Surface Well Test Equipment

Surface well test equipment or surface well test package consists of items, such as surface test tree, surface Safety Valve (SSV), data header, choke manifold, steam heat exchanger, test separator, vertical surge tank, oil transfer pumps, oil diverter manifold and burner. The main purpose of the well test equipment is acquisition of the reservoir’s data. Well test equipment is only way to collect data of the reservoir’s oil, gas, water, and condensate. Well test equipment shall be safe in operation meeting HSE requirements, effective and accurate to get data of productive capacity of a reservoir, and condition and characteristics of reservoir to adequate analyze reservoir performance and to forecast future production under various mode of operation. Data from surface well testing shall be accurate and reliable, so the client may make critical decisions regarding further test, oil and gas production and other programs in drilling and oilfield operation.

Composition of Surface Well Test Package:

- Surface Test Tree
- Surface Safety Valve (SSV)
- Data Header
- Choke Manifold
- Steam heat exchangers
- Test separator
- Vertical surge tank
- Oil transfer pumps
- Oil diverter manifolds
- Atmospheric gauge tank
- Burner
- ESD System
- Control and Automation systems
- Instruments and laboratory
- Other auxiliary equipment
Surface Test Tree (STT)

Surface Test Tree (STT), also known as Flowhead, is designed to control and direct the flow of well head liquid. SST is installed on the surface, consists of gate valves, flow and kill valves, lifting sub and swivel. Dimensions and structure may vary depending on the operation conditions.

Desander

Desander is designed for separation and filtering the sands and solids of the fluids coming from the wellhead to prevent damage of equipment in the line next and prepare fluid for further processing, such as heating and separation. Structure of desander, filtering elements and accumulator are designed depending on the operating conditions.

Surface Safety Valve (SSV)

Surface Safety Valve (SSV) is one of the important safety equipment of the well testing operations with high flow rate and high pressure. Controlled by ESD system, SSV automatically shuts down the flow and prevent injury of personnel and damage of the facility.

Data Header

Data Header is high pressure assembly for collection of data wellbore production parameters, such as pressure, temperature, sand condition. Also, Data Headers used for chemical injection and safety purposes. Data Header usually installed before and after Choke Manifold.
Steam heater

Steam heater (Water Jacket Heater), also known as Steam Heat Exchanger, is heat exchanging equipment designed for warming up the fluids coming from well head. Heat exchanging is necessary for ensuring the proper temperature for the next stage, separation process.

Choke Manifold Dis

Choke Manifold is an assembly which consist of high-pressure valves and chokes, used for reducing the pressure from the well head. It is operated by opening and closing an adjustable or fixed choke.

Test Separator

Test separator is important equipment for well testing, used for separating well head fluid to three phases, oil, gas, water. Internal components and sophisticated control & measure parts of separator skid ensures proper separation process and getting samples of the fluid. Data collected from separator is important to evaluate properties of the reservoir / well fluid.

Transfer pumps

Transfer pumps used for filling and emptying the tanks and increasing the pressure for burner boom. Pumping unit is equipped with explosion proof electrical motor and control panel. The common type of pump is centrifugal, while gear and screw types are also available depending on the operation conditions.
Atmospheric gauge tank

Atmospheric gauge tanks are used for the storage of produced fluids, calibration of the metering instruments on the test separator and helps oil effectively drive to the burner boom.

Diverter Manifold

Diverter manifold is a valve assembly, used for diverting the produced oil and gas to the proper process destination. Oil diverter manifold diverts oil to the burner boom or surge tank, while gas diverter manifold diverts to flare stack or burner boom.

Surge Tank

Surge tank is used for storage of produced fluids; further separation, where longer retention time is required; and metering to ensure effective and safe well test and production operations. Surge tank are equipped with valve and instrumentation, including sight glasses and calibration strips.

Burner Boom

Burner boom is assembly used for the disposal of the produced fluids during the operation. Burner assembly has combustion water injection system for proper burning and operation.
Trailer-mounted well test equipment

Trailer-mounted well test equipment can be fit in special-purpose trailers, which enable clients to conduct fast and effective well testing and fast mobilization of the equipment. Also, known as Dual Trailer system which equipped with manifold, separator, surge tank in one trailer, and data collection and control point on second trailer. Trailer structure and number depends the client’s requirements or can be proposed by our company.
Contact us to get more information on well test equipment.