STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION

APPLICATION OF REGENERATION ENERGY CORP. FOR APPROVAL OF THE BLUE MOON STATE UNIT, EDDY COUNTY, NEW MEXICO.

CASE NO. 20634

AMENDED AFFIDAVIT OF MARTIN JOYCE

Martin Joyce, being first duly sworn on oath, state as follows:

1. My name is Martin Joyce. I reside in Roswell, NM. I am a petroleum geologist employed by Regeneration Energy Corp. ("Regeneration") and responsible for the formation of the proposed Blue Moon State Unit ("the Unit") comprised of the following 640 acres, more or less, of State lands situated in Eddy County, New Mexico ("Unit Area"):

TOWNSHIP 26 SOUTH, RANGE 27 EAST, NMPM

Section 16: All.

2. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum geology. My credentials as an expert in petroleum geology have been accepted by the Division and made a matter of record.

3. Regeneration, the designated Unit Operator in the Blue Moon State Unit Agreement, proposes to test all formations from the surface to the base of the Delaware formation (approximately 5,732 feet) ("Unitized Interval").

4. The initial well in the Unit Area has been drilled at a standard location in the SW/4 SW/4 of Section 16 to evaluate the Williamson Sand, which is the lower-most sand of the Cherry Canyon of the Delaware formation, in the proposed Unitized Interval.

5. If the initial well is successful, additional wells will be drilled in the Unit Area.

6. **Exhibit 8-A** is a location map showing the proposed Unit location in Section 16,

together with all existing wells and locations.

7. **Exhibit 8-B** is a Structure Map on top of the Williamson Sand that shows the interval to strike nearly due north/south while dipping approximately 100 feet per mile to the east. Open hole and sample logs from offsetting vertical tests that targeted underlying Delaware objectives, suggest the Williamson Sand extends across the Unitized Interval and is potentially hydrocarbon productive across the Unit Area.

8. **Exhibit 8-C** is a Stratigraphic Cross-Section Locator Map with the west to east line of section denoted in blue from A to A'. This map includes all known wells with geophysical or mud logs in the area.

9. **Exhibit 8-D** is Stratigraphic Cross-Section A-A' for the wells denoted from west to east in blue on Exhibit 8-C. The cross-section depicts the gross thickness development of the objective Williamson Sand from offsetting wells penetrating the objective interval in the area. The penetrations also document the thickness, lateral distribution, and overall continuity of the objective interval in the Unit Area and its immediate vicinity.

10. **Exhibit 8-E** is a Stratigraphic Cross-Section Locator Map with the north to south line of section also denoted in blue from B to B'. This map includes all known wells with geophysical or mud logs in the area.

11. **Exhibit 8-F** is Stratigraphic Cross-Section B-B' for the wells denoted from north to south in blue on Exhibit 8-E. This cross-section also depicts the overall thickness development of the objective Williamson Sand within the proposed Unit area as well as from offsetting well penetrations of the objective interval outside the area. The penetrations also document the thickness, lateral distribution, and overall continuity of the objective interval in the Unit Area and its immediate vicinity.

12. I observe no evidence of faulting, pinch-outs, or other geologic impediments that will prevent this acreage from contributing to the overall production from the unitized interval. In my opinion, the unitized interval is continuous across the Unit Area.

13. **Exhibit 8-G** is the Williamson Gross Sand Isopach Map. This map documents the thickness, lateral distribution, and overall continuity of the Williamson Sand target interval in the Unit Area and its immediate vicinity. This Gross Sand Map reflects an overall trend of thickening from the northwest to the east/southeast. Deposition appears to be backfilling within a submarine canyon scour by reservoir quality sands, the trapping mechanism being updip stratigraphic thinning.

14. **Exhibit 8-H** is a Type Log for the Delaware formation from the Cluster State Com #4H (API No. 30-015-40481), which is currently producing from the Bone Spring formation underlying Section 16, Township 26 South, Range 27 East. The base of the Delaware occurs at a stratigraphic equivalent of 5732 feet in the Cluster #4H well, as reflected in open hole logs for that well, and at the stratigraphic equivalent of approximately 5720 feet in the Cluster #5H well, as determined by geologic mapping. There are no wells currently producing from the Williamson Sand interval in the immediate vicinity of the Unit Area that I am aware of. A re-entry of the Hay B Fed 1 (API No. 30-015-23935) (9-26S-27E) on 9/5/2007 recovered only 12BO and 4197BW from the Williamson sand, and it was re-plugged as of 10/22/2009.

15. In my opinion, the Unit covers an area that can be effectively and efficiently developed and formation of this Unit will result in the efficient recovery of hydrocarbons.

16. In my opinion, approval of the Blue Moon State Unit and the development of the Unit Area pursuant to a unit plan is in the best interest of conservation, the prevention of waste, and the protection of correlative rights.

17. **Exhibits 8-A** through **8-H** were prepared by me or under my direction and supervision.

FURTHER AFFIANT SAYETH NOT.

STATE OF NEW MEXICO)
) ss.
COUNTY OF Chaves)

MARTIN JOYCE

SUBSCRIBED AND SWORN before me on this 15th day of July 2019.

Notary Public

My Commission Expires:

07-05-2021

OFFICIAL SEAL
Carolyn Vandermee
NOTARY PUBLIC-State of New Mexico
My Commission Expires 7-5-2021