

Choose the field evidence your organization needs

Nano Flow Irrigation offers three measured field-validation packages. Each package answers a defined operating or commercial question and ends with a documented decision.

\$15,000 1,000 ft Commercial Performance Pilot Determine whether Nano Flow Irrigation can operate under a site's defined pressure, water, soil, and layout conditions. DECISION Proceed if every minimum criterion passes; reject if an agreed failure threshold is met; otherwise report inconclusive.	\$30,000 10,000 ft Commercial Validation Pilot Measure performance across representative laterals and field conditions. DECISION Expand if consistency criteria pass; modify if a correctable threshold is missed; otherwise stop or report inconclusive.	\$75,000 75,000 ft Commercial Benchmark Pilot Evaluate multi-zone operation, infrastructure requirements, operating boundaries, and replication potential at one commercial benchmark site. DECISION Select a next step for this site. Replication elsewhere requires a separate site-fit review.
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Included in every package A site-specific protocol, baseline measurements, commissioned field monitoring, documented limitations, and a final decision report. The participant and Nano Flow Irrigation agree on the comparison condition, measurements, responsibilities, and evaluation criteria before installation.
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A useful result is a clear result It produces the evidence needed to decide what should happen next.

What we know today vs what the pilot will answer

Existing observations support the feasibility of ultra-low discharge and measurable root-zone response under the documented test conditions. They do not yet establish commercial uniformity, long-term maintenance requirements, salinity outcomes, or crop-scale benefits. These matters are unresolved, not adverse findings.

Evidence status	Current record	Implication for the next pilot
Observed	Ultra-low discharge under documented pressure conditions and measurable root-zone moisture response during the recorded observation periods.	Pressure, discharge, soil-water status, sample count, duration, and maintenance events must be logged together.
Unresolved	Long-duration commercial uniformity; causes of observed restriction; matched buried-versus-surface performance; crop-scale water balance; salinity movement; full-cycle maintenance burden.	These are unresolved questions, not adverse findings. Each requires a defined comparison, minimum sample size, test duration, and acceptance threshold.
Interpretation boundary	Early field learning forms hypotheses and measurement requirements. It is not proof that every emitter operates within one discharge range at identical pressure or that every site will achieve the same result.	The selected configuration, comparison condition, measurement plan, and decision rules are fixed in the pilot protocol.

MEASUREMENT FRAMEWORK

USDA NRCS Irrigation Water Management Standard 449

The pilot borrows selected measurement and recordkeeping categories from the July 2026 standard: applied volume, irrigation timing and rate, distribution uniformity, ET and soil-water context, managed rooting depth, salinity observations, and irrigation-event and seasonal records. The site-specific protocol must cite each applicable Standard 449 provision by page and criterion and map it to the corresponding pilot measurement.

Standard 449 is used solely as a measurement and documentation reference. USDA NRCS has not reviewed, tested, approved, certified, or determined program eligibility for Nano Flow Irrigation, its products, or this pilot. Pilot acceptance thresholds and decision rules are defined by the parties, not by Standard 449. Prior-test sources, dataset identifiers, and claim-version approvals are recorded in Appendix D.

Success criteria are defined up front

For every pilot question, the signed protocol states the measurement, minimum sample size, test duration, comparison condition, pass threshold, failure threshold, and treatment of inconclusive results. No required field may remain blank. Criteria may change only through a documented amendment accepted by both parties.

Making clear decisions

The planning packages progress from controlled performance to representative field consistency to one-site commercial benchmark validation.

Validation scope	\$15,000 1,000 ft Commercial Performance Pilot	\$30,000 10,000 ft Commercial Validation Pilot	\$75,000 75,000 ft Commercial Benchmark Pilot
Best for	Initial site fit and controlled performance	Representative field consistency	One-site commercial operating benchmark
Core decision	Proceed when every agreed minimum criterion passes; reject when a failure threshold is met; otherwise report inconclusive	Expand when field-consistency criteria pass; modify when a correctable threshold is missed; otherwise stop or report inconclusive	Recommend a next step for the benchmark site only when its operating, infrastructure, maintenance, and economic criteria pass; do not infer suitability elsewhere
Planning duration	3 to 6 months after commissioning	4 to 9 months after commissioning	6 to 12 months after commissioning
Hydraulic architecture	One controlled, isolated test zone	Representative distribution with multiple laterals	Multi-zone commercial distribution architecture
Flow monitoring	One master pilot meter	Master plus selected zone measurement	Master plus representative zone-level measurement
Pressure monitoring	Approximately 2 to 3 points, including inlet and distal locations	Approximately 3 to 5 representative locations	Headworks, filter, representative zone inlets, and tails
Soil monitoring	Approximately 2 to 3 stations at two depths	Approximately 4 to 6 stations at two depths	Approximately 8 to 12 locations at multiple depths
Participant receives	Protocol, baseline, hydraulic and root-zone record, limitations, benchmark	Commissioned field record, spatial dataset, maintenance log, comparison, report	Integrated dataset, QA/QC record, benchmark, decision summary, replication roadmap
Recommended next step	Controlled site review	Site and comparison review	Infrastructure and operating-boundary workshop

Standard planning scope

The figures are planning benchmarks. The final agreement fixes the configuration, components, instruments, monitoring term, reporting, ownership, host obligations, travel, allowances, and site-specific additions. Unusual travel, permitting, civil work, utilities, and site-specific equipment are priced separately. Payment milestones, included visits, allowances, overages, package changes, and cancellation treatment are completed in Appendix B.

Illustrative deployment envelope

1,000 ft: approximately 667 to 1,000 emitters and 0.11 to 0.67 GPM. **10,000 ft:** approximately 6,667 to 10,000 emitters and 1.1 to 6.7 GPM. **75,000 ft:** approximately 50,000 to 75,000 emitters and 8.3 to 50 GPM.

Estimates assume 0.01 to 0.04 GPH per emitter at 12 to 18 inch spacing. Actual flow depends on configuration, pressure, site hydraulics, and measured performance.

A clear working collaboration

The standard scope separates Nano Flow Irrigation's technical work from the host's site and operating responsibilities.

Nano Flow Irrigation provides • Pilot dripline, manifolds, connectors, and specified pilot controls • Measurement infrastructure and instrumentation • Protocol, commissioning, monitoring, analysis, and reporting • Calibration, QA/QC, limitation, and deviation records	Host provides • Existing water source and adequate upstream supply • Electricity, primary mainline, routine labor, and tools • Trenching or site preparation where applicable • Crop establishment, routine operations, records, and secure access
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What the commercial benchmark covers

The 75,000-foot level is one defined benchmark site. It is not a promise to build an entire farm irrigation system. Site-specific pumping, major filtration systems, primary mains, electrical service, civil work, unusual water treatment, and extraordinary installation requirements are scoped separately.

Where the pilot budget goes

Technical work • Pilot hardware and installation • Pressure, flow, soil, weather, and water-quality measurement • Field labor, calibration, and monitoring	Decision record • Data processing and technical analysis • Reporting, archiving, and permitted dissemination • Contingency and replacement components
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Define your scope

The signed participation agreement identifies included hardware, travel, site work, monitoring duration, data rights, deliverables, payment terms, and project-specific exclusions. Appendix A assigns responsibility and Appendix B records schedule and commercial terms.

Agree on the measurement plan

Before installation and payment, both parties agree on what will be measured, how it will be measured, and the numerical conditions for pass, fail, or inconclusive. Those rules cannot be changed after the results are known.

Why this matters

An agreed measurement plan prevents either party from deciding afterward which results count. It turns the pilot from a demonstration into a defensible test that can be reviewed, explained, and repeated.

Three questions settled in advance

1 PURPOSE What are we testing? Name the operating or commercial decision, the relevant site conditions, and the baseline or comparison.	2 METHOD How will we measure it? Specify the variables, units, instruments, locations, sample size, test duration, and data-quality requirements.	3 DECISION How will we judge it? Set numerical pass and failure thresholds and define how missing, invalid, or inconclusive data will be treated.
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ONE SOURCE OF TRUTH
From measurement plan to final report

The signed protocol becomes the scorecard used in the final report. The next page applies it to hydraulic operability, field consistency, root-zone response, salinity behavior, maintenance and durability, and crop or system outcomes.

Define the scorecard

The signed site protocol must complete each applicable row before payment and installation. Bracketed fields are required site-specific values, not decisions deferred until the results are known.

Pilot question	Measurement and required scope	Prespecified decision rules
Hydraulic operability	Inlet and distal pressure; individual or zone discharge; applied volume. Minimum: [] points and [] irrigation events over [] days.	Comparison/design envelope: []. Pass: [numeric criterion]. Fail: [numeric criterion]. Inconclusive: [missing/invalid-data rule].
Field consistency	Agreed distribution-uniformity statistic and spatial discharge. Minimum: [] emitters across [] laterals or zones and [] events.	Reference condition: []. Pass: [uniformity criterion]. Fail: [criterion]. Inconclusive: [sampling or data-quality rule].
Root-zone response	Moisture or soil-water tension by depth and distance. Minimum: [] stations, [] depths, [] events, and [] days.	Baseline/comparison: []. Pass: [magnitude, timing, and duration]. Fail: [criterion]. Inconclusive: [rule].
Salinity behavior	Water chemistry and spatial soil electrical conductivity. Minimum: [] locations, [] depths, and [] sampling dates.	Baseline/leaching context: []. Pass: [root-zone criterion]. Fail: [criterion]. Inconclusive: [rule].
Maintenance and durability	Relative discharge, runtime, filter differential pressure, flushing, treatment, failures, and interventions over [] hours or [] months.	Baseline: []. Pass: [discharge/maintenance limit]. Fail: [criterion]. Inconclusive: [minimum-runtime rule].
Crop or system outcome	Scoped yield, quality, water productivity, energy, labor, equipment, and cost measures over [] crop cycle(s) or operating period(s).	Comparison: []. Pass: [outcome criterion]. Fail: [criterion]. Inconclusive: [rule].

Reading the results

Pass means every mandatory criterion for the named decision is met. **Fail** means an agreed failure threshold is met. **Inconclusive** means neither result can be supported because prespecified completeness, quality, duration, or comparison requirements were not met. An inconclusive result is not reported as a pass or a failure.

Keep the scorecard fixed

After signature, no measurement, threshold, comparison, exclusion, or missing-data rule may change unless both parties accept a written amendment that states the reason, timing, and effect on interpretation. Signoff, retesting, cure, amendment, dispute, and final-acceptance procedures are completed in Appendix C.

What a pilot-ready site looks like

A 30-minute technical-fit review identifies the site conditions, responsibilities, and comparison needed for a decision-quality pilot.

Site and water - Known crop or intended use, soil, climate, and water source - Water-quality characterization or an agreed baseline plan - Controlled or documented inlet pressure	Operations and access - Representative terminal measurements and a practical reference condition - Named site operator and secure access - Calibration, maintenance, deviation, and incident records
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Lifecycle and planning ranges

1. Fit 1 to 2 weeks Site, decision, pilot question	2. Scope 2 to 4 weeks Budget, roles, criteria, data rights	3. Baseline 4 to 8 weeks Reference condition, commissioning, calibration	4. Operate 3 to 12 months Performance, events, maintenance, deviations	5. Final record 30 to 60 days Dataset, report, replication or readiness review
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Crop cycles, procurement, permitting, measurement design, weather, and site conditions affect timing. Appendix B converts these planning ranges into administrative gates, required approvals, target dates, and pause conditions.

What to bring - Site location, crop or intended use - Water source and available water-quality information - Existing pump, filtration, mainline, power, and controls - The decision the evidence must support - Preferred baseline or comparison condition	What you'll leave with - Go or no-go recommendation for scoping - Selected package - Initial responsibility map - Information needed to finalize the participation agreement
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Choose the right place to start

Choose by the evidence required, not acreage alone.

1,000 ft	Commercial Performance Pilot	Use when the first question is whether the selected configuration can operate under defined site conditions.
10,000 ft	Commercial Validation Pilot	Use when representative laterals and spatial performance must support an expansion or modification decision.
75,000 ft	Commercial Benchmark Pilot	Use when one site's multi-zone operation, infrastructure, boundaries, and replication assumptions must be evaluated. Suitability elsewhere requires a separate fit review.

Data, ownership, and publication Raw, cleaned, and summary-data access is defined by package and scope. Site confidentiality, permitted reuse, attribution, and publication review are documented in the agreement. Nano Flow Irrigation retains its pre-existing technology and product IP. Payment does not guarantee scientific authorship or editorial control. Appendix D records recipients, formats, timing, retention, reuse, publication review, ownership, and cancellation treatment.	What pilot participation means Pilot participation is a field-validation engagement. It is not an equity investment, product purchase order, charitable contribution, or guarantee of a predetermined technical outcome. Fees, cancellation terms, travel, unusual site costs, hardware ownership, and project-specific rights are defined before work begins. Appendices A through C record responsibility, commercial administration, acceptance, and dispute procedures. No future purchasing, territory, license, distribution, or exclusivity right is implied.
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Request a 30-minute technical-fit review

Bring your site, water source, intended use, existing infrastructure, preferred comparison condition, and the decision the evidence must support.

Israel Ruttenberg | CEO & Founder
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Technical inquiries ordinarily receive a response within two business days.

Assign the work before it starts

This schedule names who is responsible, accountable, consulted, and informed for each activity. Names, inputs, and dates are completed in the signed participation agreement.

Activity	Responsible	Accountable	Consulted / informed	Required input and due date
Technical fit and scope	[role / name]	[role / name]	[roles]	[input] [date]
Site access, permits, and safety	[role / name]	[role / name]	[roles]	[approval] [date]
Equipment delivery and custody	[role / name]	[role / name]	[roles]	[inventory] [date]
Installation and commissioning	[role / name]	[role / name]	[roles]	[readiness items] [date]
Routine operation and maintenance	[role / name]	[role / name]	[roles]	[logs] [frequency]
Measurement, calibration, and QA/QC	[role / name]	[role / name]	[roles]	[records] [date]
Analysis and final report	[role / name]	[role / name]	[roles]	[dataset] [date]
Claim, publication, or external release	[role / name]	[role / name]	[roles]	[review copy] [date]

Site access and safety

- Access hours, escorts, keys, and notice period
- Site orientation, PPE, permits, and stop-work authority
- Emergency contacts and incident reporting
- Responsibility for visitors and subcontractors

Equipment custody

- Delivery inventory and condition record
- Ownership during and after the pilot
- Storage, security, loss, and damage responsibility
- Removal, return, purchase, or disposal procedure

Party-caused delay

The agreement states the required notice, cure period, schedule adjustment, standby or remobilization cost, and termination right when either party fails to provide an assigned input, approval, access condition, or resource on time.

Set the gates, dates, and commercial terms

Planning ranges become binding only when the parties complete the required inputs, owners, approvals, target dates, and pause conditions below.

Gate	Entry requirements	Owner	Completion criteria	Target date and pause conditions
1. Fit	Site profile, water source, intended use, decision question	[role]	Written go/no-go decision for scoping	[date]; pause if required site facts are missing
2. Scope	Package, budget, roles, scorecard, data rights	[role]	Participation agreement and appendices signed	[date]; pause for unresolved terms or approvals
3. Baseline	Access, permits, utilities, instruments, comparison condition	[role]	Baseline accepted and commissioning record signed	[date]; pause if site is not ready or calibration fails
4. Operate	Commissioned system, trained operator, active logs	[role]	Required runtime, events, samples, and maintenance record complete	[date]; pause for safety, access, weather, crop, or invalid data
5. Final record	Locked dataset, deviation log, completed scorecard	[role]	Report delivered, reviewed, and accepted under Appendix C	[date]; pause for disputed or incomplete inputs

Commercial schedule

Item	Included or agreed term	Adjustment rule
Payment milestones	[amount / percent] at [gate or date]	Invoice, due date, tax, late-payment, suspension, and restart terms
Field and monitoring visits	[count, duration, staffing]	Additional visit approval and rate: [rule]
Travel and expenses	[included allowance and geography]	Preapproval, documentation, markup, and overage rule
Replacement components	[included allowance]	Defect, wear, misuse, loss, and participant-requested change treatment
Package or scope change	[trigger or threshold]	Written change order states price, schedule, scorecard, and deliverable effect
Cancellation and refund	[notice and earned-fee rule]	Noncancelable commitments, demobilization, data delivery, and equipment return

Define how results are accepted

Technical criteria alone are not enough. This schedule identifies who signs, how exceptions are handled, and when a result or final report becomes administratively complete.

Process	Required rule	Authority and timing
Formal signoff	Name the authorized Nano Flow Irrigation and participant representatives for protocol, commissioning, deviations, dataset lock, and final report.	[names / roles / deadline]
Missing or invalid measurement	Apply the scorecard's completeness and QA/QC rule; document cause, affected criterion, and whether interpretation remains valid.	[reviewer / notice period]
Disputed measurement	Preserve the original record; identify the method, calibration, custody, or interpretation issue; obtain an agreed technical review.	[reviewer / response period]
Repeat measurement	State when repetition is permitted, whether the original result remains in the record, and which result controls the decision.	[approval / limit]
Retesting cost	Assign cost based on instrument fault, party-caused error, site condition, force majeure, or discretionary additional work.	[payer / approval]
Correctable failure	Define the cure action, cure period, verification method, and effect on schedule, cost, and final classification.	[owner / days]
Protocol amendment	Require a written amendment stating the reason, timing, changed term, and effect on comparability and interpretation.	[authorized signers]
Dispute escalation	Technical-lead review, executive review, and agreed mediation, expert determination, arbitration, or court process.	[steps / venue / timing]
Final report acceptance	State the review period, required specificity of comments, correction cycle, acceptance notice, and effect of no response.	[approver / days]

No result changes the process

The same signoff, review, retesting, cure, and acceptance rules apply whether the result is pass, fail, or inconclusive. A commercial preference does not override the signed scorecard.

Final deliverable review

Comments distinguish factual errors, calculation errors, missing agreed content, and differences in interpretation. Editorial preference does not permit deletion of valid adverse or limiting findings.

Administrative completion

The agreement states when undisputed deliverables, equipment return, final invoices, data delivery, confidentiality, and surviving rights are complete.

Define data rights before collection

The completed schedule identifies what each party receives, when it is delivered, how long it is retained, and which rights survive completion or cancellation.

Record	Recipient and access	Format and timing	Retention and cancellation treatment
Raw instrument data	[party / access level]	[native / CSV / interval]	[period / delivery / deletion]
Cleaned dataset and QA/QC	[party / access level]	[format / delivery date]	[period / cancellation rule]
Summary data and scorecard	[party / access level]	[format / report stage]	[period / cancellation rule]
Analysis and final report	[party / permitted use]	[PDF / source files / date]	[period / surviving rights]
Photographs and media	[party / approval limits]	[format / metadata / date]	[period / removal rule]

Ownership and reuse • Pre-existing technology and product IP • Raw and cleaned data ownership or license • Analyses, reports, photographs, and derived findings • Nano Flow Irrigation's right to reuse anonymized or aggregated results	Confidentiality and publication • Confidential information and permitted recipients • Security, breach notice, and required disclosure • Publication notice and review period • Correction of confidential or inaccurate content without suppressing valid results
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Evidence and claim register

Source or claim	Date and location	Document or dataset ID	Version	Change approver
Existing observation: [claim]	[date / site]	[identifier]	[version]	[name / role]
Pilot dataset: [scope]	[date / site]	[identifier]	[version]	[name / role]
External statement: [claim]	[date / channel]	[supporting record]	[version]	[name / role]

Cancellation does not leave data undefined

The agreement states the cutoff date, earned deliverables, delivery format, retention period, deletion or return obligations, permitted anonymized reuse, confidentiality survival, and access needed to resolve an open dispute.