

AISCT® Aurora™

GETTING THE MOST FROM THE SYSTEM

The Instrument Is Only Half of It

*Aurora controls the physics of the measurement. **You control everything that happens before it.** These fourteen habits are the difference between a screen that carries your decisions and one that produces numbers nobody can defend.*

THE SIXTY-SECOND VERSION the whole guide, before the crew leaves the truck

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| ☐ 1 Pick the sensor the job needs
detection range must reach your criterion | ☐ 2 Sample straight into the tube
never bag headspace, never soil from a bag | ☐ 3 Do not skip the QA/QC
calibration, blanks, duplicates, bump tests |
| ☐ 4 Control the working environment
shelter, temperature, dust, crowding | ☐ 5 Leave the sensor on the unit
off-unit convenience buys drift and error | ☐ 6 Do not modify the SOP
fixed mass, fixed volume, full equilibration |
| ☐ 7 Tag the Area of Concern
one App field, entered with every sample | ☐ 8 Get analytical data early
ten or more pairs, entered as they arrive | ☐ 9 Do not guess the threshold
correlated data sets it, not a feel for it |
| ☐ 10 Screen densely
clean and impacted — without impact, no line | ☐ 11 Run duplicates
they measure the site, not the instrument | ☐ 12 Resolve borderline on the spot
re-test or step out before the crew leaves |
| ☐ 13 Deploy on day one
and keep it running through to closure | ☐ 14 Your correlation belongs to this site
rebuild the pairs when conditions change | |

AT THE SAMPLE • ONE TO TWO

None of these need new equipment or a bigger budget. They are decisions the crew makes in the first ten minutes of a programme, and they set the ceiling on everything measured afterwards.

1 Pick the sensor the job needs

The question is not which sensor is on hand — it is whether its detection range reaches your criterion. Low-level BTEX work can need **parts-per-billion** resolution, and a sensor that resolves in ppm will report clean soil simply because it cannot see that far down.

✗ A sensor that cannot reach the criterion reports clean, not 'below range'.

2 Sample straight into the tube

Take the sample where the soil comes out of the ground, direct into the tube. **Never read bag headspace — and do not scoop soil out of a bag to make an Aurora sample either.** By then the volatiles have already gone. Every minute between recovery and the tube is signal you do not get back.

✗ Bag headspace measures the bag; soil from a bag is soil already stripped.

AT THE SAMPLE • THREE TO NINE

Everything from here on is about keeping the measurement comparable — to the sample beside it, and to the laboratory result it will be judged against.

3 Do not skip the QA/QC

Calibration checks, blanks, duplicates and bump tests exist so that a bad reading is caught before it becomes a decision. **An instrument out of compliance does not give a conservative answer — it gives an unknown one.** Park it until it passes.

✗ Data from an uncalibrated instrument cannot be defended later.

5 Leave the sensor on the unit

A sensor connected to the unit belongs on the unit. Carry it around the site, into uncontrolled air, and you add drift, carry-over and background that are then scored as though they came from your sample. **None of this physics is new** — it is why the practice reads the way it does.

✗ Off-unit 'convenience' is paid back in error and uncertainty.

7 Tag the Area of Concern, every sample

Apples and oranges do not average: a hydrocarbon release and a solvent release are separate populations. The Area of Concern is a field in the App — enter it once with the sample, and the data stays sorted and searchable for the life of the project.

✗ Pooled areas average a real exceedance into a clean mean.

9 Do not guess the threshold

A threshold picked by feel is a guess wearing a number. With enough correlated pairs the statistics set it for you: the system reports the relationship, rates it against eight fixed measures, and the threshold falls out of the data rather than out of the room. From there the field call carries the decision, and every sample after it is one you no longer wait on.

✗ A threshold nobody derived is a threshold nobody can defend.

4 Control the working environment

Temperature, wind, dust and a crowded tailgate all move a vapour reading. The unit enforces what it can; the crew controls the rest. A sheltered, consistent work area is not housekeeping — it is measurement quality.

✗ Ambient noise gets scored as though it came from the sample.

6 Do not modify the SOP

Standardisation is the entire mechanism. Fixed mass, fixed chamber volume and enforced equilibration are what make today's reading comparable to yesterday's and to the laboratory's. **A shortcut that saves thirty seconds costs the comparability of every sample around it.**

✗ Adjust one step and today's data no longer compares to yesterday's.

8 Get analytical data early

Aurora reports a vapour response; laboratory data is what turns it into a site threshold. Submit **at least ten samples spanning clean to clearly impacted**, as soon as you have them. Then enter the certificates in the App as they arrive — correlation does not begin until the results are in, and every pair after that keeps refining it.

✗ Certificates sitting in an inbox are pairs the model never sees.

Precision is what you are protecting. A programme that is precise but biased still tells you where the site changes and which sample is the worst case. A programme that is imprecise tells you nothing at all.

ACROSS THE PROGRAMME • TEN TO FOURTEEN
10 Screen densely, clean ground and impacted

Density is the value, not any single reading. Screen only where impact is suspected and you cannot resolve a boundary. **Without impacted samples you do not know where the line is** — and without the clean ones you cannot see what sits below it.

12 Resolve borderline readings on the spot

A sample in the ambiguous band is visible as ambiguous the moment it is read. Re-test it, duplicate it or step out while the crew is still standing there — not after the report comes back.

14 Your correlation belongs to this site

The model is built from this programme's own confirmed pairs. The slopes apply to these soils and this parameter set — not as a general Aurora calibration. When either changes, rebuild the pairs.

11 Run duplicates to measure the site

A duplicate is not a compliance chore — it measures how variable this soil actually is, right now, in this matrix. Wide spread says collect more before you call it; tight spread says move on.

13 Deploy on day one and run it to closure

The data set compounds: analytical power grows as the site record grows. The earlier the system goes out, the better calibrated the threshold is by the time the expensive decisions arrive — and the same threshold then runs delineation, remediation and closure.

ALSO WORTH KNOWING

Keep the unit above freezing — the kit must not be exposed to freezing conditions — do not leave it in a truck overnight in shoulder season.

Approved consumables only — all equipment, consumables and supplies are ordered through TRIUM, and data from any other instrument is not compatible with the analytics platform.

Define a custom parameter — any site contaminant outside the standard set can be created in the App and correlated alongside the others.

Watch the moisture filter — a saturated filter is recorded as a data-quality note against the readings taken with it — change it and take them again.

Let the screen choose the laboratory package — submit the worst case, the boundary and a confidently clean control rather than a random set.

Run the AI report, then sign it — post-processing drops from days to minutes; review and professional sign-off stay with you.

WHAT IT LOOKS LIKE WHEN IT IS DONE RIGHT
SCREENING EFFECTIVENESS

standardised procedure • 16 laboratory-paired samples • no outlier exclusion

EFFECTIVE SCORE 16 / 16

CATCH	RESTRAINT	PASS TRUST	FLAG TRUST	SEPARATION	TRACKING	FIT	RANKING
1.00	1.00	1.00	1.00	1.00	0.96	0.92	0.88
≥ 0.90	≥ 0.80	≥ 0.90	≥ 0.80	≥ 0.70	≥ 0.70	≥ 0.50	≥ 0.70

16

paired samples
field reading and accredited laboratory result

3 of 3

exceedances caught
nothing over criteria was passed as clean

0

false alarms
no clean sample was flagged as impacted

0.92

laboratory R²
share of the lab result the reading explains

8 of 8

measures rated Effective

THE BOTTOM LINE

The score is not a property of the instrument — every Aurora unit enforces the same physics. It measures how closely one programme's field readings agreed with its own laboratory results, which is decided by how the samples were taken, how the procedure was followed and how early the pairs came back. That is what the fourteen habits on this sheet are protecting, and it is why they are worth the minutes they cost.