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California Resources Corporation

Verification Report

GHG Scope 3, Category 11
Reasonable Assurance Review
Reporting Year 2024

Prepared by:

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Executive Summary

The California Resources Corporation (CRC) is reporting its Scope 3 sustainability disclosures pursuant to the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. The purpose of this verification service is to determine with **reasonable assurance** whether the facility has collected data, prepared calculations, and submitted, compiled, or reported the data accurately within a 5% materiality threshold.

The third-party verification reviewed CRC's Scope 3 emissions spreadsheet which provided total Scope 3 emissions for each of three Category 11 sold products: crude oil, natural gas liquids (NGLs), and natural gas. The products sold included by CRC in this Scope 3 Category 11 report have been limited to products produced by CRC. Based on our verification review and professional judgment, ALG provides the following verification summary for the RY2024 emissions data report:

> *ALG finds with reasonable assurance that CRC's Scope 3 Category 11 emissions are accurate to within ±5% for each of the following sold products: crude oil, natural gas, and natural gas liquids.*

1.0 Objectives and Criteria

Ashworth Leininger Group is an accredited California Air Resources Board (CARB) Mandatory Reporting Rule (MRR) verification body (EO #: H-25-001), and was commissioned by CRC to perform an independent verification of greenhouse gas emissions associated with Scope 3 Category 11 emissions reported for RY2024. This Reasonable Assurance Review has been performed according to the procedures and standards given in the California Air Resources Board (CARB) AB32 Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95131) as applicable. All references to regulatory citations refer to the CARB MRR, unless otherwise noted. The purpose of this verification service is to determine with reasonable assurance whether the facility has collected data, prepared emissions calculations, and reported emissions accurately. Note that the term Reasonable Assurance Review and verification may be used interchangeably in this report.

1.1 Required Document Contents

The table below lists the required contents of the Verification Report, and refers to the locations where the information can be found in this report:

A detailed description of the facility or entity including all emissions and product data sources and boundaries;	Section 2.0
A detailed description of data acquisition, tracking and emission calculation/product data systems;	Section 3.3
The verification and sampling plans;	Attachments 2 and 3
The detailed comparison of the data checks conducted during verification services for emissions and product data sources;	Attachment 1
The log of issues identified in the course of verification activities and their resolution;	Attachment 4
Any qualifying comments on findings during verification services; and	Section 6.1
The calculations performed for Scope 3 emissions data review.	Section 5.0

2.0 Facility Information

2.1 Locations

A total of six CRC locations are the subject of this verification: Elk Hills, Los Angeles Basin, Sacramento, San Ardo, San Joaquin Valley Basin, and Ventura.

2.2 Facility Contacts/Key Personnel

Team Leader:
Jeff Nobriga, CRC
GHG & Sustainability
1 World Trade Center
Long Beach, CA 90831
(805) 504-6865

Additional Assistance
Marcos Castro, CRC
Abby Meija, CRC
Emily Jones, CRC

2.3 Reporting Period and Verification Cycle

The reports reviewed for this verification include data for **Reporting Year 2024**. The verification is anticipated to be completed in July 2025.

2.4 Scope 3 Category 11 Verification

CRC's Category 11 emissions are comprised solely of direct use-phase emissions because products generated from crude oil, natural gas liquids, and natural gas are combusted. Briefly, the GHG Protocol Corporate Value Chain (Scope 3) Standard[1] includes 15 categories of value chain emissions. CRC has determined that Category 11 – Use of Sold Products – accounts for the largest portion of its Scope 3 emissions and accordingly, has elected to have these emissions undergo a reasonable assurance review.

The scope of ALG's verification includes an independent analysis to confirm an accurate representation of product sold, as well as a review of refinery yields, and emission factors used at each CRC facility. The products sold included by CRC in this Scope 3 Category 11 report have been limited to products produced by CRC. In general, CRC defines the boundary of its reported Scope 3 emissions, and ALG is confirming those emissions are accurate.

A breakdown of the sold products at each of CRC's basins is provided in the table below.

[1] Link, *accessed 7/30/2025*: GHG Protocol Scope 3 Standard

Facility	Sold Product: Crude Oil?	Sold Product: NGLs?	Sold Product: Natural Gas?
Elk Hills Gas Plant	No	Yes	Yes
Los Angeles Basin	Yes	No	Yes
Sacramento	Yes	No	Yes
San Ardo	Yes	No	No
San Joaquin Valley Basin	Yes	Yes	Yes
Ventura	Yes	Yes	Yes

2.5 Facility Boundaries

Because CRC operates large oil and gas basins throughout California, facility boundaries were not considered for this verification. For Scope 3 Category 11 GHG emissions, boundaries were considered in terms of which products and information to include within the CRC's application of Scope 3 Category 11 data. See Section 3.4 above.

3.0 Verification Process and Analysis

3.1 Verification Team

The verification was performed by Lead Verifier Bradley Ripa (EO# H-23-054)[2] with assistance from Teffanie Goh (verifier in training) and Elliott Ripley (EO# H-24-191). The independent review was performed by Irra Core (EO# H-24-025).

3.2 Schedule of Events

Event	Date
Data needs list provided to facility	July 3, 2025
Strategic review performed and Verification and Sampling Plans prepared	July 2025
Data analysis	July 2025
Onsite evaluation/site visits	Not applicable.
Notification of corrective actions required	Throughout verification process
Independent review performed	July 30, 2025
Verification report provided to CRC	July 30, 2025

3.3 Summary of Review

The table below summarizes the lines of inquiry, evidence gathered, and conclusions reached as a result of the verification process. This information is used to support the final verification statement as presented in Section 5.0.

[2] These EO numbers refer to CARB MRR Lead Verifier accreditations.

Section 95131(b)(8)(D) of the CARB MRR, which was used as the framework for this verification, provides the minimum requirements for data checks, as follows:

1. Tracing data in the emissions data report to its origin;
2. Looking at the process for data compilation and collection;
3. Recalculating emission estimates to check the reporter's calculations;
4. Reviewing calculation methodologies used by the reporting entity for conformance with this article; *and*
5. Reviewing meter and fuel analytical instrumentation measurement accuracy and calibration for consistency with the requirements of section 95103(k).

Data checks were performed on the main sources of emissions, in accordance with the Sampling Plan. The required elements above are included among the descriptions of verification activities below.

Description	Summary
Scope 3 Emissions Boundary	CRC's Category 11 emissions are comprised solely of direct use-phase emissions because products generated from crude oil, natural gas liquids, and natural gas are combusted. For the purposes of this verification, CRC determined that the GHG emission from the use of sold crude can be determined using the West Coast (PADD 5) average refinery yield portions published by the U.S. Energy Information Agency (EIA) for 2024[3]. Of the 16 refinery products from crude oil, the following three are assumed not to oxidize: lubricants, asphalt and road oil, and other oils for petrochemical feedstock use[4]. Natural gas and natural gas liquids are assumed to be combusted; CRC has indicated that only natural gas produced by CRC and sold is to be included in their Category 11 emissions (pass-through gas may be accounted for in another Scope 3 category, such as Category 1 or 3, and was not included in this verification). We note that CRC also sells electricity, but emissions from sold electricity are not included in this verification[5]. The scope of ALG's verification includes an independent analysis to confirm an accurate representation of products sold, as well as a review of refinery yields, and emission factors used at each CRC facility. CRC has defined which sold products to consider for the purposes of this verification. ALG is confirming the accuracy of the associated emissions from these sold products.

[3] U.S. Energy Information Administration (EIA), West Coast Region (PADD 5), 2024 Annual Refinery Yields https://www.eia.gov/dnav/pet/pet_pnp_pct_dc_r50_pct_a.htm, Accessed 7/11/2025

[4] We note that assumptions of whether or not a product eventually oxidizes may vary. For example, under the Washington Department of Ecology GHG reporting program, lubricants are assumed to oxidize and are reportable per the regulation (see WA Ecology's, *Interim guidance on reporting and documenting emissions from lubricants under the cap-and-invest program,* Publication Number 23-14-006, October 2023). However, other states such as California and Oregon do not require the reporting of lubricants.

[5] As identified in Table 5.6 of the Corporate Value Chain (Scope 3) Accounting and Reporting Standard, electricity generators do not account for Scope 3 emissions associated with sold electricity because the emissions are already accounted for in Scope 1.

Description	Summary
Emissions and Emissions Sources	Crude Oil As discussed above the crude oil sold is apportioned into specific refined products based on the U.S. EIA West Coast (PADD 5) refinery yields. The specific refinery portions have defined GHG emission factors established in 40 CFR 98 Subpart MM Table MM-1. Natural Gas Emissions from the sale of natural gas are calculated according to Equations C-2a and C-9a of 40 CFR 98 Subpart C. Natural gas sales volumes are multiplied by the annual average HHV determined by monthly natural gas composition samples and subsequently multiplied by the emission factors in Tables C-1 and C-2. Natural Gas Liquids Emissions from the sale of natural gas liquids are multiplied by emission factors from Table MM-1 to obtain CO2 emissions and multiplied by default HHV from Table C-1 and emission factors from Table C-2 of 40 CFR 98 to obtain CH4 and N2O emissions. The sold products considered from each basin are described in Section 2.4 in this verification report.
Accuracy of Sales Data	Product sale volumes are based on financial transaction data, which are not subject to CARB MRR meter accuracy and calibration requirements. Multiple video calls were performed to view sales data and discuss the associated emission calculations.
Appropriateness of Emission Factors	Crude Oil The approach used by CRC to estimate refinery yields is appropriate. The refinery yields are based on well established and public dataset by the EIA. The specific refinery portions have defined GHG emission factors established in 40 CFR 98 Subpart MM Table MM-1[6]. Natural Gas The emission factors used are Equations C-2a and C-9a of 40 CFR 98 Subpart C and are consistent with established industry standards. Natural Gas Liquids The emission factors used are from Table MM-1 and Table C-2 of 40 CFR 98 and are consistent with established industry standards.
Tracing Data to Origin	Crude Oil For each of the basins with crude oil sales LACT meter tickets serve as the primary source of crude oil sales volumes. The LACT meter tickets were reviewed and found to be consistent with the

[6] The 7/1/2011 version of 40 CFR Part 98 was used, as incorporated into the MRR regulation by CARB.

Description	Summary
	summarized financial data used to determine the amount of sold crude oil. For Sacramento the amount of 'crude oil' sold is condensate that is sold and trucked to a crude oil pipeline and assumed to be used as a diluent (see the Log of Issues, Item 5, included in Attachment 4). Accordingly, the emissions from the sold condensate have been assumed to be the same as crude oil for the purposes of this Scope 3 Category 11 verification. CRC's produced and sold crude oil volumes are closely aligned. As CRC's produced crude has already been reported and independently verified the verification team has additional assurance that crude oil emissions are properly accounted for. <u>Natural Gas</u> For Elk Hills and San Joaquin Valley (SJV), the sales volumes are based on data recorded in MMBtu from CRC's accounting database, ProCount. ProCount volumes have been verified using a sample of monthly sales invoices. Note that Elk Hills and SJV are in the same geographical area. Some of the gas produced at SJV is sold from Elk Hills. During the course of verification, multiple updates were made to the Elk Hills and SJV basin natural gas data that substantially changed the volumes sold and therefore the associated emissions. The changes made to the report are outlined in the Log of Issues included in Attachment 4. During our interviews with CRC staff it was discovered that CRC not only produces, uses and sells the natural gas it produces, but that CRC also markets natural gas produced by others and transfers natural gas from basin to basin. ALG relied on CRC to disclose which gas sold was marketed by CRC and not produced by CRC. CRC has elected to only report natural gas it produces and sells and not pass-through gas as this may be accounted for in another Scope 3 category such as Category 1 or 3, which are not included in this verification. ALG did not review CRC marketing contracts and agreements but did review process flow diagrams to determine sales points. ALG reconciled pass through gas volumes to ensure they were reported correctly. For Sacramento, LA, and Ventura, natural gas sales volumes are based on sales meter readings and higher heating values based on third-party gas analysis. For the Ventura and LA basins an average HHV was used to calculate emissions, as opposed to a weighted average HHV as prescribed by 40 CFR Part 98 (see Log of Issues, Attachment 4). The impact on the reported emissions amounted to less than 0.05% for each basin and was therefore found not to be material.

Description	Summary
	The Ventura basin produces natural gas and injects it into the SoCal gas pipeline. A portion of the natural gas injected is used in CRC's SJV operations. CRC pays a transportation fee to use SoCal's pipeline, but CRC maintained ownership of the gas. The natural gas sold from Ventura excludes the gas transferred to and used at SJV basin (as this amount would be considered a Scope 1). For San Ardo all gas produced is consumed onsite. ALG reviewed process flow diagrams provided by CRC to confirm that there are no sales points out of the San Ardo basin (see the Log of Issues Item 2, included in Attachment 4). Natural Gas Liquids For Elk Hills, monthly NGLs invoices were reviewed to confirm the accuracy of the reported sales volumes. For Ventura and SJV Basins, the sales volumes are based on data recorded in MMBtu from CRC's accounting database, ProCount. CRC's produced and sold NGL volumes are closely aligned. As CRC's produced NGLs have already been reported and independently verified the verification team has additional assurance that NGL emissions are properly accounted for.
Completeness of dataset	Multiple staff interviews were conducted to inquire about CRC's operations to confirm the nature and quantity of sold products are accurately represented in the datasets provided to the verification team. Through this process the verification team identified potentially material impacts to the Scope 3 Category 11 emissions. The issues and their resolutions are identified in Attachment 4.
Fuel Meter Accuracy [§95103(k)]	Not applicable. All data reviewed is considered financial transaction data.
Changes in Facility Emissions [§95104(f)]	Not applicable. This is the first year of verification for Scope 3 Category 11 emissions.

3.4 Measurement Device Accuracy Requirements and Calibrations

Not applicable. CRC relies on financial transaction data to estimate Scope 3 Category 11 emissions.

3.5 Missing Data Substitution

All data reviewed was sales data; no missing data substitution was necessary.

4.0 Emissions Data Check Summary

The verification of the facility's RY 2024 Scope 3 Category 11 emissions report focused on the accurate collection of data and quantification of emissions as implemented by the facility in accordance with the reporting requirements of the EPA Mandatory Greenhouse Gas Reporting Regulation (40 CFR Part 98) and the Greenhouse Gas Protocol Corporate Standard, which were used as the verification standard for this evaluation. Reported emissions are summarized in the table below:

Emissions Data Check Summary

Source	Operator Reported (MT CO_2e)	Verifier Calculated (MT CO_2e)	Discrepancy (MT CO_2e)	% Difference
Crude Oil	20,315,911.1	20,317,744.7	-1,833.6*	0.0%
Natural Gas	1,708,808.12	1,709,291.03	-482.91**	0.0%
Natural Gas Liquids	1,063,639.29	1,063,637.57	1.72	0.0%
Total	23,088,358.49	23,090,673.26	-2,314.77	0.0%

*Discrepancy is due to the reporter using produced crude oil volumes instead of sold for the LA, Sacramento, and SJV Basins.

**Discrepancy is due to the reporter using an average HHV to calculate emissions, as opposed to a weighted average HHV as prescribed by 40 CFR Part 98.

5.0 Verification Statement

ALG finds with reasonable assurance that CRC's Scope 3 Category 11 emissions are accurate to within ±5% for each of the following sold products: crude oil, natural gas, and natural gas liquids.

6.0 Confidentiality Statement

All members of the verification team are bound by the terms of non-disclosure included in the employment/sub-contractor agreements.

7.0 List of Attachments

No.	File Name	Document Type
1	Verification Analysis	Electronic
2	Verification Plan	Electronic
3	Sampling Plan	Electronic
4	Log of Issues	Electronic
5	Base Documentation (CRC Scope 3 Spreadsheet)	Electronic
6	Reasonable Assurance Statement	Electronic
7	Relevant Correspondence and Other Information	Electronic