PROJECT MONITORING REPORT 2

Indigo U.S. Project No.1

Project Name	Indigo U.S. Project No. 1
Project ID	CAR1459 Project
Document Version	v2.2
Document Date	December 14, 2022
Protocol Version	Soil Enrichment Protocol, Version 1.1
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1 Project summary

The Indigo U.S. Project No. 1 (hereafter the "Project") is a greenhouse gas (GHG) emission reduction project, under the Soil Enrichment Protocol, Version 1.1, that aims to reduce net emissions of CO_2, CH_4, and N_2O and enhance soil organic carbon (SOC) sequestration on agricultural lands through the adoption of sustainable agricultural land management activities. Indigo has designed a soil enrichment project with a complete, consistent, transparent, accurate, and conservative quantification of GHG emissions reductions. The following document displays the quantification results from the Project during the respective reporting period and the crediting period, with the inclusion of key elements to support quantification, such as the land management activities included in the Project and approved project variances.

The Project currently includes 427 enrolled growers who carry out agricultural management on 423,740 acres and, as mentioned in the Monitoring Plan v2.1, these fields are located in the Midwest and Southeast agricultural regions of the United States. The total emissions reduced by Indigo's CAR1459 Project over the course of the entire monitoring period are 133,614 tCO2e (with 151,516 tCO2e and -17,902 tCO2e contributing to the total reductions for reversible and non-reversible emissions, respectively).

In order to achieve credit issuance for the current and subsequent reporting periods, the project developer is required to upload quantification results into the Reserve's data submission portal [1] to present the total credits generated, along with credit contributions to the buffer pool for each vintage year of the Project. Table 1 summarizes these results following the format of the Reserve's data submission portal; these results are consistent with the results found in this document and the Data Submission Package.

Table 1: Registry Project Data

Project ID - Name:	CAR1459 Project- Indigo U.S. Project No. 1			
Project Type:	Soil Enrichment			
Protocol Version:	Version 1.1			
Vintage:	2018	2019	2020	2021
Current Reporting Period Start	05/08/2018	01/01/2019	01/01/2020	01/01/2021
Current Reporting Period End	12/31/2018	12/31/2019	12/31/2020	12/31/2021
Project Data				
CO2e Emissions Reductions Credited in Current Reporting Reporting Period (Metric Tons):	4,435	21,158	38,414	47,382
Buffer Pool Contribution (Offset Credits):	762	3,669	6,524	7,723
Totals				
Total Quantity of Offset Credits Issued (per Vintage):	4,435	21,158	38,414	47,382
Quantity of Current Offset Credit Vintage to Buffer Pool:	762	3,669	6,524	7,723
Quantity of Offset Credits to be Deposited to Account:	3,673	17,489	31,890	39,659

This document serves to summarize the Project's quantification results based on the equations listed in Section 5.4 Results of Quantification in the Monitoring Plan v2.1 and Section 5 of the Soil Enrichment Protocol, Version 1.1. To support this summary, Indigo has submitted a Data Submission Package which contains the data and parameters that were necessary to enable credit generation for this Project. For any additional details or inquiries, please contact the Indigo team directly as listed below.

[1] The Reserve's "data submission portal" is Indigo's assumed term for the location where the project developer is requested to submit the crediting results for their projects; this location is the "Project Emissions/Reductions" tab under the respective listed project on the Registry.

Table 2: Project developer contact information

Organization name	Indigo	Indigo
Contact names	Max DuBuisson	McKenzie Walker
Title	Head of Sustainability Policy and Engagement	Associate Manager of Project Development and Verification, Sustainability Policy and Engagement
Address	Indigo Ag. Inc. 500 Rutherford Ave. Boston, Massachusetts 02129	Indigo Ag. Inc. 500 Rutherford Ave. Boston, Massachusetts 02129
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1.1 Project activities

As detailed in Chapter 3 of the Monitoring Plan v2.1, project activities are changes in agricultural land management activities that are expected to increase SOC storage and reduce emissions of CO_2, CH_4, and/or N_2O over the crediting period of a field (listed in Table 3 below). Each project activity whose effect could be quantified through the combination of modeling and default equations, and for which the model is validated, are incentivized by a payment for a reduction in GHG emissions. These payments are quantified through the Soil Enrichment Protocol, Version 1.1 if the respective field met the eligibility requirements outlined in Section 2.2 and Section 3 of the SEP v1.1.

Project activities for currently enrolled fields in the Project resulted in one or more changes to the following practice changes: crop planting and harvesting (e.g., crop rotations and cover crops), tillage or residue management, and/or fertilizer (organic or inorganic) application.

Table 3: List of Project Activities

Practice category	**Practice**
Crop planting and harvesting	New cover crop adoption
	Adding a legume species to existing cover crop
	Longer duration of cover crops through delayed termination
	Longer duration of cover crops through earlier planting
	New crops in rotation
Tillage and residue management	Tillage reduction through number of passes
	Tillage reduction through delayed tilling
	Tillage change to a lower disturbance class instrument
Nitrogen application	Nitrogen reduction
	Change in synthetic nitrogen product with form of N
	Substitute synthetic N with organic amendments

2 Project Deviations and Modifications

Each reporting period may have variation between how the Project was conducted by Indigo and how the SEP v1.1 outlined the methodology. To provide full transparency into this process, Indigo described and justified each scenario where a deviation occurred which included specific guidance in relation to the current reporting period. Further, modifications that have been made to the documentation, quantification or infrastructure supporting the Project are reported below.

2.1 Methodology Deviations

Recall from the Monitoring Plan v2.1, Indigo has not sought approval from the Climate Action Reserve (CAR) for any variances under the Soil Enrichment Protocol, Version 1.1 (SEP v1.1). However, Indigo has submitted proposals to receive written guidance from CAR to clarify protocol language or allow flexibility to accommodate realistic agronomic circumstances that impact this Project. Any proposal that was approved is detailed in `IndigoCarbon_US-1_2021_0067` (as referenced in Section 3.11 Project Deviations and Modifications of the Monitoring Plan v2.1).

2.2 Reporting Modifications

Each reporting period may require modifications to the Project documentation, quantification or infrastructure to align with the current best practices and successfully generate verifiable carbon credits under the Soil Enrichment Protocol, Version 1.1 in an efficient and cost-effective manner. Indigo has detailed how each component changed between the current (second) and previous (first) reporting periods in Table 3.4 of the Monitoring Plan v2.1.

3 Quantification Results

Quantification for each source included in the Project (as defined in Section 4.0 Project Boundary of the Monitoring Plan v2.1) was completed through the use of default equations and biogeochemical modeling.

The data inputs and parameters for the equations used in quantification were collected and derived from multiple sources, namely, direct soil measurements based on random sampling designs. Where initial SOC measurements were available to run the model, the biogeochemical model was used, while non-modeled GHG sources were filtered through the default equations. All equations and parameters used to conduct quantification for this Project are listed in Section 5.4 Results of Quantification of the Monitoring Plan v2.1, while all quantification results, including leakage and uncertainty deductions, are provided in the following sections. Specifically, Table 1 and 11 display the final emissions reductions (credits) achieved by this Project and the remaining tables represent the intermediate (stratum) results following the requirements of the SEP v1.1. In the tables below, the stratum results may not sum to the total results of the Project due to rounding [2].

3.1 Reporting Period Quantification Results

The table below (Table 11) replicates Table 1.1 in Section 1.2 Summary Description of the Project of the Monitoring Plan v2.1 which summarizes the results of the Project by listing the number of growers and fields included, along with the total credit results and buffer contribution. All results displayed in this document and the Data Submission Package were required to achieve the total credit result listed of 111,389.

[2] Indigo rounded toward zero (i.e., truncated) both the stratum-level and project-level (total) results in the tables in Section 3 Quantification Results; however, the Data Submission Package only rounds once the final project-level (total) results have been quantified. At this point all values are rounded down, except for the buffer pool contribution, which is rounded up to err on the side of conservatism. Note the only reported value in Section 3 Quantification Results that is not rounded to an integer is the uncertainty deduction; we report the uncertainty deduction to four significant figures, though additional significant figures were used in calculations.

Table 4: Project summary results for the current (second) reporting period

	Total Growers	**Total Fields**	**Total Field Area (acres)**	**Total Credits (tCO2e)**	**Buffer Pool Contribution (tCO2e)**	**Start Date**	**End Date**
2^{nd} Reporting Period	427	5,083	423,740	111,389	18,678	May 8, 2018	December 31, 2021

3.1.1 Reversible and Non-Reversible Emission Reductions

This section follows the equations listed in Section 5.4.1 Reversible and Non-Reversible Emission Reductions of the Monitoring Plan v2.1.

The results for both reversible and non-reversible emissions reductions, as indicated in SEP Equations 5.2 and 5.6, can be found in Table 5 below. The results in this table require the use of key parameters such leakage and uncertainty deductions; these results are established for the Project and can be found in Subsubsection 3.1.5 Uncertainty and Leakage Deductions.

As described in the Monitoring Plan v2.1, the results in Table 5 indicate whether a reversal occurred in the Project (as required through Equation 5.5 of the SEP v1.1). As ER_{Rev} was not negative in this reporting period, Indigo was not required to compensate for any reversal obligations.

Table 5: Summary table of reversible and non-reversible emission reductions across the entire project

	ER_{Rev} (tCO2e)	$\text{ER}_{\text{NonRev}}$ (tCO2e)	$\Delta CO2\_\text{soil}_t$ (tCO2e)	$\overline{\Delta CH4_{s,t}}$ (tCO2e/acre)	$\overline{\Delta N2O_{s,t}}$ (tCO2e/acre)	$\overline{\Delta CO2\_NR_{s,t}}$ (tCO2e/acre)	$A_{s,t}$ (acres)
Stratum A	13,557	-1,779	13,557	-9.13×10^{-5}	-3.81×10^{-2}	-5.27×10^{-3}	49,998
Stratum B	55,182	-5,481	55,182	-1.61×10^{-4}	-3.48×10^{-2}	-6.96×10^{-3}	159,816
Stratum C	5,137	-317	5,137	0	-1.94×10^{-2}	-2.87×10^{-3}	17,402
Stratum D	13,761	-1,235	13,761	-3.61×10^{-4}	-3.22×10^{-2}	-1.22×10^{-3}	45,744
Stratum E	41,182	-8,622	41,182	-4.47×10^{-4}	-6.30×10^{-2}	-6.51×10^{-3}	150,778
Total	128,822	-17,433	128,822	-81	-18,775	-2,463	423,740

3.1.2 Soil Organic Carbon Stock Change

This section follows the equations listed in Section 5.4.2 Soil Organic Carbon Stock Change of the Monitoring Plan v2.1.

The results for the soil organic carbon stock change, as indicated in SEP Equation 5.3, can be found in Table 6 below. The results in this table require stratum areas (as listed in Table 5) and use a key parameter: the uncertainty deduction, which is established for the Project and can be found in Subsubsection 3.1.5 Uncertainty and Leakage Deductions. Note that soil organic carbon was quantified through the use of biogeochemical modeling initialized by the DayCent-CR model. The first column of table 6 shows the quantity that appears inside the sum in Equation 5.3 of the SEP v1.1:

$$\Delta CO2\_\text{soil}_{s,t} := \left(\overline{\Delta SOC_{s,t}} - \overline{\Delta SOC_{\text{bsl},s,t}}\right) \times A_{s,t} \times (1 - UNC_t). \tag{MR-1}$$

To attribute SOC emission reductions to fields for the purposes of allocating credits to growers and tracking reversals, Indigo developed an emulator of DayCent-CR that could be applied both to fields that were selected for soil sampling (and thus had DayCent-CR results) as well as fields that were not selected for soil sampling (and thus did not have DayCent-CR results) as allowed by SEP v1.1. In particular, Indigo fit a linear regression model that uses practice changes to predict DayCent-CR SOC emission reductions. For consistency, Indigo used emulator predictions of SOC emission reductions for all fields in the Project to make field attributions.

Table 6: Summary of the soil organic carbon stock change for the Project

	$\Delta CO2\_\text{soil}_{s,t}$ (tCO2e)	$\overline{\Delta SOC_{s,t}}$ (tCO2e/acre)	$\overline{\Delta SOC_{\text{bsl},s,t}}$ (tCO2e/acre)
Stratum A	15,107	0.62	0.25
Stratum B	50,081	0.74	0.36
Stratum C	5,146	0.38	0.02
Stratum D	4,943	0.16	0.02
Stratum E	53,545	0.74	0.31

To compute field attributions, attributions to management zones and cultivation cycles were scaled to sum to the total SOC emission reductions estimated per the statistical sample designs (which use DayCent-CR results as input). These attributions were pro-rated to calendar years and summed at the annual level to compute vintage-level credit totals. Indigo rounded these vintage-level totals (by rounding down for reversible credits and irreversible credits and by rounding to the nearest integer for buffer pool contributions, and those results are reflected in Table 1). Finally, the management zone and cultivation cycle attributions were scaled a second time so that they sum to the vintage credit totals, and these attributions were then used to generate field attributions. The right-hand column of Table 7 shows the stratum-level results of those attributions. As a result of rounding credits down at the vintage level, the total of the right-hand column of Table 7 is slightly smaller than the total of the left-hand column, which is erring on conservatism. Note that the variance of the total SOC emissions reduction, and thus the uncertainty deduction, was calculated with the statistical sample design estimates and not the field attributions.

Table 7: Soil organic carbon stock change: Statistical sample design estimates versus field attributions

	Statistical sample design estimate (Eq. (MR-1) and Eq. 5.3 of the SEP) (tCO2e)	Field attribution (tCO2e)
Stratum A	15,107	13,557
Stratum B	50,081	55,182
Stratum C	5,146	5,137
Stratum D	4,943	13,761
Stratum E	53,545	41,182
Total	128,822	128,822

3.1.3 Methane Emission Reductions

This section follows the equations listed in Section 5.4.3 Methane Emission Reductions of the Monitoring Plan v2.1.

The results for methane emission reductions, as indicated in SEP Equation 5.7, can be found in Table 8 below. Note that methane emissions reductions were quantified through the use of default equations for this reporting period.

Table 8: Summary of the methane emission reductions for the Project

	$\overline{\Delta CH4_{s,t}}$ (tCO2e/acre)	$\overline{\Delta CH4\_\text{md}_{s,t}}$ (tCO2e/acre)	$\overline{\Delta CH4\_\text{ent}_{s,t}}$ (tCO2e/acre)	$\overline{\Delta CH4\_\text{bb}_{s,t}}$ (tCO2e/acre)
Stratum A	-9.13×10^{-5}	n/a	n/a	-9.13×10^{-5}
Stratum B	-1.61×10^{-4}	n/a	n/a	-1.61×10^{-4}
Stratum C	0	n/a	n/a	0
Stratum D	-3.61×10^{-4}	n/a	n/a	-3.61×10^{-4}
Stratum E	-4.47×10^{-4}	n/a	n/a	-4.47×10^{-4}

3.1.4 Nitrous Oxide Emission Reductions

This section follows the equations listed in Section 5.4.4 Nitrous Oxide Emission Reductions of the Monitoring Plan v2.1.

The results for nitrous oxide emission reductions, as indicated in SEP Equation 5.16, can be found in Table 9 below. Note that nitrous oxide emissions reductions were quantified through the use of default equations for this reporting period.

Table 9: Summary of the nitrous oxide emission reductions for the Project

	$\overline{\Delta N2O_{s,t}}$ (tCO2e/acre)	$\overline{\Delta N2O\_\text{input}_{s,t}}$ (tCO2e/acre)	$\overline{\Delta N2O\_\text{bb}_{s,t}}$ (tCO2e/acre)
Stratum A	-3.81×10^{-2}	-3.81×10^{-2}	-2.82×10^{-5}
Stratum B	-3.48×10^{-2}	-3.48×10^{-2}	-4.98×10^{-5}
Stratum C	-1.94×10^{-2}	-1.94×10^{-2}	0
Stratum D	-3.22×10^{-2}	-3.23×10^{-2}	1.11×10^{-4}
Stratum E	-6.30×10^{-2}	-6.28×10^{-2}	-1.38×10^{-4}

3.1.5 Uncertainty and Leakage Deductions

This section follows the equations listed in Section 5.4.6 Uncertainty and Section 5.5 Leakage of the Monitoring Plan v2.1.

Table 10 provides the results for the both the leakage and uncertainty deduction of the Project. These results are required by SEP Equations 5.2, 5.3 and 5.6 (as referenced above in Subsubsection 3.1.1 Reversible and Non-Reversible Emission Reductions and Subsubsection 3.1.2 Soil Organic Carbon Stock Change).

Table 10: Summary of uncertainty and leakage deductions

Parameter	Value
Uncertainty deduction (UNC_t)	18.23%
Leakage deduction (LE_t)	0%

3.2 Crediting Period Quantification Results

Table 11: Project summary results for all reporting periods

	Total Growers	**Total Fields**	**Total Field Area (acres)**	**Total Credits (tCO2e)**	**Buffer Pool Contribution (tCO2e)**	**Start Date**	**End Date**
1^{st} Reporting Period	175	1,184	100,371	22,225	3,291	March 30, 2018	December 31, 2020
2^{nd} Reporting Period	427	5,083	423,740	111,389	18,678	May 8, 2018	December 31, 2021