CLOUD INVENTORY®

MOBILE-FIRST INVENTORY SOLUTIONS™

Fueling Efficiency: Optimized Inventory Management for Midstream Oil & Gas Operations

An operational and financial guide for Oil & Gas supply chain leaders

EXECUTIVE SUMMARY

In an industry where timing is everything, real-time visibility becomes the cornerstone for timely project execution, ensuring deadlines are met and delays are avoided. Oil and gas operations span vast geographies — offshore platforms, remote pipelines, refineries, and transportation hubs — where a missing part or an uninspected asset can cascade into millions of dollars in unplanned downtime.

Cloud Inventory tackles the intricacies of the midstream oil and gas industry by providing a centralized solution for coordinating and managing inventory across various locations. Whether it's pipelines, storage facilities, or transportation hubs, the platform streamlines complexities, ensuring seamless coordination and visibility throughout the supply chain.

This white paper examines how Cloud Inventory's four core capabilities — Work Orders in the Field, Asset Utilization, Warehouse Optimization, and Regulatory Compliance — address the specific operational and financial challenges facing oil and gas companies today.

PUBLISHED	2026
AUDIENCE	Operations, Supply Chain, Finance, and IT Leadership in Oil & Gas
TOPICS	Field Work Orders, Asset Utilization, Warehouse Optimization, Regulatory Compliance, MRO
ISSUER	Cloud Inventory · cloudinventory.com

© 2026 Cloud Inventory. All Rights Reserved.

01 THE INVENTORY CHALLENGE IN MIDSTREAM OIL & GAS

Oil and gas operations are defined by scale, geography, and consequence. A single upstream operator may manage hundreds of thousands of material and equipment SKUs across offshore platforms, remote pipeline stations, refineries, and transportation hubs. The penalty for inventory failure is steep — unplanned equipment downtime in this sector routinely costs operators $1 million or more per day in lost production.

Yet many companies still rely on fragmented, paper-based processes and disconnected legacy systems: spreadsheets for field tickets, manual receiving logs at remote yards, ERP extensions that go dark when connectivity drops, and warehouse management tools with no awareness of field asset status. The result is a persistent gap between what operators believe they have and what is actually available, serviceable, and accounted for.

1.1 CORE PAIN POINTS

- ! Paper and Excel-based field ticketing creating time-consuming, inaccurate work order processes
- ! Inventory discrepancies between field sites and central systems leading to costly over-ordering
- ! Limited asset visibility — tools and equipment lost, misassigned, or idle between job sites
- ! MRO stockouts triggering emergency procurement while safety stock sits idle elsewhere
- ! Compliance gaps from incomplete audit trails for maintenance operations and safety protocols
- ! Disconnected environments at remote sites where ERP systems cannot reach field workers
- ! Manual, error-prone reconciliation between field consumption and back-office inventory records

INDUSTRY INSIGHT

Studies across the energy sector indicate that MRO inventory mismanagement costs large operators between 1% and 3% of annual revenue. For a $10 billion operation, that represents $100–300 million in avoidable losses each year — losses that targeted inventory control directly addresses.

02 CLOUD INVENTORY: BUILT FOR WHERE OIL & GAS ACTUALLY WORKS

Cloud Inventory is a mobile-first, cloud-based inventory management platform designed to give operations teams real-time visibility and control — whether in a connected warehouse, a remote field site, or an offshore platform with intermittent connectivity. Unlike full WMS overhauls that require years of implementation and significant IT investment, Cloud Inventory adds an inventory control layer on top of existing ERP systems, delivering operational discipline without disrupting what already works.

2.1 PLATFORM ARCHITECTURE AT A GLANCE

WHAT CLOUD INVENTORY DELIVERS
✓ Real-time inventory execution without a complex WMS rollout
✓ Mobile-first applications that work online and offline — no connectivity required in the field
✓ Transaction-level inventory control: LPN tracking, lot/serial traceability, location enforcement
✓ Scan-verified receiving, directed putaway, and internal transfers with real-time ERP sync
✓ No-code/low-code customization — tailor workflows without expensive development
✓ Wave-based outbound execution for controlled, scan-verified picking and packing
✓ Inspection and quality control workflows with quarantine, hold, and approval controls

> CUSTOMER QUOTE
>
> “When it comes to the type of information that we capture in the field itself, there was nothing out of the box available to address those needs. That’s where the custom development piece on the Cloud Inventory side helped us tremendously.” — Thys Lourens, CIO, Azuria



CUSTOMER QUOTE

“When it comes to the type of information that we capture in the field itself, there was nothing out of the box available to address those needs. That’s where the custom development piece on the Cloud Inventory side helped us tremendously.” — Thys Lourens, CIO, Azuria

2.2 PROVEN ROI

CAPABILITY	MEASURED RESULT	WHAT IT MEANS FOR OIL & GAS
99.5% Inventory Accuracy	Reduces write-offs by 15–25%	Fewer emergency orders; less safety stock waste; accurate MRO counts
40% Increase in Productivity	Faster pick, fewer errors	Field crews spend time on jobs, not searching for parts
10% Increase On Time In Full	Higher fill rates	Critical spares available when and where maintenance crews need them
$8M in Recovered Usable Assets	Freed working capital	Redeploy idle tools and equipment across sites before buying new

03 FOUR CORE CAPABILITIES FOR OIL & GAS

Cloud Inventory’s approach to oil and gas is organized around the four operational areas where inventory failures most consistently drive cost and risk in the sector: field work order management, asset utilization, warehouse optimization, and regulatory compliance. Each is a discrete, proven capability — and together they create end-to-end inventory control from the warehouse to the wellhead.

3.1 WORK ORDERS IN THE FIELD

Paper and Excel-based field ticketing is one of the most persistent sources of inventory inaccuracy in oil and gas. Field crews create manual work orders, consume materials from truck stock or yard inventory, and reconcile records days or weeks later — by which time discrepancies are embedded in the system and difficult to unravel.

WORK ORDERS IN THE FIELD — KEY CAPABILITIES
✓ Replace paper and Excel field tickets with digital, mobile work orders on any device
✓ Real-time visibility into stock availability at any location
✓ Efficient tracking of time, labor, and materials consumed per work order
✓ Reduce inventory discrepancies caused by manual reconciliation delays
✓ Offline capability ensures field crews can capture data regardless of connectivity
✓ Automatic synchronization to ERP when connectivity is restored

The impact is immediate: operators eliminate the billing leakage and material write-offs that result from field consumption never making it back into the system of record. Crew utilization improves because work orders are tracked and closed digitally — reducing the administrative overhead that pulls technicians away from productive work.

3.2 ASSET UTILIZATION

Oil and gas operations involve extensive portfolios of high-value, mobile assets: pressure testing equipment, pipe handling tools, inspection rigs, compressors, pumps, and specialized field instrumentation. These assets move constantly between job sites, yards, and maintenance facilities.

ASSET UTILIZATION — KEY CAPABILITIES
✓ Real-time asset visibility across all locations — yards, job sites, platforms, and maintenance facilities
✓ Mobile inspections and surveys conducted on any device, with photo capture and condition recording
✓ Secure chain of custody for tools and assets, tracked from assignment through return
✓ Equipment management in fully disconnected environments — no connectivity required
✓ Reduce idle asset costs by identifying equipment available for redeployment before purchasing new
✓ Barcode and RFID scanning for fast, accurate asset identification in the field
✓ Recover millions in working capital by surfacing “missing” or misassigned equipment

FINANCIAL IMPACT

Cloud Inventory customers have recovered up to $8 million in usable assets that were previously unaccounted for — equipment that had been written off, forgotten in remote yards, or duplicated across procurement cycles. In capital-intensive oil and gas operations, this recovery directly reduces spending on new equipment.

3.3 WAREHOUSE OPTIMIZATION (MRO INVENTORY CONTROL)

MRO inventory — the maintenance, repair, and operations materials that keep drilling rigs running, pipelines flowing, and refineries operating — represents one of the largest and most poorly controlled cost categories in oil and gas. Excess safety stock ties up working capital. Stockouts trigger expensive emergency procurement. And inaccurate counts make demand forecasting impossible.

WAREHOUSE OPTIMIZATION — KEY CAPABILITIES
✓ Mobile-first warehouse applications capturing inventory data at the point of activity
✓ Scan-verified receiving and directed or rules-based putaway — no manual key entry
✓ Transaction-level inventory control: LPN tracking, lot/serial traceability, location enforcement
✓ Configurable cycle count programs (blind and guided) replacing disruptive full physical counts
✓ Variance validation workflows with audit-ready reporting for internal and external review
✓ Minimize overbuying and safety stock by providing real-time visibility into true stock levels
✓ Optimize inventory turns and reduce holding costs through accurate, real-time consumption data

The operational results are measurable: Cloud Inventory customers report productivity improvements exceeding 20% after deploying mobile-first warehouse applications, with inventory accuracy reaching 99.5% — a dramatic improvement over manual or ERP-extension approaches.

3.4 REGULATORY COMPLIANCE

Compliance with industry regulations is not optional in oil and gas. Federal and state safety agencies, environmental regulators, and industry bodies impose stringent requirements for equipment maintenance records, material traceability, hazardous materials handling, and personnel safety protocols.

REGULATORY COMPLIANCE — KEY CAPABILITIES
✓ Extensive audit trail of material movements and approvals
✓ Granular operational visibility at any point in time, supporting internal and regulatory audits
✓ Receiving inspections with quarantine holds and release approval workflows
✓ Lot and serial traceability linking materials from supplier receipt through consumption
✓ Real-time data capture for materials management and reporting
✓ Role-based access controls ensuring only authorized personnel perform sensitive transactions
✓ Secure, accountable work environment with complete transaction history per user

By capturing audit information through normal inventory transactions, Cloud Inventory reduces the administrative burden of manual compliance reporting while producing more complete and accurate records. Audit preparation — whether for an internal review or a regulatory inspection — becomes a search and export exercise rather than a significant data collection effort.

04 PLATFORM CAPABILITIES: THE TECHNOLOGY BEHIND THE SOLUTION

The four operational pillars described above are powered by a set of platform capabilities that make Cloud Inventory uniquely well-suited to the oil and gas environment: a mobile-first architecture, offline operation, API-first integration, and configurable workflows.

4.1 MOBILE-FIRST APPLICATIONS

- Comprehensive library of mobile-first apps for work orders, receiving, issuing, transfers, cycle counts, and inspections
- User-friendly design increases technician productivity and morale — replacing manual paperwork with instant digital capture
- Barcode and RFID scanning for rapid, accurate material and asset identification
- Photo capture for condition documentation, damage claims, and inspection records

4.2 OFFLINE AND DISCONNECTED OPERATION

Remote oil and gas locations — deepwater platforms, pipeline right-of-ways, arctic drilling sites — frequently operate with limited or no internet connectivity. Cloud Inventory is engineered for exactly these environments, ensuring that field crews can continue all inventory and work order activities regardless of network status.

- Full offline mode: all transactions captured locally when connectivity is unavailable
- Automatic background synchronization to the cloud and ERP when connectivity is restored
- No data loss, no transaction gaps — every action is queued and committed in sequence
- Inventory status visibility even in disconnected environments

4.3 ERP INTEGRATION — CONNECT TO YOUR SYSTEM OF RECORD

Cloud Inventory is built API-first, with RESTful integration available out of the box. The platform connects to any ERP or system of record without proprietary connectors or forced ecosystems, ensuring that inventory transactions flow bi-directionally in real time.

- Real-time ERP synchronization: inventory transactions such as receiving, issues, transfers, and adjustments post immediately
- Eliminates the reconciliation gap that creates inventory discrepancies between field and back-office
- No need to replace or modify existing ERP investments — Cloud Inventory adds control on top

4.4 NO-CODE CONFIGURATION AND SUSTAINABLE CUSTOMIZATION

Oil and gas operations are diverse — a pipeline operator’s inventory workflows differ significantly from an offshore driller’s or a refinery’s. Cloud Inventory’s no-code/low-code platform allows organizations to tailor applications and processes to their specific requirements without expensive custom development.

- Build new applications or modify existing modules, workflows, and business logic without coding
- Adapt rapidly to changing operational requirements, new regulatory mandates, or acquired assets
- Personalized mobile experiences for specific roles: field technician, storekeeper, operations supervisor

05 THE FINANCIAL CASE FOR CLOUD INVENTORY IN OIL & GAS

The ROI calculation for Cloud Inventory in oil and gas is driven by four measurable value levers: reducing inventory carrying costs and write-offs, recovering stranded asset value, eliminating emergency procurement premiums, and reducing the labor overhead of manual processes.

5.1 COST REDUCTION DRIVERS

VALUE LEVER	TYPICAL IMPROVEMENT	OIL & GAS APPLICATION
Inventory Accuracy	Up to 99.5%	MRO storerooms, field truck stock, remote yard inventory
Warehouse Productivity	+40%	Directed pick/pack, scan-verified receiving, cycle count automation
Recovered Asset Value	Up to $8M	Redeploy idle field tools and equipment before buying new
On-Time-In-Full Rate	+10%	Right part available for scheduled and emergency maintenance
Inventory Carrying Cost	15–25% reduction	Lower safety stock through accurate real-time visibility
Emergency Procurement	20–35% reduction	Fewer rush orders driven by stockouts and inaccurate counts

5.2 IMPLEMENTATION APPROACH

Cloud Inventory is designed for fast time-to-value. Because it adds inventory control on top of existing ERP systems — rather than replacing them — implementations are measured in weeks and months, not years.

IMPLEMENTATION NOTE

Cloud Inventory is built for teams that need inventory discipline without WMS complexity. The platform requires no modification to existing ERP systems and no proprietary connectors — reducing implementation risk and accelerating the path to measurable ROI.

06 SECURITY, RELIABILITY, AND DATA INTEGRITY

Oil and gas companies operate under stringent requirements for data security, operational continuity, and regulatory record-keeping. Cloud Inventory addresses these requirements through enterprise-grade security architecture and SLA-backed uptime commitments.

- SOC 2 Type 2 certification ensuring rigorous controls over data security, availability, and confidentiality
- Role-based access controls limiting transaction authority to authorized personnel by function and site
- 99.9%+ uptime SLA backed by geographically distributed, redundant data centers
- Multi-factor authentication and SSO integration for enterprise identity management
- Automated daily backups with tested point-in-time recovery capabilities

07 CONCLUSION: CONTROL FROM THE WAREHOUSE TO THE WELLHEAD

Oil and gas operations cannot afford the inventory gaps that paper-based processes and disconnected legacy systems create. Unplanned downtime, idle assets, MRO waste, and compliance exposure are not inevitable costs of operating in complex environments — they are controllable outcomes of inadequate inventory visibility.

Cloud Inventory delivers the visibility, control, and accountability that oil and gas operators need, organized around the four capabilities that matter most in the sector: field work order management, asset utilization, warehouse optimization, and regulatory compliance.

UNDERSTANDING THE IMPACT

In our experience, the greatest opportunities for operational improvement and cost savings in oil and gas organizations are often found in the management of materials, assets, and field inventory processes. Begin your evaluation with a few key areas where we frequently see significant gains:

- Conduct a baseline assessment of field work order accuracy and material reconciliation cycle times
- Quantify idle and unaccounted assets across job sites and storage yards
- Measure emergency procurement spend as a percentage of total MRO purchasing

GET STARTED

Cloud Inventory's team of supply chain experts is ready to show you exactly how the platform addresses your specific oil and gas inventory challenges. Visit cloudinventory.com or contact the team directly to schedule a personalized demo.

ABOUT CLOUD INVENTORY

Cloud Inventory delivers modern, mobile, cloud-based inventory solutions for organizations managing inventory inside and beyond the warehouse. Formerly known as Data Systems International (DSI), Cloud Inventory has served customers in oil & gas, engineering & construction, telecommunications, minerals & mining, and manufacturing for more than 40 years. Learn more at cloudinventory.com or schedule a personalized demo.

© 2026 Cloud Inventory. All Rights Reserved.