

## **BACKGROUND ON SMARTCOVER SYSTEMS and CEO GREG QUIST:**

**SmartCover Systems**  
2110 Enterprise Street  
Escondido, CA 92029  
Phone: (760) 291-1980

**NEW PRODUCT:** See Press Release on SubSonic<sup>®</sup> dual sensor at end of this document.

**MEDIA CONTACT:** Heather Towsley, cell: 858-922-7495, [htowsley@smartcoversystems.com](mailto:htowsley@smartcoversystems.com)

**Year Established:** 2005

**Staff:** 30

**Geographic Reach:** North America

**Management:**

Greg Quist, Co-Founder, President & CEO  
David Drake, Co-Founder, Chief Innovation Officer  
David Rees, Chief Technology Officer  
Don McGaughey, Vice President of Operations  
Jim Crabtree, Chief Financial Officer  
Heather Towsley, Director of Marketing  
Cliff Jones, Head of Sales

### **Vision:**

SmartCover<sup>®</sup> Systems is a pioneering technology provider specializing in wastewater solutions that protect and preserve the environment, our communities, and quality of life. SmartCover solutions gather and monitor remote sewer data, perform analytics, and enable informed decisions to stop sewer spills. Since 2005, the company has prevented thousands of sewer spills and saved millions of dollars for wastewater utilities across the country. SmartCover's suite of technology has a range of applications including the reduction of high frequency cleanings, locating infiltration and inflow (I&I), intrusion prevention, and odor control. SmartCover software monitors real time trends in a wastewater collection system and delivers timely advisories via desktop or smart devices. The technology integrates with the Iridium<sup>®</sup> satellite network, making it impervious to power or cell outages during severe weather and is especially advantageous for remote locations. SmartCover is a member of XPV Water Partners. To learn more visit [smartcoversystems.com](http://smartcoversystems.com).

SmartCover<sup>®</sup> is a turn-key, smart infrastructure product with these components:

- Core to the solution is the SubSonic<sup>®</sup> dual sensor which extends visibility throughout the entire manhole from the bottom of the channel to the cover. Not only does the dual sensor provide customers with “full dynamic range” of manholes, it combines the accuracy of ultrasonic with the wide range of a pressure sensor.
- The compact SubSonic dual sensor package is mounted on the underside of a sewer manhole. The package includes: an electronics package with satellite modem, processor, and power management circuitry; a long-lived battery; a dual

pressure/ultrasonic water level sensor; and an antenna mounted on the top of the manhole.

- Two-way wireless communications with the Iridium<sup>®</sup> satellite system, provides military-grade communications, impervious to local power or cell outages during extreme weather conditions, to ensure system operators know what's going on at all times;
- A cloud-based database and analytics suite provides real-time analysis of water levels and using pattern recognition, interprets the condition of the pipes underground;
- Software monitors real-time trends and delivers timely advisories through desktop or smart devices. Utilities are able to prioritize actions.

VIDEO: [CEO presentation at Sept. 11, 2018, Strata Data Conference](#)








### **Solutions:**

- Cleaning Maintenance Optimization (SmartClean<sup>™</sup>)
- I & I Tracking
- CSO monitoring and reporting
- Data source integration and correlation of rain, tide and river with level and flow
- H<sub>2</sub>S Monitoring
- SSO prevention
- UnderCover (Intrusion Detection/Alarm)

### **Results to Date:**

- Used by 400 cities and commercial properties across the country with more than 4,000 installations
- Identified more than 20,000 overflows in advance of an incident
- Saved an estimated \$100 million in overflow costs
- Prevented an estimated 2 million illnesses from contact with sewage tainted water
- SEE ALSO: [Case Studies](#)
- [News Videos](#)
- [White Papers](#)
- [EPA Report: Smart Data Infrastructure for Wet Weather \(includes 3 SmartCover System clients in case studies\)](#).
- [Webinar: Taking the Complaints out of Compliance](#)

**Case Studies ([detailed on Web Site](#)):**

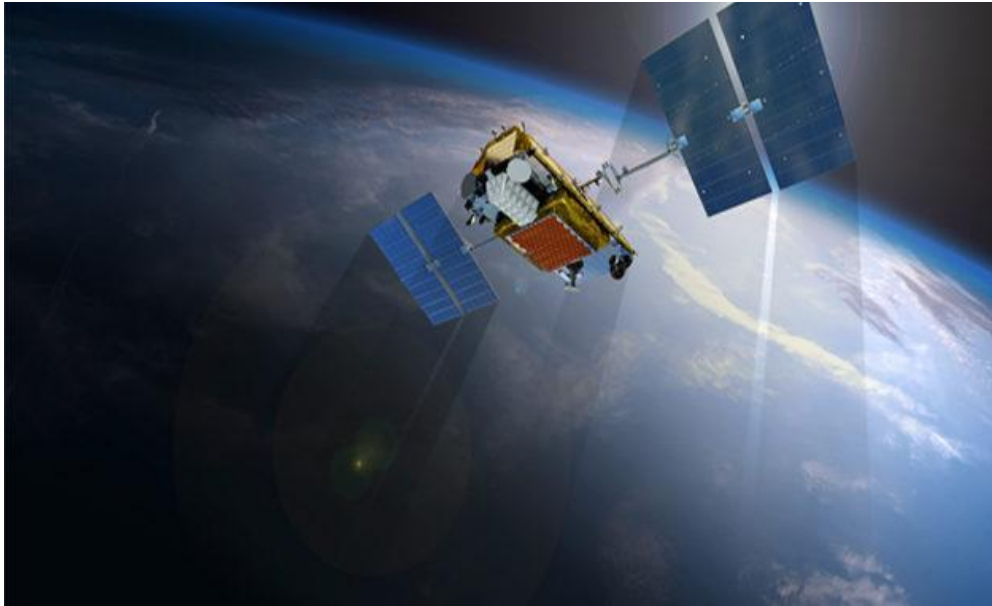
<p><b>Case Study: Escondido, CA</b></p> <p><b>The Spill that Didn't Happen</b></p> <ul style="list-style-type: none"> <li>• "Atmospheric river" storm, January 2017</li> <li>• Inflow from storm prompts large line collapse</li> </ul>   <ul style="list-style-type: none"> <li>• SmartCover® positioned 5 MH upstream</li> <li>• Detected anomalous level &amp; alarmed</li> <li>• City staff responded</li> <li>• Performed near-term fix</li> <li>• Pipe currently being replaced</li> </ul>  <p><b>NO SPILL</b></p> <p>Estimated savings: "Millions"</p>	<p><b>Case Study: Hawthorne, CA</b></p> <p><b>Eliminating Spills</b></p> <ul style="list-style-type: none"> <li>• 2 Full-time field staff</li> <li>• 90 miles of pipeline</li> <li>• 2,000 manholes</li> <li>• 0 Lift stations</li> <li>• ~ \$400K per year in fines</li> <li>• PLUS clean up and litigation</li> </ul>  <p>Historical average spills/year - 10      Since installation of 50 unit monitoring system (11/06):  <b>1 SPILL (at unmonitored location)</b></p> <p><b>99% reduction of overflows</b></p> <p>Estimated program savings: &gt; \$2.5MM</p>
<p><b>Case Study: SAWS (TX)</b></p> <p><b>Saving Operational Expenses</b></p> <ul style="list-style-type: none"> <li>• Pilot Question: Can technology reduce cleaning frequency &amp; expense with no increased risk?</li> <li>• SAWS' Pilot Set-up (8/15 through 7/16)             <ul style="list-style-type: none"> <li>• 10 monthly cleaning sites selected</li> <li>• Sites cleaned prior to start</li> <li>• SmartTrend™ trend analysis performed daily</li> <li>• Cleaning based on level trends only</li> </ul> </li> </ul>   <p><b>94% reduction of cleaning (NO SPILLS)</b></p> <p>Estimated program savings: \$3.1MM</p>	<p><b>Solution</b></p> <p>Install and Operate      Remote Level Monitoring System      COST: &lt; \$100K</p>  <p><b>Savings/Deferral ~ \$10 million</b></p> <p>Colorado State DPH      Approved monitoring system</p>

**Excerpts from Client Survey (85 operators surveyed):**

- 93% of customers say they are "satisfied" to "very satisfied" with SmartCover Systems. (84 customers surveyed)
- 94% of existing customers say are "likely" or "very likely" to recommend SmartCover Systems to utility peers. (84 customers surveyed)
- "We wanted to enhance monitoring at a few locations, and radio was pricey and phone was non-existent or poor... We learned of SmartCover Systems use of satellite, which works and is extremely cost-effective for the High Sierra Nevada region." - **Jeff Gouveia, GM, Bear Valley, California**
- "We bought SCS as an alarm system, but it's our data entry now for our flow. We wanted to know that, if there was a problem, we could get it handled before the residents knew we had a problem. That's what it has done for us." - **Brian Davey, Acting Director, Three Hills, Alberta, Canada**

- *“We had an I&I study done for about \$200,000 and we got more from two SmartCovers than we got from that external consulting investment. We learned a lot more from SmartCover than we ever thought we would.” - Frank Nicholson | Engineer, Walla Walla WTP, Washington*

## Why Does SmartCover Use Iridium Satellite Communications?



### **When Advanced, Robust Communications for Remote Monitoring *Really* Counts**

Why does SmartCover Systems use Iridium? Like severe storms before it, including Sandy, Joaquin and Matthew, SmartCover's advanced, robust satellite communications system continued to communicate throughout Hurricane Irma at customer locations in Florida. Even more, SmartCover can add tidal and rain data which when displayed in an integrated view shows how remote sites are affected by these elements of the storm.

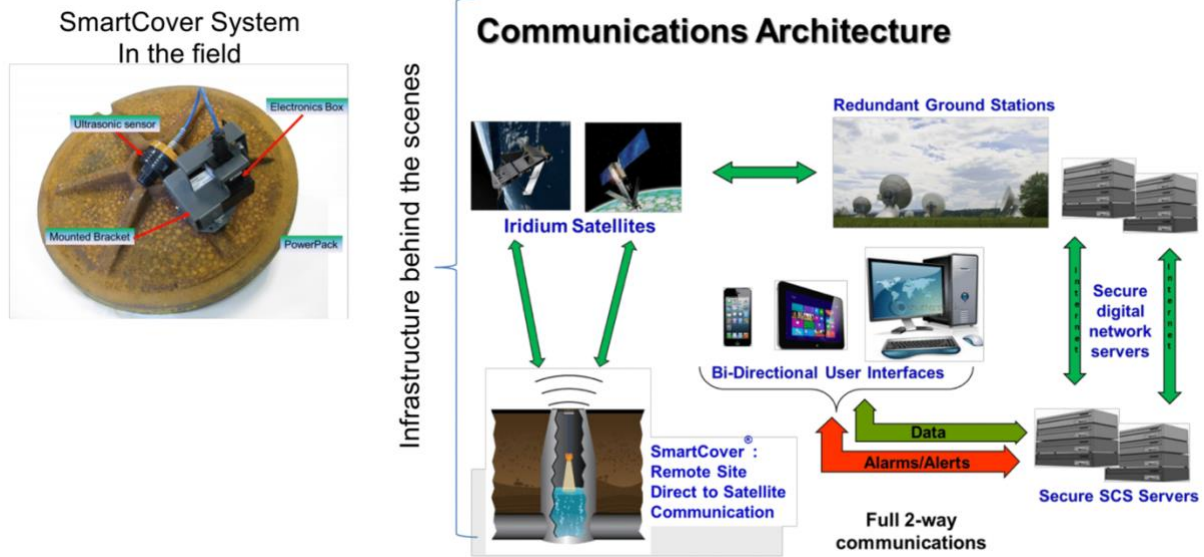
While satellite connectivity was fully operational throughout the storm, this cannot be said about cellular coverage. Wide spread outages and failures were reported Miami Herald (below). Satellite coverage maintained collection system visibility. For those cellular monitoring systems, their users were blind.

The frequency of severe weather, by many accounts, is increasing. SmartCover users are assured that their collection system visibility, supported by the Iridium Satellite system will be consistent.

SmartCover is featured in [Iridium Satellite Video](#) (at 2:35)



**SmartCover Systems Communications Architecture with Iridium Satellite:**



## CEO BIOGRAPHY:



Greg Quist, PhD, CEO, [GregQuist@smartcoversystems.com](mailto:GregQuist@smartcoversystems.com), 760-291-1980

Greg is the CEO and co-founder of SmartCover Systems, leading the strategic direction and operations of the Company. Greg is a long-time member of the water community, elected to the Rincon del Diablo MWD Board of Directors in 1990, where he has served for the past 27 years in various roles including President and Treasurer. Rincon's Board appointed Greg to the San Diego County Water Authority Board in 1996 for 12 years where he led a coalition of seven agencies to achieve more than \$1M/year in water delivery savings. He is currently the Chairman of the Urban Water Institute. With a background in the areas of metamaterials, numerical analysis, signal processing, pattern recognition, wireless communications, and system integration, Greg has worked as a technologist, manager and executive at Alcoa, McDonnell-Douglas, and SAIC and has founded and successfully spun off several high technology start-up companies, primarily in real-time detection and water technology. He holds 14 patents and has several pending. Greg received his undergraduate degree in astrophysics with a minor concentration in economics from Yale College where he played football and baseball and his Ph.D. in physics from the University of California, Santa Barbara. He has held top-level government clearances and currently resides in Escondido, CA. In his rare free time he enjoys fly fishing, hiking, golf, basketball, and tennis.

## Press Release

CONTACT: Heather Towsley, SmartCover Systems, 760-291-1980

### **SmartCover<sup>®</sup> Dual Sensor Prevents Sewer Spills with Full Dynamic Range of Manholes**

**August 14, 2019, Escondido, CA** – SmartCover<sup>®</sup> Systems released the SubSonic<sup>™</sup> dual sensor as a standard configuration for their suite of wastewater technology solutions. The dual sensor extends visibility throughout the entire manhole from the bottom of the channel to the cover. Not only does the dual sensor provide customers with “full dynamic range” of manholes, it combines the accuracy of ultrasonic with the wide range of a pressure sensor. The SmartCover SubSonic units started shipping Summer 2019.

“The release of SmartCover featuring a SubSonic dual sensor is a reflection of our dedication to helping wastewater operators prevent sewer spills. Our customers wanted full dynamic visibility of their manholes and we listened. In the past, when ultrasonic sensors submerged during heavy rainfall, operators were in the blind. SmartCover’s product engineers redesigned our solution to eliminate the deadband during a surcharge,” said Greg Quist, CEO of SmartCover.

The SubSonic embeds a pressure sensor to monitor costly inflow & infiltration (I&I) during water surges, such as heavy rainfall events when groundwater and/or stormwater flows into a wastewater collection system. Dual sensors detect water level changes from the outset and continue to provide valuable data beyond the point when the ultrasonic sensor becomes submerged. The sealed submersion sensor is virtually maintenance-free, issues alarms when a manhole is reaching overflow levels, and allows wastewater operators to “triage” manholes to prevent sanitary sewer overflows (SSOs).

“To battle inflow and infiltration, utilities need to identify segments of their collections system with the highest level of I and I. SmartCover better informs operators on rapidly changing water levels throughout the channel,” said Quist. “High wet-weather flows can be compared to dry weather flows to establish a ratio that identifies I and I so that preventive actions prevent spills.”

**About SmartCover:** *SmartCover<sup>®</sup> is a pioneering technology provider specializing in wastewater solutions that protect lives in the field, the environment, and the quality of life in communities throughout North America. SmartCover solutions gather and monitor remote sewer data, perform analytics, and enable informed decisions to stop sewer spills. Since 2005, the company has prevented thousands of sewer spills and saved millions of dollars for wastewater utilities across the country. In addition to preventing sewer spills, SmartCover’s suite of technology has a range of applications including the reduction of high frequency cleanings, locating infiltration and inflow (I&I), intrusion detection, and odor control. SmartCover software monitors real time trends in a wastewater collection system and delivers timely advisories via desktop or smart devices. The technology integrates with the Iridium<sup>®</sup> satellite network, making it impervious to power or cell outages during severe weather -- making it especially advantageous for remote locations. SmartCover is a member of XPV Water Partners. To learn more visit [smartcoversystems.com](http://smartcoversystems.com).*

SmartCover<sup>®</sup> and SubSonic<sup>™</sup> are registered trademarks of SmartCover Systems/Hadronex Inc. with the U.S. Patent and Trademark Office. Any infringement of these trademarks will be prosecuted. Under the Madrid Protocol for international trademarks under the Patent Cooperation Treaty, protection will be enforced worldwide.

# SMARTCOVER<sup>®</sup> SYSTEMS<sup>™</sup>

*TURNING YOUR DATA INTO DECISIONS<sup>™</sup>*

