



TRIAL OF NEW GROUNDBIRCH EXECUTION MODEL

Feb 25 , 2015

Andrew Chen, P&T Projects

OPPORTUNITY

- At Gundy D-66-I exploration wellpad, an opportunity to trial a new mechanical contractor, Propipe Group
- Driven by need to reduce HSE exposure and shorten time needed to tie-in wells (faster production)

PROPIPE EXECUTION MODEL

- Propipe executes all projects with the same approach whether it's a well pad or a gas plant.
- Through use of a 3D model, they shop fabricate 100% of pipe and structural steel supports. The only welding required on site is capping piles, setting structural steel and installation of equipment packages. There is less than 1% rework.
- To ensure the accuracy of the model, as-build site surveys are done and visits are made to equipment vendors to obtain "As Built" measurements for all tie in locations. This information is then imported to the model prior to running isometrics for shop fabrication.

BENEFIT OVER TRADITIONAL CONSTRUCTION

PRACTICE

- Shop hydro testing thus no requirements for water on-site or fluid disposal and transport
- Welding in controlled environment vs site set up (i.e. tent, NDE, inspection & scaffolding). Propipe can run two 10 hr shifts, 6 days a week
- Shop Fab leads to greater cost control and schedule certainty (reduces risk of weather related delays)
- Crews required for just bolt up are much smaller and are predominantly pipefitters vs welders
- Less site time leads to cost savings associated with field crews, travel time/subsistence, inspectors and site infrastructure
- Minimizes HSE Risk, i.e. smaller crews, less time on site and less vehicle travel

COMPARISON

- C-31-H Traditional Construction (3 well pad)
 - 1st Phase Build (after drilling) = 20 days onsite
 - 2nd Phase Build (post completions) = 4 days onsite
 - Total 24 days onsite
 - 8 days onsite per well

- D-66-I Propipe Build (2 well pad)
 - Single Phase Build (post completions) = 9 days onsite
 - 4.5 days onsite per well

