

<b>Rig type</b>	Platform
<b>Hole inclination</b>	80°
<b>Well depth</b>	17,608 ft [5,367 m]
<b>Drilling fluid</b>	1.25 relative density 10.4 lbm/galUS [1,245.9 kg/m <sup>3</sup> ]

### Background

An operator on Sakhalin Island needed a circulating valve to boost annular velocities for hole cleaning during drilling operations. M-I SWACO recommended positioning the WELL COMMANDER\* ball-activated drilling circulating valve above the drilling BHA to mitigate drilling hazards and to boost annular velocities as required. The high pump rates and annular velocities achieved were made possible by pumping weighted pills through the valve ports and the improved hydraulics provided by the valve.

### Technologies

WELL COMMANDER ball-activated drilling circulating valve

# WELL COMMANDER Circulating Valve Boosts Annular Velocities and Enhances Hole Cleaning Efficiency

Operator pumps weighted pills at high rates through circulating valve ports to improve hole cleaning and cuttings removal



### Operation Details

Ball Number	Shear Pressure, psi [kPa]	Tool Position After Ball Drop	Circulating Rate, bbl/min [L/min]	Standpipe Pressure, psi [kPa]
Run shallow hole test				
1	1,800 [12,411]	Opened tool	11.6 [1,328]	127 [876]
2	1,400 [9,653]	Closed tool	11.6 [1,328]	328 [2,261]
Deploy in-hole to TD				
3	2,000 [13,790]	Opened tool	39.9 [4,760]	4,450 [30,682]
Circulate three weighted/high-viscosity pills at 39.9 bbl/min [4,760 L/min]				
Find significant increase in cuttings at the surface, up to 170% of normal drilling rate				
4	1,725 [11,893]	Closed tool		
Continue operations				
5	1,943 [13,397]	Opened tool		
Circulate one weighted/high-viscosity pill at 50.3 bbl/min [6,000 L/min]				
Detect no increase in cuttings at the surface, indicating a clean hole				
6	2,000 [13,790]	Closed tool		
Pull out of hole				

*The WELL COMMANDER valve's open circulating ports provide a generous flow area, enhancing hole cleaning options and cuttings removal.*