

Doubling the Value of Wells in the UK

On behalf of the Double Value Wells Teams

- Steve Brady, Conoco (Committee Co-Chairman)
- Ian Williamson, GMIS (Committee Co-Chairman)
- Dave Taylor, Amerada (Secretary)
- Robert Johnson, TMX (Tech. Author)

WDN - Endorsed & Maintained by LOGIC

Is the Focus on Well Value Justified?

- Overall Cost to produce a barrel of oil on the UKCS ranges between \$12 - \$14 per barrel (recent developments)
- 30% - 40% of that is spent on Well Construction
- Drilling is integral to Our Business
- Efficient Operators & Contractors are Focused on Improving Well Value

CRINE/LOGIC Wells Group Focus

- Completed 2 phases of work
 - Phase I: Double the Value of Exploration Wells; Focus - Finder Well Concept
 - Phase II: Double the Value of Development Wells; Focus - Well Decision Navigator (WDN)
- CRINE Initiative ended in Q4 1999
- LOGIC up and running Q1 2000
 - Phase II endorsed and adopted by LOGIC

What is a Finder Well?

- Within today's Operators, regional Business Units aggressively compete with each other for limited exploration cash
- Finder Wells - Exploration wells designed to maximise exploration budgets & Exploration Success
- Are they Effective? Conoco's experience:
 - 30% Cost Reductions Realised
 - Finding Success Increased
 - More Wells added to the schedule

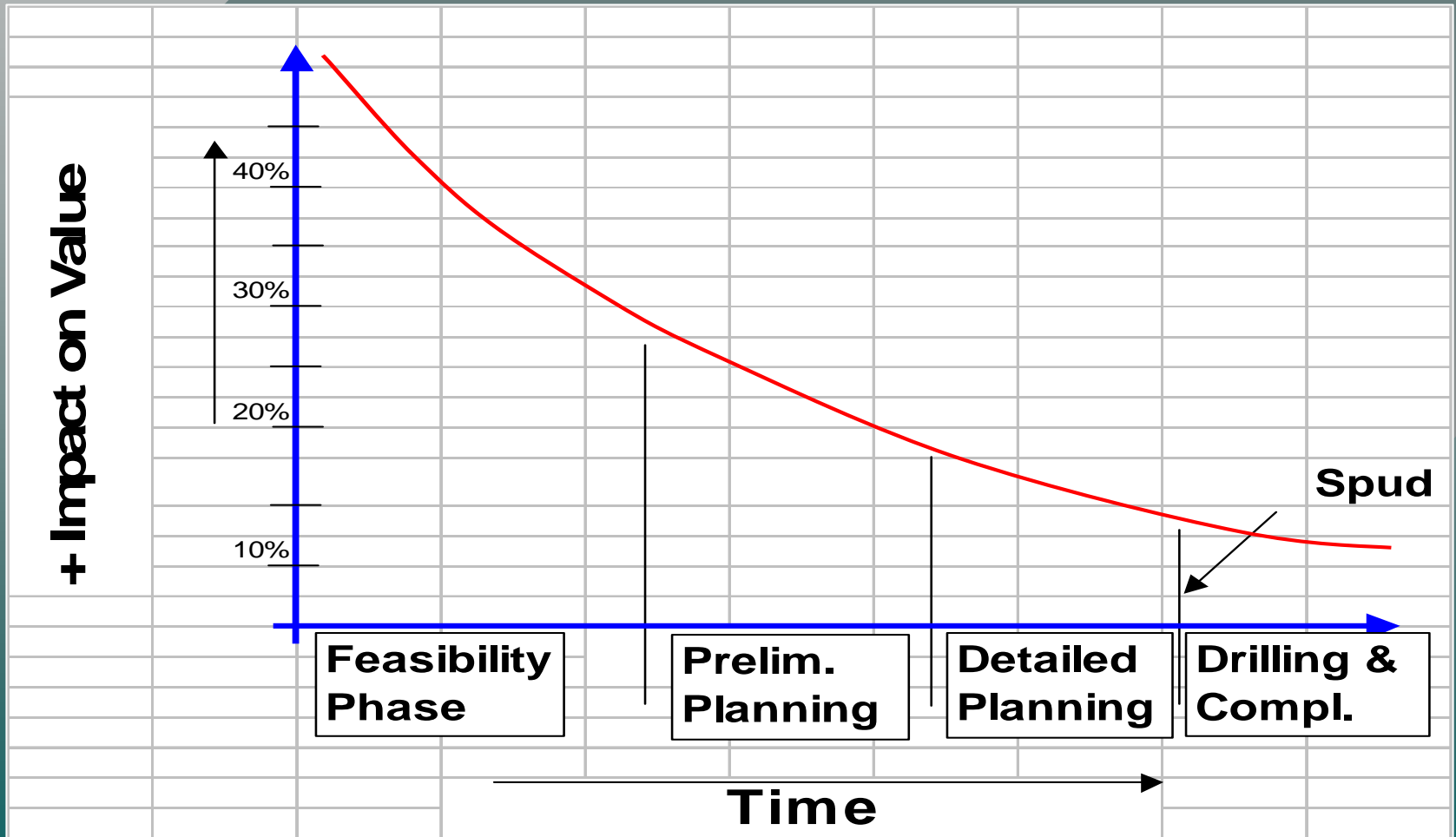
The Finder Well Concept to Maximise Exploration Budgets

- Design Exploration campaigns not just Exploration wells
- Regionally & Globally rank prospects according to potential & risk
- Determine the Vital Few Objectives of the well & design to satisfy only these
- Agree the design via a multidiscipline team then freeze design (avoid scope creep)

What's Required to Drill Finder Wells

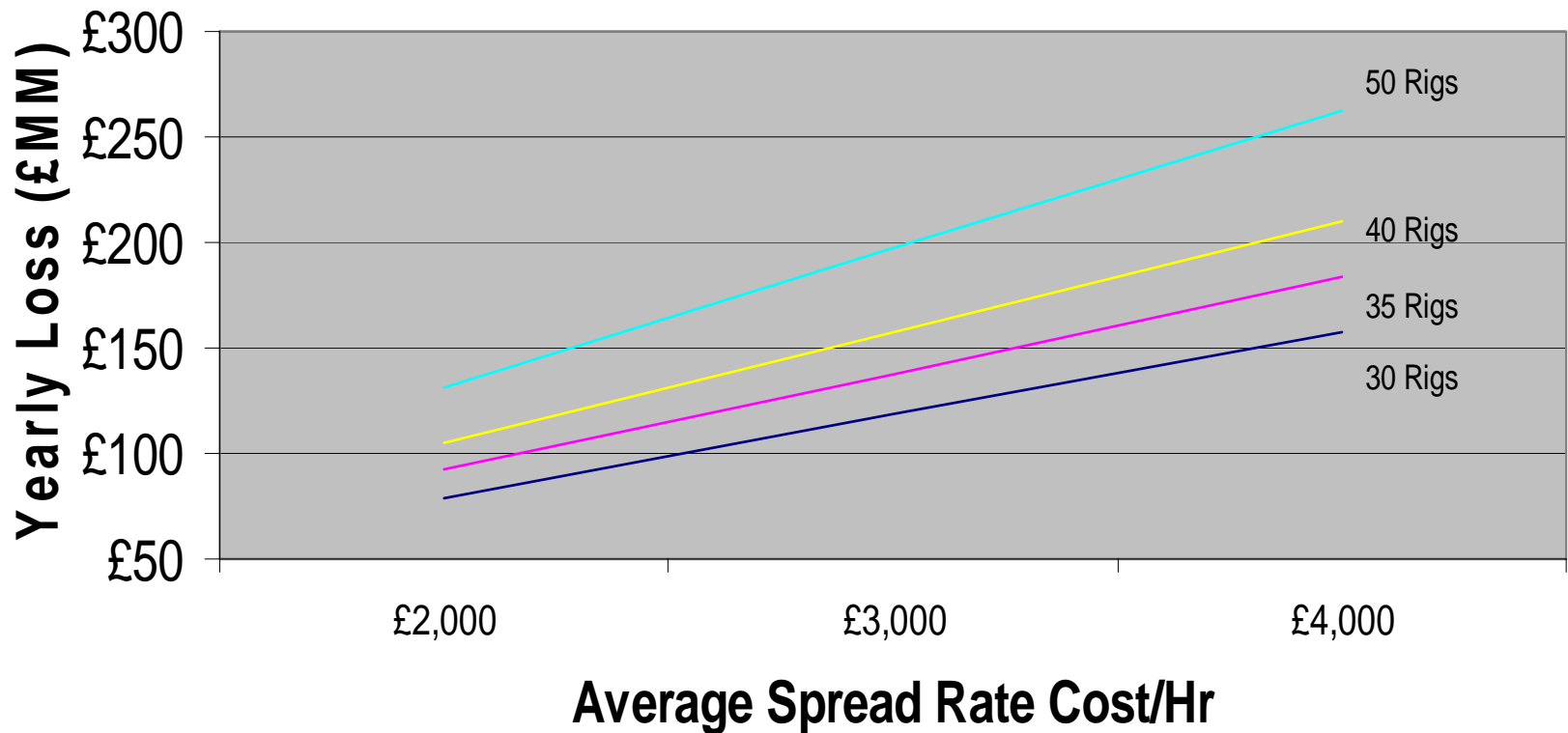
- A Change in Thinking
 - Explorer's who are driven to get the most from an exploration budget
 - Engineers who are ready to challenge convention
- Willingness to Work Together
 - Between Departments, Between Companies

How to Double the Value of Development Wells?



, but we can't ignore NPT

Yearly Waste w/15% Avg. Non Productive Time



Proper Planning Prevents Poor Performance

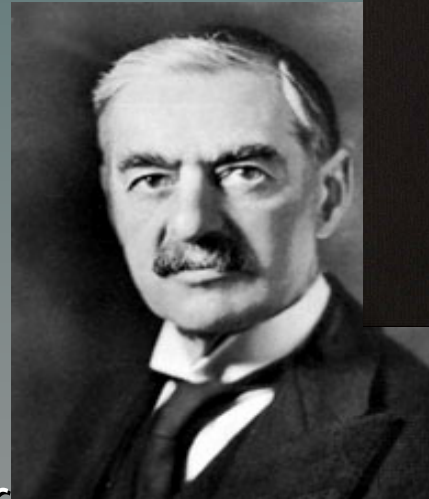
- Begin Planning With an Objective to Drill a High Value Well
- Understand Objectives: "The most expensive well you can drill is the one you don't need"
- Detail Planning to Minimise Wasted Time & Effort During Execution
- Sounds Good? How do we get there?

Doubling Development Well Value

- Each of us has a certain amount of knowledge
- *Most of us* recognize there are some things we don't know
 - We can manage this lack of knowledge by deciding to learn about them
- How Do We Manage the things that we don't realize that we don't know?

What Do These Individuals Have in Common?

- Neville Chamberlain, Prime Minister
- Ernst Lehman, Captain of the Hindenburg
- Jim Lovell, Commander Apollo 13
- Wylie E. Coyote



The Danger (& Opportunity) of the Things we Haven't Even Considered



The Development Wells Group Sought Ways to:

- Systematically decrease the knowledge gap - consider the things not considered
- Provide a framework for designing the right well, the first time
- Utilise & promote current decision making tools
- Promote innovation and use of new technology
- Drive life-of-well designs
- Provide a means to share & *utilise* well design best practices and lessons learned

The Well Decision Navigator -

- A cross-industry authored aid to:
 - To stimulate thinking early in the well planning stages
 - To eliminate low value wells.
 - Facilitate project understanding throughout a well team
- A Framework of Over 100 Questions focused on Well Planning & mapped onto simple 'off-the-shelf' software
- Links planners to industry web sites, data bases & best practices, focused on improving well value
- Documents WHY various design decisions were made not just WHAT was decided.
- An Assessment of Project Readiness

What Has Been Delivered & What's Next?

- Double Value Wells? No, Not Yet!
- Finder Wells & WDN: Stretching Drilling Budgets w/o cutting Contract & Serv. Co. profit margins
- WDN: a planning tool whose usefulness can continuously improve w/ industry use & contribution
- Want to see the WDN in action?
 - Download the WDN at <http://www.logic-oil.com> (Available June 8th)
 - LOGIC Conference, Aberdeen June 8, 9th- See the WDN in Operation

The WDN Team:

Ian Williamson, GMIS (Co-Chairman)	Dave Taylor, Amerada (Secretary)	Robert Johnson, TMX (Technical Author)	Malcom Pye, DTI	Anne Constant, Hallibuton	Paul Jeffs, Petrobras	Rob Gunn, Conoco
Bob Fennell, Transocean	Bill Fletcher, BHI	Andy Haas, Conoco	David Harrison, HRH	Adrian Jones, Transocean	Prof. Alex Kemp, U of A	Cameron Laing, ALOMAX
Mark Peacock, Shell	Simon Seward, Shell	Bill Pittman, KCA Drilling	Mike Redmond, HRH	Julian Roberts, Baroid	Peter Rowe, DTI	Richard Smout, Mobil

Peter Elkington, Reeves Euan Macinnes, Amerada Jim Stockley, CIECO