UNIVERSITY OF ARKANSAS AT LITTLE ROCK
LAW REVIEW

UA LITTLE ROCK
WILLIAM H. BOWEN SCHOOL OF LAW

VOLUME 46 SUMMER 2024 NUMBER 4

UNIVERSITY OF ARKANSAS AT LITTLE ROCK
LAW REVIEW
Executive Board Member, National Conference of Law Reviews 2005–2006
Host of the 2007 National Conference of Law Reviews

VOLUME 46 SUMMER 2024 NUMBER 4

PROPERTY AND ENERGY LAW—PAY TO PLAY: THE EFFECT OF THE BRINE CONSERVATION ACT'S STATUTORY "IN-LIEU" ROYALTY PROVISION ON THE LONG-TERM ECONOMIC VIABILITY OF ARKANSAS'S BRINE-LITHIUM INDUSTRY

I. INTRODUCTION

In her remarks delivered at the 2023 Energy Council Meeting held on September 15, 2023, Arkansas Governor Sarah Huckabee Sanders claimed that "Arkansas is 'moving at breakneck speed to become the lithium capital of America.'"[1] While the Governor's claim may sound bold and even hyperbolic, there is merit to her statement; since 2022, at least four natural resource producers have announced plans for lithium production projects in Southwest Arkansas's Smackover Formation.[2] Standard Lithium LTD ("Standard")—a publicly-traded, Vancouver-based lithium company—was the first company through the door when Standard received approval from the Arkansas Oil and Gas Commission (the "Commission") "for operation of a Pilot Plant to test the commercial viability of the extraction of Lithium from processed brine ('tail brine') produced from the Smackover Formation underlying certain lands within the South Unit and South Expansion Unit in Union County, Arkansas . . . ."[3] Standard's pilot program—conducted in collaboration with Lanxess AG—ran for 30 months and the test period concluded on December 6, 2022.[4] Since that time, Standard and Lanxess have moved forward with plans to build "a $1.3 billion facility for producing battery-quality lithium

1. Kyle Massey, *State Moving to Be 'Lithium Capital of America,' Governor Says*, ARK. BUS. (Sept. 15, 2023, 12:45 PM), https://www.arkansasbusiness.com/article/146027/state-moving-to-be-lithium-capital-of-america-governor-says.

2. *See, e.g.*, Kyle Massey, *Standard Lithium, Lanxess Proceed Toward Big Plant in El Dorado*, ARK. BUS. (Feb. 25, 2022, 6:32 AM), https://www.arkansasbusiness.com/article/139065/standard-lithium-lanxess-proceed-toward-big-plant-in-el-dorado; Ernest Scheyder, *Albemarle Jumps into Global Race to Reinvent Lithium Production*, REUTERS (Aug. 23, 2023, 10:48 AM), https://www.reuters.com/markets/commodities/albemarle-jumps-into-global-race-reinvent-lithium-production-2023-08-03/; Kyle Massey, *Galvanic, Another Prospector, Finds Lode of Lithium in Arkansas Brine*, ARK. BUS.(July 12, 2022), https://www.arkansasbusiness.com/article/140597/galvanic-another-prospector-finds-lode-of-lithium-in-arkansas-brine; *Exxon Mobil and Tetra to Develop Lithium-Rich Land in Arkansas*, GREENTECHLEAD (June 29, 2023), https://greentechlead.com/energy-news/exxon-mobil-and-tetra-to-develop-lithium-rich-land-in-arkansas.

3. ARK. OIL & GAS COMM'N, Order No. 057-2018-10 (Nov. 19, 2018).

4. *See* ARK. OIL & GAS COMM'N, Order No. 088-2021-10 (Nov. 8, 2021).

hydroxide from the underground brines of south Arkansas."[5] In July 2022, and before the conclusion of Standard's pilot program, Galvanic Energy—an Oklahoma City-based energy company—announced plans to test brine reserves beneath its 120,000 acres in the Smackover brine formation.[6] In an interview with Arkansas Business, Galvanic's CEO Brent Wilson exclaimed, "The trove [of brine] in Lafayette and Columbia counties may hold enough lithium to produce batteries for 50 million electric cars."[7] Galvanic's plans were short-lived, however, because in May of 2023, Texas-based oil giant ExxonMobil acquired Galvanic's 120,000 gross acres in the Smackover Formation for a little more than $100 million.[8] A month later, ExxonMobil, through a deal with Tetra Technologies, Inc., expanded its Smackover formation position by an additional 4,100 acres and now plans one of the world's largest lithium processing facilities not far from Magnolia, Arkansas, with a capacity to produce 75,000 to 100,000 metric tons of lithium a year.[9] North Carolina-based Albemarle Chemical Corporation followed ExxonMobil's lead and announced in August 2023 its own plans to build a $540 million lithium pilot plant in Columbia County, Arkansas.[10]

All this activity, and money, surrounding the oddly-named Smackover—a geological formation that runs across most of Southern Arkansas and extends from Texas to Florida—heralds a potential economic boom for small towns like Magnolia and El Dorado.[11] These rural communities—historically at the center of oil and natural gas production—hope the prospect of lithium will mean financial prosperity and jobs.[12] As Standard Lithium's Chief Executive, Robert Mintak, put it,

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5. Kyle Massey, *Standard Lithium Buys 118 Acres for $1.3B Plant*, ARK. BUS. (Sept. 15, 2023, 11:04 AM), https://www.arkansasbusiness.com/article/146025/standard-lithium-buys-118-acres-for-13b-plant.

6. *See* Massey, *Galvanic, Another Prospector, Finds Lode of Lithium in Arkansas Brine*, *supra* note 2.

7. *Id.*

8. Benoite Morenne & Collin Eaton, *Exxon Joins Hunt for Lithium in Bet on EV Boom*, WALL ST. J. (May 21, 2023, 8:00 AM), https://www.wsj.com/articles/exxon-joins-hunt-for-lithium-in-bet-on-ev-boom-1d72cdd6.

9. *See* Ernest Scheyder, *Exclusive: Exxon Mobil Expands Lithium Bet with Tetra Technologies Deal*, REUTERS (June 28, 2023, 6:23 PM), https://www.reuters.com/markets/commodities/exxon-mobil-expands-lithium-bet-with-tetra-technologies-deal-2023-06-28/; *see also* Collin Eaton & Benoîte Morenne, *This Arkansas Town Could Become the Epicenter of a U.S. Lithium Boom*, WALL ST. J. (July 20, 2023, 7:00 AM), https://www.wsj.com/articles/this-arkansas-town-could-become-the-epicenter-of-a-u-s-lithium-boom-54ad7306.

10. Mike McNeill, *Albemarle Corporation building lithium pilot plants in Columbia County*, MAGNOLIAREPORTER.COM (Aug. 3, 2023), http://www.magnoliareporter.com/news_and_business/local_business/article_237518fa-3237-11ee-9fac-d3df52622fc9.html.

11. *See* Eaton & Morenne, *supra* note 9.

12. Rex Nelson, *Good Times in Magnolia*, ARK. DEMOCRAT-GAZETTE (June 14, 2023, 2:20 AM), https://www.arkansasonline.com/news/2023/jun/14/good-times-in-magnolia.

> The Smackover could become as significant to domestic lithium production as the Permian Basin of West Texas and New Mexico has been for U.S. oil output. "The economics will be better, though, ... And the resource will last longer. There's a more favorable environment for where the product is going [compared with oil].[13]

The optimism shared by everyone invested in Southwest Arkansas may be warranted, but nothing is guaranteed; more significant lithium deposits may exist in other states, and even if Arkansas becomes the de facto leader for domestic lithium production, it will not matter unless that status translates into profit.[14] The notion that a natural resource in abundant reserve is of little benefit to the state and its residents unless economical and profitable production should be familiar to Arkansans.[15] When "companies arrived in north-central Arkansas in the mid-2000s eager to pull natural gas from the Fayetteville Shale[,] . . . it offered a gold-rush opportunity for [Arkansans], and thousands of jobs and wealth for local communities."[16] However, rapid industry expansion led to overproduction of natural gas in the Fayetteville shale, which pushed down the commodity's price.[17] In the Fayetteville Shale specifically, "[d]rilling . . . began to decline in 2012 when natural gas prices dipped below $2 per million BTUs and struggled to rebound" because the natural gas producer's return on investment evaporated.[18] In every natural resource production play,[19] the producer's "[r]eturn on investment . . . is a function of production rate through time, well cost, including drilling and completion costs,

13. *See* Eaton & Morenne, *supra* note 9.

14. *See id.*

15. Andrew Beattie, *The Economics of Oil Extraction*, INVESTOPEDIA (Jan. 26, 2022), https://www.investopedia.com/articles/active-trading/102214/economics-oil-extraction.asp (While a natural resource may be in plentiful supply in a particular state, like Arkansas, there are economic factors, including drilling and production costs, rate of production, or state regulatory requirements, that could render a state's abundant resource unprofitable when costs exceed the market value of the natural resource commodity).

16. Jessica Seaman, *Fayetteville Shale Boom GoneBbust; Glory Days' Jobs, Cash Now History*, ARK. DEMOCRAT–GAZETTE (July 18, 2016, 5:45 AM), https://www.arkansasonline.com/news/2016/jul/17/fayetteville-shale-boom-gone-bust-20160/#:~:text=The%20energy%20companies%27%20success%20at,the%20Fayetteville%20Shale%20are%20over.

17. *Id.*; Svetlana Ikonnikova et al., *Factors Influencing Shale Gas Production Forecasting: Empirical Studies of Barnett, Fayetteville, Haynesville, and Marcellus Shale Plays*, ECON. OF ENERGY AND ENV'T POL'Y, Jan. 2015, at 1–2, 15.

18. *See* Seaman, *supra* note 16; *see also* Ikonnikova et al., *supra* note 17, at 15–16.

19. T.R. Klett et al., *Glossary in U.S.* GEOLOGICAL SURVEY DIGITAL DATA SERIES 60, 6 (2000), http-//energy.cr.usgs.gov/WEcont/chaps/GL (The United States Geological Survey defines a 'play' as "[a] set of known or postulated [natural resource] accumulations sharing similar geologic, geographic, and temporal properties, such as source rock, migration pathway, timing, trapping mechanism, and hydrocarbon type." Although most closely associated with oil and natural gas production, this Note applies the term to lithium and brine produced in the Smackover formation).

operating costs, water costs, taxation regime, and [commodity] price."[20] When externalities, such as market uncertainties, regulatory uncertainties, infrastructure constraints, and production costs, negatively affect "well economics and the cost-benefit analysis supporting further [production] decisions,"[21] a boom will quickly and prematurely go bust when production of a particular natural resource is unprofitable, causing producers to sell off all remaining assets at a discount and exit the endeavor.[22]

In the energy sector, booms devolve into busts all the time because potential disruptions lurking around the corner lead to uneconomic and unprofitable natural resource production.[23] Overproduction and the high cost of fracking led to a quick exit from the Fayetteville shale in 2016 in the same way that a global price war and geopolitical instability created a domestic oil glut that led to a quick exit from the Tuscaloosa Marine shale.[24] While professionals—familiar with the ebbs and flows of the industry—can typically see a problem on the horizon, locals rarely see the problem until the capital investments in the community stop flowing or people lose jobs and businesses

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20. *See* Ikonnikova et al., *supra* note 17, at 14.

21. *Id.* at 16; s*ee, e.g.*, Angela Forsyth, *Bottoming Out: Arkansas's Oil and Natural Gas Production on the Decline*, Ark. Money & Pol. (July 3, 2019), https://armoneyandpolitics.com/arkansas-oil-natural-gas-production-decline; Perry Williams, *BHP Looking at Fayetteville Shale Sale*, ARK. DEMOCRAT-GAZETTE (Apr. 27, 2017, 2:12 AM), https://www.arkansasonline.com/news/2017/apr/27/bhp-looking-at-fayetteville-shale-sale-/?business%20Page%201%20of%204; Daniel Breen, *Fayetteville Shale Assets Sold Off, Fracking Still Put On Hold*, ARK. PUB. MEDIA (Sept. 20, 2018, 10:14 AM), https://www.ualrpublicradio.org/arkansas-public-media/2018-09-20/fayetteville-shale-assets-sold-off-fracking-still-put-on-hold.

22. *See, e.g.*, Forsyth, *supra* note 21; Williams, *supra* note 21.

23. *See, e.g.*, Peng Li, *Update for Fayetteville Shale Gas Play in Arkansas, 2019*, AAPG WIKI (June 2, 2021), https://wiki.aapg.org/Update_for_Fayetteville_Shale_Gas_Play_in_Arkansas,_2019; *Crude Oil Production in Texas's Eagle Ford Region Has Been Increasing Since February 2022*, U.S. ENERGY INFO. ADMIN. (Aug. 26, 2022), https://www.eia.gov/todayinenergy/detail.php?id=53619; *Eagle Ford Basin Data, History & Stats*, NOVI, https://novilabs.com/eagle-ford-basin/ (last visited Mar. 25, 2024); *Permian—Update Through July 2023*, NOVI, https://novilabs.com/blog/permian-update-through-july-2023/ (last visited Mar. 25, 2024).

24. Breen, *supra* note 21; David Mead & Porscha Stiger, *The 2014 Plunge in Import Petroleum Prices: What Happened?*, U.S. BUREAU OF LAB. STATS. (May 2015), https://www.bls.gov/opub/btn/volume-4/pdf/the-2014-plunge-in-import-petroleum-prices-what-happened.pdf; Sarfaraz A. Khan, *Plunging Energy Prices Slow Development of Tuscaloosa Marine Shale*, STREET (Dec. 24, 2015, 10:07 AM), https://www.thestreet.com/opinion/plunging-engery-prices-slow-development-of-tuscaloosa-marine-shale-12994882; Christopher Helman, *As Oil Busts, This Texas Tycoon Sees A Land Of Opportunity*, FORBES (Jan. 20, 2016, 6:00 AM), https://www.forbes.com/sites/christopherhelman/2016/01/20/in-the-oil-bust-this-texas-tycoon-sees-a-land-of-opportunity/?sh=4a887c07530d.

close down.[25] At that point, it is too late to prepare and save for the lean times ahead.[26]

As Arkansas prepares to enter the golden age of brine-lithium production, Arkansans cannot predict or anticipate every disruption. Still, it may be possible to prevent at least one of them. Lithium, extracted from brine salt water and refined into lithium carbonate, has a projected market price of $30,000 per metric ton due to the increased demand for lithium batteries in the early 2000s.[27]

With the continued growth of the Electric Vehicle (EV) industry, the "global market for lithium [, which] is currently valued at $7.5 billion[,] . . . is expected to double by 2030 . . . ."[28] Whether Arkansas, on the whole, is prepared for the rush of the lithium industry remains yet to be seen, but there already exists a statutory basis to oversee and regulate its production since lithium is a derivative of brine salt water.[29] The Arkansas Brine Conservation Act of 1979 (the "Brine Act," or the "Act")[30] authorizes the Commission to regulate the production of brine, including lithium.[31] Further, the Act authorizes the Commission to establish brine production and expansion units, including integrating unleased tracts of land within a designated production or expansion unit.[32] Finally, the Act mandates payment of an annual fixed amount to a mineral or royalty owner for produced brine, and it requires a producer to pay the mineral owner an additional royalty amount—as approved or determined by the Commission—for any other substances extracted from the brine and sold.[33]

This Note argues that specific provisions of the Brine Conservation Act, as presently written and enacted, will inadvertently strain long-term profitability and bring about a premature end to lithium production in Arkansas's

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25. *See* Seaman, *supra* note 16; *see also* Williams, *supra* note 21.

26. *See* Seaman, *supra* note 16.

27. Kyle Massey, *Hints for Landowners On Lithium Royalties*, ARK. BUS. (Sept. 25, 2023, 12:00 AM), https://www.arkansasbusiness.com/article/146120/hints-for-landowners-on-lithium-royalties; Eaton & Morenne, *supra* note 9.

28. Rob Badman, *High Voltage: Lithium Prices and EV Sales are Up . . . Does This Mean Rock Bottom's Been Hit?*, CHRONICLE (Oct. 19, 2023, 8:42 AM), https://www.thechronicle.com.au/business/stockhead/high-voltage-lithium-prices-and-ev-sales-are-up-does-this-mean-rock-bottoms-been-hit/news-story/bb07b2140ff44f9b56ebcb951205b0be; Joe Heaton & Jamie D. Rhymes, *Lithium Extraction May Soon Turn Produced Water Into Produced Profits*, ENERGY L. BLOG (Mar. 10, 2023), https://www.theenergylawblog.com/2023/03/articles/energy/lithium-extraction-may-soon-turn-produced-water-into-produced-profits/.

29. Thomas A. Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, INTERSTATE OIL & GAS COMPACT COMM'N 8–9 (2021), https://iogcc.ok.gov/sites/g/files/gmc836/f/documents/2021/brine_paper.pdf.

30. ARK. CODE ANN. §§ 15-76-301 to -324.

31. ARK. CODE ANN. § 15-76-306; ARK. CODE ANN. § 15-76-302(A).

32. *See* ARK. CODE ANN. §§ 15-76-308 to -310.

33. *See* ARK. CODE ANN. § 15-76-315.

Smackover formation and, in turn, deprive: (1) the state's mineral owners of long-term royalty payments, (2) Arkansas communities of increased capital investment, and (3) the state of a long-term source of tax revenue. The Note examines how the Brine Conservation Act treats three separate but related aspects of lithium-brine production—mineral rights ownership, unit regulations, and royalty payment requirements—that will combine to create a formidable statutory barrier to lithium profitability. Section II of this Note examines the *Strohacker*[34] Doctrine as the basis for determining mineral rights ownership in Arkansas and the Additional Substances Provision of the Brine Act.[35] Section III of this Note explores how the legal interpretation and application of two common law property doctrines, the Rule of Capture and Subsurface Trespass, created the urgent need for brine units that led to the enactment of the Brine Act in 1979, as well as how specific unitization provisions in the Act presently structure and regulate brine production.[36] Section IV of this Note provides a brief primer on Arkansas royalty-payment caselaw, and then it articulates the specific royalty provisions of the Brine Act.[37]

Finally, accounting for other externalities, Section V will demonstrate how, when combined, three aspects of the Brine Act— mineral rights ownership, unit regulations, and royalty payment requirements— will present a unique problem to Arkansas lithium's long-term viability and it will address ways to solve this problem before it becomes one.[38] This Note asserts that the Arkansas General Assembly needs to amend specific subsections of the Brine Act to alleviate an unnecessary economic risk to Arkansas's brine-lithium development.[39]

II. THE STROHACKER DOCTRINE AND ADDITIONAL SUBSTANCES

The first part of this Section will examine Arkansas' *Strohacker* Doctrine and how it qualifies a produced natural resource as a mineral to determine its ownership.[40] The second part of this Section will discuss the distinction between brine and lithium in the Brine Act.[41]

34. Missouri Pac. R.R. Co. v. Strohacker, 202 Ark 645, 152 S.W.2d 557 (1941).
35. ARK. CODE ANN. § 15-76-315(c); *see infra* Section II.
36. *See* ARK. CODE ANN. §§ 15-76-308 to –312; *see also infra* Section III.
37. *See infra* Section IV; *see also* ARK. CODE ANN. §§ 15-76-314 to -315.
38. *See infra* Section V.
39. *Id.*
40. *See infra* Section II.A; *see also* Thomas A. Daily & W. Christopher Barrier, *Well, Now, Ain't That Just Fugacious!: A Basic Primer on Arkansas Oil and Gas Law*, 29 U. ARK. LITTLE ROCK L. REV. 211, 215–16 (2007).
41. *See infra* Section II.B.

A. The Arkansas Strohacker Doctrine

1. Missouri Pac. R.R. Co. v. Strohacker

Real property is often described as a bundle of sticks, meaning that a tract of land is not simply one unified thing but "a collection of individual rights which, in certain combinations, constitute property."[42] Mineral rights are those rights that, along with land surface, water, and air rights, can be owned, sold, or leased separately and apart from the other sticks in the bundle.[43] Yet, because a "state['s] law determines . . . which sticks are in a person's bundle," whether a particular commercially-produced natural resource qualifies as a mineral, for ownership purposes, can vary from state to state.[44] The *Strohacker* Doctrine is a peculiar Arkansas rule that serves as the arbiter of Arkansas mineral rights ownership. The rule asserts that "where there is ambiguity as to the minerals actually embraced in instruments purporting to convey or to reserve certain unspecified minerals under generalized terms, that a factual determination be made as to the true intent of the parties."[45] Further, the Doctrine qualifies brine as a mineral, and "[i]ts ownership is one of the sticks in the proverbial bundle of property rights."[46]

The Supreme Court of Arkansas first articulated the *Strohacker* Doctrine in 1941, when an appellee landowner sought to quiet title to the oil and gas rights under his land.[47] Between 1892 and 1893,[48] Iron Mountain & Southern Railway Company ("Iron Mountain") conveyed several tracts of land, initially acquired through a United States land grant, to various individuals and entities.[49] However, Iron Mountain, in those conveyances, reserved "all coal and mineral deposits" unto itself.[50] Attorneys for Iron Mountain feared that "if a fee-simple absolute title were conveyed by [Iron Mountain] and the government [, through an act of Congress,] should subsequently reclaim any minerals within [the granted] lands, . . . [Iron Mountain] would be . . . [liable] to the purchasers of the land for damages under its [deed] warranties."[51] Should the United States decide to reclaim mineral rights, the mineral reservations presented a way for Iron Mountain to hedge against potential liability from its

42. United States v. Craft, 535 U.S. 274, 278 (2002).
43. Bodcaw Lumber Co. v. Goode, 160 Ark. 48, 59, 254 S.W.2d 345, 348 (1923).
44. *Craft*, 535 U.S. at 278.
45. Gerald L. DeLung, *The Strohacker Doctrine – An Arkansas Rule of Property*, 9 ARK. LAW. 85, 85–87 (1975).
46. Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 4.
47. Missouri Pac. R.R. Co. v. Strohacker, 202 Ark 645, 152 S.W.2d 557 (1941).
48. See *id.* at 647, 152 S.W.2d at 561.
49. *See id.*
50. *Id.* at 647, 152 S.W.2d at 558.
51. *Id.* at 646, 152 S.W.2d at 558.

subsequent grantees.[52] One conveyance of land from Iron Mountain to Missouri Pacific Railroad Company contained a similar mineral reservation.[53]

The Supreme Court of Arkansas held that only minerals contemplated by the parties at the time of the mineral reservation were reserved; as a result, previously uncontemplated oil and gas eluded the earlier reservations.[54] Ruling in the appellee's favor, the court stated that "[t]he mineral rights were not thought of by either party, and there is no evidence in the case tending to show that the mineral rights on the land in controversy [were] valuable."[55] The court, expounding upon its ruling, asserted that "[a] grant of minerals does not, of course, include mineral rights not embraced in the deed, nor minerals which were not within the contemplation of the parties."[56] For Strohacker and the other plaintiff landowners who possessed the land when oil and natural gas were first contemplated as minerals, this decision meant they possessed clear title to the corresponding oil and gas mineral rights.[57] The *Strohacker* Doctrine established a rule that limited all future mineral reservations to the minerals contemplated by the parties—and more specifically, the grantor—at the time of the reservation, and any subsequent mineral discovery or contemplation after the reservation would not be severed from the surface estate.[58]

2. Stegall v. Bugh

The *Strohacker* court established a doctrine that delineated ownership of certain mineral rights based on the parties' intent without adequately addressing what precisely qualified as a mineral.[59] In *Stegall v. Bugh*, the Supreme Court of Arkansas provided a more objective and qualifiable definition for a mineral that relied less on a grantor's subjective and limited understanding at the time of conveyance or reservation.[60] The court asserted,

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52. *See* Jaimie G. Moss, Comment, *The Strohacker Doctrine: Its Application in Arkansas Courts and the Need for an Updated Rule*, 64 ARK. L. REV. 1095, 1100–01 (2011).

53. *Missouri Pac. R.R. Co.*, 202 Ark. at 645–46, 152 S.W.2d at 558.

54. *Id.* at 654–55, 152 S.W.2d at 563.

55. *Id.* at 651, 152 S.W.2d at 561.

56. *Id.* at 655, 152 S.W.2d at 563.

57. *Id.* at 656, 152 S.W.2d at 563.

58. *Id.* at 654–56, 152 S.W.2d at 561–63.

59. *See* John S. Lowe, *What Substances are Minerals?*, 30 ROCKY MTN. MIN. L. INST. §2.05(2)(a) (1984).

60. Stegall v. Bugh, 228 Ark. 632, 634, 310 S.W.2d 251, 253 (1958).The court addressed the following question in Stegall v. Bugh: Did a grantor effectively reserve the oil and gas mineral rights in a non-descript mineral reservation in a prior land conveyance if it was his intention to do so at the time he conveyed the land? *Id.* Despite the appellant's argument that he intended to reserve oil and gas rights in a 1900 land conveyance, the court held that he did not reserve those rights, since evidence showed no oil production in the county until 1920 and "minerals" did not commonly include oil/gas in 1900. *Id.* at 636, 310 S.W.2d at 254.

> that the meaning . . . hereafter give[n] to the word '*mineral*' in connection with its use . . . is governed not by what the grantor meant or might have meant, but by the general legal or commercial usage of the word at the time and place of its usage.[61]

In *Stegall*, the court transformed the *Strohacker* Doctrine from a rule of law grounded in a grantor's subjective, individual interpretation into a more standardized, objective rule based on a mineral's commonly known legal or commercial understanding at the time of the conveyance or reservation.[62] The court held that a grantor could reserve or convey a particular mineral without specificity if it was also a specifically leased, purchased, sold, or commercially produced mineral at the time of the reservation or conveyance.[63] A mineral's beneficial use necessitates commercial production based on its value and marketability.[64] Since brine is basically salt water, it seemingly lacked the same valuable qualities found in other minerals, like gold, silver, or oil.[65] Its value was not readily apparent despite its commercial production.[66]

3. Ahne v. Reinhart & Donovan Co.

In a 1966 case that concerned whether a 1905 mineral reservation included natural gas, the Supreme Court of Arkansas further narrowed the *Strohacker* Doctrine by establishing a point in time for recognizing a mineral's commercial use.[67] The court stated,

> Where there is ambiguity as to minerals actually embraced in instruments . . . the intent of the parties will be determined so as to be consistent with and limited to those minerals commonly known . . . by legal or commercial usage in the area where the instrument was executed.[68]

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61. *Id.*

62. *See* C.V.V., Annotation, *What are "Minerals" Within a Deed, Lease, or License?* 86 A.L.R. 983 (1933); see also Gary Speed, Hillard v. Stephens*: Interpretation of Market Price Royalty Provisions in Natural Gas Leases*, 36 ARK. L. REV. 312, 325 n.36 (1983) ("The best examples of this approach are cases dealing with what minerals are 'minerals' for purposes of reservations in deeds. The determination is made on the basis of whether there was exploration or production of a particular mineral in a particular area at the time of the conveyance or reservation.").

63. *Stegall*, 228 Ark. at 634, 310 S.W.2d at 253.

64. *See* Rachel M. Kirk, Comment, *Variations in the Marketable-Product Rule from State to State*, 60 OKLA. L. REV. 769, 780–81 (2007).

65. *See* Stephan Owings, *One Man's Trash Is His Community's Treasure: Ownership and Uses of Produced Brine*, 4 OIL & GAS, NAT. RES. & ENERGY J. 35, 39 (2018).

66. *See* Parnell, Inc. v. Giller, 237 Ark. 267, 267–68, 372 S.W.2d 627, 628 (1963).

67. *See generally* Ahne v. Reinhart & Donovan Co., 240 Ark. 691, 401 S.W.2d 565 (1966).

68. *Id.* at 696, 401 S.W.2d at 569.

The court determined that a prior instrument, such as a brine lease, provided evidence of the intent of the parties to reserve or convey a specific mineral because the commercial instrument explicitly evidenced a prior contemplation of a mineral's commercial use.[69] Expounding on this point, the court, citing a Pennsylvania Supreme Court decision, stated, "The best construction is that which is made by viewing the subject of the contract, as the mass of mankind would view it; for it may be safely assumed that such was the aspect in which the parties themselves viewed it."[70] The court's decision, in this instance, meant that the *Strohacker* Doctrine only applied to commercially contemplated minerals in a defined part of the state, as evidenced by a mineral lease or other similar instrument for commercial production.[71]

4. D.M. Riche, Inc. v. McGowen Working Partners, Inc.

In a 2002 case to determine whether a 1938 mineral deed reservation included brine, the Court of Appeals of Arkansas held that the reservation did not reserve brine. The court held that although a 1975 amendment to Ark. Code Ann. § 15-56-301(b) included brine within its definition of a mineral, the 1938 version of Ark. Code Ann. § 15-56-301(b) "did not include 'salt water' within the definition of 'mineral.'"[72] The court stated, "Although brine would be considered a 'mineral' today under section 15-56-301(b), the record does not contain any evidence on whether brine was considered a 'mineral' [at the time of] the 1938 deed . . . ."[73] Applying the *Strohacker* Doctrine to brine ownership, the court stated, "The construction of a deed will be made with reference to the circumstances and usages at the time of the conveyance. . . . Any other construction of the [1938] reservation of water would not include brine . . . ."[74]

5. The Significance of the Strohacker Doctrine for Brine and Lithium

January 1, 1955, "[was] the date upon which the first salt water (brine) leases were recorded [in Southwest Arkansas.][75] Thus, all minerals reserved on lands where brine rights have been leased or produced on or after January

69. *Id.* at 696, 401 S.W.2d at 569.

70. *Id.* at 696, 401 S.W.2d at 568 (quoting Schuylkill Navigation Co. v. Moore, 2 Whart. 477, 491 (Pa. 1837)).

71. *See* Lin Patterson, *A Survey of Problems Associated with Ascertaining the Ownership of 'Other Minerals'*, 25 ROCKY MTN. MIN. L. INST. 21 (1979).

72. D.M. Riche, Inc. v. McGowen Working Partners, Inc., No. CA02-27, 2002 WL 31518861, at *5 (Ark. Ct. App. Nov. 13, 2002).

73. *Id.*

74. *Id.*

75. Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, app. at 6.

1, 1955, included brine.[76] The *Strohacker* Doctrine, when applied to brine, has three important and related implications for lithium produced in Arkansas: (1) at the time the Brine Act was enacted in 1979, brine was the only substance recognized as a mineral under the Strohacker Doctrine, (2) although brine remained the only commercially contemplated mineral, the underlying commercial purpose for producing brine was the bromine contained within and extracted from the brine,[77] and (3) the Brine Act defined brine as the only commercially contemplated mineral produced under a brine lease and, as such, any substance extracted from the brine, such as lithium, still counted as brine.[78]

B. The Additional Substances Provision in Ark. Code Ann. § 15-76-315(c)

The Brine Act defines brine as "salt water, whether contained in or removed from an aquifer, and all other chemical substances produced with or extracted from such salt water except for commercial production of oil and gas."[79] When the Arkansas General Assembly enacted the Brine Act in 1979, it defined brine broadly to include any and all valuable extracted substances since, at the time, brine was not distinctly commercially valuable apart from the extracted bromine content.[80] Brine included bromine in its definition since a market for brine did not exist apart from commercial bromine sales as an extracted brine byproduct.[81] The joint brine-bromine market continued unchanged until 1995, when the Arkansas General Assembly added the "Additional Substances" provision, which amended the Brine Act in three critical ways.[82] First, the provision formalizes the inseverable link between the brine mineral and profitable bromine substance "extracted by a [brine] producer" when the law took effect on January 1, 1979.[83] Thus, the primary market for brine is indistinguishable from the commercial market for bromine, and brine producers must remit royalty payments to the mineral owners accordingly.[84]

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76. *See id.*
77. *See id.* at 4–5.
78. *See infra* Section III.A.1.
79. ARK. CODE ANN. § 15-76-302(2)(A).
80. Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 12; ARK. CODE ANN. § 15-76-302(2)(A).
81. *See infra* Section IV; *see also* Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 12.
82. ARK. CODE ANN. § 15-76-315(C)(1).
83. *Id.*; Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 11–12.
84. Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 12.

Second, the provision allows for additional markets for any substance other than bromine extracted from brine and commercially sold.[85] Lithium falls into this category because there was no profitable brine-lithium extraction on January 1, 1979.[86] Although the Brine Act defines brine as the produced mineral, the provision enables a producer to distinguish between bromine and other specifically extracted substances, such as lithium, that may be more commercially valuable than bromine.[87] Should the Commission determine that such a market exists for an additional substance, then brine producers must remit equitable royalty payments to the mineral owners for that additionally extracted substance.[88]

Third, and most importantly, any royalty paid by a brine producer to a mineral owner for an additional substance, such as lithium, must be "[i]n addition to any other amounts due and owing by the producer," meaning that a lithium producer must pay the mineral owner a royalty for the bromine as well as the lithium even if the producer only wants the lithium.[89] While the provision allows for the extraction and sale of other substances, it still requires a brine producer to pay, in the form of a royalty payment to the mineral owner, for brine.[90]

85. *See* ARK. CODE ANN. § 15-76-315(c)(1).

86. Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 11–12 (When the Brine Act went into effect in 1979, bromine was the only substance extracted from brine and commercially sold during that period. When the Brine Act was amended in 1995 to include the "Additional Substances" provision in Ark. Code Ann. § 15-76-315(c)(1), the provision included all substances that could be extracted from brine and then commercially sold except bromine, which was already contemplated by the Brine Act prior to the 1995 changes. Thus, Ark. Code Ann. § 15-76-315(c)(1) encompasses lithium and any other substance extracted from brine except bromine).

87. ARK. CODE ANN. § 15-76-315(c)(1).

88. ARK. CODE ANN. § 15-76-315(b)(3).

89. *See* ARK. CODE ANN. § 15-76-315(c)(1); *see also* Joe Heaton & Jamie D. Rhymes, *The Smackover Formation: Unveiling the Lithium Potential*, ENERGY LAW BLOG (May 22, 2023), https://www.theenergylawblog.com/2023/05/articles/business/louisiana-law/the-smackover-formation-unveiling-the-lithium-potential/.

90. ARK. CODE ANN. § 15-76-315(c)(1).

III. THE RULE OF CAPTURE, SUBSURFACE TRESPASS, AND BRINE UNITIZATION

A. The Rule of Capture and Subsurface Trespass

1. Brine Production History and Mechanics

The first brine production in the state coincided with petroleum and natural gas exploration in the Smackover Limestone Formation.[91] Encountered at a depth of 8,000 to 9,000 feet subsurface, petroleum producers considered the brine salt water a nuisance; it often reached the surface as a byproduct of production alongside crude oil or gas and then had to be separated from the valued substance.[92] Owing to its corrosive nature,[93] producers had little use for brine until 1955, when scientific analysis revealed that Smackover brine's "bromine concentrations far exceeded that known to exist anywhere else in the Western Hemisphere."[94] Although extracted bromine served commercial purposes, its market value was nominal after subtracting the associated production and refinement costs.[95]

Commonly referred to as the "recycling area," the way brine "is . . . extracted . . . [requires] two (2) types of wells. Production wells remove the . . . brine from the Smackover Formation, and 'disposal' or 'injection' wells return the brine into the formation after the [lithium] has been extracted."[96] "Once the brine is brought to the surface [via the production well], it undergoes the direct extraction process . . .."[97] The Direct Lithium Extraction Method is used in the Smackover formation to extract lithium from brine.[98] Compared to other lithium extraction methods that utilize evaporation ponds and require months to extract lithium properly, "

> Standard Lithium's patent-pending LiSTR DLE process involves the use of 'a solid ceramic adsorbent material with a crystal lattice that is capable of selectively pulling lithium ions from' brine. 'The absorbent [material]

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91. *See* Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, app. at 2.

92. Luther Hudson, *Salt Water Is A Mineral: Ownership of A Natural Resource of Increasing Importance in Oil-Producing States*, 50 TEX. L. REV. 448, 451–52 (1972).

93. Owings, *supra* note 65, at 37.

94. Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 2.

95. *Id.*

96. Deltic Timber Corp. v. Great Lakes Chem. Corp., 2 F. Supp. 2d 1192, 1194 (W.D. Ark. 1998).

97. *Id.*

98. Roderick E. Wetsel & Hannah N. Davis, *The Quest for Lithium: California Dreamin' or Key to the Magic Kingdom?*, 18 TEX. J. OIL GAS & ENERGY L 198, 206 (2023).

> releases the lithium for recovery,' after 'the ceramic-absorbent materials are mounted in stirred-tank reactors' that contain the brine.[99]

Unlike the more traditional evaporation extraction method, "[t]he LiSTR DLE process is fast and 'capable of producing a consistent high-purity [lithium chloride] solution for further processing in the battery industry.'"[100] After completing the lithium-extraction process, "the remaining brine, sans the lithium, is injected back into the producing formation."[101] The operation continues until the spent brine reaches production wells.[102] Through this process, it is possible to "recover up to 99% of the lithium . . . and it has the potential to produce a higher grade of lithium that will sell at a premium."[103]

Further, injection wells serve a dual purpose: disposing of lithium-processed brine, called tail-brine, and enhancing the recovery of bromine-rich brine, or virgin brine, from the subsurface. By strategically placing these wells, virgin brine is propelled forward by the injected, spent brine toward production wells.[104] Since brine is a fugacious mineral—meaning that it is comprised of transient molecules that "move in response to very predictable and somewhat controllable forces, such as gravity"—re-injecting lithium-depleted brine back into the reservoir through the injection wells enables the brine producer to use pressure to mechanically manipulate the subsurface brine.[105] Transient mineral molecules exhibit movement in reaction to variations in pressure and typically migrate from elevated pressure to lower pressure. By strategically managing these pressure gradients, producers can exert control over the movement of these molecules. A producer can extract brine more easily from an underground reservoir by reducing pressure near the production well. Conversely, when the producer reintroduces tail brine into the same reservoir through the injection wells, the producer can elevate the pressure at the injection point. The natural tendency is for pressure to equalize, prompting the injected tail brine to flow toward the production wells, effectively displacing the intervening brine. The producer exerts control by

99. *Id.* (alteration in original); *see* Press Release, Standard Lithium LTD., Standard Lithium Announces Notice of Allowance for U.S. Patents Covering DLE Process for Recovering Lithium from Brines (Nov. 1, 2022), https://www.standardlithium.com/investors/news-events/press-releases/detail/125/standard-lithium-announces-notice-of-allowance-for-u-s (included to substantiate the patent-pending status of Standard's DLE process).

100. Wetsel & Davis, *supra* note 98, at 206 (alteration in original).

101. Heaton & Rhymes, *The Smackover Formation: Unveiling the Lithium Potential*, *supra* note 89.

102. *Id.*

103. Mark Squillace, *The Minerals Challenge for Renewable Energy*, 54 ENV'T L. REP. 10058, 10064–65 (2024).

104. Deltic Timber Corp. v. Great Lakes Chem. Corp., 2 F. Supp. 2d 1192, 1194 (W.D. Ark. 1998).

105. Daily & Barrier, *supra* note 40, at 240; Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 6.

mechanically manipulating these molecular movements.[106] While parts of this process are unique to lithium, the industry's recycling process has been a standard for decades and the impetus for significant legal decisions based on the rule of capture and subsurface trespass.[107]

2. Budd v. Ethyl Corp.

In a 1971 Arkansas case involving a subsurface trespass, the plaintiff-mineral owner, Budd claimed that the [brine] recycling project encroached under his tracts and replaced the *in-situ* brine water with less valuable water that had been stripped of its minerals."[108] The Supreme Court of Arkansas held that a trespass did not occur since the plaintiff's tract of land sat outside the production zone.[109] To arrive at its conclusion, the court applied the rule of capture to brine siphoned from under lands outside the recovery operation or adjacent to leased lands already producing brine.[110] To summarize the court's understanding, the rule of capture asserts that liquid and gaseous minerals, including oil, gas, and brine, are a landowner's property as long as the vagrant minerals remain under the owner's land or control. However, if landowner's minerals move to an adjacent property or fall under someone else's control, the landowner loses title to them.[111] When a producer captures brine at his well, the substance no longer belongs to the mineral owner.[112] Although the doctrine against subsurface trespass barred a producer from drilling a well into an adjacent tract of land solely to siphon minerals directly from under the unleased neighboring land,[113] it did not constitute a trespass to the subsurface landowner when liquid minerals freely moved toward the recycling area.[114] The court contended that any brine that freely moved from under the plaintiff's tract of land into the recycling area belonged to the defendant brine producer.[115] The court also held that, absent a subsurface trespass, the plaintiff was not entitled to damages for the depleted brine.[116] The court made an

106. Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 6.

107. *See infra* Section II.B.2–4.

108. Joseph A. Schremmer, *A Unifying Doctrine of Subsurface Property Rights*, 46 HARV. ENV'T L. REV. 525, 578 (2022).

109. Budd v. Ethyl Corp., 251 Ark. 639, 642, 474 S.W.2d 411, 413 (1971).

110. *Id.* at 640–41, 474 S.W.2d at 412–13.

111. *Id.*

112. *See* Schremmer, *supra* note 108.

113. *Id.* at 535.

114. *See Budd*, 251 Ark. at 640–41, 474 S.W.2d at 412.

115. *Id.*

116. *See id.* at 413–14, 474 S.W.2d at 641–44.

exception for lands outside the recycling area but included in a unit with other lands located within the recycling area.[117]

3. Young v. Ethyl Corp

In 1975, the Eighth Circuit Court of Appeals held that a brine producer committed subsurface trespass by using the recycling area to manipulate and move brine from the plaintiff's tract of land to the producer's well.[118] Unlike the appellee's unleased tract of land in *Budd v. Ethyl Corp.*, Young's unleased tract of land lay inside the recycling area and was surrounded by other tracts under the defendant's exclusive control.[119] Young claimed that when he refused to lease his tract to the defendant, the defendant used the brine production process, or the recycling area process, to move Young's brine away from his land and toward the producer's production well.[120]

The court found that the producer's mechanical movement constituted actionable subsurface trespass on Young's mineral estate.[121] As a way of distinguishing this case from *Budd v. Ethyl Corp.*, the *Young* court affirmed the general rule of capture, stating,

> [W]hen [fugacious minerals] escape and go into other land or come under another's control, the title of the former owner is gone. If an adjoining owner drills his own land and taps a deposit of oil or gas extending under his neighbor's field, so that it comes into his well, it becomes his property.[122]

However, the court did not apply the rule of capture when the producer removed the landowners's minerals from under his land through mechanical manipulation through injection and production wells on surrounding property.[123]

Because the rule of capture was "not a license to plunder,"[124] the court put forward the doctrine of correlative rights as a restraining corollary to the rule of capture.[125] Under the doctrine of correlative rights, a landowner may extract oil, gas or from a shared pool, subject to two imposed duties: (1) to avoid harming the source of supply for other owners, and (2) to refrain from

117. *Id.*
118. *See* Young v. Ethyl Corp., 521 F.2d 771, 772 (8th Cir. 1975).
119. *Id.* at 772.
120. *Id.*
121. *Id.* at 774.
122. *Id.* at 773 (internal citations omitted).
123. *Id.* at 774.
124. *Young*, 521 F.2d at 774.
125. *Id.* at 774–75.

taking an excessive share of oil and gas from the common pool.[126] The court held that the brine producer's actions amounted to trespass on Young's subsurface estate.[127] The court also surmised that "the Supreme Court of Arkansas would not apply the rule of capture to this situation and, hence, would not need to proceed to the alternative question of correlative rights."[128]

4. Jameson v. Ethyl Corp

The Supreme Court of Arkansas, in its own subsurface brine trespass case, faced the same dilemma previously addressed by the Eighth Circuit Court of Appeals in *Young*: does the use of a process to mechanically manipulate brine from an unleased tract lying inside the recycling area toward a producer's production well constitute subsurface trespass?[129] The Appellant, Jameson, claimed that Appellee, Ethyl Corporation, depleted valuable brine off her 95-acre tract of land in Columbia County, Arkansas.[130] In her claim, Jameson "characterize[d] the recycling process as a pushing of tail brine and Magnolia field brine onto the Jameson property in order to force the valuable bromine-enriched brine into Ethyl's wells, which Appellant labels 'pushing' or 'sweeping.'"[131]

The court recognized that Ethyl purposely moved a significant amount of bromine under Jameson's 95-acre tract of land to its own production wells and then Ethyl claimed the produced property as its own and, partially persuaded by the Eighth Circuit Court of Appeal's decision in *Young*, the court "adopt[ed] an interpretation that the rule of capture should not be extended insofar as operations relate to lands lying within the peripheral area affected . . . ."[132] However, unlike the decision in *Young*, the Supreme Court of Arkansas held that Ethyl's "reasonable and necessary secondary recovery processes of pools of transient materials should be permitted, when such operations are carried out in good faith for the purpose of maximizing recovery from a common pool" as long as "the extracting party to compensate the owner of the depleted lands for the minerals extracted in excess of natural depletion . . . ."[133] Striking a balance between the goal of maximizing natural resource production and the need to protect a mineral owner's rights against trespass in pursuit of that goal, the court pointed to Arkansas's unitization laws, enacted

126. *Id.*
127. *Id.*
128. *Id.* at 775.
129. *Compare* Jameson v. Ethyl Corp., 271 Ark. 621, 629, 609 S.W.2d 346, 351 (1980), *with Young*, 521 F.2d at 772.
130. *Jameson*, 271 Ark. at 622, 609 S.W.2d at 347–48.
131. *Id.* at 625, 609 S.W.2d at 349.
132. *Id.* at 625, 629, 609 S.W.2d at 349, 351.
133. *Id.* at 629, 609 S.W.2d at 351.

to avoid waste of waste and maximize mineral resource production.[134] On the one hand, by preventing maximum resource recovery, "brine will be wasted if a single landowner is able to thwart secondary recovery processes . . . ."[135] On the other hand, because there exists "a need to protect each landowner's rights to some equitable portion of pools of such minerals," expanding the rule of capture would likely "extend the license of mineral extraction companies to appropriate minerals [mechanically] moved from other properties through [the recycling process] . . . ."[136]

As such, the court contended that, while good faith trespass was in the best interest of the public if it also carried with it an obligation on the producer's part to pay the mineral owner for the depleted resource stemming from the subsurface trespass, it still, nonetheless, constituted actionable trespass.[137]

The courts in both *Young* and *Jameson* dealt with the same problem in virtually the same way. Both courts opted not to extend the rule of capture to include the mechanical use of the recycling area to physically move brine minerals from an unleased tract of land, lying adjacent to the recycling area, to the production well on the recycling area.[138] However, by combining the *Young* decision with the recently-enacted Brine Conservation Act, the Supreme Court of Arkansas provided a roadmap in the *Jameson* decision as to how it intended to subsequently handle subsurface trespass claims: the court would "allow[] damages for brine which would not have been displaced but for the producer's injection wells."[139]

B. Arkansas Unitization

Every natural resource-producing state has enacted unitization law to both avoid waste and protect a mineral landowner's correlative rights. state that significant.[140] In Arkansas, the Oil and Gas Commission holds the "statutory authority to establish drilling units, designate the number of wells that may be drilled and produced, and regulate the spacing among wells within a unit" to prevent waste and excessive drilling.[141] A drilling unit consists of individual, often separately-owned tracts of land that allows "[o]wners of tracts

134. *Id.* at 628, 609 S.W.2d at 351.
135. *Id.*
136. *Jameson*, 271 Ark. at 628, 609 S.W.2d at 351.
137. *Id.* at 628–29, 609 S.W.2d at 351.
138. *See id.* at 629, 609 S.W.2d at 351*; see also* Young v. Ethyl Corp., 521 F.2d 771, 775 (8th Cir. 1975).
139. *See* Deltic Timber Corp. v. Great Lakes Chem. Corp., 2 F. Supp. 2d 1192, 1196 (W.D. Ark. 1998) (citing Jameson v. Ethyl Corp., 271 Ark. 621, 609 S.W.2d 346 (1980)).
140. Daily & Barrier, *supra* note 40, at 242.
141. Gawenis v. Arkansas Oil & Gas Comm'n, 2015 Ark. 238, at *4, 464 S.W.3d 453, 455.

or interests within an established drilling unit [to] voluntarily pool, combine, and integrate their tracts or interests for the development or operation of that drilling unit."[142] "Each owner's fair share [of production in a unit] is termed his "*correlative right*" to [oil, gas, and/or brine] within the common reservoir."[143]

In *Gawenis v. Arkansas Oil & Gas Commission*, the Supreme Court of Arkansas held that the Arkansas Oil and Gas Commission could forcefully integrate an unleased mineral owner into an oil, gas, or brine production or expansion unit.[144] The court held that when the brine producer owns or controls the mineral rights in the tracts of land lying adjacent to or surrounding a unit, the Commission, upon notice to the land owner of an unleased tract, could forcibly pool—or integrate—that unleased tract of land into a proposed production or expansion unit without the owner's consent to prevent waste.[145]

Brine Production Units reduce the number of drill site locations for brine recycling by combining, or pooling, contiguous tracts of land into a single cohesive unit.[146] By combining acreage into a pooled unit, a brine producer can access and gather brine from a shared subsurface aquifer under the pooled acreage instead of drilling multiple wells on multiple separate tracts of land to access and produce brine from that same shared auqifer.[147] Should a land owner or mineral owner refuse to lease to the producer, the state can force the landowner to participate in the unit if the lands around that tract are leased and dedicated to the unit.[148] Otherwise, that unleased tract of land could impede production by forcing the producer to expend the cost to establish additional drill sites around the unleased tract, leading to waste through excessive drill sites.[149] In its *Gawenis* decision, the court found it necessary to weigh the potential for drill-site waste against the mineral owner's rights not to participate in a lease.[150] The court held that, although the Commission could force the inclusion of the plaintiff's land into the production unit, "the integration order allow[s] [the plaintiff] to lease his interest in the drilling unit in exchange for compensation or to participate in the drilling of the well and receive monetary benefits."[151]

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142. *Id.* at *5, 464 S.W.3d at 456.

143. Thomas A. Daily, *Lawyering the Fayetteville Shale Play—Welcome to My World*, Ark. L., Spring 2009, at 10, 12. It is important to note that correlative rights are statutorily-created rights and are not common law rights. *Id.*

144. *Gawenis*, 2015 Ark. 238 at *9, 464 S.W.3d at 458.

145. *See id.* at *4, 464 S.W.3d at 455 (citing ARK. CODE ANN. § 15-72-303(b)).

146. Daily & Barrier, *supra* note 40, at 248.

147. *Id.*

148. *See* ARK. CODE ANN. §§ 15-72-302(3), 15-72-302(4), 15-72-302(9).

149. *Gawenis*, 2015 Ark. 238, at *4, 464 S.W.3d at 455.

150. *Id.* at *8, 464 S.W.3d at 457.

151. *Id.*

C. Brine Production and Expansion Units in the Arkansas Code

To prevent waste and excessive drilling, the Brine Act incorporates unitization through brine production units and brine expansion units in the Act.[152] A brine expansion unit increases the size of an existing brine production unit by adding additional acreage.[153] The intention of each unit type is the same: (1) drain efficiently the area of the brine expansion unit, and (2) protect the correlative rights of each owner of the brine unit.[154]

At a minimum, a brine production unit will consist of 1,280 contiguous or adjacent acres of land unless otherwise approved by the Commission.[155] A brine producer can seek the Commission's permission to expand a unit if the producer provides a statement to the Commission demonstrating that the producer "owns or controls the right to produce brine from not less than seventy-five percent (75%) of the entire area of the proposed brine production unit or brine expansion unit."[156] While the Brine Act provides for expanding a brine unit, the Commission cannot reduce an established unit without violating a land owner's correlative rights.[157] Because brine production depletes brine from commonly owned aquifer lying beneath the unitized tracts, the Brine Act prioritizes the mineral owners' correlative rights to their proportionate share of that aquifer by prohibiting a producer from deleting acreage out of the unit to reduce its size.[158]

While there remains the possibility that a brine producer may trespass upon the subsurface estate of an unleased owner of land adjacent to the unit, the Commission has the authority to integrate unleased tracts of land into the unit to prevent waste of resources or the producer's capital.[159] If an owner of an unleased tract, not part of or adjacent to a unit, claims that a producer has unlawfully drained his or her brine, that owner can petition the Commission for an accounting of royalty or compensation and receive the amount he or she is owed as if the owner were part of a unit.[160]

When the Commission orders the integration of an unleased tract of land into a production or expansion unit, the owner of that tract must decide election within sixty days from the effective date of that order.[161] The owner can either elect to proportionally participate in the unit and pay his proportionate

152. ARK. CODE ANN. § 15-76-308 to -311.
153. *See* ARK. CODE ANN. § 15-76-302(3)–(4) (defining brine expansion unit and brine production unit).
154. ARK. CODE ANN. § 15-76-308(d)(1).
155. ARK. CODE ANN. § 15-76-308(b).
156. ARK. CODE ANN. § 15-76-309(7).
157. ARK. CODE ANN. § 15-76-308(b)–(d).
158. *Id.*; Young v. Ethyl Corp., 521 F.2d 771, 774–75 (8th Cir. 1975).
159. *See* ARK. CODE ANN. §§ 15-76-310, 15-76-311, 15-76-313.
160. ARK. CODE ANN. § 15-76-312(b)(1)–(3).
161. ARK. CODE ANN. §§ 15-76-314(a), 15-76-314(g)–(h).

fair share of the unit costs, or he can choose not to participate and, instead, receive a "royalty interest equal to one-eighth (1/8) of the value of his or her just and equitable share of the brine produced from the unit."[162] Since the Commission possesses the authority to integrate an unleased tract lying inside or adjacent to a proposed unit, there is no real option for an owner of an unleased tract of land to simply opt out or not participate in the unit, which would allow that individual owner to single-handedly undermine the express purpose for the Act's unitization provisions.[163]

IV. CALCULATING MINERAL ROYALTY UNDER THE BRINE CONSERVATION ACT

A. Payable Royalty Determinations

1. Clear Creek Oil & Gas Co. v. Bushmiaer

Determining the royalty payment amount owed by a producer to a leased or unleased mineral owner for the natural resource produced and sold from the mineral owner's land has proven to be very difficult because of the issue with the term "market price."[164] In *Clear Creek Oil & Gas Co. v. Bushmiaer*, the Supreme Court of Arkansas held that the royalties owed by a producer to a landowner for his proportionate share of natural gas sold "should be determined at the nearest place where they have a market value, deducting the extra expense of delivering them there," meaning that the producer may proportionately deduct expenses for distribution and transportation from royalty payments owed to the mineral owner.[165]

The court reasoned that these expenses were necessary to market and sell the natural gas and that, without these expenses and subsequent sales as a result of these expenses, there would be no basis for a royalty payment.[166] The primary rule, articulated by the court in *Creek Oil & Gas Co. v. Bushmiaer*, is that royalty payments should be calculated based on the market value of the natural resource at the wellhead—or first point of production—less marketable costs.[167]

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162. *Id.*

163. Gawenis v. Arkansas Oil & Gas Comm'n,, 2015 Ark. 238, at *4 n.2, 464 S.W.3d 453, 455 n.2.

164. *See generally* Clear Creek Oil & Gas Co. v. Bushmiaer, 165 Ark. 303, 304, 264 S.W. 830, 831 (1924).

165. *Id.* at 308, 264 S.W at 832.

166. *See id.*

167. *Id.*

2. Hanna Oil and Gas Co. v. Taylor

Sixty-five years after *Creek Oil & Gas Co. v. Bushmiaer*, the Supreme Court of Arkansas, in *Hanna Oil and Gas Co. v. Taylor*, held that certain costs could not be deducted from a mineral owner's royalty payment unless the lease governing the relationship between the mineral owner and the producer allowed such a deduction.[168] The court emphasized that unless the lease provided for a royalty payment based on the net proceeds from the sale of natural gas, then the producer could not deduct additional costs not contemplated by the lease; to do so would "go beyond the clear language of the agreement between the parties."[169] The primary rule articulated in *Hanna Oil and Gas Co. v. Taylor* is that the express terms of the lease govern what costs a producer can and cannot deduct from the royalty amount owed to a mineral owner.[170]

There is a conflict between these two cases regarding what post-production costs a producer can deduct from a royalty payment. However, both cases uniformly disallow any pre-production or production costs.[171] Concerning royalty payments for brine and lithium, the Brine Act equally simplifies and complicates this issue.

B. Calculating Brine and Lithium Royalty Payments

In the follow-up to *Young v. Ethyl Corp.* to determine money damages owed by Ethyl Corp. to Young for depleting brine from under Young's land, the court affirmed that Ethyl was liable to Young for damages for the brine depleted due to trespass.[172] However, the court held that the lower court "applied an improper measure of damages under Arkansas law . . . ."[173] The court reversed the award and remanded the case to the district court "for determination under Arkansas law upon the amount of damages awarded."[174]

The court's issue with the lower court's damage award was two-fold. First, although the defendant trespassed on the plaintiff's estate and depleted 7,612,000 barrels of brine, enough evidence was presented at trial to demonstrate that the trespass was innocent and in good faith.[175] Second, the lower court awarded the plaintiff damages based on the value of the produced and

168. Hanna Oil & Gas Co. v. Taylor, 297 Ark. 80, 81–82, 759 S.W.2d 563, 565 (1988).
169. *Id.* at 81, 759 S.W.2d at 565.
170. *Id.* at 81–82, 759 S.W.2d at 565.
171. *Compare Clear Creek Oil & Gas Co.*, 165 Ark. 303, 264 S.W. 830, *with Hanna Oil & Gas Co.*, 297 Ark. 80, 759 S.W.2d 563.
172. Young v. Ethyl Corp., 581 F.2d 715, 716–18 (8th Cir. 1978).
173. *Id.* at 716.
174. *Id.* at 719.
175. *Id.* at 717.

processed brine.[176] To the second point, the court surmised that because the plaintiff lacked the knowledge and capability to produce brine on his own, he should not be entitled to receive damages based on the market value of the brine-extracted bromine without the associated extraction and transportation costs.[177] After deducting those extensive costs from the final marketable product, the court could not assign any value to raw produced brine or award the damages to Young for his depleted brine.[178] In remanding the case, the court shifted the responsibility of assigning a value to raw produced brine to Arkansas, asserting that it could not "achieve this result without [Arkansas] statutory authority."[179]

With the enactment of the Brine Act, the Arkansas General Assembly created the statutory authority necessary to determine damages for brine trespass and calculate mineral owner royalty payments for the sale of brine.[180] As previously mentioned, the Brine Act creates a market for brine through a direct connection to the sale of extracted bromine, and the Additional Substances provision permits the establishment of markets for all other brine-extracted substances besides bromine.[181] Also, recall that the statute's definition of brine includes any substance extracted from brine; therefore, the Brine Act extends the Arkansas Oil and Gas Commission's statutory authority to interpret, implement, and enforce the Act's provisions for all brine-extracted substances.[182]

First, the Brine Act sets the market value for brine at "the average price at which the operator of the unit has purchased or sold brine in Arkansas adjusted to reflect concentrations of ions, temperature, other relevant physical and chemical specifications, and delivery point."[183] For that market to exist, the brine producer must first buy or sell brine in Arkansas, with a market value derived from the average purchase price of bromine at the point of sale in the year it is sold.[184] Because a market for brine depends on brine sales, most often, the brine market does not sufficiently exist.[185] If a brine market does exist, the net proceeds are minimal or nothing at all after accounting for the deduction of allowable distribution and transportation costs and the

176. *Id.*
177. *Id.*
178. *Young*, 581 F.2d at 718.
179. *Id.* at 719.
180. *See* ARK. CODE ANN. § 15-76-306.
181. *See supra* Section II.B.
182. *See supra* Section II.A.; *see generally* ARK. CODE ANN. § 15-76-306 to -307.
183. ARK. CODE ANN. § 15-76-315(a)(1)(A).
184. *Id.*
185. *See* ARK. CODE ANN. § 15-76-315(a)(1)(A).

proportionate division of the net proceeds to the mineral owners in a brine unit.[186] So, to encourage mineral owners to continue to lease their land and participate in brine production, the Brine Act devises an "in-lieu" royalty payment.[187] The provision states that

> no valuation of brine . . . shall ever result in compensation which is less than thirty-two dollars ($32.00) per acre per year, as increased or decreased annually based on changes in the Producer Price Index for processed goods for intermediate demand published by the United States Bureau of Labor Statistics, or its successor.[188]

Irrespective of actual brine sales, the Brine Act requires that brine producers pay the in-lieu royalty "annually based on a statutory rate, as opposed to a true royalty based on the amount of the produced brine."[189] Further, the statutory payment amount of $32.00, as amended from $25.00 in 1995, must either increase or decrease annually based on inflation, which puts the approximate in-lieu royalty payment amount at slightly below $65.00 per acre per year.[190] For example, for a 100-acre unitized tract of land, the statute will require the brine producer to pay that mineral owner an in-lieu royalty payment of approximately $6,500.00 for this year (2023).[191]

Second, for all other substances extracted from brine, the Additional Substances provision requires the producer to "account separately and on a fair and equitable basis to each owner in the unit for all substances which are found by the commission to be profitably extracted from brine by a producer . . . ."[192] In a recent submission to the Commission, Standard Lithium requested approval of a lithium royalty payment calculation for its South Brine Unit and its South Brine Expansion Unit.[193] In the request, Standard Lithium proposed a minimum royalty of $400.00 per metric ton of lithium chloride solution produced and sold "at a realized price actually received" of $30,000.00 or less, to be distributed on a "fair and equitable basis for compensating the owners in the South Brine Unit and South Brine Expansion Unit

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186. *See* Daily, *Arkansas' Brine Production Business: How You Make Something From Less Than Nothing*, *supra* note 29, at 10; *see, e.g.*, Clear Creek Oil & Gas Co., 165 Ark. 303, 303, 264 S.W. 830, 832 (1924).

187. ARK. CODE ANN. § 15-76-315(a)(3).

188. *Id.*

189. D. ROY ECCLES ET AL.., TETRA TECHNOLOGIES, INC., S-K 1300 TECHNICAL REPORT: MAIDEN INFERRED BROMINE AND LITHIUM RESOURCE ESTIMATIONS 3 (Sept. 15, 2022).

190. ARK. CODE ANN. § 15-76-315(a)(3).

191. $65.00 ($32.00 in 1995 and adjusted for inflation, per *Consumer Price Index Inflation Calculator*, U.S. BUREAU OF LAB. STATS., https://data.bls.gov/cgi-bin/cpicalc.pl [last visited Mar. 26, 2024]) *multiplied* by 100 acres; ARK. CODE ANN. § 15-76-315(a)(3)–(4).

192. ARK. CODE ANN. § 15-76-315(c)(1).

193. ARKANSAS OIL AND GAS COMMISSION, Application No. 058-2023-08 (July 28, 2023).

for the lithium extracted from the brine."[194] Based on the language of the Brine Act, this royalty payment would be in addition to the statutory $65.00 per acre per year in-lieu royalty payment.[195]

V. Problems and Solutions

A. Adding Up the Problems

1. Two Substances

The Additional Substances Provision delineates between brine-extracted substances based on the Brine Act's effective date.[196] Since bromine was the only substance profitably extracted from brine when the law went into effect on January 1, 1979, the statute requires the producer to pay a royalty based on the market value of bromine.[197] However, should that royalty payment amount to less than $65.00 per acre, the statute requires the producer to pay the mineral owner $65.00 per acre as a statutory annual in-lieu royalty payment.[198] In addition to the statutory royalty payment for brine/bromine, any substance "found by the commission to be profitably extracted from brine by a producer and which [was] not extracted by a producer on January 1, 1979," including lithium, is considered an additional substance and, as such, a producer must pay additional royalty amounts to the mineral owner for the substance.[199] Thus, lithium producers in Arkansas will be required to pay a calculated royalty for lithium and the statutory payment for bromine, which will likely be re-injected into the aquifer rather than extracted and sold.

2. Two Substances + Oversized Units

To prioritize the prevention of waste, excessive drilling, and subsurface trespass, the Brine Act authorizes the Commission to establish brine production units of at least 1280 acres per unit.[200] Regarding royalty, the Brine Act requires that a lithium producer pay the statutory minimum of approximately $83,200 annually, and depending on inflation, simply to maintain the unit acreage. Should that same producer need three to five years to build and develop the infrastructure and drill wells necessary to produce an extract lithium, the producer will still be required to pay between $240,000 and $420,000

194. *Id.*
195. *See* Ark. Code Ann. § 15-76-315(c)(1).
196. *Id.*
197. Ark. Code Ann. § 15-76-315(a)(3)–(4); *see also supra* Section II.B.
198. Ark. Code Ann. § 15-76-315(a)(3).
199. Ark. Code Ann. § 15-76-315(c)(1); *see also supra* Section II.B and IV.B.
200. Ark. Code Ann. § 15-76-308(b).

on a minimum 1280-acre unit to mineral owners during those three to five years before any lithium is either produced or sold. Further, because a unit can only increase in size since any reduction would violate unit mineral owners' statutorily-protected correlative rights, any unit expansion based on exploratory geology will also increase the statutory in-lieu royalty payment amount because, once expanded, a unit cannot be reduced. In a rush to acquire significant acreage and produce lithium, competition amongst producers inevitably will lead to oversized units that will contain both productive and unproductive acreage. Regardless, without the ability to reduce a unit's size, the brine producer will be required to pay the annual statutory royalty payment of approximately $65.00 per acre to maintain control over the designated unit lands under lease.[201]

3. Two Substances + Oversized Units + Two Royalty Payments equals . . .

If a major producer acquires 100,000 acres and then projects to build a lithium extraction facility within five years, it will cost that producer approximately $32.5 million ($6.5mm annually) for the privilege to produce and sell Arkansas lithium.[202] Once the infrastructure is finally in place, the major lithium producer will be required, under the Brine Act, to pay royalties on both lithium and brine.[203] While some Arkansas lithium producers have already acquired acreage with pre-existing infrastructure, most producers entering the Smackover Formation lithium play must build and pay for infrastructure, including injection and production wells to extract and re-inject brine lithium.[204] The cost, alone, to construct wells and pipelines to transport brine to an extraction facility could easily reach six figures, and the additional capital needed to build and maintain extraction facilities could run in the hundreds of millions, if not billions, of dollars.[205]

Producers cannot proportionately deduct any of these costs from mineral owner royalty payments, so producers must bear these costs alone.[206] However, with the "global market for lithium . . . currently valued at $7.5 billion and . . . expected to double by 2030" to a projected $15 billion, at what point

201. ARK. CODE ANN. §§ 15-76-315(a)(3)–(4).

202. *See supra* Section II.B and III.B.

203. *See* ARK. CODE ANN. § 15-76-315; *see also supra* Section II.B and IV.B.

204. *See* FRANK GAY ET AL., STANDARD LITHIUM, LTD. NI 43-101 TECHNICAL REPORT SOUTH WEST ARKANSAS PROJECT 65 (Sept. 18, 2023).

205. *See, e.g.*, McNeill, *supra* note 10; Massey, *Standard Lithium Buys 118 Acres for $1.3B Plant*, *supra* note 5.

206. *See supra* Section IV.A.

does the annual $2 million or $6.5 million statutory royalty for brine start to drag on the economic viability of Arkansas-produced lithium?[207]

B. The Point at which the Annual $2 Million or $6.5 Million Statutory Royalty for Brine starts to drag on the Economic Viability of Arkansas Lithium Production

On October 26, 2023, Ford Motor Co. announced its plans to postpone a $12 billion investment in electric vehicles, stating, "[M]any customers in North America are no longer willing to pay a premium for an electric vehicle over an internal-combustion or hybrid alternative."[208] While Ford CFO John Lawler dismissed any notion that it was backing away from the electric vehicles, he did say that "[w]e are . . . looking at the pace of the capacity [to produce electric vehicles] that we're putting in place. We are going to push out some of that investment."[209]

Ford's decision may have been more notable if, two days before Ford's announcement, General Motors had not also announced that the company planned to abandon "a self-imposed target to build 400,000 electric vehicles by mid-2024 . . . ."[210] General Motors' announcement came a week after the company announced that it would delay the opening of an EV truck factory in suburban Detroit.[211] Tesla—often hailed as the leader in the electric vehicle market—saw its stock price sink "9.3% to its lowest level in nearly two months [on October 19], after the electric vehicle maker missed on earnings."[212]

While these recent announcements do not necessarily mean that the electric vehicle industry is doomed or defunct, they could indicate that the EV industry may need more time to scale up product demand. At first glance, a $65 per acre annual royalty may not seem significant, but for companies seeking to produce and supply the lithium needed for EV batteries, the arbitrary

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207. Heaton & Rhymes, *Lithium Extraction May Soon Turn Produced Water Into Produced Profits*, *supra* note 28.

208. John Rosevear, *Ford Will Postpone About $12 Billion in EV Investment as Buyers Become More Cautious*, CNBC (Oct. 27, 2023, 6:43 AM), https://www.cnbc.com/2023/10/26/ford-will-postpone-about-12-billion-in-ev-investment.html#:~:text=Ford%20Motor%20said%20Thursday%20that,on%20new%20EV%20manufacturing%20capacity.

209. *Id.*

210. Mike Colias, *GM Scales Back EV Plans as Buyers Hesitate*, WALL ST. J. (Oct. 24, 2023, 12:28 PM), https://www.wsj.com/business/autos/general-motors-gm-q3-earnings-report-2023-5064f4c2.

211. *Id.*

212. *See generally* Pras Subramanian, *Tesla Stock Sinks 9.3% on Profit Miss, Mexico Plant Pause; Cybertruck Deliveries Set for Nov. 30*, YAHOO FIN. (Oct. 19, 2023), https://finance.yahoo.com/news/tesla-q3-earnings-140032243.html.

yearly cost of $2 million, or $6.5 million, or $10 million for a statutory royalty on brine will look more costly with each passing day, especially when combined with the capital expenditures for infrastructure and production.

The statutory royalty will also start to drag on Arkansas's lithium prospects if, and when, someone discovers an alternative source for lithium that is just as plentiful and accessible but cheaper to produce than lithium from the Smackover formation.[213] If it costs less to produce Nevada lithium than Arkansas lithium, then an arbitrary royalty for bromine will only move the economic status of the Smackover lithium brine formation closer to the Tuscaloosa Marine Shale, in terms of production viability.[214] The discovery of a lithium alternative could also prove fatal to Arkansas-lithium, with or without the imposition of the in-lieu royalty; if an EV battery can be made from something similar to lithium in efficiency but cheaper and easier to produce, then the viability of lithium would quickly evaporate. In that instance, it will not matter if Arkansas is the lithium capital of North America in the same way that it would not matter if Arkansas became North America's type-writer production capital or the world's VHS capital. If the demand does not exist, then that industry, including the financial resonances of that industry, does not matter.

C. Possible Solutions

Outside of buying only EVs, there is very little that can be done, at least by Arkansas and Arkansans, to ensure that the electric vehicle industry takes off and thrives. Yet, it may be possible to diminish the economic effect of the Brine Act's statutory in-lieu royalty requirement so that it does not become a barrier to the potential long-term success of Arkansas lithium production.

1. The Lease Approach

At the mineral owner level, it may be feasible to structure the brine lease to incorporate the in-lieu royalty into the royalty paid on lithium or presents. This approach would allow the lease to tie the statutory brine royalty to the lithium production and subsequent lithium royalty. Essentially, the lease would allow the mineral owner to opt for the higher long-term lithium royalty or, alternatively, the terms of the lease could allow the lithium producer to deduct the in-lieu royalty payment from the total annual amount owed to the mineral owner for lithium. Either way, the lease would govern the royalty payment and alleviate the statutory burden on the producer in favor of a more

213. *See* Jeniffer Solis, *Report of Giant Lithium Find Shows Fractures*, RENO-GAZETTE J., Oct. 4, 2023, at LL1.

214. *See supra* Section I.

long-term Arkansas lithium production industry and higher long-term lithium royalties.

There are at least two challenges to this lease approach. First, structuring a lease to contractually circumvent provisions of the Brine Act could nullify the lease. In *Hurd v. Flywheel Energy Production, LLC*—a federal case in the United States District Court for the Eastern District of Arkansas—a question arose as to whether a lease between a mineral owner and a natural gas producer can dictate the terms of post-production costs and royalty proceeds if those terms contravene an Arkansas statute that explicitly addresses those terms.[215] Because the question is a "question[] of state law that is novel, significant, and in dispute[,]" the court has submitted the question as a certified legal question to the Supreme Court of Arkansas.[216]

In the order certifying the legal question, the federal court speculated as to the Supreme Court of Arkansas' likely answer, asserting that Arkansas state statute would likely effectively supplant the terms of a contravening lease between two private parties.[217] The court's conclusion in anticipation of an answer provides little room for a lease alternative to the Brine Act's statutory royalty requirement.

Second, even if the lease provided a way around the statutory requirement, practically speaking, it would be difficult, if not impossible, to convince most mineral owners to forego guaranteed money every year in exchange for the mere possibility of higher long-term lithium royalties.

2. The Commission Approach

At the Commission level, the Commission could use its authority to devise a calculation for lithium royalties that allows the producer to deduct the statutory royalty from the lithium royalty payment if it significantly exceeds the statutory payment.[218] In conjunction with the producers, the Commission could define the phrase "significantly exceeds" while maintaining the statutory royalty as the floor for royalty payments. This approach would not necessarily alleviate the statutory royalty payment for the first years during infrastructure construction and before lithium production. Still, it would lessen the burden of paying two royalties once production starts. The main issue with this approach is that it is sure to make mineral owners angry at both the Commission and the lithium producers simultaneously for attempting to deprive the mineral owners of guaranteed money.

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215. Order Certifying A Legal Question To The Arkansas Supreme Court, Hurd v. Flywheel Energy Prod., No. 4:21-CV-01207-LPR, 2023 WL 3687166, at *4 (E.D. Ark. May 26, 2023).

216. *Id.* at *1.

217. *Id.* at *5.

218. *See* ARK. CODE ANN. §§ 15-76-306(b)–(c).

3. The Legislative Approach

At the legislative level, the Arkansas General Assembly could amend the Brine Act's Additional Substances provision by removing the "in addition to" language so that the statute would only require lithium producers to pay royalty on lithium when targeting only lithium.[219] Legislators could structure the amended provision to entirely bifurcate the statutory and additional royalty and allow each producer to designate the additional substance royalty over the in-lieu royalty. Like the Commission approach, legislators could incorporate the in-lieu royalty payment into the overall royalty payment structure as the royalty floor, thereby alleviating the double royalty requirement. However, like the Commission approach, any legislation eliminating guaranteed money will likely lead to angry Arkansas mineral-owning constituents. The question then becomes, do we elect our state representatives for appeasement, or do we elect them to make decisions for us and will serve our best interests?

VI. CONCLUSION

If Arkansans elect their state representatives to make decisions that are in their best interests, then those representatives should amend the Brine Conservation Act so that it does not impose an unnecessary strain on an industry that could be a long-term financial generator for the state and its citizens. In the short term, several people—mostly mineral owners—will be mad, and a few legislators may not be invited back via the ballot box to serve in the General Assembly. Yet, if the potential for a long-term win that bolsters a fledgling domestic industry, creates well-paying jobs, and meaningfully establishes Arkansas as the lithium capital of North America exists, then it also may be in every legislator's best interest, in the long-term, to amend the Brine Act.

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219. *See* ARK. CODE ANN. § 15-76-315(c).

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