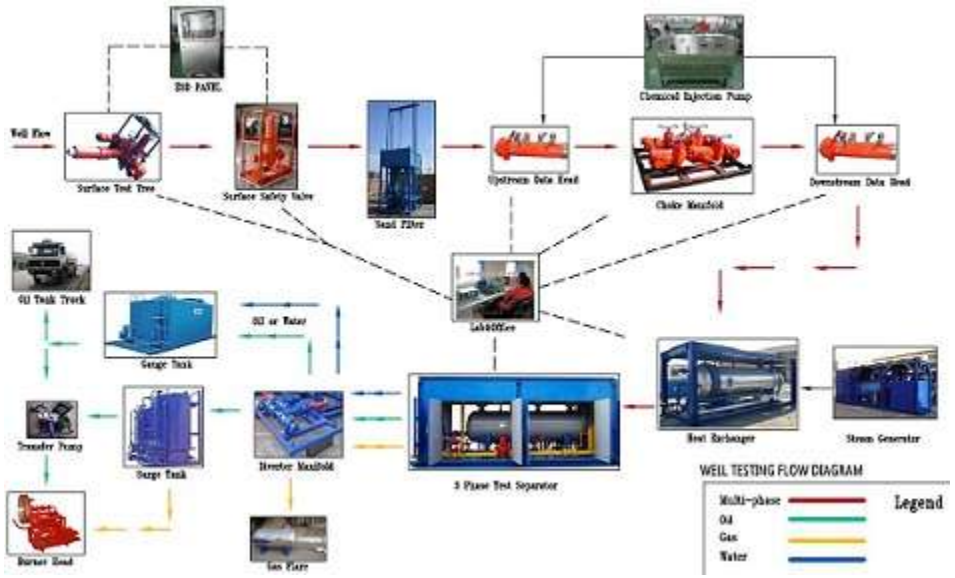
CHE INC.

CHRISTOHOUSTON ENERGY INC.

CHE Well Testing Package/Service:

CHE delivers well testing package And services, trailer mounted well testing package and offshore/onshore well testing services with over 10 years experience. Our testing equipment are available for immediate deployment in Middle East, Africa, South America and Australia, operated by CHE TRAINED Engineers.



ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

Applicable Standards & Codes:

- API Spec. 12J Oil and Gas Separators
- ASME Section VIII, Div. 1, Rules for Construction of Pressure Vessels
- ASME B31.3 Process Piping
- NACE MR.0175 Latest Edition
- API Spec. 16C Choke and Kill System
- DNV 2.7.3 Portable Offshore Units
- .....

- As a major supplier of well testing equipment and services, CHE provides a range of systems suited to specific testing environments and has a proven track record. CHE well testing equipment allows easy expansion of modules to handle future increasing and changing process conditions.

- The pressure control is handled through an upstream Test Tree, ESD Valve, Data Headers, Choke manifold, HP pipework. Inlet and outlet Data Headers allow the safe monitoring of high pressure process conditions. The process stream once choked down through the choke manifold, passes through a raise the temperature of the process fluids for better downstream separation.

- The test process stream continues on to the test separator, allowing the individual testing of wells for monitoring production rates. Safety systems consist of a closed loop ESD system providing manual and automatic safety shut-down. This is in addition to the relief valve and rupture disks integrated into the process equipment.

The Well Test product line offers industry accepted well testing processes that CHE has engineered to meet high, international industry compliance standards with;

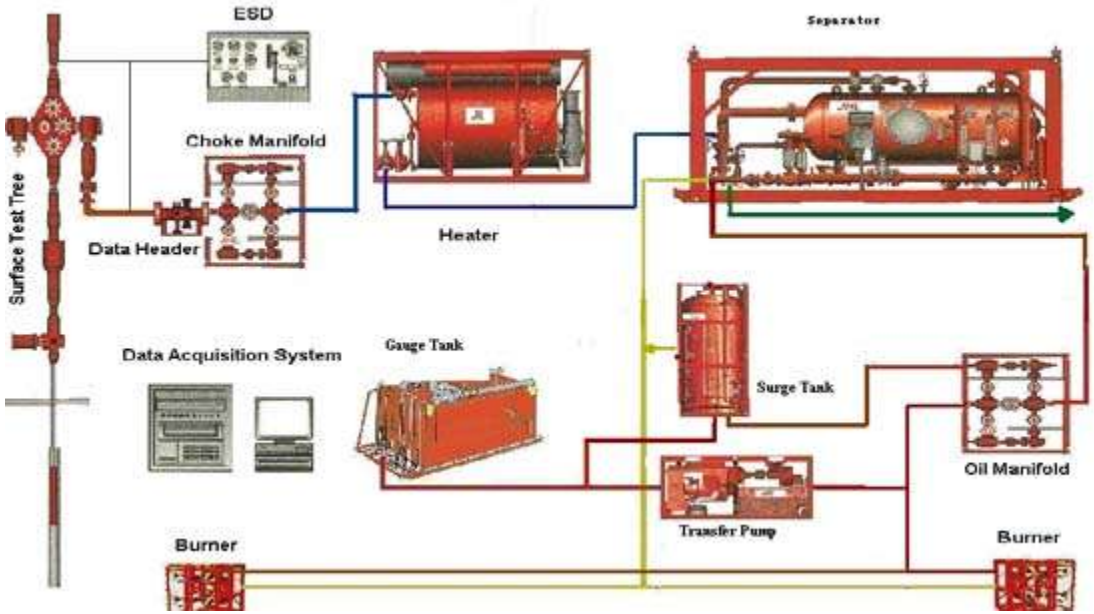
- Reliability/dependability,
- Operational efficiency and

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

- Safety forefront in our designs.

CHE Well Testing Packages and services are used to conduct a well test to provide the following information,

- ❖ Well control
- ❖ Reservoir fluid processing
- ❖ Reservoir fluid flowrate analysis
- ❖ Reservoir fluid disposal



ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

- The exact combination of surface equipment components necessary to achieve these goals is dependent upon well conditions and well location:

- A typical CHE surface well test package consists of a surface test tree (flowhead), choke manifold, heat exchanger, 3-phase separator, test tank, Crude oil transfer pump, diverter manifolds, flare booms and burners, and interconnecting pipelines of the appropriate pressure ratings to meet well conditions. A simplified schematic for a surface well test equipment hookup is shown in the figure above.

FLOWHEAD:

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

Flowhead, also called Surface Test Tree, is located at the top of the test string to control the flow of fluid from the well and is the first piece of surface test equipment. It consists of four gate valves: one master valve, two wing valves (flow line & kill line), and one swab valve. A swivel below the main block of the test tree allows drill stem to rotate freely, while the test tree remains stationary.

APPLICATIONS:

- Surface well testing operation
- Pre-completion testing
- Drill Stem Testing (DST)
- Post-completion testing (carried out without the use of X-mass tree)

FEATURES & BENEFITS:

- Supports the weight of the test string.
- Adaptable and compact design provides added flexibility and mobility.
- Low torque metal-to-metal sealing on all gate valves provides increased reliability and ease of operation.
- Protection frame on main block for manual and hydraulic valves improves durability
- It controls flow out of the well through a flow valve.
- Swivel enables rotation of the test string for packer setting and disconnect operations
- Master valve can be located below swivel or integrated in main block

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

SSV:

Surface safety valve (SSV) is a hydraulically actuated fail-safe gate valve for testing oil and gas wells with high flow rate, high pressure, or the presence of H2S. The SSV is used to quickly shut down the well choke manifold upstream in the event of overpressure, failure, a leak in downstream equipment, or any other well emergency requiring an immediate shut down.

APPLICATIONS:

During onshore & offshore exploration, development, and production well testing of HPHT wells or the presence of H2S
When an additional pressure barrier is needed in addition to the master valve

FEATURES & BENEFITS:

- Provide instant shut down to the well in case of an emergency, less than 2 seconds
- Prevent overpressure conditions to the downstream equipment
- Reduce personnel exposure during emergencies

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

- Comply with environmental regulations and reduce environmental risk
- Fail-safe and remote activation and automatic well closure
- Comes with API 6A flanges, but can be fitted with hammer union

ESD Control Panel:

Emergency Shut Down Control Panel is designed to generate signal to pneumatically control the
ESD system controls the hydraulic safety valve on the test tree and on the well head wing valve and allows manual or remote closure in response to any equipment failure upstream of the choke manifold such as pipe leaks, equipment malfunction, fire or any emergency that may occur during the operations.

APPLICATIONS:

- Well Testing Operations
- In all H2S environments
- Sweet gas environment s with a well head pressure greater than 5, 000psi

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

FEATURES & BENEFITS:

- Protect all personnel on wellsite
- Provide fail-safe Well Testing operations
- Provide instant closure of the flow line in case 411 of an emergency
- Dual Pot Sand Filter

- Dual Pot Sand Filter is skid unit improve well analysis during testing operations through the effective removal of sand and other solids from the well effluent, which working pressure is 5000psi, 10,000psi and 15,000 psi.

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

- The dual pot sand filter consists of two vertical vessels, each vessel holding one inner filter assembly. The two filtration pots are controlled individually allowing for either single or dual pot operation. Normally, one vessel is in use, in order to facilitate cleaning of the other.

APPLICATIONS:

- Well Testing Operation
- Completion cleanups
- Maximum sand-free rate tests

FEATURES & BENEFITS:

- Modular and rugged filter design
- Standard 200 micron filter cartridge supplied Water flushing system for safe and quick sand removal
- Fitted with backup valves
- No post-frac clean up requirements, production starts immediately through the facilities

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

Choke Manifold:

- Choke Manifold consists of four manual valves (five if a bypass valve is included) and is used to control the flow rate and reduce well pressure before the flow enters the processing equipment.
- The CMF also includes an adjustable choke, a positive choke, and several pressure or sampling ports to monitor pressure or fluid characteristics. The CMF design allows the well to flow, through positive chokes for flow rate reference as well as adjustable chokes. Dual flow paths allow fast choke changes without interrupting the flow.

APPLICATIONS:

- Surface well testing
- Cleanup after drilling or workover operations
- Flowback after stimulation or workover operations

FEATURES & BENEFITS:

- Reduce effluent pressure before entering process equipment
- Fast choke changes without interrupting the flow

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com

- Control flow with a calibrated orifice for flow rate reference
- Two flow paths, one through a positive choke, and one through an adjustable choke that can be converted to a positive choke

ChristoHouston Energy Limited
30 Bourdillon Road Ikoyi Lagos Nigeria: Ph: 1-877-778-8279: +234-908-206-5651
Email: info@christohoustonenergy.com Website: www.choustonenergy.com