



Learning Event



Failure of Lifting Equipment

Hazard

Lifting / Loading / Unloading

led to

Unwanted Event

Failure of Lifting Equipment

Description

When lifting a Frac Valve from the wellhead, one of the top lifting eyes sheared at the bolt causing the valve to swing sideways slightly. The valve stayed suspended held by the remaining 3 chains and was lowered to the ground in a controlled manner.

Nobody was injured. The only resulting damage was the sheared bolt on the lifting eye.

The lifting operation used the blocks of the rig with 10mm 4-leg chain attached to the top of the valve. A loader was also used with a chain and soft sling attached to the bottom of the valve. The intention was to lower the valve to the ground horizontally.



Risk Event Statement

Due to deficiencies in lift planning or equipment inspection, failure of lifting equipment may occur which could lead to personnel being exposed to dropped/uncontrolled suspended loads potentially causing serious injuries or a fatality.



Habits

- ✓ Exclusion zones properly defined and maintained.
- ✓ Plan in place to ensure no need to walk/work under suspended load.
- ✓ Lifting gear carefully checked by crew on site prior to lifting.
- ✓ Job stopped when identified that current tags were not available.
- ✗ Inspection tags not current on original lifting eyes.
- ✗ Replacement lifting eyes of different style than original - lifting plan not revised accordingly.
- ✗ Equal load distribution not maintained across all lifting points.



Learnings

- Rigging angles were not maintained within prescribed angles for the type of lifting eyes being used.
- Chain hooks were connected directly onto lifting eyes (adequate shackles not used) resulting in lifting points being pulled in the wrong direction/plane.
- When the two ends of the load (top & bottom) are simultaneously lifted/pulled by separate equipment (rig & loader) the SWL of individual lifting points may be exceeded.



Considerations

- Verify all equipment to be used for lifting & hoisting has been inspected, maintained & certified by a competent person & in accordance with the corresponding asset management procedure.
- Ensure that a specific lift plan is developed for all non-routine lifts, including complex & heavy lifts. When developing lift plans, all relevant parties must be involved/consulted including not only supervisors & operators, but also equipment supplier/owner.

Could this happen to you?

- Are you & your crew in charge of, or involved with, any lifting operations at your work site? What are they?
- What resources & controls are available at your site to ensure that all lifting equipment is properly inspected, maintained & certified?
- Are you & your team members trained on, & familiar with, how to prepare & develop adequate lift plans?
- What resources & controls are available at your site to make sure that people understand & comply with exclusion zones?