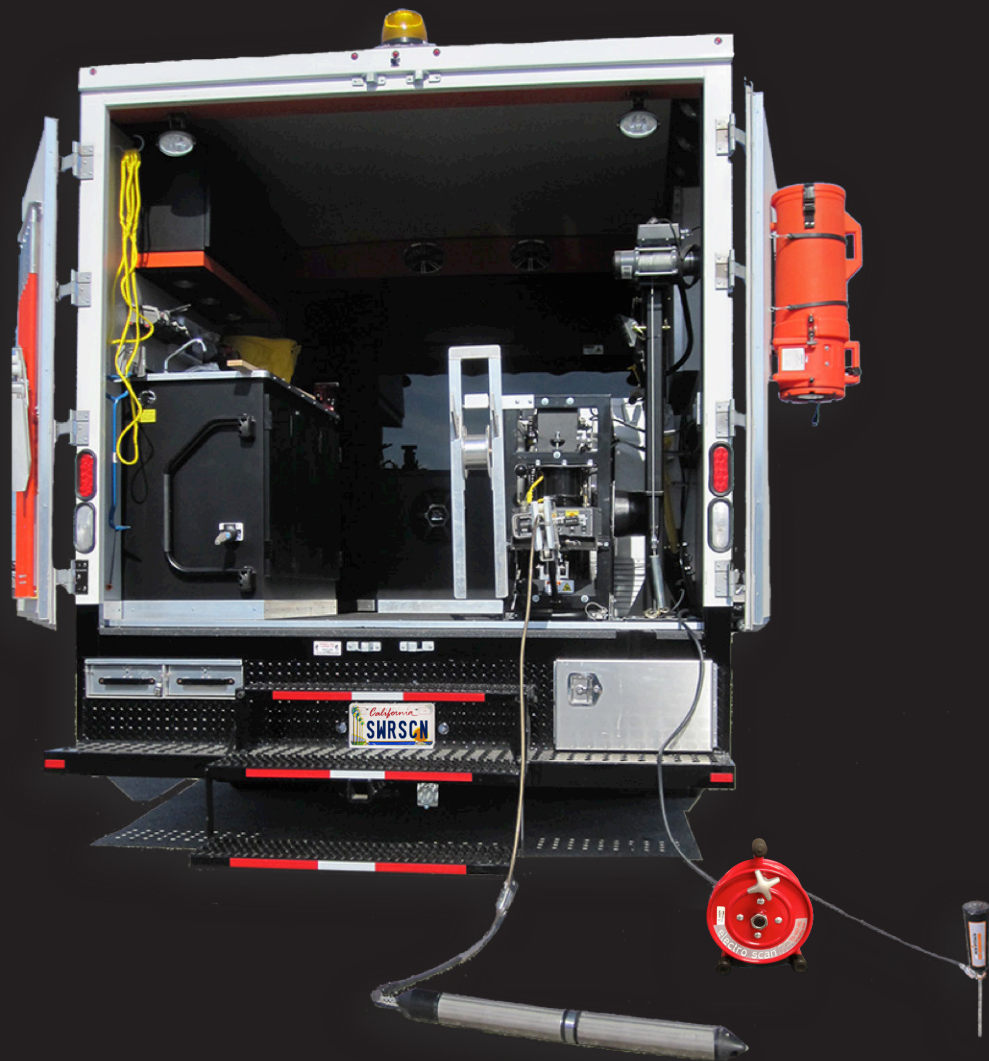


# MACHINE-INTELLIGENT

## LEAK TESTING OF UNDERGROUND PIPES



electro<sup>o</sup>scaninc.

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If a Pipe Leaks Electricity,  
It Will Leak Water.

IF A PIPE LEAKS ELECTRICITY, IT WILL LEAK WATER.

## FELL FIELD OPERATIONS

Each pipe is assessed by continuously pulling the ES-620 for Sewer Mains probe through the pipe at 45-60 feet per minute with a Jet Truck. The data collection is automatic, only requiring the operator to monitor the scan speed, water height, and grounding source.

Data is collected without delay and fed through the coaxial cable back to the Mainline Application on a laptop computer in the Electro Scan Truck. Once the scan is completed, the data is uploaded via on board wifi to the cloud-based Critical Sewers® application where it will be instantly processed and available for viewing.



## ABOUT FOCUSED ELECTRODE LEAK LOCATION (FELL) TECHNOLOGY

Focused Electrode Leak Location (FELL) unambiguously locates and measures, in gallons per minute, all potential leaks that are typically missed by CCTV. Bad joints, cracks, holes, fractures, bad service reconnections, and poorly cured liners leak but cannot be detected visually. FELL has become the choice for locating infiltration and certification of trenchless rehabilitation throughout the United States.

Non-conductive materials naturally prevent electricity from passing through, or along, the wall of a pipe. Electrical current should never be able to "leak" from inside a piping system unless there is an opening in the pipe wall. The larger the defect opening, the greater the electric current flow, and greater leak potential, as described in ASTM F2550.

# IF A PIPE LEAKS ELECTRICITY, WE MEASURE IT. IT'S THAT SIMPLE.

## CLOUD-BASED DATA STORAGE WITH IMMEDIATE & AUTOMATIC REPORTING

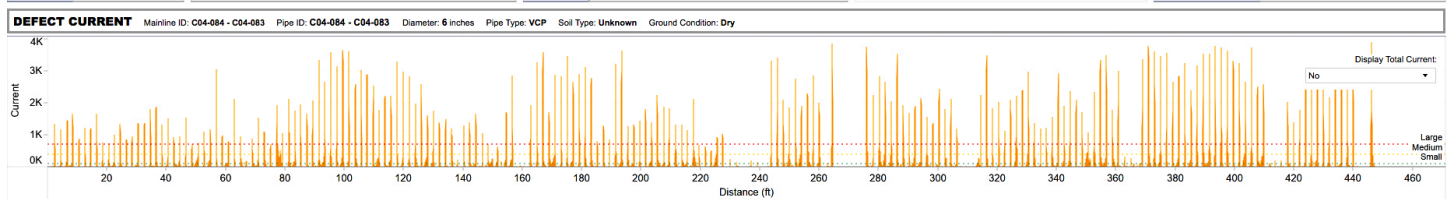
Upon scan completion, an average of 12,000 data points are sent to the Critical Sewers® cloud-based application, generating easy-to-read graphics of pipe conditions and project summaries. Powerful sorting and prioritization tools allow Users to manage projects by Gallons Per Minute (GPM) and Gallons Per Day Per Inch Diameter Mile (GPD/IDM). Users can easily make hypothetical repairs, and immediately see how their decisions reduce number of defects and flows.

This recent 75,000 LF project has been sorted by Gallons Per Minute to identify the "worst offending" pipes. Results showed that only 1% of the pipes represented 10% of potential I/I. This data allows Owners to target only areas that require rehabilitation, and to focus rehabilitation efforts to eliminate the most I/I, thus reducing unnecessary capital spending. Each "spike" represents the location of an individual defect with leakage estimated in GPM. Reports are available in 2 minutes.

	Scans	Distance	S	M	L	GPM	GPD	GPD/IDM
<b>Total:</b>	284	75,262	10,091	4,234	8,162	42,117.78	60,649,603	174,758,446

Date	Mainline ID	Pipe ID	Pipe Type	Diameter	S	M	L	GPM	GPD	GPD/IDM	
8/22/2019	C04-094 - C04-093	C04-094 - C04-093	VCP	6	445	26	6	197	1,030.82	1,484,381	2,938,459
8/21/2019	C04-084 - C04-083	C04-084 - C04-083	VCP	6	449	24	7	186	968.58	1,394,755	2,735,359
8/26/2019	C05-088 - C05-105	C05-088 - C05-105	VCP	8	344	12	0	136	955.69	1,376,194	2,639,672
8/29/2019	C04-159 - C04-183	C04-159 - C04-183	CIPP	6	303	5	2	145	909.91	1,310,270	3,809,052
8/10/2019	C04-189 - C04-180	C04-189 - C04-180	VCP	6	306	0	1	148	889.15	1,280,376	3,678,294
9/10/2019	C04-329 - C04-180	C04-329 - C04-180	VCP	6	386	8	12	179	839.87	1,209,413	2,759,739
1/4/2019	B05-046 - B05-074	B05-046 - B05-074	VCP	6	652	49	61	229	839.16	1,208,390	1,631,561
8/21/2019	C04-081 - C04-080	C04-081 - C04-080	VCP	8	393	16	6	151	791.81	1,140,206	1,913,707

DEFECTS		LENGTHS		GPM SUMMARY		DIAMETER & DISTANCE		OPERATOR INFO	
Large	186		0.1875	Severe	765,490	6		Atmospheric Test	Scan Start
Medium	7		0.0043	Moderate	7,350			8/21/2019 12:55:25 PM	8/21/2019 2:27:29 PM
Small	24		0.0068	Minor	988,580				
All Defects	217		0.1986	Total GPM	1,394,755				
				GPD	2,735,359				
				GPD IDM			449.00 ft		
				Severe %	79.46%				
				Moderate %	13.79%				
				Minor %	0.74%				



## ABOUT ELECTRO SCAN INC.

Founded in 2011, the company designs, markets, and supports machine-intelligent products & services for pipe condition assessment, environmental compliance monitoring, and measuring rehabilitation effectiveness. The company was selected by Blue Tech Research as a Top 15 Water Technologies to Watch, Fast Company 50 World's Most Innovative Companies, GovTech100 Top Government Technologies, and Red Herring Top 100 North American Private Companies. Headquartered in Sacramento, California, the company sells and licenses equipment to local governments and utilities to conduct their own pipeline testing and offers a Technology-as-a-Service (TaaS) solution with certified independent contractors.





## KEY BENEFITS

1. Locate and Quantify I/I Sources Missed by CCTV Inspection
2. Optimize CIP Resources by Improving Condition Assessment Programs & Rehabilitation Priorities
3. Certify Rehabilitated Pipes as Watertight - Never Accept a Bad Liner!
4. Establish Remaining Useful Life of Trenchless Rehabilitation, i.e. Cured-in-Place Pipe (CIPP)
5. Enhance Ongoing CCTV Inspection with Detailed "Defect Road Map"
6. Integrate Inspection Data Directly to Your GIS and Asset Management Software Applications
7. Develop Easy-to-See ROI Benefits from FELL Inspections
8. Reduce Unwanted Flows to Treatment Facilities - Defer Significant Capital Expenditures

## WHAT'S NEXT?

- Technical, Hands-On Presentation for Your Organization, at Your Location
- Complimentary Field Demonstration in Your Collection System

## SCHEDULE TODAY

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## FOCUSED ELECTRODE LEAK LOCATION

RESULTS	PRODUCTION
Horizontal Defect Locational Accuracy to 1 cm	Daily Inspection Rates >3,000 LF
Quantify Defect Flows in Gallons Per minute (GPM)	Wet or Dry Weather Inspection
Repeatable - Results are Unambiguous to Field Conditions or Operator	No Bypass Pumping Required / No Abandoned Surveys