



# CALSCAN

precision  
temperature pressure  
& flow measurement

## Test Pad

### Production Data Reporting

**Test Pad** is a fully customizable software package that calculates flow rates and volumes during a production test, and presents the data and results in a convenient format.

Measurements are entered and the calculated results displayed in a spreadsheet-like data table. Comments and remarks can be added to the table based on a time line. Cut, Copy, and Paste functions are available. If your data is in a spreadsheet or text file, simply copy and paste data into Test Pad.

The data, as well as any comments, can be used to create a PDF final report for your client.

### Test Pad Measurement Solutions

**Fluid Types:** Gas, Oil, Water, Condensate

**Gas Meter Types:** Turbine, Orifice, Flow Prover, V Cone, Measured Rate

**Liquid Meters:** Turbine, Measured Rate, Measured Level, Measured Level (BS&W compensated), Produced Volume Cumulative, Produced Volume Gain

Multiple meters and customized names are handled easily.

### Gas Equations of State Supported:

AGA8-92 Gross

AGA8-92 Detailed

Redlich-Kwong with Wichert-Aziz sour gas correction

**PAS File Generation:** Test Pad can export an Alberta ERCB PRD PAS file for electronic submission of test data. You can also import well data from pre-existing PRD PAS files into Test Pad.

**ASCII and Excel Exporting:** Test Pad can directly export Excel files or generate ASCII text files.

**Calculate Fluid and Frac Gas Recovery:** Option of monitoring CO<sub>2</sub> and N<sub>2</sub> gas Frac Fluid recovery separate from well production, allowing for more accurate well production calculations.

### Additional Features

Test Pad advanced graphing handles millions of data points. Graphs are simple to make and are completely customizable.

Create a customized report template and store it for future use.

Import data directly from Calscan recorders directly via a bin file.

Autosave feature prevents loss of work and time in case of system or power failure.

Can calculate different fluid flow rates from tank levels and BS&W cuts.

Level measurements supported for both vertical and horizontal tanks. Measurements are compensated for flat, spherical and semi-elliptical heads.

Production totals calculate the flow rates, accumulations and fluid ratios (GOR, WOR, etc.)

Units of measurement in both Imperial and SI standards. All measurements and calculations are converted when changing units.

Date		Time	Cum Time	Tubing Pressure kPaa	Tubing Temp C	Casing Pressure kPaa	Flow Temp C	Choke Size mm	Flow Time hour	Static Pressure kPag	Meter Temp C	Plate Size mm	Gas Gain sm <sup>3</sup>	Gas Cum sm <sup>3</sup>	Gas Rate s10m <sup>3</sup> /day	Compressibility Factor	Oil Gain m <sup>3</sup>	Oil Cum m <sup>3</sup>	Oil Rate m <sup>3</sup> /day	Oil Rate s10
247	1:46:00 PM	78.7867		0	0	0	0							48854.494						
248	1:46:00 PM	78.7867		"2.50" ( 63.50 mm) PLATE IN SERVICE"																
249	1:50:00 PM	78.8333		10065	22	143	0							48854.494						
250	1:55:00 PM	78.9167		9931	22	113	0							48854.494						
251	2:00:00 PM	79.0000		9989	22	83	0	1.04	1189.988	7	63.5	2018.728	18017.318	2807.719	0.978	1.84	27.18	1264.30		
252	2:00:00 PM	79.0000		TRACE OF SAND IN SAMPLE. A.P1 = 31.2 @ 15.6 C																
253	2:15:00 PM	79.2500		9823	23	83	0							56114.128						
254	2:30:00 PM	79.5000		9593	26	83	0	0.91	1274.988	7	63.5	2009.946	19173.916	3213.785	0.978					
255	3:00:00 PM	80.0000		9483	26	83	0	1.0	1379.988	8	63.5	1962.192	17679.950	3261.593	0.977	1.4	23.16	87.2		
256	3:30:00 PM	80.5000		9290	26	83	0	1.01	1399.988	9	63.5	18136.293	170994.16	3403.036	0.972					
257	4:00:00 PM	81.0000		9173	25	83	0	1.11	1399.988	8	63.5	18037.987	165293.062	3434.898	0.971	1	24.16	40		
258	4:01:00 PM	81.0167		0	0	0	0			-0.01	0	0	0	229290.067	0	0.968	0	24.16	0	
259	4:01:00 PM	81.0167		SHUT IN. RIG INTO THE CASING VALVE. ATTEMPT TO FLOW CASING TO RECOVER LOAD FLUID.																
260	4:10:00 PM	81.1867		12593	0	103	0			-0.01	0	0	0	229290.067	0	0.968	0	24.16	0	
261	4:10:00 PM	81.1867		"OPEN TO FLOW 2.0" BYPASS "																
262	4:12:00 PM	81.2000		0	0	0	0							229290.067						
263	4:12:00 PM	81.2000		FLUID TO SURFACE (100% OIL) NO GAS.																
264	4:15:00 PM	81.2500		13428	0	4093	0							229290.067						
265	4:15:00 PM	81.2500		"DECREASE CHOKE TO 1.0" (25.40 mm)"																
266	4:30:00 PM	81.5000		13993	0	10293	0							229290.067						
267	4:35:00 PM	81.5833		0	0	0	0			-0.01	0	0	0	229290.067	0	0.968	0	24.16	0	

# Screenshots

The screenshot shows the 'Test Pad' software interface. On the left is a tree view with 'Meter/Data' selected. A context menu is open over a 'Gas Orifice Meter' entry, showing options like 'Delete Gas Orifice Meter', 'Add Frac Monitor', 'Set Meter Material', 'Set Orifice Material', and 'Rename "Gas Orifice Meter"'. A sub-menu for 'Set Meter Material' is also visible, listing materials like Carbon Steel, Stainless Steel, Hastelloy C, Inconel, Monel, K-Monel, Tantalum, and Titanium.

The main window displays a 'Field Measurement' table with columns for Date, Time, Cum Time, Tubing Pressure (kPag), Tubing Temp (C), Casing Pressure (kPag), Flow Temp (C), Flow Time (hour), Static Pressure (kPag), Meter Temp (C), Pulse, Gas Gain (cm³), Gas Cum (cm³), Gas Rate (m³/day), Compressibility Factor, H2S (ppm), Static Pressure (kPag), Meter Temp (C), Diff Pressure (kPa), and Plate Size (mm). The table contains data for a test run from 08:00:00 to 12:30:00 on 2012-08-02. Some rows are highlighted in yellow, and there are text annotations like 'This is a sample file for Test Pad' and 'Resume test Open Well To Flow Flow gas through turbine meter'.

Below the table is a graph titled 'Sample File 1 Tbg P & Q vs Time'. The x-axis is 'Time(hours)' from 0 to 4.0. The left y-axis is 'Tubing Pressure(kPag)' from 400 to 600. The right y-axis is 'Gas Rate(m³/day)' from 0 to 200. Three data series are plotted: Tubing Pressure (black line), Gas Rate (red line), and H2S (blue line). Tubing pressure starts at ~550 kPag, dips to ~460 at 1.0h, then rises to ~560 at 2.0h before falling. Gas rate starts at 0, rises to ~150 at 1.0h, dips to ~50 at 3.0h, and rises to ~100 at 4.0h. H2S remains near 0 until 2.0h, then rises to ~15 ppm.

At the bottom left of the main window is a parameter table:

Parameter	Value	Units
meter_diameter	0.102	meter
meter_exp_coeff	0	m³/(m³K)
meter_ref_temp	0	K
orifice_exp_coeff	0	m³/(m³K)
orifice_ref_temp	0	K
viscosity	0	Pa's
isotropic_exp	0	

Time	TWH	TUB	TUPS	CSPS	TCAS	QTGAS	QTOIL	QTCOM	QTWTR	VTGAS	VTOIL	VTCOM	VTWTR	COMM
2003 07 16 07:10:00	0.00	1.593.00	1.593.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2003 07 16 08:00:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2003 07 16 08:00:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	FRAC CREW ARRIVES. SPOTS AND BEGINS TO RIG UP.
2003 07 16 09:00:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	HOLD SAFETY MEETING.
2003 07 16 09:45:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	PRESSURE TEST ALL SURFACE LINES.
2003 07 16 10:25:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	START TO FRAC.
2003 07 16 11:15:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	FLUSH AWAY. FRAC COMPLETE. 34 MPa ON TUBING.
2003 07 16 11:30:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	START FORCED CLOSURE TO RIG TANK. RETURN 0.30 m³/min.
2003 07 16 11:30:01	0.00	5.093.00	5.093.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5.0 m³ FRAC FLUID RETURNED.
2003 07 16 11:45:00	0.00	4.893.00	4.893.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.6 m³ FLOWED BACK LAST 15 MIN. SHUT IN AND RIG OUT STRINGER.
2003 07 16 12:15:00	0.00	4.893.00	4.893.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	OPEN TO FLOW TO RIG TANK. 38.10 mm BYPASS.
2003 07 16 12:30:00	0.00	143.00	143.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	RIG UP TO SWAB.
2003 07 16 13:00:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SWAB #01: TAG @ SURFACE. FULL @ 437 m(100 FRAC OIL).
2003 07 16 13:00:00	0.00	93.00	93.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SWAB #02: TAG @ 221 m. PULL 647 m (100 L FRAC OIL TRACE GEL).
2003 07 16 13:50:00	0.00	93.00	93.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	SWAB #03: TAG @ 329 m. PULL 749 m (SNOTTY GEL WITH TRACES OF SUSPENDED SAND IN).
2003 07 16 14:10:00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2003 07 16 14:10:01	0.00	93.00	93.00	0.00	0.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Gas	Fraction
C <sub>1</sub>	100
N <sub>2</sub>	0
CO <sub>2</sub>	0
C <sub>2</sub>	0
C <sub>3</sub>	0
H <sub>2</sub> O	0
H <sub>2</sub> S	0
H <sub>2</sub>	0
CO	0
O <sub>2</sub>	0
iC <sub>4</sub>	0
nC <sub>4</sub>	0
iC <sub>5</sub>	0
nC <sub>5</sub>	0
nC <sub>6</sub>	0
nC <sub>7</sub>	0
nC <sub>8</sub>	0
nC <sub>9</sub>	0
nC <sub>10</sub>	0
He	0
Ar	0



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