Saudi Desert Control

Turning Sand into Fertile Soil - Naturally

PRODUCT CATALOGUE - LIQUID NATURAL CLAY (LNC)

Liquid Natural Clay (LNC)

Advanced Soil Enhancement Technology for Water-Efficient Landscaping and Sustainable Land Rehabilitation

48+	Up to 50%	Up to 5 Yrs	100%
Countries Patented	Irrigation Reduction	Soil Performance Duration	Natural & Organic Certified

Powered by Desert Control AS, Norway - Exclusively Licensed to Saudi Desert Control

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Executive Overview

Saudi Desert Control (SDC) is a Riyadh-based environmental solutions company and the exclusive licensee of Liquid Natural Clay (LNC) technology in the Kingdom of Saudi Arabia, developed by Desert Control AS, Norway. SDC delivers end-to-end soil treatment services — from site soil assessment through bespoke LNC formulation, on-site application, and long-term performance monitoring — enabling measurable water conservation, landscape resilience, and operational cost reduction across arid and semi-arid environments.

LNC is a patented, 100% natural soil amendment that permanently restructures sandy soils into water-retaining, nutrient-holding growing media in a single application. The technology is OMRI Listed (certified organic), carries ISO 9001, 14001, and 45001 management system certifications, and has been independently validated across KSA, UAE, and the USA — including deployments at Misk City, Green Riyadh, Atlas Turf Arabia, Masdar City, and Saudi Aramco facilities.

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About Saudi Desert Control

Legal Entity	Joda Al-Turba L.L.C. (trading as Saudi Desert Control) | National No. 7036964737
Headquarters	3651 Prince Faisal Ibn Abdulrahman, Hittin, Riyadh 13518, Saudi Arabia
Technology Origin	Desert Control AS, Norway — exclusively licensed for Saudi Arabia
Patents	LNC patented in 48+ countries worldwide
Core Activity	Manufacturing and Application of Liquid Natural Clay (LNC)
Deployment Model	Mobile production units; on-site formulation and direct application
Certifications	ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018 OMRI Listed — NOP Bentonite (Crop Fertilizers & Soil Amendments)
Key Partners	Estidama (NRDCSA) | KAUST Innovation Cluster Saudi AgriFood Tech Alliance | Saudi Landscape
Vision 2030 Alignment	Water conservation | Saudi Green Initiative | Sustainable cities | Agricultural efficiency

Global Recognition

SDC's LNC technology has been featured by the BBC, CNN, Reuters, Mashable, Arabian Business, and the World Economic Forum. Desert Control AS was recognised as a WEF Top Innovator & UpLink Winner and supported by the Bill & Melinda Gates Foundation Global Innovator Program. SDC has exhibited at COP-16 (UN Convention to Combat Desertification), the Saudi Agriculture Exhibition, and the Saudi Sustainable Building Forum.

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What is Liquid Natural Clay (LNC)?

Liquid Natural Clay (LNC) is a patented, liquid-form soil amendment composed entirely of natural clay minerals (bentonite-based) suspended in water. When applied to sandy or degraded soils, it permanently restructures the soil matrix — filling the large pore spaces between sand grains with clay micro-particles that carry a natural surface charge. The result is a sponge-like soil architecture that retains water, nutrients, and microbial life in the root zone where plants need them most.

LNC is applied once and delivers measurable performance for up to five years without further treatment. It uses just 1/100th the material volume of conventional clay amendment methods and can be applied through existing irrigation infrastructure — requiring no excavation, no disruption to established landscapes, and no specialist civil works.

Before & After: How LNC Changes the Soil

Without LNC — Sandy Soil	With LNC Applied
Water drains rapidly below the root zone; most irrigation is wasted.	Clay micro-particles fill soil pores — water is held in the root zone.
No surface charge on sand grains; nutrients leach away with irrigation.	Charged clay surfaces attract and retain cations, reducing fertiliser loss.
Poor microbial habitat; weak root structure and slow establishment.	Improved structure supports microbial life and accelerates root development.
High irrigation frequency required; elevated operational cost.	Irrigation frequency reduced by up to 50%; sustained over multiple years.
Plants vulnerable to heat stress and saline soil conditions.	Clay buffer shields root zones from heat and salinity damage.

Why LNC Outperforms Conventional Amendments

Immediate results	Measurable soil improvement within days of application — not seasons.
Single application	One treatment lasts up to 5 years; no re-treatment required.
Minimal material	Uses 1/100th the volume of traditional bulk clay amendment methods.
100% natural & safe	Non-toxic, non-hazardous; OMRI certified organic; no chemical additives.
Mobile production	Formulated on-site using mobile units — no bulk haulage or ground disruption.
Seamless integration	Applied via existing drip or sprinkler systems; no infrastructure changes needed.
Scalable	From a single tree to 100+ hectare deployments — one consistent methodology.

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Key Benefits & Performance Outcomes

Water Conservation

Up to 50% sustained reduction in irrigation demand, independently validated across KSA, UAE, and US deployments.

Soil Water Retention

Water Holding Capacity (WHC) improved by up to 42%. Sensor data confirms higher, stable moisture at root depth (10-55 cm).

Nutrient Retention

Improved Cation Exchange Capacity (CEC) reduces fertiliser leaching, cutting fertiliser dependency and input costs.

Root Zone Enhancement

Stronger soil aggregation, improved pore distribution, and enhanced root-zone stability promote deeper, healthier root systems.

Faster Establishment

Accelerated germination, faster seedling establishment, and significantly higher early-stage plant survival rates.

Heat & Salinity Tolerance

Clay buffer protects roots from heat stress and saline soil conditions, critical for Saudi Arabia's extreme climate.

Reduced Plant Mortality

Improved water and nutrient availability dramatically reduces plant mortality during establishment and throughout the growth cycle.

Lower Operational Cost

Reduced irrigation frequency, lower fertiliser inputs, and fewer management hours deliver measurable cost savings.

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Applications & Deployment Sectors

LNC is applicable across all sectors where sandy or degraded soils limit water retention, plant establishment, or landscape sustainability. A single application methodology scales from individual trees to large multi-hectare deployments.

Landscape & Green Infrastructure	
Facility compounds | Residential campuses | Parks & recreation areas | Roadside planting | Urban greening programs	*Cuts irrigation costs, supports sustainability targets, improves long-term landscape resilience.*

Turf, Sports & Recreational	
Golf courses | Sports fields & stadiums | Resort & hospitality landscaping | Turf nurseries & sod farms	*Maintains premium playing surface quality with significantly reduced water input.*

Agriculture & Horticulture	
Date palm & orchard plantations | Open-field & greenhouse crops | Forage production | Plant nurseries	*Reduces irrigation demand while maintaining or improving crop yield and plant health.*

Afforestation & Land Rehabilitation	
National greening & tree planting programs | Degraded soil restoration | Desert reclamation | Buffer zone establishment	*Enables vegetation in challenging soils; directly supports Saudi Green Initiative goals.*

Infrastructure & Mega Projects	
Airport landside landscaping | Industrial facility green areas | Giga-project contractors | Highway corridor planting	*Non-intrusive; integrates with existing irrigation systems; no civil works required.*

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Technical Specifications

Product Specification

Product Name	Desert Control LNC (Liquid Natural Clay)
Composition	100% natural clay minerals (bentonite-based) suspended in water; no chemical additives
Physical State	Liquid — brownish suspension; density approx. 1 g/cm3; soluble in water
Application Method	Injection via drip or sprinkler irrigation system; direct soil injection
Application Depth	Root zone — typically 10 to 55 cm depending on crop or landscape type
Performance Period	Up to 5 years per application cycle
Hazard Status	NOT CLASSIFIED — non-hazardous, non-toxic, non-flammable under EU CLP/REACH regulations
Ecological Status	Readily biodegradable; not harmful to the environment; no PBT or vPvB substances
Organic Status	OMRI Listed — NOP: Bentonite (Crop Fertilizers & Soil Amendments) Product Code: dcd-18739 | Valid to: 1 September 2026
Transport Classification	Not classified as dangerous goods under UN, IMO, ADR/RID or IATA/ICAO regulations
Soil Compatibility	Optimised for sandy and sandy-loam soils; effective in most arid soil types
Irrigation Compatibility	Compatible with drip, sprinkler, and flood irrigation systems
Storage Requirements	Store in original container; avoid freezing; no special conditions required
SDS Reference	Safety Data Sheet Version 4 — issued 19.12.2022, revised 15.01.2025 Quality-controlled by Kiwa Kompetanse AS, Norway (ISO 9001:2015 certified)

Indicative Application Rates

All dosages are determined following site soil assessment and are customised per project. Rates below represent typical deployment ranges.

Application Type	Typical Scope	Rate Basis	Application Method
Turf / Lawn	Sports fields, parks, resort landscaping	Calculated per m2 based on soil assessment	Via sprinkler or drip
Trees	Compound planting, urban trees, orchards	Calculated per tree based on root volume	Direct injection or drip
Groundcover / Shrubs	Landscape beds, nursery stock	Calculated per m2 or per plant	Drip or hand application
Open Field / Crops	Date palms, forage, greenhouse crops	Calculated per hectare based on soil study	Existing irrigation system
Large-scale Projects	Golf courses, giga-project landscapes	Full site assessment required	Mobile unit deployed on-site

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Deployment Methodology

SDC's four-step deployment process is systematic and quality-controlled at every stage, ensuring LNC formulation and application are precisely matched to site conditions to maximise water savings and long-term performance outcomes.

01 STUDY	Soil conditions, water usage data, and plant requirements are gathered and analysed. Soil samples are assessed for texture, moisture retention baseline, and existing water holding capacity to determine optimal LNC formulation parameters.
02 FORMULATE	LNC is custom-formulated on-site using SDC's mobile production units, tailored to match the specific soil structure, crop type, and irrigation system of the project. No bulk transport of pre-mixed product is required.
03 APPLY	LNC is infused directly into the soil via the client's existing irrigation system (drip or sprinkler) or through direct soil injection — with zero disruption to established landscaping or ongoing site operations.
04 MONITOR	Post-application soil moisture, plant health, and irrigation usage are tracked using sensor technology and periodic soil analysis. Performance data is compiled into reporting dashboards to validate results and guide irrigation optimisation.

Mobile Production Capability

SDC operates mobile LNC production units transported directly to project sites. This enables on-demand, on-site LNC formulation without large-scale logistics infrastructure — making SDC operationally agile across KSA from its Riyadh base, and capable of scaling to multi-site concurrent deployments.

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HSE & Sustainability Profile

Hazard Classification	NOT CLASSIFIED — LNC does not meet criteria for health, fire, or environmental hazard classification under EU CLP Regulation (EC) No 1272/2008
Toxicology	No acute toxicity. No skin or eye sensitisation. No carcinogenicity classification. No reproductive toxicity. No known or expected symptoms under normal use conditions.
Environmental Impact	Readily biodegradable. Not expected to bioaccumulate. Not classified as environmentally harmful. Contains no PBT, vPvB, or endocrine-disrupting substances.
Transport Status	Not classified as dangerous goods under UN, IATA/ICAO, IMO, or ADR/RID. No UN number assigned.
Composition Safety	100% natural clay mineral (bentonite) and water. No synthetic chemicals, polymers, or additives.
Operator Safety	No respiratory protection required under normal use conditions. Standard gloves and eye protection recommended as precaution. Standard hygiene practices apply.
Water Impact	Reduces total water consumption by up to 50% at treated sites — direct contribution to national and regional water conservation objectives.
Carbon Benefit	Indirect emissions reduction through lower irrigation pump energy requirements and reduced fertiliser production and transport associated with decreased fertiliser demand.
Soil Health	Supports soil microbiome diversity, root-zone carbon sequestration potential, and long-term soil fertility, validated with KAUST Innovation Cluster.

Certifications & Approvals

ISO■9001
Quality■Management
Cert. No. 230925019606
Valid to: 22 Sep 2028

ISO■14001
Environmental■Management
Cert. No. 230925029607
Valid to: 22 Sep 2028

ISO■45001
OH&S■Management
Cert. No. 230925039608
Valid to: 22 Sep 2028

OMRI■Listed
Organic■Certification
Cert. No. dcd-18739
Valid to: 1 Sep 2026

All three ISO certifications were issued by ARS Assessment Private Limited (UAF-accredited, IAF MLA member) covering the scope of Manufacturing and Application of Liquid Natural Clay. The OMRI certificate confirms suitability for use in certified organic production in accordance with USDA National Organic Program regulations.

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Project References & Case Studies

The following references represent a selection of completed and ongoing deployments across Saudi Arabia, the UAE, and the United States. All outcomes are based on measured field data collected post-application.

Kingdom of Saudi Arabia

Saudi Aramco — Water Utilities Department

Aramco Facilities, Dammam | 2025-2026

Challenge	Demonstrating measurable water conservation across controlled landscape areas including turf and trees through existing irrigation systems.
Solution	LNC applied via existing irrigation infrastructure with zero operational disruption. Soil sensor arrays installed at multiple depths to track moisture retention performance.
Outcome	**30% irrigation reduction for turf; up to 40% for trees. Soil WHC improved by up to 42%. Enhanced moisture stability confirmed at all depths (10-55 cm). Stronger soil aggregation and improved root-zone stability recorded.**

Misk City — Sports Park, Area 3

Misk City, Riyadh | June 2025

Challenge	Sandy soils drained water rapidly, making it difficult to establish healthy, lasting green spaces aligned with the city's sustainability vision.
Solution	LNC applied across a 2-hectare landscape area to enhance water holding capacity, increase CEC, and stimulate microbial activity for improved plant resilience.
Outcome	**2-hectare treated area. Improved soil structure, enhanced plant establishment, and sustained irrigation reduction supporting Misk City's long-term green vision.**

Atlas Turf Arabia

Riyadh, Saudi Arabia | 2022 (ongoing)

Challenge	Turf farming in arid conditions faced severe water retention challenges, high irrigation demand, and unstable sandy soils.
Solution	LNC applied to PLATINUM TE PASPALUM turf with sensor-based monitoring (PoGo sensors) tracking soil moisture at all depths before and after irrigation.
Outcome	**Turf density increased by 59% in 6 weeks. Water infiltration rate improvement of 165% after 6 weeks. Consistently higher soil moisture in treated zones pre- and post-irrigation.**

Green Riyadh Program — Green Maramer Plant Nursery

Riyadh, Saudi Arabia | 2023-ongoing

Challenge	Nursery operations in arid conditions faced high water consumption, elevated costs, and challenges maintaining plant vitality at scale.
Solution	LNC applied across trees in-ground, potted trees (150L bags), and shrubs. A new LNC-based soil mix introduced to eliminate peat moss dependency across nursery production.
Outcome	**Water use reduced by up to 44%. Irrigation time cut significantly. Production costs reduced up to 16% through peat moss elimination. Improved soil moisture retention and plant health across all scopes.**

Rabian Garden — Tina Plant Nursery	Riyadh, Saudi Arabia | 2024-ongoing
Challenge	Nursery operations required significant water inputs to sustain plant health across large tree and shrub inventories in harsh sandy conditions.
Solution	LNC applied across 88 trees (150L bags), 129 shrubs (8L pots), and 138 trees planted directly in-ground across three distinct application scopes.
Outcome	**Water savings reallocated to support in-ground tree establishment. Healthier plant growth across all stages; enhanced landscape resilience and long-term sustainability.**

United Arab Emirates

Masdar City — Pump Park

Abu Dhabi, UAE | 2022

Challenge	Urban landscape required water-efficient soil conditioning for 68 trees and 592 m2 of landscaping in extreme arid conditions.
Solution	LNC applied with a structured soil improvement strategy; performance monitored over seven months via soil and irrigation tracking.
Outcome	**Water savings of up to 60% recorded during peak periods. Full landscape health maintained throughout the 7-month monitoring period.**

Khalifa Public Park

Abu Dhabi, UAE | 2022

Challenge	Established lawn required irrigation reduction without compromising grass quality, despite already-amended soil with improved water holding capacity.
Solution	LNC applied across 2,052 m2 of lawn area. Water usage tracked from February to September 2022 — seven months of continuous monitoring.
Outcome	**AED 1.3 million project. Sustained 33-36% irrigation reduction maintained over 7 months with lawn condition fully unaffected throughout.**

In5 Tech Corporate Office — Dubai

Dubai, UAE | 2022

Challenge	Commercial landscaping required sustainable water management across 508 m2 including 26 trees while maintaining premium visual standards.
Solution	LNC applied to all landscape elements. This represented the first significant commercial LNC deployment in the UAE.
Outcome	**40% water reduction with fully maintained visual condition. Reduced fertiliser usage and fewer management hours recorded.**

Residential Development — Dubai

Dubai, UAE (with Soyl) | 2024

Challenge	Residential development required vibrant, sustainable landscaping while significantly reducing pressure on water resources.
Solution	LNC applied in partnership with Soyl across lawns, shrubs, plants, and trees throughout the residential site.
Outcome	**Up to 50% water usage reduction. Healthier plants, reduced fertiliser input, and lower maintenance effort across the development.**

United States of America

Woodland Hill Country Club

California, USA | 2024-ongoing

Challenge	Water conservation across 43 irrigated acres of fairways, trees, and roughs while maintaining world-class playing conditions.
Solution	LNC deployed through the club's existing irrigation system across 43 acres, demonstrating seamless integration and scalability at golf course scale.
Outcome	**USD 900,000 project. Up to 50% irrigation reduction. Immediate water savings with no compromise to turf or playing surface quality.**

Berkeley Country Club	California, USA | 2024
Challenge	Sustainable water management across 63 irrigated acres without disruption to premium turf quality or member experience.
Solution	LNC applied via existing irrigation infrastructure across fairways, trees, and roughs across 63 acres.
Outcome	**USD 650,000 project. Immediate and sustained water savings. Optimal turf and playing conditions maintained throughout.**

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Strategic Partners & Client Portfolio

Research & Validation Partners

Estidama — NRDCSA	Joint validation of LNC as a breakthrough water conservation technology for Saudi agriculture. Partnership signed at COP-16. Contribution to national programs reducing water use and improving resource efficiency in farming systems.
KAUST Innovation Cluster	Ongoing soil microbiome assessments and product validation trials advancing scientific understanding of LNC's role in sustainable soil health and carbon sequestration potential.
Saudi AgriFood Tech Alliance	Member organisation — working alongside key stakeholders to advance sustainable agriculture and innovative agri-food technologies across the Kingdom.
Saudi Landscape	Valued strategic partner for large-scale landscape and irrigation improvement projects across Saudi Arabia.

Select Client Portfolio

- Saudi Aramco (Water Utilities)
- Misk City / Mohammed Bin Salman City
- Green Riyadh Program
- Atlas Turf Arabia
- Masdar City, Abu Dhabi
- Khalifa Public Park, Abu Dhabi
- In5 Tech — Dubai
- Woodland Hill Country Club (USA)
- Berkeley Country Club (USA)
- Rabian Garden / Tina Nursery
- Green Maramer Nursery
- Egis Group
- Bioo (Nature-powered solutions)
- Saudi Landscape

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Why Saudi Desert Control

Exclusive Technology

SDC holds the exclusive licence for LNC technology in Saudi Arabia — the only company in the Kingdom authorised to manufacture and deploy this patented solution.

Local Presence & Speed

Riyadh-based operations with mobile production units enable rapid mobilisation across all KSA regions without international logistics lead times.

End-to-End Service

SDC provides a complete service: soil assessment, custom formulation, on-site application, and ongoing performance monitoring — fully managed.

Proven in Saudi Conditions

Validated in KSA's specific climate, soils, and regulatory environment across projects ranging from urban parks to large agricultural deployments.

Measurable Outcomes

Every project is backed by sensor data, soil analysis, and irrigation monitoring — enabling clients to quantify ROI and report performance to stakeholders.

Certified & Compliant

ISO 9001/14001/45001 certified. OMRI Listed organic. Full SDS in compliance with EU REACH/CLP. Regulatory-ready documentation available.

Vision 2030 Aligned

LNC directly supports water conservation targets, Saudi Green Initiative goals, and the broader agenda for sustainable cities and agriculture.

Scalable Deployment

From a single compound landscape to a 100+ hectare giga-project — the same methodology, mobile units, and technical team deliver consistent results.

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Contact & Next Steps

To discuss a site assessment, request a technical proposal, or arrange a demonstration deployment, please contact the SDC team directly.

Company	Saudi Desert Control (Joda Al-Turba L.L.C.)
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Phone	+966 53 986 4005
Email	office@saudidesertcontrol.com
Website	saudidesertcontrol.com

Saudi Desert Control is ready to provide site assessments, technical datasheets, soil analysis reports, and full project references on request. We welcome the opportunity to demonstrate LNC's performance at your facility through a controlled pilot deployment.

Powered by Desert Control AS, Norway | LNC patented in 48+ countries | All performance data based on field-measured results.