AISCT

Artificial Intelligence Site Characterization Technology

/EH - SIST/

AISCT

Artificial Intelligence Assisted
Site Characterization Technology

From Data to Discovery : The Smarter Way to Understand Soil and Water

ANALYTICS MEETS INTELLIGENCE -
A NEW ERA OF FEILD LEVEL ANALYSIS

Next-Generation AI Characterization Technology for Sustainable Management, Assessment & Remediation Practices

WHAT IS AISCT?

A rtificial
I ntelligence Assisted
S ite
C haracterization
T echnology

Next-Generation AI Site Characterization Technology for Environmental Management, Assessment & Remediation

AISCT® , the ARTIFICIAL INTELLIGENCE ASSISTED SITE CHARACTERIZATION TECHNOLOGY, is a cutting-edge remediation technology designed for rapid and accurate soil and water analysis. AISCT achieves this by integrating advanced sensors with state-of-the-art artificial intelligence. AISCT was developed by and is held under the trademark of TRIUM Environmental Inc. and ecoAI INNOVATES.

TRIUM ENVIRONMENTAL

At TRIUM Environmental, our strength lies in our team of dedicated professionals who share a common vision of creating a smarter, more sustainable environment through the power of artificial intelligence and alternative remediation processes.

Our diverse team comprises world-class engineers, researchers, administration, marketing, business development and industry experts who bring a wealth of knowledge and experience to the table. TRIUM Environmental Inc. also offers a comprehensive range of environmental services, focused on a specialty in in-situ and ex-situ chemical and biological remediation. In this sector, TRIUM also provides design, pilot and bench scale support for these programs. More recently the focus has shifted to include AI based solutions to complicated environmental problems.

Soil Characterization

Soil characterization refers to the process of identifying and describing the physical, chemical, biological, and mineralogical properties of soil. This is done to understand the soil's capacity to support various land uses, such as agriculture, construction, and environmental management.

It essentially determines soil health, fertility, suitability for specific uses and environmental remediation strategies, helping to make informed decisions regarding land management and environmental practices.

Developed, trained and designed for characterization, AISCT® tests for contaminants in soil or water with current and future systems noted below. As research and development continue to advance, so does the power of AISCT®.

MODELS

Presently Developed AISCT Models

AISCT PETRO
Hydrocarbon Test Kit

AISCT SAL
Salinity Test Kit

AISCT AURORA
VOC Test Kit

Is This You?

DO YOU SPEND TIME WAITING FOR LAB RESULTS FOR WEEKS?

ARE YOU LOSING MONEY ON RUSH FEES BECAUSE YOU NEED TO MAKE QUICK DECISIONS?

ARE YOU EXPERIENCING DIFFICULTIES IN RUNNING TESTS IN REMOTE REGIONS?

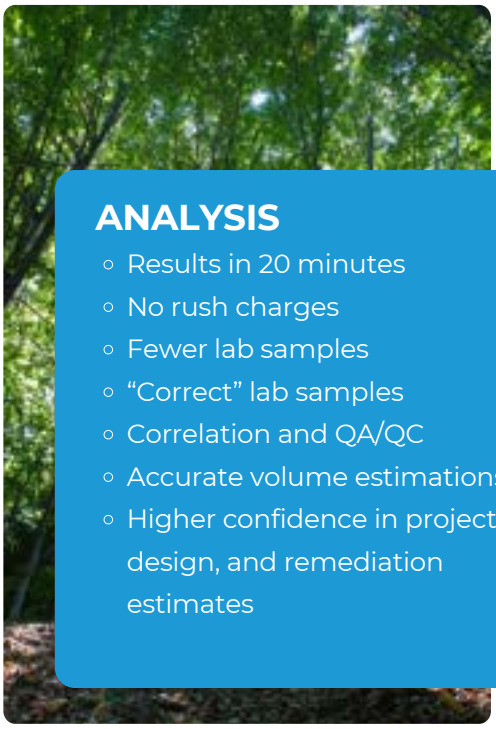
DO YOU HAVE TO RUN TESTS MUTIPLE TIMES DUE TO INACCURATE RESULTS?

ARE YOU SPENDING MORE MONEY THANK YOU SHOULD BY SENDING MORE SOIL TO THE LABS THAN YOU SHOULD?

DO YOU LOSE MONEY TESTING CLEAN SOIL TO MEET EXCESS SOIL REGULATIONS?

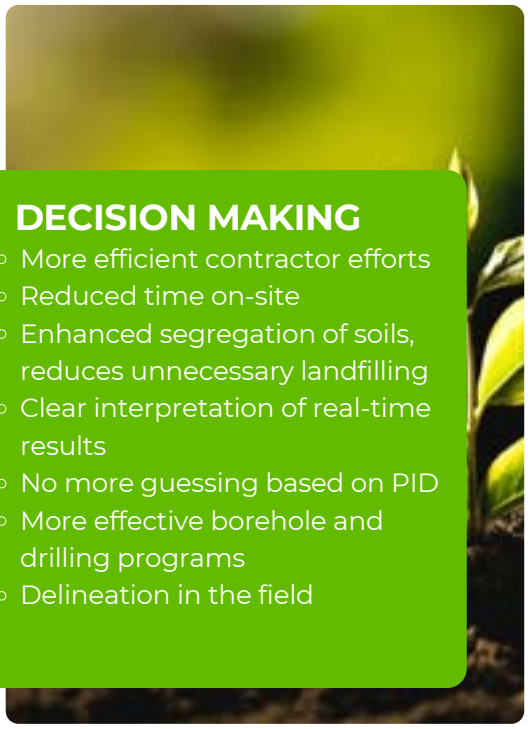
IS YOUR EMERGENCY RESPONSE NOT TREATED LIKE AN EMERGENCY AT ALL?

DISCOVER THE EDGE OF AISCT®



ANALYSIS

- Results in 20 minutes
- No rush charges
- Fewer lab samples
- “Correct” lab samples
- Correlation and QA/QC
- Accurate volume estimations
- Higher confidence in project design, and remediation estimates



DECISION MAKING

- More efficient contractor efforts
- Reduced time on-site
- Enhanced segregation of soils, reduces unnecessary landfilling
- Clear interpretation of real-time results
- No more guessing based on PID
- More effective borehole and drilling programs
- Delineation in the field

FIELD PORTABLE

IN HOUSE SCANNING

20 MINUTES Multiple Sample Run

CURRENT FIELD SCREENING PRACTICE

Petroleum Hydrocarbons

A Photoionization Detector (PID) or Flame Ionization Detector (FID) is a type of gas detector used to measure volatile organic compounds (VOCs) and some inorganic compounds in the air.

Limitations :

- Sensitive to Humidity/Soil Type
- Interferences
- Maintenance: The UV lamp and sensor can become contaminated quickly, requiring regular cleaning and calibration
- Limited Selectivity: may not distinguish between VOCs

Prone to Error:

- Preparation
- Calibration/Over Limit
- Collection - Temperature
- Contaminant - User Etc.

EASE OF USE = EASE OF MISUSE

CURRENT FIELD SCREENING PRACTICE

AISCT® redefines the standard for field screening with its cutting-edge AI-driven technology. Unlike traditional methods that often yield limited and unreliable results, AISCT® delivers precise, comprehensive soil analysis in just minutes. This innovative tool leverages historical and real-time data to provide highly accurate insights into soil composition and contamination levels, enabling faster, more informed decision-making. By streamlining the entire process, AISCT® not only saves time and reduces costs but also ensures that environmental assessments and remediation efforts are grounded in the most reliable data available, making it an indispensable asset in today's environmental landscape.

SAMPLE COLLECTION

- Time : 1-2 days
- Cost : Low
- Logistics : High
- Errors : Possible contamination during collection.

TRANSPORT TO LAB

- Time : 1-3 days
- Cost : Medium
- Logistics : High
- Errors : Sample degradation during transit.

SAMPLE PREPARATION

- Time : 1-2 days
- Cost : Medium
- Logistics : Low
- Errors : Mishandling or incorrect preparation.

LAB ANALYSIS & INTERPRETATION

- Time : 3-10 days
- Cost : High
- Logistics : Low
- Errors : Instrument/ Human error in analysis and interpretation.

RESAMPLING

- Time : 10-14 days
- Cost : High
- Logistics : High
- Errors : Possible repeat of human and instrumental errors.

Meet The AISCT Family

- Heavier Hydrocarbons (C10-C50).
  Diesel, Lubricants, Crude Oil. etc.
- Pipeline Corridors, Tank Farms, Legacy Industrial Sites. etc.
- Targets Slower Moving Heavier Contamination.
- Maps Deep Contamination Plumes To Prevent Over-Excavation.
- Control Over Long Term Environmental Liability.
- Assesses Historic Contamination or Infrastructure Failure

PETRO

Hydrocarbon Analysis

- Light Volatile Hydrocarbons (C6-C8).
  BTEX ; Benzene, Toluene, Ethylbenzene, Xylene.
- Gas Stations, Urban Terminals, High-traffic Sites With Quick-Spread Risks.
- Targets Fast Moving Mobile Contamination.
- Early Detection Of Volatile Plumes To Prevent Spread & Regulatory Penalties.
- Addresses Fresh Spills.

AURORA

VOC Analysis

- Detects Elevated Soil Salinity & Chloride Concentrations Specialized for salt-impacted environments such as brine releases, road salt zones, and saline industrial sites.
- Ideal for Agricultural Lands, Road Corridors, and Legacy Salt Impact Sites
- Maps Salt Migration Patterns & Deep Contamination Plumes
- Assists in Risk Assessment for Infrastructure, Wetlands & Water Tables
- Enhances Predictive Models for Long-Term Salt Impact Management

SAL

Chloride Analysis

PETRO

Hydrocarbon Analysis

PETRO relies on Big Data and AI algorithms to provide a constantly improving database of validated correlations to provide unmatched support for drilling, excavating, and any soil or water sampling activities. It delivers consistent, reproducible results in less than 20 minutes, making it a versatile solution for on-site or centralized soil and water analysis.

Speed and Efficiency
AISCT® offers rapid soil analysis, significantly reducing the time needed for critical environmental decisions.

Unmatched Precision
By utilizing advanced AI, AISCT® ensures high accuracy in measuring soil and/or water contaminants. AISCT® maintains >95% correct characterization of soil samples to regulatory guidelines.

Field Portable & Mobile
This technology is portable and easy to transport to different sites including remote regions and sites with access challenges.

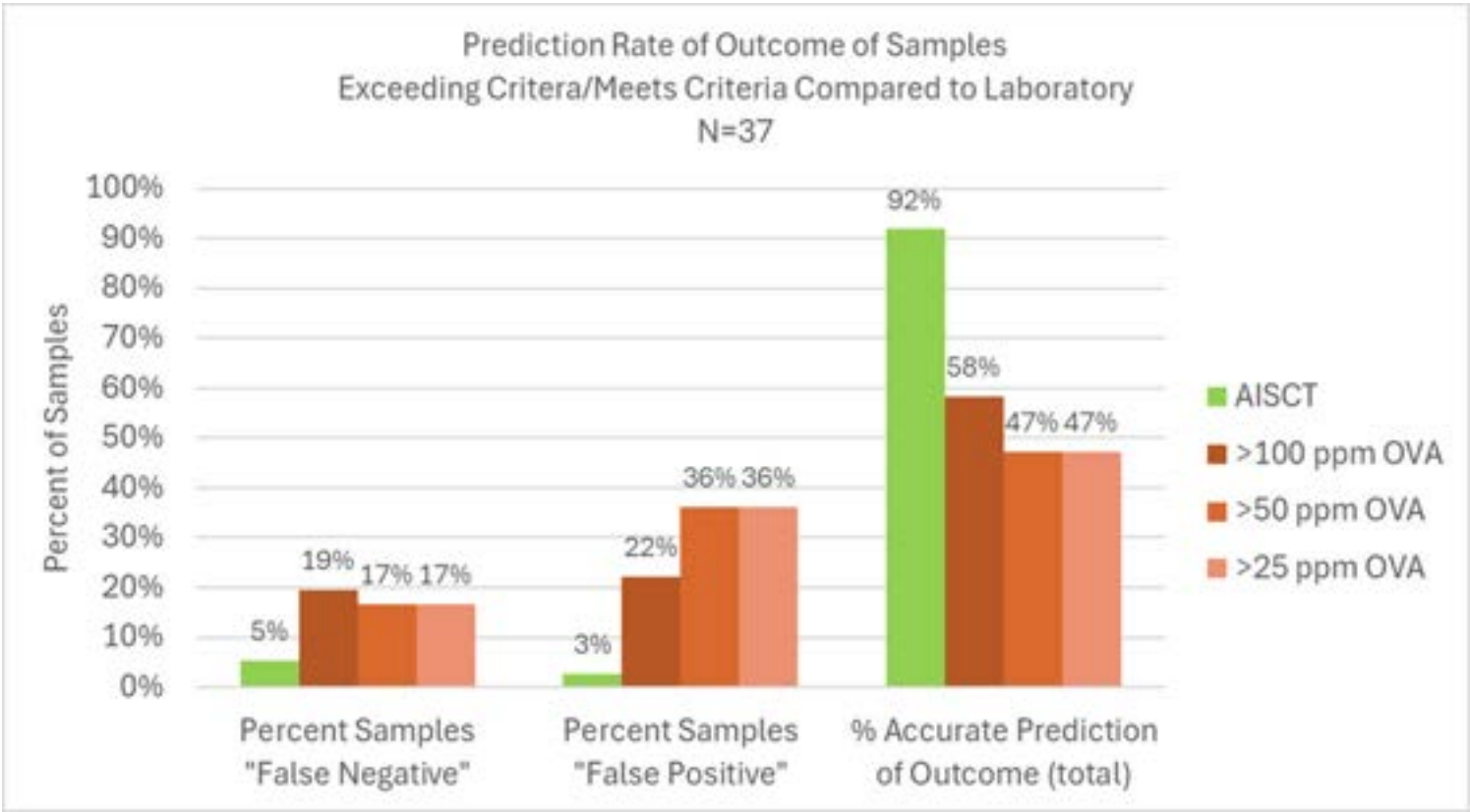
Cost-Effective Solutions
The technology helps in reducing the need for multiple lab tests, minimizing costs, and improving overall project efficiency.

Versatility
AISCT® is applicable across various environmental challenges, including assessments, excess soils, remediation, reclamation and restoration programs.

AISCT® - Petro
Designed for testing hydrocarbons

Petroleum Hydrocarbons

Typical Field Screening Methods for hydrocarbons plagued by: Error, Preparation, Calibration, Correlation, Collection, Temperature, Contaminant Etc.



VOC

AISCT® AURORA is a field screening system designed to optimize the detection of volatile organic compounds (VOCs), particularly BTEX compounds. AURORA integrates artificial intelligence with a proprietary soil vapor separation and conditioning method to deliver highly accurate, real-time data using standard photoionization detectors (PIDs).

AUR ORA

SAL

Advanced Salinity & Chloride Assessment

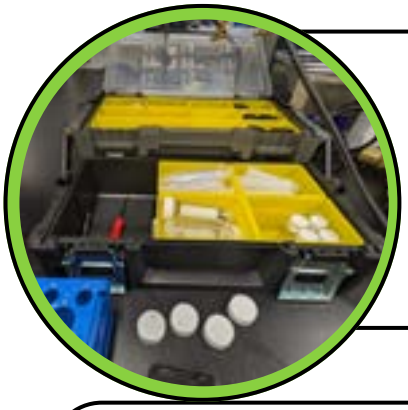
- Heavier Hydrocarbons (C10-C50).
  Diesel, Lubricants, Crude Oil. etc.
- Pipeline Corridors, Tank Farms, Legacy Industrial Sites. etc.
- Targets Slower Moving Heavier Contamination.
- Maps Deep Contamination Plumes To Prevent Over-Excavation.
- Control Over Long Term Environmental Liability.
- Assesses Historic Contamination or Infrastructure Failu

Chloride

- Typical Field Screening for Chloride plagued by:
  - Error
  - Preparation
  - Calibration
  - Correlation
  - Collection
  - Interpretation
  - Etc.

HOW DOES IT WORK?

AISCT® simplifies soil analysis by rapidly processing samples with advanced AI through a sensor system. This efficient process enables precise site characterization and easy sampling .

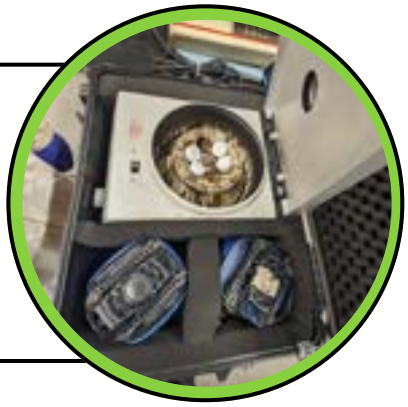


01. PREPARATION

Soil samples are collected from the site, whether through drilling, excavating, or surface sampling.

02. EXTRACTION

Samples are prepped and extracted utilizing propriety extraction products designed to ptimize sample recovery and stability.



03. ANALYSIS

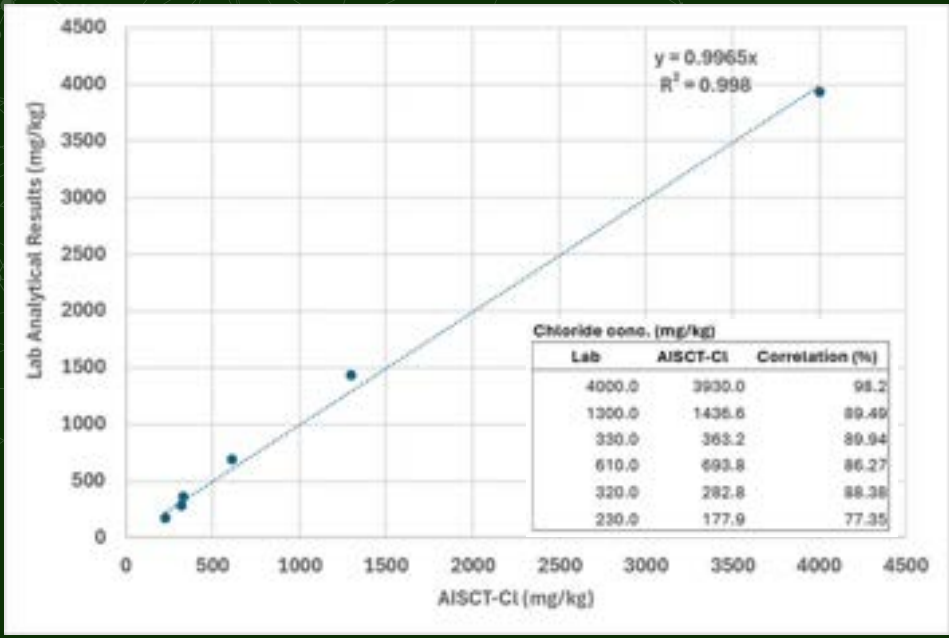
Samples are fed into the system where advanced AI algorithms rapidly analyze the data, comparing it with both historical and present day-information.

04. OUTPUT

Within 1 minute, the system delivers precise and reproducible results, providing results that guide informed decisions for characterization or remediation.

PERFORMANCE

- AISCT- Sal Model Validation with Field Samples



- Strong correlation with lab measurements across various chloride concentrations
- High level of accuracy
- Reliable
- Soil
- Groundwater
- Surface water

Sample	F1			F2			F3		
	GC	AISCT	% Diff.	GC	AISCT	% Diff.	GC	AISCT	% Diff.
FE412	2094.3	2296.7	9.6%	4952.8	5237.8	5.7%	3052.3	3055.8	0.09%
FE416	2199.9	2385.1	8.4%	5856.7	6020.7	2.8%	3819.4	3703.6	-3.1%
FE420	5391.3	5515.0	2.3%	6712.8	6895.1	2.7%	3945.8	3965.9	0.5%
FE446	2159.0	2276.3	5.4%	3213.7	3356.9	4.4%	1979.3	1848.7	7%

- AISCT-Petro with Field Samples

Laboratory **AISCT**

	GC			AISCT		
	F1	F2	F3	F1	F2	F3
CS6	0.0	0.0	0.0	uncontaminated	uncontaminated	uncontaminated
CS23	0.0	0.0	0.0	uncontaminated	uncontaminated	uncontaminated
FE89	19.8	51.4	143.8	uncontaminated	uncontaminated	uncontaminated
FE117	16.9	48.9	158.4	uncontaminated	uncontaminated	uncontaminated
FE121	15.5	43.4	139.0	uncontaminated	uncontaminated	uncontaminated
FE129	112.0	685.2	510.6	uncontaminated	775.4	uncontaminated
FE147	56.4	381.0	317.2	uncontaminated	382.2	uncontaminated
FE148	59.2	383.2	353.4	250.0	367.2	uncontaminated
FE174	28.2	56.5	162.6	uncontaminated	uncontaminated	uncontaminated
FE175	22.9	45.3	14	inated	uncontaminated	uncontaminated
FE182	153.6	1200.0	96	inated	1063.0	uncontaminated
FE201	169.9	1057.8	818.6	uncontaminated	967.4	uncontaminated
FE264	258.9	1123.1	828.4	228.4	1052.9	uncontaminated
FE284	176.0	829.4	660.6	uncontaminated	764.7	uncontaminated
FE294	21.2	50.4	119.3	uncontaminated	uncontaminated	uncontaminated
FE308	1682.3	534.3	195.3	1704.8	581.6	uncontaminated
FE335	351.2	1298.4	73.2	289.6	1046.6	uncontaminated
FE355	25.2	36.1	83.4	uncontaminated	uncontaminated	uncontaminated
FE390	365.2	1518.4	89.7	352.4	1560.9	uncontaminated
FE397	260.8	1104.6	88.4	215.3	974.8	uncontaminated
FE412	2094.3	4952.8	3052.3	2296.7	5237.8	3055.8
FE416	2199.9	5856.7	3819.4	2385.1	6020.7	3703.6
FE420	5391.3	6712.8	3945.8	5515.0	6895.1	3965.9
FE446	2159.0	3213.7	1979.3	2276.3	3356.9	1848.7
FE451	38.5	750.2	681.4	uncontaminated	618.9	uncontaminated

>95% Correct Prediction

- >95% correct prediction of outcome compared to guideline.
- Strong correlation to laboratory analysis.
- Consider acceptable QA/QC can often be +/- 40% in an analytical test.

▪ AISCT-Petro with Field Samples

	Samples	Chemical Lab			AISCT			AISCT_RAW		
PID		F1	F2	F3	F1	F2	F3	F1	F2	F3
20	24MW01-05	<10	<10	20.00	Uncont.	Uncont.	Uncont.	64.56	52.25	226.91
20	24MW01-11	<10	<10	38.00	Uncont.	Uncont.	Uncont.	57.23	61.60	299.13
15	24MW02-07	<10	<10	49.00	Uncont.	Uncont.	Uncont.	61.51	178.75	263.80
45	24MW02-09	<10	<10	56.00	Uncont.	Uncont.	Uncont.	60.35	81.33	221.35
15	24MW02-12	<10	<10	45.00	Uncont.	Uncont.	Uncont.	51.39	64.86	222.74
10	24MW03-06	<10	<10	43.00	Uncont.	Uncont.	Uncont.	60.63	93.10	208.11
15	24MW03-11	<10	10.00	82.00	Uncont.	Uncont.	Uncont.	43.33	112.78	361.65
0	24MW04-04	<10	<10	11.00	Uncont.	Uncont.	Uncont.	48.45	122.66	359.25
5	24MW04-10	<10	<10	32.00	Uncont.	Uncont.	Uncont.	48.60	80.06	258.42
10	24MW05-07	10.00	93.00	148.00	Uncont.	Uncont.	Uncont.	52.43	80.26	218.85
15	24MW05-11	<10	<10	20.00	Uncont.	Uncont.	Uncont.	39.17	97.75	206.89
0	24MW06-06	<10	<10	12.00	Uncont.	Uncont.	Uncont.	51.75	165.75	463.98
0	24MW06-11	<10	<10	28.00	Uncont.	Uncont.	Uncont.	53.02	76.80	315.68
5	24MW07-08	<10	30.00	77.00	Uncont.	Uncont.	Uncont.	35.67	105.49	185.49
5	24MW07-11	<10	26.00	82.00	Uncont.	Uncont.	Uncont.	35.94	117.72	189.91
5	24MW08-08	<10	<10	20.00	Uncont.	Uncont.	Uncont.	36.34	103.50	185.88
100	24MW08-11	<10	<10	59.00	Uncont.	Uncont.	Uncont.	59.76	73.73	373.43
5	24MW08-12	<10	<10	79.00	Uncont.	Uncont.	Uncont.	33.47	112.84	182.83
35	24MW09-08	<10	<10	15.00	Uncont.	Uncont.	Uncont.	35.57	98.38	157.89
45	24MW09-10	<10	<10	23.00	Uncont.	Uncont.	Uncont.	35.63	104.72	178.71
35	24MW09-13	<10	<10	55.00	Uncont.	Uncont.	Uncont.	57.13	84.22	363.66
15	24MW10-07	<10	<10	18.00	Uncont.	Uncont.	Uncont.	36.35	133.03	181.35
20	24MW10-12	<10	<10	59.00	Uncont.	Uncont.	Uncont.	71.09	68.70	331.28
45	24MW11-08	<10	<10	33.00	Uncont.	Uncont.	Uncont.	68.83	72.31	342.67
45	24MW11-12	<10	<10	58.00	Uncont.	Uncont.	Uncont.	27.50	75.76	305.87
15	24MW12-07	<10	<10	28.00	Uncont.	Uncont.	Uncont.	15.51	142.32	297.11
0	24MW12-12	<10	<10	90.00	Uncont.	Uncont.	Uncont.	73.98	60.86	327.93

Excavated

Excavated

Excavated

Excavated

>95% Correct Prediction

FACTS

- >95% correct prediction of outcome compared to guideline
- Strong correlation to laboratory analysis
- Excavated material represented >$10,000 in additional/unwarranted cost

▪ AISCT-Petro with Field Samples

Test Pit ID	IBL (ppm)	AISCT (20%)			AISCT (raw data)			Laboratory		
		F1	F2	F3	F1	F2	F3	F1 (C6-C10)	F2 (C10-C16)	F3 (C16-C34)
TP3-1	76	M.C.	M.C.	M.C.	37.6	59.4	210.8	<5.0	30	84
TP3-2	10	M.C.	M.C.	M.C.	44.3	102.8	214.0			
TP3-3	12	M.C.	M.C.	M.C.	40.3	81.9	271.5			
TP3-4	20	M.C.	[illegible]	M.C.	32.4	446.7	413.6	59	231	401
TP4-1	21	M.C.	M.C.	M.C.	41.0	151.1	166.9	<5.0	31	111
TP4-2	1	M.C.	M.C.	M.C.	34.3	104.4	250.3			
TP4-3	2	M.C.	M.C.	M.C.	61.4	71.5	218.4			
TP4-4	1	M.C.	M.C.	M.C.	22.4	92.8	199.1			
TP5-1	6	M.C.	M.C.	M.C.	33.0	84.2	246.9			
TP5-2	4	M.C.	[illegible]	[illegible]	300.2	4163.1	5782.9	245	5041	2051
TP5-3	8	Sample not supplied for analysis						288	2460	1100
TP5-4	1	M.C.	[illegible]	M.C.	65.8	704.0	553.9	69	639	508
TP6-1	48	M.C.	M.C.	M.C.	39.1	74.3	221.2	<5.0	133	385
TP6-2	10	M.C.	[illegible]	M.C.	44.4	589.7	435.8			
TP6-3	4	M.C.	[illegible]	M.C.	91.6	757.2	603.5	87	548	600
TP6-4	1	M.C.	M.C.	M.C.	94.0	167.0	469.3			
TP7-1	6	M.C.	M.C.	M.C.	27.1	60.1	206.3	<5.0	<25	<50
TP7-2	1	M.C.	M.C.	M.C.	32.0	76.7	229.8			
TP7-3	2	M.C.	M.C.	M.C.	42.3	75.6	186.3			
TP7-4	1	M.C.	M.C.	M.C.	33.5	70.3	134.8			
TP8-1	11	M.C.	M.C.	M.C.	44.6	66.9	210.5	<5.0	<25	<50
TP8-2	1	M.C.	M.C.	M.C.	37.4	148.5	1007.2			
TP8-3	2	M.C.	M.C.	M.C.	30.3	114.1	294.2			
TP8-4	1	M.C.	M.C.	M.C.	30.1	111.6	727.5			

PID analyzed

AISCT analyzed

PID analyzed

AISCT analyzed

PID analyzed

AISCT analyzed

PID analyzed

AISCT analyzed

PID analyzed

PID analyzed

FACTS

- In each testpit the highest IBL value was analyzed as “normal practice”
- In 33% of the test pits the wrong decision would have been made.
- All of the exceedances were in samples with less than 20 ppm on the PID
- Every sample with PID values greater than 20 ppm satisfied the applicable criteria
- AISCT predicted the soil sample outcome correctly >95% of the time.
- The number of laboratory samples could have been reduced by >33%

AISCT® - Aurora

Highly portable and rapid VOC based sensor system

- Resolves:
  - Temperature
  - Volume
  - Soil type
  - Moisture
  - Time of day
  - Equipment
- Optimizes existing practice to:
  - Relate VOC in air to mass in soil
  - AI integration
  - Error reduction and elimination
  - PHC VOC's and CVOC's
  - Rental based model

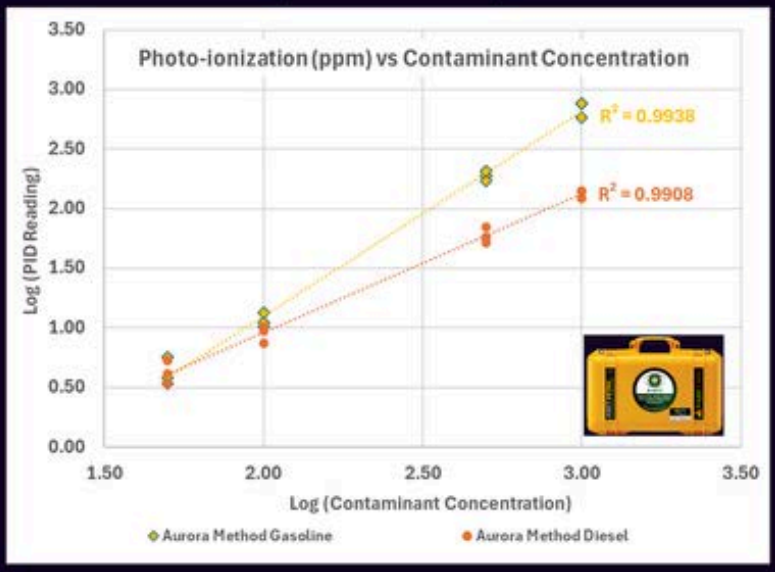
Moisture filter after only 10 samples!

AISCT® - Aurora

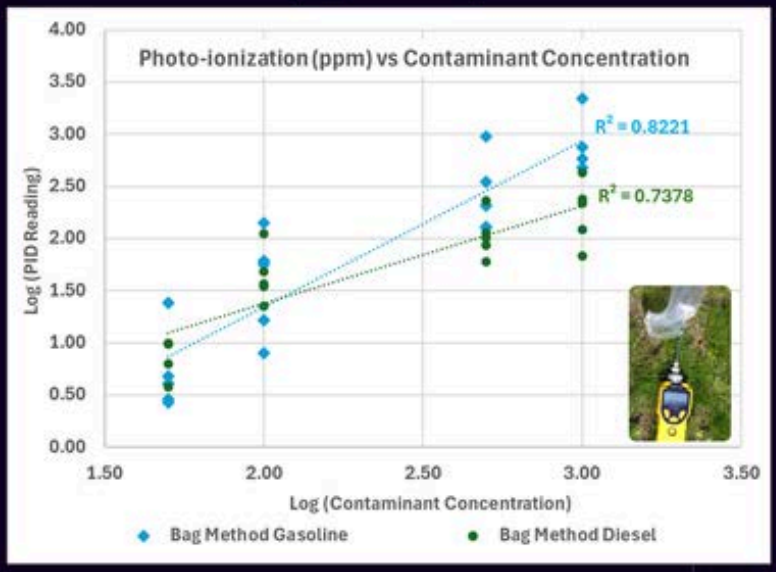
Traditional "Bag" Method vs Aurora Method for soil measurement

- **Aurora method reduces scatter and allows much deeper interpretation and crossover**

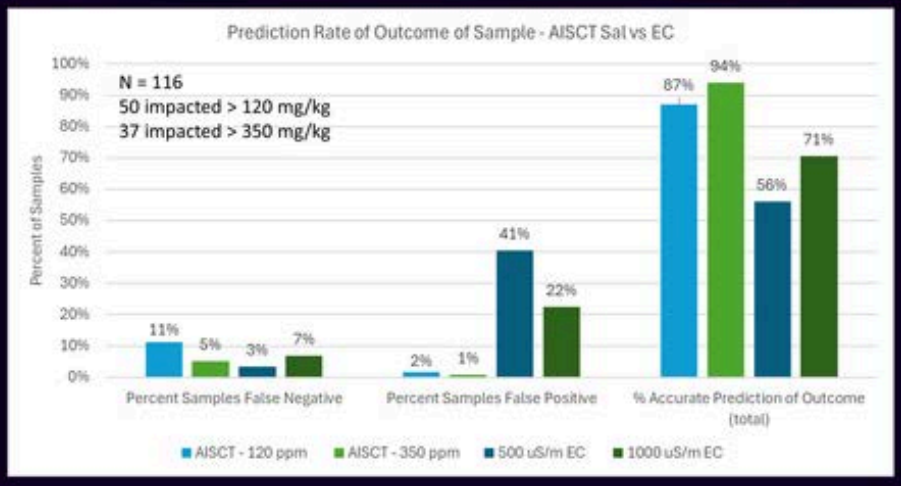
Aurora Method



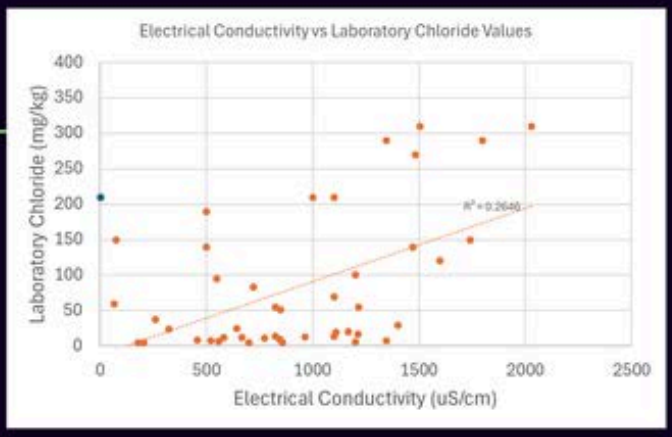
Bag Method

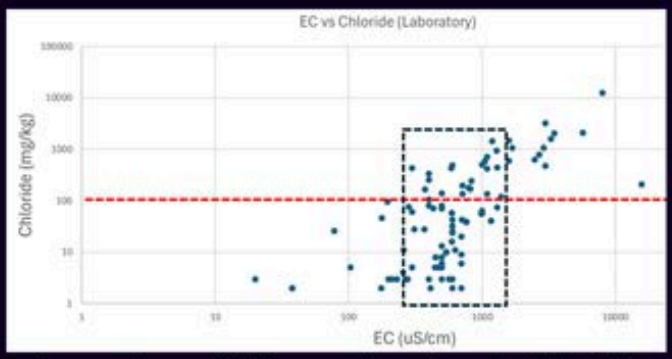


AISCT® - Sal Field Results – Assessment Program
Electrical Conductivity vs Chloride



Comparison of AISCT Sal Results vs EC screening levels



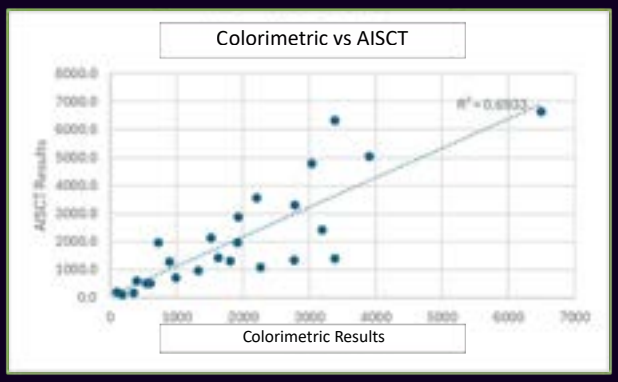


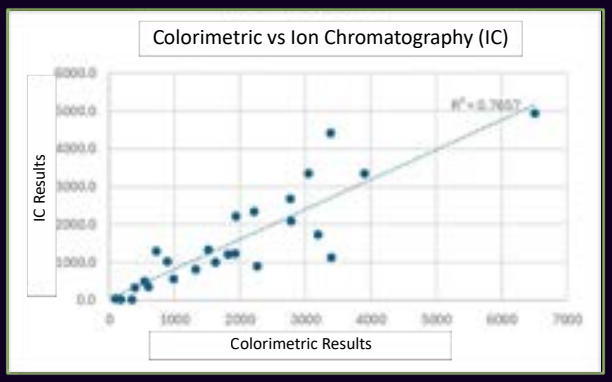
Comparison of EC screening values to Chloride

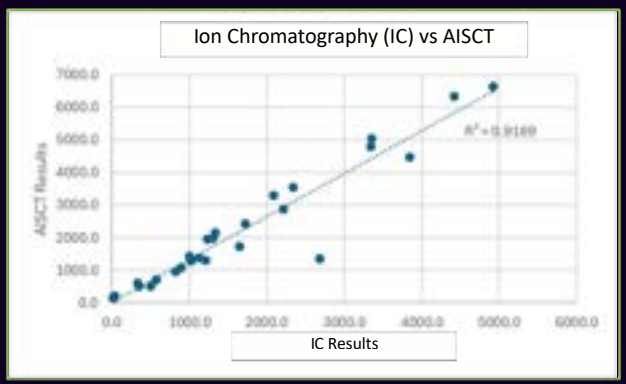
AISCT® - Sal Field Results
CLAY BASED SOIL

FACTS

- **Methodology matters for correlation**
- **AISCT prediction overcomes variability**







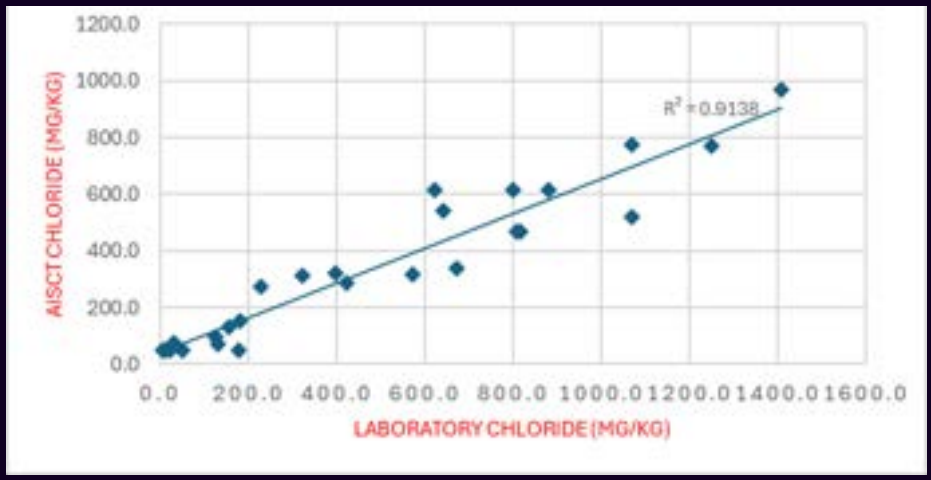
	250 ppm "Criteria"	1,000 ppm "Criteria"
# of samples	30	30
Samples Underestimated by AISCT (False Negative)	1	1
Samples Overestimated by AISCT (False Positive)	0 **3%**	2 **3%**
Percent Samples Understimated	**0%**	**7%**
Percent Samples Overestimated	**97%**	**90%**
% Accurate Prediction of Outcome (total)		

CASE EXAMPLE

CHLORIDE RESULTS SUMMARY

Parameter	Value
# Samples Analyzed	228
# of Exceedances Predicted	42
# of Laboratory Samples	28
# Correctly Predicted	27

AISCT CORRELATION



CORRECT PREDICTION

96.4%

Some Live Images During Testing & Development

AISCT® in Action: Highlighting Key Events and Conferences

Our Engagements at Major Environmental Conferences

AISCT® has been making waves in the environmental technology sector, consistently showcasing its cutting-edge capabilities at some of the most prestigious industry events and conferences worldwide. From global forums on sustainable development to specialized gatherings of environmental professionals.

A FIELD SCREENING NUMBER IS MORE THAN JUST A NUMBER

DIRECT COSTS

Current practices showing 50/50 level of correct decision making.

- Multiple site access to obtain delineation – repeated work efforts.
- Excess soils removed, escalating waste disposal costs.
- Standby time and inefficient contractor efforts.

LIABILITY ESTIMATIONS

Low accuracy & uncertainty costs money and causes poor planning.

- Contaminant volumes and extents inaccurate.
- Causes rapid remediation cost escalation and overrun.
- Unnecessary manifested waste registered in landfills

DISASTER RESPONSE

Speed and efficiency of decision making critical.

- Stakeholders, insurance, environmental scrutiny, media management.
- Expedited decision making and may increase environmental footprint.
- Tendency to react and be over conservative.

REGULATORY

Closed Site Audits, regulatory scrutiny, landowner/stakeholder management.

- Trust eroded by extensive and drawn out work programs.
- Low Regulator acceptance of reliable. methods
- Less confidence in site closure.

SAFETY

Transportation accidents = 40% of occupational fatalities (2001 and 2020).

- Highway accidents alone constituted 72% of these transportation-related deaths.
- On-site man hours, equipment and risk exposure significantly elevated due to repeated or extended work efforts.

Closed Site Audits, regulatory scrutiny, landowner/stakeholder management

PETRO

AURORA

SAL

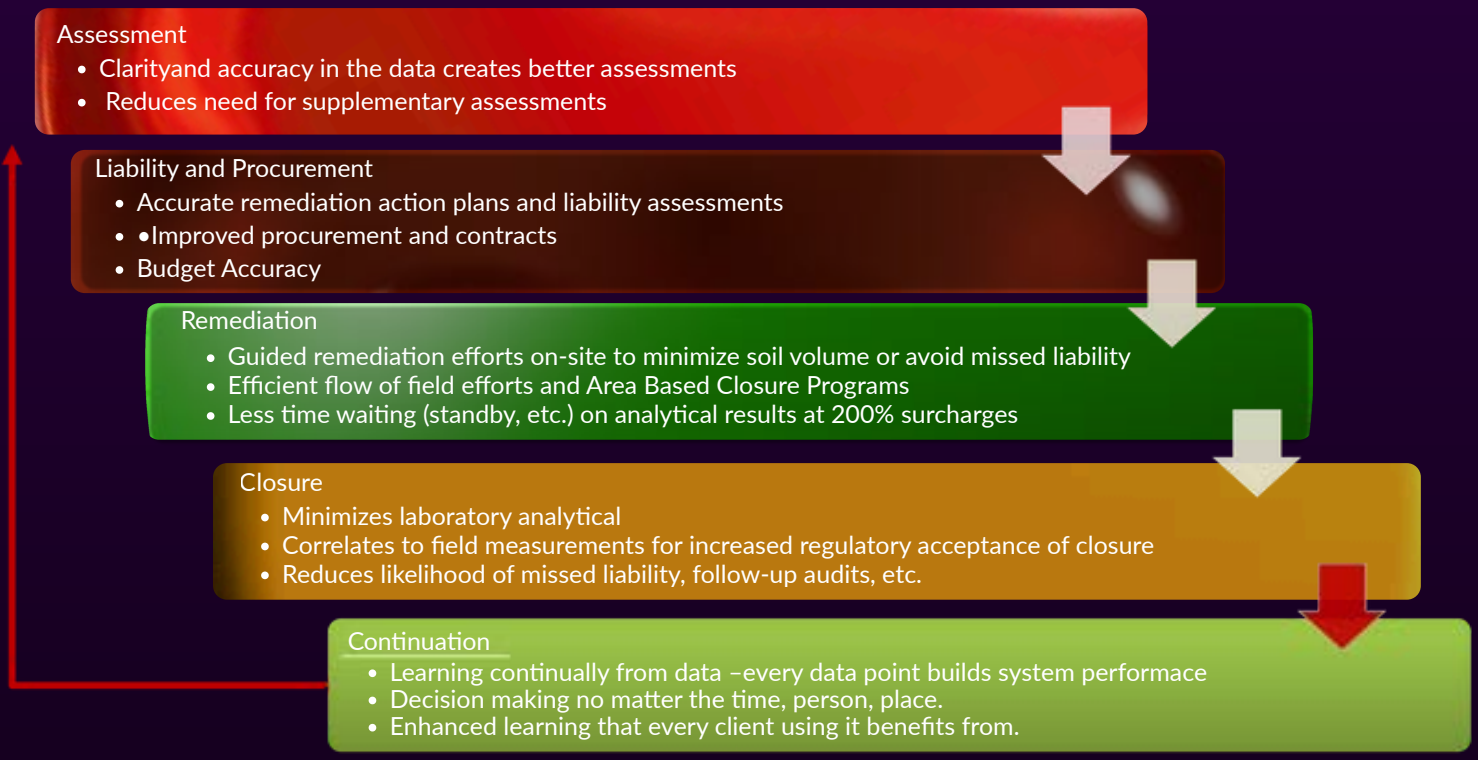
DISCOVER THE AISCT® ADVANTAGE

In a world where environmental awareness and responsibility are paramount, the need for reliable, efficient, and precise remediation technologies has never been greater. AISCT® rises to this challenge by offering an unparalleled combination of speed, accuracy, and versatility, setting it apart from traditional field soil and water analysis methods. As environmental challenges become increasingly complex, the tools we use must evolve, and AISCT® is a future-ready technology designed to meet the demands of a rapidly changing world. Its advanced AI-driven approach enables it to process growing amounts of data while continually improving its accuracy and efficiency. For anyone involved in environmental remediation, AISCT® is not just the best solution available today—it's a vital tool for addressing the complex challenges of tomorrow and ensuring sustainable outcomes.

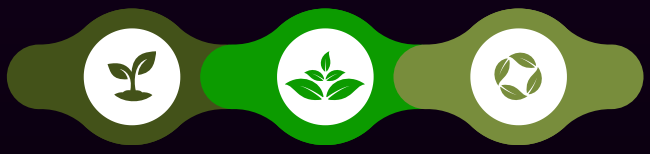
DEFINING YOUR DELINEATION PROGRAM AND CSM TO "ACCURATELY" ESTIMATE VOLUME REDUCES UNCERTAINTY AND SUBSEQUENT DECISIONS AND REMEDIATION COSTS

REDUCE YOUR ANALYTICAL AND RUSH CHARGES TO ONLY THOSE REQUIRED.

Continual Improvement Making Every Site Better



AISCT® has taken center stage, demonstrating how its AI-driven soil analysis technology is revolutionizing site characterization and remediation efforts.



"To resist the tide of change is to anchor oneself in still waters while the world races ahead. In the age of AI and innovative advancement, those who cling to yesterday will find themselves adrift, left behind by a future that waits for no one and soars beyond their reach."

WHAT DOES THIS MEAN FOR YOU?

RAPID TESTING

To Excavate or Not to Excavate?

To Drill or Not To Drill?

Spill/ Emergency Response

Large or Small Sites

PRECISION & ACCURACY

Correlated Predictions and Concentrations

CSM Development

Closure Programs

Drilling and Sampling

REAL TIME RESULTS

Defines Go/ No Go

Saves Soil From Disposal

Excess Soils

Reduces Lab Analytical

Fewer Rush Charges

Reduces Standby

Frequently Asked AISCT *Questions*

1	**What type of data does AISCT collect, and is it secure?**	AISCT collects sensor and analytical data only — no client identifiers or site-specific coordinates are stored. The data is anonymized and used strictly to improve the machine learning model, ensuring system performance increases without compromising privacy.
2	**Can clients operate AISCT independently, or must TRIUM be on site?**	Clients can absolutely operate AISCT independently. TRIUM provides a structured training program with practical onboarding materials and support. The system is intuitive, with guided prompts and built-in checks to assist both new and experienced users.
3	**Does AISCT need to be calibrated separately for every project or site?**	No. AISCT was designed to overcome soil type and environmental variability, thanks to its extraction process and machine learning calibration. While rare site-specific anomalies may require slight algorithmic tweaks, the system is broadly trained for general use.
4	**How accurate is AISCT compared to traditional field screening tools like PID or FID?**	AISCT consistently demonstrates 90–100% prediction accuracy in controlled projects, compared to 45 to 75% for PID/FID. Its accuracy is based on real-world data matched against certified lab results and continuously improves with use.
5	**How robust is the equipment in field conditions?**	AISCT is rugged and can operate in cold and variable climates, but optimal performance is achieved in controlled environments like site trailers, camp shacks, or tents. Operational limit for the sensor is 0 Degrees Celsius.
6	**What is the power requirement for AISCT?**	The systems operate under very low power demand, ideally with 2kW to 5kW generators or direct power source. Systems can even be run off battery power. Clean stable electricity is required for any Petro unit due to internal light sensor.
7	**How many samples can AISCT process per hour?**	A trained technician can screen 10 to 15 samples per hour on average. The system interface prompts users with calibration reminders and checks, making the process smooth and fast even under field pressure.
8	**Does AISCT detect BTEX and other low-level volatile hydrocarbons?**	Yes — AURORA was specifically designed for BTEX detection and VOC analysis. It accounts for factors like soil moisture, temperature, and gas release behavior, increasing detection reliability of low-level contaminants.
9	**Can the system be thrown off by organic-rich soils or biogenic interference?**	AISCT includes flagging protocols for unusual sample signatures. In rare cases of high organic content (e.g. peat), it may raise alerts suggesting biogenic influence, helping users decide when to investigate further or verify with lab analysis.
10	**What's the role of lab data in AISCT projects? Is it still required?**	Yes. While AISCT enhances field decision-making, **certified lab results are still necessary** for final site closure and regulatory compliance. AISCT helps determine **which samples to send**, reducing cost and increasing lab result certainty.