

# HALIBUT-1

FORMATION TESTER RECOVERY DATA

FIT DATA

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TEST No. <u>1</u>	RECOVERY DATA	TOOL DATA
TEST DEPTH <u>7948</u>	Gas (Total) <u>0</u> cuft	Type of tool <u>FIM-A</u>
OPEN HOLE TEST <input checked="" type="checkbox"/>	Condensate <u>—</u> cc	Type of Sample shot <u>2 Follower Packer</u>
CASED HOLE TEST <input type="checkbox"/>	Oil <u>—</u> cc	Sample Unit size <u>20,500</u> cc
PRESSURE DATA	Water <u>19,900</u> cc	Choke size <u>4 X 0.015</u>
Initial Shut in <u>—</u> psi	Mud <u>600</u> cc	
Shut in Time <u>—</u> min	Sand <u>Trace</u> cc	
Sampling <u>2750</u> psi		
Sampling Time <u>39.9</u> min	RECOVERY ANALYSIS	MUD FILTRATE DATA
Final Shut in <u>8150</u> psi	Free Gas <u>—</u> cuft	Rmf <u>0.355 @ 180</u> °F
Shut in Time <u>7.4</u> min	Oil <u>—</u> cc	Equivalent Cl <u>6,600</u> ppm
Hydrostatic <u>4800</u> psi	API Gravity <u>—</u> °F	Rw <u>0.055 @ 180</u> °F
Surface Chamber <u>16</u> psi	GOR <u>—</u>	Equivalent Cl <u>53,000</u> ppm
	Water <u>—</u>	REMARKS <u>permeability = 9.3 md</u>
	Rrf (Filtered) <u>0.178 @ 180</u> °F	<u>water productive zone</u>
	Equivalent Cl <u>18,000</u> ppm	
	<u>15% Formation water</u>	

TEST No. <u>2</u>	RECOVERY DATA	TOOL DATA
TEST DEPTH <u>7911</u>	Gas (Total) <u>0</u> cuft	Type of tool <u>FIM-A</u>
OPEN HOLE TEST <input checked="" type="checkbox"/>	Condensate <u>—</u> cc	Type of Sample shot <u>2 Follower Packer</u>
CASED HOLE TEST <input type="checkbox"/>	Oil <u>—</u> cc	Sample Unit size <u>20,500</u> cc
PRESSURE DATA	Water <u>3,000</u> cc	Choke size <u>4 X 0.015</u>
Initial Shut in <u>—</u> psi	Mud <u>—</u> cc	
Shut in Time <u>—</u> min	Sand <u>—</u> cc	
Sampling <u>—</u> psi		
Sampling Time <u>—</u> min	RECOVERY ANALYSIS	MUD FILTRATE DATA
Final Shut in <u>—</u> psi	Free Gas <u>—</u> cuft	Rmf <u>0.355 @ 180</u> °F
Shut in Time <u>—</u> min	Oil <u>—</u> cc	Equivalent Cl <u>6,600</u> ppm
Hydrostatic <u>4950</u> psi	API Gravity <u>—</u> °F	Rw <u>0.055 @ 180</u> °F
Surface Chamber <u>—</u> psi	GOR <u>—</u>	Equivalent Cl <u>53,000</u> ppm
	Water <u>—</u>	REMARKS <u>unable to seat</u>
	Rrf (Filtered) <u>—</u> °F	<u>packer - mud run</u>
	Equivalent Cl <u>—</u> ppm	

TEST No. <u>3</u>	RECOVERY DATA	TOOL DATA
TEST DEPTH <u>7893</u>	Gas (Total) <u>—</u> cuft	Type of tool <u>FTM-B</u>
OPEN HOLE TEST <input checked="" type="checkbox"/>	Condensate <u>—</u> cc	Type of Sample shot <u>—</u>
CASED HOLE TEST <input type="checkbox"/>	Oil <u>—</u> cc	Sample Unit size <u>20,500</u> cc
PRESSURE DATA	Water <u>—</u> cc	Choke size <u>4 X 0.015</u>
Initial Shut in <u>—</u> psi	Mud <u>—</u> cc	
Shut in Time <u>—</u> min	Sand <u>—</u> cc	
Sampling <u>—</u> psi		
Sampling Time <u>—</u> min	RECOVERY ANALYSIS	MUD FILTRATE DATA
Final Shut in <u>—</u> psi	Free Gas <u>—</u> cuft	Rmf <u>—</u> @ <u>—</u> °F
Shut in Time <u>—</u> min	Oil <u>—</u> cc	Equivalent Cl <u>—</u> ppm
Hydrostatic <u>—</u> psi	API Gravity <u>—</u> °F	Rw <u>—</u> @ <u>—</u> °F
Surface Chamber <u>—</u> psi	GOR <u>—</u>	Equivalent Cl <u>—</u> ppm
	Water <u>—</u>	REMARKS <u>Flowline Valve Failure</u>
	Rrf (Filtered) <u>—</u> °F	<u>No Test</u>
	Equivalent Cl <u>—</u> ppm	

TEST No. <u>4</u>	RECOVERY DATA	TOOL DATA
TEST DEPTH <u>7893</u>	Gas (Total) <u>0</u> cuft	Type of tool <u>FIM-A</u>
OPEN HOLE TEST <input checked="" type="checkbox"/>	Condensate <u>—</u> cc	Type of Sample shot <u>2 Follower Packer</u>
CASED HOLE TEST <input type="checkbox"/>	Oil <u>50</u> cc	Sample Unit size <u>20,500</u> cc
PRESSURE DATA	Water <u>20,050</u> cc	Choke size <u>4 X 0.015</u>
Initial Shut in <u>—</u> psi	Mud <u>400</u> cc	
Shut in Time <u>—</u> min	Sand <u>—</u> cc	
Sampling <u>2850</u> psi		
Sampling Time <u>39</u> min	RECOVERY ANALYSIS	MUD FILTRATE DATA
Final Shut in <u>3275</u> psi	Free Gas <u>—</u> cuft	Rmf <u>0.355 @ 180</u> °F
Shut in Time <u>8</u> min	Oil <u>—</u> cc	Equivalent Cl <u>6,600</u> ppm
Hydrostatic <u>4850</u> psi	API Gravity <u>—</u> °F	Rw <u>0.055 @ 180</u> °F
Surface Chamber <u>150</u> psi	GOR <u>—</u>	Equivalent Cl <u>53,000</u> ppm
	Water <u>—</u>	REMARKS <u>DNPE = 5 BOPD/FT clean</u>
	Rrf (Filtered) <u>0.065 @ 180</u> °F	<u>oil - no water cut</u>
	Equivalent Cl <u>6200</u> ppm	<u>NO FORMATION WATER RECOVERED -</u>
	<u>ONLY FILTRATE RECOVERED</u>	<u>k = 3 md</u>

TEST No. <u>5</u>	RECOVERY DATA	TOOL DATA
TEST DEPTH <u>7786</u>	Gas (Total) <u>5.3</u> cuft	Type of tool <u>FIM-A</u>
OPEN HOLE TEST <input checked="" type="checkbox"/>	Condensate <u>—</u> cc	Type of Sample shot <u>2 Follower Packer</u>
CASED HOLE TEST <input type="checkbox"/>	Oil <u>17,760</u> cc	Sample Unit size <u>20,500</u> cc
PRESSURE DATA	Water <u>5,500</u> cc	Choke size <u>4 X 0.015</u>
Initial Shut in <u>—</u> psi	Mud <u>500</u> cc	
Shut in Time <u>—</u> min	Sand <u>—</u> cc	
Sampling <u>3175</u> psi		
Sampling Time <u>40</u> min	RECOVERY ANALYSIS	MUD FILTRATE DATA
Final Shut in <u>3450</u> psi	Free Gas <u>5.3</u> cuft	Rmf <u>0.355 @ 180</u> °F
Shut in Time <u>24.5</u> min	Oil <u>—</u> cc	Equivalent Cl <u>6,600</u> ppm
Hydrostatic <u>4625</u> psi	API Gravity <u>41.5 @ 60</u> °F	Rw <u>0.055 @ 180</u> °F
Surface Chamber <u>—</u> psi	GOR <u>66</u>	Equivalent Cl <u>53,000</u> ppm
	Water <u>—</u>	REMARKS <u>DNPE 12 BOPD/FT</u>
	Rrf (Filtered) <u>0.485 @ 180</u> °F	<u>clean oil k = 7 md</u>
	Equivalent Cl <u>4,900</u> ppm	
	<u>all water recovered</u>	
	<u>13 filtrate</u>	

TEST No. <u>6</u>	RECOVERY DATA	TOOL DATA
TEST DEPTH <u>7690</u>	Gas (Total) <u>—</u> cuft	Type of tool <u>FIM-A</u>
OPEN HOLE TEST <input checked="" type="checkbox"/>	Condensate <u>—</u> cc	Type of Sample shot <u>2 Follower Packer</u>
CASED HOLE TEST <input type="checkbox"/>	Oil <u>800</u> cc	Sample Unit size <u>20,500</u> cc
PRESSURE DATA	Water <u>17,900</u> cc	Choke size <u>4 X 0.015</u>
Initial Shut in <u>—</u> psi	Mud <u>1,500</u> cc	
Shut in Time <u>—</u> min	Sand <u>—</u> cc	
Sampling <u>3750</u> psi		
Sampling Time <u>40</u> min	RECOVERY ANALYSIS	MUD FILTRATE DATA
Final Shut in <u>3750</u> psi	Free Gas <u>—</u> cuft	Rmf <u>0.355 @ 180</u> °F
Shut in Time <u>24</u> min	Oil <u>—</u> cc	Equivalent Cl <u>6,600</u> ppm
Hydrostatic <u>6000</u> psi	API Gravity <u>—</u> °F	Rw <u>0.055 @ 180</u> °F
Surface Chamber <u>—</u> psi	GOR <u>—</u>	Equivalent Cl <u>53,000</u> ppm
	Water <u>—</u>	REMARKS <u>DNPE greater than</u>
	Rrf (Filtered) <u>0.67 @ 180</u> °F	<u>100 BOPD/FT</u>
	Equivalent Cl <u>5500</u> ppm	<u>k greater than 45 md</u>
	<u>All water recovered is</u>	
	<u>Filtrate</u>	

TEST No. <u>7</u>	RECOVERY DATA	TOOL DATA
TEST DEPTH <u>7912</u>	Gas (Total) <u>—</u> cuft	Type of tool <u>FIM-A</u>
OPEN HOLE TEST <input checked="" type="checkbox"/>	Condensate <u>very faint</u> cc	Type of Sample shot <u>2 Follower Packer</u>
CASED HOLE TEST <input type="checkbox"/>	Oil <u>20,000</u> cc	Sample Unit size <u>20,500</u> cc
PRESSURE DATA	Water <u>500</u> cc	Choke size <u>4 X 0.015</u>
Initial Shut in <u>—</u> psi	Mud <u>—</u> cc	
Shut in Time <u>—</u> min	Sand <u>—</u> cc	
Sampling <u>3415</u> psi		
Sampling Time <u>40</u> min	RECOVERY ANALYSIS	MUD FILTRATE DATA
Final Shut in <u>3425</u> psi	Free Gas <u>—</u> cuft	Rmf <u>0.355 @ 180</u> °F
Shut in Time <u>31</u> min	Oil <u>—</u> cc	Equivalent Cl <u>6,600</u> ppm
Hydrostatic <u>4700</u> psi	API Gravity <u>—</u> °F	Rw <u>0.055 @ 180</u> °F
Surface Chamber <u>—</u> psi	GOR <u>—</u>	Equivalent Cl <u>53,000</u> ppm
	Water <u>—</u>	REMARKS <u>water cut oil production</u>
	Rrf (Filtered) <u>0.531 @ 180</u> °F	<u>greater than 100 BOPD/FT</u>
	Equivalent Cl <u>4500</u> ppm	<u>k greater than 45 md</u>
	<u>all water recovered is</u>	
	<u>Filtrate</u>	

TEST No. <u>8</u>	RECOVERY DATA	TOOL DATA
TEST DEPTH <u>7562</u>	Gas (Total) <u>2.7</u> cuft	Type of tool <u>FIM-A</u>
OPEN HOLE TEST <input checked="" type="checkbox"/>	Condensate <u>—</u> cc	Type of Sample shot <u>2 Follower Packer</u>
CASED HOLE TEST <input type="checkbox"/>	Oil <u>3,000</u> cc	Sample Unit size <u>20,500</u> cc
PRESSURE DATA	Water <u>11,000</u> cc	Choke size <u>4 X 0.015</u>
Initial Shut in <u>—</u> psi	Mud <u>400</u> cc	
Shut in Time <u>—</u> min	Sand <u>—</u> cc	
Sampling <u>5525</u> psi		
Sampling Time <u>40</u> min	RECOVERY ANALYSIS	MUD FILTRATE DATA
Final Shut in <u>5525</u> psi	Free Gas <u>2.7</u> cuft	Rmf <u>0.355 @ 180</u> °F
Shut in Time <u>20</u> min	Oil <u>37.7 @ 60</u> °F	Equivalent Cl <u>6,600</u> ppm
Hydrostatic <u>4500</u> psi	GOR <u>143</u>	Rw <u>0.055 @ 180</u> °F
Surface Chamber <u>—</u> psi	Water <u>—</u>	Equivalent Cl <u>53,000</u> ppm
	Rrf (Filtered) <u>0.53 @ 180</u> °F	REMARKS <u>clean oil greater than</u>
	Equivalent Cl <u>4,500</u> ppm	<u>100 BOPD/FT k greater</u>
	<u>Filtrate water recovery</u>	<u>than 45 md</u>

