Baker Oil Tools – Houston, Texas
Emmott Road R&D Test Lab

Location: 9100 Emmott Road,
Houston, Texas 77040-3514

Established: 1978

Test Lab Area: 15,000 sq ft

Test Cells: Cased Hole: 2

Static: 4

Capabilities: 30,000 psi/ambient
to 800ºF

Fluid Pumping Systems

Flow Loop
Triplex Pump
Portable Console
Kobe Pump

Elastomer Testing

Tension/Compression Testing:

up to 2 million pounds

Metallurgy

Data Acquisition Systems:

National Instruments' LabView®
Hardware & Software

For more information about Baker Oil Tools, visit us at *www.bakeroiltools.com*.

www.bakerhughes.com/bot/

Headquarters 9100 Emmott Road (77040-3514) • P.O. Box 40129 (77240-0129) • Houston, Texas • Tel (713)-466-1322

DELIVERING
PERFORMANCE

Baker Oil Tools - Houston, Texas
Emmott Road R&D Test Lab Facility

THE Completion Company

BAKER HUGHES
Baker Oil Tools

Emmott Road R&D Facility

Testing In The Baker Oil Tools Tradition

Baker Oil Tools has always been guided by the belief that oilfield equipment should be proven in the laboratory and prototype field settings before it is placed in a customer's well. The Emmott Road Test Lab Facility continues this tradition with a **15,000**-square-foot test lab where every product manufactured at this location is subjected to testing that ranks among the most stringent in the industry.

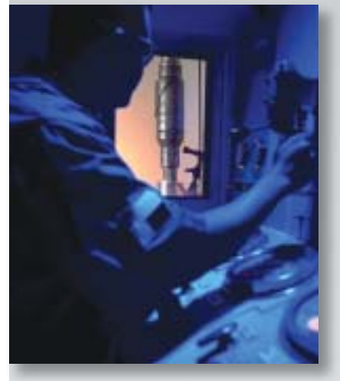
To ensure that performance ratings for Baker products exceed industry standards, the facility houses six fully equipped test cells, each with up to 30,000-psi test capabilities at temperatures ranging from ambient to 800°F, and a 2-million-pound load frame for compressive and tensile tests. On-site data acquisition systems ensure complete and accurate reporting.

Testing takes place around the clock and is broadcast over the Baker Oil Tools internal network, so customers, third parties and Baker engineers can observe the proceedings from a comfortable, isolated, on-premises viewing room or from the customer's office or a remote location.

R&D Test Lab Capabilities - Emmott Road

Equipment	Cased Hole OD	Specifications and Limits	Mechanical Loads
Cased Hole Test Cells			
Test Cell # 1	20 in., accepts up to 13.625 in.	40 ft deep cased hole - 5 ton hoist - 32 ft lifting capacity - 800°F max temperature with ceramic pad resistance heaters, 500°F with oil heater	Hydraulic rams - 400,000 lb tension, 240,000 lb compression - console with pumps for pressure to 20,000 psi max - flow rates to 6 GPM - data acquisition
Test Cell # 2	40 in., accepts up to 30 in.	24 ft deep cased hole - 5 ton hoist - 26 ft lifting capacity - 800°F max temperature with ceramic pad resistance heaters, 500°F with oil heater	Hydraulic actuator (MOE) - 2,000,000 lb tension, 2,000,000 lb compression - console with pumps for pressure to 30,000 psi max - flow rates to 6 GPM - data acquisition
Static Test Cells			
Test Cell # 3 and # 4	12 ft high accepts 28 ft long horizontal	800°F max temperature with ceramic pad resistance heaters, 500°F with oil heater	Console with pumps for pressure to 15,000 psi max - flow rates to 6 GPM - data acquisition
Test Cell # 5	8 ft high	800°F max temperature with ceramic pad resistance heaters	Used for testing miscellaneous small tools, no pump required
Test Cell # 6	8 ft high	800°F max temperature with ceramic pad resistance heaters, 500°F with oil heater	Console with pumps for pressure to 20,000 psi max - circle chart recorders for pressure and temperature
Equipment	**Type**	**Specifications and Limits**	**Mechanical Loads**
Gas (Nitrogen) Pumping System	Mod. 14AGT-125/315	Gas Booster for Nitrogen	1,000 psi minimum inlet pressure - 20,000 psi max outlet pressure
Fluid Pumping Systems			
Flow Loop	Centrifugal Pump	11.5 lb - 12 lb water base mud with 2% sand - 200 bbl tank	50 psi @ 20 bbl/min - data acquisition for pressure transducers, LVDT, and temperature probes
Triplex Pump	Triplex Pump	40 bbl tank	30 GPM @ 2,400 psi - 330 GPM @ 700 psi - data acquisition
Portable Console			Pump pressure to 20,000 psi - circle chart recorders for pressure
Kobe Pump			Pump pressure to 5,000 psi - 2.5 GPM
Elastomer Testing		Extrusion test fixture / Hardness	Single element - 45 A - 8,000 psi - 350°F / Shore "A"
Tension-Compression Testing			
Universal Tension-Compression Machine		4 in. stroke - 15 in. working height	Push/Pull 0-40,000 lb
Horizontal Press		30 in. stroke - 12 ft working height	Push/Pull 0-150,000 lb
Vertical Press (1)		6 ft stroke	Push/Pull 0-2,000,000 lb
Vertical Press (1)		14 in. stroke - 4 ft working height	Push 0-60,000 lb
Vertical Press (2)		14 in. stroke - 4 ft working height	Push 0-200,000 lb
Press Fixture		With plates (3 each, 4 in. Tk. x 36 in. OD) With retaining rods (1.375 OD x various lengths to 13 ft) With hydraulic cylinders (20 sq in. each) - 12 ft working height	Compression load 0-1,000,000 lb
Metallurgy			
Miscellaneous		Sample preparation Small furnace	Furnace (10 in. x 10 in. x 22 in. work area; 0°-1,900°F)
Microscopes		Inverted metalograph microscope Microscope (7X-30X)	
Hardness Testing		Hardness tester Hardness Twintester (A thru K;N;T) - I hardness tester	
Data Acquisition Systems		Data acquisition with Lab View hardware, and software	

Testing an Intelligent Well System™



Expanding tubular w/ 2 million lb of pressure

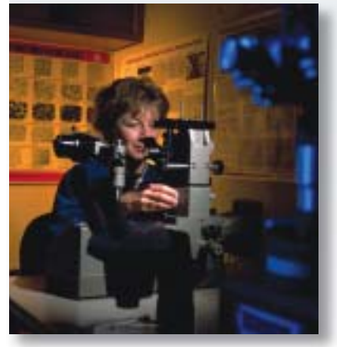
EXPress™ Expandable Screen testing

Baker Oil Tools - World Headquarters

Rapid prototype testing

Preparing an inflatable tool for testing

Assembling liner hanger product for testing



Metallurgy testing