2015 digital map one-liner

**Technology Deployment**

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| Alaska | Alaska BP is the largest gross producer of oil in Alaska and operates 12 oil fields on the North slope, including the supergiant Prudhoe Bay. |
| Canada | Developing energy from Canada’s oil sands, the third-largest crude reserves in the world, as well as exploring offshore frontiers in the Beaufort Sea Arctic and Nova Scotia. |
| North America | Top-quality unconventional business, leveraging decades of ‘know-how’ in drilling and completions at scale. |
| Gulf of Mexico | Largest leaseholder in the deepwater Gulf of Mexico, owning more than 650 gross blocks in water depths of 1,200 feet or greater. |
| Trinidad & Tobago | Huge gas business, averaging approximately two billion standard cubic feet daily sold each day. Increasingly, production is moving subsea and into deepwater. |
| Brazil | BP holds a diverse portfolio in Brazil, with 27 exploration and production licenses, onshore and offshore, in seven different basins. |
| North Sea | Maximizing recovery from this maturing basin with world-class imaging, reservoir management and enhanced oil recovery. |
| Norway | New offshore projects and keen focus on life of field extension, push BP Norge’s plans out to 2050. |
| Algeria | Major gas business, with two large gas developments – in Salah (dry gas) and in Amenas (wet gas) – both in partnership with Sonatrach and Statoil. |
| Egypt | Sustaining oil production plateau in the Gulf of Suez and opening up a new deepwater gas business in the Nile Delta. |
| Iraq | In partnership with Iraqi State Oil Marketing Organization and CNPC, BP is aiming to almost treble output from the supergiant Rumaila to 2.8 million barrels per day. |
| Azerbaijan | BP, with partners, is developing the giant high pressure Shah Deniz gas field and moving into the next phase of development of the supergiant oil field ACG. |
| Oman | Full Field development of giant Khazzan tight gas field will involve drilling 300 wells over 15 years, to deliver plateau production of a billion cubic feet gas per day. |
| Angola | 200,000 barrels per day from BP’s operated and non-operated deepwater and ultra deepwater fields. BP is also exploring pre-salt plays in the Kwanza Basin. |

**Technology Projects**

Red = spelling error on the digital map that need to be updated

**Advanced Seismic Imaging**

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| *ISS*® | Multiple sources acquiring seismic simultaneously, with noise distortion processed out |
| *ISSN*™ | Multiple sources working independently but recorded continuously |
| Full Waveform Inversions | High-resolution velocity model-building through inversion of entire 3D data sets |
| Multi-Azimuth Seismic | Illuminates target from different azimuths with multiple surveys over the same area |
| Wide Azimuth Towed Streamer | Receivers illuminated with multiple sources to survey from many azimuths and offsets |
| Ocean Bottom Nodes | Seabed receivers enable surveys around facilities and high density survey configurations |
| Seismic ~~Simulations~~ Modeling | Synthetic data generation to support data acquisition, processing and analysis |
| 4D Seismic | Reservoir monitoring to detect gas and fluid changes over time |

**BP Well Advisor**

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| Casing Running Console | Detects changes in observed friction between casing and the wellbore |
| BOP Monitoring | Remote monitoring of BOP health and valves performance, with control systems diagnostics beyond rig site |
| Pressure Testing | Real-time display, interpretation and documentation of positive well barrier pressure tests |
| Rigsite Fluid Management | Early warning indicators for potential lost circulation and well control issues |
| No Drilling Surprises | Key subsurface and hazardous risks identified from offset wells, updated in real time during drilling operations |
| Cementing | Real-time cement placement and centralizer stand-off analysis, with verification of cement well barriers to reduce zonal isolation events |
| ~~Data Quality Console~~ | Delete |
| ROP Optimization | Maximizing drilling efficiency in hard rock environments |
| ~~Completions (Makeup Torque)~~ | Delete |
| ~~Tripping~~ | Delete |

**Beyond Sand Control**

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| Downhole Sand Management | Proprietary software to support optimal completion design selection and define well operating parameters |
| Sand Consolidation | Adds strength to weak rock formation to increase productivity from sand-prone wells |

**Enhanced Oil Recovery**

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| --- | --- |
| Designer Gas® | Miscible gas injection to displace oil from the rock, often alternated with water injection to improve sweep, can improve recovery by 6% to 10% over base waterflooding. Lean gas such as methane, vaporizes oil from the rock surface and carries it to production wells, before being recycled |
| Bright Water® | Bright Water® is a submicron thermally activated particle that expands reducing the flow in thief zones and diverting injection water into poorly swept areas of the reservoir, thereby increasing oil recovery |
| *Designer Water*® EOR - *LoSal*® EOR | A breakthrough reduced salinity waterflooding technology that significantly increases compared to conventional waterflooding |
| Designer Water® EOR - Polymer Flood | The polymer particles flow with the water and warm up as they pass through the reservoir. |
| Digital Rocks | Application of image-based modeling and simulation techniques to derive reservoir rock properties |

**Field of the Future® Technology**

|  |  |
| --- | --- |
| Production Management Advisor | Integrated real-time information system to optimize short and long term hydrocarbon value |
| Operations Advisor | Analysis and intelligent alters management system, with condition-based monitoring and pro-active risk management |
| Distributed Temperature Sensing | Provides a near real-time view of how fluids such as oil, gas and water enter wells from different reservoir units, without the need for costly well interventions and production shut-downs |
| ~~Sensor CoE~~ | Delete |
| [Advanced Collaborative Environments](http://ace.bpweb.bp.com/" \t "_self" \o "Advanced Collaborative Environments Home) (ACE) | Enables people to work collaboratively regardless of distance, encouraging more efficient decision making, enhanced productivity and improved operational performance |

**Facilities & Integrity**

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| --- | --- |
| Highly Reliable Chemical Injection | Efficient, reliable application of chemical barriers, supported by BP’s Chemical Management Suite to track performance |
| Guided Wave Inspection System | An inspection technique that offers rapid screening of long lengths of pipework for corrosion and other defects |
| EMAT Inspection | Electromagnetic acoustic transducers provide a permanent image of the entire inspection segment |
| Digital Radiography | An inspection technology for subsea environments, an alternative to traditional pipeline inspection gauges, or 'pigs'. |
| Corrosion & Erosion Modeling | State-of-the-art integrity monitoring and control system models that inform decision making in corrosion monitoring and management. |
| Subsea Pumping | Used to raise the rate of recovery, extend the duration of the peak production plateau and reduce the final abandonment pressure, increasing total recovery |
| Subsea Metering | Combine flow- and composition-sensing elements and apply empirical flow modeling algorithms to infer the flow rates of oil, water and gas in the production stream |
| Subsea Processing | Enables the development of smaller fields that were previously considered uneconomical by tying them back to hub facilities miles away |
| Project 20K™ | 20K technologies will unlock the next wave of deepwater resources, trapped in ultra-high pressure reservoirs |

**Unconventional Reservoirs**

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| --- | --- |
| Geo-Engineered Completion Optimization | Proprietary integrated seismic, petrophysics, geomechanics and reservoir modelling tool to optimize well and field design to maximize economic recovery from unconventionals |
| ~~Hardrock Drilling~~ | Delete |
| Tight Gas | Full range of Upstream Technologies, seismic, reservoir management, drilling, completions and operations applied to unconventional, low permeability rocks |