



Quantifying the Value of Digital Frac Data and Analysis Tools

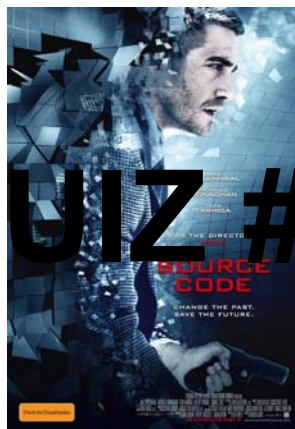
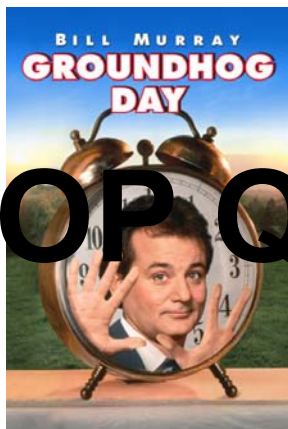
Presenter:

Melanie Popp, P.Eng., Director of Engineering, geoLOGIC systems ltd.

Spring 2018
Data & Analytics Showcase



What do these movies all have in common? Do overs! The story is told from 2 different perspectives.



POP QUIZ #1

Our competitors are running twice as much proppant as us and are getting much better results!

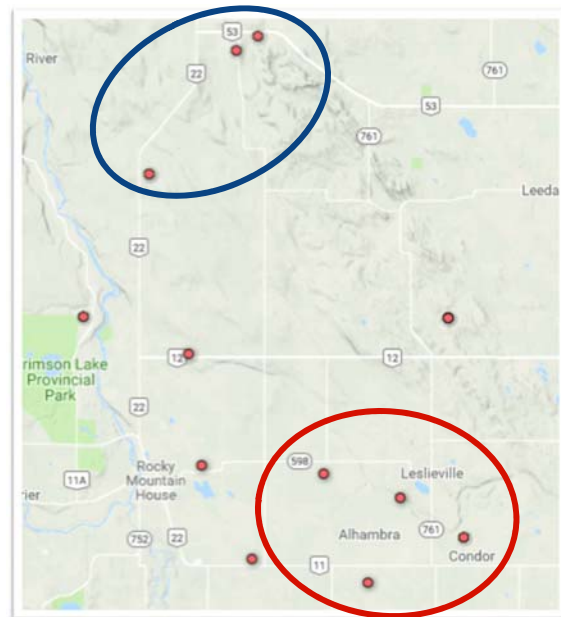
Scenario 1: Get the Data

- Used a free service to identify wells in the area
 - 2 of my company's wells are wrongly identified
 - Order additional 8 wells
- MONEY SPENT:
 - 8 tours x \$44.10/tour=\$352.80
 - 8 production reports x \$11.55/report = \$92.40
- TIME SPENT: 8 days of waiting



Scenario 1: Analyze Data

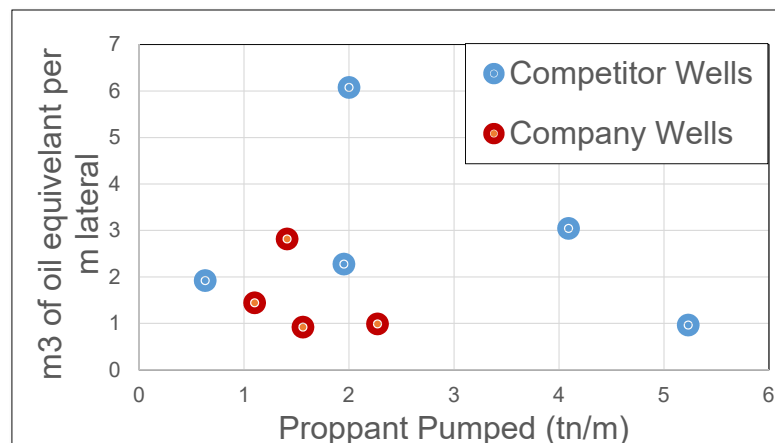
- Only 3 competitor wells
- TIME SPENT:
 - 2.5 hours/well calculating total proppant and stimulated lateral length
 - 2 hours/well calculating equivalent BOE/well
 - Additional 1 hour of analysis and presentation
 - Plot in Excel for a presentation to the boss



5

Scenario 1: Present Data

- No correlation seen between proppant pumped and well productivity
- Company is CONFUSED!



6

Scenario 1: No Data, Free Tools

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Spent \$445.20

8 days waiting

12 hours of Engineer's Time

No additional insights!

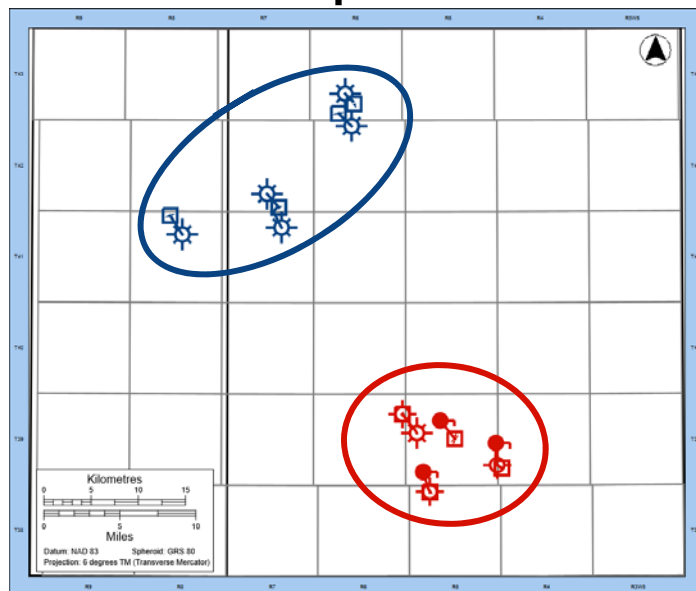


Source: <https://media.giphy.com/media/6GY01XQBk3IS/giphy.gif>

7

Scenario 2: Identify Wells & Get Completion Info

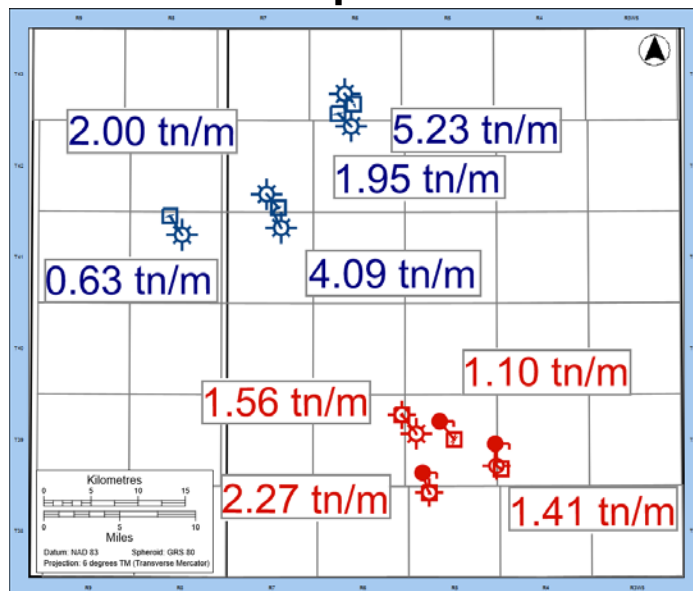
- Engineer quickly identifies and plots the **company wells** versus the **competitor wells**.



The map and wells are increased in size for illustration purposes.

Scenario 2: Identify Wells & Get Completion Info

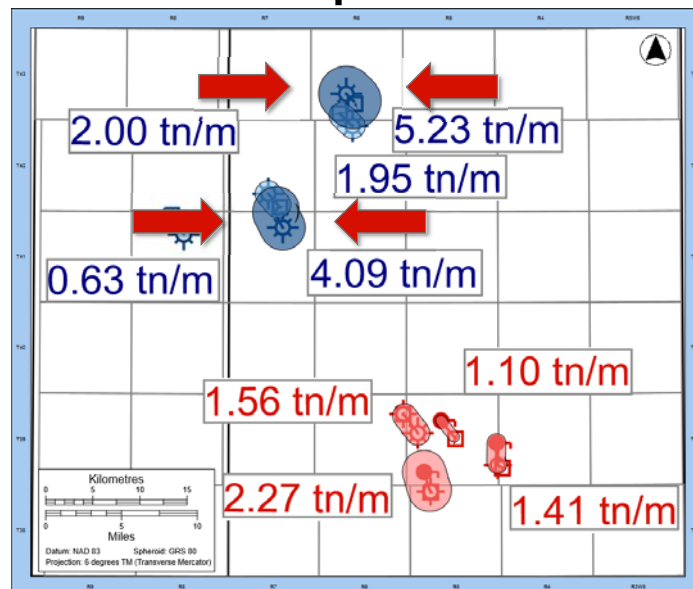
- Engineer quickly identifies and plots the **company wells** versus the **competitor wells**
- Adds average proppant ton/per metre values



Wells and postings are increased in size for illustration purposes.

Scenario 2: Identify Wells & Get Completion Info

- Engineer quickly identifies and plots the **company wells** versus the **competitor wells**.
- Adds average proppant ton/per metre values.
- Plots total proppant per metre in an elongated bubble along the wellbore.

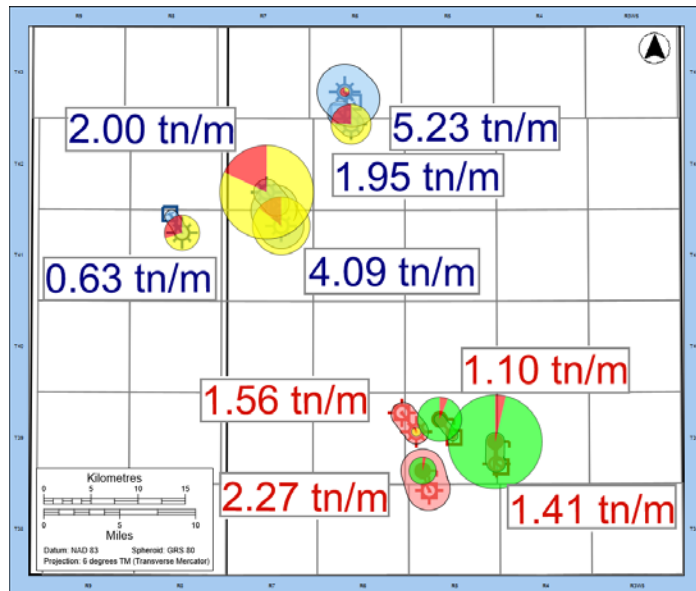


Wells and postings are increased in size for illustration purposes.

Scenario 2: Compare with Production

- First 6 months BOE does not correlate to having more production.

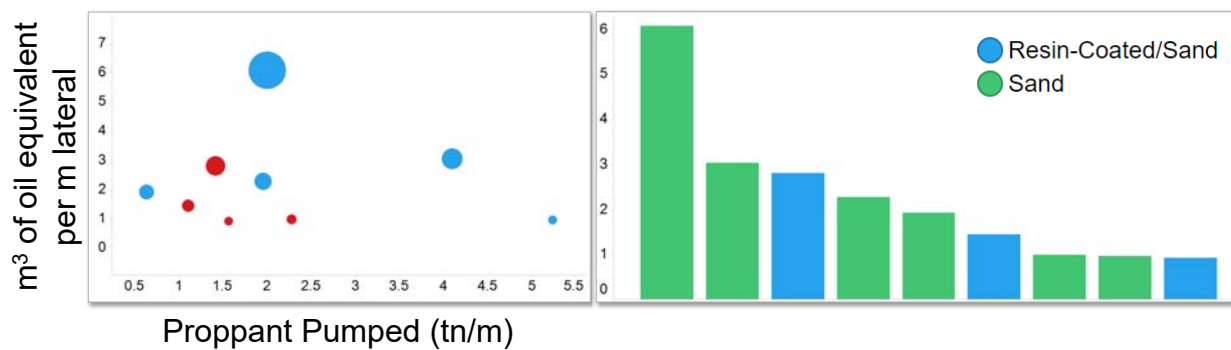
TIME SPENT:
10 minutes



Wells and postings are increased in size for illustration purposes.

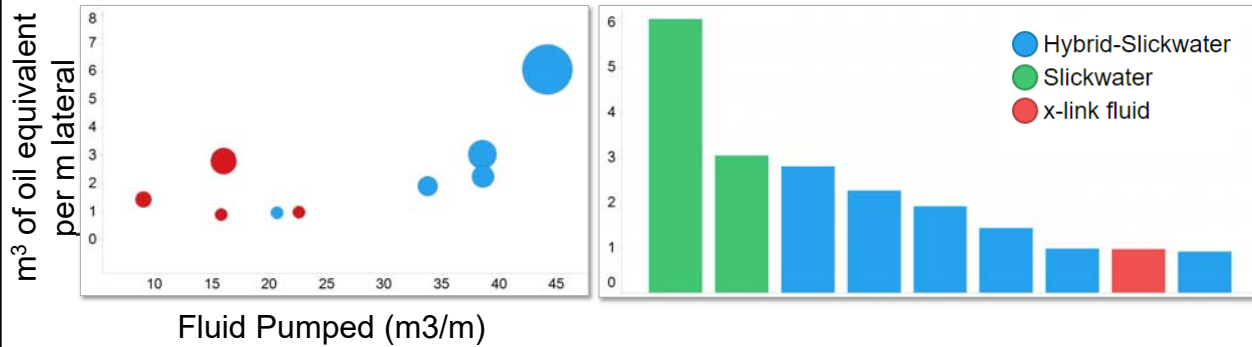
Scenario 2: Additional Analysis

- The assumptions previously made are held up when normalized on completed lateral length.
- There is no advantage to pumping higher strength proppants.



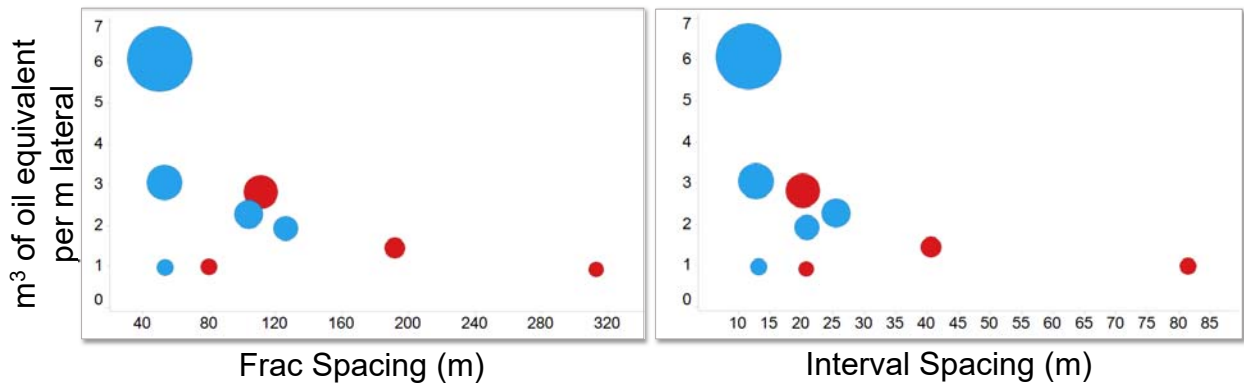
Scenario 2: Additional Analysis

- Slickwater fracs lead to the best 2 performers in the field.
- Volume of fluid pumped appears to be a stronger indicator than volume of proppant.



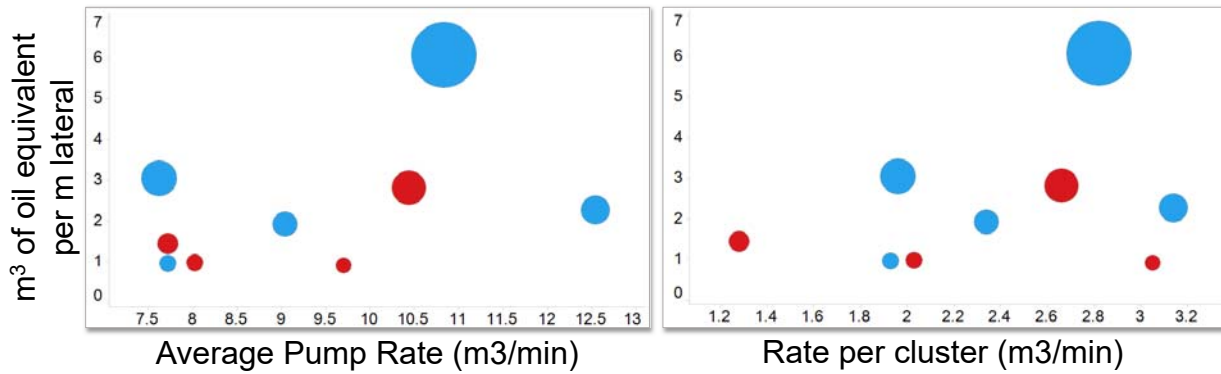
Scenario 2: Additional Analysis

- Reducing frac spacing leads to better performing wells.
- Production also enhanced by shortening interval spacing.

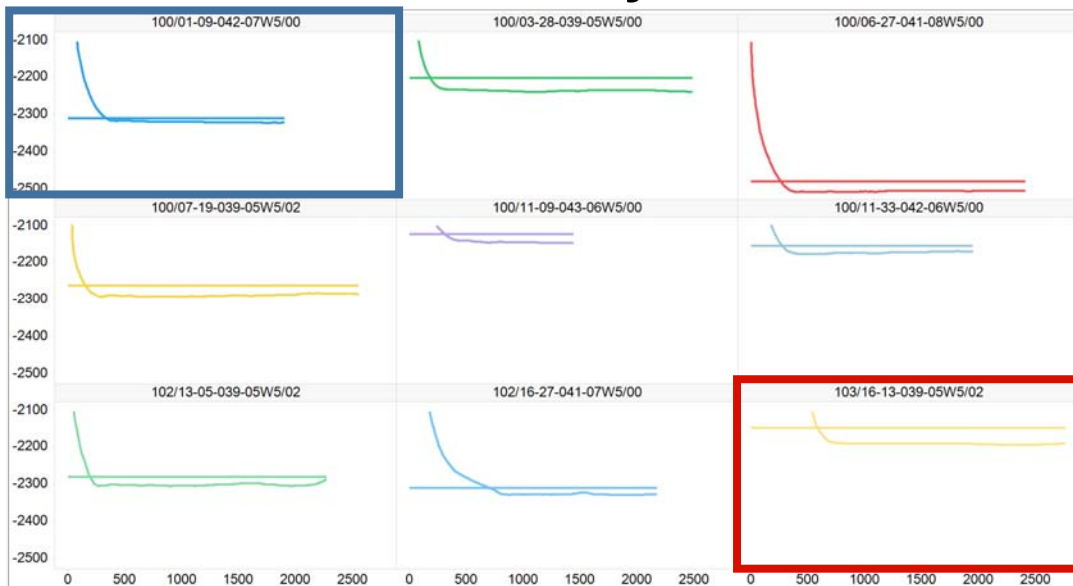


Scenario 2: Additional Analysis

- Increasing average pump rate per frac leads to better results.
- More rate per cluster also appears to help.

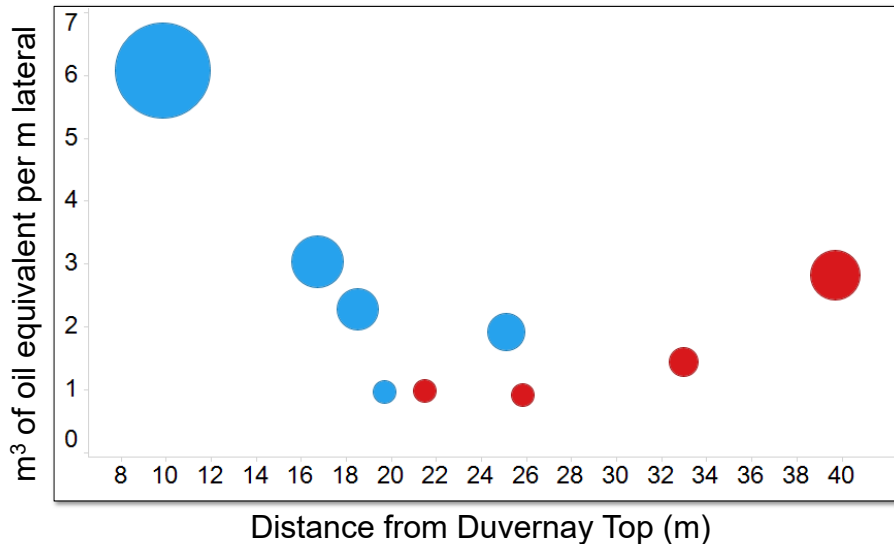


Scenario 2: Additional Analysis



Scenario 2: Additional Analysis

Wells are drilled in **completely different horizons**.



TIME SPENT:
2 hours

Conclusion: Quantifying the Value

Scenario 1:
No Data, Free Tools

Spent \$445.20

8 days waiting

12 hours Engineer's Time

No additional insights!

Scenario 2:
geoLOGIC Data and Tools

No extra costs!

No waiting

2 hours of Engineer's Time

Full analysis of completions technologies with geoLOGIC interpretation.

What do all these images have in common? They're all things you pay for that are time savers.



WHAT IS YOUR TIME WORTH?

- 1
- 2 **Your Order**
Shopper will select items as possible and make pickup in your order when you want it.
- 3 **Pick Up & Go**
Choose your pickup time and your order will be waiting when you arrive. We'll even load your groceries into your car for you.



Want More Information?



If you would like more information about geoLOGIC's Frac Analysis options, please contact Sales@geoLOGIC.com