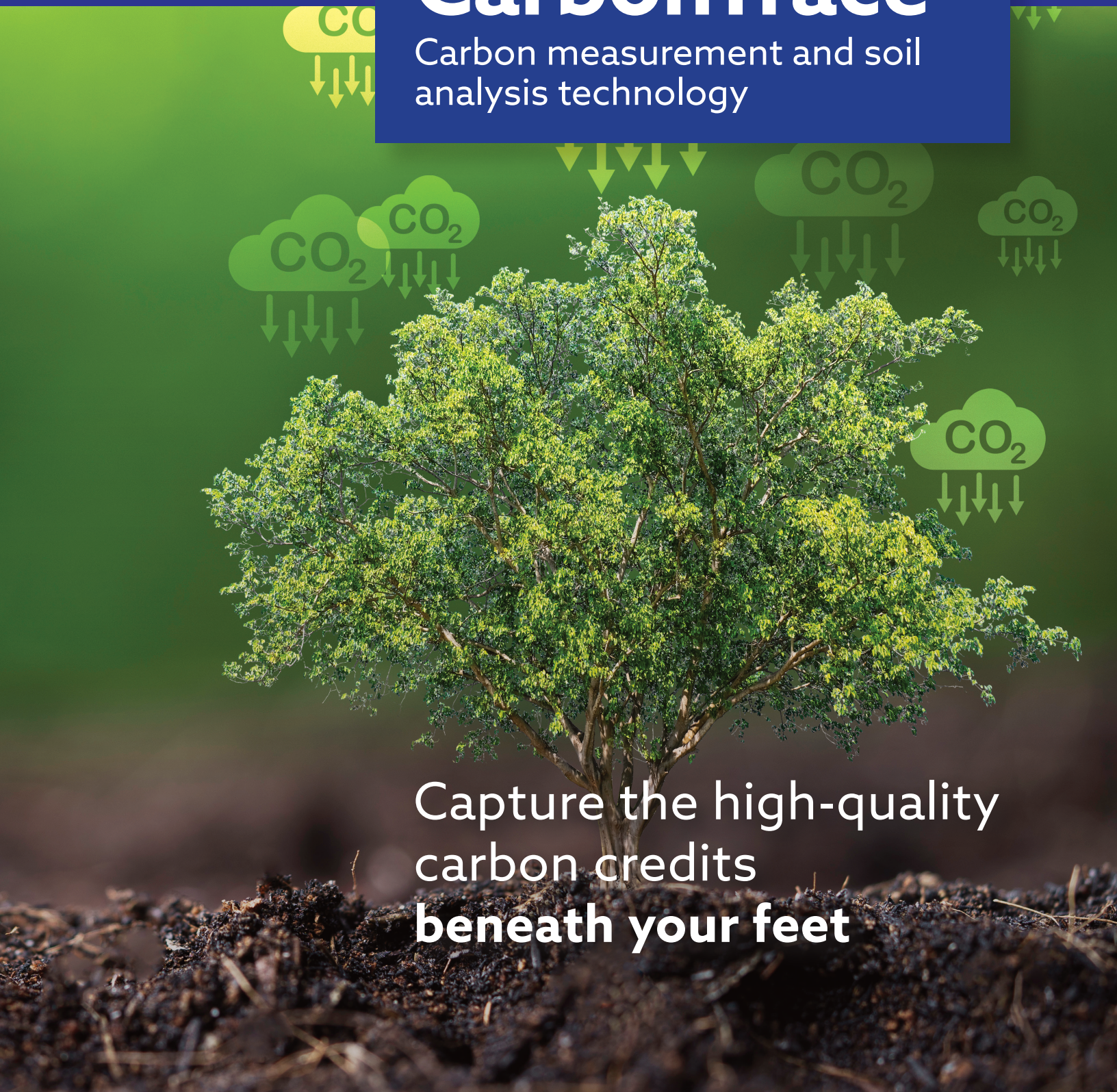
QuantumPro, Inc.

CarbonTrace™

Carbon measurement and soil analysis technology



Capture the high-quality carbon credits
beneath your feet

CarbonTrace scientifically measures nature-based CO_2 deposits others have missed

Soil is to carbon what a magnet is to steel. More precisely, the root systems and biomass of plants and trees draw in enormous quantities of atmospheric carbon, which is securely deposited in subsoil sediments. In fact, this superior carbon absorbent is said to capture more than three times the amount of carbon dioxide (CO_2) currently being spewed into the atmosphere.

As such, agricultural activities within this natural CO_2 sink provide landowners ready access to incremental revenue through the robust carbon credit marketplace, where companies buy credits to offset emissions from their operations. Conventional soil sampling and testing practices, however, routinely underestimate the volume and quality of carbon actually sequestered in subsurface sediments. The typical extraction of one sample per 100 or more acres at a depth well above root systems fails to document the enormous amount of carbon in the deeper strata, thereby stranding high-quality carbon credits and leaving them unmarketable.

Our pioneering CarbonTrace carbon measurement and soil analysis technology, for the first time, conclusively measures the full breadth of the carbon encapsulated underneath agricultural acreage and forests. With CarbonTrace we integrate our advanced oilfield sub-atomic and nano-particle analytical expertise in a comprehensive core sampling, ultra-high-resolution carbon measurement, soil geomechanics, and subsurface soil diagnostic initiative to fully quantify and map nature-based carbon sequestration.

In groundbreaking West Texas projects, in parallel with agricultural activities and Permian Basin oil and gas asset development operations, CarbonTrace conclusively verified soil-based carbon sequestration levels 25 times higher/acre than those previously recorded.

For farmers, ranchers, and land owners this means a potentially lucrative income stream beyond the sale of the crops and livestock that grow and graze on their acreage. For investor-pressured oil and gas companies and other carbon emitters, this translates to an immediate, secure, and comparatively low-cost and efficient way to get a major jump start on meeting net zero directives.

Targeted clientele

- Farmers, ranchers, and forest owners/ managers
- Corporate land and mineral rights owners
- Industrial CO_2 emitters
- Federal, state, and municipal-controlled lands and parks
- Federal and state regulatory agencies
- Carbon credits buyers and traders

Features

- One-of-a-kind soil-based carbon measurement workflow
- Science-based sub-atomic measurement technologies
- Deep, high-resolution, and frequent soil sampling
- Comprehensive coring and testing protocol
- Sub-atomic and nano-particle level resolution
- Extensive data-driven carbon sequestration and diagnostic expertise
- Precise mapping and characterization of naturally sequestered carbon
- Global fit-for-purpose sub-atomic soil analysis laboratories
- Proven oilfield technologies transferred to nature-based CO_2 capture
- Alternative to high-cost carbon capture and storage (CCS) projects

Benefits

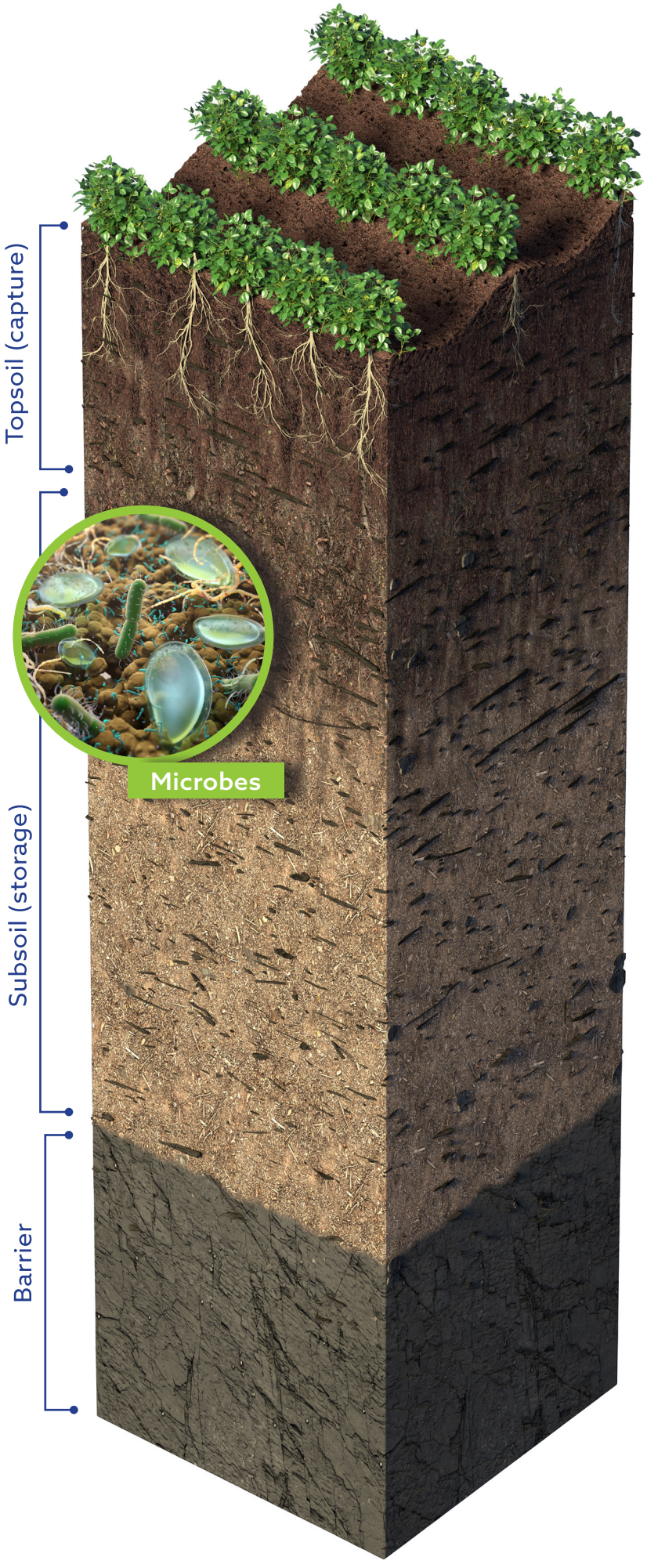
- Documents the full breadth of nature-based carbon capture
- Targets the sweet spot of CO_2 accumulation and storage
- Measures conclusively the deep and shallow carbon sequestered/acre
- Quantifies carbon containment for high-quality carbon credits
- Maximizes value and quality of carbon credit marketplace
- Generates incremental revenue stream for landowners
- Provides immediate and low-cost emission offsets for all industries
- Verifies upper and lower strata carbon sequestration volumes, unlike inferences from air or satellite images
- Helps meet 2030 net zero mandates and de-carbonization objectives

Cataloging the bounty in nature's CO_2 safe-deposit box

Soil is regarded as second only to the oceans as a natural CO_2 storage vessel. To point, as the root systems of plants and trees draw in atmospheric carbon through the photosynthesis biochemical process, the collected CO_2 is permanently sequestered in subsurface sediments.

Typical sampling practices, however, only encroach the top soil, so any carbon that may have accumulated is dispersed back into the atmosphere with tilling and plowing between planting seasons. What's more, taking only a single soil sample for a 100 or more acres fails to account for topographical and lithological heterogeneity, compositional deviations or the lateral distribution of carbon deposits.

CarbonTrace carbon measurement and soil analysis technology begins with deeper and more frequent sampling to accurately quantify carbon aggregation in the deep subsoil layers. By first extracting up to 20 soil samples/100 acres, we take into consideration both surface and subsurface heterogeneity and long-term carbon storage proficiency and containment. In addition, pulling those samples from a depth of 10 ft or more - well below the roots of plants and trees - enables analysts to more definitively measure the CO_2 securely locked in the subsurface sweet spot.



Testing protocol measures the totality of naturally sequestered CO_2

Reflecting the effective transfer of advanced and well proven oilfield core extraction, carbon mapping and subsurface diagnostic technologies to the agricultural nature-based solutions (Ag-NBS) arena, CarbonTrace, in collaboration with leading verification and certification companies, comprises a sweeping testing protocol that quantifies both the quantity and duration of sequestered carbon. At the QuantumPro sub-atomic analytical labs in the US, Canada and Kazakhstan, soil samples undergo a seven-test regime that employs the latest in science-driven analytics, including:

Soil Carbon and Organic Content Analysis
This most vital measurement of actual soil carbon sequestration quantification and verification is conducted through infrared absorption of finely ground soil particles samples heated to 680 deg C (1,256 deg F).

Particle Size Distribution (PSD) and Surface Area Analysis by Laser Diffraction
In this analysis, advanced nano-lasers are used to differentiate the carbon absorption capacity of different soil lithologies and particle sizes.

Soil Compound and Mineral Analysis
Here, highly advanced X-ray diffraction (XRD) analysis identifies the assorted clay and silt minerals in a sample to quantify the different soil particles absorption capabilities.

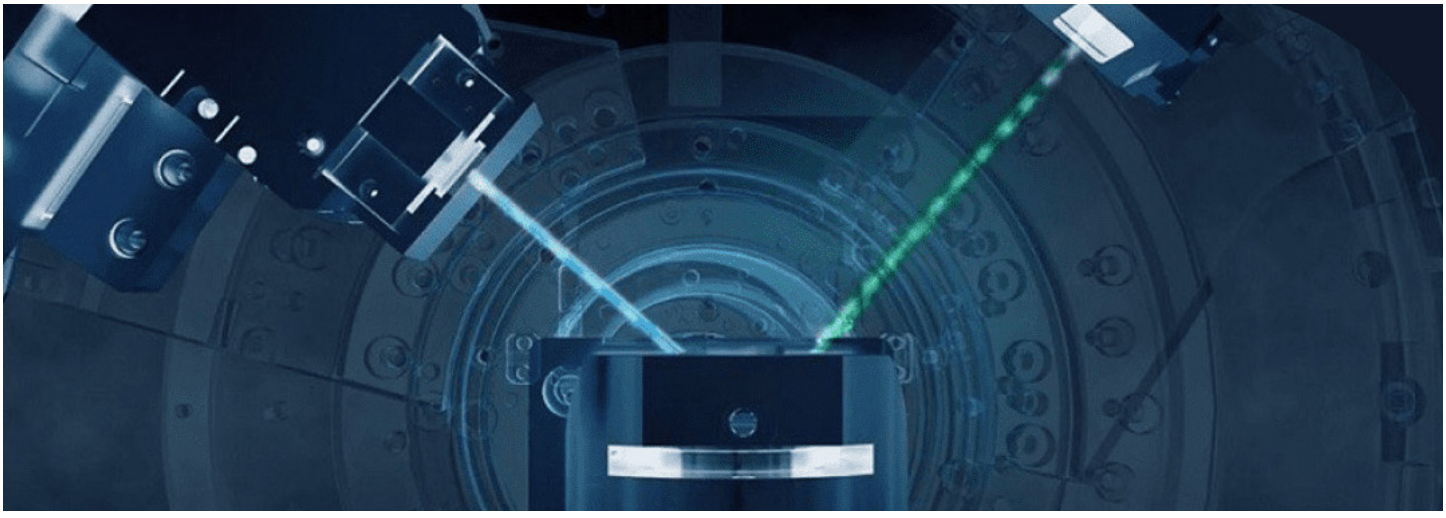
Soil Geochemical and Elemental Analysis
Using sub-atomic energy-dispersive X-ray spectroscopy, we determine the specific elemental composition and compounds in a core sample that impact the sequestration process and final sequestration capacity.

Soil Proctor Compaction Test
A measure of volume and weight to determine topsoil compaction over time and specifically determines the optimal moisture content at which a given soil type will become most dense and achieve its maximum dry density.

Soil Density Analysis
An important test for soil characterization, wet and dry density assessments are critical components of soil carbon sequestration analysis.

Soil Moisture Content Analysis
A critical differentiating measurement during new crop planting seasons, this test pinpoints soil properties and determines the ratio of the mass of water held in the soil to the dry soil.

This sampling and testing procedure is repeated yearly to account for higher-frequency sampling and the additional carbon sequestered during each new planting season.

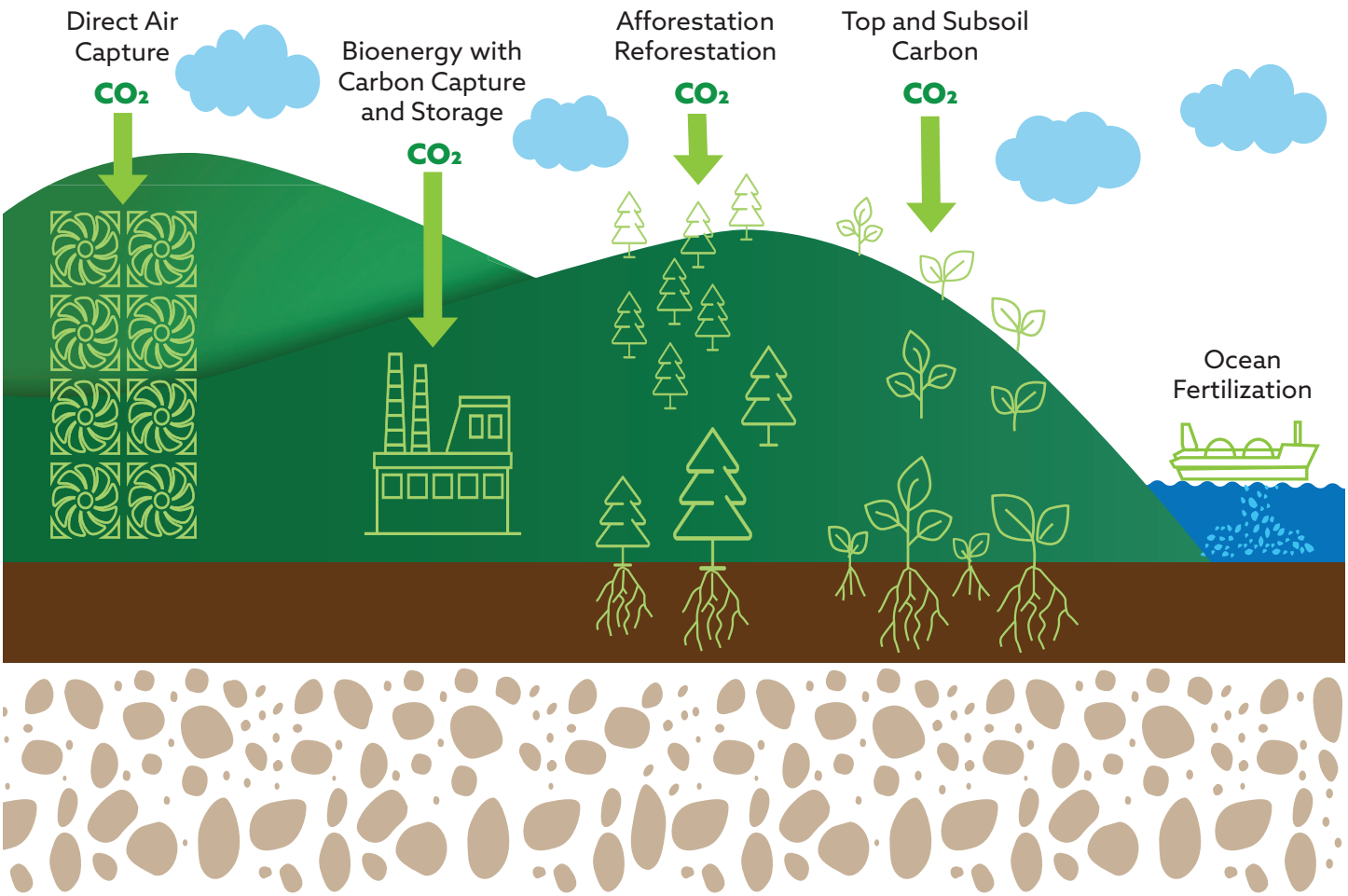


Hitting the sweet spot for high-quality offsets

The beauty of the CarbonTrace carbon measurement and soil analysis technology lies in the capacity to target exactly where the bulk of naturally harvested CO_2 goes and where it remains. As demonstrated in the West Texas projects, the CarbonTrace sampling and testing methodology verified 10 times more certifiable total carbon by weight than that of earlier shallower measurements.

Where others attempt to infer soil-based carbon containment volumes from limited air or surface datasets, CarbonTrace gives you an indisputable high-resolution and in-depth carbon sequestration accounting and storage verification across multiple top and subsoil layers. By maximizing the documented tons of naturally sequestered CO_2/acre, we likewise enable the maximum amount of the highest-quality carbon credits, or offsets available for sale in the carbon credit marketplace.

Carbon Dioxide Removal Options



The time to net zero is running out

Analysts and others have said if companies are to meet net zero commitments, they must at least double the pace of emission reductions by 2030. CarbonTrace gives you a leg up on meeting this rapidly approaching deadline, and does so at minimal costs.

The choice could not be clearer: Why invest millions in complex and very expensive engineered CCS projects and wait years for payback, when an immediate pathway to net zero could be lying right under your feet?

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To learn more about how **CarbonTrace™** can provide a potentially lucrative revenue stream while simultaneously helping meet net zero objectives contact **QuantumPro, Inc.** at

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