

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

**APPLICATION OF GOODNIGHT MIDSTREAM
PERMIAN, LLC FOR APPROVAL OF
SALTWATER DISPOSAL WELLS
LEA COUNTY, NEW MEXICO**

CASE NOS. 24123

**APPLICATIONS OF GOODNIGHT MIDSTREAM
PERMIAN, LLC FOR APPROVAL OF
SALTWATER DISPOSAL WELLS
LEA COUNTY, NEW MEXICO**

CASE NOS. 23614-23617

**APPLICATION OF GOODNIGHT MIDSTREAM
PERMIAN LLC TO AMEND ORDER NO. R-22026/SWD-2403
TO INCREASE THE APPROVED INJECTION RATE
IN ITS ANDRE DAWSON SWD #1,
LEA COUNTY, NEW MEXICO.**

CASE NO. 23775

**APPLICATIONS OF EMPIRE NEW MEXICO LLC
TO REVOKE INJECTION AUTHORITY,
LEA COUNTY, NEW MEXICO**

CASE NOS. 24018-24027

**GOODNIGHT MIDSTREAM'S MOTION TO STRIKE EMPIRE'S REBUTTAL
WITNESS DISCLOSURE**

Goodnight Midstream Permian, LLC ("Goodnight Midstream"), through undersigned counsel, respectfully submits this motion to strike Empire New Mexico LLC's Rebuttal Witness Disclosure filed on January 6, 2025. For the reasons stated, the testimony identified for Empire's additional rebuttal witnesses identifies as rebuttal testimony that was required to be presented as part of Empire's case in chief because it falls squarely within what Empire must establish as part of its initial evidentiary burden. The Commission should grant this motion and strike Empire's Rebuttal Witness Disclosure or, in the alternative, require Empire to file an amended Rebuttal

Witness Disclosure that is limited to testimony that is rebuttal in nature and not merely cumulative evidence that Empire has the burden of proving in its case in chief.

INTRODUCTION

After the Commission vacated the September 2024 consolidated hearing in these matters and rescheduled it for February 2024, the hearing examiner assigned to help support the Commission in these matters issued an Amended Prehearing Order on December 5, 2024, setting out revised deadlines. *See* Amended PHO, attached as **Exhibit A**. Empire timely filed its Rebuttal Witness Disclosure, attached as **Exhibit B**. However, the subject matter of the testimony for Empire's additional witnesses does not qualify as rebuttal testimony.

In its rebuttal disclosure, Empire proposes to provide new testimony through two additional witnesses on a new oil in place analysis and a new petrophysical model. *See* Exhibit B. Empire has already identified two witnesses who provided testimony on oil in place calculations and a petrophysical model as part of Empire's case in chief through direct testimony. *See* Empire Exhibit G (McShane) and Empire Exhibit F (Dillewyn). On its face, therefore, Empire's proposed rebuttal testimony goes to Empire's case in chief and should have been presented as part of Empire's direct witness testimony in support of its initial evidentiary burden. It is not rebuttal; instead, it is either cumulative of Empire's direct witness testimony or, at worst, it presents an entirely new petrophysical analysis and an entirely new oil in place calculation that will conflict with Empire's direct testimony and that no party will have previously seen with approximately only two weeks before the evidentiary hearing.

The Commission should strike Empire's Rebuttal Witness Disclosure or require Empire to file an amended Rebuttal Witness Disclosure that is limited to testimony that is rebuttal in nature.

ARGUMENT

I. Empire's Rebuttal Witness Disclosure Describes Testimony that Goes to its Initial Burden of Proof in its Case in Chief and, Therefore, is not Rebuttal Testimony.

Empire timely filed its Rebuttal Witness Disclosure, but rather than disclosing rebuttal witnesses—to refute, contradict, or explain evidence presented by Goodnight's witnesses—Empire disclosed witnesses who will provide testimony on issues that Empire has the initial burden of establishing beyond a preponderance of the evidence in its case in chief. Because Empire is required to present this testimony and evidence to meet its burden of proof, the proposed evidence and testimony is not rebuttal. Empire's rebuttal disclosure should be stricken or, in the alternative, Empire should be required to file an amended rebuttal disclosure that is limited to testimony that is rebuttal.

In its direct testimony, filed on August 26, 2024, Empire submitted the testimony of Joseph A. McShane, filed as Empire Exhibit G, and Galen Dillewyn, filed as Empire Exhibit F. Mr. McShane is a petroleum geologist with Empire. His testimony includes an analysis and calculation of Empire's estimate for oil in place within the San Andres to support Empire's contention that the San Andres contains an economic residual oil zone. His conclusions and oil-in-place calculations are based on the petrophysical model and calculated oil saturations prepared by Mr. Dillewyn. Mr. Dillewyn is seeking to be qualified as an expert in petrophysics. His testimony and exhibits set out a petrophysical model and analysis he prepared to calculate oil saturations from well logs in the EMSU and upon which Mr. McShane relies. This testimony is necessary to meet Empire's evidentiary burden to establish that there are purportedly economic hydrocarbons in the San Andres formation within the EMSU. Empire acknowledges that such evidence is part of its initial burden of proof. *See, e.g.,* Empire Motion to Clarify Scope, filed August 26, 2024; *see also* Empire Reply in Support of Motion to Clarify, filed Sept. 19, 2024.

After receiving direct testimony in support of Goodnight's initial evidentiary burden in its case in chief, which presented Goodnight's analysis of the oil in place and petrophysics, Empire submitted revised testimony for Mr. McShane and Mr. Dillewyn. Empire's revised testimony is based on a revised petrophysical model Mr. Dillewyn prepared at Empire's direction. The petrophysical model was revised by changing certain petrophysical input parameters based on cored log data in the EMSU that had been available but not initially analyzed by Empire. The revised testimony was served and filed with the Commission on December 6 and December 4, respectively. Empire did not seek leave to file its revised testimony and did not provide a basis or justification for filing revised testimony, such as explaining what was changed, why it was changed, or the timing for the revisions.¹ In short, Empire's revised testimony substantially reduced Empire's estimate of the oil in place in the San Andres by about 56% on average—ranging from a decrease of about 40% to more than 80%, depending on the well.

Approximately a month after submitting revised testimony on oil in place and a revised petrophysical model, Empire filed its Rebuttal Witness Disclosure on January 6, 2025, identifying two new witnesses—Ryan Bailey and Scott Birkhead. Empire states that Mr. Bailey “is expected to testify regarding, *inter alia*, . . . San Andres oil-in place volumes for the Eunice Monument South Unit (“EMSU”) in light of petrophysical modeling developed by OPS Geologic and Scott Birkhead.” See Exhibit B (emphasis added). Mr. Birkhead “is expected to testify regarding, *inter alia*, log calculated oil saturation values in light of petrophysical modeling developed by Mr. Birkhead together with OPS Geologic.” See *id.* (emphasis added). In other words, Empire is proposing to present two new witnesses, presenting evidence and

¹ The parties have conferred on this issue and have agreed to file notices of revised testimony for any direct testimony that has been revised.

testimony on the exact same topics and issues that were addressed in its original testimony and revised testimony submitted as part of its case in chief. On its face, Empire's Rebuttal Witness Disclosure is improper and does not identify rebuttal testimony.

Rebuttal evidence is not a reiteration of evidence presented in the case in chief, but is evidence offered in reply to new matters that could not have been reasonably anticipated in advance of the hearing or to refute, contradict, criticize, or explain evidence presented by the opposing party as part of its case in chief. *See State v. Manus*, 1979-NMSC-035, ¶ 38, 597 P.2d 280 (internal quotations and citation omitted) (holding that because "rebuttal evidence is not simply a reiteration of evidence in chief but consists of evidence offered in reply to new matters" a party is therefore "not allowed to withhold substantial evidence supporting any of the issues which it has the burden of proving in its case in chief merely in order to present this evidence cumulatively at the end of [the other party's] case."); *Wirth v. Commer. Res., Inc.*, 1981-NMCA-057, ¶ 20, 630 P.2d 292 (holding that rebuttal witnesses are those persons "the necessity of whose testimony reasonably cannot be anticipated before the time of trial.").

The testimony and evidence Empire intends to present through Mr. Bailey and Mr. Birkhead is nothing more than a reiteration of Empire's direct testimony presented through Mr. McShane and Mr. Dillewyn. As disclosed, Mr. Birkhead intends to develop a new and different petrophysical model and analyses than Mr. Dillewyn with different log-based oil saturation calculations. Similarly, Mr. Bailey intends to develop a new oil-in-place calculation that is different than the one prepared by Mr. McShane because, unlike Mr. McShane's analysis, his will be based on the petrophysical analysis prepared by Mr. Birkhead. The analyses of Mr. Bailey and Mr. Birkhead will be all new work that reiterates or is cumulative of Empire's direct

testimony or it will be in conflict with the recently filed revised testimony. Either way, it is not proper rebuttal testimony.

Goodnight counsel immediately attempted to confer with Empire counsel over this issue to determine how Empire's proposed rebuttal testimony could qualify as rebuttal. See email from A. Rankin, dated January 7, 2025, attached as Exhibit C. Empire counsel stated the proposed testimony is being offered to refute Goodnight's petrophysical analysis. However, the proposed testimony is not a reply to new matters that could not have been reasonably anticipated before the hearing because Empire has included oil in place and petrophysical analyses and testimony in since it first filed testimony in these cases in November 2023. Nor is it evidence or testimony intended to refute, contradict, criticize, or explain evidence presented by Goodnight's experts because rather than pointing out alleged flaws or problems with Goodnight's analyses, Empire is proposing to present entirely new analyses. The fundamental problem is that Empire's proposed rebuttal is testimony that should have been included in Empire's direct testimony as part of its case in chief. It is not, under any reasonable definition, rebuttal testimony.

Allowing Empire to proceed to file entirely new analyses on oil in place and petrophysics that should have been included in its case in chief is likely to result in severe prejudice to Goodnight. Empire has already substantially revised its oil in place and petrophysical analyses—more than three months after the deadline to file direct testimony. Allowing Empire to do so again under the pretext that it is rebuttal testimony—with only approximately two weeks before the evidentiary hearing will begin—will not provide Goodnight time to review, assess, or respond to Empire's entirely new analyses before the hearing. That is patently unfair. Empire should be required to play by the rules and be limited to rebuttal testimony that is truly rebuttal,

and not be allowed to introduce entirely new analyses on issues that were required to be addressed in their case in chief.

CONCLUSION

For the reasons stated above, the Commission should grant this motion and strike Empire's Rebuttal Witness Disclosure or, in the alternative, require Empire to file an amended Rebuttal Witness Disclosure that is limited to testimony that is rebuttal in nature.

DATED: January 15, 2025

Respectfully submitted,

HOLLAND & HART LLP

/s/ Adam G. Rankin

By: _____

Michael H. Feldewert
Adam G. Rankin
Nathan R. Jurgensen
Paula M. Vance
Post Office Box 2208
Santa Fe, NM 87504
505-998-4421
505-983-6043 Facsimile
mfeldewert@hollandhart.com
agrankin@hollandhart.com
nrjurgensen@hollandhart.com
pmvance@hollandhart.com

**ATTORNEYS FOR GOODNIGHT MIDSTREAM
PERMIAN, LLC**

CERTIFICATE OF SERVICE

I hereby certify that on January 15, 2025, I served a copy of the foregoing document to the following counsel of record via Electronic Mail to:

Ernest L. Padilla
Padilla Law Firm, P.A.
Post Office Box 2523
Santa Fe, New Mexico 87504
(505) 988-7577
padillalawnm@outlook.com

Dana S. Hardy
Jaclyn M. McLean
HINKLE SHANOR LLP
P.O. Box 2068
Santa Fe, NM 87504-2068
(505) 982-4554
dhardy@hinklelawfirm.com
jmclean@hinklelawfirm.com

Sharon T. Shaheen
Daniel B. Goldberg
Spencer Fane LLP
Post Office Box 2307
Santa Fe, New Mexico 87504-2307
(505) 986-2678
sshhaheen@spencerfane.com
dgoldberg@spencerfane.com
ec: dortiz@spencerfane.com

Attorneys for Empire New Mexico, LLC

Miguel A. Suazo
BEATTY & WOZNIAK, P.C.
500 Don Gaspar Ave.
Santa Fe, NM 87505
Tel: (505) 946-2090
msuazo@bwenergylaw.com
sgraham@bwenergylaw.com
kluck@bwenergylaw.com

Attorneys for Pilot Water Solutions SWD, LLC

Jesse Tremaine
Chris Moander
Assistant General Counsels
New Mexico Energy, Minerals, and
Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
(505) 741-1231
(505) 231-9312
jessek.tremaine@emnrd.nm.gov
chris.moander@emnrd.nm.gov

Attorneys for New Mexico Oil Conservation Division

Matthew M. Beck
PEIFER, HANSON, MULLINS & BAKER,
P.A.
P.O. Box 25245
Albuquerque, NM 87125-5245
Tel: (505) 247-4800
mbeck@peiferlaw.com

Attorney for Rice Operating Company and Permian Line Service, LLC

Adam G. Rankin
Adam G. Rankin

EXHIBIT A

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

APPLICATION OF GOODNIGHT
MIDSTREAM PERMIAN, LLC TO AMEND
ORDER NO. R-7767 TO EXCLUDE THE SAN
ANDRES FORMATION FROM THE EUNICE
MONUMENT OIL POOL WITHIN THE
EUNICE MONUMENT SOUTH UNIT AREA,
LEA COUNTY, NEW MEXICO.

CASE NO. 24277

APPLICATION OF GOODNIGHT
MIDSTREAM PERMIAN, LLC TO AMEND
ORDER NO. R-7765, AS AMENDED TO
EXCLUDE THE SAN ANDRES FORMATION
FROM THE UNITIZED INTERVAL OF THE
EUNICE MONUMENT SOUTH UNIT,
LEA COUNTY, NEW MEXICO.

CASE NO. 24278

APPLICATIONS OF GOODNIGHT MIDSTREAM
PERMIAN, LLC FOR APPROVAL OF
SALTWATER DISPOSAL WELLS
LEA COUNTY, NEW MEXICO

CASE NOS. 23614-23617

APPLICATIONS OF EMPIRE NEW MEXICO LLC
TO REVOKE INJECTION AUTHORITY,
LEA COUNTY, NEW MEXICO

CASE NOS. 24018-24027

APPLICATION OF GOODNIGHT MIDSTREAM
PERMIAN LLC TO AMEND ORDER NO. R-22026/SWD-2403
TO INCREASE THE APPROVED INJECTION RATE
IN ITS ANDRE DAWSON SWD #1,
LEA COUNTY, NEW MEXICO.

CASE NO. 23775

PRE-HEARING ORDER

This Pre-Hearing Order follows the status conference held on September 23, 2024, before the Oil Conservation Commission. The above-referenced matters shall proceed as follows:

1. These matters will be heard, and evidence presented, starting on February 24, 2025, beginning at 9:00 A.M., and continuing thereafter on consecutive business days until complete, unless and until otherwise ordered. Opening arguments shall be heard on February 20, 2024.

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Case Nos. 24277-24278, 23614-23617, 24018-24027, 23775

Order No. R-XXXXXX

2. The parties, having disclosed their direct witnesses and having filed their direct witness testimony and exhibits, shall disclose their additional witnesses for rebuttal, each rebuttal witness's particular area of expertise, and identify the subject matter of each rebuttal witness's anticipated testimony, by Monday, January 6, 2025.

3. The last day to submit requests for subpoenas, including subpoenas for witness depositions in advance of hearing, shall be December 16, 2024.

4. Discovery motions may be filed, and if filed, motions to compel shall be filed on or before Thursday, January 9, 2025. Responses will be due by Monday, January 20, 2025. Replies will be due by Monday, January 27, 2025. Rulings shall be made pursuant to 19.15.4.16.C NMAC.

5. Dispositive motions shall be filed no later than Thursday, January 23, 2025. Responses will be due ten business days after service of the dispositive motion and, in any event, no later than Thursday, February 6, 2025. Replies will be due seven business days after service of the response and, in any event, no later than Thursday, February 13, 2025. The Commission shall hear all outstanding motions at its February 20, 2025, regularly scheduled meeting.

6. Pre-hearing statements shall be filed on Thursday, February 6, 2025, and shall include a list of issues common to all applications and a list of issues unique to any specific application or sub-group of applications.

7. Rebuttal testimony and exhibits shall be filed on Thursday, February 6, 2025. The parties agree to provide copies of documents that are (1) within the respective party's possession, custody, or control, (2) upon which each party (including their witnesses) relied in preparation for the merits hearing, and (3) referenced in the rebuttal testimony and exhibits within one week of a request for such documents, without a subpoena.

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Case Nos. 24277-24278, 23614-23617, 24018-24027, 23775

Order No. R-XXXXXX

8. Objections to testimony and exhibits shall be filed no later than Thursday, February 13, 2025.

9. Hearing, if any, on any unresolved motions shall be held at the start of the evidentiary hearing.

10. Except as to dates certain provided herein, all periods shall be calculated according to Rule 1-006 NMRA. Extensions to the foregoing deadlines and dates, including hearing continuances, may be granted by the Division Director, by agreement of the parties or on a motion for good cause shown.

DONE at Albuquerque, New Mexico on the 5th day of December, 2024.

**STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION**

/s/ Rip Harwood

Rip Harwood, Hearing Officer

EXHIBIT B

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

APPLICATION OF GOODNIGHT
MIDSTREAM PERMIAN, LLC FOR APPROVAL
OF A SALTWATER DISPOSAL WELL, LEA COUNTY,
NEW MEXICO

CASE NO. 24123
ORDER NO. R-22869-A

APPLICATIONS OF GOODNIGHT MIDSTREAM
PERMIAN, LLC FOR APPROVAL OF
SALTWATER DISPOSAL WELLS
LEA COUNTY, NEW MEXICO

CASE NOS. 23614-23617

APPLICATION OF GOODNIGHT MIDSTREAM
PERMIAN LLC TO AMEND ORDER NO. R-22026/SWD-2403
TO INCREASE THE APPROVED INJECTION RATE
IN ITS ANDRE DAWSON SWD #1,
LEA COUNTY, NEW MEXICO.

CASE NO. 23775

APPLICATIONS OF EMPIRE NEW MEXICO LLC
TO REVOKE INJECTION AUTHORITY,
LEA COUNTY, NEW MEXICO

CASE NOS. 24018-24020, 24025

EMPIRE NEW MEXICO LLC'S REBUTTAL WITNESS DISCLOSURE

In accordance with paragraph 2¹ of the New Mexico Oil Conservation Commission's ("Commission") Pre-Hearing Order issued on December 5, 2024, Empire New Mexico LLC ("Empire") hereby discloses the following additional witnesses who may be called to provide rebuttal testimony at the evidentiary hearing beginning February 24, 2025. Empire reserves the right to offer previously identified witnesses in rebuttal and will provide their rebuttal statements in accordance with paragraph 7 of the Pre-hearing Order.

¹ Paragraph 2 of the December 5, 2024 Pre-Hearing Order states that the parties "shall disclose their additional witnesses for rebuttal, each rebuttal witness's particular area of expertise, and identify the subject matter of each rebuttal witness's anticipated testimony, by Monday, January 6, 2025."

1. Ryan Bailey

Mr. Bailey is a geologist employed with OPS Geologic, LLC (“OPS Geologic”), where he serves as Vice-President of Geoscience. Mr. Bailey has 17 years of experience in the upstream oil and gas industry, including time managing operations in the most successful US onshore plays in the last two decades. He began his career at Anadarko Petroleum where he worked as an Asset Manager and Geoscience Manager. More recently, Mr. Bailey was the Vice President of Geoscience at JBL Energy Partners. Mr. Bailey received his Bachelor of Science and Master’s of Science in geology from the University of Alabama. For further details regarding Mr. Bailey’s professional experience and qualifications, a copy of Mr. Bailey’s curriculum vitae is attached as Exhibit A.

Mr. Bailey is expected to testify regarding, *inter alia*, the structure of the San Andres formation and San Andres oil-in place volumes for the Eunice Monument South Unit (“EMSU”) in light of petrophysical modeling developed by OPS Geologic and Scott Birkhead.

2. Scott Birkhead

Mr. Birkhead is a petrophysicist who works as an independent consultant with OPS Geologic LLC, among others. Mr. Birkhead received his Bachelor of Arts in Geology and his Master’s of Science degree in Geology from Texas A&M University. For almost 20 years, Mr. Birkhead has assisted oil and gas companies in developing petrophysical models to characterize reservoir properties throughout the world. Among other things, Mr. Birkhead utilizes data-specific petrophysical techniques to provide quality control of well logging data. For further details regarding Mr. Birkhead’s professional experience and qualifications, a copy of Mr. Birkhead’s curriculum vitae is attached as Exhibit B.

Mr. Birkhead is expected to testify regarding, *inter alia*, log calculated oil saturation values in light of petrophysical modeling developed by Mr. Birkhead together with OPS Geologic.

Respectfully submitted,

By: /s/ Sharon T. Shaheen
Sharon T. Shaheen
SPENCER FANE LLP
P.O. Box 2307
Santa Fe, NM 87504-2307
(505) 986-2678
sshaheen@spencerfane.com

Dana S. Hardy
Jaclyn M. McLean
Timothy Rode
HINKLE SHANOR LLP
P.O. Box 2068
Santa Fe, NM 87504-2068
(505) 982-4554
dhardy@hinklelawfirm.com
jmclean@hinklelawfirm.com
trode@hinklelawfirm.com

Ernest L. Padilla
PADILLA LAW FIRM, P.A.
P.O. Box 2523
Santa Fe, NM 87504
(505) 988-7577
padillalawnm@outlook.com

Attorneys for Empire New Mexico, LLC

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served upon the following counsel of record by electronic mail on January 6, 2024.

Michael H. Feldewert Adam G. Rankin Nathan R. Jurgensen Julia Broggi Paula M. Vance Holland & Hart LLP P.O. Box 2208 Santa Fe, New Mexico 87504-2208 Telephone: (505) 986-2678 mfeldewert@hollandhart.com agrarkin@hollandhart.com nrjurgensen@hollandhart.com jbroggi@hollandhart.com pmvance@hollandhart.com <i>Attorneys for Goodnight Midstream Permian, LLC</i>	Jesse K. Tremaine Christopher L. Moander New Mexico Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive Santa Fe, New Mexico 87505 Tel (505) 709-5687 Jessek.tremaine@emnrd.nm.gov chris.moander@emnrd.nm.gov <i>Attorneys for New Mexico Oil Conservation Division</i>
Matthew M. Beck PEIFER, HANSON, MULLINS & BAKER, P.A. P.O. Box 25245 Albuquerque, NM 87125-5245 Tel: (505) 247-4800 mbeck@peiferlaw.com <i>Attorneys for Rice Operating Company and Permian Line Service, LLC</i>	Miguel A. Suazo Sophia A. Graham Kaitlyn A. Luck BEATTY & WOZNIAK, P.C. 500 Don Gaspar Ave. Santa Fe, NM 87505 Tel: (505) 946-2090 msuazo@bwenergylaw.com sgraham@bwenergylaw.com kluck@bwenergylaw.com <i>Attorneys for Pilot Water Solutions SWD, LLC</i>

/s/ Sharon T. Shaheen

Sharon T. Shaheen

Ryan Bailey

39 N Lansdowne Cir., The Woodlands, TX 77382

Phone: 832-585-6865 Business E-Mail: rbailey@opsgeologic.com Personal E-Mail: rmb4112@gmail.com

Summary Qualifications

- 17 years of geology and multi-disciplinary management experience in field development and exploitation of conventional and unconventional oil and gas resources across US Onshore.
- Team oriented leader with the ability to motivate staff to perform at a high level.
- Proven track history of leading multiple disciplines to execute active drilling programs.
- Delivered high quality mapping and geologic interpretations under short deadlines with technical excellence.

Experience: Ops Geologic (May 2021-Present)

Co-founder and Vice President Geoscience

- Responsible for generating client driven geoscience products from play fairway analysis and prospect generation to field development plans, data acquisition, and ultimately execution of operations.
- Recent projects include multiple M&A process evaluations of the Eagle Ford and Austin Chalk across South Texas from Gonzales to Webb County, evaluation of the Bone Spring and Wolfcamp across Lea and Eddy County, New Mexico, and exploration projects across the East Texas Basin and Texas Gulf Coast.
- Manage multi-disciplinary team of geoscientists and engineers to ensure quality, completion, and delivery of client driven projects.

Arkatex Energy Advisors (August 2020-Present)

Founder and CEO

- Provide contract geoscience services including play fairway analysis, prospect generation, field development, data acquisition, and operations support.
- Developed West Haynesville exploration prospect in the East Texas basin which included reservoir characterization utilizing log, petrophysical, and core analysis to identify the sweet spot of the play. Third party funding has secured leases on ~40k acres to date with plans to operate soon.

JBL Energy Partners (January 2020-August 2020)

Vice President Geology

- Responsible for generating regional geological and rock property maps for Pennsylvanian sands within the Ft. Worth basin, identifying prospect areas, and generating development plans for ~50k acres.
- Managed geological operations for horizontal drilling inclusive of identifying target intervals, generating geopros, and coordinating mudlogging, geosteering, and wireline operations.
- In addition, responsible for generating prospects, screening potential prospects, and providing geological analysis for potential acquisitions.

EXHIBIT A

Anadarko Petroleum (July 2007-November 2019)

Area Asset Manager - Delaware Basin (Midland, TX)

June 2019-November 2019

- Responsible for developing & delivering a value-based business strategy for the exploitation of Anadarko's Blacktip-Monroe asset area (55k gross acres). Identified & recommended strategic business options such as acquisitions, divestitures, trades & facility buildouts. Coordinated the efforts of multiple disciplines including geology, reservoir, drilling, completions, production, and regulatory teams to focus on critical tasks.

G&G Manager Delaware Basin (Midland, TX)

September 2016-June 2019

- Managed a multi-disciplinary geology & geophysics staff focused on generating a series of regional geologic interpretations for the key development horizons of the Delaware Basin. Integrated the results into a multivariate analysis process to isolate key productivity drivers for each formation.
- Designed & managed appraisal studies to better describe the resource potential & development recipes for key geologic areas across the basin including the Department of Energy sponsored HFTS #2 study.
- Implemented comprehensive test programs to optimize well spacing and completion designs. Tests included production, open-hole & lateral logs, micro-seismic, fiber optic and bottom-hole pressure surveys, fluid & time-lapse geochemistry sampling.
- Sponsored the acquisition and negotiated contracts for 1,800 sq. miles of new 3D seismic data (900 sq. miles of multicomponent data) to better understand geomechanical properties and their influence on productivity.

G&G Manager - Base Assets (The Woodlands, TX)

January 2016 – September 2016

- Managed a team of geoscientists responsible for the development of Anadarko's Eaglebine, Marcellus, East Chalk, Ozona, and Hugoton assets. Assisted with divestment of assets by providing geologic assessments of future development and potential upside targets to prospective buyers.

G&G Supervisor - Appalachian Basin (The Woodlands, TX)

September 2013 – December 2015

- Responsible for the geoscience staff in the Appalachian Basin which delivered more than 100,000 BOEPD production.
- Identified additional deep and shallow exploitation plays within the basin.
- Assisted in the prediction of "sweet spots" through multivariate regression analyses of geologic and completions data. This model workflow was integrated into other assets.
- Mentored young staff to facilitate their understanding of operations and development as well as advancing mapping and interpretation skill sets.

Senior Geologist - Maverick Basin (The Woodlands, TX)

May 2011 – September 2013

- Assisted the team with development of the Eagleford shale horizontal program to deliver 200,000 BOEPD of production to the company.
- Responsible for the geosteering of two rigs, designing field development plans for ~100,000 acres, and regional mapping for the Eagleford shale petrophysical and core properties.
- Presented well proposals for management approval and partner meetings.

- Mentored new geologists on development and operational roles and responsibilities and led several core workshops.
- Led an exploitation team to test two separate targets both of which were geologic successes.

Geologist I & II - US Onshore (The Woodlands, TX)**July 2007 – May 2011**

- Appalachian Basin – Lead development geologist for the start-up of the Marcellus shale horizontal drilling program. Responsibilities included designing development plans, geosteering wells for four rigs, presenting wells to management for funding, and regional mapping of core and petrophysical properties.
- East Texas/Carthage - Recommended & managed an active development drilling program as lead geologist for the Cotton Valley sand & Haynesville shale horizontal program in Oak Hill and Henderson Fields.
- Performed detailed geologic mapping studies of the Hugoton field, Kansas and Golfinho field offshore Brazil.

Education**University of Alabama- M.S. & B.S. Geology****July 2007**

M.S. Thesis: Seismic Interpretation And Structural Restoration Of A Seismic Profile Through The Southern Appalachian Thrust Belt Under Gulf Coastal Plain Sediments

Undergraduate Research: Analysis of Acid Mine Drainage on The Water Quality of Lake Harris Via Geochemical Analysis

Skills

- Exceptional leadership and management ability to implement business strategy
- Excellent interpersonal and communication skills at all levels
- Strong organizational and time management skills leading geoscience & asset teams
- Experienced in managing large data acquisition & appraisal programs for value optimization
- High level community involvement in charity/fundraising (Midland Junior Achievement Board)
- Software expertise in Microsoft Office, Petra, Kingdom Suite, and Rockpilot steering software

Stanley 'Scott' Birkhead (M.Sc.)

Principal Petrophysicist/Owner
Petrobrane Petrophysical Consulting LLC

Stanley.birkhead@gmail.com

(979) 219-0892

Profile

Extensive knowledge and experience in the petrophysical evaluation and assessment of conventional, unconventional, carbonate, multimineral, CO2 injection, and geothermal wells	Wide experience working with core data and with core/log integration including mudlogs
Field studies, Operational Petrophysics, Reserves calculation, Experimental Design	Low Resistivity Low Contrast Pay evaluation expertise.
Formation Evaluation Planning, wireline tendering and execution	Exploration and development petrophysics
Years of experience and great love of training and mentoring in Petrophysics from the intern to the classroom level.	Broad experience working with modern, historic, as well as Eastern European logs.

Professional Experience

Independent Petrophysical Consulting

Principal Petrophysicist (full time) 9/15/22

Petrobrane Petrophysical Consulting LLC

Owner, Principal Petrophysicist 10/05/2022 - current

Projeo Corporation 07/2024 - current

- Petrophysical consultant evaluating the petrophysical potential for upcoming CCUS project and for input into reservoir models

ARI (Advanced Resources International, Inc) 07/2024 - current

- Petrophysical mentoring
- Evaluating planned logging programs for operational wells, meeting with vendors
- Recommendations for logging strategies, sticking mitigation, etc.
- Evaluating the petrophysical potential for upcoming CCUS project and for input into reservoir models

Alpha Energy 06/2024 - 08/2024

- Petrophysical field study for field optimization

Armstrong Oil and Gas 12/23 - present

- Petrophysical consultant for spring drilling campaign on North Slope of Alaska
- Worked wellsite wireline operations on companies behalf
- Consulted on Wireline program with operator and partners
- Troubleshoot wellsite issues and ensured data quality
- Petrophysical interpretation

Quidnet Energy 11/2023 - present

- Petrophysical consultant reviewing appropriateness of reservoirs for application and testing of new technology

EXHIBIT B

Stanley 'Scott' Birkhead

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Ops Geologic 9/2022 - present

- Petrophysical consultant to clients of Ops Geologic
- Projects include exploration, field studies, bypassed pay, LRLC, conventional, and unconventional reservoirs
- Worked on multiple projects in the continental US

Criterion Energy Partners 9/2022-7/2023

- Consulting Petrophysicist to Criterion geothermal projects
- Projects include exploration, field studies, outputs for modelling, correlation, delineation of objective zones for production and salt water disposal

Talos Low Carbon Solutions 10/2022-4/2024

- **Planned, executed, and interpreted the formation evaluation of the first offshore CCUS well in the Gulf Coast**
- Consulting Petrophysicist for Talos Low Carbon Solutions
- Assessed viability of several areas in the Gulf Coast arena for CCUS
- Petrophysical support and guidance for multiple projects
- Wireline tendering, vendor selection, program design
- Formation evaluation related Class VI permitting experience
- Communication and integration with partners
- Work with modelers to ensure proper distribution of properties

Western Midstream 10/2022-present

- Operations Petrophysics for Western Midstream salt-water disposal wells
- Communication and instruction to wireline crews regarding logging
- Interpretation of data in near real time for wells being evaluated.
- Deliver high quality interpretation to client.
- Detailed work on Geomechanics to support permitting and geology
- Petrophysical support for assessing new objectives for water injection

DeGolyer and MacNaughton

Independent Consultant 11/2/20 - 4/19/21

Senior Petrophysicist (full time) 4/19/21 – 5/20/22

Highlights: Work in the Reservoir Studies Division included petrophysical reserve reviews, reserve upgrades, exploration concept assessment, and uncertainty analysis. Part of a select group that developed a new workflow to correctly bracket client uncertainty deterministically. Also improved communication and morale between petrophysicists by instigating monthly technical Zoom meetings.

Responsibilities:

- Developed petrophysical models and characterized reservoir properties for numerous projects
- Quality control of well logging data from modern, vintage, and Russian sources
- Managed simultaneous projects while maintaining stakeholder communication
- Utilized data specific petrophysical techniques to deal with poor and/or uncalibrated data
- Communicated results through detailed and peer reviewed technical documentation and figures, verbally with clients using translators when necessary, and through a series of presentations documenting the phases of the project.
- Collaborated closely with geologists to ensure quality results with tight deadlines

Kerr McGee | Anadarko Petroleum Corporation | Occidental Petroleum

9/26/2005 – 6/25/2020

Stanley 'Scott' Birkhead

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Senior Staff Petrophysicist

Highlights: Principal petrophysicist for major assets at different times during their life cycle including Ghana, Mozambique, and unconventional assets. In Mozambique, I worked the multi-billion dollar project to the Final Investment Decision. Post FID and sale of the asset to Total, I finalized the complex multiscale petrophysical model and transferred the knowledge to the new owners. I also have extensive experience in fresh water and low resistivity/low contrast reservoirs.

Responsibilities:

- Extensive international experience
- Developed petrophysical models, characterized reservoir properties for numerous projects, and presented results to management, partners, and NOCs.
- Communicated with drilling rig regarding operations and evaluation program.
- Characterized reservoirs for geologic environments using an array of petrophysical techniques.
- Developed workflows for new techniques and new experiments in log and core analysis.
- Integrated with the teams for major studies, technical documentation, data analytics, peer reviews, wireline tendering, dataroom evaluation, asset sales, and new ventures work.
- Handed off projects, interpretations, and data to new companies such as Total post-acquisition of multi-billion dollar assets such as Golfinho and Prosperidade.
- Trained and mentored staff and secondees.

Regions worked:

International: Algeria, Australia, Benin, Brazil, China, Colombia, Equatorial Guinea, The Falklands, Gabon, Ghana, India, Indonesia, Ivory Coast, Kenya, Liberia, Madagascar, Mozambique, Namibia, Newfoundland, New Zealand, Nigeria, Nova Scotia, Peru, Poland, Russian Federation, Senegal, Sierra Leone, South Africa, Trinidad and Tobago, Tunisia, U.K., Ukraine, Uzbekistan, and others

US: Marcellus, Carthage, GOM Deepwater, Gulf Coast (Texas, Louisiana), Natural Buttes, Haynesville, Wamsutter, Eagleford, Eaglebine, Wattenberg, Alaska, Permian Basin, South Texas, Delaware Basin, Wyoming, Mississippi, and more

External Experience**URTEC**

Member of volunteer group planning the technical program for the Petrophysical portion of the conference. Involved for 2023, 2024, and starting planning for 2025.

Responsibilities: Part of committee in charge of building Theme 2 (Petrophysics) for the program. Also part of the committee to build a program of special topics and lunches.

Stanley 'Scott' Birkhead

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Unconventional Resources Special Interest Group/SPWLA

Steering Committee Member holding various officer positions

Responsibilities: Key planning member of the group that hosted several annual one-day conferences and funded several college scholarships focused on unconventional petrophysical topics. The special interest group has now been dissolved.

Petrophysical Interest Group/AAPG

Steering Committee Member / Instructor

Responsibilities: While still in its formational years, an established goal of the group is education and awareness. Group is currently on hiatus.

Leukemia and Lymphoma Society's Light the Night Walk

Team Captain

Responsibilities: A key leader in Anadarko's main fundraising efforts for this charity for several years.

URTEC 2023-2024

Session Chair/Reviewer/moderator volunteering within the Petrophysical themes and topics for the conventions

Education

Texas A&M University

2001 Bachelor of Arts: Geology

2005 Master of Science: Geology

Thesis: Architecture of the Upper Sego Sandstone, Book Cliffs, Utah

Advisor: Dr. Brian Willis

Professional Interests

Teaching, mentoring, research/data integration, freshwater aquifers, low resistivity/low contrast pay, upscaling, modern sedimentary processes, uncertainty analysis, unconventional reservoirs, CO2 sequestration and capture, multimineral analysis, bridging between geology and data science.

EXHIBIT C**Adam Rankin**

From: Adam Rankin
Sent: Tuesday, January 7, 2025 5:33 PM
To: Shaheen, Sharon
Cc: Sandoval, Yolanda; mbeck@peiferlaw.com; msuazo@bwenergylaw.com; sgraham@bwenergylaw.com; kluck@bwenergylaw.com; jparrot@bwenergylaw.com; Chris.Moander@emnrd.nm.gov; Jessek.tremaine@emnrd.nm.gov; Michael Feldewert; Paula M. Vance; dhardy@hinklelawfirm.com; jmclean@hinklelawfirm.com; trode@hinklelawfirm.com; padillalawnm@outlook.com; drubin@nmag.gov; sheila.apodaca@emnrd.nm.gov; ripharwoodrbhpc@gmail.com; Ortiz, David; John C. Anderson; Jacqueline F. Hyatt
Subject: RE: Goodnight/Empire - Case Nos. 24123, 23614-23617, 23755, 24018-24020, 24025 (Empire New Mexico, LLC's Rebuttal Witness Disclosure)
Attachments: Empire New Mexico, LLC's Rebuttal Witness Disclosure 010625-c.pdf; Amended PTO 120524 Nos 23614-23617 23775 24028-24020 24025 24123.pdf

Sharon,

Good evening. I have the following concerns with Empire's rebuttal disclosure that was filed and served yesterday (attached).

First, the amended Pre-Hearing order (also attached) requires the parties to disclose each rebuttal witness and the subject matter of the anticipated testimony. Empire's disclosure simply states that "Empire reserves the right to offer previously identified witnesses in rebuttal and will provide their rebuttal statements in accordance with paragraph 7 of the Pre-hearing Order."

It is not acceptable for Empire to withhold the identify and subject matter of its rebuttal witnesses until February 6 and only then disclose which of its previously disclosed witnesses will be testifying in rebuttal and what their testimony will be. The prehearing order was intended to prevent that type of surprise attack by requiring the parties to identify—yesterday, in fact—their rebuttal witnesses and the anticipated subject matter of their testimony. At this point, Goodnight can only guess whether Empire will call any of its previously disclosed witnesses and what their rebuttal testimony might be; and then would have only two weeks to assess and evaluate what if anything Empire files in rebuttal. Empire has failed to disclose each rebuttal witness and the subject matter of their anticipated testimony, as required.

Second, Empire discloses two new witnesses for purposes of rebuttal, which is fine in practice. But on its face, the description of their anticipated testimony does not qualify as rebuttal testimony. Can you please explain how their anticipated testimony qualifies as rebuttal? I am not tracking.

Given the timeframes and potential for severe prejudice, I appreciate a prompt response.

Best,
Adam

Adam Rankin
Partner, Holland & Hart LLP

agrarkin@hollandhart.com | T: (505) 954-7294 | M: (505) 570-0377

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From: Ortiz, David <dortiz@spencerfane.com>

Sent: Monday, January 6, 2025 4:59 PM

To: mbeck@peiferlaw.com; msuazo@bwenergylaw.com; sgraham@bwenergylaw.com; kluck@bwenergylaw.com; jparrot@bwenergylaw.com; Chris.Moander@emnrd.nm.gov; Jessek.tremaine@emnrd.nm.gov; Michael Feldewert <MFeldewert@hollandhart.com>; Adam Rankin <AGRankin@hollandhart.com>; Paula M. Vance <PMVance@hollandhart.com>; Nathan R. Jurgensen <NRJurgensen@hollandhart.com>; dhardy@hinklelawfirm.com; jmclean@hinklelawfirm.com; trode@hinklelawfirm.com; padillalawnm@outlook.com; drubin@nmag.gov; sheila.apodaca@emnrd.nm.gov; ripharwoodrbhpc@gmail.com

Cc: Shaheen, Sharon <sshshaheen@spencerfane.com>; Sandoval, Yolanda <ysandoval@spencerfane.com>

Subject: Goodnight/Empire - Case Nos. 24123, 23614-23617, 23755, 24018-24020, 24025 (Empire New Mexico, LLC's Rebuttal Witness Disclosure)

External Email

All,
Attached is *Empire New Mexico, LLC's Rebuttal Witness Disclosure* which was submitted for filing today.

David Ortiz Legal Administrative Assistant
Spencer Fane LLP

325 Paseo De Peralta | Santa Fe, NM 87501-1860
D 505.986.2641 O 505.982.3873 F 505.982.4289
dortiz@spencerfane.com | spencerfane.com