



Cosmopolitan Development Project Cook Inlet, Alaska

February, 2017



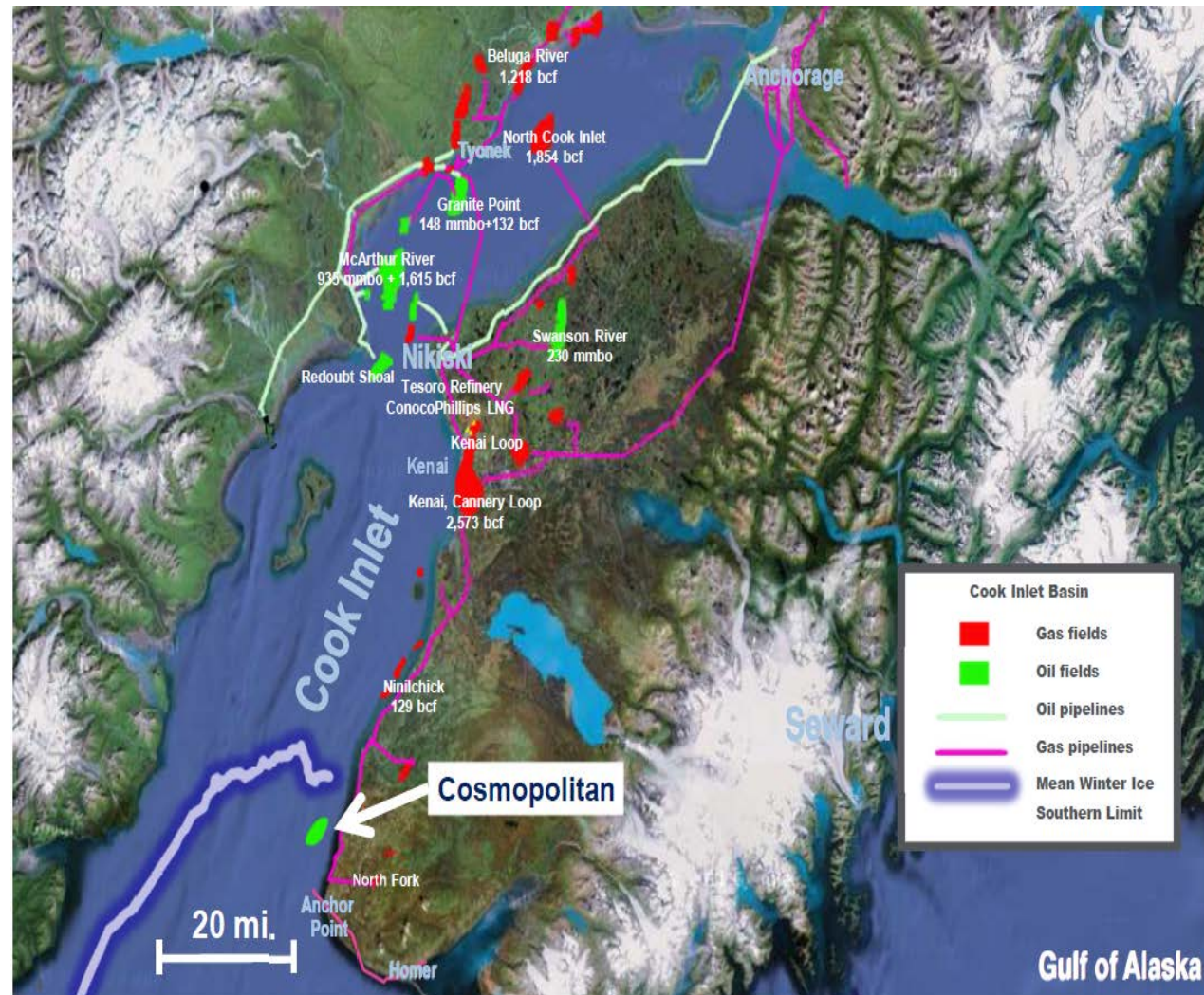
Business Overview

- **Small privately-held oil and gas development company**
 - Headquarters in Fort Worth, TX
 - Operation office in Anchorage, AK
- **Alaska experienced directors and management team**
- **Project located about six miles north of Anchor Point**
 - 100% lease ownership in Cosmopolitan Unit
- **Over \$350 million invested in Cosmo Unit to date**
- **Emphasis on personnel safety and environmental stewardship**

Project Overview

Asset Details

- Field located 3 miles offshore
- Extended reach wells drilled from shore
- Dual-lateral wells
- Hydraulic fracture stimulation
- Spud first well on Nov. 29, 2016
- 12K BLPD onshore processing facility
- Tyonek and Hemlock Formations; 24-27 API



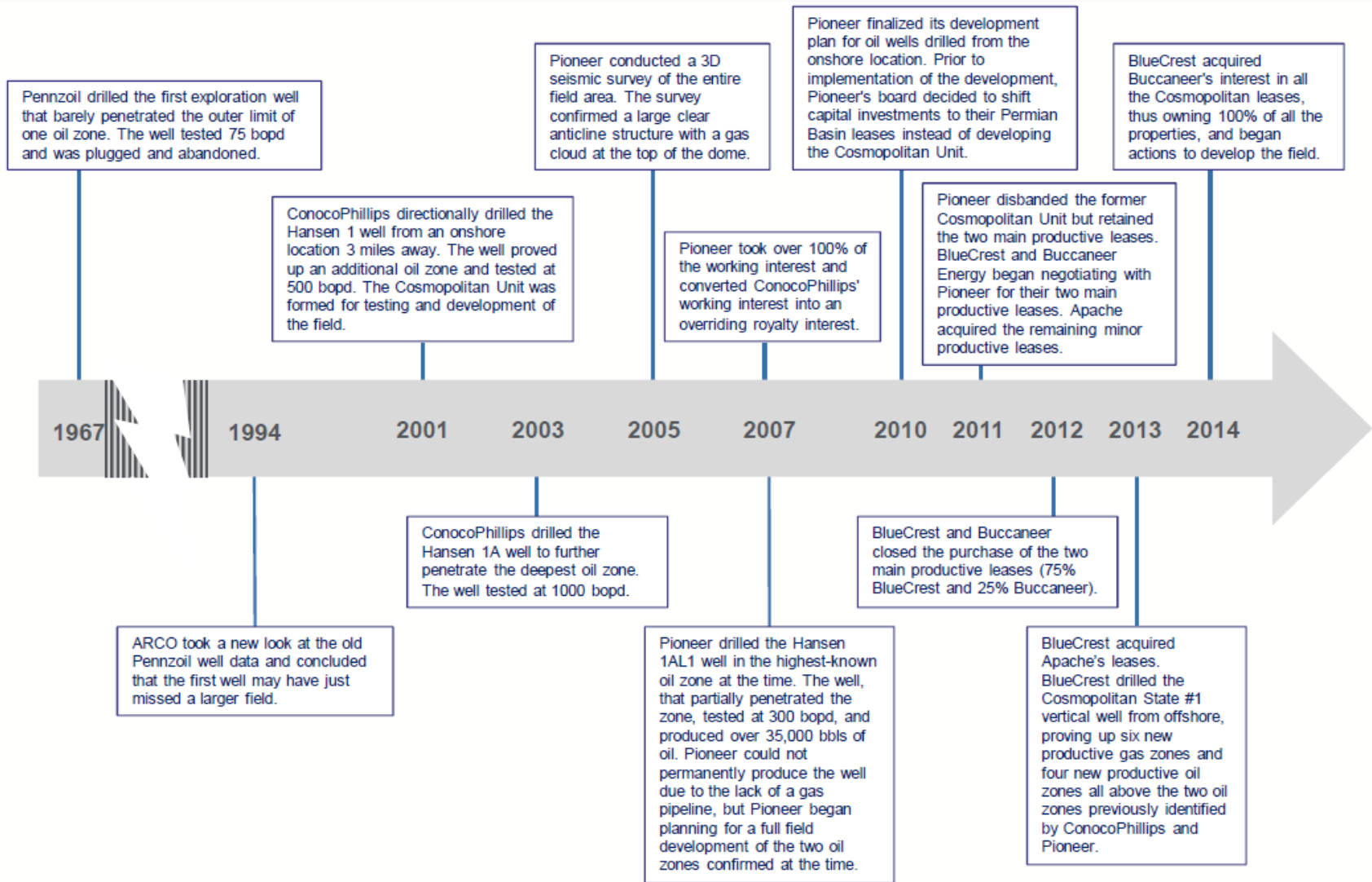
Hansen Production Facility



38 Acre Pad

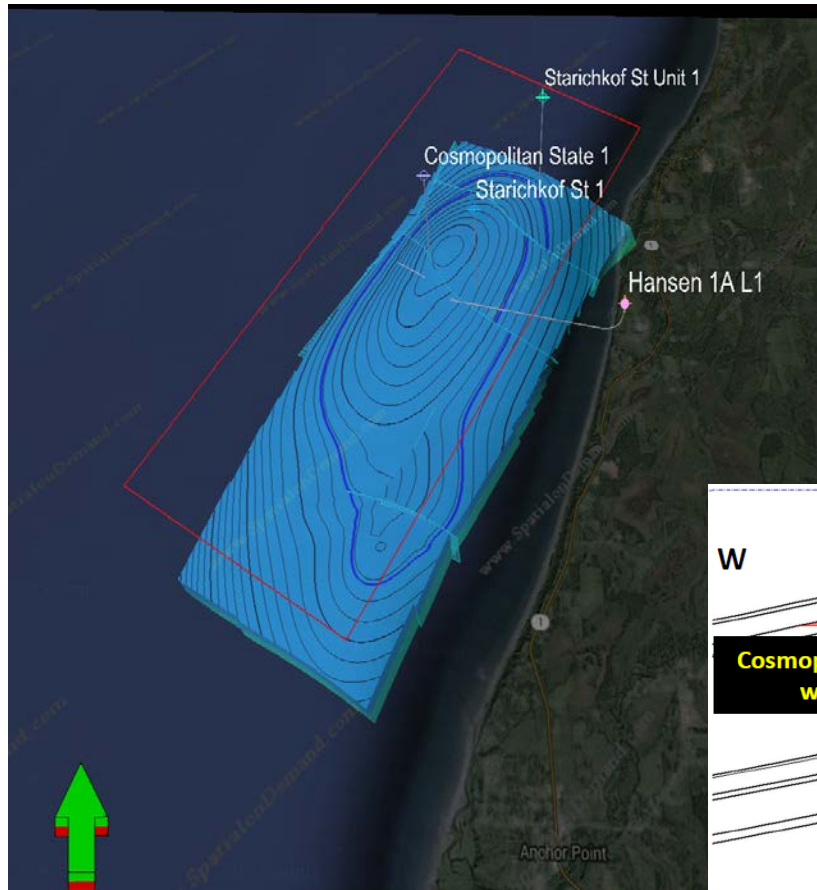


Cosmopolitan Field History

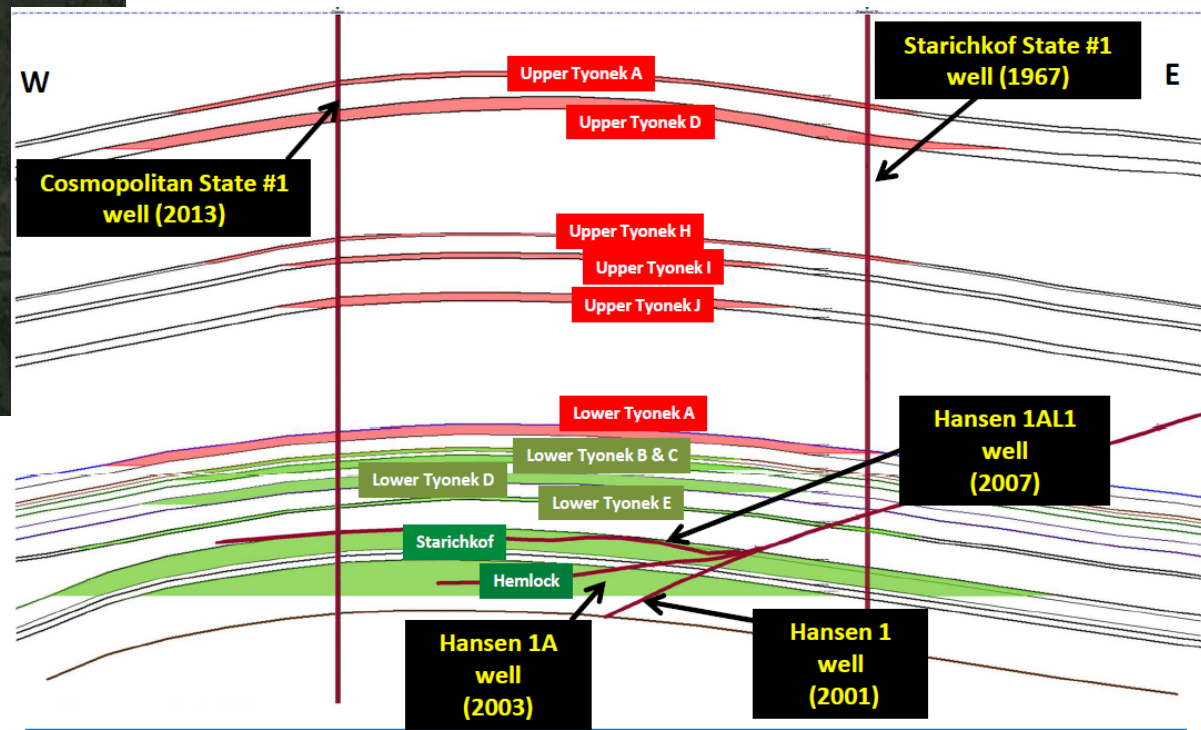


Geologic Summary

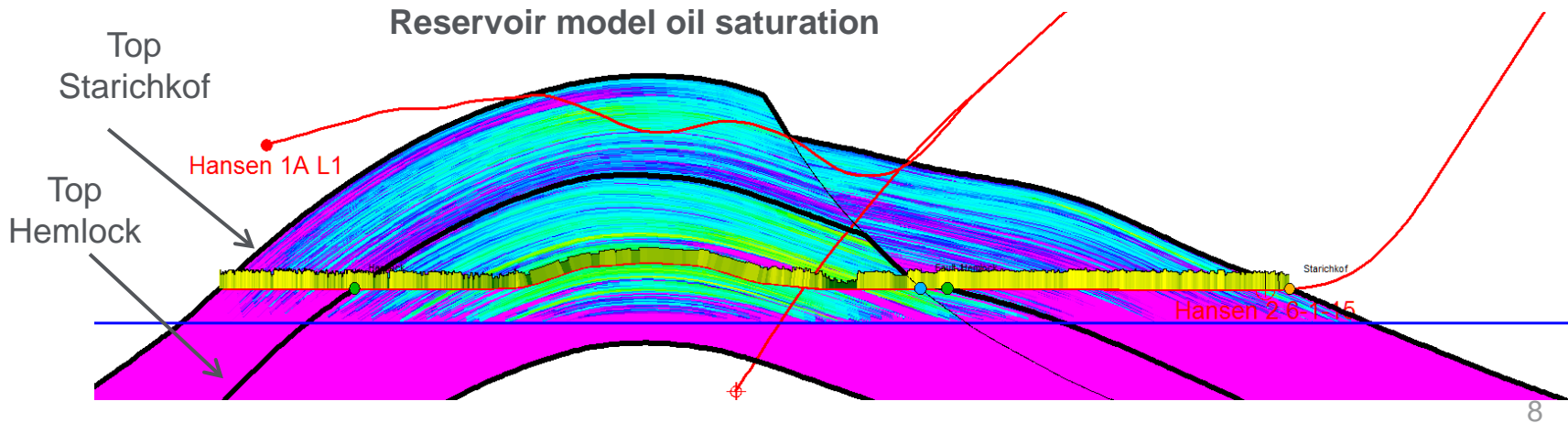
- Northeast-southwest-trending anticlinal structure
- Supported by local 3-D seismic and 6 wellbores
- Target Eocene-Oligocene Hemlock Formation and Lower Tyonek Formation
- Seal is the shale-rich member of the Tyonek Formation.
- Braided fluvial depositional setting with conglomeratic sandstone



Top of structure at 6400' TVDSS



Reservoir Engineering



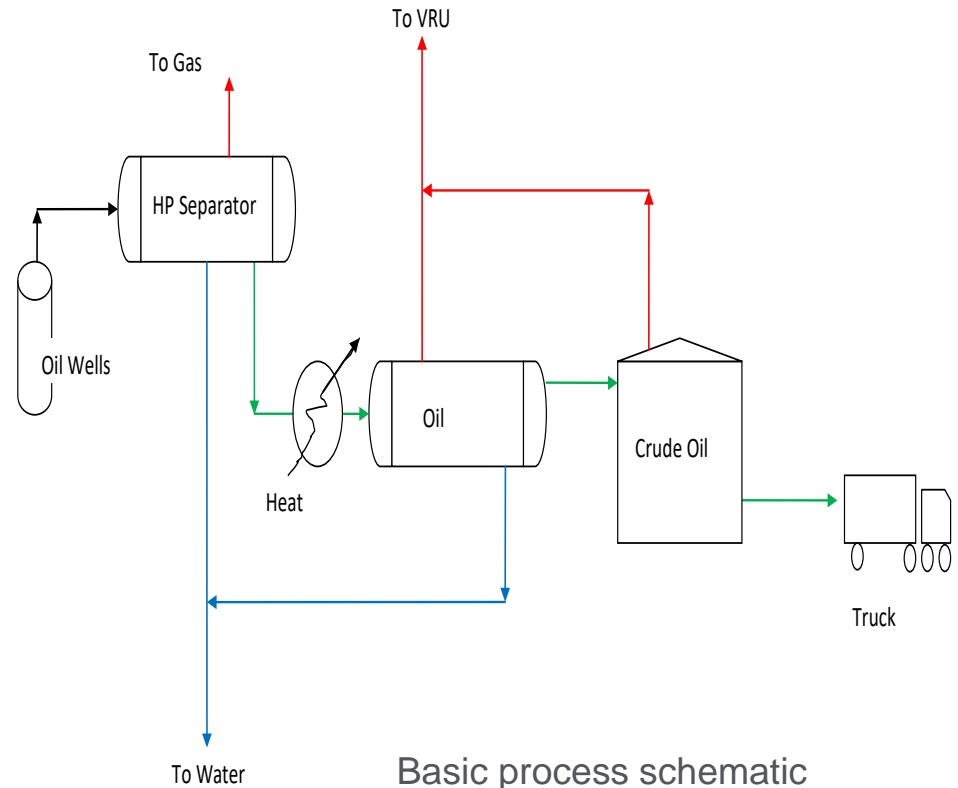
Reservoir Model

- History matched to well test data
- Used for field development planning and profile generation
- Reserves analysis
- Geocellular model with 549 layers with 1ft average thickness
- Upscaled to 42 layers (280K active cells)
- 7 subzones identified in the Starichkof and 14 within Hemlock
- Porosity 12-17%, permeability 3-14 md, Water saturation 40%

Processing Facility

Facility Summary

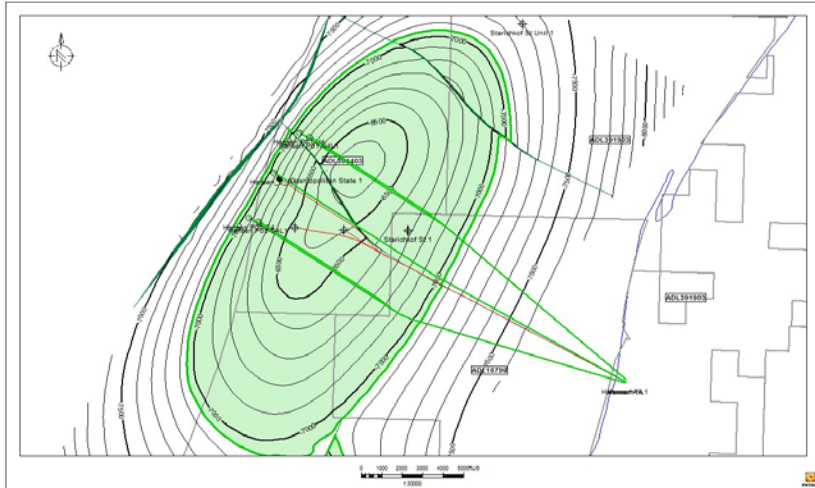
- Processing Facility Capability:
12,000 BLPD
12.5 MMSCFD
- 5000 Barrel Oil Storage Tanks,
2 Sales Oil Loading racks
- Sales Gas Pipeline
- Control room monitoring
- 50 man camp
- First oil sold April 2016



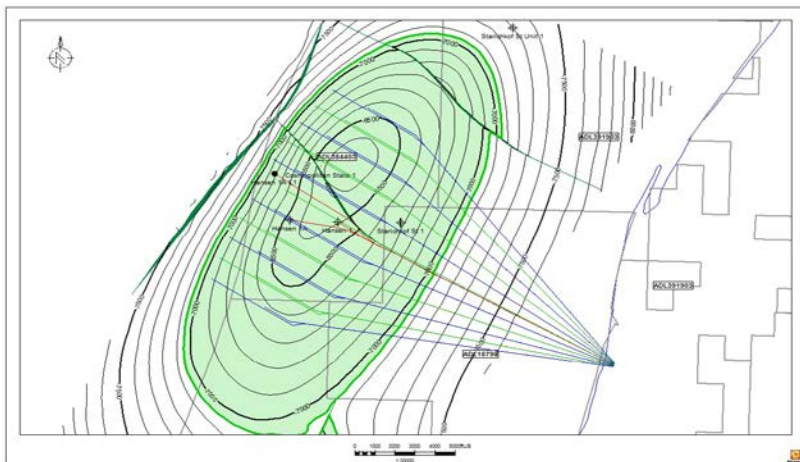
Plan of Development

Oil Development

Phase 1: 12K BLPD facility, 10 producer wells

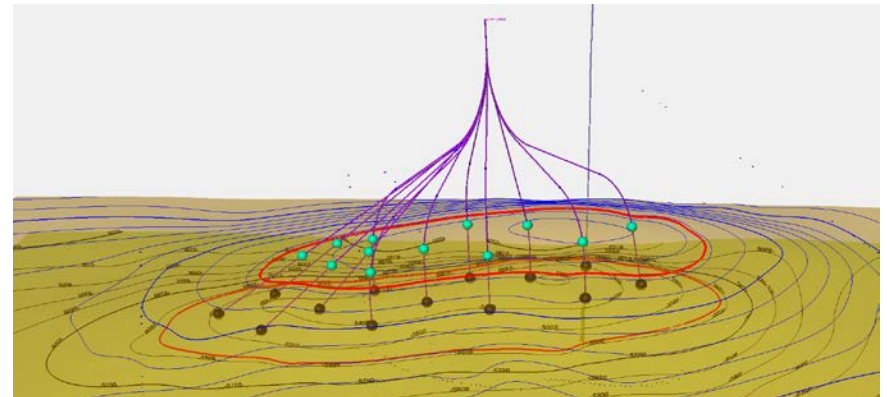


Phase 2: Additional infill drilling, waterflood

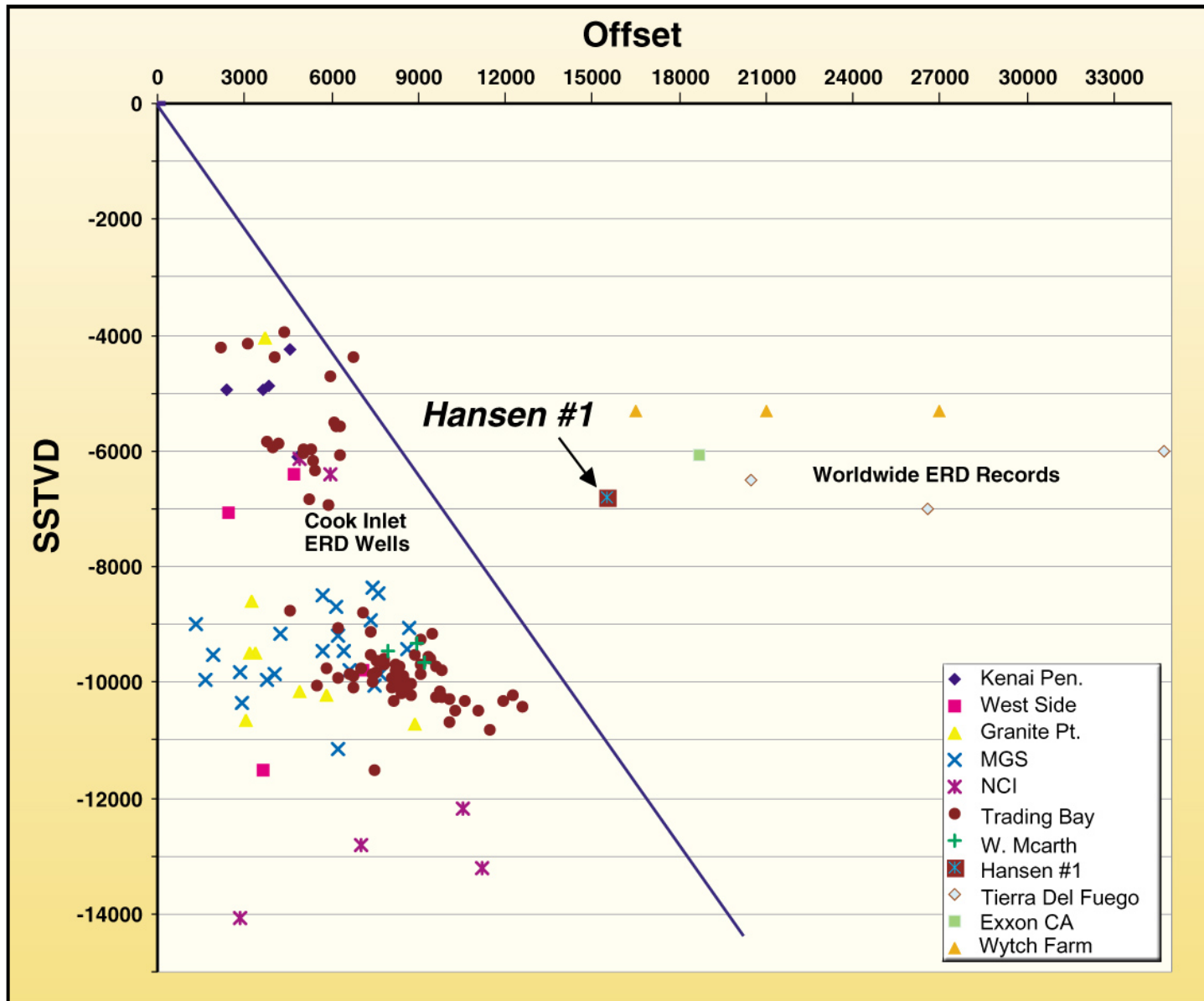


Expansion projects

- Train 2 additional processing capacity
- Lower Tyonek oil development
- Offshore gas development
 - Offshore prod platform
 - Tyonek gas sands
 - On hold pending tax credit continuation or reasonable alternative



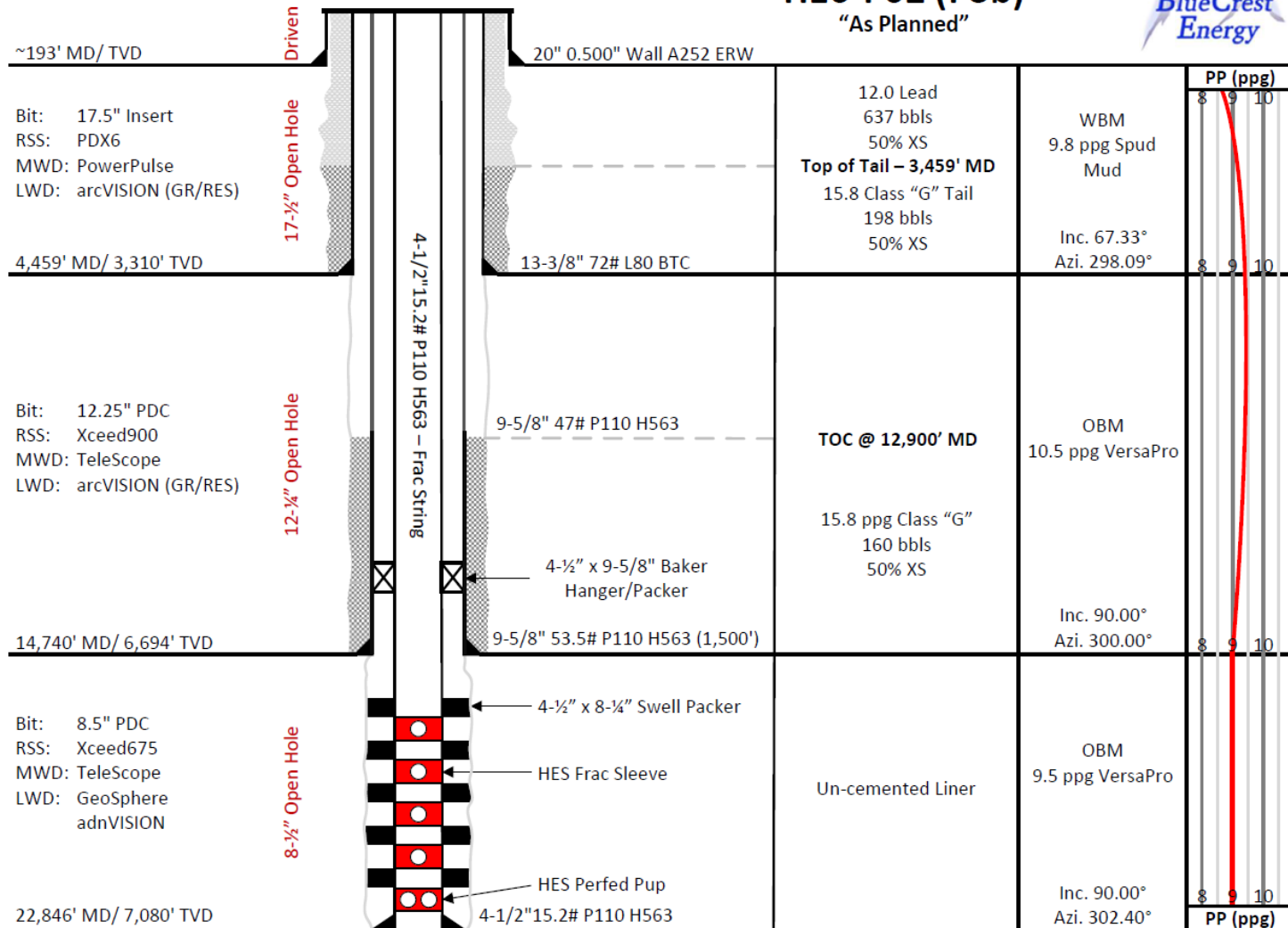
Drilling Challenges



Section Review

Last Updated: JIL 05/06/2016

H16-P02 (P3b) "As Planned"



Dual-lateral Well Schematic



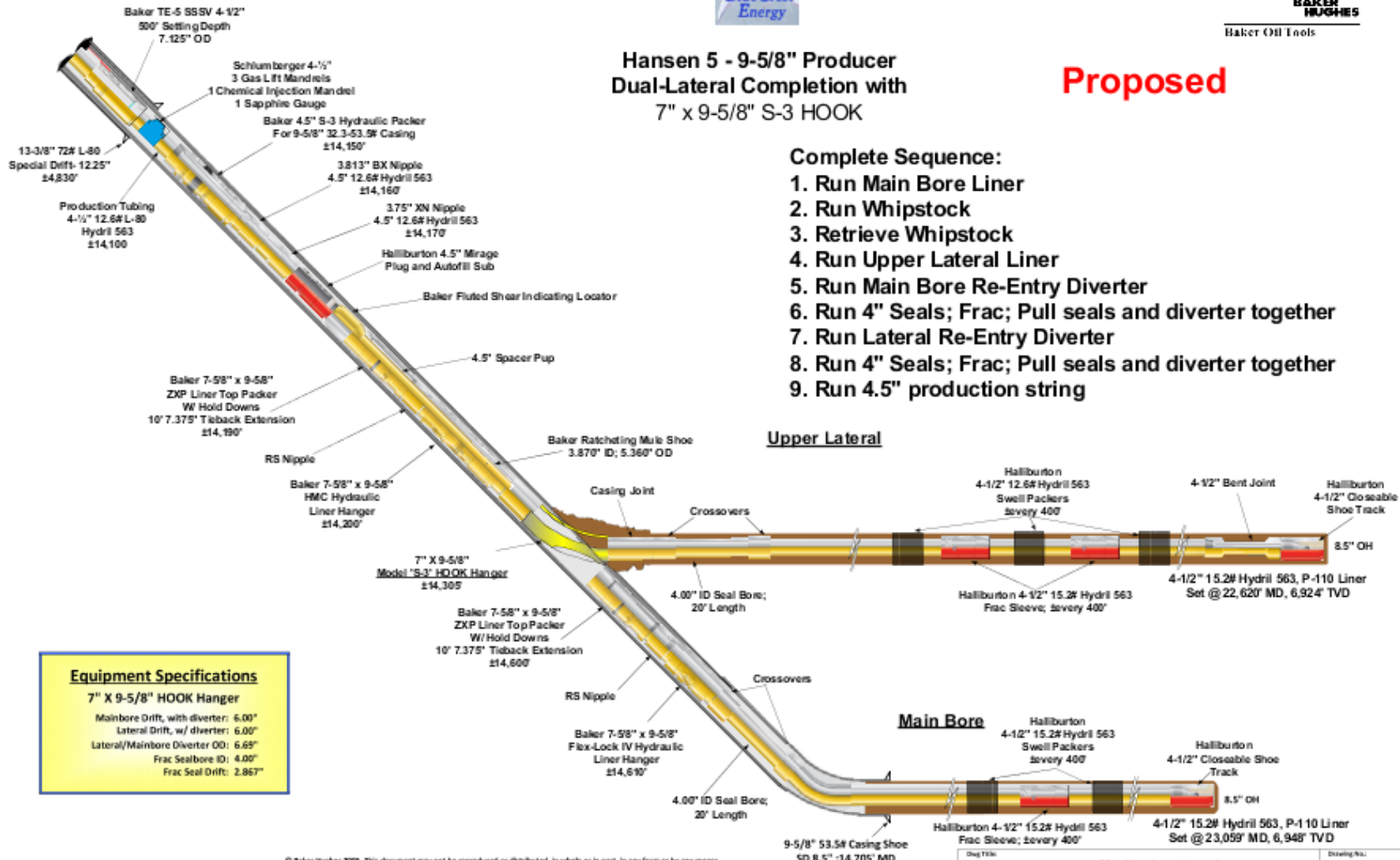
Baker Oil Tools

Hansen 5 - 9-5/8" Producer Dual-Lateral Completion with 7" x 9-5/8" S-3 HOOK

Proposed

Complete Sequence:

1. Run Main Bore Liner
2. Run Whipstock
3. Retrieve Whipstock
4. Run Upper Lateral Liner
5. Run Main Bore Re-Entry Diverter
6. Run 4" Seals; Frac; Pull seals and diverter together
7. Run Lateral Re-Entry Diverter
8. Run 4" Seals; Frac; Pull seals and diverter together
9. Run 4.5" production string



Equipment Specifications

7" X 9-5/8" HOOK Hanger

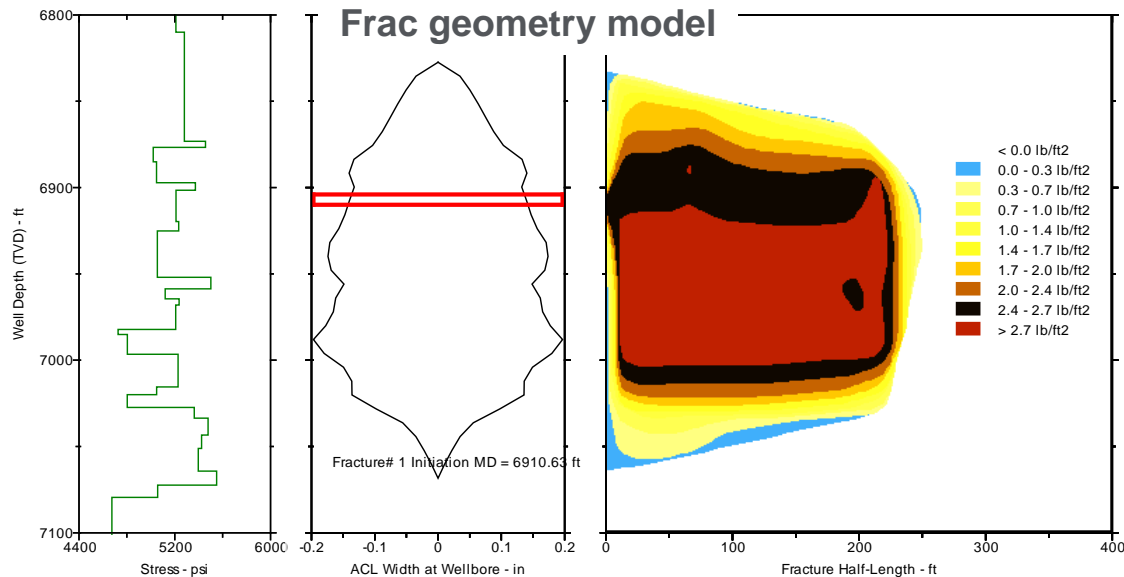
- Mainbore Drift, with diverter: 6.00'
- Lateral Drift, w/ diverter: 6.00'
- Lateral/Mainbore Diverter OD: 6.69'
- Frac Sealbore ID: 4.00"
- Frac Seal Drift: 2.867"

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Doc Title	Hansen 5 - 9-5/8" Dual-Lateral Completion - Producer	Drawing No.	
Doc	November 26, 2015	Drawn by	Joseph Nally
		Revision No.	Proposed 2
		Page No.	5
		Of	1



Stimulation Program Engineering Details



General Information		
No. of stages per well	17	
Fluid volume per frac stage	2000	bbls
Estimated frac pressure	4500-5000	psi
Max surf treatment pressure	8500	psi
Design height of fracture	200	ft
Design Fracture Half length	200	ft
Type of proppant	16/20	Carbolite ceramic
Volume of proppant per stage (avg)	220K	lbs

Community Outreach



- **Community input has influenced development plans**
 - Water wells won't be drilled to avoid impacts to private wells
 - 14-foot berm around entire pad for light and noise mitigation
 - Emergency Evacuation Notice System to Neighbors
 - Directional LED Lighting
- **We encourage feedback and local engagement**
- **Local hire preference as project develops**
- **Multiple community meetings**
 - Ninilchik, Homer, Anchor Pt.



Cosmopolitan Offshore **Gas** Development

- Entire offshore gas development is now on hold, pending confirmation of future tax credit program.



Questions?

Back Up

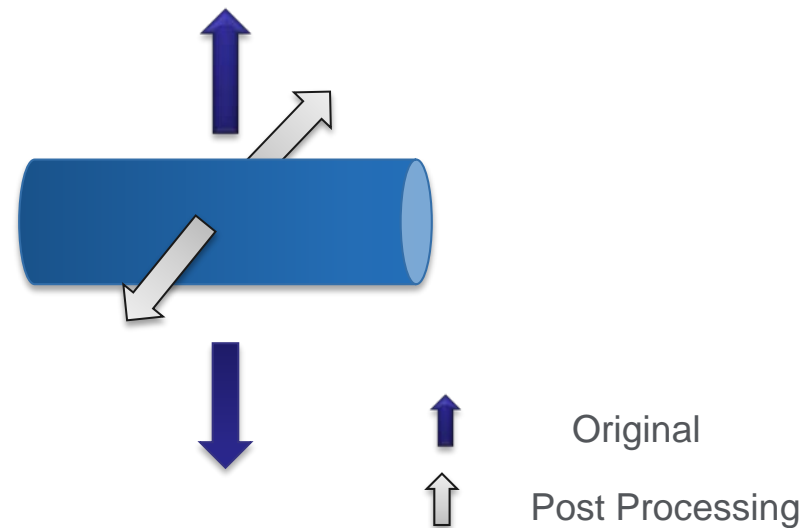
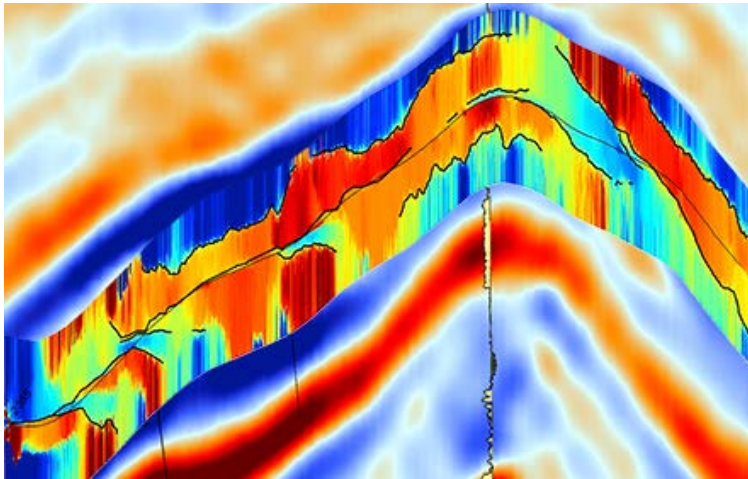


Reservoir Mapping



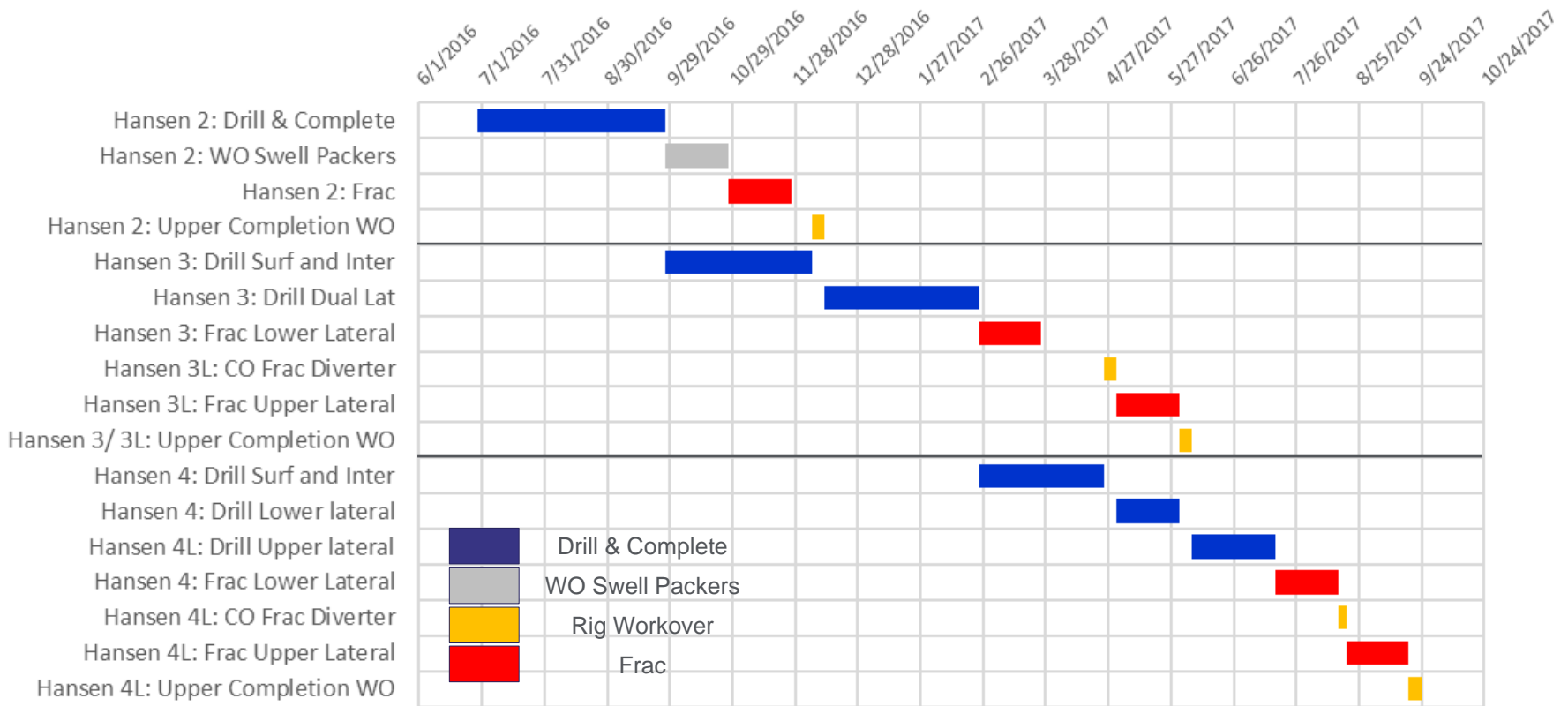
GeoSphere

- Deep Directional Resistivity Measurements
- 100' Depth of Investigation
- Post processing azimuthal shifting



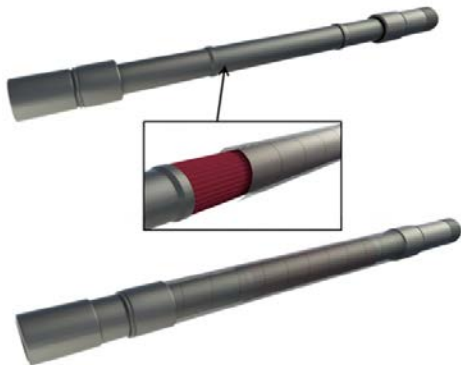
Three Well Drilling & Frac Schedule

Cosmopolitan Project Schedule

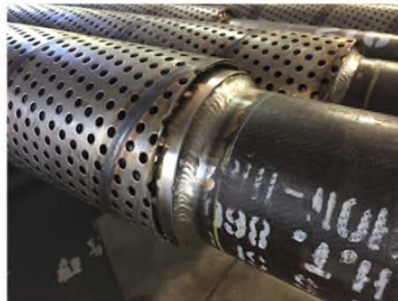


Tracer technology

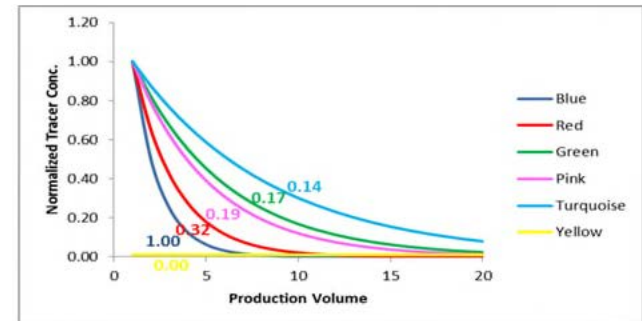
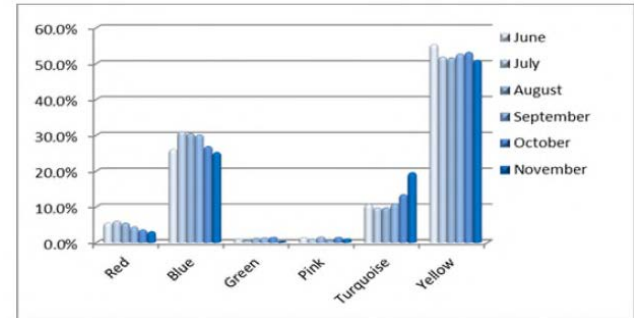
- ▶ Tracers are installed at each frac sleeve
- ▶ Concentration is recorded through sampling at surface
- ▶ Analysis is performed after each sampling period
- ▶ Used widely on North Slope – COP, BP, ENI, Caelus



Tracer carrier design



Analysis



Well Position	Comparative Slope	Comparative Flow (bbl/d)	Flow Contribution (bbl)	% Flow
Red	0.32	142	808	18
Blue	1	444	666	55
Green	0.17	76	222	9
Pink	0.19	84	146	10
Turquoise	0.14	62	62	8
Yellow	0	0	8.8	0

