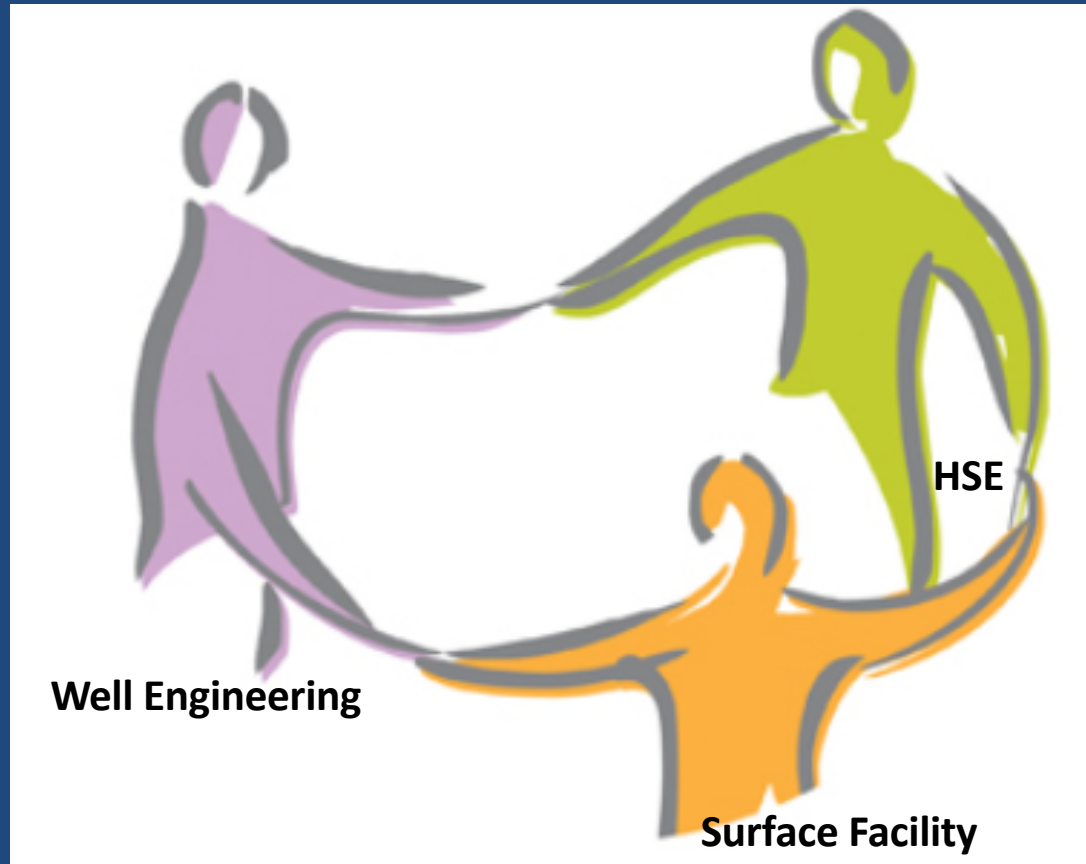


Consultancy Services Offerings



How We Deliver



Skype discussion on needs and Objectives and definition of Scope.



Synopsis of the Study Objectives and deliverables.

Submission of Commercial proposal with Cost Time Resource Sheet.

Submission of Interim report and review feedback.



Presentation of the key recommendations and their significance in the successful delivery of the project.



Submission of the detailed engineering report.

Tools Used to Deliver



- ✓ Repository of API standards and procedures.
- ✓ Reference to manuals and minimum standards as applicable practices by major operators.
- ✓ Reference to SPE papers to identify contemporary concepts and advancement in technology.
- ✓ Utilize industry standard software tools and techniques to evolve engineering solutions.
- ✓ Microsoft Project used for exhibiting milestone during the execution of the project .



Services & Capabilities



Well Engineering

- ✓ Offer Well Reviews
- ✓ Concept Options and Reviews
- ✓ Hazard Identification
- ✓ Basis of Well Design

Well Planning

- ✓ Casing Design Report
- ✓ Wellhead Design
- ✓ Metallurgy Selection
- ✓ Completion Design
- ✓ Identification of Long Lead Items
- ✓ Bill of Material
- ✓ Rig Selection
- ✓ Well Planning
- ✓ Drilling Programme
- ✓ Time and Cost Analysis
- ✓ Well Re-entry Programmes & Well Abandonment

Surface acilities

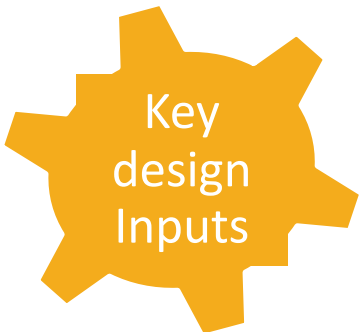
Services & Capabilities Contd.



- WellMax has strong in-house expertise to carry out FEED, and detail engineering of a complete range of EPF modular packages of the EPS facility to facilitate production of the range 10,000 to 40,000 BBL/day .The EPF mainly consist of :



- Separator
- De-salter/Dehydrator
- Crude Stabilization Column
- Crude Heater
- Flare System
- Pump Skid
- Chemical Injection System
- Utility & Instrument Air System
- Control Room
- DG Diesel Generator Set
- Fuel Oil System
- Day Tanks & Storage Tanks



The critical elements that determines the design aspect of these vessels/ packages are:-

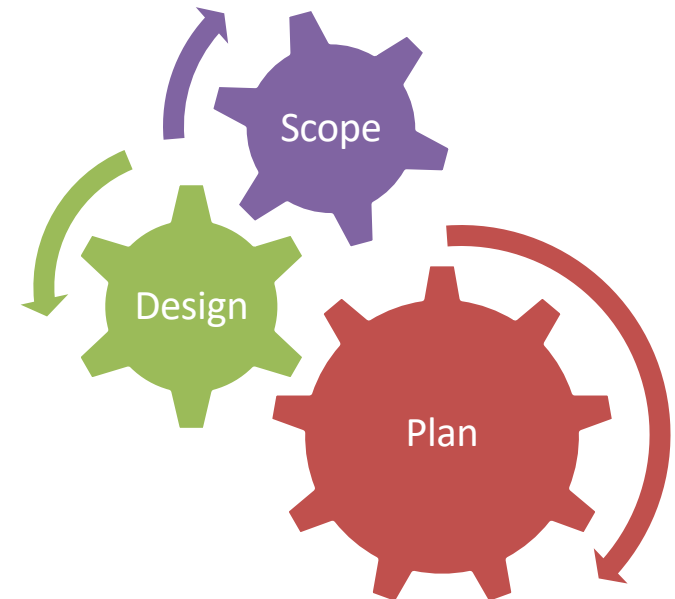
- | | |
|---|----------------------|
| Type of content to be handled (Crude Oil/Gas/Water) | H2S content (if any) |
| Capacity to be Handled | Salt Content |
| Operating Pressure & Temperature of the vessels/ packages | CO2 Content (if any) |
| Inlet Pressure & Temperature of the vessels/ packages | |

- Our EPF solutions are reliable, robust and compliant to the highest industry standards and scalable to increased production capabilities.

Well Engineering Scope



The Well Engineering Scope follows a well delivery process to ensure that all goals and objectives are accomplished. The actual process will vary according to each project/well scope, but the methodology will remain the same and will include a **Scope, Design, Plan and Execute** cycle of phases for each well.



Execute:- Phase can be provided if required.

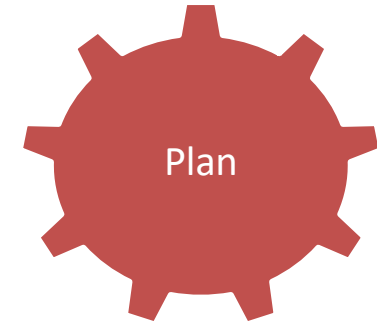
Well Engineering Scope



- ✓ Concept Options Identification
- ✓ Concept Options Review
- ✓ Ranking of the Options
- ✓ Rig Specifications (Options)
- ✓ Potential Long Leads Identified
- ✓ Time and Cost Estimates
- ✓ Time and Cost Estimate +/- 50%
- ✓ Planning AFE



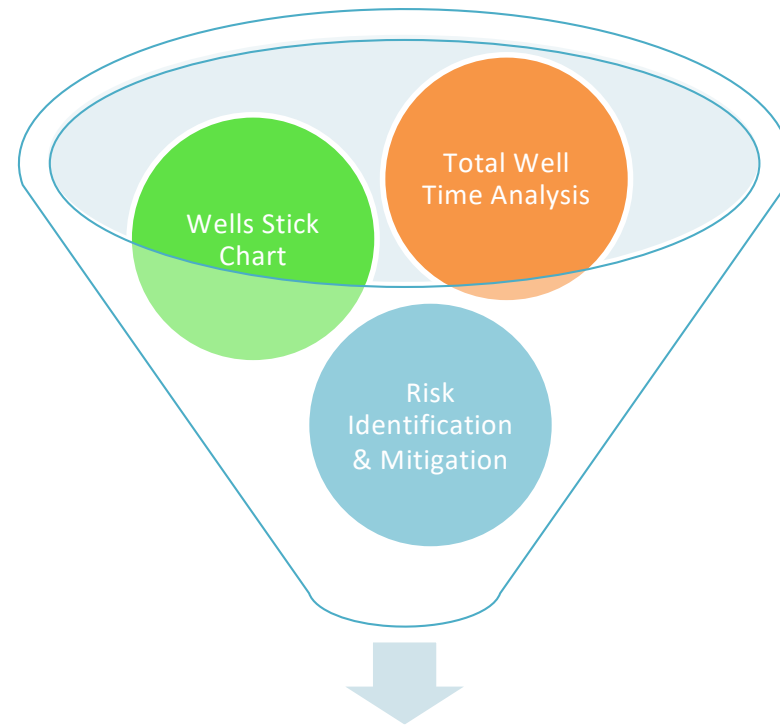
- ✓ Well Construction Basis of Design
- ✓ Bill Of Materials
- ✓ Risk Register
- ✓ Vendor Plan (timed for Services and Tangibles)



- ✓ Detailed Drilling Program
- ✓ Time Vs Depth Curve
- ✓ Final Time V/S Depth and Cost Estimate +/-10%
- ✓ Risk and Mitigations Matrix

The Subsequent set of slides highlights the importance of the key activities proposed in the Well Engineering Work Scope

Offset Well Review



Offset Well Review

Note:- Total Time Analysis would help identify the productive and non productive drilling time thereby aid in normalizing to geo-specific benchmarking of drilling performance.

Conceptual Well Design

1. Casing Seat Selection.

- ✓ Critical to get casing seat selection to ensure well integrity.
- ✓ Mitigate hole problems encountered in offset wells.
- ✓ Have adequate kick tolerance to drill the well safely.
- ✓ Isolation of Shallow aquifer getting contaminated

2. Casing Design in Stress Check.

- ✓ Formation pore pressure , Temp & frac gradient provided by the sub-surface team. Will determine the casing design
- ✓ Production loads during the producing life of the well will determine the design factors.
- ✓ Safe operating envelope for the well.

Conceptual Well Design Contd

3. Kick Tolerance

- ✓ Kick tolerance will determine the shoe integrity in the eventuality of a Well kick and restoring the well to an operational phase after Well Kill.
- ✓ Kick tolerance values considered with international acceptable standards for a safe operating envelope

4. High Level Mud Program, Cementation, Trajectory and BHA Design, Well Test and Completion Design

- ✓ This high level program helps address regulatory compliance , level 5 costs. And Budget Planning

Rig Selection

The operating parameters to deliver the well construction and subsequent operations to complete the well would demand the right selection of rig capable to deliver the objective. Rig selection would also help identify the critical rig specifications.

Metallurgy Selection

Identification of the correct metallurgy for the OCTG and Wellhead/Tree considering the well envelope remains a very critical study for selection of the right metallurgy grade in the entire lifecycle of the well.

Well Planning

Drilling a well constitutes different elements to be planned to deliver a well to the desired objectives.

A detailed study and a proposal will be delivered commensurate with the geological objectives and the geological/operational challenges that needs to be addressed. Some of the key elements that would be addressed are listed as below:-

- Drilling Montage
- Mud Programme
- Trajectory Plan & Anti-collision Report
- Cement Programme
- Hydraulics and ECD Management
- Drill String and BHA Design
- Torque and Drag Analysis

Completion Design

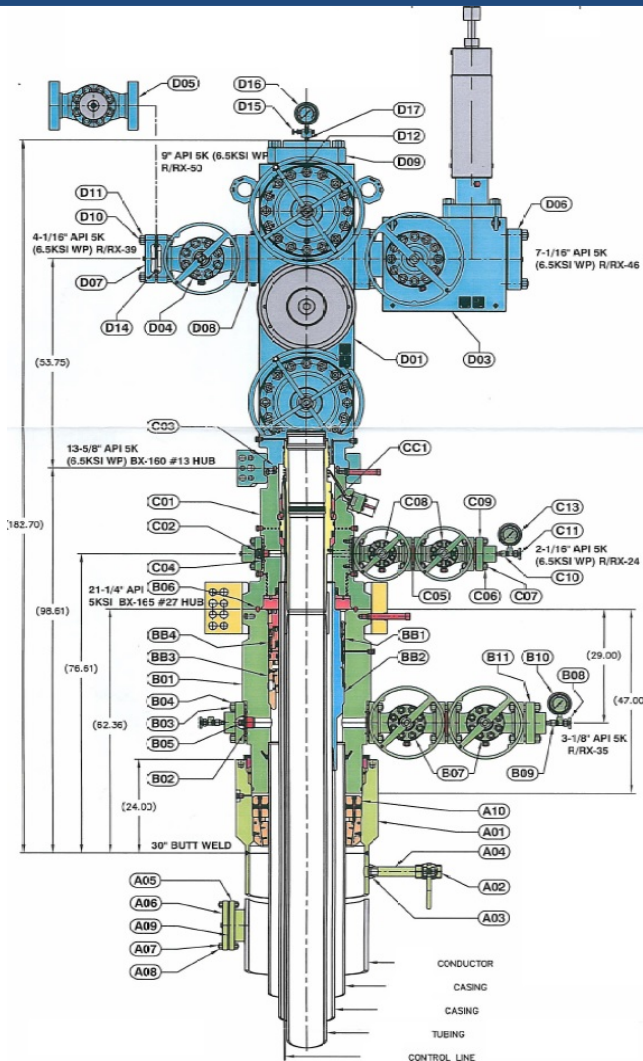
The BOD will be an outcome of the proposed completion string size selected by the client. Our service will outline and discuss the following:

- The safe operating envelope by performing tubing stress and tubing movement analysis using StressCheck and WellCat as required.
- Sand face completion / lower completion design.
- Upper completion design.
- Artificial lift philosophy and design. Is it needed right at the time of construction or at a later phase? Provision for retrofit installation of A/L system in future.
- Metallurgy selection for well completion jewelleryes.
- Well activation method and equipment incorporation in the completion string.
- Down-Hole Equipment specification (SSSV, SSD, Packers, TSA, Chemical subs, Flow Control Devices, etc.)
- Determination of MAASP & MAWOP.
- Well acceptance & verification as per design AND recommendation in case of deviation.

Wellhead & X-Mass Tree Design

The surface design of the wellhead forms an integral part of a well which is dependent on the anticipated wellhead pressures, reservoir hydrocarbon compositions, type of completion, re-entry plans and cellar/pad design. Our service will help:

- In the Selection of X-Mass Tree as per the Well Operating Envelope and Metallurgy.
- Provide recommendation for function test & operating envelop test.



Christmas Tree

Plug and Abandonment Design

A phase in the well life would require either to shut-off drained reservoir zones with re-entry or permanently abandoned. This will be designed as per prevalent statutory national regulatory requirements.

Workover and Re-Entry

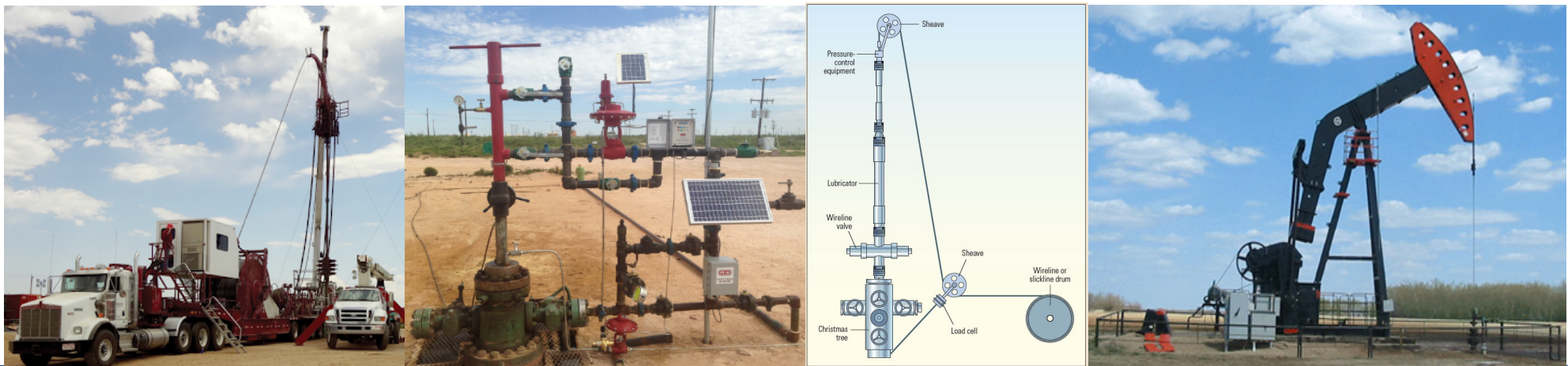
Well workover throws many challenges which require adequate planning and resources to sustain the productivity of the well. Re-entries are planned to tap the existing reservoir and optimise well costs from an existing well.

Well Intervention Methodology



As part of the Well Intervention Planning services the following elements can be discussed and provided:

- Well Activation Program (NCTU, Gas Lift, or Other Artificial Lift methods).
- Well Stimulation Planning & Program Execution.
- Well Intervention Planning & Program Execution.
- Zonal Isolation.
- Well Integrity Investigation.
- Risk – Mitigation Analysis in case of any Deviation from the original design.
- Well Intervention Job Supervision.



Engineering Credentials



- We as consultants have a total combination of over 40 years of combined experience with professionals in Drilling Engineering and Operations having assumed responsible positions with major global operators like Shell, KOC, ADNOC, BG-India, Halliburton Consultancy. The portfolio includes land and off-shore projects with different complexities and challenges. The group also consists of a Chartered Engineer who brings extensive international best practices having been extensively involved in Well Examination reviews.
- Our EPF design and FEED teams have been involved in providing extensive services in this field to local and international clients and have over 30 years of combined experience
- Our consultancy group also have widely experienced completion and well test specialist who are currently actively involved in well operations with major operators and others who were domain champions and team leaders in their specialised areas.
- We as professionals have been responsible in handling multimillion dollar projects as key stake holders along with other team members both for the studies and successful delivery of projects.

Integrated Planning

Additional Service.



WellMax also has additional capabilities to provide either total or discreet planning services. Listed below are some of the activities which will be tracked as part of the planning service. This service will aid in identifying critical path activities and provide forecasting vision during project execution.

- ✓ Environmental Studies (EIA) initiation to environment & forest clearance and approval from State authorities.
- ✓ Seismic contract hand over, processing, interpretations, stage Gate 0 to Gate 4 clearance & prospect generation.
- ✓ Integrated Drilling plan from Rig identification & selection, contract award, Wells planning, Well pad & road construction, Spudding, demob. This also includes the Rig sequence plan, Wells sequence by Rigs, regions by blocks.
- ✓ Well testing by work over rigs region wise block wise well wise.
- ✓ Site restoration plan.
- ✓ Early monetization- EPFO / QPF selection, monetization, installation commissioning & start up. We'll hook up to inlet manifold & Regulatory approvals for full fledged production.
- ✓ Operations Readiness for the first oil

HSE Consultancy Services

Additional Service.



HSE Risk Management for safe operation & successful project delivery

- HSE Risk Management for Safe Operation & Successful Project Delivery HSE Risk Management throughout value chain by identifying potential hazards, assessing HSE risk potentials, reviewing existing controls and recommending additional preventive controls and mitigation measures as per applicable standards, and eventual risk reduction (ALARP). Assurances, conducted for gaps closure for effective risk management.
- Successful project delivery by establishing safety requirements at conceptual, design and engineering phases, conducting gap closure audits and inspections as per approved Codes and Standards (e.g. NFPA, IADC, API, ASME, ISO 14001, OHSAS 18001 series).

HSE Consultancy Services

Additional Service.



Process Safety Management

- Operational Excellence by defining Safety Critical Elements (SCE) and its safe operating limits/parameters for plants and equipment, Well Barrier Elements (WBE) and Well Integrity.
- Process safety assurances are conducted in order to assure the quality of periodical inspection and functional tests completed on each SCE and WBE under the Swiss Cheese clustered elements of Structural Integrity, Process Containment etc.
- HSE Case Development & CIMAH Report preparation by conducting technical safety assessment studies e.g. HAZID, QRA, EERA, ESSA, ALARP demonstration for offshore and onshore operating facilities.

WellMax – at a glance



- **WellMax Oilfield Technologies** is an upstream oilfield services company specialising in various well intervention & well life cycle services such as **Surface Well Testing, Slickline Services, (Upcoming TCP & DST services)** to diagnose well issues to optimise well flow, plot reservoir changes and gather mission critical fluid data.
- **WellMax** has been formed by a group of oilfield services experts having a combined experience of more than 75 years in diverse functional areas of oil & gas business including core areas of Service Line Applications, Operations, Engineering, Sales & Business Development, Tendering & Finance from premier Service & E&P companies in India and abroad. The experience & expertise of our management & operations teams have been drawn from working globally in very diverse, challenging & complex geological and geographical areas of E&P business. Our team of well qualified and experienced professionals are geared up to render efficient, safe and fit for purpose solutions to clients & optimise their exploration and production needs and budgets.
- An ISO 9001:2008, 14001:2004 & OHSAS 18001:2007 certified organisation, **WellMax** is headquartered in Mumbai having its offices & engineering yards at Gujarat & Rajasthan in western India & Kakinada in southern India to suitably cater to key clients in the region.
- **WellMax** is equipped with API, NACE and ASME certified state of the art equipment sourced from top of the line vendors in USA, Singapore, UAE, India & Germany and offers a variety of commercial business models that provide operators many options to maximize their return on investments.

Thank You



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