

Sandy, Alexander

From: Mary.Gerschefski@shell.com
Sent: Monday, December 10, 2018 5:26 PM
To: Orris, Edward
Cc: Sandy, Alexander; Gorog, Mark; Doug.Scott@shell.com; Robert.Wooten@shell.com
Subject: [External] Falcon RFD Follow-Up from call on 07Dec2018

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Ed,

Wanted to follow-up on the questions from our call this past Friday regarding the Falcon Air Request for Determination - questions and answers are given below. Please advise if additional clarifications are needed.

Q: What leak size can be detected by the leak detection system on the pipeline?

A: Based on similar pipelines that are currently in operation for Shell Pipeline, the pipeline leak detection system for Falcon is estimated to detect leaks that are 3% of the flow over a 1-hour time period. Worth noting that the project is using more advanced meters and have located pressure transmitters at each mainline valve meter site. For these reasons, Falcon may be able to detect leaks smaller than 3% of the flow over a 1-hour time period. In addition to the continuous online monitoring of the pipeline, routine checks along the pipeline route and at the meter stations are made by the operators. It is during these routine checks that small leaks are detected. Each meter site will have hydrocarbon gas detection which alarms in the presence of hydrocarbon gas resulting from a leak at the meter site. The meter sites are also equipped with low pressure shutdowns to automatically isolate the meter station in the event of a large leak at a meter site.

Q: What are the 'As the Crow Flies' miles between the various meter sites?

A: The following table provides the pipeline miles and the 'As the Crow Flies' miles between the various meter sites.

Distance of Interest	Pipeline Miles	As the Crow Flies Miles
Houston to Junction	31.38	25.05
Houston to Monaca Integrity Station	35.03	27.78
Junction to Monaca Integrity Station	3.65	2.88

Best regards,

Mary Gerschefski, P.E.
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