Whiskey House of Kentucky
Company Overview
2026


DSP-KY-20132
WHISKEY HOUSE
KENTUCKY


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KENTUCKY


robotic
GERSTEL
Multi Purpose Sampler
Twister

About Us

Whiskey House of Kentucky is one of the most advanced distilleries in the United States and the only one designed from the ground up to provide the highest-quality, customized American whiskey for the most discerning companies and brands.

Advanced Manufacturing in Distilling

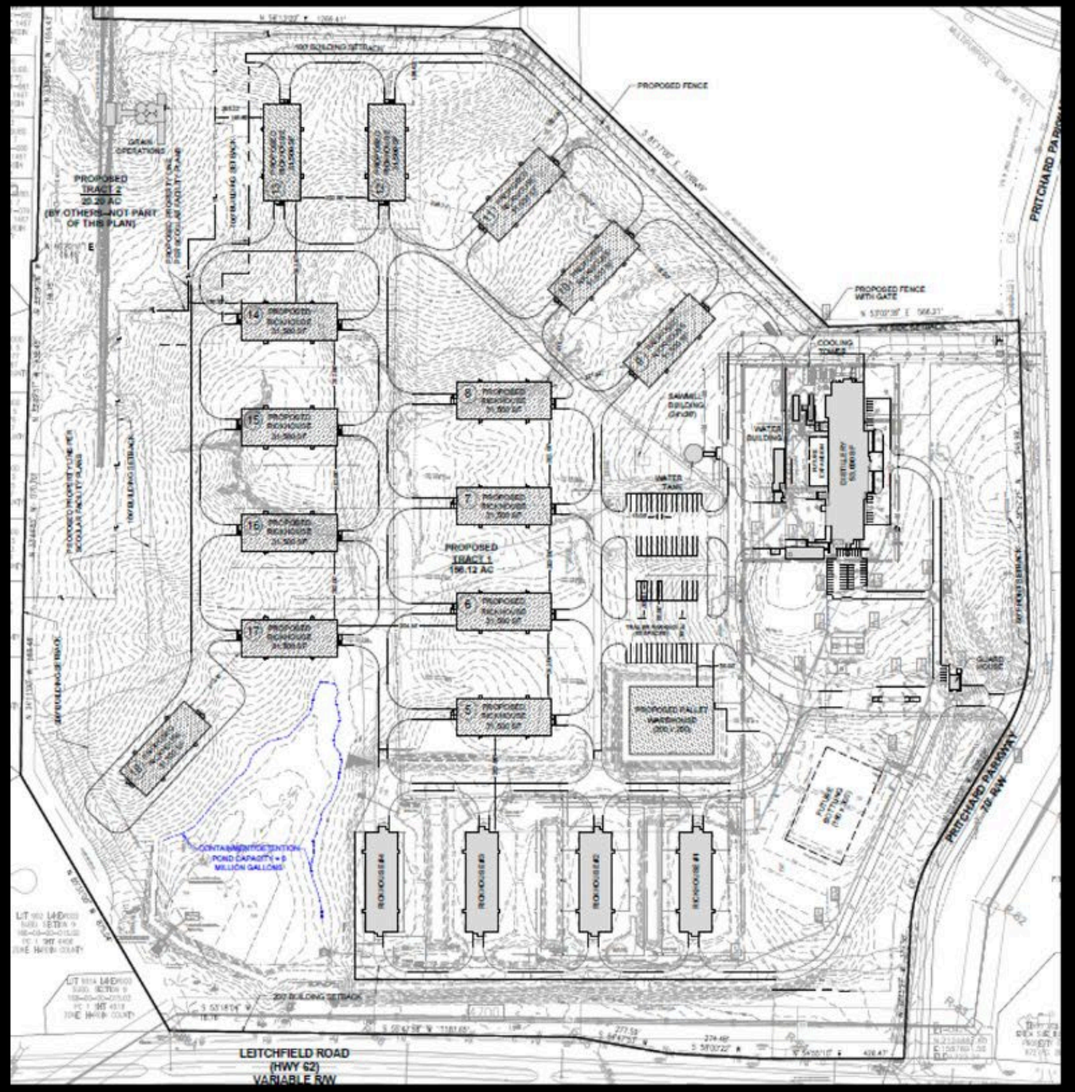
By incorporating best practices, programs, and state-of-the-art technology from advanced food manufacturing and applying them to distilling, we deliver

- Unparalleled quality;
- Consistency in production from batch to batch ;
- Unmatched flexibility in customization; and
- Ability to test and scale innovation projects.

Strategically Advantaged Location

Strategically located on 178 acres in the Hardin County Industrial Park in Elizabethtown, Kentucky, Whiskey House has the infrastructure to support future growth:

- 112k-barrel capacity with expansion to 224k
- Robust and redundant electrical, sewage, and gas supply
- Access to the largest limestone aquifer in the state
- Rail lines on the property for raw material receiving and international goods
- 19 warehouses for storage and maturation of nearly 900k barrels
- 45 miles south of Louisville, in close proximity to the I-65 corridor and Bluegrass Parkway



Industry 4.0 for Distilling

Whiskey House incorporates a proprietary technological platform that captures data from every aspect of the manufacturing process to communicate, automate, and make decisions in real-time.

Current Certifications

- Kosher - Star K
- ISO 9001: Quality Management Systems - NSF-ISR
- ISO 14001: Environmental Management Systems - NSF-ISR
- ISO 45001: Occupational Health & Safety Management Systems - NSF-ISR

Operational Performance to Date

- Over 130,000 barrels since the start of operations
- Bourbon Whiskey Average Yield - 5.3
- 59 unique recipes and mashbills
- Rye Whiskey Average Yield - 5.0
- 41 customers
- Best-in-Class Beer Chemistry
- Filled and shipped drums, totes, and tankers domestically and internationally

Mission & Values

Through innovation and collaboration, we create exceptional customized American Whiskey that builds sustained brand recognition for our exclusive customers

- Integrity - we consistently do what is right, even when it is not easy
- Communication - we listen and share honestly and transparently so all are informed and valued
- Partner Focus - we understand the needs of our partners and ensure everything we do adds value
- Innovation - we embrace curiosity and creative risk-taking to continuously deliver advanced solutions

PRACTICAL DISTILLERY SUSTAINABILITY

Optimizing Conversion & Fermentation
to Reduce Co-Product & Wastewater Impacts

29th Annual Distillers Technology Symposium 2026

Prepared By: Justin Dixon & John Hargrove

WHY THIS CONVERSATION MATTERS NOW

REGULATORY PRESSURE

BOD/COD limits on industrial wastewater discharge are tightening. Kentucky distilleries aren't immune. Municipal surcharges, land application restrictions, and permit scrutiny are all trending one direction — up.

CO-PRODUCTS COST MONEY

Spent grain hauling, pot ale disposal, and wastewater treatment are real cost line items. Reducing their volume — or increasing their value — is a direct margin play, not just an environmental checkbox.

MARKET EXPECTATIONS

Premium spirits buyers care about sustainability. Distributors and retail partners are starting to ask. Getting ahead of this is cheaper than reacting to it — and it builds brand credibility in a crowded market.

THE ROOT CAUSE FRAME

Most distilleries treat co-products as a disposal problem.

The better frame:

- **Co-products and wastewater are conversion inefficiency made visible.**
- **Every high-BOD discharge, every ton of spent grain, every off-spec batch lost, that is grain, water, enzyme, and energy cost that never made it into the bottle.**

CONVERSION LEVER #1: GRAIN MILLING & MASH

Particle Size Consistency

- Inconsistent grind = poor starch exposure. This directly limits conversion rate and loads more unfermentable organics into your stillage and wastewater.

Enzyme Dosing Optimization

- Balance alpha and gluco-amylase dosing for your mash bill. Over-reliance on one enzyme leaves residual starch. Validate with your supplier on a schedule.

Cook Temperature & Hold Time

- Are you validating conversion on every cook, or assuming it? A Brix or refractometer check at mash-out costs almost nothing and catches variation before it hits fermentation.

Water Quality & Mash pH

- pH drives enzyme activity. If you're not controlling mash pH, you're leaving conversion efficiency on the table every single cook.

THE BOTTOM LINE

Under-converted mash generates more unfermentable organics.

Those organics end up in your stillage, your drains, and your wastewater bill.

Conversion efficiency IS environmental performance.

CONVERSION LEVER #2: FERMENTATION PERFORMANCE

Yeast Pitch Rate & Viability

- Under-pitching or pitching stressed yeast means incomplete fermentation. Residual sugars and fermentables flow straight into your stillage and drain.

Fermentation Temperature Control

- Temperature excursions generate stress metabolites, reduce yield, and create flavor defects. Consistent temperature = consistent conversion = less waste.

Fermentation Cycle Optimization

- Truncated cycles leave alcohol and fermentables on the table. Are you hitting attenuation targets before dropping? Every point of residual gravity is money and organics in your drain.

Backset (Setback) Management

- Improper recycling rates affect yeast health, pH, and fermentation consistency. Backset is a tool — use it with precision, not just habit.

WHAT'S AT STAKE

Every pitch failure, every temperature excursion, every truncated cycle shows up in three places:

- Your yield numbers
- Your stillage quality
- Your wastewater treatment cost

Fix fermentation. Fix sustainability.

CO-PRODUCT STREAM OVERVIEW

WET SPENT GRAIN

- Animal feed (current disposition)
- Drying extends shelf life & value
- Composting local partnerships
- Biogas potential (long-term)
- Track: volume per bushel processed

STILLAGE / POT ALE

- Highest BOD, highest volume stream
- Thin stillage recycling (backset)
- Evaporation/concentration for feed
- Land application (permit-dependent)
- Anaerobic digestion — best long-term path

FUSEL OILS

- Often overlooked — real value here
- Industrial alcohol buyers
- Solvent applications
- Small volume, clean revenue stream
- Track: volume per distillation run

FERMENTATION CO2

- Currently vented & wasted
- CO2 capture for carbonation
- Fire suppression applications
- Sale to industrial buyers
- Future opportunity — flag for capital plan

WASTEWATER STREAM ANALYSIS

PROCESS WATER

Fermentation & distillation

HIGHEST BOD + TEMP

CIP / SANITATION

Chemical load, pH swings

MODERATE — WATCH pH

COOLING WATER

High volume, low organic load

CLEAN — SEPARATE IT

FACILITY WASHDOWN

Variable — floor drains etc.

MONITOR & CONTROL

BASELINE METRICS TO ESTABLISH

- BOD and COD loads per gallon of spirits produced
- Total Suspended Solids (TSS)
- pH range across the production day
- Discharge volume per production day
- Cost per gallon treated or discharged

Treatment Path: Flow Equalization › pH Neutralization › Stream Separation › DAF/Aerobic › Anaerobic Digestion

QUICK WINS — NO OR LOW COST, START NOW

01

Establish Fermentation Efficiency KPIs

Track actual vs. theoretical yield per batch. If you're not measuring it, you can't manage it. Start weekly reporting.

02

Validate Mash Conversion Every Cook

Brix or refractometer check at mash-out. Costs almost nothing. Catches variation before it hits fermentation and your drains.

03

Tighten Fermentation Temperature Controls

Audit current temp logging and alarm thresholds. Identify which vessels have the most excursions. Fix the worst first.

04

Optimize CIP Rinse Cycles

Review rinse water volume and cycle counts. Most operations are over-rinsing. Reducing water use reduces wastewater volume directly.

05

Separate Cooling Water from Process Wastewater

Cooling water is typically clean. If it's mixing with high-BOD process water, you're paying to treat water that doesn't need treatment.

06

Start a Wastewater Discharge Monitoring Log

Date, volume, visual check, pH. Costs zero. Builds your baseline and protects you in a regulatory conversation.

MEDIUM-TERM PROJECTS — 6 TO 18 MONTHS

Grain Milling Audit & Particle Size Optimization

Engage your mill manufacturer or a brewing/distilling process consultant. Measure current particle size distribution. Establish a target range and monitor.

Enzyme Protocol Review with Supplier

Work with your enzyme supplier to audit current dosing, timing, and temperature. Small adjustments here can move conversion efficiency meaningfully.

Spent Grain Drying or Value-Added Partnership

Model the cost of hauling wet grain vs. drying and selling at higher value. Explore regional feed partnerships or composting programs with local farms.

Flow Equalization Tank Installation

Evening out discharge spikes reduces municipal surcharges and protects your permit. This is often a modest capital investment with a fast payback.

Automated pH Control on Discharge

Manual pH checks create gaps. Inline monitoring and automated neutralization dosing gives you consistency and a compliance audit trail.

CAPITAL INVESTMENT OPTIONS — LONG HORIZON

ANAEROBIC DIGESTION

The most scalable long-term solution for high-strength distillery waste. Dramatically reduces BOD/COD load, produces biogas as a byproduct, and lowers your wastewater disposal cost at volume. Best ROI at higher production levels.

HIGHEST IMPACT

CO2 CAPTURE & REUSE

Fermentation CO2 is a renewable byproduct currently being vented. Capture systems enable use for carbonation, fire suppression, or sale to industrial buyers. Capital-intensive but strong brand and operational story.

BRAND + REVENUE

AEROBIC TREATMENT EXPANSION

Scaling on-site aerobic treatment handles higher discharge volumes and provides additional compliance buffer. Often integrated with anaerobic systems for maximum BOD reduction.

COMPLIANCE BUFFER

BIOGAS TO ENERGY

Biogas from anaerobic digestion can be converted to heat or electricity on-site, offsetting fuel costs and reducing your carbon footprint. Works best as part of a full digestion system.

ENERGY OFFSET

SUSTAINABILITY METRICS & KPIs

Sustainability without measurement is marketing. These KPIs connect environmental performance directly to production cost.

01

Fermentation Efficiency

% Theoretical Yield

Frequency: Per Batch

02

Water Use

Gallons per Proof Gallon Produced

Frequency: Monthly

03

Wastewater BOD/COD

Load per Production Day

Frequency: Weekly

04

Spent Grain Volume

Tons per Bushel of Grain

Frequency: Per Run

05

Wastewater Discharge

Volume & Cost per Month

Frequency: Monthly

06

Co-Product Value

Revenue or Avoided Disposal Cost

Frequency: Monthly

RECOMMENDED NEXT STEPS

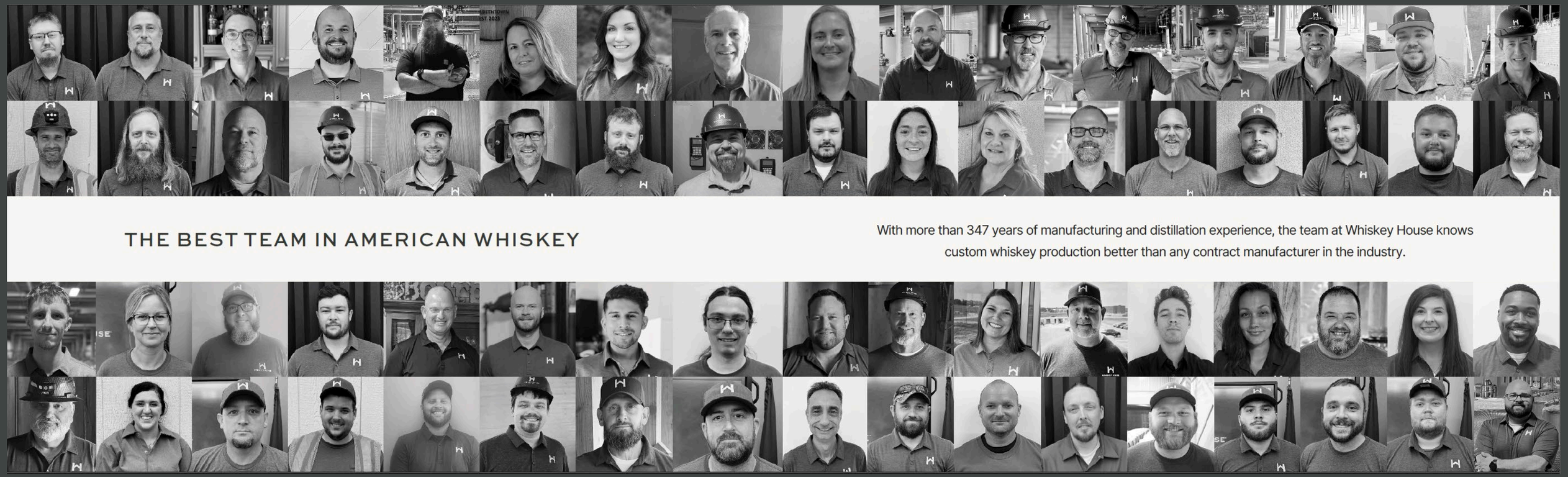
01	**Conduct a Baseline Audit** Current fermentation efficiency, wastewater discharge volumes, and co-product disposition costs. No roadmap is credible without a baseline.	FSQA + Production
02	**Identify Top 2–3 Quick Wins** Find the conversion and fermentation optimizations with the highest ROI. Prioritize what you can implement in the next 90 days without capital.	Operations Lead
03	**Map Permit Requirements vs. Actual Discharge** Pull your current discharge permit. Compare limits to actual monitoring data. Quantify the compliance risk and the gap.	FSQA + EHS
04	**Evaluate Co-Product Valorization Options** Assess 2–3 options — spent grain drying, feed partnerships, land application — based on your actual volumes and local market availability.	Operations + Finance
05	**Build a 12-Month Sustainability Roadmap** Phased plan covering quick wins, medium-term projects, and capital investment options. Assign owners, timelines, and targets for each KPI.	COO + FSQA

WHISKEY HOUSE OF KENTUCKY

The path forward is clear.

Every decision we make inside the grain room, the fermentation cellar, and the stillhouse has an environmental footprint attached to it. The good news is the levers that reduce that footprint are the same levers that drive yield, quality, and profitability.

Optimize conversion. Control fermentation.
Measure everything. Start today.



THE BEST TEAM IN AMERICAN WHISKEY

With more than 347 years of manufacturing and distillation experience, the team at Whiskey House knows custom whiskey production better than any contract manufacturer in the industry.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