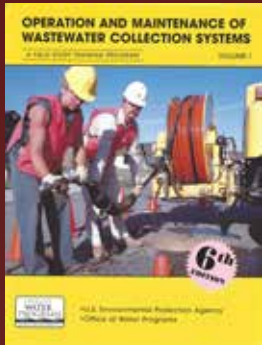


**NEW**

# Next Generation Sewer Condition Assessment Technology\*

## Upgrade Your CMOM, SSES, and GIS Programs

As Featured in the *SEVENTH EDITION, VOLUME 1, OPERATION AND MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS* Manual



Sixth Edition (2003)

### New Lesson 4.4 - ELECTRO SCANNING INSPECTION

#### Chapter 4 - Inspection and Testing Collection Systems

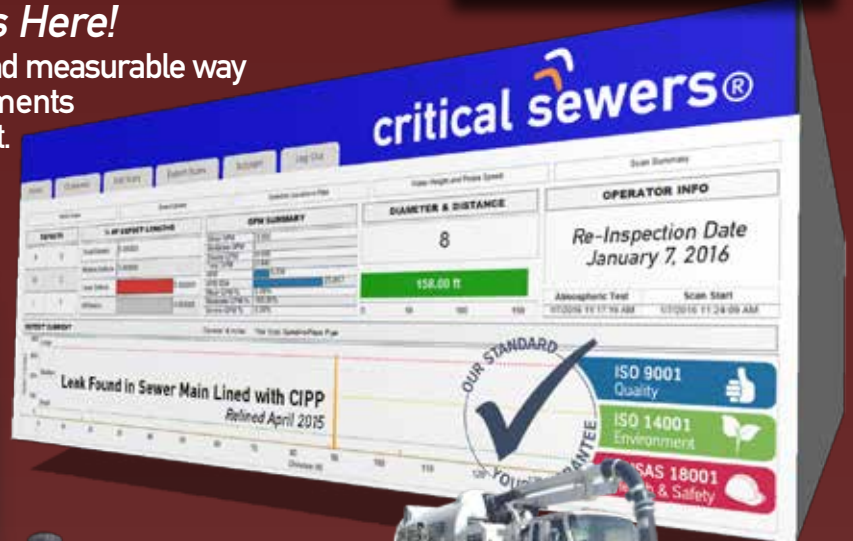
- Find Major Defects Missed by TV Inspection
- Locate Leaks & Estimate Their GPM
- Certify CIPP Lining & Point Repairs
- Identify Sources of Infiltration
- Add to Your Existing TV Truck or Van

NOT SEEN ON  
**CCTV**



### \* Low Voltage Condition Assessment is Here!

Represents the industry's first reliable, repeatable, and measurable way to provide unbiased sewer pipe condition assessments without third party interpretation or operator judgement.



Add Electro Scan to...

- Aries
- Cues
- EnviroSight/Ipek
- IBAK
- Rausch



**Sewer Probe**

*No Defect Coding. No Operator Judgment. No Third Party Data Interpretation.*

U.S. Patent # 9143740. Multiple U.S. and International Patents Pending.

Services Available From Electro Scan Inc.

# electro scan inc.

# Electro Scan Added to Seventh Edition, Volume 1 of Industry Leading Wastewater Collection Manual

As Featured in *Chapter 4: Inspecting and Testing Collection Systems*

When Chuck Hansen asked his good friend and industry pioneer, Ken Kerri, Ph.D., P.E. and founder of the Office of Water Programs, in 2011 to perform due diligence on the viability of low voltage technology to assess sewers, Hansen was blown away by his findings.

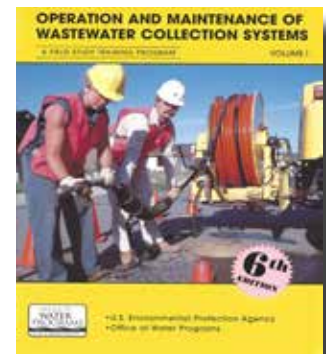
Said Dr. Kerri, "If [Electro Scan] does half of what I think it can do, it will forever change the industry. All you have to do is figure a way to put it in a TV truck so crews can easily switch back and forth."

So began a reengineering and patenting of a technology that had its roots in Germany beginning in the 1990s, including a number of EPA & WERF benchmark studies and adoption by leading sewer utilities.

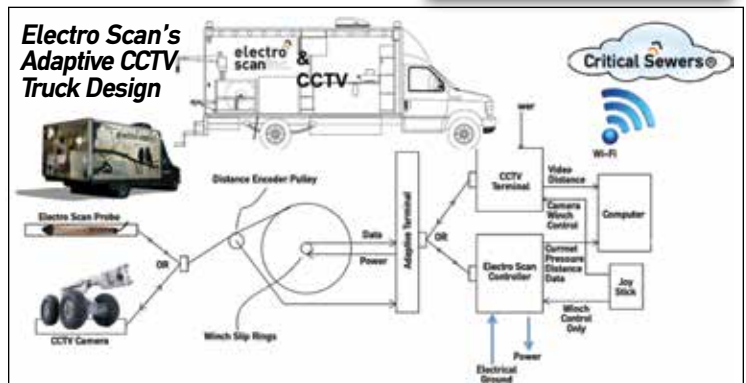
In 2013 – after publication of ASTM F2550-13, winning a series of major awards, and additional investigations – Dr. Kerri asked Hansen to help him co-author a new chapter for the new edition of his famed OPERATION AND MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS, VOLUME 1 manual.

Included as a standalone lesson in Chapter 4: Inspecting and Testing Collection Systems, Electro Scan is joined by updated lessons on CCTV, Smoke Testing, and Dye Testing.

"I am delighted to bring this game changing technology to the sewer business," states Chuck Hansen of Electro Scan. "And an honor for Dr. Kerri to invite me to co-author the lesson on *Electro Scanning Inspection*."



Electro Scan's Mark Grabowski and Ken Kerri, Ph.D., P.E.



# Electro Scan Partners With WRc in the UK The People That Brought Us 'Weeper, Dripper, & Gusher'

Known for its international defect and coding standards for closed-circuit television (CCTV) inspection licensed by NASSCO in the United States for its PACP certification program, WRc (Swindon, England) has teamed with Electro Scan Inc. to offer its patented low voltage inspection services throughout England, Scotland, Northern Ireland, and the Republic of Ireland.

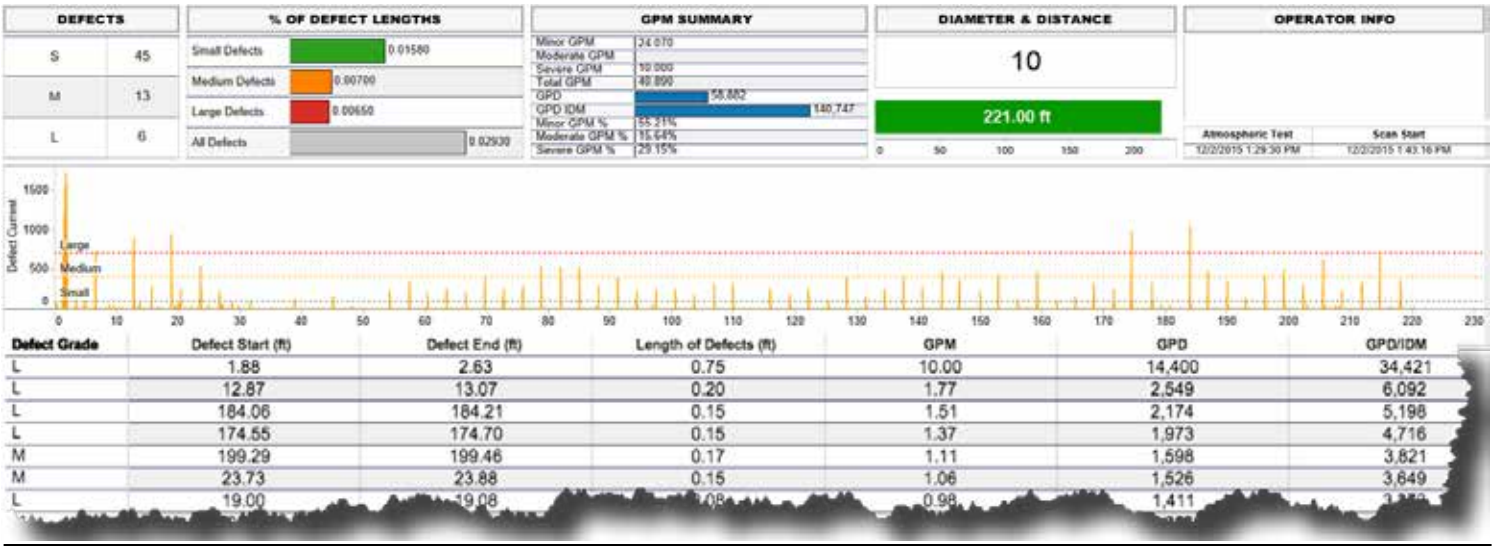
Famous for bringing U.S. sewer agencies terms like 'weeper, dripper, and gusher' to describe infiltration, Electro Scan will be offered for assessing sanitary sewerage and stormwater mains.



# Introducing New Standards For Inspecting Sewers

Purchase a copy of the new Seventh Edition of the *OPERATION AND MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS* manual for more practical applications.

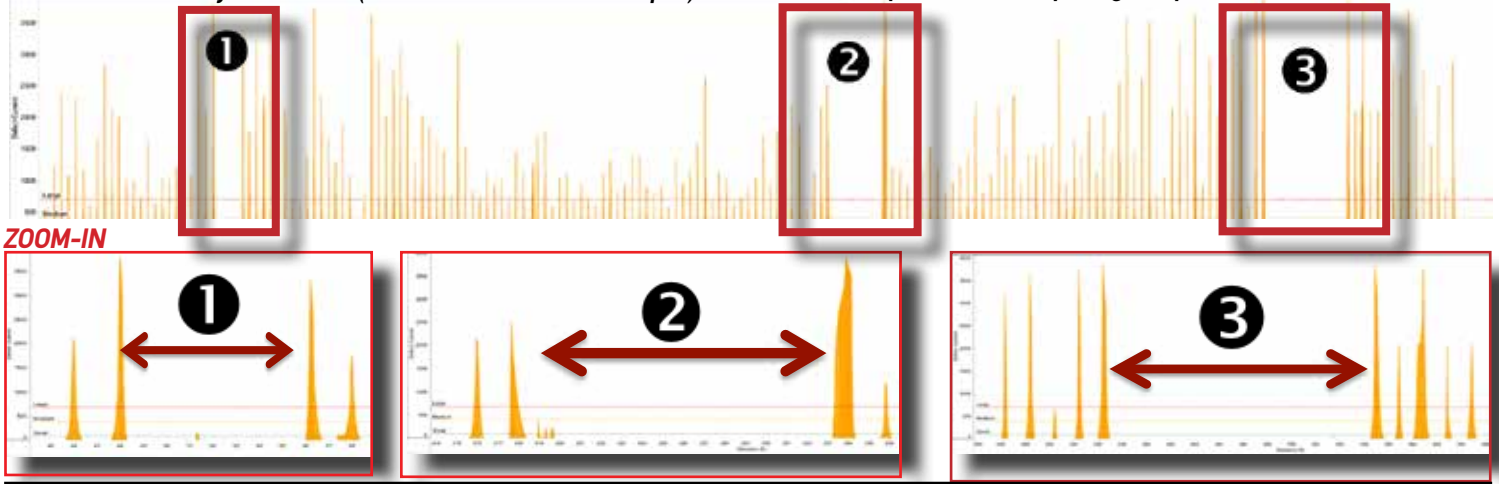
## 1. Vitrified Clay Pipe (VCP) Assessment Using Electro Scan



## 2. Point Repair Assessments Using Electro Scan

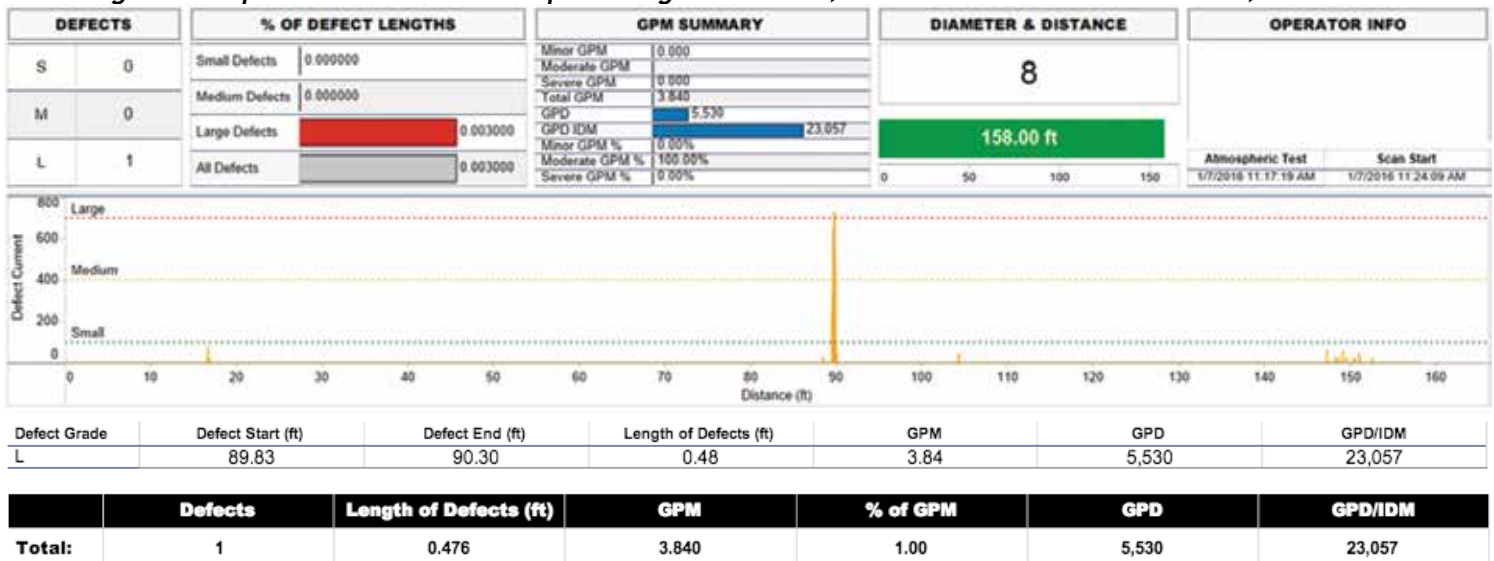
**Good News:** Point or spot repairs (Circles 1, 2, and 3) completed by this California sewer utility were 'Good' (i.e. no electrical current escapes).

**Bad News:** Major sections look like they worked, but may have caused large leaks at end points. Unless repairing collapses, not the 'best' rehab decision.



## 3. CIPP Assessment Using Electro Scan

Never Again Accept a Cured-In-Place Pipe Lining with Leaks, Defective Service Connections, or Hidden Tears.



# Electro Scan Investigates Sewer Main That Showed Zero Defects As Recorded By Certified CCTV Operator

Electro Scan is frequently asked, 'How does CCTV inspection compare to Electro Scanning Inspection?' While TV operators can always have an off-day – especially if the camera is operated at Mach speed traveling through a pipe – Electro Scan significantly alters how TV is used, especially if finding sources of infiltration and SSOs is a key objective of the sewer agency.

After over 300 projects, benchmark demonstrations, and side-by-side comparisons with CCTV, you can't help but see how certified camera operators miss openings at joints, inverts, and service connections where water can easily enter or exit a pipe, but cannot be easily seen even with high resolution cameras.

While CCTV is still an important inspection tool to assess the need for periodic maintenance, especially to assess grease, roots, and debris, its usefulness to certify repair, rehabilitation, and renewal projects has reached a crossroads, as Electro Scan has been found to more accurately detect leaks in a pipe. A surprise to many, but not after seeing comparative 'bake-offs' like the benchmark completed below of a sewer main with 'no defects.'

## CCTV INSPECTION REPORT

Work order:  Position segment ref:  Start date/time: 2013/04/18 13:03 Location (street name and number): 1163 SPRUCETREE Locality:

Further location details:  (Upstream manhole No.:  Downstream manhole No.:  Run to invert:  Invert:

Run to grade:  Use of sewer:  Operator:  Height:

Material: VCP Lin. method:  Pipe joint length:  Total length: 390.6 Length surveyed: 390.6 Year inst:  Inlet label:

Inspection: Sewer category:  The cleaning:  Date cleaned:  Weather:  Location code:  Additional info:

Station	Amount of Defects (Defects)	Defects (Large/Small)	Estimated Defect Flow (GPM)	Estimated Defect Flow (GPM)	Estimated Defect Flow (GPM)	Estimated Defect Flow (GPM)	Estimated Defect Flow (GPM)	Estimated Defect Flow (GPM)	Estimated Defect Flow (GPM)
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0

NO DEFECTS FOUND BY TV INSPECTION

It's not the fault of CCTV Operators for not recording defects they can't see.

Footage			
5' CCTV		Estimated Defect Flow 10.0 GPM	<b>No TV Callout</b>
2' ES		Estimated Defect Flow 10.0 GPM	<b>No TV Callout</b>
281' CCTV		Estimated Defect Flow 7.8 GPM	<b>No TV Callout</b>
280' ES		Estimated Defect Flow 7.8 GPM	<b>No TV Callout</b>

(Below) While CCTV inspection was completed over a year prior to the Electro Scan survey, Electro Scan found 93 Total Defects, including 78 Large Defects, many of which exceeded our maximum defect flow of 10 GPM per defect. Total estimated defect flow for the entire 390ft, 6in, VCP sanitary sewer main was 268.05 GPM.

**NOTE:**  
This California benchmark was completed by a certified CCTV operator that compared a TV Inspection Report having an Overall Pipe Rating Index (OPRI) of ZERO to Electro Scanning Inspection.

Located in a known flood zone with high groundwater, the City suggested this sewer to see what Electro Scan could identify when compared with a pipe with no CCTV defects and considered in **Good Condition**.

Electro Scanning Inspection was performed at 2pm on a clear day, with sewer already running half-full.

Pipe Diameter: 6 inches  
Pipe Length: 390 feet  
Pipe Type: VCP

Defect Flows	
GPM	268
GPD	385,992
GPD IDM	924,082

GPM SUMMARY	
Minor GPM	
Moderate GPM	169,980
Severe GPM	96,060
Total GPM	268,050
GPD	385,992
GPD IDM	924,082
Minor GPM %	0.75%
Moderate GPM %	63.27%
Severe GPM %	35.98%

Defect Count	
Small	6
Medium	9
Large	78
<b>TOTAL</b>	<b>93</b>

93 DEFECTS

78 or 84% of Defects Are 'Large'

0 DEFECTS

Electro Scan Date: 2/19/2014

Footage	Video Ref	Desc.	Description	Dia.	Clock
0.0	2				0
0.0	3				0
24.3	189	TF	Tap Factory Active	4	09
32.2	237	TFA	Tap Factory Active	4	03
46.0	303	TFA	Tap Factory Active	4	09
101.9	448	TFA	Tap Factory Active	4	03
124.9	487	TFA	Tap Factory Active	4	09
135.6	520	TFA	Tap Factory Active	4	03
146.3	578	TFA	Tap Factory Active	4	09
215.4	773	TFA	Tap Factory Active	4	03
231.9	827	TFA	Tap Factory Active	4	09
241.6	856	TFA	Tap Factory Active	4	03
249.4	885	TFA	Tap Factory Active	4	09
318.2	1026	TFA	Tap Factory Active	4	09
325.7	1054	TFA	Tap Factory Active	4	03
339.4	1078	TFA	Tap Factory Active	4	09
343.8	1109	TFA	Tap Factory Active	4	03
390.6	1400	AMH			

NEW STANDARD

While CCTV may view major structural defects, it is not able to see through joints or cracks to determine if a pathway exists for water to enter or exit a pipe.

0 DEFECTS

TV Date: 4/18/2013

All results provided to the City Engineer – in the field – within 10 minutes of completing Electro Scanning Inspection.

# Adding Electro Scan To Your CCTV Truck or Van Helps Find & Measure What Cameras Can't See

Upgrade Your CCTV Truck Overnight to Allow Your Utility to Experience The Magic of Electro Scanning

**\*\*\* SPECIAL PRICING IF PURCHASED BEFORE JUNE 30, 2016 \*\*\***

**1**  
**CUES**



**3**  
**IBAK**



**4** **ENVIROSIGHT (Ipek)**



**2** **ARIES**



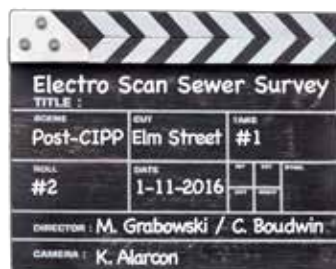
**CONVERT FROM CCTV TO ELECTRO SCAN, AND BACK AGAIN, IN LESS THAN 10 MINUTES.**

## Electro Scan's Sewer YouTube Channel Leads Industry With Over 250,000 Views\*

Unmatched in the Trenchless Technology industry, Electro Scan's Sewer Channel has become a social media darling, breaking records for YouTube views as compared to all other competitors in the pipe condition market.

"Cut & Paste" the URL (Right) and see explaining showing the most exciting innovations in the global wastewater business.

[https://www.youtube.com/channel/UCIMCQhtGrn\\_V0DF4poTRFOw](https://www.youtube.com/channel/UCIMCQhtGrn_V0DF4poTRFOw)



And, visit its website to read about its recent developments and its Strategic Alliance with WRc, Swindon, England, originators of the NASSCO coding system for CCTV.

Are You Getting Quality CIPP Lining Projects?

2015 Are You Getting a Quality Cured-In-Place Pipe (CIPP) Lining... 108,766 views



2013 WEF Best Innovative Technology Award 65,797 views

MIAMI-DADE COUNTY WATER AND SEWER

2015 Miami-Dade and Electro Scan 44,445 views



2015 The First Snow in Vail, Colorado 43,183 views



\* YouTube views as of January 15, 2016.

# NASTT Names Electro Scan Best Innovative Product 2013

## Award Presented at No-Dig Conference

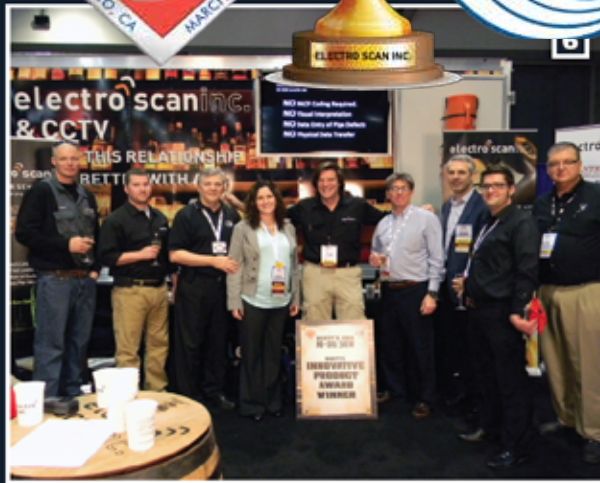


### INNOVATIVE PRODUCT AWARDS

NASTT annually recognizes two companies with state-of-the-art products in either new installation or rehabilitation for their achievements in advancing the trenchless industry — called the Joseph L. Abbott Jr. Innovative Product Awards. In 2013 Electro Scan Inc. and HammerHead Trenchless Equipment were the recipients of this honor.

The award is given in memory of the late Joseph L. Abbott Jr., who was an active member of the society since its inception in 1990. Electro Scan Inc. and HammerHead were formally recognized at the Gala Dinner.

Electro Scan Inc. received the Rehabilitation Award for its Electro Scan ES-620 for Sewer Mains technology. Using patent pending technology that measures the variation of electrical current inside pipes, electro scanning is now available to independently test and certify newly relined



and rehabilitated sewer mains and laterals as leak free. While CCTV inspection is often conducted when a pipe is dry, Electro Scan assesses a pipe's performance under wet conditions. Electro Scan is designed to more accurately find defects in newly relined pipes.



## Electro Scan Inc. Named CleanTech Company of the Year

The Editors of Britain's 'The New Economy' magazine selected Electro Scan Inc. as its winner of the 2013 Clean Tech Award for Best Water & Wastewater Solution and featured the company as its April/May 2014 cover story.

In its annual international competition, the magazine selected Electro Scan for its groundbreaking leak detection and cloud computing applications that finds defects not previously found by legacy CCTV inspection (visual) and acoustic (audio) devices. The company's smart water sensor automatically finds defects where comparative visual inspection might only find partial or no defects, leading to incorrect or inappropriate condition assessments.

# ASTM F2550-13: International Standard Covering Electro Scanning Inspection Authorized Through 2019



Designation: F2550 - 13

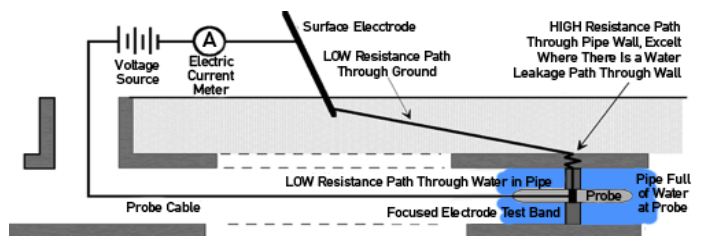
### Standard Practice for Locating Leaks in Sewer Pipes By Measuring the Variation of Electric Current Flow Through the Pipe Wall<sup>1</sup>

This standard is issued under the fixed designation F2550; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

#### INTRODUCTION

Infiltration of groundwater into a sewer through defects in the pipe can considerably increase the operation and capital costs of a sewer system. Exfiltration of sewage out of a sewer pipe may cause degradation of soil and shoreline waters. Accurate location, assessment, and characterization of all of the defects in a sewer system are necessary for the proper design and construction of a sewer system.

### The Electric Circuitry of Water & Sewer Pipe



## How Does Electro Scanning Inspection Compare to Other Inspection Techniques?

Electro Scan's low voltage conductivity technology do not rely on your parent's closed-circuit television inspection camera or other device to find defects in sewers.

Representing a new breed of water loss leak detection solutions -- without the need for third party data interpretation or operator guesswork -- *Electro Scanning Inspection* provides unbiased, unambiguous

pipe condition assessment and leak detection data unlike anything delivered by CCTV, Smoke Testing, Dye Flood Testing, or Pressure Testing (i.e. limited to a PASS FAIL ONLY, not a location or magnitude of source of failure).

*Electro Scanning Inspection* is like comparing iPhones to 8-track tape players. Call Electro Scan today to learn how to get started.

OUR'S



THEIR'S



## Hamilton Township Municipal Authority, PA Hosts Annual BBQ, Featuring Electro Scan



A big THANK YOU to Hamilton Township Municipal Authority's Sharon Purnell, Manager, for inviting the Electro Scan crew to their Annual BBQ & Pig Roast, held October 2015. Ms. Purnell became Manager in 2011 and has been with the Authority for +30 years!

"Don't be fooled by the size of HTMA" states Pete Dannenberg, Electro Scan's Manager of Field Services. "Despite managing only 70 miles of sewer main, they've scanned nearly 30,000 ft since their purchase & installation in August 2014."



## Get Your Electro Scan Certification Online, Instead of in a Classroom

Did you know that your sewer utility can Electro Scan 3 times as much footage as CCTV inspection? Not to mention find 5-10 times the number of defects? Sign-up today and start learning all the ways that Electro Scan will save your utility money. Call us today to learn more.

Jamie Johnson, Director of Services  
Electro Scan Inc.

\$495.00  
[www.ElectroScan.com](http://www.ElectroScan.com)



Ask about our discount for 5 or more from the same Utility. Replace your CCTV training budget with Electro Scan, today!

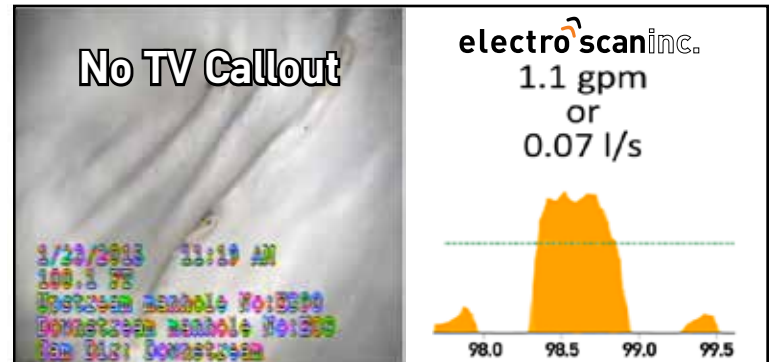
# CIPP Laboratory Testing Shows Lining Leakage Also Seen by Electro Scan Low Voltage Inspections

Water is able to pass through poorly installed or badly cured lining, and it doesn't just occur at defective service reconnects. No wonder agencies are seeing more root intrusion in liners within just a few years of installation.

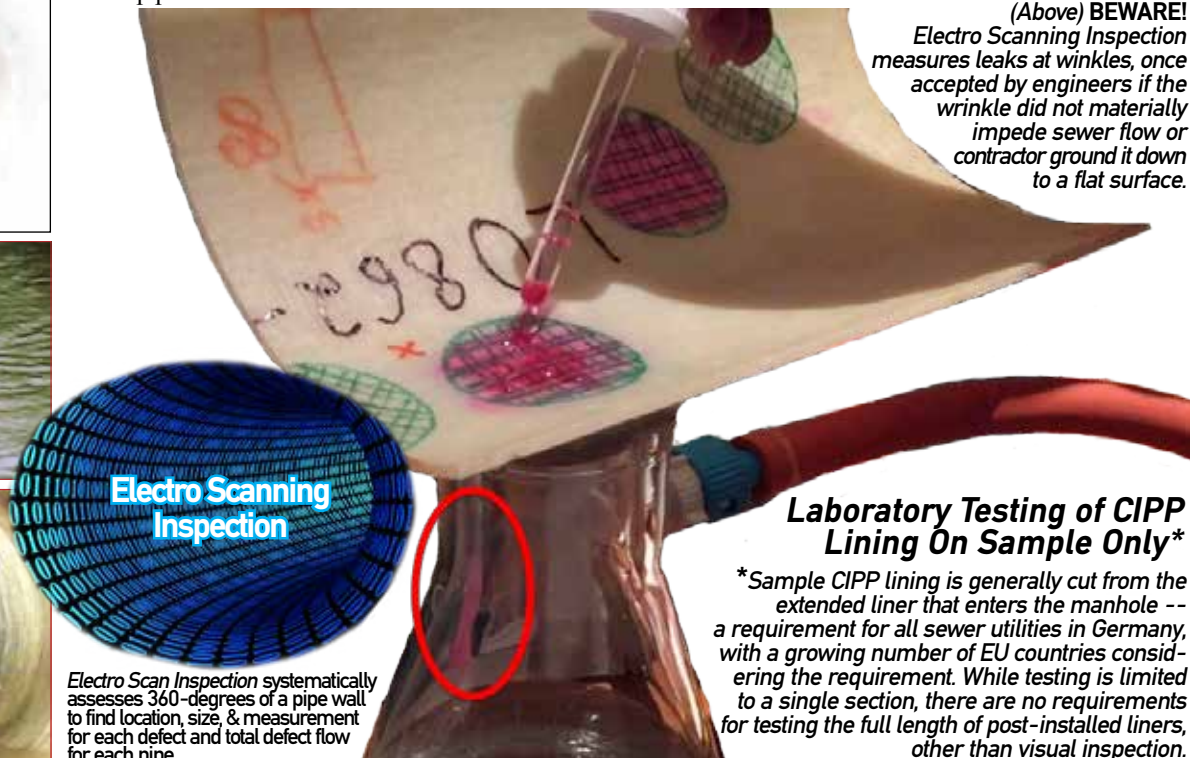
Since we don't have the time or money to perform a laboratory test on every square inch of cured-in-place pipe, it is recommended that all post-CIPP liners are tested with Electro Scan.

**BAD NEWS** for trenchless contractors that do not use quality liners or poorly install CIPP -- sewer agencies are now altering their standards for accepting repairs, renewals, and rehabilitation to no longer rely on visual inspection.

**GOOD NEWS** for sewer utilities, bondholders, and credit rating agencies -- *Electro Scanning Inspection* can now provide a more comprehensive assessment of a post-CIPP to substantiate useful life assumptions of pipe renewals.



(Above) **BWARE!**  
Electro Scanning Inspection measures leaks at wrinkles, once accepted by engineers if the wrinkle did not materially impede sewer flow or contractor ground it down to a flat surface.



Electro Scan Inspection systematically assesses 360-degrees of a pipe wall to find location, size, & measurement for each defect and total defect flow for each pipe.

### Laboratory Testing of CIPP Lining On Sample Only\*

\*Sample CIPP lining is generally cut from the extended liner that enters the manhole -- a requirement for all sewer utilities in Germany, with a growing number of EU countries considering the requirement. While testing is limited to a single section, there are no requirements for testing the full length of post-installed liners, other than visual inspection.

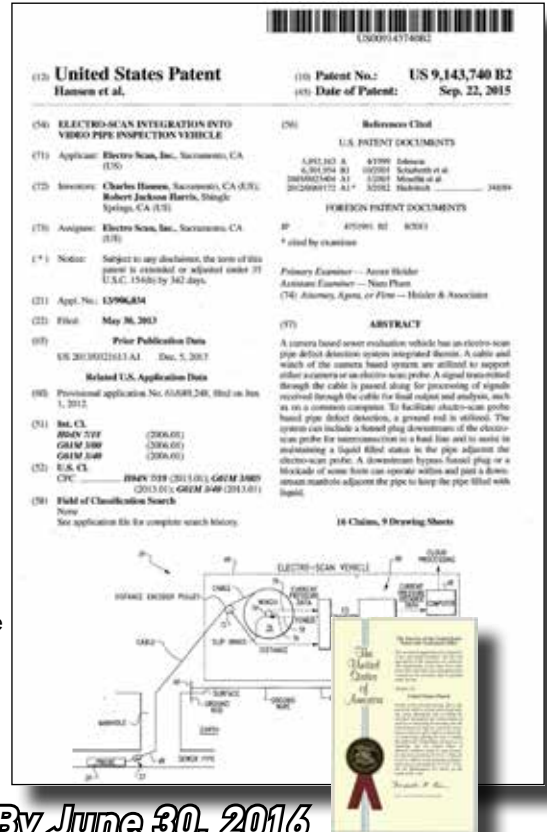
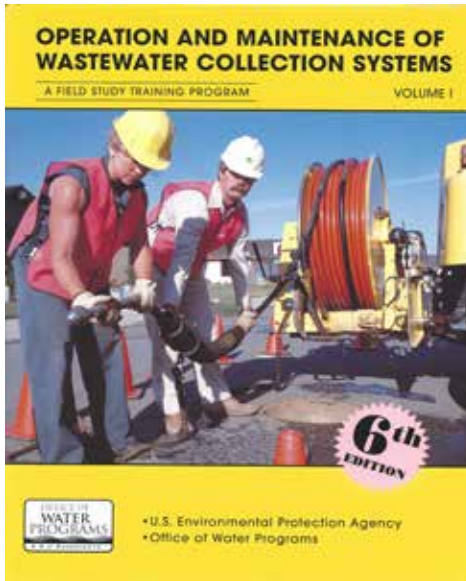
# Join Leading Sewer Utilities Using Sole Source Justification to Add Electro Scan to CCTV Trucks & Vans

ASTM Standard, U.S. Patent, and Featured Technology in New O&M Manual May Eliminate Need for RFP

Issuing an RFP or RFQ to purchase Electro Scan equipment may not be required, as determined by a growing number of municipal sewer utilities.

Priced in accordance with generally available camera technologies, including associated software, long-term support, and data management alternatives, Electro Scan's status as the exclusive supplier for electro scanning inspection, also referred to as low voltage conductivity inspection, may be directly purchased as a Sole Source Justification by your Agency or Utility.

Check with your Purchasing Dept. or contact Electro Scan today.



Selected sewer utilities that have already taken advantage of a Sole Source Justification – *without requiring a public bid* – to purchase equipment, and add Electro Scan to an existing CCTV rig, include:

- City of Coos Bay, OR
- City of Tallahassee, FL
- Metropolitan Sewer District of Greater Cincinnati, OH
- Hamilton Township Municipal Authority, PA
- Miami-Dade Water and Sewer Department, FL

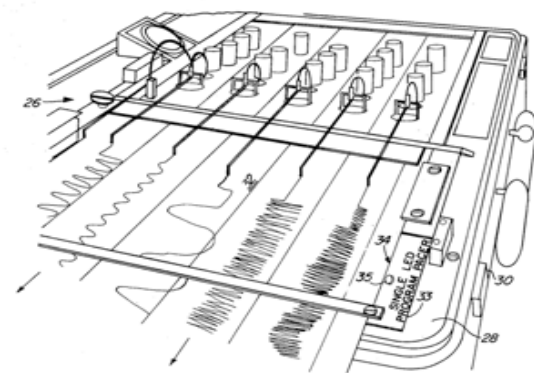
**Special Pricing If Purchased By June 30, 2016**

## Electro Scan Becomes Another Tool In Toolbox, Doing What CCTV Can't!

### Find Infiltration | Certify Rehabilitation

When Chuck Hansen asked his good friend and industry pioneer, Ken Kerri, Ph.D., P.E. and founder of the Office of Water Programs, in 2011 to perform due diligence on the viability of low voltage technology to assess sewers, Hansen was blown away by his findings.

Said Kerri, "If [Electro Scan] does half of what I think it can do, it will forever change the industry. All you have to do is figure a way to put it in a TV truck so its a familiar tool to the operator."



(Above) Electro Scan? No! This is a polygraph or lie detector test, illustrating how Electro Scan's patented Low Voltage technology finds all defects to certify rehabilitation projects -- missed by visual inspection -- and helps hold sewer contractors accountable for their work!

### Advantages Using Electro Scan for Sewer Condition Assessment

		CCTV	Electro Scan
1	Automatically Finds Potential Sources of Infiltration	N	Y
2	Automatically Finds Leaks Inside Joints	N	Y
3	Automatically Finds Leaks at Service Connections	N	Y
4	Automatically Finds Sources of Infiltration at Cracks	N	Y
5	Automatically Finds Leak Locations (within 0.4 in or 1 cm)	N	Y
6	Automatically Measures Size of Leaks (Estimated in GPM or LPS)	N	Y
7	Automatically Finds Defects That Leak from Bad Couplings	N	Y
8	Automatically Finds Defects That May Still Leak After Repairs	N	Y
9	Automatically Finds Defects That Leak in Re-Lining Projects	N	Y
10	Automatically Finds Defects After Service Re-Connections	N	Y
11	Automatically Finds Leaks, If Silt or Debris on Bottom of Pipe	N	Y
12	Able to Conduct Inspections, If Sewer Pipe Is Full of Water	N	Y
13	Able to Determine Size of Potential Leak, If Roots Are Present	N	Y
14	Automatically Finds Leaks at Joints, If Grease Is Present	N	Y
15	Able to Determine Size of Leaks, If Pipe Has Encrustation	N	Y
16	Requires Active Infiltration to Identify Defect at Source	Y	N
17	Contains Moving Parts That Could Clog from Debris or Silt	Y	N
18	Requires Bypass During Inspection, If Pipe Full	Y	N
19	Requires Special Training and Certification to Identify Defects	Y	N
20	Relies on Visual Observations to Record Defects	Y	N
21	Ave. Speed of Inspection (6-30" Sewer Main Diameters)	3ft/min	50ft/min



# Electro Scan Delivers First Standalone Low Voltage Van to San Francisco PUC

## NEW CUSTOMER

SAN FRANCISCO, CA -- Electro Scan Inc. has delivered its first standalone low voltage survey van to the San Francisco Public Utilities Commission. The system included Electro Scan's patented low voltage conductivity probe, IBAK KW180 reel and cable, online and in-field training, and access to the Electro Scan's CriticalSewers® cloud application.

Contact Electro Scan Inc. for more information.

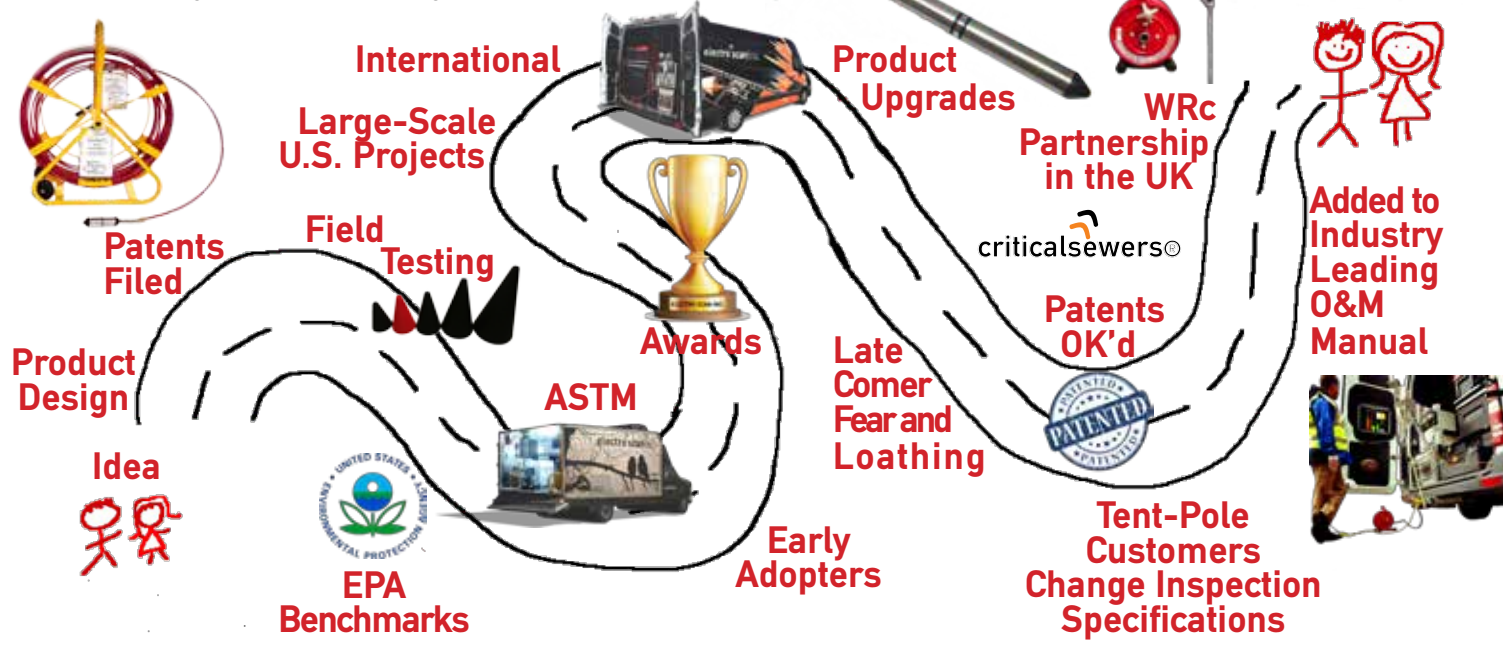


# Re-Inventing the Sewer Condition Assessment Market

## How Did Electro Scan Do It!

We are often asked 'how [we] changed the market for sewer and water pipe condition assessment so quickly?' And, the simple fact is that it was time. Of course, it didn't hurt having +30 years in the industry, a working knowledge of technological innovations, and being well financed.

But, given the slow speed of most government agencies, the trick is building a product that has an immediate and substantial competitive advantage over legacy solutions, having the perseverance to support your customer, no matter what happens along the road, and having fun, too!



# Electro Scan in Japan...

下水道調査の次世代を担う  
新しい調査機器『エレクトロスキャン』

テレビカメラ車のカメラケーブルに接続できます  
(150mm~1.5m)

Electro Scan  
テレビカメラ装置後付

小口径用 (76mm~250mm)

下水道管路管理の次世代を担う新技術『エレクトロスキャン』

- 新設管および更生後の管の「漏水ゼロ」を証明
- テレビカメラ調査では発見できない漏水を自動検知
- 下水管継手部の状態を評価
- 浸入水を自動計算 (リットル/分)

継ぎ手不良  
部分補修不良  
更生不良

WinCan SWE

小間番号 3-15

エレクトロスキャンで漏水箇所がわかります

electro scan inc. www.electroscan.com

株式会社 カンツール www.kantool.co.jp

# ...and in the United Kingdom.



## Electro Scan Awarded 2015 'Best Project' By UK Society of Trenchless Technology

Electro Scan (UK) Limited has won the 2015 Best Project Award as announced by the United Kingdom Society for Trenchless Technologies (UKSTT) on behalf of its project with Severn Trent Water Plc.

The project was the largest and most comprehensive comparison of the Electro Scan technology and Closed-Circuit Television (CCTV) inspections using the WRc Manual of Sewer Condition Classifications. Working under the guidance of Severn Trent's in-house engineers and project managers, the project was

conducted in an English village that had experienced persistent and unexplained sewer flows.

CCTV had been used on multiple occasions so a key objective of the project was to determine if Electro Scan could identify and measure defects not found by previous visual observations. Result: Electro Scan's international patent-pending technology not only identified a number of potential sources of infiltration, not seen by previous CCTV inspections, but provided estimated defect flows for each sewer main and each identified defect.

# Mark Your Calendar: May 4, 2016

## Trenchless TECHNOLOGY Webinar



### Learn About the Water & Sewer Industry's First 'Smart' Leak Detection & Measurement Solution



Approx. 15,000 Data Points Every 300 ft of Pipe



CONTACT  
Carissa Boudwin, Director of Marketing  
Electro Scan, Inc.  
Email: carissa@electroscan.com

### New Standards for Sewer Inspection and Testing:

Highlights of the Seventh Edition, Volume 1, Operations and Maintenance of Wastewater Collection Systems

Gain deeper understanding of how Electro Scan technology is used to prioritize rehab projects and certify newly installed pipe and liners in sewer mains and laterals. Get first hand small agency, large agency, and contractor perspective of their experience with Electro Scan technology and how it is being implemented into their SSES and CMOM programs.

Highlights will include applications, comparisons to other assessment techniques, lessons learned, and how the technology is changing the way sewer systems are being evaluated.

Electro Scan, governed by ASTM F2550-13, is changing the pipeline inspection market by locating defects and measuring (in GPM) their potential for infiltration during wet weather events. For the first time, Owners are able to prioritize rehab projects based on GPM defect flows to get the biggest reduction in infiltrating wastewater treated in their facilities and avoiding regulatory repercussions from SSOs.

Allowable infiltration thresholds are now becoming the basis of how Owners are certifying and accepting rehab projects. Additionally, participants will learn how Electro Scan is being used to help identify locations of potential exfiltration in sensitive ecological areas.

Attendees will gain valuable knowledge on how a "condition snapshot" provided by electro scanning results can be applied as a road map for CCTV operators, used in decision-making, and other practical field applications.

Finally, a discussion from municipal guest speakers will give a unique small and large agency perspective on how Electro Scan is being used to detect I&I and why they have made changes to their programs to avoid Regulatory Injunctions or remain EPA Consent Decree Compliant.

## Chuck Hansen Comes Out of Retirement To Lead Electro Scan & Accelerate Growth



Chuck Hansen  
Electro Scan Inc.

Selling a company for \$100 million after turning 50 years old might make some people buy a house on a beach and never look back, but not Chuck Hansen. Founder & former Chairman of Hansen Information Technologies, and developer of some of the largest water & sewer asset management systems, Hansen founded Electro Scan Inc. in October 2011 to introduce low voltage conductivity testing instrumentation to water & sewer agencies.

"I was always disappointed to see our customers rely on incomplete or inaccurate information to prioritize their repairs & rehabilitation, especially using faulty CCTV reports and acoustic data," says Hansen. "By comparison, I saw earlier versions of low voltage technology, but knew they weren't managing the data right, not to mention making it user friendly for field crews."

Located in Sacramento in the original building where he started Hansen Software in 1983 with his Dad and older brother, Scott, Electro Scan is now a global juggernaut with offices in London, Melbourne, Toronto, Frankfurt, and Miami, FL.



# Oregon Wastewater Utilities Add Electro Scan to CCTV Rigs

## NEW CUSTOMER

Coos Bay, Oregon has turned to Electro Scan to help locate and quantify their Rain Dependent Infiltration (RDI).

Given that average rainfall in Coos Bay is 55% higher than the average in Oregon and 66% higher than the national average, RDI is a significant problem.

With 93 miles of sewer main, an aging system, high groundwater, and poor soils, the City will be using Electro Scanning Inspection, in accordance with the newly published OPERATION AND MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS, Seventh Edition, Volume 1.



(Above) Steve Donovan, P.E. (far) and Ron Stillmaker (near), SHN Consulting Engineers & Geologists, Inc., Coos Bay, OR.

## Tri City Water & Sanitary Authority



(Above) Cody Hammond.

## NEW CUSTOMER

Tri City Water and Sanitary Authority serves an area located approximately 20 miles south of Roseburg along Interstate 5 and the South Umpqua River.

Tri City is unincorporated with a population of approximately 4,000 and encompasses just under 2,000 acres immediately south of the City of Myrtle Creek, OR.

The Authority also owns, operates, and maintains a community wastewater system, consisting of 29.3 miles and a water system which includes a river intake on the South Umpqua River, a conventional water treatment plant (built in 1999), 4 finished water storage tanks, 2 distribution pump stations, and approximately the same miles of water main.

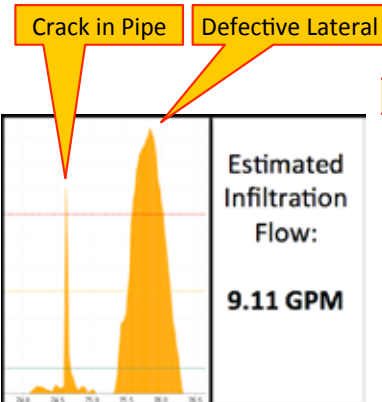
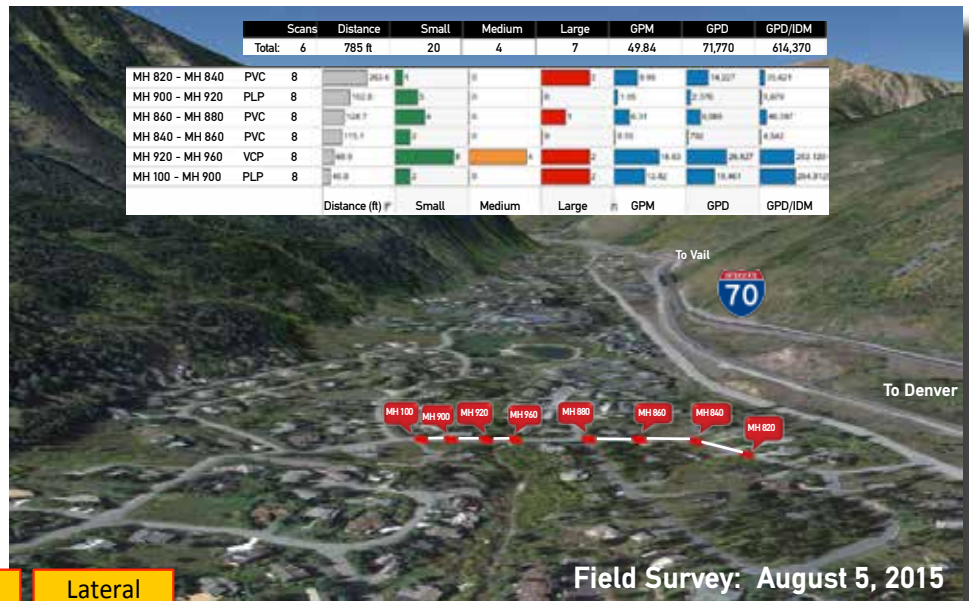
# Eagle River Water & Sanitation District, Vail, Colorado Electro Scan 1-Day Demo Leads to 50,000ft Project

After attending the Electro Scan Trenchless Technology Webinar in June 2015, the friendly folks at Eagle River Water & Sanitation District (ERWSD) invited Electro Scan to stop by if ever in the neighborhood.

Dropping in August 5, 2015, it was clear that ERWSD had done their homework, meaning they knew what pipes they wanted to have us scan, already knew the defects that they wanted to see if Electro Scan could spot, and had a 'hard to televise' sewer main, especially since it ran under a creek and always seemed to be running full.

In other words, a great way to spend a Summer day in the Rockies.

Electro Scan provides a location, size, and estimated GPM for each defect flow and total pipe segment.



Electro Scan wishes to thank the hospitality of ERWSD, including Linn Brooks, Todd Fessenden, Glen Phelps, Mike Thompson, and Siri Roman.



*"Every CCTV truck or van should add Electro Scan to accurately assess pre- and post-rehabilitated sewers. Why would you keep your hammers in one truck and your screwdrivers in another when you need both to get it right?"*

Chuck Hansen  
 Founder & Chairman, Electro Scan Inc.  
 Former CEO, Hansen Information Technologies

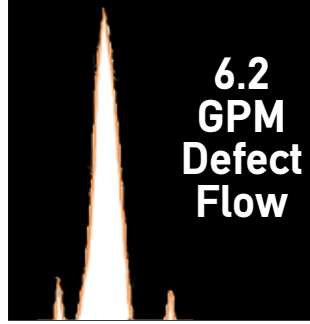
**electroscaninc.**  
 1745 Markston Road  
 Sacramento, California 95825-4026

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## Pre-Rehabilitation Assessment

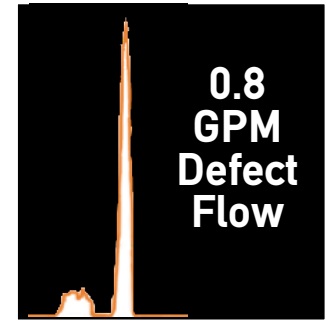
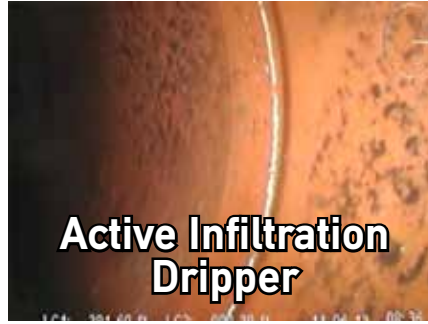
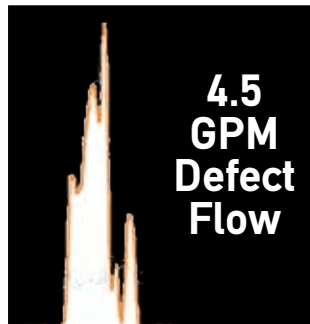
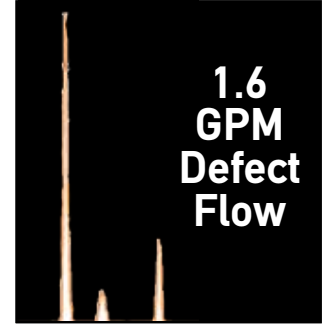
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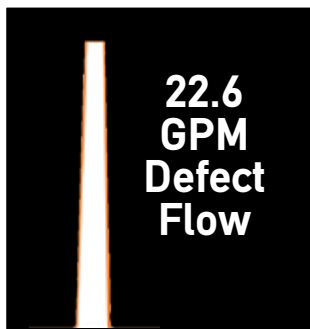
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## Post-Rehabilitation Assessment

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