



Production Optimization Services

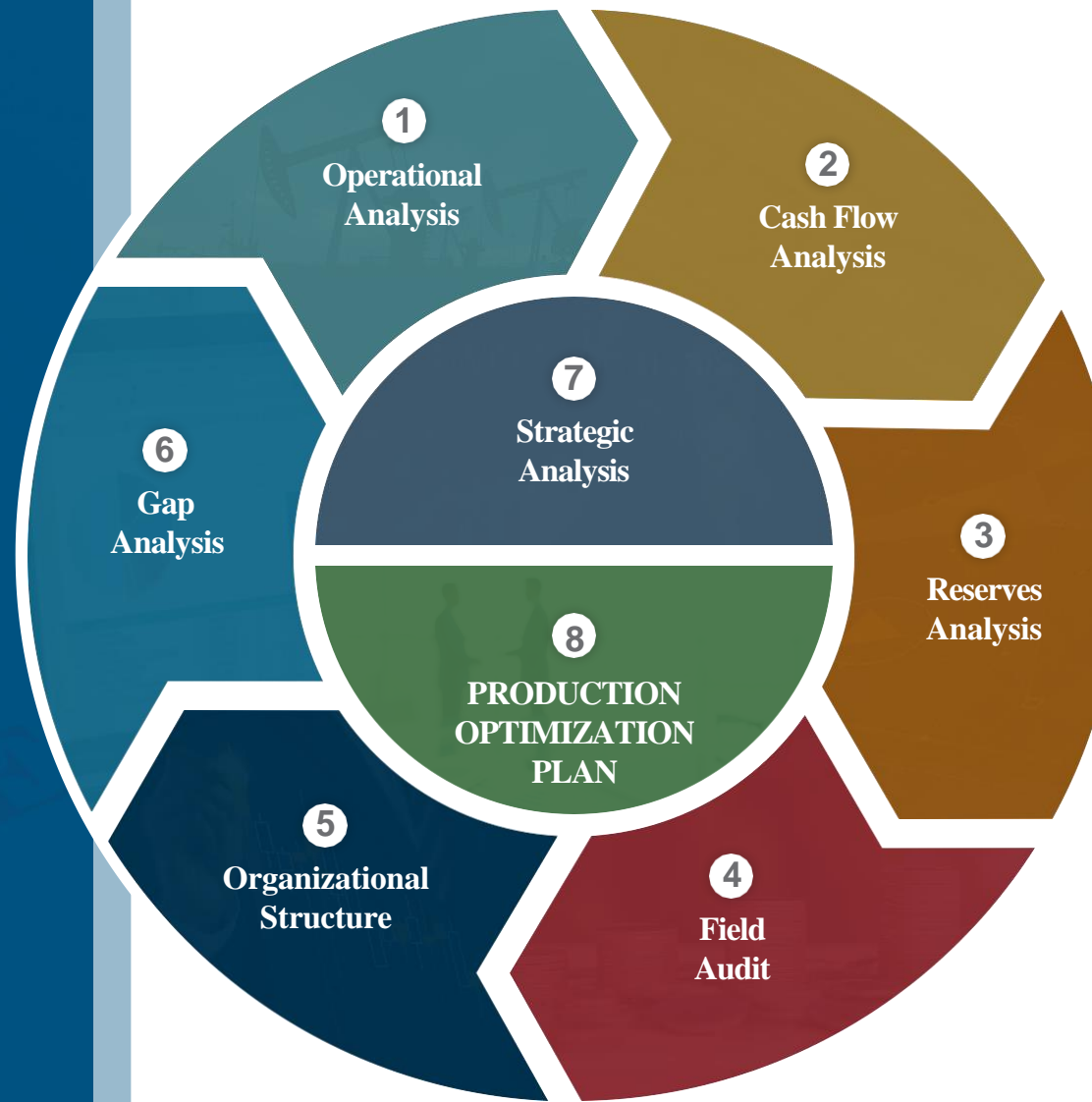
Overview

OUR APPROACH

The Performance Analytics approach to production optimization employs an integrated, multi-disciplinary framework that goes beyond basic field assessments. Our objective is to enhance production, add reserves, maximize cash flow, and keep your operations flexible in the face of change.

We begin with an operational analysis, complemented by geological and reservoir reviews and an onsite field inspection. These insights are then integrated with cash flow and reserves analysis to develop a production optimization plan that identifies key areas for improvement and production enhancement. Alongside this plan, we create a realistic production and cash flow pro forma to help you accurately project financial returns and assess ROI. Given the dynamic nature of the market, we also provide strategic analysis and contingency plans to ensure you're prepared for any challenges ahead.

Once we finish and present the Plan, we will work closely with you during the implementation phase. From weekly consultation meetings to onsite fieldwork supervision, we will be with you every step of the way until your field is optimized for peak production and profitability.



OPERATIONAL ANALYSIS

To design your Production Optimization Plan, we begin with an operational assessment. This assessment integrates geological data, reserves information, production history, and cost analysis to identify patterns, anomalies, and areas for improvement. We also review past efforts, including workovers and other targeted production enhancements, to evaluate their effectiveness and cost efficiency. This comprehensive assessment forms the foundation for a robust production optimization plan, ensuring your field operates at peak efficiency and profitability.



Key Components of a Field Operational Assessment:

Production Trends Analysis:

- Review of historical production data to identify trends and anomalies
- Evaluation of production rates relative to forecasted targets

Cost Analysis:

- Detailed examination of operational expenses, including lease operating expenses (LOE) and production costs
- Comparison of current costs against industry benchmarks
- Identification of areas for potential cost reduction without compromising production efficiency

Well Failure Analysis:

- Assessment of well failure incidents, including mechanical issues and production drops
- Recommendations for preventive measures and corrective actions

Workover Results Evaluation:

- Review of past workover operations, including the success rate and impact on production
- Assessment of Other Operators' Successful Production Enhancement Techniques.
- Identification of wells or areas with untapped potential or underperformance
- Develop plans for targeted interventions that improve production efficiency and profitability

CASH FLOW ANALYSIS

In addition to an Operational Assessment, we conduct a thorough cash flow analysis that evaluates your operation's capacity to generate cash. This involves a detailed examination of your lease operating expenses and overall profitability. We identify opportunities for cost savings and pinpoint areas where strategic investments—such as enhanced production surveillance, lift optimization, and facility upgrades—could lead to improved production and increased cash flow. These insights are then seamlessly integrated into a comprehensive production optimization plan tailored to your specific needs.



Key Operational Cash Flow Analysis Components for an Oil & Gas Field:

1. Profitability Analysis:

- Evaluate total production costs, including LOE, transportation, and processing.
- Assess the impact of oil, gas, and NGL ratios on overall profitability.
- Analyze net margins after accounting for operating expenses.
- Examine exposure to commodity price fluctuations and the effectiveness of hedging strategies.

2. Free Cash Flow Assessment:

- Determine true cash flow available after accounting for general and administrative expenses, debt servicing, and tax obligations.

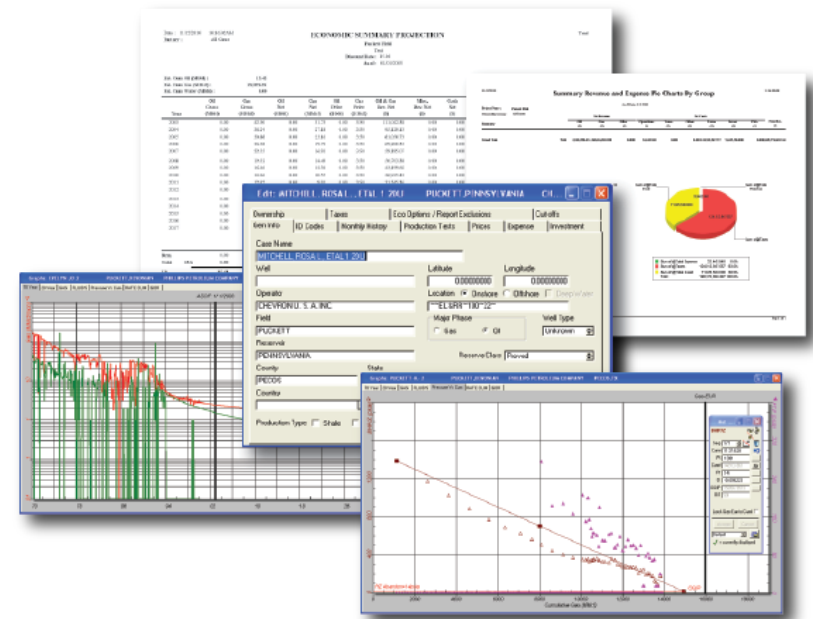
3. Cash Flow and Future Growth:

- Analyze cash flow vs. growth profile
- Evaluate the field's asset portfolio in terms of cash flow stability and growth opportunities.
- Determine whether current cash flow can support planned capital expenditures for field expansion and optimization.

RESERVES ANALYSIS

Our initial assessment also includes a thorough review of your asset reserves. If you have an existing reserve model, we incorporate it into our analysis, validating its contents and accuracy. If you don't have one, we will build a custom reserves model for you using PHDWin software. Our comprehensive reserves analysis involves creating a detailed reserve database and reports with up-to-date values and production forecasts. Using advanced reserve software, we identify production anomalies through decline and type curve analysis and conduct both individual well and area-wide reviews. Areas performing above trend are thoroughly examined for geological and reservoir explanations, while wells and areas with below-average production are scrutinized to determine the causes of underperformance.

This reserve model not only helps in understanding current production but also serves as a foundation for planning and timing capital expenditures aimed at enhancing and increasing production. The insights from this comprehensive analysis are integrated into your Production Optimization Plan, allowing us to clearly demonstrate the value created—both in reserves and in the plan's net present value.



Key Components/Analysis

1. Economic Recovery Potential:

- Analysis of booked reserves versus total resource base

2. Historical Reserve Forecast Accuracy:

- Look-back analysis of past performance vs. projections
- Evaluation of known recovery factors

3. Current Reserve Forecast Realism:

- Analysis of vulnerability to commodity price fluctuations
- Assessment of concentration risk

4. Opportunity Assessment:

- Identifying wells and leases that perform above historical forecasts for potential optimization
- Flagging wells and leases that perform below historical forecasts to determine causes and remediation strategies
- Identification of remediation candidates, workover candidates, and new drills

ONSITE FIELD AUDIT

Understanding that analysis is just one part of the equation; we conduct onsite field audits and operational assessments to validate our findings in a real-world context. Our audits cover every aspect of your operation, from the condition of artificial lift systems to the integrity of pipelines and processing facilities. We thoroughly assess the age, maintenance history, and current state of your equipment to ensure smooth and efficient operations, helping you maintain optimal production levels and extend asset life by identifying potential issues before they lead to additional expenses. Additionally, our field audits evaluate your personnel's ability to effectively manage operations and incorporate production enhancement efforts. The insights from our onsite field audit are used to confirm the results of our analysis and are seamlessly integrated into the production optimization plan, ensuring the plan is realistic and achievable based on real-world assessments and actions.

Key Components of an Onsite Field Audit

1. Field Condition Assessment:

- Conduct an initial assessment of the terrain, topography, location, and road access
- Assess the overall condition of well sites, access roads, and other field infrastructure.
- Examine the age, maintenance history, and wear-and-tear of production equipment, including pumps, artificial lift systems, and separators.

2. Production Equipment Evaluation:

- Analyze the efficiency of key production equipment and identify any underperforming units.

3. Personnel Capability Review:

- Assess the skills and experience of field personnel, including their ability to manage current operations and handle future growth.

4. Capacity for Growth:

- Determine whether the current team structure can support expansion plans or if additional hiring and training are needed.

5. Offset Operators:

- Evaluate the operations and activities of nearby or offset operators to identify actions, processes, and opportunities for implementation



ORGANIZATIONAL CAPABILITY

Analyzing a company's organizational capability from the top level down to the field targeted for production optimization is crucial for ensuring the plan is realistic and achievable. However, this assessment is often a qualitative and challenging process. Through careful observation and evaluation, we can identify where your company excels and where improvements are needed. This analysis is vital to ensuring any production optimization plan is well-designed and effectively executed, resulting in tangible value creation.



Key Components of an Organizational Capability Assessment:

1. Appropriate Level of Staffing:

- Evaluate whether the current staffing levels are sufficient to support ongoing operations and future growth initiatives.

2. Knowledge and Expertise of Staff:

- Assess the skill sets and expertise of staff across various roles, ensuring they have the necessary knowledge to meet operational and strategic goals.

3. Flexibility and Adaptability:

- Determine the ability of staff to adapt to changing operational demands, including their willingness and capacity to take on new responsibilities or roles as needed.

OPPORTUNITY ANALYSIS

Our Opportunity Analysis process integrates all relevant assessments—operational analysis, cash flow analysis, reserves evaluation, field audits, and organizational capability assessments—to pinpoint opportunities for cost reduction, production enhancement, and overall field optimization for profitability and value creation. This comprehensive approach reveals hidden gaps and untapped potential where production optimization is achievable. Once these areas are identified, we develop a tailored production optimization plan that specifically targets these opportunities. The plan is thoroughly back-tested and refined to ensure it is robust, adaptable, and ready for implementation, effectively responding to changes in market conditions, operational environments, or unforeseen challenges. The result is a dynamic strategy designed to boost production, increase efficiency, and secure long-term profitability.



Key Components of Opportunity Analysis

1. Identification of Cost Savings:

- Pinpoint opportunities to reduce operational expenses without compromising efficiency or production quality.

2. Production Enhancements:

- Identify potential improvements in production processes, equipment, or techniques that could increase output and overall efficiency.

3. Reserves Monetization:

- Assess strategies for effectively converting reserves into revenue, including timing and methods for bringing additional reserves online.

4. Capital Expenditures:

- Analyze current and planned capital investments to ensure they align with strategic goals and offer the best return on investment. Determine areas where targeted capital spending could drive significant improvements in production or cost efficiency.

STRATEGIC ANALYSIS

After developing a Production Optimization Plan, we subject it to a rigorous strategic assessment using SWOT Analysis. This involves evaluating the field's strategic position by examining its Strengths, Weaknesses, Opportunities, and Threats. By analyzing internal and external factors, we ensure that the plan is resilient and adaptable to price changes, operating conditions, or unforeseen developments. Our approach prepares for various contingencies, guaranteeing that the plan remains effective, no matter the challenges, while embracing the industry's only constant—change.

SWOT Analysis

Strengths

1.
2.
3.
4.
5.
6.

Weaknesses

1.
2.
3.
4.
5.
6.

Opportunities

1.
2.
3.
4.
5.
6.

Threats

1.
2.
3.
4.
5.
6.

Key Components of a Field SWOT Analysis:

1. Strengths (Internal):

- Identify the field's core advantages, such as high-quality reservoirs, untapped locations, efficient infrastructure, or skilled personnel.

2. Weaknesses (Internal):

- Highlight areas of concern, such as aging equipment, high operational costs, limited potential, and/or significant P&A liabilities.

3. Opportunities (External):

- Explore potential growth areas such as offset operator initiatives, technological upgrades, or expansion into adjacent fields.

4. Threats (External):

- Assess external risks, such as exposure to volatile commodity prices, regulatory changes, or competitive pressures from nearby operators.

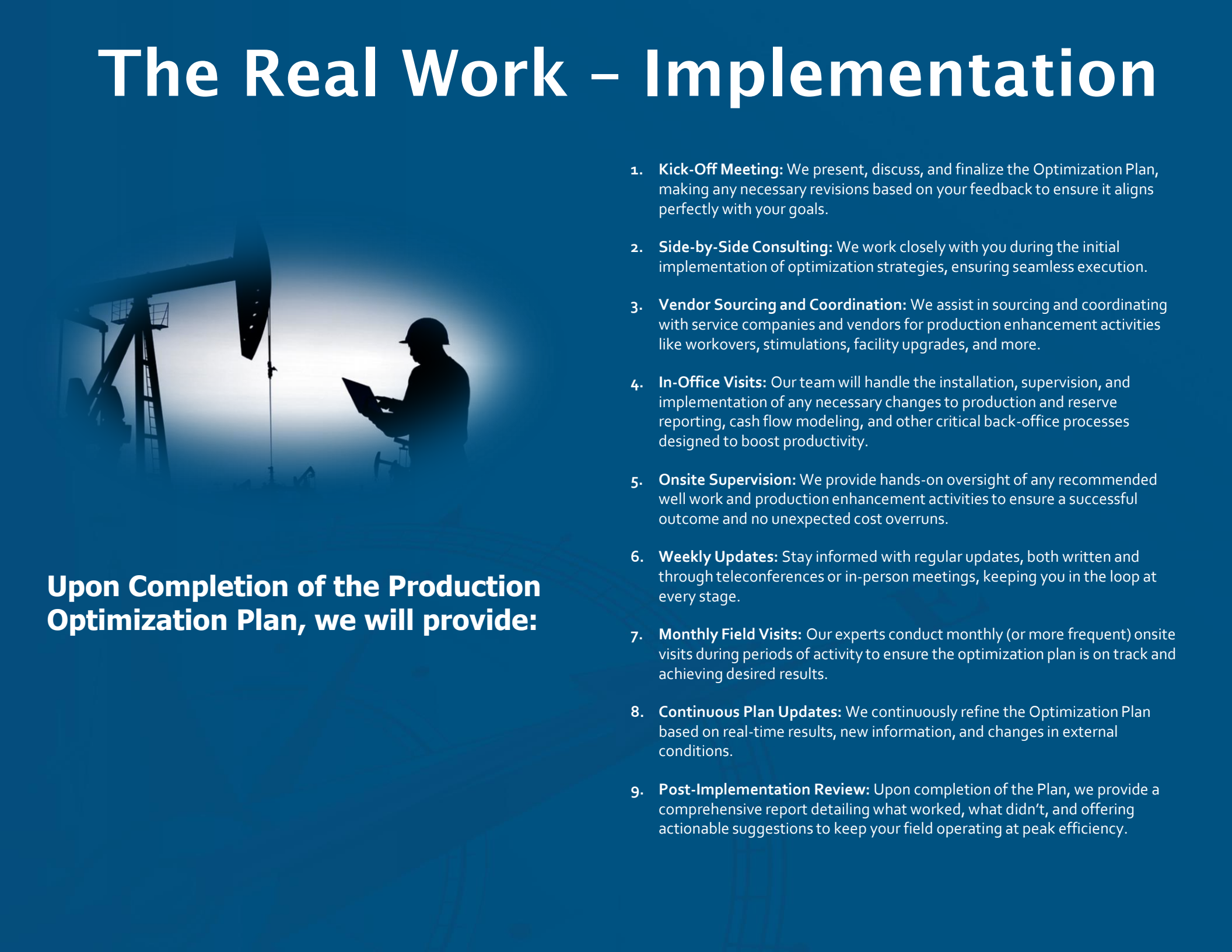
The Production Optimization Plan



Your Production Optimization Plan will include:

1. A comprehensive operational assessment evaluating production, expenses, workovers, and drilling activities, with detailed trend analysis, key component analysis, and internal and external benchmarking.
2. A thorough review of past financial performance focused on operational and free cash flow generation, alongside an analysis of return on investment.
3. An independent reserves assessment, including lookbacks of previous reserve reports and projections, an analysis of the impact of non-recurring charges, a comparison of projections versus actual performance, and a probabilistic assessment of current reserves using historical data.
4. A detailed Production Optimization Plan with a clear timeline of action steps to optimize production, covering:
 - Cost-saving initiatives
 - Workovers
 - Artificial lift optimization
 - Production enhancement activities (ex. acid washes, refracs, scale removal, and chemical treatments).
5. A targeted list of potential capital expenditure activities focused on new production zones, potential new drilling locations, waterflood implementation, and facility modifications/upgrades.
6. A detailed pro forma and capital expense projection for production and cash flow, incorporating the proposed actions outlined in the production optimization plan.
7. A comprehensive price sensitivity and contingency analysis prepared to address potential changes in the operating environment or commodity price markets.
8. A detailed assessment of eventual P&A liabilities, which allows the operator to make informed decisions on how to manage these obligations effectively.

The Real Work – Implementation



Upon Completion of the Production Optimization Plan, we will provide:

1. **Kick-Off Meeting:** We present, discuss, and finalize the Optimization Plan, making any necessary revisions based on your feedback to ensure it aligns perfectly with your goals.
2. **Side-by-Side Consulting:** We work closely with you during the initial implementation of optimization strategies, ensuring seamless execution.
3. **Vendor Sourcing and Coordination:** We assist in sourcing and coordinating with service companies and vendors for production enhancement activities like workovers, stimulations, facility upgrades, and more.
4. **In-Office Visits:** Our team will handle the installation, supervision, and implementation of any necessary changes to production and reserve reporting, cash flow modeling, and other critical back-office processes designed to boost productivity.
5. **Onsite Supervision:** We provide hands-on oversight of any recommended well work and production enhancement activities to ensure a successful outcome and no unexpected cost overruns.
6. **Weekly Updates:** Stay informed with regular updates, both written and through teleconferences or in-person meetings, keeping you in the loop at every stage.
7. **Monthly Field Visits:** Our experts conduct monthly (or more frequent) onsite visits during periods of activity to ensure the optimization plan is on track and achieving desired results.
8. **Continuous Plan Updates:** We continuously refine the Optimization Plan based on real-time results, new information, and changes in external conditions.
9. **Post-Implementation Review:** Upon completion of the Plan, we provide a comprehensive report detailing what worked, what didn't, and offering actionable suggestions to keep your field operating at peak efficiency.

For more information, please contact us. We would be glad to discuss how we can provide you with the information you need to make sound operational, financial, and informed investment decisions



2001 Timberloch, Suite 500, The Woodlands, TX 77380
(832) 990-6714 • www.asset-analytics.com