



Indian Brook Trout Farm in Jackson, Michigan

“Lining Up” Opportunities

As population increases worldwide, the demand for nutritious food is on the rise. Seafood is often considered one of the solutions to this problem as it is an efficient and sustainable way to produce a high-quality food product containing protein.

According to the United Nations Food & Agriculture Organization, an additional 27 million metric tons of fish per year will be needed to maintain the current level of consumption by 2030, not taking into account population growth. Additionally, even though the U.S. is the third largest consumer of fish in the world, the U.S. aquaculture industry only supplies about 1.5% of the nation’s seafood supply, with most of it coming from Canada, South America and Asia.

A Unique Opportunity

This has led to a need for a more robust aquaculture industry in the U.S. Owen Ballow, President and Owner of the Indian Brook Trout Farm in Jackson, Michigan, saw the opportunity to fill this demand when he purchased the trout farm in 2011.

“The demand for high-quality, farm-raised fish is so high that we can’t keep up with all of the requests,” Ballow said.

The farm, which cultivates rainbow trout, is located on an aquifer that runs from Lake Erie to Lake Michigan. This rare location means all of the tanks and ponds on the property can use all artesian wells – no power is needed to keep the water levels up.

Currently, the farm harvests 10,000 pounds of fish per month, with a goal to harvest 4.5 million fish per month in two years. The current harvest supplies 400 grocery store chains and restaurants around Michigan.



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The Setup

To house his current inventory of fish, Ballow has both outdoor ponds and indoor round tanks. The round tanks are 9, 12, 18 and 30 feet in diameter, with PVC liners in each tank.

Before purchasing Indian Brook, Ballow researched the ideal setup for fish farming and quickly realized the importance of using liners in both outdoor ponds and indoor tanks.

“There are many case studies where the fish become diseased on a farm with earthen ponds and the Department of Natural Resources (DNR) will force them to fill in the ponds,” Ballow said. “If the ponds had been lined they would have been OK.”

So when the liners Ballow originally purchased to line his tanks deteriorated prematurely, he knew he had to find a better solution.

A Versatile Solution

In searching for a new liner solution, Ballow came across Plastatech® Engineering, Ltd., a geomembrane manufacturer in Saginaw, Michigan. Plastatech’s ability to manufacture custom tank liners, combined with the material’s durability offered the solution Ballow was looking for.

“Having the liners come to us pre-made saves a ton of time,” Ballow said. “We can drop them right in and, in a matter of minutes, they are ready to go.”

Plastatech FG (Fish Grade) Geomembrane in 30 mil was the product selected to line all of the different sized fish tanks. This product is known for having good tensile strength and flexibility, making it a good fit for both the outdoor ponds and tanks.

“A nice thing about these liners is that you can walk on them because they don’t puncture,” Ballow said. “The other day I lost my cell phone and I could go look for it without worrying about putting a hole in the membrane.”

Another problem that Plastatech helped resolve was how to make any penetration into the tank watertight and not leak. One of Ballow’s issues with the original liners was creating a watertight drain seal. To resolve this, Ballow and his team made due by gluing the liner to a PVC board and screwing the drain into the board, but this was time consuming and not always watertight. Plastatech has the ability to make custom pipe and drain flashings to make it a complete tank solution.

“Plastatech’s drains are compression fitted so they are more secure and come ready to go,” Ballow said.



Environmental Impact

Lined ponds can also be more attractive from a sustainability perspective. Environmentally, the containment of fish waste is an added benefit of farm-raised fish. In lakes where open water pen-raised fish are raised, all of the waste that piles up on the bottom of lakes decays and causes disease and other issues, whereas in farms it can be contained, gathered and sold as fertilizer.

“Containing the fish waste is all about the liners,” Ballow said. “Without the right liner, you have no way of containing it.”

Plastatech’s geomembranes not only contain fish waste, but are also easy to clean.

“When the ponds are drained, we can just clean them with a push broom,” Ballow said. “But most importantly, the liner keeps diseases from getting into the water and chemicals from getting into the soil.”

Farm-raised fish are becoming more popular for both health and environmental concerns. Farm-raised fish contain no pollutants, are pesticide and heavy metal free and contain three times more Omega-3 fatty acids than fish caught in the wild due to the special food they are fed.

Helping the Competition

Demand for farm-raised fish is so large that Ballow isn’t concerned about competition – he wants to encourage it. Ballow is working with others to develop a system to help people get into aquaculture and start a fish farm of their own.

This system includes creating a package with everything someone would need to get started in the aquaculture industry. The package will include the Plastatech liners, plumbing fixtures and various sized tanks, depending on the size of the operation.

“There is so much demand that I just want to contribute to growing this industry,” Ballow said.

Another part of this is coordinating with processing facilities to help small farmers. Many small farms don’t have large enough inventories to justify the costs of processing, so pooling small farmers’ inventories together could save on those costs.

Indian Brook has also partnered with universities in the state, including the University of Michigan and Jackson College, to offer aquaculture and biology internships. The idea is that the students who complete these internships can go on to work at the farms they are helping.

“Fish farming is a great opportunity for college students because it is about so much more than just biology,” Ballow said. “It involves math and physics, along with an understanding of all the laws and regulations surrounding aquaculture.”





Unlimited Potential

With its vast fresh water supply, Michigan is uniquely situated to be the hub for the aquaculture industry. The combination of increased food production needs, and demand for farm-raised fish, offers many opportunities. Last year, the DNR reported that Michigan's aquaculture industry generated \$5 million, while the Indian Brook Trout Farm alone is eventually expected to generate more than \$50 million per year.

"Right now it's the perfect storm where demand is increasing, but the supply isn't there yet in the U.S.," Ballow said. "It's a great time for fish farms in Michigan to get ahead of the game. And by working with local companies like Plastatech, that is easier than ever."



To learn more about Plastatech FG or our other laminated PVC geomembranes, contact us at:

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