

The Permian in Transition: Crude Takeaway Developments



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February 21, 2019

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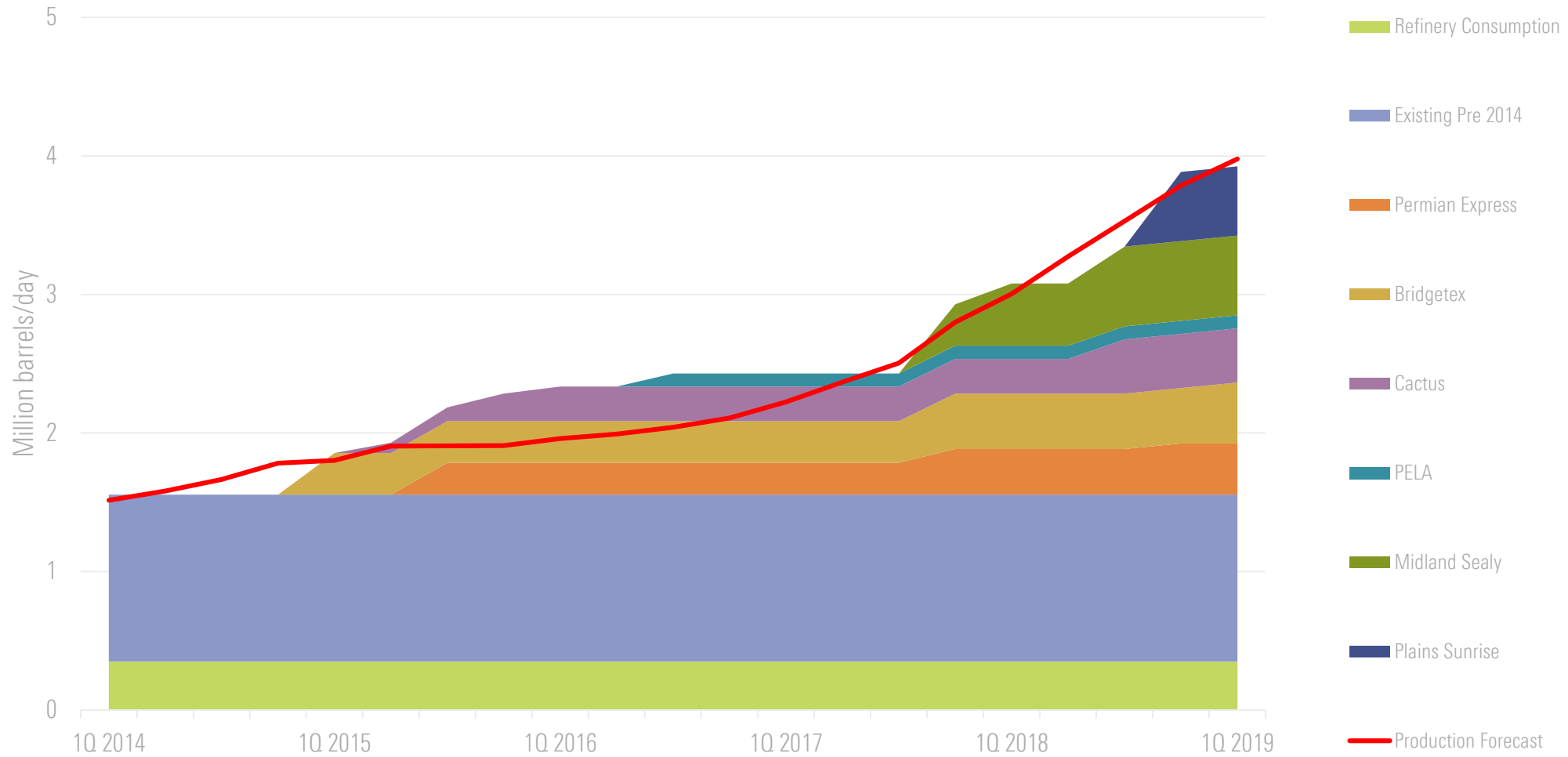
Permian Crude Takeaway Developments Agenda



Image Source: Shutterstock

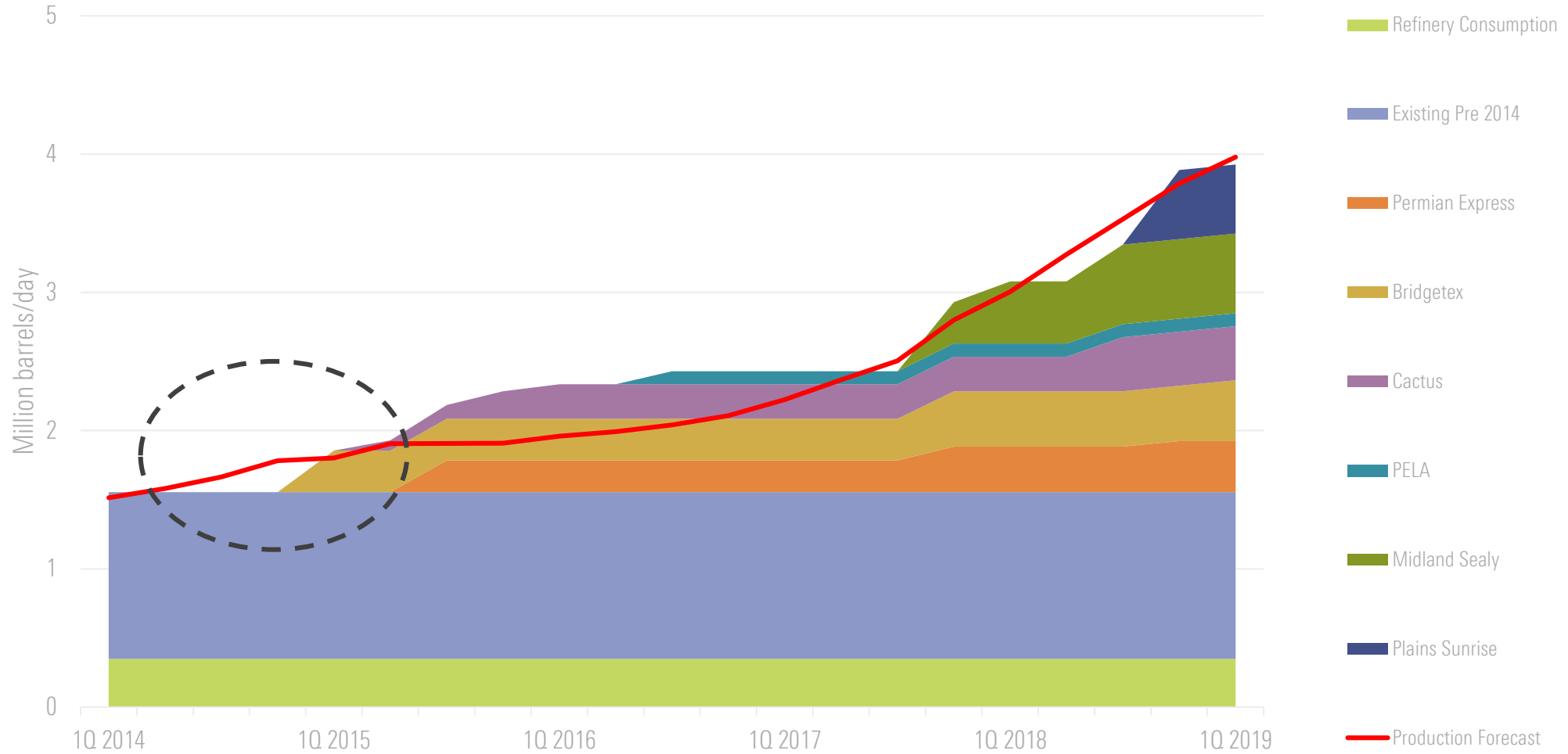
- Crude Takeaway Stack
- Midland Congestion 2018
- Takeaway Stack Through 2021
- New Pipeline Projects
- Gulf Coast Exports
- VLCC Dock Projects

Permian Basin Takeaway Stack February 2019



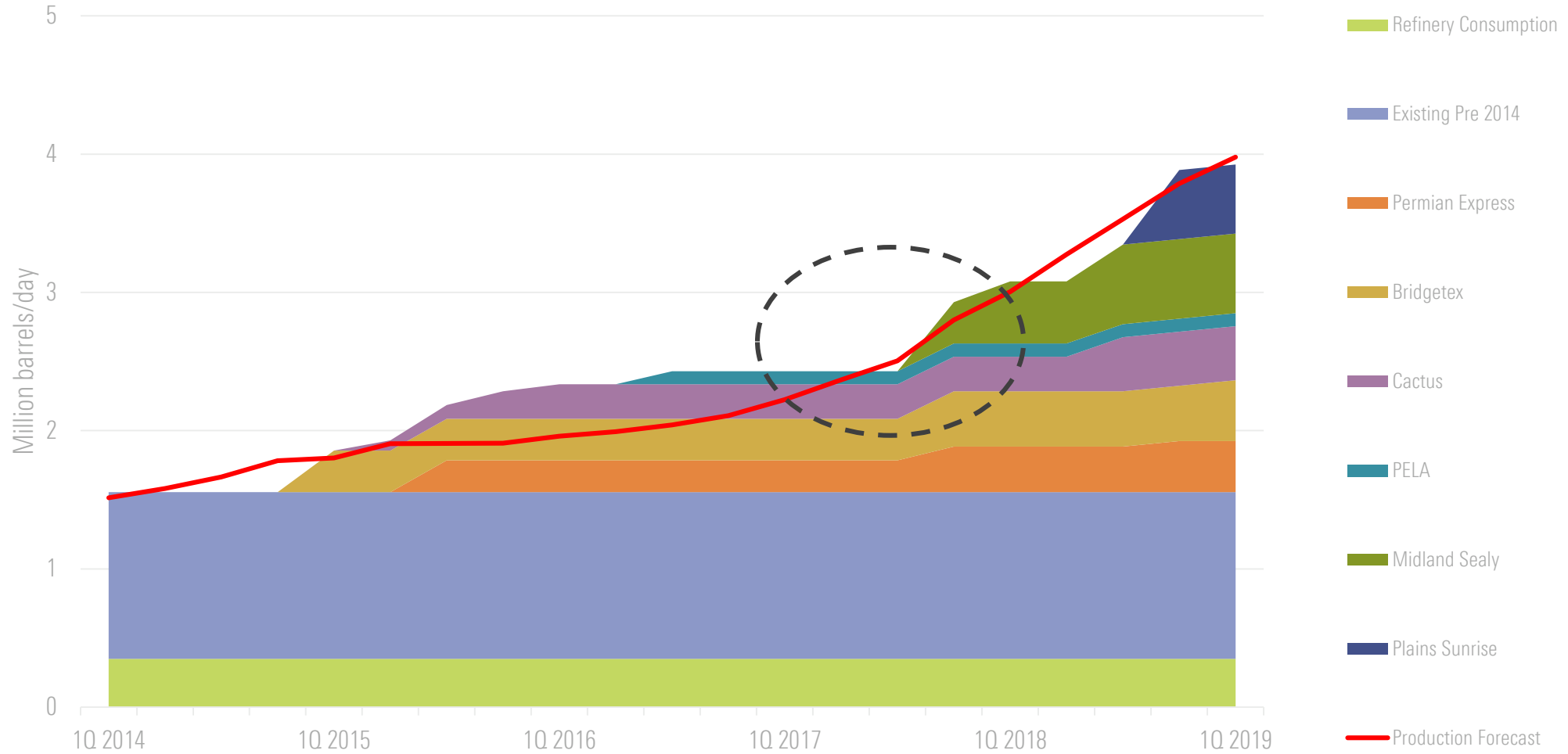
Source: Company Presentations, Morningstar

Permian Basin Takeaway Stack February 2019



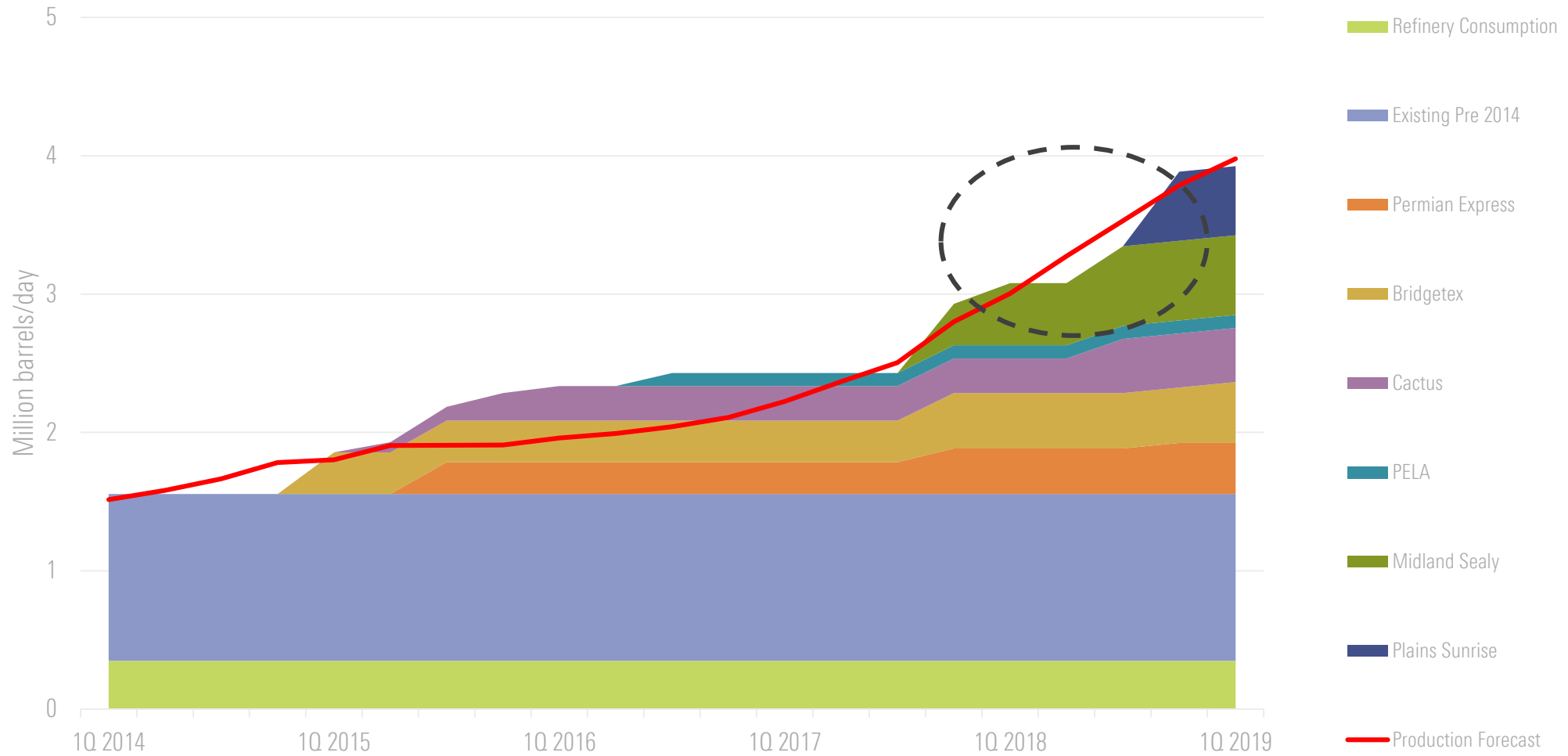
Source: Company Presentations, Morningstar

Permian Basin Takeaway Stack February 2019



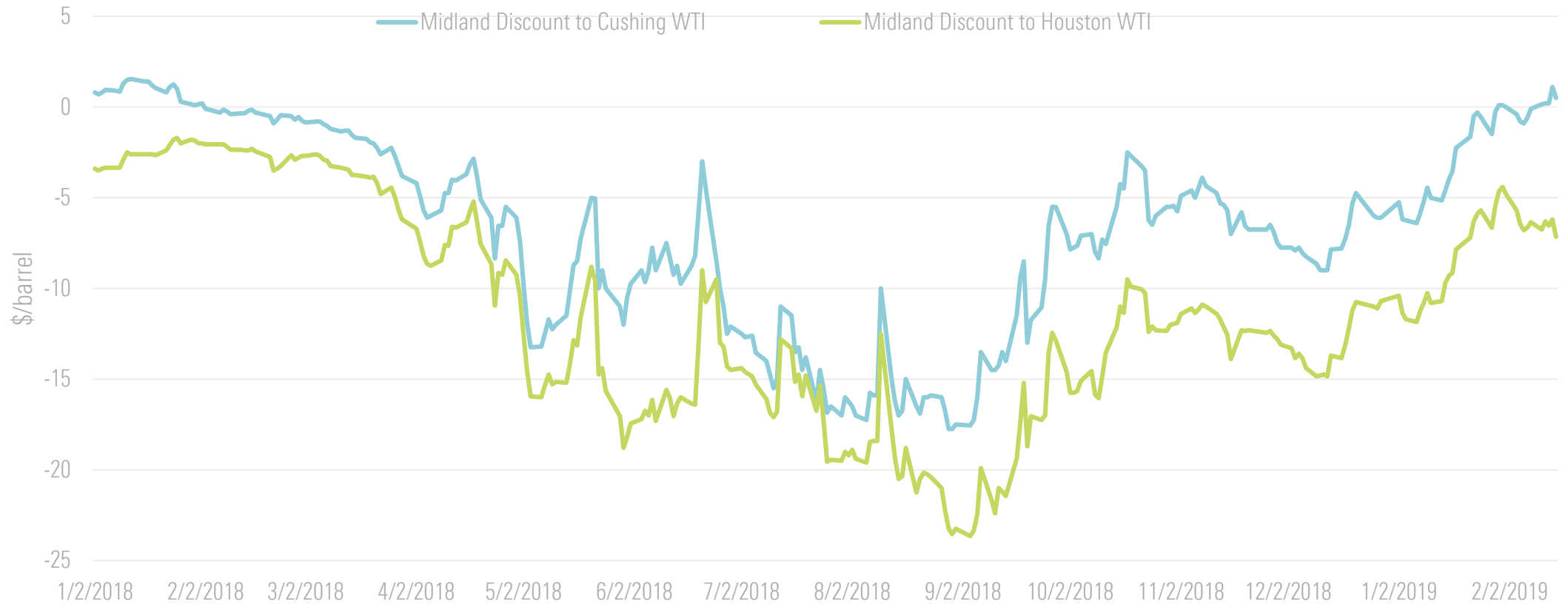
Source: Company Presentations, Morningstar

Permian Basin Takeaway Stack February 2019



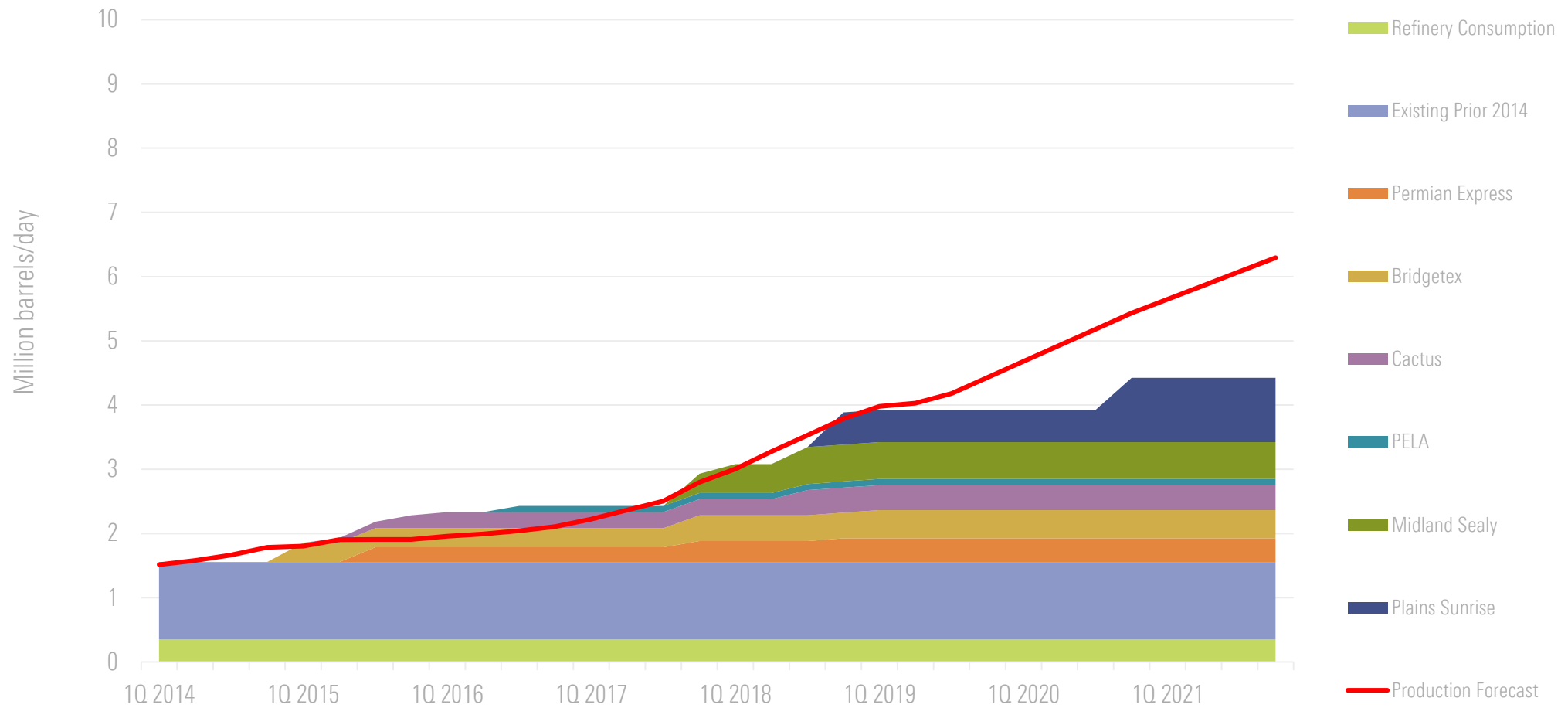
Source: Company Presentations, Morningstar

Midland Congestion Causes Price Discounting in 2018



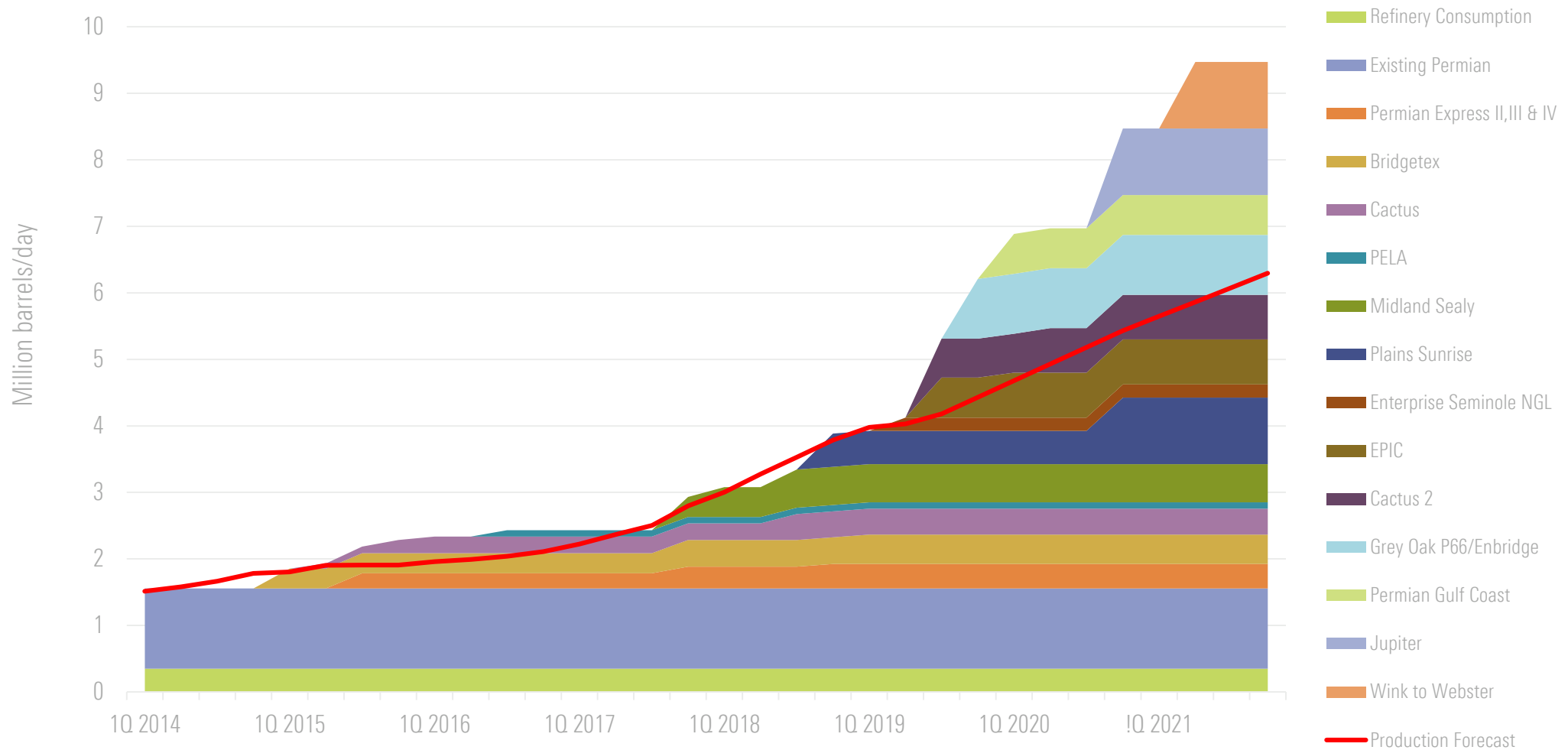
Source: Platts,

Expected Permian Basin Production to End of 2021



Source: Company Presentations, Morningstar

Expected Permian Basin Takeaway Stack Forecast at End of 2021



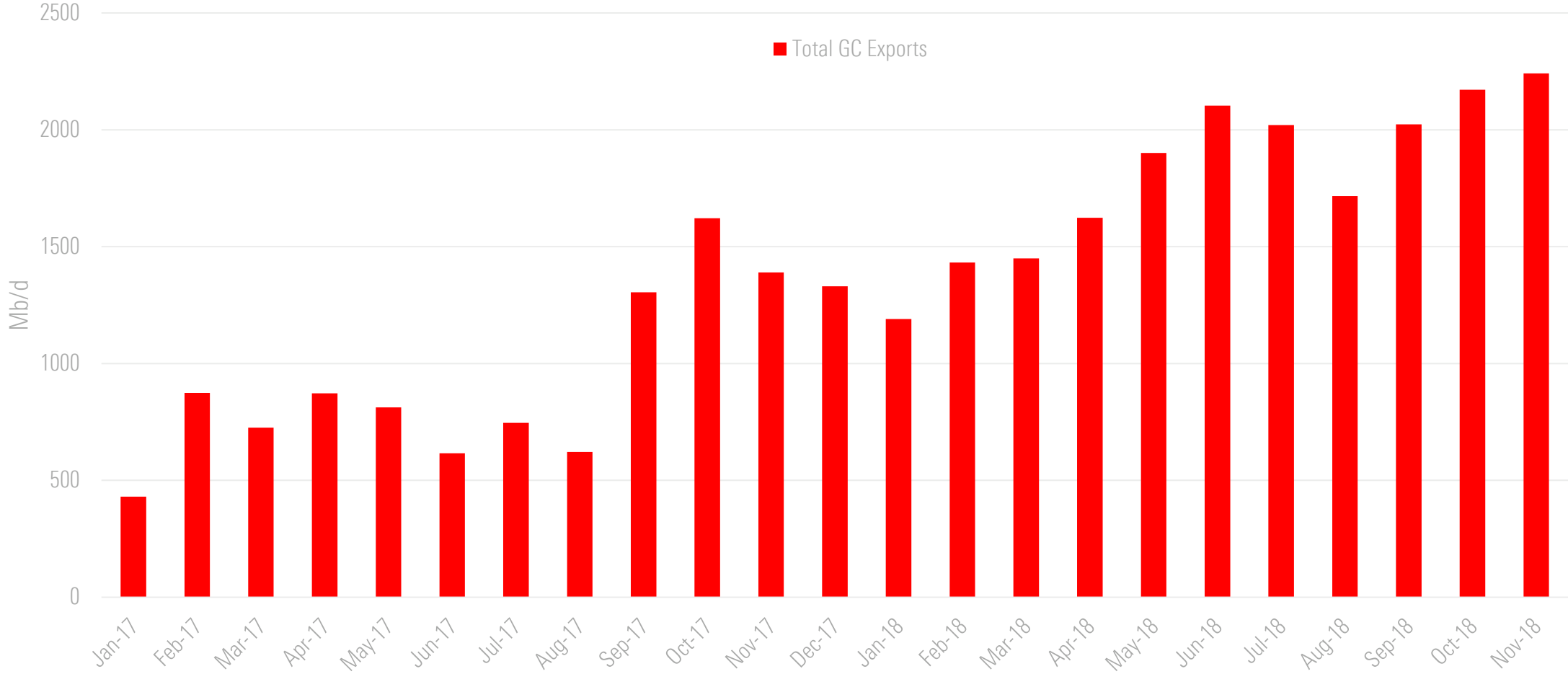
Source: Company Presentations, Morningstar

Permian Pipeline Additions Q2 2019 – Q2 2021

| Project | Owners | Origin | Destination | Capacity (Mb/d) | Online Date |
|------------------------|----------------------------------------|-----------------------------------------|-------------------------------------------|-----------------|---------------------------------------------|
| Seminole NGL Repurpose | Enterprise Product Partners | Hobbs TX | Houston | 200 | Apr-19 |
| EPIC | Ares Mgt, Texstar, CCI & Ironwood | Orla, Midland, TX | Corpus Christi | 675 | 600 Mb/d 675 Mb/d Q3 2019 Q1 2020 |
| Cactus 2 | Plains | Orla, Wink, Midland, Crane, McCamey, TX | Corpus Christi, Ingleside | 670 | 585 Mb/d 670 Mb/d Q3 2019 Apr 2020 |
| Gray Oak | Phillips 66 (75%) Andeavor (25%) | Reeves, Loving, Winkler, Crane TX | Corpus Christi, Sweeny, Freeport | 900 | Q4 2019 |
| Permian Gulf Coast | Energy Transfer, Magellan, MPLX, Delek | Midland | Houston MEH, Nederland | 600 | Q1 2020 |
| Jupiter | JupiterMLP, Charon System Advisors | Midland, Pecos, Crane, TX | Three Rivers, Corpus Christi, Brownsville | 1000 | Q4 2020 |
| Wink to Webster | Plains, ExxonMobil, Lotus Midstream | Wink, Midland, TX | Baytown, Webster, Beaumont, TX | 1000 | Q2 2021 |
| Total | | | | 5045 | |

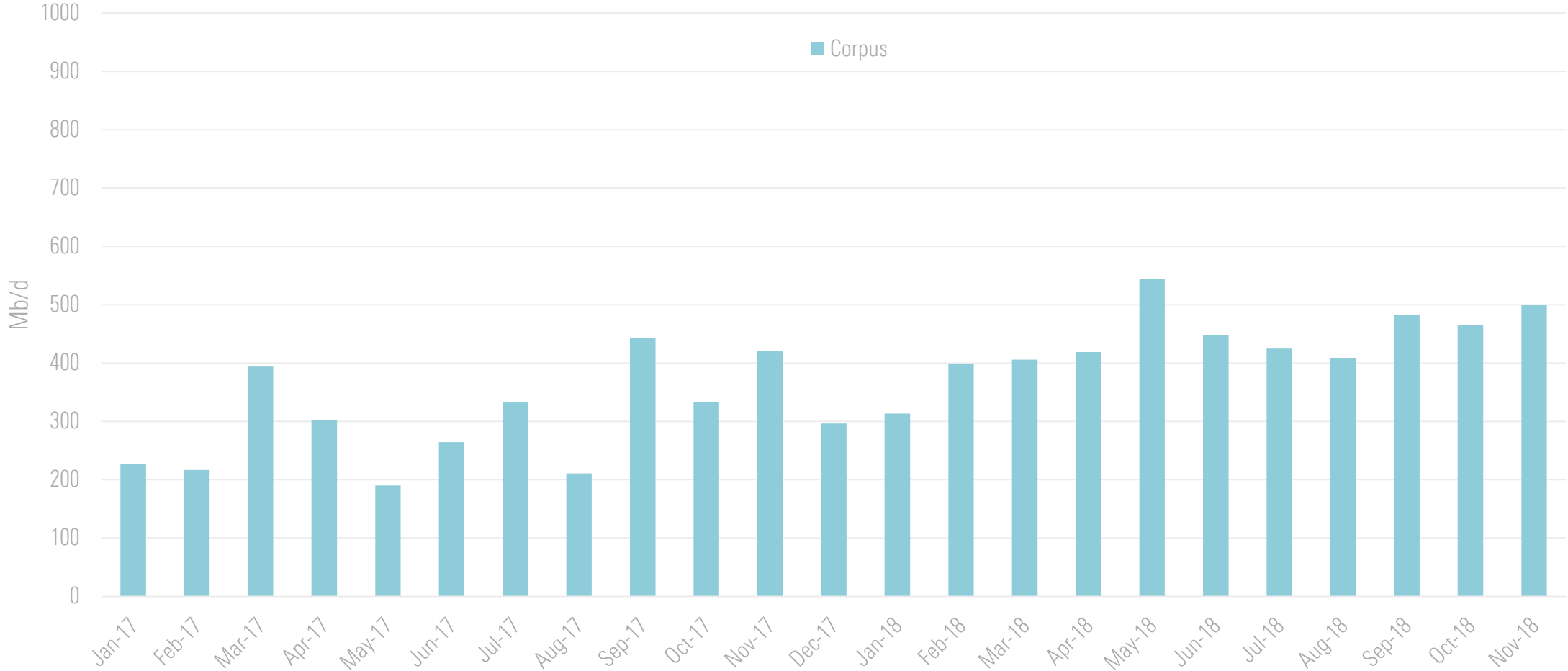
Source: Company Presentations, Morningstar

Gulf Coast Crude Exports



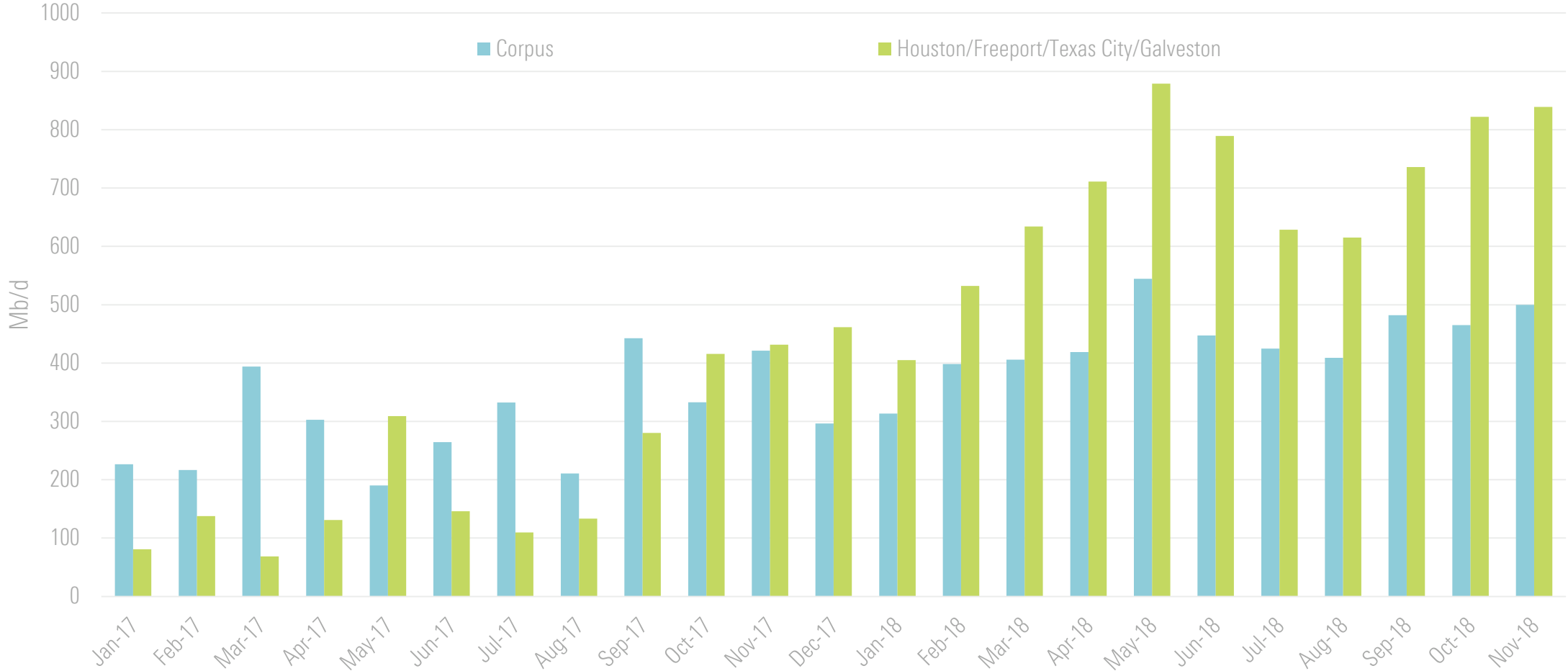
Source: U.S. Customs, Morningstar

Gulf Coast Crude Exports by Region



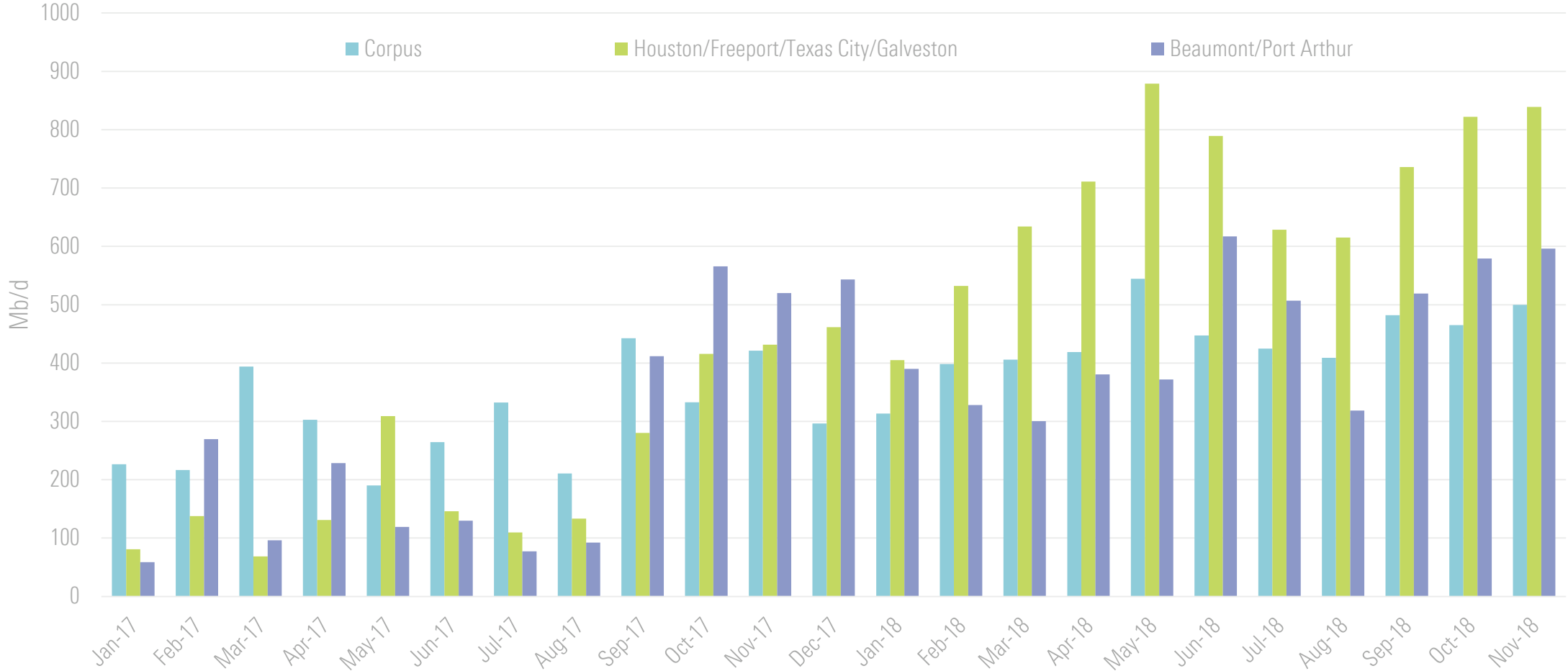
Source: U.S. Customs, Morningstar

Gulf Coast Crude Exports by Region



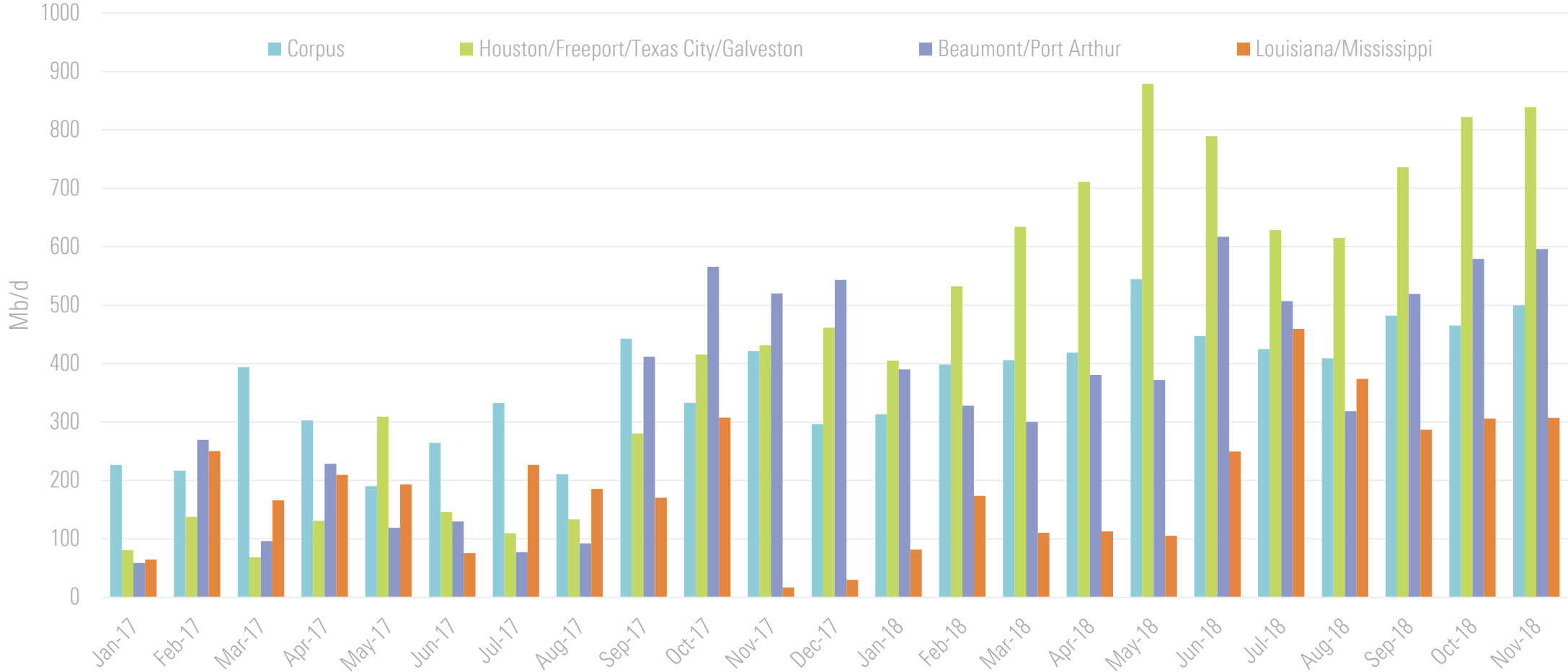
Source: U.S. Customs, Morningstar

Gulf Coast Crude Exports by Region



Source: U.S. Customs, Morningstar

Gulf Coast Crude Exports by Region



Source: U.S. Customs, Morningstar

VLCC Dock Projects



Proposed Trafigura Single Point Mooring Buoy System

- LOOP is only Gulf Coast Deep Water Port
- Plans to add 2 docks in Corpus Christi
- Offshore Buoys at Freeport, Texas City, Corpus Christi, Louisiana
- Will accommodate VLCCs

Source: Company Presentations, Morningstar

Permian Crude Takeaway Development - Summary



Image Source: Shutterstock

- Current Takeaway Stack Just Adequate
- Congestion Over For Now
- Takeaway Stack after 2019 is Huge
- Multiple New Pipeline Projects Planned
- VLCC Dock Projects
- Room for Continued Crude Growth
- Overbuild Possible