



**RANGE RESOURCES®**

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TO: Investors and analysts  
FROM: Rodney L. Waller and the IR Team  
DATE: June 15, 2012  
RE: NGL Hedging Overview

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Range recently posted an updated version of commodity hedges on the 'Hedging Summaries' tab under its Investor Relations website. This memo discusses the NGL hedging portion of the summary and how we suggest you consider modeling future expected NGLs prices based on the new hedging update.

***What has changed with NGL hedging?***

Our NGL barrel has several different gas liquid components, but the barrel itself is often referred to in two different parts – lights and heavies. Over the past several months the light end of the NGL barrel, propane (C3) and ethane (C2), have experienced a weakness in prices. Propane prices are soft due to an extremely mild winter for a product which is primarily used as a consumer heating fuel. Ethane has been weak due to crackers being down for maintenance and expansion to absorb another 150,000 barrels a day of ethane in the future. Weakness in these two products has caused a weakening in the correlation of NGLs to WTI overall. As a result, our hedges using natural gasoline (C5) as a proxy, which largely tracks the movement in WTI, while still strongly in-the-money, have become less effective in our view as a hedge on the entire NGL barrel.

By breaking the NGL barrel into two distinct parts, a light barrel and heavy barrel, we are able to strengthen the correlation of our hedging to price movements of the overall NGL barrel. We believe this has allowed us to help stabilize our NGL prices with the defensive hedges that we have in place and as we add hedges. Our plan is for the light barrels to be hedged using propane (C3) and the heavy barrels to be hedged using natural gasoline (C5).

Previously to access a deeper and more liquid market, we had been using natural gasoline as a proxy hedge for the entire NGL barrel. Recently, we have added propane hedges and effectively closed several of our natural gasoline hedges so that we were not over hedged. The result of those actions was a locked-in gain of \$12.7 million in 2012 and \$7.3 million for 2013. These gains are reflected in the hedged price of propane for the appropriate periods. (i.e. A higher C3 price due to an \$12.7 million gain on C5 hedges that were previously associated with the proxy hedge for the light barrels.) As of June 14, 2012, our NGL hedges have a mark to market value of \$9 million for the 2Q2012, \$24 million for the 3Q2012, \$23 million for the 4Q2012 and \$45 million for 2013. Roughly speaking based upon guidance production growth, our expected NGL production is 50% to 60% hedged looking at the relative dollar values of the underlying barrels for determining a composite barrel. Remember, our current Marcellus NGL barrel does not have ethane included but our NGLs in the Midcontinent and Permian do contain ethane; some priced at Mont Belvieu and some priced on Conway. Currently, around 65% to 70% of our total NGL volumes come from the Marcellus.

*How best to model NGLs and the change in NGL hedging?*

Internally, we continue to model NGLs on a percent of WTI basis, but with the understanding that a large portion of the barrel has dislocated from WTI movements causing the percent to change. Range's NGL realization from Q4 2011 was 52% on a pre-hedge basis. This ratio has to be reduced by the softness in propane and ethane prices over the first two quarters of 2012. Using the assumption that propane is roughly 40% of the overall Range corporate NGL barrel, looking at the percentage reduction in propane prices over the first two quarters we can calculate what the revised ratio to WTI would be in the subsequent periods. The ratio in 1Q2012 of NGLs to WTI was 48% on a pre-hedge basis. Propane prices for the first quarter were down 12.5% which largely explains the reduction in the ratio. (The other delta is the drop in ethane prices.)

In addition, models for hedging gains and losses will now include four separate revenue streams: natural gas, oil, propane (C3) and natural gasoline (C5). We think that the best way to model hedges is to determine the gain and loss based on settlement prices each month and adjust the overall estimated realized price for each commodity for the gain or loss.

Please do not hesitate to contact us if you have any further questions.

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