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MATRIX SERVICE AND MODA MIDSTREAM

Team approach results in greater expansion and improved project delivery schedule.

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MODA Midstream partners with Matrix to develop world-class Gulf Coast export terminal



MODA midstream

Exporting U.S. Crude Oil

MODA Midstream partners with Matrix to develop world-class Gulf Coast export terminal



When Moda Midstream acquired the Oxy Ingleside Energy Center (now known as the Moda Ingleside Energy Center, or MIEC) in September 2018, it did so with plans to build on the former owner's vision for a premier Gulf Coast export terminal capable of safely and efficient-

three new long-haul, next-generation pipelines — Cactus II, Gray Oak and Epic — offering a combined transfer capacity of nearly 2 million barrels per day. Moda recognized it could expand existing storage capacity from 2.1 million barrels to 12 million barrels, improve waterfront

manner.”

Moda also knew there were changes and other enhancements it wanted to make in order to untap the MIEC's significant growth potential. But doing so meant modifying the original expansion growth plan, construction schedules and related work already underway.

Fortunately, the front-end loading, FEED and subsequent detailed engineering had been completed by Matrix PDM Engineering, and the primary EPC contractor on-site was Matrix Service, which Moda had worked with on multiple occasions. Matrix had also been the EPC contractor on the initial six crude oil storage tanks at MIEC.

“One thing that is evident with Matrix is that they are real professionals armed with technical and execution proficiency, and for us, that is critical for success,” said del Olmo. “They also recognized our

operational expertise in storage and terminaling logistics and were open to alternative viewpoints. That kind of teamwork is a key characteristic we look for in our business partners.”

Moda Midstream Vice President of Engineering Luis Perez agreed. “There are only a few contractors in the world that have the expertise to design and construct what Matrix is executing at this level of proficiency,” he said. “They understood our approach and service-oriented alternative design, and together, we came up with solutions focused on terminal flexibility, batching and customer segregation, and were also able to improve the schedule, all of which supports Moda's focus on speed-to-market.”

Positioning for today, planning for tomorrow, partnering for success

Soon after completing the acquisi-

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— Javier del Olmo, executive vice president and COO, Moda Midstream

ly moving large amounts of crude oil and other liquids to global markets. A Texas-based company with deep roots in the Gulf Coast, Moda provides independent terminaling, storage and transportation of bulk liquids such as crude oil, condensate, NGLs and refined products.

Moda knew the Ingleside Energy Center would provide solutions for the logistical challenges and barriers faced by producers across the Permian, Eagle Ford and elsewhere since the U.S. lifted its 40-year ban on crude oil exports in late 2015. Moda also knew that, as a former U.S. Navy base, the center's sheltered harbor, proximity to the Gulf of Mexico and ability to handle very large vessels made it an ideal choice for a world-class export terminal.

Already connected to the Cactus I Pipeline, MIEC is well-positioned to receive future deliveries from

loading capabilities, and allow berthing and loading of very large crude carriers (VLCCs). Moda also knew the MIEC's position near the mouth of the Corpus Christi Ship Channel would give VLCCs and other larger tankers like Suezmax and Aframax vessels fast access to deep waters and even faster vessel turnaround time.

“The No. 1 driver for any producer is flow assurance, making sure product flows from the wellhead to market in the most efficient way possible,” said Moda Executive Vice President and COO Javier del Olmo. “We knew as an independent service provider that we had a real opportunity to create enhanced value for our customers by offering a safe, reliable, optimal solution for the handling and export of their product. Proper execution would allow us to cater to customer needs and ever-changing market dynamics in a quick and efficient



New Berth 2A installation by Matrix allows for mooring of very large crude carriers and provides improved loading capabilities of up to 80,000 barrels per hour with 99.9-percent VOC emissions recovery.

tion, Moda met with Matrix to better understand the details of the existing EPC contract and scope of work. Moda shared its perspectives on current and future growth, how it would operate and maintain the facility, and what it needed in order to make the operation as flexible as possible. Moda knew it wanted to add even more storage capacity and infrastructure for contracted customer growth and to facilitate additional development.

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“The key is to stay ahead of the curve,” said del Olmo. “We look at how we will stage our growth and we do that in close coordination with our customer base. How we upgrade our terminal and increase capacity is key to addressing flow assurance and being able to respond to our customers and to growing market demand. If we can do that, then we’ve created value for everybody involved in the logistics chain.”

For Matrix, close customer coordination is equally important. Making sure Matrix understands its customers’ business issues and partners with them to find solutions is central to the culture and core values that have defined Matrix’s success. In this case, that culture was even more valuable given the change in ownership and need to quickly incorporate Moda’s vision into the project scope.

“The executive team at Moda brought with them extensive experience in developing and operating large-scale liquid storage terminals here in the U.S. and around the world, and with that, they also brought a very clear vision for how they wanted to approach current and future expansion at Ingleside,” said Matrix Service Vice President of Operations Pat Chambers. “It was imperative that we quickly understood their strategy and operating challenges so that we could work with them to develop solutions to meet or exceed their expectations while minimizing potential impacts to the project schedule.”

Together, Moda and Matrix developed a plan to achieve Moda’s objectives, improving both schedule and deliverables while also dramatically

increasing storage capacity.

“Moda embraced the relationship from the beginning, and together, we worked tirelessly to make the modifications required to meet their flexibility objectives,” said Chambers.

Moda doubled the number of storage tanks it asked Matrix to construct, accounting for nearly 7 million barrels of the additional storage capacity. The tanks — approximately 210 feet in diameter and 80 feet tall — each

have a capacity of 490,000 barrels.

Moda also relied on Matrix for improvements to the MIEC’s deepwater berths. It was highly specialized technical knowledge Matrix PDM Engineering gained through an acquisition that brought a longstanding legacy of expertise in marine structures.

“The Berth 2A upgrades that Matrix designed and built allow us to have a very safe, efficient means of loading crude oil onto vessels, including VLCCs,” said del Olmo. “These upgrades are what differentiate this facility from any other.”

Structurally, the upgrades included concrete reinforcement of the bulkhead and placement of fenders and bollards along a 1,364-foot stretch of the wharf to allow for the mooring of VLCCs. They also included the addition of gangways and other required infrastructure. Operationally, the upgrades included installation of three 20-inch loading arms capable of pumping 80,000 barrels of crude oil an hour — the highest certified loading rate for crude oil anywhere along the Gulf Coast. They also required installation of state-of-the-art vapor destruction equipment, which included a 20-inch vapor recovery arm, designed to eliminate 99.9 percent of the VOC emissions discharged during loading.

“These modifications, along with our location on the waterfront, mean large vessels, specifically VLCCs, can come into the anchorage area, safely moor and load, and be back out to the Gulf in about one day, which is remarkable,” said del Olmo.

Aframax vessels can already be loaded to full capacity; howev-

er, draft restrictions in the Corpus Christi channel currently limit loading of Suezmax vessels to 85 percent of volume capacity and VLCCs to 1.3 million barrels, or 64 percent. Once the Corpus Christi Ship Channel Improvement Project reaches Ingleside (expected by early 2020), the MIEC will be able to fully load Suezmax vessels and increase the payload on VLCCs to 80 percent of volume capacity. Once complete, the Corpus Christi channel will be the deepest ship channel in the U.S. Gulf.

Additional waterfront modifications being completed by Matrix will allow for simultaneous loading of 40,000 barrels an hour from each side of the MIEC’s finger pier. This, together with the improved loading

capabilities at Berth 2A, means up to 160,000 barrels of crude oil an hour can be loaded concurrently across the MIEC’s three deepwater berths.

“It all speaks to flexibility and providing service in a safe, efficient manner, and Matrix has been a key partner in helping us achieve our objectives,” said del Olmo. “It is part of our focus on speed-to-market and ensuring we remain the service provider of choice today and into the future.”

“We are fortunate to have Matrix on-site,” agreed Perez. “They are a great team partner to have working on one of the most important energy projects in recent history.”

For more information, visit www.matrixservicecompany.com or call (866) 367-6879.



Planned modifications by Matrix to the finger pier at the Moda Ingleside Energy Center will allow for the simultaneous loading of an additional 40,000 barrels per hour from each of its two berths.



Matrix is providing EPC services on 14 aboveground storage tanks and related balance of plant, adding 7 million barrels of storage capacity at the Moda Ingleside Energy Center.

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