



Perdure Petroleum, LLC
Shidler Unit – Subpart RR Annual Report
Reporting Period: 1/1/2020 – 12/31/2020

Annual Report: 40 C.F.R. 98.446(Subpart RR)

Company Name: Perdure Petroleum, LLC
Company Address: 1101 Central Expressway South, Suite 150, Allen, Texas 75013
GHGRP: 553337
Facility Name: North Burbank Unit
Facility Address: 373 Phillips Road, Shidler, Oklahoma 74652
Reporting period: January 1, 2020 – December 31, 2020
Date of Submittal: March 26, 2020

Please contact the following for information regarding this report:

Contact Name: David D'Souza
Phone Number: (832) 300-8218
Email Address: ddsouza@perdurepetro.com

Certification by Designated Representative:

The information and statements in this report are true, complete, and accurate to the best of my knowledge.

Designated Representative

Carl Thunem, Director Health, Safety and Environmental

Executive Summary:

North Burbank Unit monitoring efforts by Perdure Petroleum, LLC began January 1, 2020 pursuant to the Monitoring, Reporting and Verification (MRV) plan. The final MRV plan was approved by the EPA effective December 21, 2020. The MRV plan identification number is 1010975-1.

Summary of Monitoring Activities:

Perdure Petroleum, LLC's program for monitoring potential leak pathways in the North Burbank Unit including detection methods and locations is summarized below.

Leakage Pathway	Detection Method	Monitoring Location
Surface Equipment	SCADA Surveillance Visual Inspection Fixed H ₂ S Monitors Personnel H ₂ S Monitors	Production wellhead thru recycle facility to injection wellhead
Wells	SCADA Surveillance Visual Inspections MIT Personal H ₂ S Monitors	Wellhead to formation
Formation	Production well performance	Producing wells located down structure from CO ₂ flood

- 1) A narrative history of the monitoring efforts conducted over the previous calendar year, including a listing of all monitoring equipment that was operated, its period of operation, and any relevant tests or surveys the were conducted.**

Perdure Petroleum, LLC collected flow rates, pressure, and gas composition data from the North Burbank Unit as part of ongoing operations. CO₂ injection wells were monitored through continual, automated flow and pressure measurements in the injection zone, monitored annular pressure in wellheads, and daily well inspection and maintenance. A commercial custody transfer meter was used to measure CO₂ volume received. CO₂ recycled volumes were measured at each compressor utilizing V Cone meters at each compressor. These meters are measured continuously, and data collection is automated thru the local SCADA system. Fluid compositions were measured to determine mass flow rates.

Perdure used 40 C.F.R. Part 98 Subpart W and engineering estimates to estimate surface leakage, emissions from equipment leaks, and vented emissions from surface equipment in the North Burbank Unit.

- 2) A description of changes to the monitoring program that you concluded were not material changes warranting submission of a revised MRV plan under 98.448(d).**

Perdure Petroleum, LLC has reviewed the MRV plan and concluded there are no non-material changes to the EPA approved MRV Plan for the 2020 reporting period.

- 3) A narrative history of any monitoring anomalies that were detected in the previous calendar year and how they were investigated and resolved.**

Perdure Petroleum, LLC has determined that no anomalies were detected in the previous calendar year.

- 4) A description of any surface leakages of CO₂, including a discussion of all methodologies and technologies involved in detecting and quantifying the surface leakages and any assumptions and uncertainties involved in calculating the amount of CO₂ emitted.**

Field personnel routinely visited the surface facilities and conducted visual inspections during the reporting year. In addition, Perdure Petroleum, LLC used personal H₂S monitors

to detect the potential small leaks that would trigger an immediate response. During the reporting year routine inspection of active and abandoned well locations discovered three minor surface leaks via abandoned wellbores. After regulatory approval was granted workover crews were immediately dispatched to re-plug these wells. The leaked mass of CO₂ was estimated by volumetric computations of the near atmospheric CO₂ bubbles and their rate assuming the same gas composition as the produced CO₂ gas composition and the total leak duration. The total volume was estimated at 22.9 MT for the 2020 reporting period.