

Standard Operating Procedures (SOP) Manual for “*Precision Geotagged Soil Sampling & Chain of Custody for Carbon Verification*”

Client: ABC Green Audit Agency

Project Location: India (pilot in Maharashtra, expansion planned pan-India)

Lead Consultant: Mr. XYZ

Date of Submission: [xx/xx/xxxx]

Background: ABC Green Audit, is a firm that validates carbon sequestration in soil for farmers selling carbon credits. They rely on satellite data and ground-truthing. To verify a claim, field agents must physically visit specific GPS coordinates to measure soil organic carbon. However, agents are frequently parking their trucks and taking samples "near" the point rather than at the point, or failing to record the specific RTK (Real-Time Kinematic) accuracy of their device. An SOP for Precision Geotagged Soil Sampling and Chain of Custody is prepared for this problem. This ensures the physical sample matches the digital coordinate exactly, which is a legal requirement for the credit to be sold.

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Note: Images are for representation only. Actual analysis and final outputs contain detailed, project-specific data, high-precision GIS mapping, and proprietary client analytics.

Version Control

Item	Details
Sop Manual Version	2.1 (Updated For Rtk Compliance).
Date Of Issue	
Applicable From	
Review Cycle	Annual or as Per Regulatory Updates

Approval & Authorization

Designation	Name	Signature	Date
Competent Authority			
Competent Authority			
Competent Authority			

Temkars Agri-Tech & Geospatial Consultancy

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1.0 Document Control & Version History

This section establishes formal control over the Precision Geotagged Soil Sampling & Chain of Custody SOP to ensure that only the latest, approved, and legally defensible version is used during field operations, audits, and dispute resolution. Given the compliance-critical nature of carbon credit verification, uncontrolled or outdated SOP usage is treated as a major non-conformance.

1.1 Document Identification

Each SOP issued by ABC Green Audit is uniquely identifiable to prevent ambiguity during internal audits, third-party verification, or legal review.

Parameter	Description
SOP Title	Precision Geotagged Soil Sampling & Chain of Custody for Carbon Verification
SOP Code	GA-OPS-004
Department	Field Operations / Compliance
Current Version	2.1
SOP Category	Operational / Compliance-Critical
Confidentiality	Internal Use & Accredited Auditors Only

1.2 Versioning & Change Control

This SOP follows semantic version control to clearly distinguish between procedural, technical, and compliance-driven updates.

Version Type	Meaning	Example
Major (X.0)	Fundamental workflow or legal methodology change	Change in SOC depth protocol
Minor (X.Y)	Technical or equipment update without workflow redesign	RTK accuracy threshold update
Patch (X.Y.Z)	Clarifications, typo fixes, or non-procedural edits	Text clarification

Current Version Interpretation: Version 2.1 indicates a *minor update* applied to Version 2.0, specifically addressing RTK accuracy enforcement and metadata capture requirements.

1.3 Effective Date & Validity

Parameter	Detail
Effective Date	DD/MM/2025
Supersedes	GA-OPS-004 Version 2.0
Review Cycle	Annual or upon regulatory update
Next Scheduled Review	DD/MM/2026

Mandatory Compliance Rule: Field data collected before the effective date of this version must be validated against the SOP version active at the time of sampling.

1.4 Approval & Authorization

This SOP is legally binding only after multi-disciplinary approval to ensure operational feasibility, scientific validity, and regulatory compliance.

Role	Name / Signature	Date
Operations Director	_____	_____
Head of Compliance	_____	_____
Lead Soil Scientist	_____	_____

Authority Clause: No individual below the signatory level is authorized to modify, waive, or interpret this SOP outside its written provisions.

1.5 Revision History Log

All revisions are logged to provide a forensic audit trail, especially critical in the event of carbon credit disputes or buyer challenges.

Version	Date	Section(s) Affected	Description of Change	Approved By
2.1	27-01-2026	9.0, 11.0	Enforced <2 cm RTK accuracy; added mandatory GPS metadata capture	Head of Compliance
2.0	14-09-2025	Multiple	Introduced Chain of Custody formalization	Ops Director
1.0	03-03-2025	All	Initial SOP release	Founding Team

1.6 Distribution & Access Control

Controlled distribution ensures that field behavior matches documented procedure, a critical requirement for ISO and VCS audits.

Recipient Group	Access Mode	Responsibility
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Field Technicians	Mobile App (Read-Only)	Execution
GIS Analysts	DMS + GIS Server	Validation
Lab Managers	DMS	Sample reconciliation
QA Officers	DMS + Audit Dashboard	Compliance oversight
External Auditors	Time-bound, read-only access	Verification

Access Rule: Outdated SOP versions are automatically archived and locked within the DMS to prevent accidental use.

1.7 Document Storage & Retention

Record Type	Storage Location	Retention Period
Master SOP	Central DMS (ISO-compliant)	10 years
Field Copies	ABC Green Audit Field App	Active version only
Archived Versions	Compliance Archive	Permanent

1.8 Non-Compliance Statement

Failure to adhere to the current approved version of this SOP may result in:

- Sample invalidation
- Carbon credit rejection
- Field agent retraining or suspension
- Reportable compliance breach under VCS audit protocols

2.0 Purpose & Objective

2.1 Primary Purpose

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