





Generate Alternative Alpha by Predicting Future Price Activity with Precise Geospatial Intel

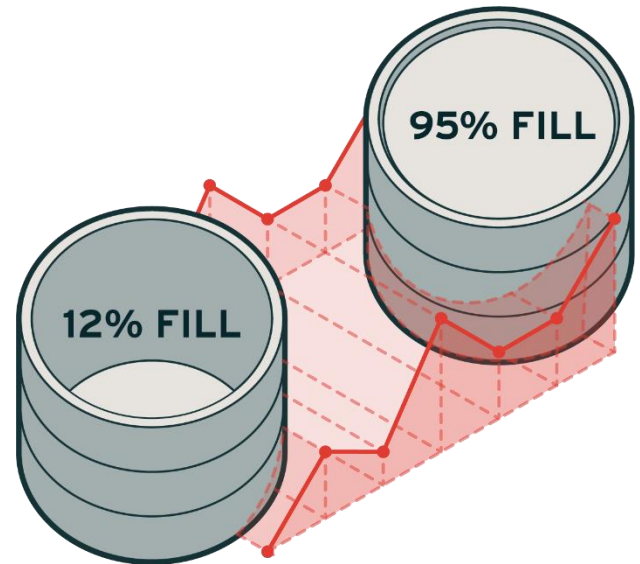
June 2019

ICE Brent Futures Hypothetical Trading Scenario

Global energy markets are notoriously opaque. Traditional oil storage data is often out-dated, limited to a few locations, and can have variable accuracy.

Clearly, timeliness and accuracy are key competitive advantages.

Ursa's MENA regional coverage of approximately 30 of the most material terminals across Middle East and North African nations has a strong inverse correlation of 74.4% to ICE Brent futures flat price movement with 6-week predictability. Inventory and price correlations were run from March 2018 through May 2019.



In other words, as Ursa's MENA inventories measure stock drawdowns, this serves as a leading indicator of rising ICE Brent prices six weeks out. As supplies fall, prices rise (and vice versa) with a 6-week leading indication.

Let's look at an ICE Brent futures hypothetical trading scenario to generate "alternative alpha", or P/L, with this time advantage.

As you can see in Figure 1, MENA crude oil inventories have a clear, strong inverse correlation to ICE Brent futures prices. Suppose given the sizeable 4.7% decline in MENA crude oil inventories measured in weeks 40 to 42, you have a bullish view on Brent prices and decide to put on a long 100mb ICE Brent futures position at the end of week 42 (note that week 1 refers to mid-March 2018).

In other words, you buy 100 contracts (equivalent to 100,000 barrels) in early January 2019 at a price of \$59.25/bbl, with the intent of holding for a 6-week period -- given the lack of transparent data publicly available about MENA stocks, the expectation is a 6-week lag for market activity to react.



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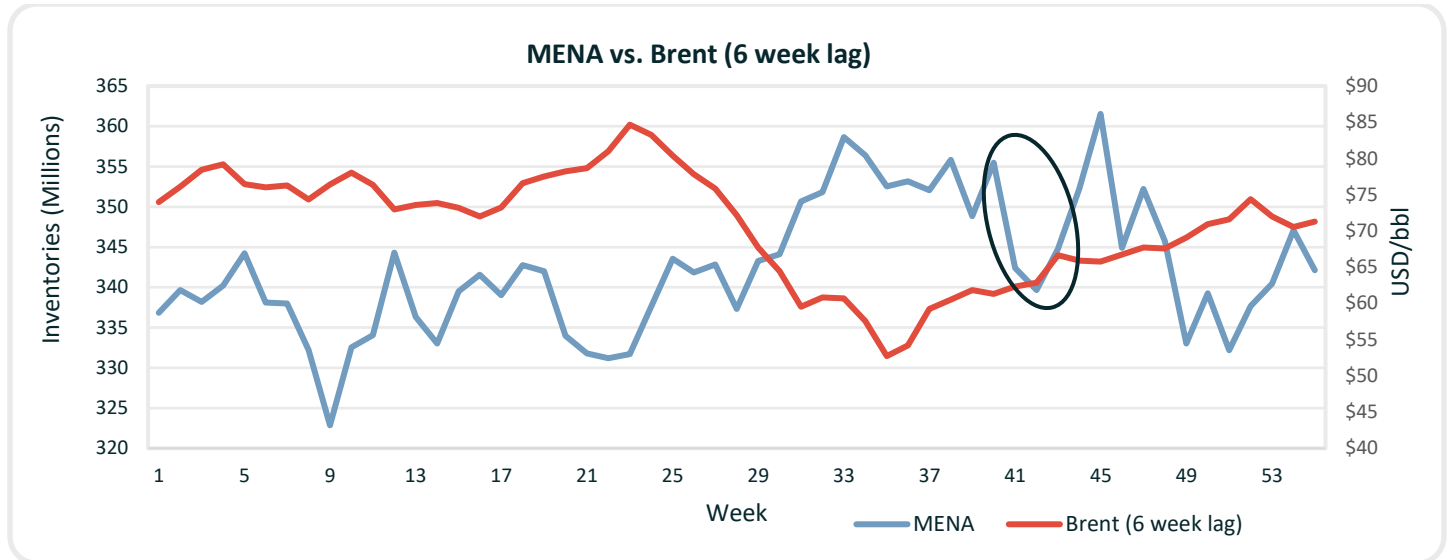
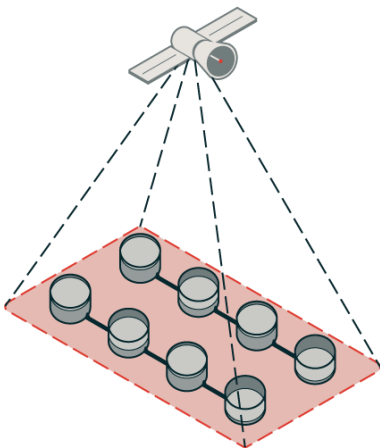


Figure 1: Ursa MENA Inventory Data. Pricing Source: MarketView

Let's see how that long 100mb Brent futures position would have performed (remember Ursa MENA inventories show a strong inverse correlation of 74.4% to ICE Brent futures flat price movement with 6-week predictability). **The ICE Brent price rose 11.1% to \$66.67/bbl when you close out your position at the end of the 6-week holding period, and you would have realized \$742,000.**

NYMEX WTI Time Spread Hypothetical Trading Scenario

Ursa's weekly measurements at Cushing, Oklahoma (the WTI delivery hub) have a strong inverse correlation of 71% to NYMEX WTI prompt-month time spreads (M1/M2), with one-week leading predictability, giving advanced knowledge of spread activity.



As Ursa measures builds in Cushing inventories, this serves as a leading indicator of weaker NYMEX WTI prompt month (M1/M2) time spreads that same week, as prompt-month prices are pressured with higher supplies (and vice versa).

Ursa publishes Cushing inventory measurements on Monday mornings at 9:30am EST, two days before EIA publishes Cushing numbers.

Suppose it's mid-May 2019 and you've observed multiple weeks of significant builds in Cushing inventories. You receive Ursa's Monday Cushing intelligence and see another week of significant builds and anticipate the NYMEX WTI prompt-month contango will grow. You therefore "short" the spread.



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According to Ursa, Cushing inventories increase by over 5% in the subsequent two-week period, and the prompt WTI time spread widened by \$0.07/bbl from a \$0.11/bbl discount to a \$0.18/bbl discount, providing you with advanced knowledge of the spread widening.

Will Cushing's Counter-Seasonal Builds Continue?

Total US crude oil inventories are currently over 485 million barrels – the highest level since July 2017. Cushing inventories are at levels not seen since December 2017, at almost 53 million bbls. Large stock builds are weighing on prompt WTI spreads, with the Jul/Aug spread deep in carry, trading at a \$0.24/bbl discount as of June 17th.

Market expectations are for these crude builds at Cushing to reverse as the high demand summer driving season draws near, with the anticipation that refinery run rates will pick up as we move through the summer. Over the last week, refinery utilization rates increased by 1.4% to 93.2% - still some distance from the 97.2% reached in late December. As per the EIA, so far this year average crude throughput has been 16.427 million barrels per day (bpd), down from 16.657 million bpd in 2018.

When stocks aren't following seasonal norms, Ursa can provide insights into fundamental inflection points in near real-time.

Financial Use Case: Single-Name Equities Hypothetical Trading Scenario – ExxonMobil (XOM)

A diverse basket of global, materially significant countries from Ursa's portfolio of global coverage has a strong inverse correlation of 78.5% to ExxonMobil's (ticker: XOM) share price movement with 4-week predictability.

There are numerous factors that influence XOM's share price, but ceteris paribus, as you can see in Figure 3, movement in this basket of countries' crude oil inventories has a clear, strong inverse correlation to XOM's share price.

More recently in weeks 52-56 (mid-April through mid-May 2019) you observe a trend of sizeable builds of over 7.6% in the basket of countries' inventories. As a result, you have a bearish view of XOM's share price, anticipating it to fall 4 weeks later, and you enter into a short position of 50,000 shares of XOM at the end of week 56 at a price of \$81.37/share. ***Holding this position for 4 weeks, XOM has fallen \$4.90/share (-6.4%), and you sell XOM at \$76.16/share, realizing \$245,200.***



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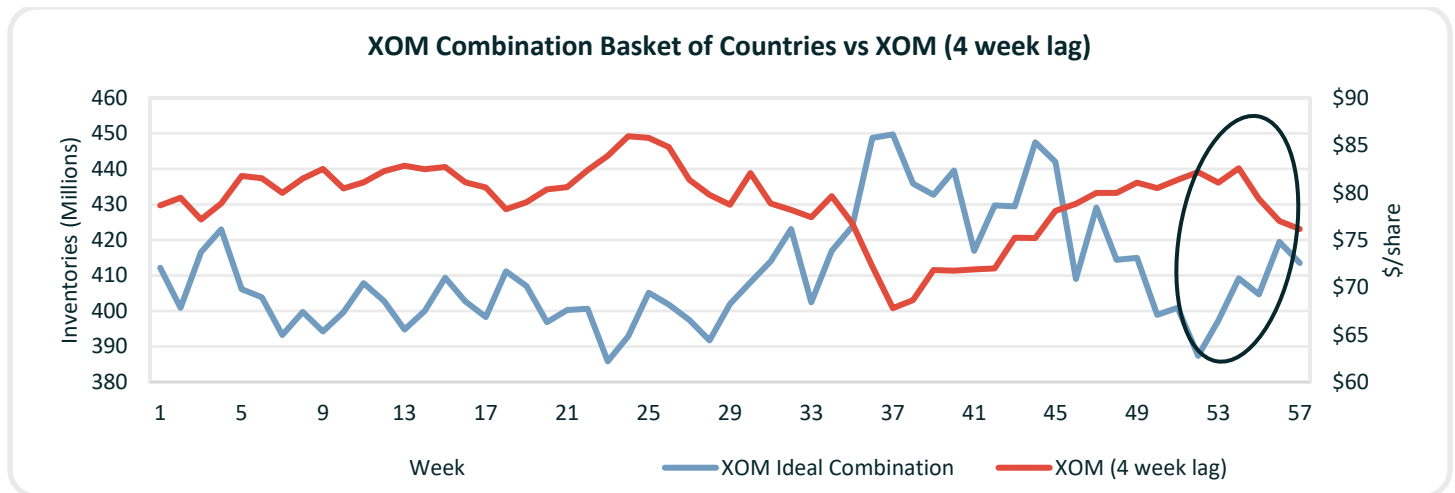


Figure 3: Ursa Inventory Data. Pricing Source: MarketView

Could Ursa's inventory data have helped predict XOM's negative quarterly earnings surprise?

On April 26, 2019 XOM reported quarterly earnings for Q1. They reported fiscal quarter-end Earnings Per Share (EPS) of 0.55, a -23.61% surprise relative to the consensus 0.72 EPS forecast. Ursa clients would have already seen the strong correlation of builds preceding the announcement of Q1 earnings and anticipated a decline in XOM's share price during this period.

Financial Use Case: Exchange-Traded Funds (ETFs) Hypothetical Trading Scenario – USO, XLE, and XOP

Ursa's weekly measurement at Wichita Falls, Texas has a strong inverse correlation of 75.3% to price movement of the US Oil Fund ETF (ticker: USO) with 6-week predictability.

USO is an exchange-traded security designed to track the daily price movements of WTI light, sweet crude oil. Suppose you put on a short 200,000 share USO position at \$13.30/share in mid-April 2019 after observing material builds of nearly 35% at Wichita Falls over a few weeks. ***With your bearish market outlook, you hold the position for 6 weeks and sell at a price of \$12.09/share at the end of May, realizing a 9.1% gain on your short position, or \$242,400.***

A basket of key North American sites within Ursa's coverage yields a strong inverse correlation of 74.1% to price movement of the Energy Select Sector SPDR Fund (ticker: XLE) with 2-week predictability (see Figure 4).

XLE offers a representation of the energy sector of the S&P500 – providing exposure to upstream, midstream, and downstream companies in the oil and gas sector. Suppose the recent trend of inventory draws at the end of May 2019 leads you to have a bullish view on XLE two weeks out. On May 31, 2019 you buy 75,000 shares of XLE at a \$58.77/share with the intent of holding



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for a 2-week period. *After holding the position for two weeks – selling it on June 14, 2019 at a price of \$61.01/share – you would have realized a gain of \$2.24/share, or a profit of \$168,000 in just two weeks.*

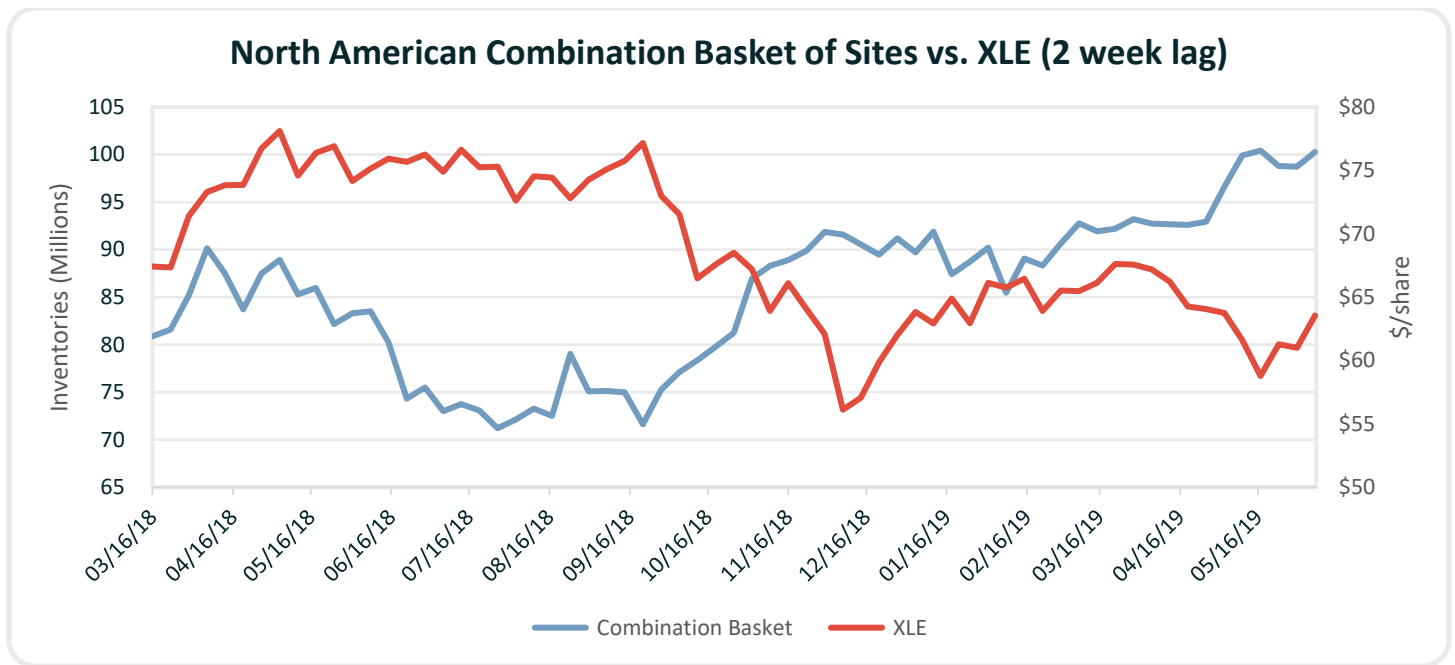


Figure 4: Ursa Inventory Data. Pricing Source: MarketView

A similar analysis can be performed on the SPDR S&P Oil & Gas Exploration & Production ETF (ticker: XOP), which aims to track performance of an index of the US oil and gas exploration & production industry.

A basket of North American sites from Ursa's portfolio of coverage has a strong inverse correlation of 78.2% to price movement of XOP with 4-week predictability (see Figure 5).

Suppose the recent trend of inventory draws mid-to-late December 2018 leads you to have a bullish view on XOP four weeks out. On Dec 28, 2018 you buy 150,000 shares of XOP at a \$26.37/share with the intent of holding for a 4-week period. *After holding the position for four weeks – selling it on Jan 25, 2019 at a price of \$30.53/share – you would have realized a gain of \$4.16/share (+15.8%), or a profit of \$624,000 in just four weeks.*



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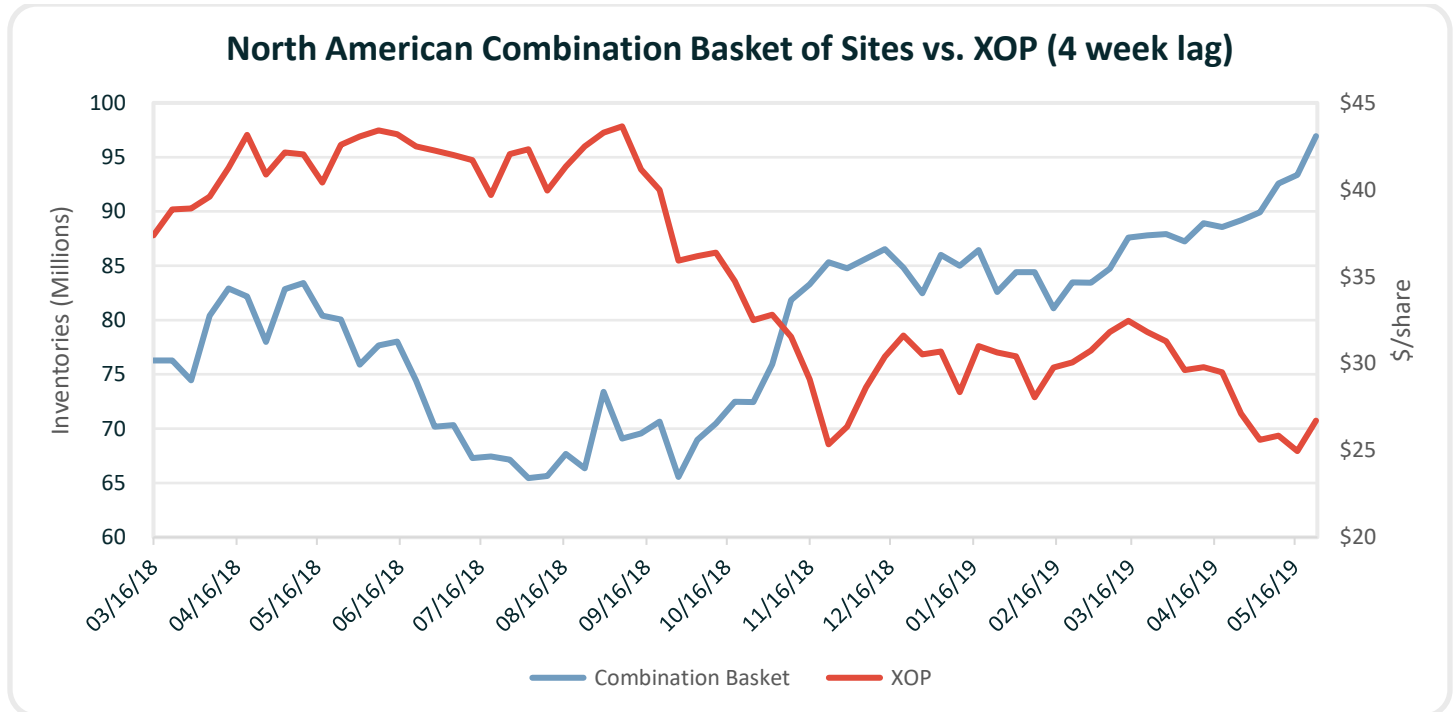


Figure 5: Ursa Inventory Data. Pricing Source: MarketView

Financial Use Case: Exchange-Traded Notes (ETNs) Hypothetical Trading Scenario – UWT

A similar analysis can be performed on the VelocityShares 3x Long Crude Oil ETN (ticker: UWT), which aims to provide daily 3x leveraged exposure to an index of front-month WTI crude oil futures contracts. **A basket of PADD 2 and PADD 3 US sites from Ursa's portfolio of coverage has a strong inverse correlation of 75.1% to price movement of UWT with 2-week predictability.**

As can be seen in Figure 6, inventories at this basket of US sites rose by 5.5% from the end of April 2019 through early May (from 81.47M bbls to 85.93M bbls), counter-seasonal builds for this time of year. Given the material builds, you have a bearish outlook on the price of UWT and put on a short 100,000 share position at a price of \$19.44/share with the intent to hold the position for two weeks. ***Closing out the position two weeks later at a price of \$15.76, you realize a gain of 18.9% on your short position, or \$367,600.***



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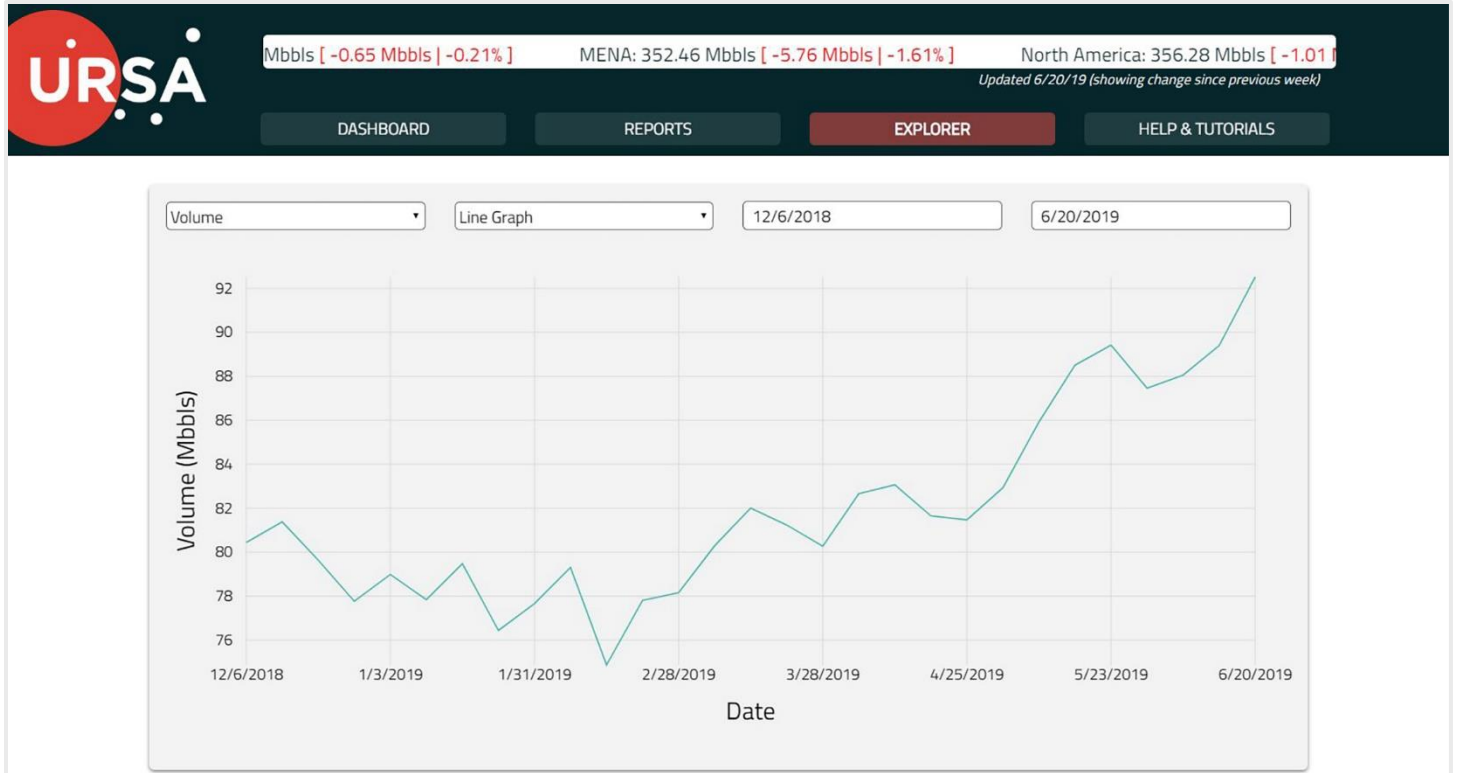


Figure 6: Ursa Inventory Data for Select Basket of US Sites. Imagery Source: Ursa Portal

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Daniel Baruch is the Director of Global Energy Markets & Business Development at Ursa. His background is across energy commodity markets with experience in crude oil & NGLs at Glencore, natural gas & power at Morgan Stanley, and alternative investments portfolio management at AllianceBernstein. He can be reached at Daniel.Baruch@UrsaSpace.com