

Whiskey Business: The Environmental Hazards of the Bourbon Industry and Proposed Regulatory Solutions

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INTRODUCTION

The bourbon industry has seen unprecedented growth in recent years.¹ America's native spirit, which has been produced in Kentucky for more than 230 years, has exploded in popularity in the past two decades.² To attempt to keep up with demand, distilleries have increased production more than 360 percent since 2000, and there are no signs they will slow down anytime soon.³ Bourbon is an \$8.6 billion dollar industry in Kentucky, and the sharp increase in demand has brought with it jobs, capital investments in Kentucky companies, and hundreds of millions of dollars in annual tax revenue.⁴ However, the industry's growth has also highlighted the environmental dangers of the distilling process.

This Note explores the dangers of allowing relaxed enforcement of wastewater regulations against distilleries, explores the regulatory environment of neighboring states, and proposes changes for Kentucky's environmental regulations and enforcement actions related to bourbon distilleries. This Note argues that implementing criminal penalties and increasing the existing monetary penalty structure for environmental protection violations would encourage distilleries to prevent the pollution of

* Editor-in-Chief, Vol. 15 of the *Ky. J. of Equine, Agric. & Nat. Res. L.*; B.S. Economics & Business Administration, 2019, University of Kentucky Gatton College of Business and Economics; J.D. Expected May 2023, University of Kentucky J. David Rosenberg College of Law.

¹ Wayne Curtis, *The Bourbon Boom*, IMBIBE (Sept. 21, 2020), <https://imbibemagazine.com/the-bourbon-boom/> [<https://perma.cc/KBM6-E6V2>].

² *Whiskey History and Timeline*, THE SPRUCE EATS (Apr. 28, 2021), <https://www.thespruceeats.com/bourbon-history-timeline-760176#:~:text=1789%3A%20Elijah%20Craig%2C%20The%20Father%20of%20Bourbon&text=It's%20been%20said%20that%20Elijah,of%20bourbon%20to%20this%20day> [<https://perma.cc/2HDV-SXZS>].

³ *Kentucky Bourbon Quick Shots 2020*, KY. DISTILLER'S ASS'N, <https://kybourbon.com/wp-content/uploads/2021/08/NOV.2020-Quick-Shots.pdf> (last viewed June 9, 2022) [<https://perma.cc/2373-XA5A>].

⁴ *Id.*

the water sources that these distilleries rely on. These changes would promote sustainable growth of the bourbon industry and allow for its expansion without the sacrifice of Kentucky's natural resources. Without a meaningful change in the behavior of bourbon distilleries—whether by pressure from consumers or the threat of criminal and civil penalties—the future of this booming industry may well be cut short by its own actions.

I. THE DISTILLING INDUSTRY AND AN OVERVIEW OF ENVIRONMENTAL REGULATIONS

In January of 2021, Filibuster Distillery in Virginia and its vice president were each indicted on more than fifty charges of violating state water laws.⁵ In a plea deal, the distillery and its executive agreed to pay \$700 thousand and invest in equipment upgrades at the distillery to prevent future harm to the environment.⁶ This case represents the first criminal charges brought by the state for environmental violations, but the Virginia Attorney General's office indicated they would not be the last.⁷

The illegal wastewater discharge at Filibuster Distillery was unfortunately not an isolated event. In 2019, a fire destroyed a Jim Beam warehouse containing 45 thousand barrels of whiskey.⁸ While emergency crews attempted to prevent leakage into the nearby Glenn's Creek, alcohol was detected more than twenty-three miles downstream, where the creek meets the Ohio River.⁹ In 2018, a Barton 1792 warehouse collapsed, sending barrels of aging bourbon into a tributary of the Beech Fork River, killing nearly 800 fish due to reduced oxygen levels in the water.¹⁰

⁵ Clark Mindock, *Virginia Whiskey Distillery Hit with Criminal Wastewater Charges*, LAW360 (Jan. 15, 2021, 2:15 PM), <https://www.law360.com/articles/1345437> [<https://perma.cc/EQC8-6PM7>].

⁶ *Shenandoah County Distillery to Pay \$700,000 for Polluting Stream*, N. VA. DAILY (Nov. 5, 2021), https://www.nvdaily.com/filibuster-distillery-and-its-owner-to-pay-700-000-for-dumping-waste/article_ca4e8e50-185d-5157-a26e-badf7d2ef175.html [<https://perma.cc/7L8S-Z2WE>].

⁷ Mindock, *supra* note 5.

⁸ Mike Stunson & Ryan Hermens, *Massive Fire Destroys Jim Beam Kentucky Warehouse. Bourbon Runoff Reaches Kentucky River.*, LEXINGTON HERALD-LEADER (July 4, 2019, 5:33 PM), <https://www.kentucky.com/news/local/counties/woodford-county/article232234137.html> [<https://perma.cc/7BJY-ADQU>].

⁹ *Jim Beam Warehouse Fire Leaves Behind Environmental Impact*, WHISKYCAST (July 8, 2019), <https://whiskycast.com/jim-beam-warehouse-fire-leaves-behind-environmental-impact/> [<https://perma.cc/6E2W-UB8E>].

¹⁰ Stunson & Hermens, *supra* note 8.

In a separate incident, the same distillery also spilled nearly 120 thousand gallons of fermented mash, which is later distilled into bourbon, into the nearby waterway.¹¹ However, accidents like fires and structural collapses are not the only source of pollution from alcohol distilleries. In 2018, Tennessee distilleries Jack Daniels and George Dickel “exceeded their limits for chlorine and other pollutants” known to cause harm to fish and other aquatic life.¹² In 2019, the Castle & Key Distillery near Frankfort, Kentucky discharged “an unknown quantity of untreated wastewater” into Glens Creek, killing an “unknown number of fish.”¹³

Excessive wastewater discharge and whiskey spills are extremely damaging to the environment. Alcohol distilling is one of the most polluting industries, as “88% of its raw materials are converted into waste,” which must then be discharged, often into nearby bodies of water.¹⁴ As a result of the water-intensive chemical processes used to distill alcohol, distilleries produce twelve times as much wastewater by volume as alcohol.¹⁵ This wastewater is dark in color, and blocks out sunlight when discharged into a water source, reducing oxygen levels in the water and inhibiting photosynthesis.¹⁶ Because of its high nutrient content, the wastewater also causes a process called eutrophication, which further depletes dissolved oxygen levels in bodies of water.¹⁷ Accidental spills of distilled alcohol are also

¹¹ Matthew Glowicki, *120,000 Gallons of Fermented Mash Spills at Barton 1792 Distillery in Bardstown*, COURIER J. (Mar. 5, 2019, 5:22 PM), <https://www.courier-journal.com/story/news/2019/03/05/would-bourbon-spills-barton-1972-distillery/3071517002/> [<https://perma.cc/UA79-6ZCZ>].

¹² Mike Reicher, *Tennessee Whiskey Distillers Focus on Pollution Controls as Industry Grows*, TENNESSEAN (Jan. 25, 2018), <https://www.tennessean.com/story/money/2018/01/25/tennessee-whiskey-distillers-focus-pollution-controls-industry-grows/1039412001/> [<https://perma.cc/AXS6-BTM3>].

¹³ John Cheves, *Another Spill at a Kentucky Bourbon Distillery Kills Fish in this Frankfort Creek*, LEXINGTON HERALD-LEADER (Aug. 16, 2019, 4:33 PM), <https://www.kentucky.com/news/politics-government/article234080232.html> [<https://perma.cc/ZU3Q-ZE5Z>].

¹⁴ Yogita Kharayat, *Distillery Wastewater: Bioremediation Approaches*, 9 J. INTEGRATIVE ENV'T SCI. 69, 69 (2011).

¹⁵ Wioleta Mikucka & Magdalena Zielińska, *Distillery Stillage: Characteristics, Treatment, and Valorization*, 192 APPLIED BIOCHEMISTRY & BIOTECHNOLOGY 770, 772 (2020).

¹⁶ *Id.*

¹⁷ *Id.*

detrimental as they kill fish and other wildlife due to alcohol toxicity and reduced oxygen levels in the water.¹⁸

The pollution of water sources is especially troubling for Kentucky bourbon distilleries, which rely on the state's famed limestone-filtered water to produce their whiskey.¹⁹ Many distilleries, like Maker's Mark, incorporate the use of limestone-filtered water into their marketing materials, referring to it as "the secret ingredient that makes bourbon so good."²⁰ Maker's Mark, in particular, relies heavily on the unique properties of limestone water, as it claims to be "the only bourbon with its own water source," a lake directly next to the distillery.²¹ The water used by Kentucky distilleries is rich in calcium and magnesium, which aids in the fermentation process.²² Additionally, the limestone filters out iron, which could make the finished product turn black and alter its flavor.²³ Whether it is used for its unique mineral content or simply for marketing, Kentucky limestone water is undoubtedly important to the industry as a whole.²⁴

Whiskey producer's use of Kentucky's water sources in does not appear to be slowing down in the near future, and with increased production will likely come increased environmental costs.²⁵ From 2010 to 2020, American whiskey sales within the United States increased by more than 84 percent.²⁶ In that same time span, "super premium" American whiskey sales, representing

¹⁸ *Bardstown Distillery Faces Fines Tied to Fish Kill After Warehouse Collapses*, WDRB (June 25, 2018), https://www.wdrb.com/news/business/bardstown-distillery-faces-fines-tied-to-fish-kill-after-warehouse-collapse/article_3ab75ec3-bd15-5f1e-a5fb-6c1484b7564d.html [https://perma.cc/F2HT-7JMP].

¹⁹ *The Essential Role of Kentucky Limestone Water*, HEAVEN HILL DISTILLERY BLOG (Sept. 21, 2020), https://blog.heavenhilldistillery.com/detail.php?post_name=essential-role-kentucky-limestone-water [https://perma.cc/2UVG-DRUK].

²⁰ *Kentucky Limestone Water*, MAKER'S MARK, <https://www.makersmark.com/tags/kentucky-limestone-water> (last viewed Feb. 27, 2022) [https://perma.cc/5EWB-WV6S].

²¹ *Id.*

²² *Id.*

²³ Maggie Kimberl, *Limestone Filtered Water a Key Bourbon Ingredient*, THE WHISKEY WASH (Sept. 14, 2015), <https://thewhiskeywash.com/whiskey-styles/bourbon/whats-deal-limestone-water/> [https://perma.cc/TH38-AHMB].

²⁴ Lew Bryson, *Is the Secret to Kentucky Bourbon Limestone Water?*, THE DAILY BEAST (Jan. 12, 2018), <https://www.thedailybeast.com/is-the-secret-to-kentucky-bourbon-limestone-water> [https://perma.cc/TA99-HE3A].

²⁵ *On America's Whiskey Trail*, DISTILLED SPIRITS COUNCIL (Feb. 2021), <https://www.distilledspirits.org/wp-content/uploads/2021/01/American-Whiskey-2020.pdf> [https://perma.cc/T28K-XPY6].

²⁶ *Id.*

extremely rare and limited whiskey releases, increased by nearly 435 percent.²⁷ According to the Kentucky Distiller's Association, \$570 million in bourbon and other spirits were exported from Kentucky.²⁸ Although the "bourbon boom" started in the early 2000s, sales of bourbon are expected to continue to grow in the near future.²⁹ The COVID-19 pandemic appears to have further increased demand for alcohol.³⁰ Total alcohol sales outside of bars and restaurants increased 24 percent during the pandemic, while the sale of spirits increased more than 27 percent.³¹

The rapid growth of bourbon's popularity has led to a shortage of popular bottles, and distilleries are investing heavily to catch up with demand.³² Buffalo Trace Distillery invested \$1.2 billion to expand its operations through the construction of additional fermenting and distilling equipment and rickhouses.³³ According to the Kentucky Distiller's Association, "\$2.3 billion in capital projects have been completed or are planned over the next five years," indicating that the industry is preparing for continued demand.³⁴ With increased demand and production, comes an increased risk of accidental alcohol spills or unpermitted discharges of wastewater.³⁵ Therefore, as the industry grows, steps must be taken in order to protect the water sources that distilleries rely on.

The main federal law concerning industrial wastewater restrictions is the Clean Water Act, which was passed in 1972 and "establishes the basic structure for regulating discharges of

²⁷ *Id.*

²⁸ *The Bourbon Effect*, KY. DISTILLERS' ASS'N, <https://kybourbon.com/wp-content/uploads/2021/08/NOV.2020-Quick-Shots.pdf> (last viewed Feb. 27, 2022) [<https://perma.cc/NPJ3-6F9Q>].

²⁹ Tim McKirdy, *What's Fueling the Billion-Dollar Bourbon Boom?*, VINEPAIR (Sept. 1, 2020), <https://vinepair.com/articles/bourbon-market-billions-exports-sales-2020/> [<https://perma.cc/JMB6-VGJJ>].

³⁰ Brian Mann, *Hangover From Alcohol Boom Could Last Long After Pandemic Ends*, NAT'L PUB. RADIO (Sept. 11, 2020, 4:57 AM), <https://www.npr.org/2020/09/11/908773533/hangover-from-alcohol-boom-could-last-long-after-pandemic-ends> [<https://perma.cc/F297-FWVW>].

³¹ *Id.*

³² *Buffalo Trace Distillery Makes Headway on \$1.2 Billion Expansion*, THE LANE REP. (Aug. 10, 2021), <https://www.lanereport.com/145285/2021/08/buffalo-trace-distillery-makes-headway-on-1-2-billion-expansion/> [<https://perma.cc/R83G-KVHE>].

³³ *Id.*

³⁴ KY. DISTILLERS' ASS'N., *supra* note 28.

³⁵ Kharayat, *supra* note 14.

pollutants into waters of the United States...”³⁶ The Clean Water Act is enforced at the federal level by the Environmental Protection Agency (“EPA”), which has implemented various pollution control programs since the Act went into effect.³⁷ One such program is the National Pollutant Discharge Elimination System (“NPDES”), which provides for permits to discharge wastewater under certain restrictions.³⁸ These permits must be acquired if an industrial facility discharges waste into any above-ground water source.³⁹ Although the Clean Water Act is a federal law, compliance monitoring takes place mostly at the state level, with forty-six states having implemented their own NPDES programs.⁴⁰ Because individual states are tasked with monitoring and enforcing the Clean Water Act’s various environmental protections, the enforcement procedures and penalties in each state can vary widely.⁴¹ For example, the charges in the Filibuster Distillery case were brought under Virginia state law as authorized by the Clean Water Act.⁴² This approach to enforcing environmental regulations by imposing criminal sanctions on companies and their executives falls under the broad definitions found in the Clean Water Act, but such strict enforcement is not required.⁴³

The optimistic goal of protecting America’s waterways along with the “notoriously vague” definitions found in the Clean Water Act has left enforcement of important wastewater protections mostly to state governments.⁴⁴ Additionally, the recently revised definition of “navigable waters” under the Clean Water Act has limited the number of waterways protected under the Act.⁴⁵ The Environmental Protection Agency expects several

³⁶ *Summary of the Clean Water Act*, ENV’T PROT. AGENCY, <https://www.epa.gov/laws-regulations/summary-clean-water-act> (last viewed Feb. 27, 2022) [<https://perma.cc/8YCG-MT6H>].

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Clean Water Act (CWA) Compliance Monitoring*, ENV’T PROT. AGENCY, <https://www.epa.gov/compliance/clean-water-act-cwa-compliance-monitoring> (last viewed Feb. 27, 2022) [<https://perma.cc/5JX5-HC2H>].

⁴¹ A. S. Ward & R. Walsh, *New Clean Water Act Rule Leaves U.S. Waters Vulnerable*, EOS (Feb. 11, 2020), <https://eos.org/opinions/new-clean-water-act-rule-leaves-u-s-waters-vulnerable> [<https://perma.cc/3G9M-DJNP>].

⁴² Mindock, *supra* note 5.

⁴³ *Id.*; Ward & Walsh, *supra* note 41; Clean Water Act, 33 U.S.C.A. § 1251 (West).

⁴⁴ Ward & Walsh, *supra* note 41.

⁴⁵ *Id.*

states to contract out their environmental protections because of this revision.⁴⁶ So, while Virginia appears to be expanding its enforcement of wastewater protection violations, the same cannot be said for many other states.⁴⁷

Kentucky, for example, has fairly relaxed penalties for wastewater violations, meaning that distilleries and other industrial polluters are not under pressure to comply with the water quality guidelines set by the Environmental Protection Agency.⁴⁸ Other states, such as Virginia, have implemented more restrictions on wastewater disposal alongside harsh penalties for offending distilleries and even their executives.⁴⁹ States like Virginia are leading the charge in environmental protection by introducing criminal sanctions alongside civil penalties for environmental law violations and prosecuting companies that fail to comply.⁵⁰

With the projected future growth of Kentucky bourbon, evidenced by both consumer trends and capital investments in distilleries, more pollution events like the ones seen in recent years are to be expected. These incidents are harmful to local ecosystems, but they are largely preventable. By implementing changes in the incentive structure and enforcement mechanisms affecting the distilling industry, Kentucky can avoid environmental damage while promoting the sustainable growth of the bourbon industry.

II. ENVIRONMENTAL HAZARDS OF THE DISTILLING INDUSTRY

Distilling alcohol is one of the most polluting industrial processes, which results in the discharge of wastewater with “high concentrations of organic matter and nitrogen compounds, low pH, high temperature, dark brown color, and high salinity.”⁵¹ This distilling byproduct is known as “high organic” load stillage.⁵² For every gallon of alcohol distilled, twelve gallons of high organic load stillage is produced.⁵³ Alcohol distilleries also require large

⁴⁶ ENV'T PROT. AGENCY & DEP'T OF THE ARMY, ECONOMIC ANALYSIS FOR THE NAVIGABLE WATERS PROTECTION RULE: DEFINITION OF “WATERS OF THE UNITED STATES” (2020).

⁴⁷ See Mindock, *supra* note 5.

⁴⁸ See KY. REV. STAT. § 224.60-155 (West).

⁴⁹ See VA. CODE ANN. § 62.1-44.32 (West).

⁵⁰ Mindock, *supra* note 5.

⁵¹ Mikucka & Zielińska, *supra* note 15.

⁵² *Id.*

⁵³ *Id.*

quantities of water to cool products throughout the distilling process.⁵⁴ According to data from the Beverage Industry Environmental Roundtable, distilleries are the most water-intensive facilities within the beverage industry, which also includes breweries, wineries, and bottling plants.⁵⁵

The various waste products from the distilling process can have detrimental effects on plant and animal life near distilleries.⁵⁶ When discharged into a body of water, the dark color of distillery stillage can block out sunlight, which prevents aquatic plants and algae from producing oxygen.⁵⁷ The Kentucky Natural Resources and Environmental Protection Cabinet (“NREPC”) monitors the amount of dissolved oxygen in the state’s streams and rivers because of its importance to aquatic life.⁵⁸ According to the NREPC, “dissolved oxygen is one of the most important parameters in aquatic systems” because it is required for aerobic organisms, like fish and some species of bacteria, to produce energy through metabolism.⁵⁹ Oxygen enters water either by diffusion from the surrounding air and as a waste product of photosynthesis.⁶⁰ The discharge of distillery stillage can inhibit both processes.⁶¹

Distillery wastewater discharge poses another a risk to the environment by encouraging eutrophication of water bodies.⁶² Because distillery stillage is rich with nutrients and inorganic substances leftover from the distilling process, bodies of water can become too nutrient-dense after stillage is discharged.⁶³ The abundance of nutrients causes an excess of algae and plants, which eventually die off and decay.⁶⁴ As the dead algae and plants are

⁵⁴ BEVERAGE INDUS. ENV’T ROUNDTABLE, *Beverage Industry Continues to Drive Improvement in Water, Energy, and Emissions Efficiency* (Jan. 2019), <http://www.bieroundtable.com/wp-content/uploads/2018-Water-and-Energy-Use-Benchmarking-Study.pdf> [<https://perma.cc/S6XZ-XDQK>].

⁵⁵ *Id.*

⁵⁶ Mikucka & Zielińska, *supra* note 15.

⁵⁷ *Id.*

⁵⁸ See KY. WATER WATCH, *Dissolved Oxygen and Water Quality*, <http://www.state.ky.us/nrepc/water/ramp/rmdo2.htm> (last viewed Feb. 27, 2022) [<https://perma.cc/5GAB-B8ZZ>].

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ Mikucka & Zielińska, *supra* note 15.

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Nutrients and Eutrophication*, U.S. GEOLOGICAL SURV. (Mar. 3, 2019), <https://www.usgs.gov/mission-areas/water-resources/science/nutrients-and->

broken down by bacteria, the bacteria consume dissolved oxygen from the water, thereby reducing the available supply of oxygen for other organisms.⁶⁵ This process can lead to large-scale fish kills and a foul taste and odor in the water.⁶⁶

In 2019, Castle & Key Distillery discharged an unknown quantity of untreated wastewater into a nearby creek that flows directly into the Kentucky River.⁶⁷ After a wastewater treatment system failed, the distillery discharged the untreated stillage into the creek for approximately two hours, killing an unknown quantity of fish due to depleted, dissolved oxygen levels.⁶⁸ Information about the penalties incurred by Castle & Key is currently unavailable. The accidental wastewater discharge at Castle & Key demonstrates the danger of introducing untreated stillage into water sources and the speed with which these incidents can affect the environment.⁶⁹

Along with stillage discharges, accidental alcohol spills pose a major threat to local ecosystems. These spills generally result from a collapse of a whiskey aging warehouse, or rickhouse, causing aging whiskey to leak out of barrels and into nearby water sources.⁷⁰ Often, these spills are caused by fires fueled by the highly flammable alcohol stored inside the warehouses.⁷¹ In 2019, a rickhouse containing aging bourbon from the Jim Beam Distillery was struck by lightning.⁷² The strike caused a fire which destroyed the warehouse, sending approximately 40 thousand barrels of bourbon into Glenn's Creek, the same creek that Castle

eutrophication?qt-science_center_objects=0#qt-science_center_objects
[<https://perma.cc/AF8S-MQYH>].

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ Cheves, *supra* note 13.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ Sarah Riley & Zahria Rogers, *From 'Bourbonado' to Jim Beam's Fire: Kentucky's Historic Bourbon Disasters*, COURIER J. (June 22, 2018, 5:00 PM), <https://www.courier-journal.com/story/life/food/spirits/bourbon/2018/06/22/kentucky-bourbon-disasters-through-years/726491002/> [<https://perma.cc/Y4HF-HNYN>].

⁷¹ *Id.*

⁷² Karla Ward, *Jim Beam to Pay \$600,000 Fine Because of Spill*, LEXINGTON HERALD-LEADER (Dec. 30, 2019), https://infoweb-newsbank-com.ezproxy.uky.edu/apps/news/document-view?p=AWNB&t=pubname%3ALHLB%21Lexington%2BHerald-Leader%2B%2528KY%2529&sort=YMD_date%3AD&maxresults=20&f=advanced&val-base-0=jim%20beam%20to%20pay%20fine&fld-base-0=alltext&docref=news/1782AEC5CB7E4E78 [<https://perma.cc/Q593-8LQ8>].

& Key Distillery is located on.⁷³ Although the distillery coordinated with emergency workers to contain the spill, most of the bourbon contained in the rickhouse ended up in the waterway.⁷⁴ The spill killed an unknown amount of fish as it spread more than sixty miles downstream.⁷⁵

Both the accidental wastewater discharge at Castle & Key and the fire and resulting bourbon spill at Jim Beam resulted in monetary penalties for the distilleries. Castle & Key faced penalties of up to \$25 thousand per violation per day according to state officials, but the total fine assessed by the state is unknown.⁷⁶ Jim Beam agreed to pay a \$600 thousand fine for the environmental damage caused by the spill as well as \$112,075 directly to the Kentucky Energy and Environmental Cabinet to compensate the state for its response to the spill.⁷⁷ The distillery also agreed to provide an alternate source of drinking water to individuals who found that their well or spring water was contaminated after the spill.⁷⁸ Looking at Jim Beam's parent company's 2019 earnings summary helps put the fine into perspective. According to the 2019 fiscal year report, Beam Suntory's alcoholic beverages segment, which includes bourbon and Japanese whisky brands, had an annual revenue of more than \$6.5 billion.⁷⁹ The fine agreed to by the state was therefore about 3.3 percent of the company's revenue for a single day in 2019.⁸⁰ Insignificant fines, like the one paid by Beam Suntory following the Jim Beam bourbon spill in 2019, are unlikely to encourage companies to invest in preventing further environmental harms. Instead, these fines are considered a cost of doing business.

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ John Cheves, *Distillery Discharge Kills Fish in Frankfort Creek*, LEXINGTON HERALD-LEADER (Aug. 17, 2019), https://infoweb-newsbank-com.ezproxy.uky.edu/apps/news/document-view?p=AWNB&t=pubname%3ALHLB%21Lexington%2BHerald-Leader%2B%2528KY%2529&sort=YMD_date%3AD&maxresults=20&f=advanced&val-base-0=john%20cheves&fld-base-0=Author&bln-base-1=and&val-base-1=2019&fld-base-1=YMD_date&bln-base-2=and&val-base-2=distillery&fld-base-2=alltext&docref=news/17562F4DFA206EA0 [https://perma.cc/X4UJ-MGCL].

⁷⁷ Ward, *supra* note 72.

⁷⁸ *Id.*

⁷⁹ *Suntory Holdings Limited Summary on FY2019 Earnings*, SUNTORY GRP. (Feb. 14, 2020), https://www.suntory.com/about/financial/pdf/comment_201912.pdf [https://perma.cc/LR9A-UJV2].

⁸⁰ *Id.*

Other accidental bourbon spills include the 2003 Jim Beam fire—which was also caused by a lightning strike.⁸¹ Following the strike, the aging bourbon caught fire and flowed into a nearby creek, causing a “massive fire tornado” to spin above the surface of the water.⁸² Another accident occurred in 2000 at the Wild Turkey Distillery following a fire that destroyed a warehouse.⁸³ Because of the massive amount of product that spilled into the Kentucky River, authorities pumped oxygen into the water in an attempt to prevent the deaths of fish downstream from the distillery.⁸⁴ Unfortunately, these efforts were not enough to prevent an environmental catastrophe, as a twenty-eight-mile long stretch of “dead water” developed in the Kentucky River, killing thousands of fish and driving others to jump over a dam in search of habitable water.⁸⁵ Environmental investigators theorized that the oxygen was depleted through eutrophication due to a large algae plume that developed in the days following the spill.⁸⁶

However, some of the bourbon spills could have been prevented with investments in the structural integrity of aging warehouses. In 2018, a warehouse containing 18 thousand barrels of bourbon collapsed in Bardstown, Kentucky.⁸⁷ Bourbon flowed from the collapsed rickhouse and into Withrow Creek for more than three hours before emergency personnel could control the spill, killing approximately 4,000 fish.⁸⁸ An investigation by the Courier Journal in Louisville, Kentucky, found that rickhouses “can go decades without independent inspections for structural weaknesses or safety issues.”⁸⁹ The warehouse involved in the 2018 collapse, owned by the Barton 1792 Distillery, was more than sixty

⁸¹ Riley & Rogers, *supra* note 70.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ See *Fish Kill Blamed on Bourbon Spill*, ASSOC. PRESS (May 17, 2000), <https://apnews.com/article/8d29424832ad943278c89f8d5c498d7c> [<https://perma.cc/QM6J-WB7B>].

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ Beth Warren & Bobby Shipman, *The Rest of the Barton Bourbon Warehouse Collapsed. Here's What we Know*, COURIER J. (July 4, 2018), <https://www.courier-journal.com/story/news/2018/07/04/barton-1792-distillery-bourbon-warehouse-collapses-again-bardstown-kentucky/758091002/> [<https://perma.cc/5BWR-AF52>].

⁸⁸ Thomas Novelly, *In Kentucky, Bourbon Could Kill You Even if you Don't Drink it.*, COURIER J. (Sept. 6, 2018), <https://www.courier-journal.com/story/news/2018/09/06/barton-1792-warehouse-collapse-regulations-distilleries/910683002/> [<https://perma.cc/Q8S8-86XJ>].

⁸⁹ *Id.*

years old when it collapsed and had minimal safety features.⁹⁰ Aging rickhouses are not required to be updated to current building codes even after major events like a building collapse.⁹¹ Voluntary safety upgrades are often rare due to their cost, as distilleries are more likely to build new rickhouses to increase their production capacity rather than improve older buildings.⁹² But, these upgrades, including maintenance of aging warehouses and the installation of new safety features like fire suppression systems, can and should be mandated if distilleries refuse to take preventative measures themselves.

Newly constructed rickhouses are now subject to stricter building codes in order to prevent collapses like the one in Bardstown, but these additional requirements were added relatively recently.⁹³ However, because the Barton 1792 rickhouse was constructed in the 1940s, it was not subject to these heightened requirements, and had not been voluntarily upgraded by the distillery.⁹⁴ Requiring distilleries to update older rickhouses to meet modern building codes and add safety features to manage collapses when they do happen would likely prevent or mitigate future incidents in distilleries, but there appears to be little government interest on this front.⁹⁵

In the absence of government intervention to promote safety and prevent future spills, industry groups and private companies have been taking steps to prevent more harm to the environment, but not all the interested parties see the same danger in aging facilities. The Kentucky Distiller's Association established regulations for the construction of new rickhouses in 2010.⁹⁶ These regulations were intended to ensure that new rickhouses constructed to meet the rapidly increasing demand for Kentucky bourbon would have modern safety features.⁹⁷ However,

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *See id.*

⁹³ Ben Tobin, *It's Been a Year since Kentucky's Huge Bourbon Barrel Spill. What's Changed?*, COURIER J. (June 21, 2019), <https://www.courier-journal.com/story/news/local/2019/06/21/kentucky-barton-1792-bourbon-warehouse-collapse-one-year-later/1447068001/> [<https://perma.cc/K347-Y5GF>].

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ Nicholas Mancall-Bitel, *Have Kentucky's Historic Rickhouses Become the Bourbon Industry's Greatest Liability?*, LIQUOR.COM (Dec. 23, 2019), <https://www.liquor.com/articles/kentucky-distillery-accidents/> [<https://perma.cc/X7GL-HRBX>].

⁹⁷ *Id.*

these regulations—like construction codes—grandfather in older rickhouses, meaning distilleries are not required to update older structures to meet the new requirements.⁹⁸ Many distilleries in Kentucky were founded as far back as the 1800s, and are still using structures that were built more than seventy years ago, leaving a concerning amount of unregulated rickhouses.⁹⁹

Companies like StructuRight have stepped in to monitor the integrity and modernize these older rickhouses that are not subject to modern regulations.¹⁰⁰ StructuRight specializes in monitoring the structural health of distilleries through a system of sensors that constantly monitor vibration, strain on support beams, and changes in position, meaning distilleries can actively monitor minute changes in the structure of their rickhouses and catch problems before they become catastrophic.¹⁰¹ Jeff Phelps, the CEO of StructuRight, predicts that issues surrounding aging distillery warehouses will “be something that’s confronting the industry as a whole.”¹⁰² Phelps is hopeful the recent rickhouse collapses and the increasing scrutiny of environmentally-conscious consumers will lead to updates to aging rickhouses.¹⁰³ Even in the face of high-profile rickhouse collapses and bourbon spills, Eric Gregory, the president of the Kentucky Distiller’s Association (“KDA”), argues that older rickhouses may be more structurally sound than they seem, citing “superior construction techniques and hardier wood and brick.”¹⁰⁴ Because of the Kentucky Distillers Association’s influence over bourbon distilleries, the denial of the dangers of aging rickhouses by the KDA could slow the adoption of monitoring technology offered by companies like StructuRight.

Unfortunately, there are potential polluting events at nearly every step of the distilling process. Whether distilleries accidentally discharge untreated wastewater due to an equipment malfunction or a rickhouse collapses because of poor maintenance, the results can be devastating to local ecosystems. This is especially true for the waterways near many of Kentucky’s

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Structural Health and Wellness Monitoring*, STRUCTURIGHT, <https://www.structuright.com/structural-health-monitoring.html> (last viewed Feb. 2, 2022) [<https://perma.cc/RZ7G-2QYP>].

¹⁰² Mancall-Bitel, *supra* note 96.

¹⁰³ *Id.*

¹⁰⁴ *Id.*

distilleries, which are home to more than 200 species of native fish and other forms of aquatic life.¹⁰⁵ Bourbon distilleries rely heavily on a constant supply of fresh, clean water, which often comes directly from natural sources.¹⁰⁶ To sustain the growth of Kentucky's distilling industry, significant changes need to be made to protect the state's natural resources.

III. THE IMPORTANCE OF CLEAN WATER TO THE DISTILLING INDUSTRY

The bourbon industry relies heavily on a constant supply of fresh, clean water to continue the production of whiskey.¹⁰⁷ Water is used in many processes essential to a distillery's operation, including malting grains, producing fermentable mash, diluting aged spirits before bottling, cooling, and for powering pot stills with steam.¹⁰⁸ Whether the water ends up in the final product, which generally contains up to 60 percent water, or is used indirectly in distilling, it is essential in nearly every step of the production process.¹⁰⁹ Water's significance in the production of spirits was highlighted in Scotland in 2019, when a drought forced distillers to halt production throughout the entire month of September.¹¹⁰

The importance of water goes beyond its use in the production of whiskey. The types of water used by different distilleries have taken on almost mystical qualities. The water used by Scottish distillers has long been rumored to affect Scotch's unique "peaty" flavor, although this is not backed by scientific evidence.¹¹¹ In Kentucky, nearly every bourbon distillery credits the commonwealth's famous limestone-filtered water as being the

¹⁰⁵ Matthew R. Thomas, *Kentucky Fishes*, KY. DEP'T OF FISH & WILDLIFE (2011), <https://fw.ky.gov/Wildlife/Documents/KYFISHID.PDF> [https://perma.cc/47DD-Y9H2].

¹⁰⁶ *How Bourbon Whiskey Is Made: An Illustrated Description of the Production of Bourbon*, WHISKY.COM <https://www.whisky.com/information/knowledge/production/overview/how-bourbon-whiskey-is-made.html> (last viewed Feb. 27, 2022) [https://perma.cc/H5PP-2VVL].

¹⁰⁷ Thijs Klaverstijn, *How Water Affects Whiskey*, DISTILLER (July 22, 2021), <https://distiller.com/articles/water-affects-whiskey> [https://perma.cc/27BK-5AHD].

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ Arabella Mileham, *Droughts Last Year Halted Whiskey Production, Scotch Producers Admit*, THE DRINKS BUS. (June 4, 2019), <https://www.thedrinksbusiness.com/2019/06/droughts-last-year-halted-whiskey-production-scotch-producers-admit/> [https://perma.cc/4GCE-JUEM].

¹¹¹ Klaverstijn, *supra* note 107.

spirit's secret ingredient.¹¹² Limestone water is considered to be "hard water" due to its high mineral content.¹¹³ The presence of dissolved minerals, mainly calcium, affect the mouthfeel and flavor of the final spirit.¹¹⁴

Kentucky limestone water acquires its unique properties from the state's abundant underground limestone shelves.¹¹⁵ As water from underground aquifers filters through limestone, the water is filtered, removing iron and adding minerals like calcium and magnesium.¹¹⁶ Iron can discolor finished bourbon, and the additional minerals are either consumed by yeast during the fermenting process or end up in the finished product, affecting the taste and feel of the spirit.¹¹⁷ While the mineral composition and other qualities of the water were unknown to Kentucky's first distillers, the water's beneficial properties were obvious and allowed farmers to develop their small distilling operations into large companies.¹¹⁸ This historical connection to Kentucky limestone water has helped the legends surrounding its unique properties persist for decades. Maker's Mark Distillery boasts about the large limestone-filtered lake on its property in its marketing materials, and Heaven Hill has an interactive web page that informs readers about the history and science behind the water it uses at its distillery.¹¹⁹ One water bottling company in Kentucky has attempted to capitalize on the legendary limestone-filtered water by selling spring water as "mixing water" to be enjoyed with bourbon.¹²⁰ On its website, Old Limestone advertises their bottled limestone-filtered spring water as a perfect complement to Kentucky bourbon that brings out the nuanced flavor profile of the spirit.¹²¹

However, not all distilleries use Kentucky's famed limestone water in their product, some distilleries produce their

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ HEAVEN HILL DISTILLERY BLOG, *supra* note 19.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ Bryson, *supra* note 24.

¹¹⁹ MAKER'S MARK, *supra* note 20; *Whiskey & Water: Water's Journey Through the Bourbon Making Process*, HEAVEN HILL DISTILLERY, <https://heavenhilldistillery.com/whiskey-water/> (last viewed May 20, 2022) [<https://perma.cc/DUZ6-LKEC>].

¹²⁰ *Our Story*, OLD LIMESTONE: THE MIXING WATER OF KY. BOURBON, <https://www.oldlimestone.com/> (last viewed May 20, 2022) [<https://perma.cc/SBV6-U7WG>].

¹²¹ *Id.*

bourbon with water from a blend of multiple sources. Buffalo Trace in Frankfort, Kentucky uses water from the nearby Kentucky River as well as from the Frankfort municipal water system.¹²² Heaven Hill (the previously mentioned distillery with an informational page praising the benefits of using naturally limestone-filtered water) exclusively uses municipal water at its Louisville, Kentucky distillery.¹²³ Master distillers generally agree that using hard water with a high calcium content and low iron content is important for producing bourbon, but the legendary status of natural limestone-filtered water seems to endure mostly because of the marketing departments of Kentucky's distilleries.¹²⁴

Whether the water used in producing bourbon is sourced from a naturally occurring spring or from a municipal source, there is no overstating its importance to the final product.¹²⁵ At the very least, bourbon distilleries rely on the famous properties of Kentucky's limestone-filtered water supplies to market their whiskey.¹²⁶ Many distilleries take that reliance further by collecting all of the water used in the distilling process through natural sources.¹²⁷ These water sources, whether they are used in bourbon's marketing, production—or both—should be protected from the potentially harmful impacts of the distilling industry.

IV. THE DISTILLING INDUSTRY IN TENNESSEE AND VIRGINIA

Nearby states with comparable distilling industries are strengthening their regulatory structures and enforcement practices. Tennessee inspects rickhouses for structural integrity and focuses on testing and reporting water quality to the state's Department of Environment and Conservation.¹²⁸ Virginia recently brought criminal charges against a distillery and its executives for environmental regulation violations.¹²⁹ These state actions are intended to prevent environmental damage from distilleries and promote future compliance.

¹²² Bryson, *supra* note 24.

¹²³ *Id.*

¹²⁴ *See id.*

¹²⁵ *See* Klaverstijn, *supra* note 107.

¹²⁶ *Id.*

¹²⁷ *See The World's Most Sustainable Whisky Distilleries*, WORLD WHISKY DAY <https://www.worldwhiskyday.com/the-worlds-most-sustainable-whisky-distilleries/> (last viewed Apr. 24, 2022) [<https://perma.cc/6KRY-UJ69>].

¹²⁸ *See* Reicher, *supra* note 12.

¹²⁹ Mindock, *supra* note 5.

The Tennessee distilling industry has seen comparable growth to Kentucky's bourbon industry in recent years.¹³⁰ In 2009, only three counties in Tennessee allowed distilling.¹³¹ The state legislature has since enacted multiple laws to allow more counties to open distilleries, and the state now has seventy-five counties that allow distilling.¹³² Today, thirty-one distilleries are members of the Tennessee Distillers Guild, an organization meant to promote and grow the state's distilling industry.¹³³

Tennessee has focused on promoting the sustainable growth of the distilling industry while protecting the state's natural resources.¹³⁴ Like Kentucky, Tennessee requires distilleries to sample and test nearby water sources to ensure that alcohol or dangerous byproducts are not being unlawfully discharged.¹³⁵ Large distilleries employ environmental compliance teams to ensure that wastewater is properly treated before being discharged into approved waterways.¹³⁶ However, smaller distilleries generally do not have the resources to monitor their environmental impact as closely.¹³⁷ Therefore, the state provides recommendations to new distilleries about where to locate in order to connect to municipal sewer systems and avoid having to treat their wastewater.¹³⁸ Additionally, large distilleries partner with newer distilleries to provide information on how to meet and exceed environmental regulations.¹³⁹ Larry Combs, the general manager of Jack Daniels Distillery, stressed the importance of these informal relationships, stating "[i]f one of us makes a mistake or messes up, it's a reflection on all of us."¹⁴⁰

This collaborative environment between distilleries and state regulators is also seen in distilleries' transparency concerning the structural integrity of their rickhouses.¹⁴¹ Jack Daniels has "a long-standing practice of inspecting [its] warehouses throughout the year, every year for structural

¹³⁰ *About Us*, TENN. DISTILLERS GUILD, <https://tndistillersguild.org/about-us/> (last viewed Feb. 27, 2022) [<https://perma.cc/38V9-985W>].

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *See* Reicher, *supra* note 12.

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ Reicher, *supra* note 12.

¹⁴¹ *See* Novelly, *supra* note 88.

integrity.”¹⁴² These inspections include “seismic and geological analysis” of warehouse sites, which gives the distillery information on what repairs need to be made to warehouses before there are major issues that could lead to a collapse.¹⁴³ New rickhouses with additional safety features are being constructed in Tennessee as more distilleries are founded, but the state is not neglecting older rickhouses.¹⁴⁴ The state government performs regular inspections of both new and old warehouses to verify their safety.¹⁴⁵ The environment of transparency surrounding Tennessee’s distilling industry helps to prevent incidents like the warehouse collapses and accidental wastewater discharges seen in Kentucky in recent years.

Notably, Kentucky seems hesitant to make changes to building codes or to inspect warehouses more often. Kentucky State Representative Chad McCoy emphasized that “distillers are in the business of making bourbon . . . they more than anyone want to make sure it is safe,” minimizing the importance of expanded regulations on distilleries.¹⁴⁶

The distilled spirits industry is also growing in Virginia. The Virginia Distillers Association has thirty-one member distilleries which produce a wide variety of spirits.¹⁴⁷ While Kentucky is the most famous whiskey-distilling state, Virginia is likely the birthplace of American whiskey.¹⁴⁸ Whiskey distilled from corn was mentioned by colonists as far back as 1620, and distilling became a major industry in Virginia after Scottish and Irish immigrants settled in the area in the late 1700s.¹⁴⁹ Much like Kentucky and Tennessee, Virginia has seen a significant increase in demand for its whiskey in the recent decades, and craft distilleries are now producing spirits alongside historical operations.¹⁵⁰

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Distilleries*, VA. DISTILLERS ASS’N <https://www.virginiaspirits.org/distilleries/> (last viewed Feb. 27, 2022) [<https://perma.cc/C4G4-4W5S>].

¹⁴⁸ C. Jarrett Dieterle, *Kentucky is Neither the Birthplace Nor Apex of American Whiskey*, VINEPAIR (Dec. 20, 2017), <https://vinepair.com/articles/virginia-whiskey/> [<https://perma.cc/5KUG-PQ25>].

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

Virginia has recently taken a punitive approach to protecting its natural resources.¹⁵¹ The state brought its first criminal charges for environmental violations in 2021.¹⁵² The Filibuster Distillery, which produces a range of spirits including whiskey and gin, was indicted on fifty-seven felony charges and one misdemeanor related to knowing violations of environmental laws.¹⁵³ The distillery's vice president, Sid Dilawri, was also indicted on fifty-six felony charges and one misdemeanor for the same incidents.¹⁵⁴

The indictments alleged that the distillery dumped 40 thousand gallons of untreated wastewater into a nearby stream between 2018 and 2020.¹⁵⁵ This wastewater contained zinc and copper in concentrations over what is allowed by Virginia's environmental regulations.¹⁵⁶

Filibuster and Dilawri pleaded guilty to forty counts of violating Virginia's environmental protection laws and agreed to pay \$700 thousand in penalties.¹⁵⁷ The plea agreement also requires Filibuster to remain in compliance with environmental regulations and to upgrade its wastewater treatment systems.¹⁵⁸ The director of Virginia's Department of Environmental Quality said the prosecution of Filibuster and its executive demonstrated the agency's mission to protect the environment by "directing funds back into the impacted community" and sending "a strong message that environmental crimes will not be tolerated."¹⁵⁹ The prosecution has also been widely publicized, with statements from other state officials, like the Virginia Attorney General.¹⁶⁰

Tennessee and Virginia's distilling industries can be used as inspiration for changes to Kentucky's bourbon industry that will protect the Commonwealth's natural resources. Kentucky could adopt practices seen in both states to remedy the evident problems with the bourbon distilling industry's effect on the environment.

¹⁵¹ Mindock, *supra* note 5.

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ N. VA. DAILY, *supra* note 6.

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

V. PROPOSED SOLUTIONS

The bourbon industry's rapid growth in recent years has no doubt been beneficial to the commonwealth and its citizens, but changes must be made to protect the state's environment and the thousands of individuals employed in the industry. As the industry grows, Kentuckians are seeing more negative impacts on their state's environment. The process of producing bourbon through distilling alcohol and aging the spirit in barrels has resulted in multiple environmental disasters in recent years. The unauthorized wastewater discharge at Castle & Key sent untreated distilling byproducts into a nearby creek, making it uninhabitable for aquatic life and killing an unknown number of fish.¹⁶¹ In the same year, a lightning strike resulting in a fire at Jim Beam distillery caused more than 40 thousand barrels of aging bourbon to spill into the same creek, causing further environmental damage.¹⁶² While these recent incidents prompted some response by state environmental officials, the fines imposed appeared to be minimal, especially when compared to the revenues reported by distilleries amid the bourbon boom.¹⁶³

As the regulations surrounding the bourbon distilling industry currently stand, environmentally harmful events will likely continue to occur. One may expect distilleries to voluntarily make upgrades to the efficiency and safety of their wastewater filtration systems, or to the structural integrity of the rickhouses containing aging bourbon, as a response to the recent environmental disasters that have taken place at Kentucky distilleries. The water polluted by these incidents is the same water that distilleries so often praise in their marketing materials as being the secret ingredient that sets Kentucky bourbon apart from other liquors. Unfortunately, the reliance on Kentucky's limestone-filtered water does not seem to provide enough of an incentive to make changes to protect this unique and essential resource. Without adequate pressure from outside sources, distilleries seem content with exploiting Kentucky's waterways while continuing to pollute them. While consumers are becoming

¹⁶¹ Cheves, *supra* note 13.

¹⁶² See Stunson & Hermens, *supra* note 8.

¹⁶³ Ward, *supra* note 72; see Tim McKirdy, *What's Fueling the Billion-Dollar Bourbon Boom?*, VINEPAIR (Sept. 1, 2020), <https://vinepair.com/articles/bourbon-market-billions-exports-sales-2020/> [https://perma.cc/E52H-BH6V].

more conscious of their consumption's effects on the environment, public pressure does not appear to be meaningfully affecting the behavior of distilleries. Untreated wastewater is still periodically spilled into Kentucky's waterways, and rickhouses continue to collapse.

In the absence of adequate consumer pressure, environmental regulators have the potential to make a significant impact on distillers' relationships with the environment. Comparing the atmosphere and effects of Tennessee's distilling industry to Kentucky's shows how the Kentucky's distillers and regulators can make changes that will positively impact the environment.

Tennessee's distilling industry has grown significantly since 2009, when the state legislature began passing laws allowing distilling in most of Tennessee's ninety-five counties.¹⁶⁴ Since this process began, Tennessee has seen an increase from only three distilleries to little more than thirty.¹⁶⁵ Because the industry's growth took place so recently, state regulators and the established distilleries have been able to create an atmosphere of collaboration, to the benefit of distillers and the state's environment. Established distilleries assist new and smaller distilleries in testing their filtered wastewater and provide information on best practices for protecting the environment.¹⁶⁶ State regulators have also developed working relationships with distilleries to inspect rickhouses for building code violations, meaning that distilleries can catch structural issues well before they cause the warehouse to collapse.¹⁶⁷

Kentucky's distilling industry has seen growth in recent years, but many of the popular distilleries in the Commonwealth were either founded before prohibition or rose to fame in the middle of the twentieth century.¹⁶⁸ By the late 1950s, there were nearly 100 distilleries operating in Kentucky.¹⁶⁹ Environmental

¹⁶⁴ TENN. DISTILLERS GUILD, *supra* note 130.

¹⁶⁵ *Distilleries*, TENN. DISTILLERS GUILD, <https://tndistillersguild.org/distilleries/http://www.tnledger.com/editorial/articleemail.aspx?id=112565&print=1> (last viewed Feb. 27, 2022) [<https://perma.cc/3MAX-2NFR>].

¹⁶⁶ Reicher, *supra* note 12.

¹⁶⁷ Novelty, *supra* note 88.

¹⁶⁸ Sara Havens, *The History of Bourbon Country: the Kentucky Bourbon Trail and Beyond*, MINT JULEP LOUISVILLE (July 22, 2021), <https://mintjuleptours.com/2021/07/22/the-history-of-bourbon-country-the-kentucky-bourbon-trail-and-beyond/> [<https://perma.cc/T66S-GDYU>].

¹⁶⁹ *Id.*

regulations like the Clean Water Act were not passed until the early 1970s, meaning these distilleries were established before widespread concern about the industry's effects on the state's natural resources.¹⁷⁰ While there has been an increasing focus on environmental matters since the 1970s, Kentucky did not have the opportunity to create the same kind of open and cooperative atmosphere as seen in Tennessee.

Additionally, Tennessee's focus on building codes and rickhouse maintenance seems to be absent in Kentucky.¹⁷¹ Officials ranging from state regulators down to county building inspectors in Kentucky are content with leaving safety and security inspections to distilleries.¹⁷² Building codes vary from county to county, and older rickhouses are not subject to any routine inspections from government officials or third-party companies.¹⁷³ While some distilleries claim to subject their buildings to safety inspections, the self-regulation of rickhouse safety is not enough.¹⁷⁴ The only information available about the Tennessee distilling industry's negative environmental impact is an article referencing a minor wastewater filtration issue.¹⁷⁵ Further, there appears to have been no rickhouse collapses in the state.¹⁷⁶ This record of safety stands in stark contrast to Kentucky's long list of rickhouse collapses which have caused a significant amount of environmental damage in the state.¹⁷⁷ While Kentucky's state regulators claim distilleries' environmental disasters as isolated incidents, their argument cannot stand when comparing the state's track record with its southern neighbor.

Kentucky has a lot to learn from Tennessee when it comes to how its distillers interact with the environment. The Kentucky Distillers' Association—which primarily focuses on tourism and the promotion of the state's distilleries—could assist in fostering a collaborative environment where large distilleries could partner with smaller producers to promote the responsible stewardship of Kentucky's natural resources.

¹⁷⁰ ENV'T PROT. AGENCY, *supra* note 36.

¹⁷¹ *See* Novelly, *supra* note 88.

¹⁷² *See id.*

¹⁷³ *See id.*

¹⁷⁴ *See id.*

¹⁷⁵ Reicher, *supra* note 12.

¹⁷⁶ *Id.*

¹⁷⁷ Riley & Rogers, *supra* note 70.

The structural integrity of rickhouses should also be a focus of the industry. State regulators should require distilleries to update aging warehouses, or at the very least implement systems to monitor their structural integrity. Because older warehouses are grandfathered into building code requirements, many of the rickhouses currently in use by distilleries lack modern safety features and are rapidly deteriorating. Inspections by state regulators, like those used in Tennessee, could prevent structural issues from threatening the stability of rickhouses. Additionally, distilleries should be incentivized either through industry groups or state regulations to self-monitor the integrity of warehouses. This self-monitoring process is being made simpler for distilleries to implement because of companies like StructuRight, which provide automated monitoring systems to provide data to distilleries on the safety of their rickhouses.¹⁷⁸

Kentucky also has the option to implement a more punitive system for promoting environmental safety, like what Virginia is doing through new regulatory enforcement practices. Kentucky's current regulatory structure is inadequate to encourage distilleries to make the changes necessary to prevent future spills or other accidents. The fines incurred by distilleries are often insignificant compared to the revenue from bourbon sales. Because distilleries can so easily cover the costs of these fines, they are treated as an operating cost rather than a punishment. Additionally, these fines are rarely published, meaning the general public does not have ready access to distilleries' infractions and the penalties imposed. The relaxed enforcement of environmental regulations also detracts from the fines already limited effectiveness in promoting environmental safety.

With strong financial penalties and the possibility of criminal charges for damaging the environment with improper wastewater discharges from distilleries, Virginia is sending a strong message to distillers that they must comply with environmental regulations or face serious consequences. The prosecution of Filibuster Distillery and its officers by the Virginia Attorney General is the first of its kind in Virginia and is relatively rare throughout the country. Kentucky can focus on enforcing the current environmental regulations and could potentially add the possibility of criminal charges and enhanced civil penalties for

¹⁷⁸ *About Us*, STRUCTURIGHT <https://www.structureight.com/about.html> (last viewed Feb. 27, 2022) [<https://perma.cc/T9PZ-QMR5>].

those directly responsible for environmental harms to motivate distilleries to update and maintain their wastewater treatment and disposal systems. These changes would also encourage distilleries to better maintain their aging warehouses, which are often located near water sources because of their proximity to distilleries, to prevent collapses and the resulting bourbon spills.

Virginia's strict enforcement of environmental regulations have also been widely publicized by regulators and the state's attorney general. In Kentucky, information about the extent of environmental damage caused by distilleries and state enforcement efforts is limited at best. Local media outlets tend to report on the incidents as they occur but rarely include information directly from state regulatory agencies. Kentucky can improve its enforcement efforts by making this information available to the public, which would promote environmental education and awareness about distilleries that fail to act in accordance with the law.¹⁷⁹

Kentucky already monitors the environmental impact of polluting events to determine whether to assess fines and how severe those fines should be.¹⁸⁰ Making this information available to the public could incentivize distilleries to prevent and manage discharges and spills if there is a stronger risk for public backlash.¹⁸¹ Publicizing the penalties imposed on offending distilleries would further reinforce the severity of distilleries' environmental impact.¹⁸²

The steps taken to protect the environment from distilleries in Tennessee and Virginia can be used as a model for changes to Kentucky's distilling industry. Some changes, like the promotion of a collaborative atmosphere among distilleries and state regulators would take place through the efforts of industry groups and the state government. These changes may also take a long time to implement, as Kentucky's distilling industry is well-established and holds a lot of political power due to its history and significance to the state's economy. But changes to enforcement

¹⁷⁹ Cf. Jennifer Jacquet, *Public Shaming Makes the World a Better Place*, WIRED, (July 24, 2015 2:06 P.M.), <https://www.wired.co.uk/article/public-shaming> (explaining effectiveness of public shaming) [<https://perma.cc/ZW2E-T49T>].

¹⁸⁰ See *Enforcement*, KY. ENERGY & ENV'T CABINET, <https://eec.ky.gov/Environmental-Protection/Enforcement/Pages/default.aspx> (last viewed May 19, 2022) [<https://perma.cc/6MFK-K9EA>].

¹⁸¹ Cf. Jacquet, *supra* note 179.

¹⁸² Cf. *id.*

procedures like those seen in Virginia could take place sooner. Kentucky's existing environmental regulations could be more strictly enforced, and new regulations could be added to specifically address how distilleries interact with Kentucky's natural resources. Making these changes will undoubtedly have positive effects on the state's environment and will help secure the sustainable future of the bourbon industry.

CONCLUSION

The bourbon industry's recent growth has brought with it many benefits. The industry employs over twenty thousand Kentuckians and generates a massive amount of tax revenue for the state.¹⁸³ New distillers produce innovative and creative new expressions of America's native spirit, and heritage producers continue to hone their craft. But this innovation and economic growth have come at a cost to the Commonwealth's environment. The damage to Kentucky's natural resources and ecosystems does not have to continue, though. By taking inspiration from neighboring states' interactions with their own distilling industries, Kentucky can shape its regulatory structure to promote the sustainable growth of the bourbon industry well into the future.

¹⁸³ KY. DISTILLER'S ASS'N, *supra* note 3.