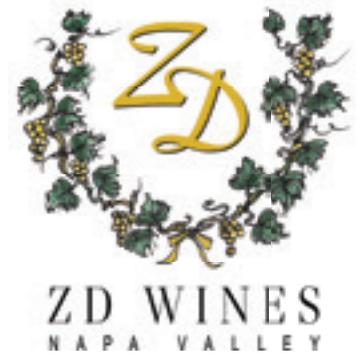


Technical Spotlight

ZD Wines

Fifty years of innovative family winemaking



Stacy Briscoe

Stacy Briscoe joined *Wine Business Monthly* in 2018. She has been writing about wine professionally since 2015, freelancing for multiple publications including *The San Francisco Chronicle*, *Edible Communities* and *Napa Sonoma Magazine*, among others. She also maintains her own website, *BriscoeBites.com*, dedicated to wine reviews and tasting notes. Outside of wine writing, she also contributes as a freelance editor for the independent publisher She Writes Press. Stacy has a Bachelor of Arts degree in English-Language Literature from the University of California, Santa Cruz.



“I GUESS WE CAN start with Zero Defects,” said **Brandon deLeuze**, winemaker and third-generation owner of **ZD Wines** in Napa, as he began to tell the story of his family’s winery. deLeuze’s grandfather, **Norman deLeuze**, alongside friend and colleague **Gino Zepponi**, founded ZD Wines back in 1969. The two men were in the aerospace industry, building one of the nation’s first rocket engines at **Aerojet** in Sacramento.

The name ZD is a nod to their career at Aerojet. “ZDs were posted all around that plant, which stands for ‘Zero Defects,’ a common quality control program,” Brandon deLeuze said. Zepponi and deLeuze’s industrial engineering, forward thinking and dedication to zero defects transitioned into their careers as winemakers, making ZD Wines’ name synonymous with its product.

As the story goes, deLeuze and Zepponi bonded over their mutual love of wine, ultimately deciding to invest \$3,000 each to start their own label. “They started on a shoestring,” Brandon deLeuze said. “They got a couple of used brandy barrels, shaved them down and toasted them. They purchased some pumps that were broken and fixed them.”

For the first 10 years, the two men kept their day jobs while sourcing Pinot Noir and Chardonnay grapes from whatever vineyards in Carneros they could afford, producing wine in a small barn building they rented just off of Burndale Road. The first wine produced by ZD, a 1969 Pinot Noir, is of historical significance: it was the first wine to recognize Carneros on the label, reading, “Made in Sonoma from grapes grown in the Carneros region of Napa.” Carneros was not declared an official AVA until 1983.

“The way the winery grew the first 10 years was they didn’t take any money out,” deLeuze said. “All the money they made went right back into the winery.” In 1978, Norman deLeuze decided to “take on” the winery as ZD’s first full-time employee. “It took him one year to find a bank that would invest in him,” deLeuze said.

Norman deLeuze played the part of winemaker for “the first many years,” said Brandon deLeuze. When his father Robert deLeuze, Norman deLeuze’s son, became head winemaker in 1983 at the age of 21, he was the second full-time employee at ZD Wines (and the youngest winemaker in Napa Valley at the time).

Zepponi, meanwhile, worked as the general manager at **Domaine Chandon**. “He actually made the automated riddling system they still use today,” deLeuze said.

When Zepponi died in 1985, Norman deLeuze and his wife, **Rosa Lee deLeuze**, bought Zepponi’s shares in the ZD Wines’ business. Norman and Rosa Lee deLeuze have since passed on, but the second generation has taken the helm, with **Robert deLeuze** acting as CEO and director of winemaking and his brother, **Brett deLeuze**, as president. ZD Wines remains 100 percent family-owned and -operated.

Key Points

- Winery remains 100 percent family-owned and -operated after 50 years
- Organic farming practices in place since 1979
- The deLeuze family designs and manufactures key pieces of winemaking equipment
- Celebrating anniversary with first release sparkling wine

Technical Spotlight ZD Wines



Organic Vineyards, Eco-friendly Winery

After Norman deLeuze secured that first loan in 1979, he purchased the current estate property on Silverado Trail along the eastern bench of Rutherford. It was a blank slate—no building, no vines. “My grandpa and my dad literally had carpenter belts on that first year and built this winery,” deLeuze said during a tour with *Wine Business Monthly*.

That first year, the two deLeuze men also planted the estate’s 3.2 acres of Cabernet Sauvignon vines. Brandon deLeuze can’t say when the first official harvest was for the family’s Rutherford property since winemaking doesn’t focus on vineyard designate wines. “Being that we came from winemaking and not vineyard ownership, we learned early on that we can make superior wine through blending,” he said.

Today, about one-third of ZD Wines’ total grape sourcing comes from their estate vineyards, which also include 23 acres of Chardonnay and 6 acres of Pinot Noir from their ZD Carneros Estate Vineyard purchased in 1996. “We have probably a dozen Cabernet Sauvignon growers, four or five Chardonnay growers and two Pinot Noir growers outside of ourselves,” deLeuze said.

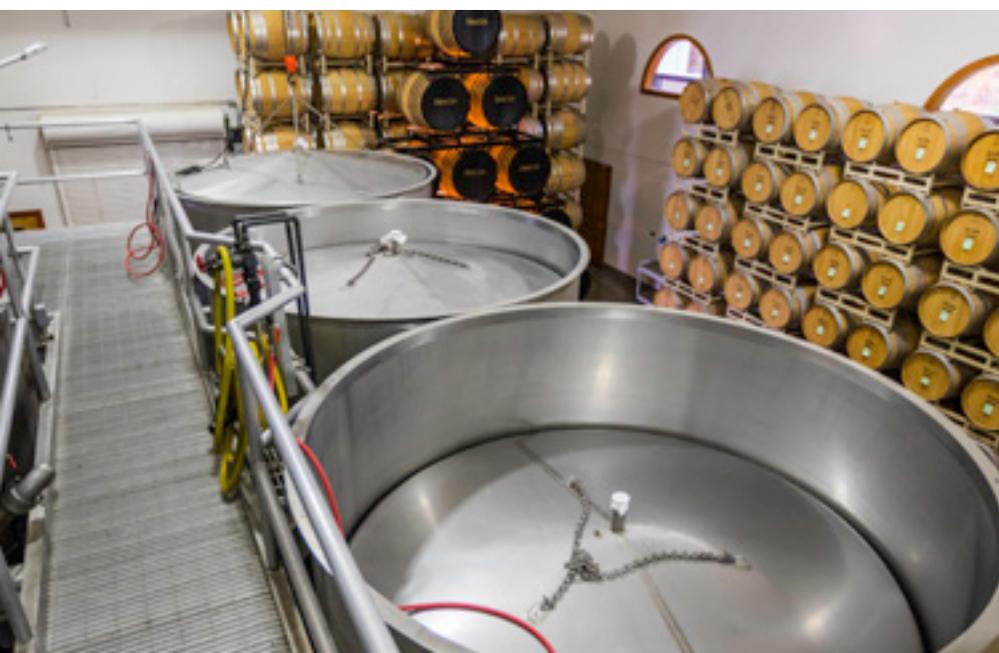
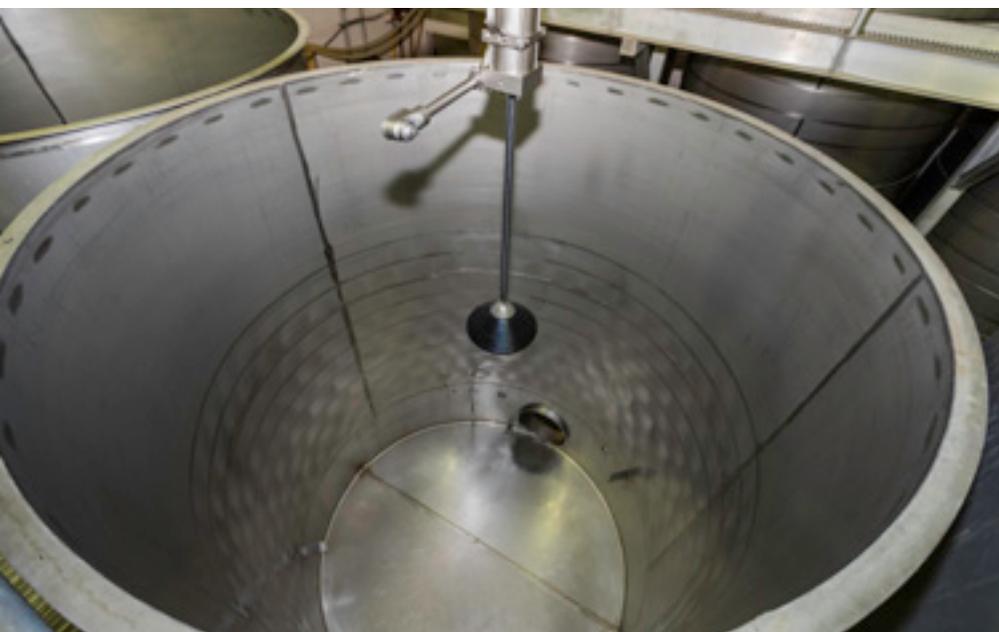
ZD’s “legacy,” deLeuze said, is getting every one of those growers to convert to 100 percent organic and certify as such through **California Certified Organic Farmers (CCOF)**, which they officially accomplished as of 2018. ZD Wines’ estate vineyards are 100 percent organic and have been from the first Rutherford planting in 1979. “My grandpa was just really into that,” deLeuze said. ZD Wines’ estate vineyards officially certified organic with CCOF in 1999 and today is also certified by **Fish Friendly Farming, Napa Green Winery** and **California Certified Sustainable Winegrowing**.

As part of their organic vineyard management practices, the deLeuzes created their own aerobic biological digesting wastewater unit in their Rutherford estate vineyard. The wastewater system utilizes naturally occurring aerobic microorganisms to consume the organic matter and nutrients in the winery’s wastewater before using it to irrigate the vines.

The system derived from an original self-contained unit by **Techqua**, purchased in 2003. “This unit did not work,” deLeuze said. “The Techqua had two aeration tanks, totaling 1,800 gallons. Since then, we’ve upgraded the system multiple times.” The new “supercharged” system now contains a 10,000-gallon tank with a new membrane bio reactor (MBR) membrane filtration cartridge unit (by **Lyve Systems**), a 6,000-gallon effluent holding tank and two 3,000-gallon irrigation tanks. “The system was put together by us with advice from multiple wastewater specialists,” deLeuze said. **Gary McCollum** of **McCollum General Engineering** in American Canyon, Calif., installed the tanks.

Since the ZD Wines’ Carneros Estate Vineyard does not have a wine-making facility, it does not use a wastewater system. The vineyard is, however, plumbed into recycled water from **Napa Sanitation** and runs on 100 percent solar power.

ZD Wines also utilizes 99.9 percent bio diesel tractors in both its estate vineyard locations. “It is made from renewable sources, such as cooking oil. We use this as part of our effort to minimize our use of petroleum,” deLeuze said. “The major downside is the delicious smell of french fries is an appetite stimulator.”



Variable capacity tanks ferment red wines “hot and fast” at 90°F.

The environmentally-conscious decisions also expand into the winery. The 26,000-square-foot building, which includes both the production and hospitality areas, are 100 percent solar-powered since 2007. The Rutherford winery is home to 712 solar panels, manufactured by Sanyo, estimated to remove 233,224 pounds of CO₂ from the environment annually.

Recycling is also big at ZD Wines. “We are able to recycle nearly all our waste, including shrink wrap, Styrofoam, cork, tin, etc.,” deLeuze noted. Wine shippers are made from cardboard, sourced from **WineShield** by **PakSource**, and packing material is made from paper provided by **Sealed Air’s Pack-Tiger Cushioning System**. Other eco-friendly details include integration of a high-efficiency air compression system, utilizing multiple stage systems and variable frequency drives; a night air exchange system, decreasing the use of air conditioning; and electrical vehicle charging stations for both employee and guest use.

Winemaking

ZD Wines currently produces 30,000 cases annually. “We were steadily growing production over the years until we hit the 30,000 mark. Then we plateaued, simply because we hit the limit of our permit,” deLeuze said. In 2017, the family petitioned for, and received, an increase to a 50,000-case production permit. “We chose that number because we can make that here with our current staff,” deLeuze said, explaining that they choose to keep the winemaking team small, with Robert deLeuze, director of winemaking; **Chris Pisani**, senior winemaker; **Chad McComber**, cellar master; **Greg Chouinard**, cellarman; and Brandon deLeuze, winemaker. “We don’t even take on any interns,” he added, “which means we really are doing all the work ourselves.”

All grapes are hand-harvested at ZD Wines. “We’ve done trials with mechanical harvesting, but we haven’t seen great results,” deLeuze said. The problem, he explained, is that mechanical harvesting is most successful in vineyards that use vertical shoot position (VSP) trellising system. “We’ve had a lot of success with the larger canopies. We don’t do a lot of high-density hedging—we let vines become large if they want to become large,” deLeuze said.

WHITE WINEMAKING

Robert deLeuze established ZD’s winemaking style early on, according to Brandon deLeuze. “At the time it was considered completely, atypically ripe and fruit-forward,” he said, specifically speaking to the white winemaking program: Chardonnay grapes are picked at about 25° or 26° Brix in order to maintain a riper expression of the typically subtle white grape.

Grapes are sorted in a receiving hopper, designed by Brandon and Robert deLeuze, fabricated and engineered by **Nick Wolff** of **Wolff’s Welding & Fabrication** in Sonoma. The hopper can accommodate a half-ton of grapes (the same amount accommodated by the receiving bins) and includes an ultrasonic sensor that ensures the hopper stays filled without overflowing: The sensor is able to see the fill height and automatically controls the speed of the conveyor belt with variable speed controls.

The fluidity of the machine, deLeuze noted, allows him to single-handedly process 15 tons of grapes in under one hour.

The hopper separates stems from berries; stems are fed directly into a compost bin, and compost is then fed back into the ZD Wines’ estate vineyards. Grapes are crushed between two pressure rollers. “If we want, we can open the rollers up and include whole berries,” deLeuze said, adding that whole berry inclusion is reserved for certain batches of Pinot Noir and smaller production red wines.



Concrete tanks include soil from both ZD Wines’ estate properties.

ZD WINES

NEW CONCRETE TANKS

In 2018 ZD Wines purchased two 240-gallon concrete fermentation tanks, custom made by **Sonoma Cast Stone** in Petaluma, Calif. According to deLeuze, he’d tasted multiple concrete trials that he thought were “really good,” and was enthused to try implementing them into both the red and white winemaking program at ZD Wines. “The nice thing about our family winery is I don’t have to go to some board to ask permission for purchases,” deLeuze said. “If there’s something that might have an association with wine quality, I don’t have to ask; I just get it.”

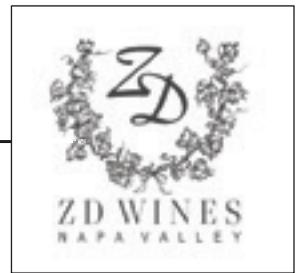
So far, deLeuze has only run a “test batch” of Chardonnay in one of the tanks and said the resulting wine had “more pineapple on the aroma” compared to ZD’s traditionally **American oak**-fermented white wine.

The plan is to use the new fermenters for the Chardonnay going into the 2018 Rosa Lee wine—a wine that changes from vintage to vintage but is always an “experimental” production.

Further adding to the experiment is the soil inclusion within the concrete tanks: one has soil from ZD Wines’ Rutherford vineyard, the other from the Carneros Estate. Though there’s not a large amount of soil inclusion, as the concrete needs to maintain its structural integrity, deLeuze is eager to taste test to see if he can detect any differences in flavor and aroma between the two tanks.

ZD Wines

8383 Silverado Trail, Napa, CA, 94558 | 707-963-5188 | zdwines.com



OWNERS/PRINCIPALS



Robert deLeuze
CEO, partner



Brett deLeuze
president, partner

WINEMAKERS



Brandon deLeuze
winemaker



Chris Pisani
senior winemaker

YEAR BONDED: **1969**
WINERY CASE PRODUCTION: **30,000**
AVERAGE BOTTLE PRICE: **\$50**
DIRECT-TO-CONSUMER SALES: **30%**

VINEYARD INFO

VINEYARD: **Rutherford**
VINEYARD ACREAGE: **3.2 acres**
APPELLATION: Rutherford AVA
VARIETALS GROWN: Cabernet Sauvignon (3.2 acres)

VINEYARD: **Carneros Estate**
VINEYARD ACREAGE: **31 acres**
APPELLATION: Los Carneros AVA
VARIETALS GROWN: Chardonnay (23 acres); Pinot Noir (6 acres)

TONS USED VS. TONS SOLD: **All used**

SUSTAINABILITY CERTIFICATIONS: California Certified Organic Farmers (CCOF), Napa Green certified, Fish Friendly certified, Certified California Sustainable Winegrowing

SOIL TYPE: Rutherford – Perkins Gravelly Loam; Carneros – Haire Loam

CLIMATE: Quite pleasant

Building/Renovating the Winery (Production Area)

YEAR BUILT: 1979
SIZE: 26,000 square feet
ARCHITECT: **Dave Bell** (Norman deLeuze's close friend)
CONTRACTOR: **Nordby Construction**, Santa Rosa, CA, nordby.net
FLOORING: urethane concrete
SOLAR: **Sanyo** (now **Panasonic**), panasonic.net
OTHER KEY CONTRACTORS/SUPPLIERS USED:
Knight's Electric, Inc., Windsor, CA, knightselectric.com;
Refrigeration Technology Inc., Middletown, CA, rti2000.com;
Reid Sheet Metal Services Inc., American Canyon, CA, 707-253-0909;
Napa Valley Petroleum, American Canyon, CA, napavalleypetroleum.com

Building/Renovating the Hospitality Area

YEAR BUILT: 1992
YEAR RENOVATED: 2018-2019
ARCHITECT: **Leong Architects**, St Helena, CA, leongarch.com
CONTRACTOR: **Bruce Tucker Construction**, Napa, CA, brucetuckerconstruction.com
ENGINEER: **MKM & Associates Structural Engineers**, Rohnert Park, CA, mkmassociates.com
LIGHTING: **Anna Kondolf Lighting Design**, Fairfax, CA, kondolf.com
Christman Electrical Contracting, Napa, CA, christmanelectricalcontracting.com
FLOORING: **North Coast Tile & Stone**, Santa Rosa, CA, nctile.com
SOLAR: **Sanyo** (now **Panasonic**), panasonic.net
WASTEWATER: Developed by ZD Wines, starting with **Techqua Winery Wastewater Treatment System**

Making the Wine (brand/supplier, size, type)

RECEIVING HOPPER AND/OR VIBRATING SORTING TABLE: Custom design by ZD.
Fabrication and engineering by **Wolff's Welding & Fabrication**, Sonoma, CA, wolffswelding.com
DESTEMMERS: **Rauch A12**
PRESSES: 2 **Diemme AR 80 F** Bladder presses, diemme-enologia.com
BARRELS: **Cooperage Demptos**, demptos.fr
Tonnellerie Radoux, tonnellerieadoux.com
Canton Cooperage, cantoncooperage.com
François Frères, francoisfreres.com
Tonnellerie O, tonnellerieo.com
World Cooperage, worldcooperage.com
Tonnellerie de Mercurey, tonnellerie-de-mercurey.com
Kelvin Cooperage, kelvincooperage.com
Paul Mueller Stainless Steel, paulmueller.com
PUMPS: **Kiesel** progressive cavity must pump, wine pumps: **Jabsco**, **Zambelli**, **Waukesha**, **Yamada** air
FILTERS (IF USED): **Bucher Vaslin** cross-flow FM 40, Santa Rosa, CA, bvnorthamerica.com
Della Toffola high solids cross-flow lees filter, Santa Rosa, CA, dellatoffola.us

Packaging

BOTTLING LINE: **GAI**, gai-it.com
GLASS: **Saverglass**, saverglass.com
Encore Glass, encoreglass.com
CORKS: **Portocork** Icon TCA free, portocork.com
CAPSULES: **Ramondin**, Napa, CA, ramondin.es
LABEL DESIGNER: **Sterling CreativeWorks**, Napa, CA, sterlingcreativeworks.com
LABEL PRINTING: **Paragon Label**, Petaluma, CA, paragonlabel.com
CASE GOODS STORAGE: **Biagi** warehouse, American Canyon, CA, biagibros.com. In-house, ZD Wines
SHIPMENTS: In-house, ZD Wines



Della Toffola high solids cross-flow lees filter



The destemmed, crushed Chardonnay then moves directly into one of the winery's two **Diemme** AR 80 F bladder presses via **Kannaflex** hoses. "The bladder press is a much more gentle way of pressing versus the 'old basket press,'" deLeuze said, explaining he prefers the slow process of the bladder's press-rotate routine, which allows him to get more volume and better quality juice from the grapes.

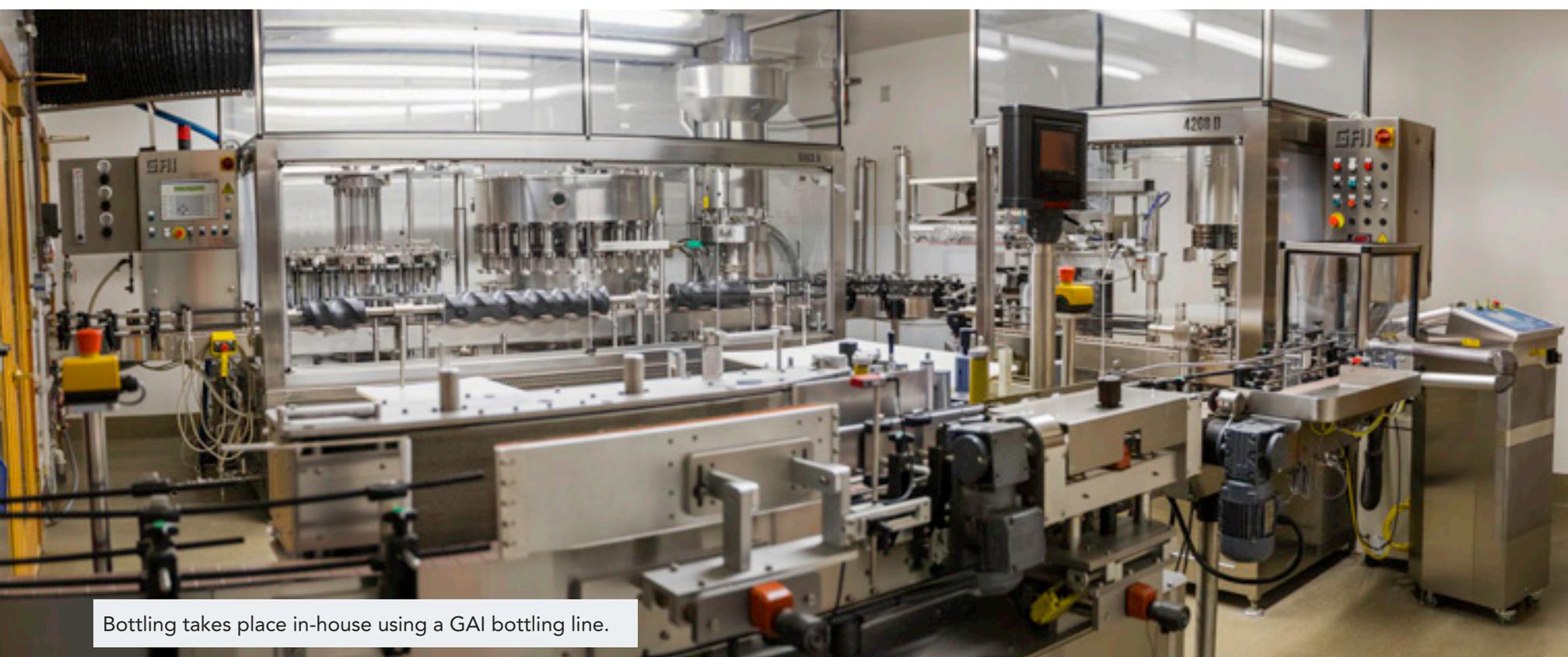
Pressed Chardonnay then moves directly to barrel for primary fermentation. This process takes over two months at ZD Wines since the barrels are stored in a cold room at 46° F. "That's the limit for yeast," deLeuze stated. "It's one of the things my dad instigated really early on: What is the lowest [temperature] yeast can handle? And he came up with this number." deLeuze explained that it's another tactic for maintaining the ripe fruit characteristic in the wine. "That character tends to dissipate at higher temperatures," he added.

Following primary fermentation, Chardonnay is immediately filtered in order to prevent malolactic fermentation. In the past, ZD Wines used

diatomaceous earth (DE) filtration—a filtration process that deLeuze and his team found unsanitary. In 2017 the winery purchased a "stupidly expensive" new **Della Toffola** high solids cross-flow lees filter. "It's more gentle, cleaner and more efficient," deLeuze said. "We usually send 20 percent solids lees to the unit, and it will recover 75 percent of the wine, kicking out the heavy solids with minimal juice or wine loss."

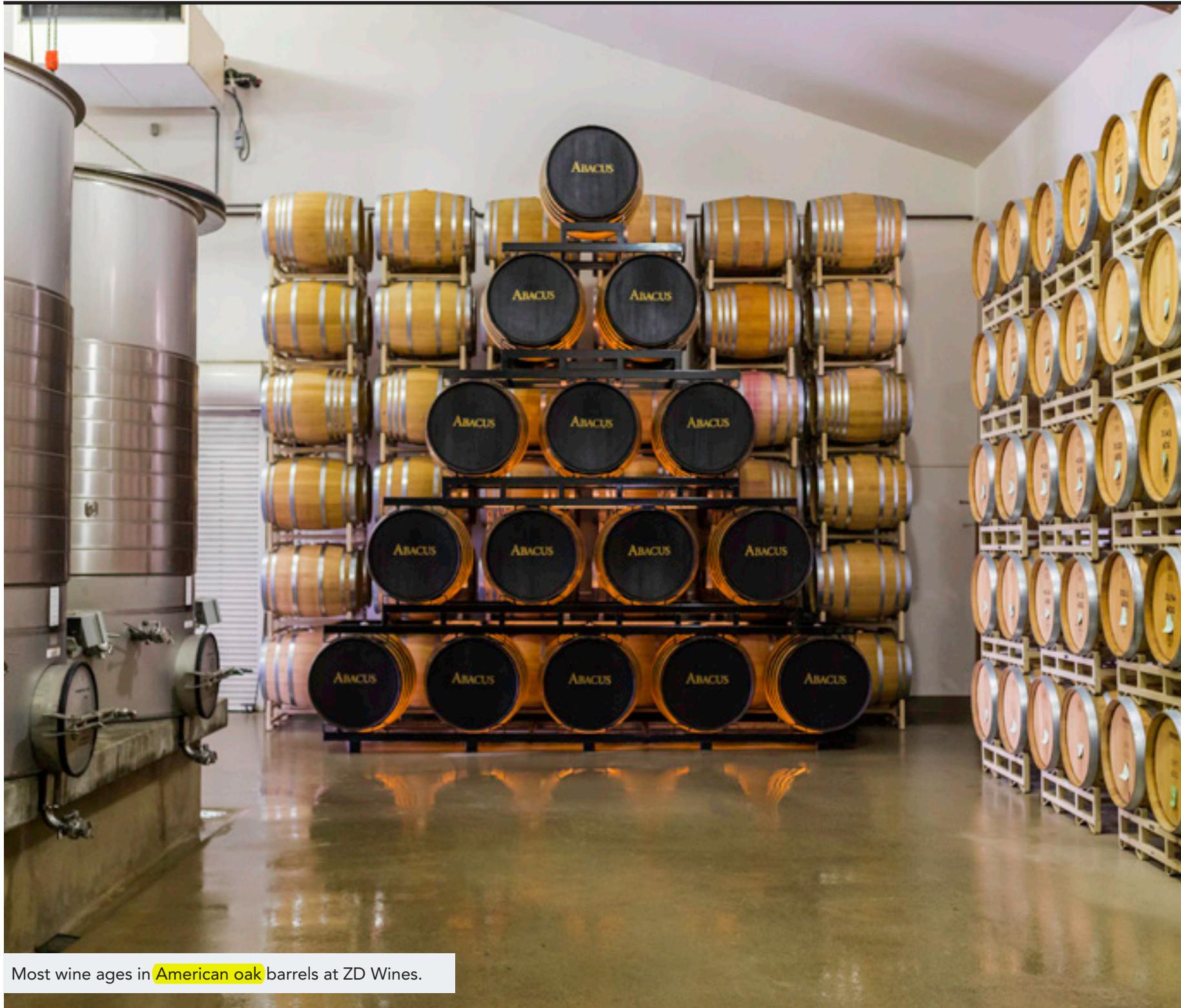
In keeping with ZD Wines' commitment to environmentally friendly winemaking, the leftover solids are sent to a local company that distills it into grappa.

ZD Wines' Chardonnay ages in 100 percent **American oak** (25 percent new) for 10 months; ZD Wines' Reserve Chardonnay ages for 15 months but is moved to all neutral barrels for the last five months. The choice to use **American oak** over French oak is another tradition passed down from deLeuze's grandfather, stemming from the days when he and Zapponi could only afford to purchase and refurbish used brandy barrels. Thus, when ZD



Bottling takes place in-house using a GAI bottling line.

Technical Spotlight ZD Wines



Most wine ages in **American oak** barrels at ZD Wines.

Wines could afford wine-specific barrels, they turned to **American oak**. The result, for Chardonnay, is a wine with a soft, rounded mouthfeel and vanillin characteristics that uplift the wine's floral aromas and fruit flavors.

RED WINEMAKING

Red grapes are mostly destemmed, with a small percentage of stem inclusion in the Carneros Pinot Noir, and then moved immediately to tank for primary fermentation. The process only takes five days for Cabernet Sauvignon. "We're hot and fast," deLeuze said, explaining that the variable capacity, open-top fermentation tanks, complete with glycol jackets, are kept at 90° F.

deLeuze said his father and grandfather originally employed this technique out of necessity. "We only had so many tanks, and we were bringing in so much fruit. We had to ferment and move on," he said—no cold soak, no extended maceration.

Today, deLeuze and his winemaking team believe that the technique is still the best one, especially when it comes to their Cabernet. "The big deal with Cabernet is the fermentation temperature and time on skin—that all dictates

how much 'stuff' you get out of the skin," deLeuze said. "The waxy layer around the grape seeds starts to break down after seven days—then you're in full-on extraction mode. We try to beat that," he said.

Pinot Noir also ferments at 90° F but is left on its skins for seven days, simply because the tannin structure is more delicate.

Cabernet receives punch-downs three times daily, the Pinot Noir four. All punch-downs are conducted using a pneumatic punch-down arm, designed by Robert deLeuze and manufactured by **Elect Air** in Fontana, CA. The device is hooked to an I-beam, fabricated by **Morris Welding** in Pope Valley, CA, that runs along the roof of the winery, allowing it to reach any one of ZD Wines' seven open-top fermentation tanks. The length of the arm extends nearly the entire length of the 3,200-gallon tanks.

Similarly, lids, designed by deLeuze's grandfather, can accommodate the tanks' variable capacities. Each lid includes a kind of rubber suction around the perimeter; one simply has to lower the lid to the level of the wine, inflate the rubber and the lid stays.

Once fermentation is complete and the wine pressed, again using the Diemme AR 80 F bladder press, the Pinot Noir ages in French oak (30 percent



CELEBRATING 50 YEARS WITH SPARKLING WINE

With the enduring innovative spirit of his grandfather in mind, Brandon deLeuze, who was newly appointed to the winemaking position at his family's winery in October 2018, spearheaded a sparkling wine experiment in celebration of ZD Wines' 50th anniversary. "My father calls this project 'an industrial distraction,'" deLeuze said. "It's a lot more work for us than still wines."

The Blanc de Blanc is made from Chardonnay grapes from two separate early pickings from the **Carneros Estate Vineyard**, with grapes picked at 18° and 19° Brix to allow for blending options. The sparkling wine, made in the *methode traditionnelle*, required a custom gentle press cycle from the Diemme AR 80 F bladder press. The ZD Wines' winemaking team hand-riddled the wine using A-frame riddling racks purchased from **Premier Wine Cask** in Napa, CA. "We also had to borrow a wood tirage from a neighboring winery to do the traditional aging in the box," deLeuze said.

ZD Wines turned to a mobile service for dosage and second bottling. **Keith Hock**, former winemaker at **Schramsberg Vineyards** in Calistoga, CA, added a mobile bottling service specifically dedicated to sparkling wine to his wine consulting business, **Hock Wines**. "Keith has been a great partner while producing our first sparkling wine," deLeuze said. "His ability to bring the needed specialized bottling equipment to ZD enabled us to do every step of the winemaking at ZD and ensure our established style translated into this new product."

Though deLeuze said the sparkling wine is technically a one-off experiment in celebration of ZD Wines' 50th anniversary, he did divulge that there's a reserve Pinot Noir-Chardonnay sparkling in the works to be released in 2019.

new) for 10 months (or 15 months for the reserve), and Cabernet ages in 100 percent **American oak** (15 percent new) for two to three years.

Red wines are typically blended before undergoing cross-flow filtration, "but for us there are no rules in terms of order," noted deLeuze.

Bottling at ZD takes place in-house on a **GAI** bottling line, complete with a 20-head nitrogen purger, 24-head filler, 4-head corker and an 8-head foiler, which has autofoiling capability. The line also includes an **Impresstik** labeler, an **Xymark** laser etcher, which puts time and date of bottling onto the bottom of the bottle, and a **Squid Ink** industrial inkjet printer for applying the vintage to the box.

"Bottling sucks," deLeuze said. "That's why most people prefer mobile bottling—they don't want to deal with it. But for us, it's a quality control point—we want total control [Zero Defects] from start to finish." **WBM**

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