

**Vortex Flow**  
**Well Recap Master – Downhole Tools**  
**08/17/04**

BP Canada

Well Name: Kirby Horizontal Well Hz 100/12-2-75-5W4

Formation:

Field Supervisor:

Engineer: Vic Rabel

Tool Type: DXR

Installation Date: 02/18/04

Tool Installation Depth:

**Well Characteristics:**

Tubing Size: 60 mm OD (was a collar stop)

Tubing Depth:

Flowing Tubing Pressure: 227 KPag

Casing Size: 114.3 mm OD

Casing Pressure: 400 KPag

Well Depth:

Perforation Zones:

Packer:

Typical Pre-installation production rate: 5.21 q

Estimated Bottom-hole pressure:

Bottom-Hole Temperature:

Typical surface pressure:

Critical Rate:  $Cr=7.5$

$q/Cr$ : 69%

Estimated Turner Critical Rate:

Estimated Coleman Critical Rate:

Estimated Vortex Critical Rate:

Pre-Vortex downhole tool method of production:

Comments:

Other production method options:

Vortex Value Proposition:

Typical Post-installation production rate: 7.84 q

Incremental Gas Flow Rate (E3m3/d) Compared to Pre-Installation Rate: 2.63

Critical Rate:  $Cr=6.77$   
 $q/Cr=1.04$

Post installation casing pressure: 305 KPag  
Post installation tubing pressure: 270 KPag

**Post Installation Vortex Conclusion:** initial  $q/CR=0.71$ , installed tool at 53 degrees inclination, Vortex tool is recovering 5.3bbl water/mmcft, realized a 48% increase in production, works well, will leave it in to monitor decline.