

Well Control Methods – Day 2

1. **The well has been shut in on a kick and the kill operation has not started.**

Shut in drill pipe pressure	500 psi
Shut in casing pressure	700 psi

After stabilization, both pressures begin increasing due to gas migration. If the casing pressure is kept constant at 700 psi, what will happen to the bottom hole pressure?

- A. Increase
B. Decrease
C. Stay the same
2. **A gas kick is being circulated along the horizontal section of the hole. What will happen to the active mud pit volume if the correct kill procedure is being followed?**
- A. Increase as the kill mud is displaced into the horizontal section of the hole
B. Decrease as the kill mud is displaced into the horizontal section of the hole
C. Remain approximately constant
3. **If no action is taken, what can happen if gas migration occurs in a shut in well?**
- A. BHP will decrease
B. Possible formation fracture due to excessive pressure
C. The volume of gas will increase due to expansion
D. BHP will remain constant
4. **A kick has been swabbed in while tripping. Which of the following is an indication that the influx is below the bit and that stripping to bottom will be required?**
- A. The SIDPP is higher than SICP
B. The SIDPP is lower than SICP
C. The SIDPP is equal to SICP
5. **Under which circumstance would the Wait and Weight Method provide lower equivalent pressures at the casing shoe than the Driller's Method?**
- A. The pressures at the casing are the same regardless of the kill method used
B. When the drill string volume is more than the annulus open hole volume
C. When the annulus open hole volume is less than the drill string volume
D. When the drill string volume is less than the open hole volume

- 6. You are currently circulating a gas influx out of the well using the Driller's method. What should happen to active pit level volume during the circulation?**
- A. The active pit level should increase due to gas expansion then decrease as gas is circulated out of the well
 - B. The active pit level should increase due to gas expansion then stay constant as gas is circulated out of the well
 - C. The active pit level should decrease due to gas expansion then increase as gas is circulated out of the well
 - D. The active pit level will stay constant
- 7. Why is it important to kill the well at a reduced pump rate?**
- A. To prevent the casing from collapse
 - B. To prevent the casing from bursting
 - C. To minimize the effects of annular pressure loss while circulating
 - D. To prevent a mud pump failure
- 8. During the Wait & Weight kill procedure, how do you maintain constant bottom hole pressure when kill mud is being pumped down the drill string?**
- A. Follow the correct drill pipe pressure schedule
 - B. Maintain drill pipe pressure constant
 - C. Maintain casing pressure constant
 - D. Maintain kill line pressure constant
- 9. What is the main objective of the Wait and Weight Kill Method?**
- A. Displace both the drill string and annulus with kill mud in a single circulation
 - B. Displace both the drill string and annulus with original mud weight
 - C. Remove entire influx during first circulation, kill well during second circulation
 - D. Circulation begins immediately, not allowing time for gas to migrate up the well
- 10. During a kill operation on a surface BOP stack, the pump rate is reduced while maintaining drill pipe pressure constant. How will this affect Bottom Hole Pressure (BHP)?**
- A. BHP will increase
 - B. BHP will decrease
 - C. BHP will stay constant
- 11. Which statement best describes the Volumetric Method?**
- A. Maintains constant pressure inside the influx as it is allowed to migrate up the well
 - B. Maintains constant bottom hole pressure as the influx migrates up the well
 - C. Allows uncontrolled migration of the influx up the well
 - D. Should only be used when the influx is saltwater

12. What is the main objective of the lube and bleed method?

- A. To increase surface pressure by controlling gas migration
- B. To increase mud density in the well and force the influx back into the formation
- C. To reduce surface pressure by removing dry gas
- D. To reduce surface pressure by increasing hydrostatic pressure and removing dry gas

13. After completion of a well kill operation, what is the correct procedure to check for trapped pressure?

- A. Open the well on the choke manifold, bleed until pressure is 0 psi, shut the well back in, and observe the pressure response. If the well is underbalanced, pressure will build up; if the pressure that was bled off was trapped, pressure will remain the same
- B. Bleed a small amount of pressure from the choke and shut the well back in. Then observe the pressure gauge. If the well is underbalanced, pressure will build up; if the pressure was trapped it will remain the same
- C. Open the well on the choke manifold, bleed until pressure is 100 psi, shut the well back in, and observe the pressure response. If the well is overbalanced, pressure will climb; if the pressure that was bled off was trapped, pressure will decrease
- D. Close the choke and observe pressures. Do not bleed pressure

14. Which procedure below could be used to find the correct SIDPP if a kick is taken with a float in the drill string?

- A. Begin pumping very slowly. When the drill pipe gauge starts to move, stop pumping. That is the SIDPP
- B. Pump slowly down the drill pipe until SICP starts to increase, then stop pumping. The drill pipe pressure reading minus casing pressure increase is the SIDPP
- C. Bring the pumps online using the correct start up procedure, then allow time for the pressures to stabilize. The drill pipe pressure reading is the SIDPP.
- D. Bring the pump up to 30 SPM while keeping the casing pressure constant with the choke. When the pump rate and the casing pressure are stable, the circulating pressure will be the SIDPP.

15. A 500 foot long cement plug is set up inside the casing shoe. The mud in the hole is to be displaced to a new mud density. Formation pressure below the cement plug is equal to 11.8 ppg equivalent mud weight.

New mud density = 12.8 ppg
Top of cement plug = 8200 feet

If the plug failed and allowed pressure to pass between the top and the bottom of the plug, what would most likely happen to the bottom hole pressure?

- A. Increase BHP
- B. Decrease BHP
- C. BHP would stay the same

Subsea

16. **What is a reason for measuring Choke Line Friction (CLF) pressure?**
- A. To determine how much to allow casing pressure to increase at the start of a kill operation
 - B. To determine how much to allow drill pipe pressure to increase at the start of a kill operation
 - C. To determine if the choke and kill lines should be used during the kill operation
 - D. To help determine possible pressure increase during the final stages of a well kill
17. **On a subsea rig, which of the following practices will create the highest Bottom Hole Pressure?**
- A. Circulate down the drill string and take returns up both the choke and kill lines
 - B. Circulate down the drill string and take returns up the choke line
 - C. Circulate down the kill line and take returns up the choke line
 - D. Circulate down the kill line and take returns up the riser
18. **What gauge is used to identify the correct choke line friction (CLF) pressure?**
- A. The same drill pipe pressure gauge that is used to take the slow circulating rate pressure
 - B. The casing pressure gauge on the choke panel
 - C. The casing pressure gauge on the driller's panel
 - D. The drill pipe pressure gauge on the driller's panel
19. **A subsea rig has shut in the well on a kick. The choke line is filled with drill water.**
- | | |
|------------------------------|------------------|
| Well Data: | |
| Choke line length | 4200 feet |
| Weight of drill water | 8.3 ppg |
| Mud weight | 12.3 ppg |
| SICP | 1430 psi |
- Before starting the kill operation the choke line is displaced to 12.3 ppg mud.**
- What will be the new SICP?**
- A. 1030 psi
 - B. 922 psi
 - C. 556 psi
 - D. 432 psi
20. **What statement best describes "hydrates"?**
- A. Hydrates are a solid, frozen combination of water and gas
 - B. Hydrates are a solid, frozen combination of methanol and water
 - C. Hydrates are a solid, frozen combination of oil and water
 - D. Hydrates are a solid, frozen combination of methanol and oi

ANSWER KEY – DAY 2

1. B
2. C
3. B
4. C
5. D
6. A
7. C
8. A
9. A
10. A
11. B
12. D
13. B
14. B
15. A

Subsea

16. D
17. B
18. A
19. C
20. A