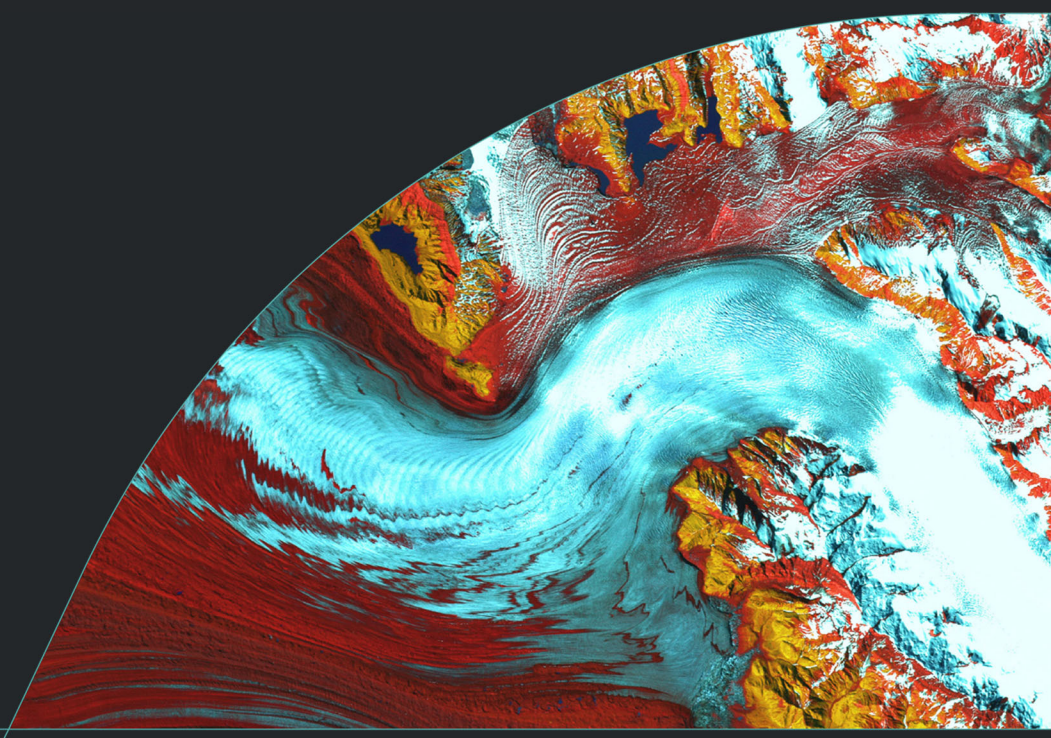
November 2025

Puro.Earth Production Facility Validation and Batch 1 Output Verification

Lithos Carbon US Southeast ERW Deployment

—
ecoengineers.us
+1 515.985.1260



Validation and Verification Summary

EcoEngineers has been contracted by Puro.Earth on behalf of Lithos Carbon (Lithos), to conduct a validation and verification of the Lithos Carbon US Southeast ERW Deployment (hereinafter referred to as the "Southeast Facility") enhanced rock weathering (ERW) project against the requirements specified in the Puro.earth Enhanced Rock Weathering Methodology 2022 (methodology). There are two phases of the verification process for this project: batch 1 and batch 2. This report will detail the Southeast Facility validation and the batch 1 verification outcomes and opinion statement.

EcoEngineers conducted a combined validation and verification to determine whether the life-cycle analysis (LCA) model, sampling procedures, and practices for the reporting period (as further described in section 1) are free of non-conformances and material misstatements. Upon review of the submission materials, EcoEngineers conducted a risk assessment to determine the sampling and audit methodology. The EcoEngineers team reviewed the supporting documentation according to the validation and verification sampling plans.

Table 1: Summary of Lithos Carbon Southeast Facility

Project Name	Lithos Carbon US Southeast ERW Deployment
Production Facility ID	203380
Monitoring Period	May 19, 2024 to February 27, 2025 (Batch 1)
Crediting Period	May 19, 2024 to May 18, 2029

Table of Contents

List of Appendices

Appendix #	DESCRIPTION
A	Validation/Verification Plan
B	Log of Issues
C	References
D	Auditor Competencies
E	Validation Verification Opinion Statement

Section 1: Introduction

EcoEngineers was contracted by Puro.earth to conduct an independent, third-party combined production facility audit and output audit of the project detailed in Section 1.1.1 and 1.1.2 of this report. EcoEngineers is independent of Lithos Carbon, completed a conflict-of-interest check, and declares there is no conflict of interest with the contracted combined validation and verification of the project.

EcoEngineers is an independent, accredited, third-party Validation and Verification Body (VVB) for the Puro.earth Registry. For more information visit https://puro.earth/partners.

Table 2. Validation/Verification Body Auditor Information

Validation/Verification Body (VVB)	EcoEngineers
VVB Contact Information	1300 Walnut Street, Suite 100 Des Moines, Iowa, 50309 1-515-985-1260 clientservices@ecoengineers.us
ANAB Accreditation ID	9159
Lead Validator / Lead Verifier	Zoe Nong
Site Visit Auditors	Ally Standefer, Zoe Nong
Validator / Verifier	Valerie Chan
Independent Reviewer	Jocelyn Stubenthal
Subject Matter Expert / GHG Verification Director	Andrea Adams

Competence of the validation and verification team is demonstrated through the certificates in Appendix D.

1.1: Project Background, Scope, and Boundaries

1.1.1: Project Background

Lithos Carbon, hereinafter referred to as “Lithos”, aims to accelerate Earth’s natural carbon cycle by permanently removing carbon dioxide (CO_2) from the atmosphere while simultaneously improving crop yields and soil health for farmers. The Lithos team utilizes enhanced rock weathering (ERW) by deploying organic-grade basalt dust onto agricultural farmland. ERW is the process of dissolving silicate rocks by means of a natural chemical weathering reaction when exposed to acidic rain. This chemical weathering reaction occurs instantaneously as the CO_2 from the rainwater converts to stable bicarbonate. Lithos accelerates the chemical weathering process by applying fine basalt rock dust onto farmland with high porewater CO_2 concentrations. The dissolved bicarbonate formed through chemical weathering is transferred downstream by rivers and streams to the coastal ocean, where it remains for thousands of years. On the geologic time

scale, the bicarbonate biomineralizes into calcium carbonate and eventually sinks to the ocean floor, where it becomes solid limestone.

Per the Lithos Puro Project Description:

> *Lithos is an enhanced rock weathering company that continually deploys superfine basalt silicate waste feedstock. The feedstock is procured from a fully compliant aggregate quarry, operating under an active U.S. Mine Safety and Health Administration (MSHA) permit.*
>
> *The superfine basalt feedstock is a waste byproduct of routine rock quarrying operations. With 90% of particles smaller than 114 microns, it has little to no value for conventional construction markets and no other commercial applications. This lack of market demand allows Lithos Carbon to secure substantial quantities of highly reactive, superfine material that would otherwise remain unused. By redeploying this quarry waste in local agricultural settings, Lithos unlocks meaningful carbon dioxide removal (CDR) potential.*
>
> *Lithos sources local businesses to reliably transport procured superfine basalt to growers within a certain distance of the quarry. Lithos then sources local agricultural equipment to spread feedstock or apply this feedstock onto agricultural working lands at pre-determined application rates to manage soil pH. Typical agricultural equipment used by vendors are traditional agricultural equipment such as paddles or a spinning disc.*
>
> *To verify changes in soil characteristics, Lithos contracts soil samplers over a series of sampling events to collect topsoil samples for analysis and archiving. Sampling events occur prior to application, immediately after application and subsequently at various time intervals throughout several growing and harvesting seasons.*
>
> *Each soil sample is split for analysis by two types of 3rd party commercial laboratories: one for conventional agricultural testing and another for geochemical testing. Results from lab testing are then used to validate the impacts the soil amendment feedstock has on soil health and to quantify the CDR. Regarding the fate of the captured carbon within the soil, post-weathering alkalinity transport is conservatively evaluated by attributing discounts towards the total CDR potential measured from the basalt weathering amount. Sub-processes such as alkalinity re-equilibration in riverine and ocean environments are modeled and estimated conservatively. These discounts are accounted for upfront on the CDR estimates from basalt weathering so as to account for any uncertainties that may occur between feedstock dissolution at the soil phase to alkalinity/weathering product transport within the river and ocean boundary conditions.*

1.1.2: Project Location

Lithos deployed basalt rock fines from the Sunrock quarry in Butner, North Carolina. The basalt fines were loaded at the quarry by facility personnel, transported via contracted third-party hauling companies, and unloaded at various farm deployment sites in the surrounding Durham, North Carolina area.

Table 3: Project Location Details

CO_2 Removal Supplier	Lithos Carbon
CO_2 Removal Supplier Address	1111B S. Governors Ave, #6084 Dover, Delaware 19904

Quarry Name	Sunrock Butner Facility
Quarry Address	100 Sunrock Drive, Butner, 27509, North Carolina
Production Facility Name	Lithos Carbon US Southeast ERW Deployment
Production Facility ID	203380
Monitoring Period	May 19, 2024 to February 27, 2025 (Batch 1)
Crediting Period	May 19, 2024 to May 18, 2029
Production Facility Location(s)	36 plots for one Grower in North Carolina, Deal ID #886 Coordinates: 36.405359,-78.296386

1.2: Audit Boundary Scope

1.2.1: Baseline Scenario

According to the Lithos Puro Project Description:

> *Without Lithos project activity, basalt dust is stored in large open air piles in quarry waste storage areas. The feedstock acquired as-is or burden free, as described above, is a waste byproduct created during standard crushing and grinding to produce aggregate product. Lithos does no further processing, procures, and arranges 3rd party logistics and applications as-is. To assess the weathering potential for feedstock water exposure after rainfall, we estimate the penetration depth of water into the waste pile. With a water infiltration rate of 10 mm hr-1, we estimate that feedstock spread across farmland would be exposed to water within 15 min, while it would take 50,000 longer (1.6 continuous years) for a comparable rain event to penetrate the depth of a consolidated waste pile, resulting in minimal counterfactual weathering.*
>
> *Lithos actively screens and qualifies projects, the field management practices, to the best ability, characterize projects and their subsequent baseline scenario. Growers are qualified and screened before hand for their liming and other agricultural management practices for applicability. Lithos documents any provided information that may lead to any counterfactual scenario. In addition, baseline or control agronomic pH indicators also inform soil conditions of baseline scenarios. Spreading of basalt rock as a soil amendment is not a standard practice in the general project area or at the specific application site(s) listed in Section 2.2. Lithos is the only spreader of basalt rock in the region. Thus no weathering occurs without Lithos project activity.*

1.2.2: Boundaries

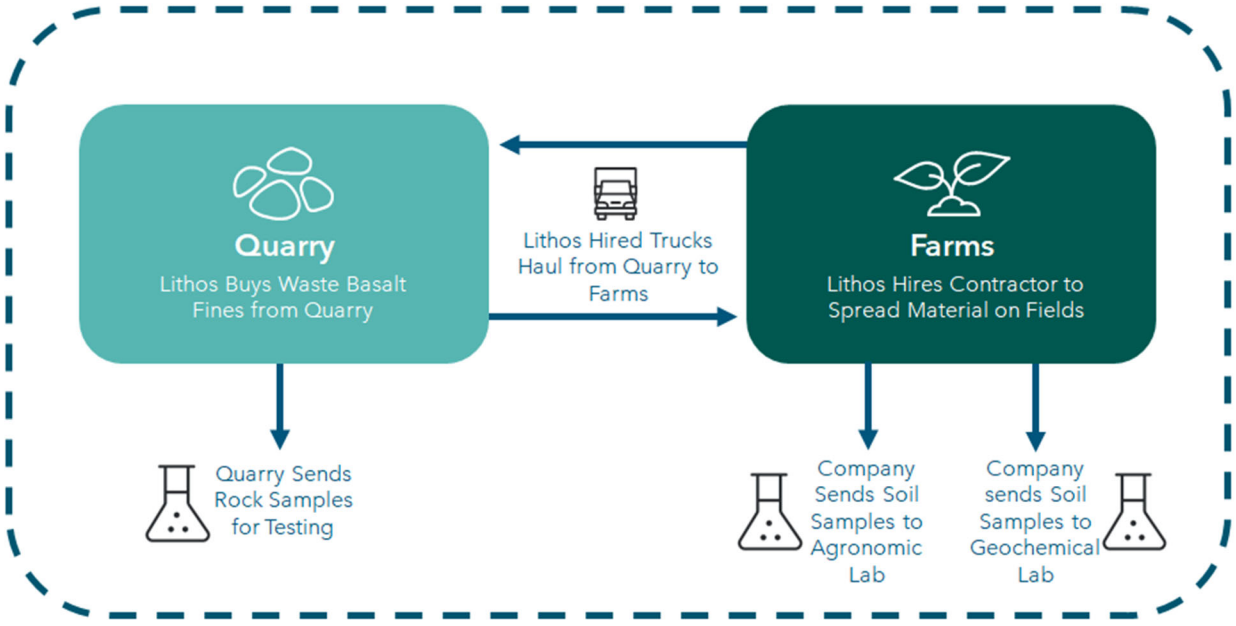
The Lithos Southeast project consists of a cradle-to-grave system boundary. The four stages included in the boundary are described below:

1. Feedstock sourcing: Waste material (a byproduct of the quarry's grinding and milling processes) is purchased from Sunrock Quarry.
2. Transport: Transportation of rock fines from the quarry to the application site.
3. Application: Applying rock fines to the fields.
4. Weathering: Monitoring and sampling soils.

According to the Lithos Puro Project Description:

> *The CDR activity falls well within the Generic Process Boundaries for ERW in Soils defined by the Puro ERW Methodology 2022 Edition, v2.0, Section 5.1.3. Lithos accounts for activities within the categories surrounding geographical soils, specifically at the application site(s) listed in Section 2.2 of this document. The defined climatic area for North Carolina is humid subtropical, the coastal plain region. The environmental risk assessment provides identified risks and their mitigation plan.*

Figure 1: Lithos LCA Boundary



- *EcoEngineers*

1.2.3: CO_2 Removal Certificates (CORCs)

CO_2 Removal Certificates are defined in the Puro.Earth ERW Methodology as net one (1) tCO_2e removed the atmosphere and as stated in section 6.1 by the following:

$$\mathbf{CORCs = C_{stored} - E_{project} – E_{leakage} - E_{loss}}$$

C_{stored}: Gross amount of CO_2 stored via weathering of the applied rock. (Tonnes of CO_2)

$E_{project}$: Total life cycle emissions arising from the whole supply chain of the ERW activity. (Tonnes of CO_2e)

$E_{leakage}$: Total GHG emissions due to negative economic leakage. (Tonnes of CO_2e)

E_{loss}: Total re-emissions from initially sequestered CO_2. (Tonnes of CO_2e)

1.2.4: Reporting Period

The commitment date for the Lithos ERW is May 14, 2024, based on the date Lithos committed to implementing the CO_2 Removal Activity, the date the first physical actions were taken to implement the mitigation activity, per the commitment date definition in the Puro Standard General Rules, version 4.2. and the Puro Standard General Rules, version 4.2.

The reporting period of the batch 1 feedstock application activities occurred from May 19, 2024, through February 27, 2025.

There is a 5-day gap between the May 14, 2024 commitment date and May 19, 2024 reporting period start date. EcoEngineers reviewed and confirmed that basalt material hauling activities began on May 14, 2024, and the spreading of the basalt material at the application site started later on May 19, 2024.

Section 2: Audit Methodology

2.1: Validation and Verification Criteria

EcoEngineers' validation and verification was conducted in accordance with the following standards, rules, requirements, and documents:

- Puro.earth Enhanced Rock Weathering Methodology 2022v.2 (Methodology)
- Puro.earth Standard General Rules. Version 4.2, approved June 30, 2025 (Rules)
- Puro.earth Clarifications for Application of Puro Standard and Methodologies, last updated October 6, 2025 (Clarifications)
- Puro.earth Additionality Assessment Requirements, Version 2.0, June 7, 2024 (Additionality Requirements)
- Puro.earth Validation & Verification Requirements, Version 1.2, July 2025 (V/V Requirements)
- Puro.earth Stakeholder Engagement Requirements, Version 1.1, May 13, 2024 (Stakeholder Requirements)
- Puro.earth Puro Standard Article 6 Procedures, Version 1.2, May 10, 2024
- Puro.earth SDG Assessment Requirements, Version 1.0 (SDG Requirements)
- IAF MD 4:2025 IAF Mandatory Document for the Use of Information and Communication Technology (ICT) for Conformity Assessment Purposes, January 30, 2025
- ISO Standard 14064-3:2019 – Specification with guidance for the verification and validation of greenhouse gas statements
- Global Reporting Initiative (GRI) Universal Standards 3: Material Topics, 2021

2.2: Materiality Threshold

The intended user has not set a materiality threshold for verification, thus EcoEngineers established the quantitative materiality threshold for material misstatement to be ±5% of the reported tons of CO_2 removed. EcoEngineers determines performance materiality considering the quantitative materiality threshold.

2.3: Audit Objectives

The objective of the validation is to assess the likelihood that implementation of the project activities described in the Project Description and Monitoring Plan will result in the achievement of GHG outcomes as stated by Lithos Carbon, and whether the documents conform to the requirements established by the methodology and applicable criteria.

The objective of the verification is to determine conformance of the CO_2 Removal Certificate (CORC) Output Report to the applicable monitoring and reporting requirements established by the methodology, ISO Standards, and applicable criteria, and determine whether the emissions reductions claimed are within scope, real, quantifiable, additional, verifiable, counted once, and under clear ownership.

2.4: Level of Assurance

EcoEngineers designed and conducted verification services to provide a reasonable, but not absolute, level of assurance that the GHG assertion allocated to Puro.earth by projects under the program for the Southeast facility is materially in conformance with the objectives and the criteria.

2.5: Validation and Verification Plan

The validation and verification plan is included in Appendix A.

2.6: Strategic Analysis and Risk Assessment

2.6.1: Summary of Risks

EcoEngineers performed a strategic analysis and a risk assessment and sampling plan (RASP), which evaluates the data's relative contribution to a material misstatement, uncertainty in calculations, and potential for incomplete reporting, as well as assessing the effectiveness of the current reporting strategy and identify strengths and weaknesses within the data. The resulting information was used to determine assertion attributes. Then inherent risk, probability and magnitude of potential risks within the data, control risks, and design and effectiveness of controls were reviewed and evaluated to determine risk assessment considerations and procedures for sampling data.

2.7: Evidence Gathering Plan

Based on the outcome of the Risk Assessment EcoEngineers requested supporting documentation for the claims made in the GHG Assertion and to receive additional information on Lithos' practices.

Section 3: Audit Process

3.1: Site Visits

3.1.1: Requirements

A site visit must be completed to verify the operations taking place at the project site. Project personnel made available all records, permits, policies, procedures, and protocols, and provided access to appropriate areas of each site. EcoEngineers staff completed all required activities based on the sampling and validation plan for the project and its professional judgment, including, but not limited to:

- Reviewed supporting evidence on-site
- Interviewed key personnel related to preparing and collecting data
- Reviewed the data management system
- Directly observed the production equipment, confirmed the process diagram accuracy, and accounting systems associated with high risk
- Assessed measurement device accuracy and reviewing financial transactions as necessary

EcoEngineers previously completed an in-person site visit to the Lithos Southeast location on August 4, 2025. During the site visit, it was confirmed that:

- The Sunrock quarry:
    - Was operational at the time of the site visit and the quarry produced ERW feedstock (Basalt sand)
    - The ERW feedstock is a waste product of the quarry
    - Truck scales are present to measure quantity of feedstock sold to Lithos

A virtual farmer interview was held on November 4, 2025. During the virtual site visit, it was confirmed that:

- Feedstock was spread on the fields starting in June
- Soil tests are completed by the farmer and independent third parties
- Lithos monitors of soil quality twice a year and of breakdown of ERW material
- Control and treatment plots were used
- Lithos only applies feedstock to fields that are suitable

3.2: Desk Audit

3.2.1: Requirements

EcoEngineers, the third-party VVB, used professional judgment in establishing the extent of data checks for each data type, as indicated in the sampling plan, which were needed for the team to conclude with reasonable assurance whether the data type specified for the application or report

is free of material misstatement. At a minimum, the data checks selected by the VVB included the following:

- Tracing data in the LCA and CORC Summary Report to its origin;
- Reviewing the procedure for data compilation and collection;
- Reviewing and confirming the theoretical simulation approach against current and cited literature;
- Recalculating intermediate and final data to check original calculations;
- Reviewing calculation methodologies used by the entity required to contract for verification services;
- Reviewing meter and analytical instrumentation measurement accuracy and calibration for consistency with the requirements;
- Observation of data management practices during the site visit and interviewing key personnel.

Section 4: Validation Findings

4.1: Project Details

Table 4. Puro.earth Validation Requirements and Findings

Requirement *Puro.earth document & (section) references*	**Evidence gathering activities, evidence checked and assessment conclusion**
Project Description contents *Rules (2.3.4.2(i) to (xi))*	EcoEngineers reviewed and cross-referenced the Project Description against the applied Methodology (Puro.earth Enhanced Rock Weathering Methodology 2022v.2) and observed the following issue(s). EcoEngineers observed that Lithos' Production Facility information in the Project Description was consistent with the Puro Platform Agreement definition of production facility, and was in accordance with the Project Description template instructions to specify the registered Production Facility information. EcoEngineers noted that the production facility definitions in the Platform Agreement and the ERW Methodology are inconsistent. During a call on November 18, 2025, Puro clarified to Lithos and EcoEngineers that provision of geographic details of the application site boundaries is sufficient detail for the production facility. EcoEngineers reviewed the Puro Project Description Lithos Southeast ERW Deployment v5 document and determined that the final Project Description did contain the information listed in Section 2.2.4.2 of the Puro Rules. EcoEngineers verified that the final Project Description contains the information listed in Section 2.2.4.2 of the Puro Rules.

Baseline Scenario	In Section 4.2 of the Project Description, Lithos describes the baseline scenario related to operations at the quarry, per the registered Production Facility information. The text additionally states that Lithos actively determines and documents the applicable baseline scenarios for the land-owners/land-users (i.e., growers). It is noted in the Project Description that spreading of basalt rock, e.g., enhanced rock weathering activities, is not standard practice in the geographic area of the application sites.
Commitment Date ***Rules (Definitions)***	In the initial Additionality project documents, the May 19, 2024 commitment date was described as the date of signature of agreement with growing partner. EcoEngineers noted that the description and date were incorrect, since the growing partner agreement was signed on December 16, 2024, and hauling invoices were dated May 14, 2024. Lithos revised the Additionality project document which resolved the issue. The commitment date for the Lithos SE Facility is May 14, 2024, as specified in Section A5 of the Puro Additionality v1.9 v3 project document. EcoEngineers verified that this date marks the initiation of physical actions to implement the mitigation activity. Supporting documentation includes: • Hauling invoices: Dated May 14, 2024, confirming material departure from the quarry. • Spreading invoices: Dated June 11, 2024, subsequent to the commitment date.
CO_2 Removal Supplier attestation of the accuracy of information ***Rules (2.2.4.3)***	EcoEngineers reviewed the Authorization of Representation supporting document and determined that the contents of the file met the information accuracy attestation requirements.
Eligibility ***Methodology (3.1)***	EcoEngineers reviewed the Project Description and supporting documentation, completed site visits, interviewed project stakeholders, and referenced Section 3.1 of the Methodology to determine if the Project met the eligibility requirements. As required by Section 3.1.4 of the Methodology, EcoEngineers obtained the standing data of the CO_2 Removal Supplier and Production Facility including: • Official document stating that the CO_2 Removal Supplier's organization legitimately exists ○ "Division of Corporations – Filing.pdf" documents a Delaware.gov Division of Corporations – Filing result for Lithos Carbon, Inc., incorporated on March 16, 2022.

	• CO_2 Removal Supplier registration of the Production Facility in the Puro Registry
	  ○ Puro.earth provided EcoEngineers with the Puro.earth Facility Registration Summary, file name "Facility Registration Document_Lithos_Carbon US Southeast ERW Deployment.pdf", registration date: December 9, 2024.
	• Locations of the application sites forming the Production Facility
	  ○ "Lithos_Application_sites.xlsx", listing 1 application site in North Carolina, USA for Batch 1.
	• Whether the Production Facility has benefitted from public support
	  ○ Lithos answered "*no subsidies*" in response to the Section A7 question in the "Puro Addtionality v1.9 v3.docx".
	• Date on which the Production Facility becomes eligible to issue CORCs. See the Verification Opinion Statement in Appendix E for more information.
	  ○ In accordance with Section 3.1.3 of the Methodology, this is the date that the third-party production facility audit is completed, which is November 24, 2025.
	EcoEngineers confirmed that the project activity involves the application of basalt weathering material to soil at application sites, and was not applied to bodies of water, e.g., shorelines, beaches, etc.
	EcoEngineers reviewed documents including but not limited to third-party laboratory analytical reports. EcoEngineers confirmed that there was one single application site comprising the Production Facility for the first reporting period, i.e., Batch 1 output audit; and therefore, there is consistent geographic location, climatic conditions, type of applied feedstock, soil type and risk profile related to potentially toxic elements.

Additionality ***Methodology (3.2)*** ***Puro Additionality Assessment Requirements***	EcoEngineers reviewed and cross-checked the Project Description and Puro Addtionality v1.9 v3 document against the requirements of the Puro.earth Additionality Assessment Requirements, Version 2.0, June 7, 2024 (Additionality Requirements), and Methodology. The verifiers independently checked the North Carolina Department of Environmental Quality (NC DEQ) and North Carolina Department of Agriculture and Consumer Services (NC AGR) websites and confirmed the project is not required by current laws or regulations. EcoEngineers reviewed and confirmed that Lithos reported and addressed the carbon additionality to the baseline requirements from Section 2.3 of the Additionality Requirements. Lithos performed simple cost analysis, provided project financials and counter-factual analysis that were based on conservative, project-specific

	baselines, and demonstrated the project would not occur without carbon finance. Lithos was not required to conduct common practice analysis, since the enhanced weathering methodology has not reached a technology readiness level of 8 or 9, according to Table 1 in the Additionality Requirements. In summary, Lithos demonstrated project additionality and met the requirements in Section 3.2 of the Methodology, and the Additionality Requirements.
Prevention of Double-counting & Participation under other GHG programs ***Methodology (3.3)*** ***Rules (3.5)***	Lithos provided a signed Declaration of Representation and Non-Double Claiming, dated November 4, 2024 ("Authorisation of representation ERW.docx"). Lithos Carbon attested that the carbon removal certificates are solely registered in the Puro Registry for the Lithos Carbon US Southeast ERW Deployment, as required by Section 3.3.1 of the Methodology. EcoEngineers is aware that Lithos' US Southeast Enhanced Weathering Project is under validation with another carbon registry, with a crediting period from January 1, 2024 to January 1, 2028. EcoEngineers reviewed and confirmed that there is no overlap/duplication of the application sites (farms) involved in the Lithos projects for Puro and the other registries, in compliance with Clarification Number 019 GR4 regarding Section 3.5.3.1 in the Rules. EcoEngineers checked the Carbon Standard International Global C-Sink Registry and did not find any projects located in the United States. EcoEngineers confirmed there is no double-counting of CO_2 removals from the Lithos Carbon US Southeast ERW Deployment project that is registered with Puro.earth. Lithos provided a file titled "Lithos Sunrock Credit Ownership Acknowledgement.docx.pdf", effective January 1, 2024, that prevents the weathering material supplier(s) from making carbon claims. EcoEngineers confirmed this document satisfies the requirements of Section 3.3.2 of the Methodology. Lithos provided the Grower Agreement, dated December 16, 2024, that related to the Spring 2024 application of basalt. A September 9, 2025 addendum modified the Grower Agreement to prevent the landowner/land-user from rights, title and claims to the carbon removal credits. Based on EcoEngineers' review, Lithos has met the Methodology Section 3.3 requirements for prevention of double-counting.
Social Safeguards ***Methodology (4.3)***	EcoEngineers completed a site visit to the application site, interviewed the landowner, and reviewed the Stakeholder Consultation evidence. EcoEngineers confirmed that the following social safeguard requirements in Methodology Section 4.3 were addressed: 1) Engagement with local communities has occurred in a transparent manner.

	2) Project activities do not occur on culturally sensitive land, and do not cause community displacement. 3) Lithos provided documented information on the effects and concentrations of composition and concentration of trace elements in the basalt weathering material, files titled "(NC) Lithos Overview – Lithos Luncheon.pptx" and "Lithos_spec sheet- North Carolina.pdf" 4) Lithos informed stakeholders of the acceptability limits for contaminants and/or communicated potential health risks and limits for toxic contaminants, in accordance with the requirement of Methodology Section 4.3.4 in the file "Basalt Information Material.pdf" 5) Presentation materials document the information Lithos provided to local stakeholders, and consent from affected stakeholders (i.e., landowners and/or land-users) is documented in agreements and associated addenda/acknowledgements. Separate documents detail the procedures for continued dialogue after the weathering material is applied to the soil, and the policy and procedures in place to address potential grievances, i.e., "Lithos Feedback Mechanism Summary.docx", "Lithos Grievances Procedure.docx". 6) Measures taken for occupational health and safety hazards are documented in "Evidence of safe working environment.docx".
Stakeholder Consultation ***Stakeholder Engagement Requirements***	Lithos provided evidence that stakeholder engagement was conducted for the project activities. Stakeholder engagement began in August 2023, before the Production Facility Registration, to October 2025 inclusive, before beginning the Production Facility Audit, which complies with the Stakeholder Requirements Sections 2.1.2, 2.2.1, and 2.2.2. Stakeholders are given the opportunity to submit continuous feedback via Lithos' website or by phone, in accordance with Stakeholder Requirements Section 2.1.4. Based on EcoEngineers' review, the Stakeholder Engagement Requirements were met, with the following exceptions: • Stakeholder Requirements Section 2.3.4: Invitations did not include a mailing address for the CO_2 Removal Supplier • Stakeholder Requirements Section 2.5.2: Feedback mechanisms did not allow for anonymous feedback
Monitoring Plan ***Methodology (7)***	EcoEngineers confirmed that the following monitoring requirements in Methodology Section 7 were addressed: 1) Soil samples were taken from within the top six inches of soil in homogenous plots of similar soil, topography, vegetation, and history. 2) Measurements of the concentration of major cations were tested by a third-party accredited laboratory using ICP-MS/OES. 3) Soil bulk density, soil texture, and soil organic carbon (though proxy measurements) is monitored.

	4) The monitoring plan covers crop yields, climatic monitoring, control sites, and geochemical assay of the feedstock; including expected or normal values and uncertainty. 5) Control site measurement includes major cations, pH, CEC, soil organic carbon (through proxy measurements), and potentially toxic elements. 6) Sampling meets a density of one sample per hectare.

4.1.1: Environmental Risk Assessment

EcoEngineers received guidance from the Puro.earth team to deviate from Section 4.5.10 of the Puro.earth Enhanced Rock Weathering Methodology 2022. In that regard, EcoEngineers has reviewed the Environmental Risk Assessment and confirmed hazard characterization, exposure characterization, risk characterization, and risk mitigation measures were outlined in accordance with the EPA Regional Screening Levels (RSL) and the North Carolina Department of Environmental Quality.

Lithos outlined Constituents of Potential Concern (COPCs) at regional screening levels (RSL); associated generic human and ecological receptors; potential routes of exposure; concentration of COPCs in the ERW Basalt Material, background (baseline and post application) soil, surface water, and groundwater; and risk mitigation measures.

Soil was sampled from the top six inches. The risk assessment estimates that basalt makes up 2.7% of the field's mass in this layer and assumes a 5–20% runoff range based on the EPA Pesticides Water Model.

EcoEngineers reviewed the mitigation methods for respiratory risk from crystalline silica or other mineral dust and confirmed it complied with OSHA standards. Mitigation methods confirmed on site.

In tables 5 and 6 below, each risk characterization is outlined for human and ecological receptors.

Table 5: Human Risk Characterization

Screening Analysis	COPCs	Potential Risks
Residential Soil Screening Analyses	Lanthanum and zirconium	Exceeds the RSL
Industrial Soil Screening Analyses	Zirconium	Non-cancer hazard
Residential Watershed	Aluminum, arsenic, cobalt, iron, lanthanum, lead, thallium, and zirconium	Non-cancer hazard

Screening Analysis	COPCs	Potential Risks
Groundwater	Antimony, arsenic, cobalt, fluoride, iron, lithium, manganese, nickel, thallium, tungsten, uranium, and zirconium. In addition, antimony, arsenic, barium, lead, selenium, and thallium	Exceeds the RSL

Table 6: Ecological Risk Characterization

	COPCs	Potential Risks
Soil Screening Analysis	Antimony, Barium, Boron, Chromium(III), Lithium, Manganese, Mercury, Thallium, Vanadium, and Zinc	Exceeds the RSL for Plants, Soil invertebrates, Mammals, and Birds
Water Quality Analysis	Chromium(III), lead, and zinc	Potential acute hazards
	Aluminum, chromium(III), copper, lead, manganese, mercury, vanadium, zinc, and zirconium	Exceeds the RSL
	Aluminum, chromium(III), copper, lead, manganese, mercury, vanadium, zinc, zirconium, iron, and lanthanum	Identified by National water quality criteria
	Aluminum, chromium(III), copper, lead, manganese, mercury, vanadium, zinc, zirconium, iron, and lanthanum, nickel, and uranium	Potential Chronic risks

The COPCs identified as potential risks were further analyzed and conclude with general safety by the following manners:

- confirmed zirconium presence exists in the highly stable, insoluble, weakly bioavailable zirconium silicate form;
- confirmed arsenic is below the threshold of 5 ppm;
- confirmed cobalt increase to soil is marginal and in the presence of iron and aluminum oxides, increase cation exchange capacity thus decreasing leaching;

- confirmed arsenic is below the threshold of 18.1 ppm;
- confirmed thallium and selenium are not detected in the basalt or measured soils;
- confirmed barium, fluoride, antimony, lanthanum, tungsten, and uranium concentrations are less than the background soil pre-amendment;
- confirming manganese, iron, aluminum, and nickel is present in the more inert, less toxic, and less bioavailable oxide forms;

EcoEngineers has determined that human and ecological receptors face minimal or no risk, with no significant increase above baseline levels, and overall, they affirm general safety. EcoEngineers also agrees that Lithos' ERW activity "*does not create risk to soils or water*… [and] *does not enhance a present-risk due to greater concentrations of a COPC in natural soils*."

4.1.2: Assessment of the Enhanced Rock Weathering model

EcoEngineers reviewed the Lithos model simulation using guidelines from the Puro.earth Enhanced Rock Weathering Methodology v.2, and references from published scientific literature (Appendix C).

The Lithos model simulation estimates the basalt weathering fraction and associated carbon dioxide removal by a temperature-dependent dissolution rate term of the Arrhenius equation, a baseline kinetic constant converted to discrete geochemical units using specific surface area, and molar mass (Navarre-Sitchler, A., Brantley, S. 2007). A weathering maximum of 90% was used to approximate interstitial clay-bound cations, allowing for a conservative 10% reduction. The model indicates Magnesium, Calcium, and Sodium as the dominant cations released from the basalt feedstock, and thus the weathered fraction. Rainfall is also factored in on a climate-based precipitation rate.

The model simulation utilizes an uncertainty sensitivity analysis of 20% to each key parameter: temperature, rainfall, and specific surface area. The model description compares two recent ERW-based studies (Kantola et al., 2023 and Beerling et al., 2024) that utilize similar framework. Lithos' model is consistent with literature reported values.

The model is in the form of a Python code, which computes total change in cations from the post-spread baseline (BLP) and sampling round 1 (R1) by inputting geochemical batch data, acre information per each deal ID (specific plot), and agricultural correction factors to the Python code. The code converts oxides to elemental concentration, applies pre-processing and agronomic corrections, performs 10,000 resampling iterations to estimate stable median concentrations, scales all treatment-phase cation medians using chromium as the immobile tracer, and computes the change in cations from R1 to the BLP in mean equivalents.

It should be noted that with using waste fines and quantifying carbon sequestration on a post spread basis, the need for counterfactual calculation is theoretically eliminated. Lithos provided further supporting documentation and EcoEngineers verified that the alternative fate scenario of the basalt fines stored in waste piles does not result in counterfactual weathering. The precipitation duration required to infiltrate the pile and reach exfiltration before dissolved CO_2 is consumed -- which is not replenished further as there is no biological respiration -- is statistically improbable.

As outlined in Section 8.2.1(a-c), the model was provided with site-specific data, including information on basalt application, results from soil geochemical and agronomic laboratory tests, and climate conditions.

EcoEngineers noted the model simulation does not include possible secondary effects on dissolution of grains such as fluid supersaturation, clay formation and surface passivation effects; weather rates being affected by pH; and a respect-to-expected-performance in the field as noted in section 8.1 of the Enhanced Rock Weathering Methodology. See the Validation Verification Statement of this report and Appendix E for more information.

Section 5: Verification Findings

5.1: Assessment of life cycle greenhouse gas emissions

EcoEngineers reviewed the inputs to the Lithos LCA model using guidelines from the Puro.earth Enhanced Rock Weathering Methodology v.2, and references from published scientific literature. Each CI reference and emission factor was comprehensively reviewed and are supported by the current scientific consensus. EcoEngineers noted nine discrepancies related to the CI references that were resolved during the audit.

The Lithos LCA covers emissions associated with sourcing the weathering material, transporting the weathering material, applying the weathering material to the soil, and monitoring operations during the weathering phase. Lithos claims zero emissions from processing the weathering material as the basalt feedstock is categorized as waste fines from Sunrock quarry. See Section 4.1 of this report for more information and supporting evidence.

Table 7summarizes the data points and metrics that underwent validation and verification.

Table 7: Summary of LCA Inputs

Level 1 Categories	Activity	Quantity	Unit
Esourcing	Waste Fines	7,117.7	Short-tons
Etransport	Hauling	246,270.69	Short-ton miles
Eapplication	Loading	215.12	Gallons of Diesel
	Spreading	683.80	Gallons of Diesel
	Conservative estimate of Spreader and Loader travel	50.0	Miles
	Agronomic Sampling	72.67	Kilometer metric ton
Eapplication	Geochemical Sampling	232.03	Kilometer metric ton

Level 1 Categories	Activity	Quantity	Unit
	Conservative estimate of Sampler travel	50.0	Miles
	Single Use Paper bags for Sampling	305	#
	Price of Agronomic Testing	$7,018.14	USD
	Price of Geochemical Testing	$21,301.25	USD
Eweathering	Agronomic Sampling	42.89	Kilometer metric ton
	Geochemical Sampling	136.94	Kilometer metric ton
	Conservative estimate of Sampler travel	50	Miles
	Single Use Paper bags for Sampling	180	#
	Price of Agronomic Testing	$4,141.86	USD
	Price of Geochemical Testing	$12,571.23	USD

EcoEngineers confirmed that the plots used for this verification do not overlap other plots used in other carbon registries. Application acres were confirmed through GIS plotting, virtual site visit confirmation, and document review; noting one discrepancy that was resolved during the audit.

To confirm the quantity of waste fines, EcoEngineers sampled 10% of the total scale tickets and hauling BOLs for review, noting one discrepancy that was resolved.

Travel distances from the quarry to the plots and physical sample travel to the agronomic and geochemical laboratories were verified through Google Maps and air travel calculators, noting zero discrepancies.

Individual loading and spreading equipment travel was not directly measured on the field and estimated based on a conservative assumption of the maximum plot radius (at a minimum being

50 miles) multiplied by the number of sites. EcoEngineers reviewed the estimation method and noted zero discrepancies or issues.

Diesel use was not directly measured in field but was estimated from a California Air Resource Board accepted “In-use Off-Road Diesel-Fueled Fleets Regulation” emissions calculation method using horsepower, activity hours, and load-dependent emission factors. EcoEngineers reviewed each input parameter noting zero discrepancies.

Application and weathering sampling size, events, paper bag use, and estimated one-way travel for the sampler vendor was verified through laboratory results, monitoring plan documentation, and GIS files, noting two discrepancies that were resolved.

Agronomic and Geochemical Laboratory costs invoices were reviewed and recalculated, noting zero discrepancies.

5.2: Quantification of CO_2 Removal Certificates (CORCs)

EcoEngineers reviewed the inputs into the CORC Removal Summary using guidelines from the Puro.earth Enhanced Rock Weathering Methodology 2022, and references from published scientific literature.

The CORC Summary Report quantifies CO_2 Removal Certificates from these inputs and calculated values: amortization time; carbon stored; carbon storage losses; emissions associated with basalt sourcing, transportation, and application; and emissions associated with monitoring. Baseline removal and carbon loss to land use change are zero.

Gross Carbon Stored is calculated via the model simulation as explained in Section 4.1.4 of this report. Output results on the change in calcium, magnesium, and sodium from the baseline post spreading and sampling in round one were compared against the inputs to the Summary CORC Reports, noting two discrepancies that were resolved.

The carbon storage losses have fixed percentage-based values for infield non-carbonic acid neutralization, plant uptake, riverine loss, and marine loss. Lithos calculated a 1.83% infield strong acid weathering derived from fertilizer addition. Standard 5%, 5%, and 10% were utilized for the other three loss pathways respectively as noted in Section 6.7.3 (c, e, f) of the Puro Enhanced Rock Weathering Methodology.

EcoEngineers reviewed the CDR potential calculations against the cited Steinour equations and laboratory basalt results on the percent weight of calcium, magnesium, and sodium. Lithos capped the total weathered potential for magnesium, calcium, and sodium at 46.1%, 94.4%, and 100% respectively.

EcoEngineers compared the emissions associated with sourcing, transportation, application, and monitoring against the verified LCA. See Section 5.1 of this report for more information on the inputs used to calculate these emissions. EcoEngineers noted one discrepancy that was resolved.

Table 8 summarizes the CORC certificates calculation that underwent validation and verification.

Table 8: CORC Summary Report Calculation Inputs

	Value	Unit
R_y Gross Carbon Stored	858,207.47	kg CO_2e per event

	Value	Unit
RA_y Emissions associated with application	16,879.03	kg CO_2e per event
M_y Emissiongs associated with Monitoring	1,100.43	kg CO_2e per event
L_y Loss	187,346.69	kg CO_2e per event
CORCs	652.88	tonnes CO_2e

Section 6: Accuracy of Asserted Emission Reductions and Removals

6.1: Qualitative Material Misstatement and Non-Conformities Assessment

EcoEngineers noted four findings related to qualitative material misstatements in the Log of Issues (appendix B). The model simulation did not include possible secondary effects on dissolution of grains such as fluid supersaturation, clay formation and surface passivation effects; weather rates affected by pH; and a respect-to-expected-performance in the field as noted in section 8.1 of the Enhanced Rock Weathering Methodology. Lithos stated they are unable to make necessary changes to include this information. EcoEngineers concluded that since these discrepancies did not affect crediting, the issues were resolved with a qualified positive opinion statement. The other three findings were resolved by Lithos and detailed on the Log of Issues (appendix B).

6.2: Quantitative Material Misstatement Assessment

EcoEngineers noted 15 findings related to quantitative material misstatements in the Log of Issues (appendix B). All issues were resolved and verified as corrected prior to finalizing the report.

Section 7: Conclusions

The EcoEngineers team completed the combined production facility audit and output audit, to a reasonable level of assurance, for the Lithos Carbon US Southeast ERW Deployment for the monitoring period of May 19, 2024 to February 27, 2025 (Batch 1) in accordance with the criteria listed in Section 2.1 of this report.

EcoEngineers noted 18 findings related to supporting document omissions, 20 findings related to discrepancies with the submitted data and inputs to the LCA and CORC Summary Report, and 8 findings related to discrepancies with the facility audit documentation. All findings were resolved except for three findings, for which qualifications were specified. See Appendix B for a detailed breakdown of the types of issues found as well as the qualifying statement below.

In conclusion, Lithos prepared and submitted the GHG Statement to Puro.earth **free of material misstatement**; however, elements of the GHG Statement (i.e., Production Facility Audit Documentation) were **not in conformance** with the requirements of the Puro.earth Enhanced Rock Weathering Methodology 2022 and Stakeholder Engagement Requirements v1.1.

The result is a **Qualified Positive Validation and Verification Statement**. The basis for this statement is detailed in this joint validation verification report, the accompanying validation verification statement (appendix E), and is further supported by the other appendices to this report.

Important Information

This report and its attachments and/or other accompanying materials (collectively, the "Deliverables"), were prepared by TPR Enterprises, LLC, d/b/a EcoEngineers ("EcoEngineers"), an LRQA company, solely for the identified client ("Client") and no other party. Client may use the Deliverables solely for the express purpose for which they were prepared, subject to the assumptions and limitations set forth in them and any underlying scope of work, master services agreement, and/or other governing instrument. Client's use of the Deliverables is subject to certain assumptions and limitations, including the following: the Client is the sole intended user of the Deliverables; all information, summaries and/or conclusions set forth in the Deliverables are provided as of a particular date(s) and, as such, the Deliverables have not been updated to address changes and other matters that may have arisen after such particular date(s); and in preparing the Deliverables, EcoEngineers has reviewed and relied on data, documentation, and other information delivered to it or its affiliates and should such information be erroneous, misleading, or incomplete, in whole or in part, same may impact any conclusions set forth in the Deliverables. Any third party (other than Client) who receives, in whole or part, a copy of the Deliverables, may not rely on it for any purpose.

About EcoEngineers

EcoEngineers, an LRQA company, is a consulting, auditing, and advisory firm with an exclusive focus on the energy transition. From innovation to impact, Eco helps its clients navigate the disruption caused by carbon emissions and climate change. Eco helps organizations stay informed, measure emissions, make investment decisions, maintain compliance, and manage data through the lens of carbon accounting. Its team of engineers, scientists, auditors, consultants, and researchers live and work at the intersection of low-carbon fuel policy, innovative technologies, and the carbon marketplace. Eco was established in 2009 to steer low-carbon fuel producers through the complexities of emerging energy regulations in the United States. Today, Eco's global team is shaping the response to climate change by advising businesses across the energy transition. Recently, Eco was named one of the top ten global sustainable consulting companies by Sustainability Magazine. For more information, visit www.ecoengineers.us.