

Geothermal CoW Claim Workshop

7th Asia Offshore Energy Conference 2016



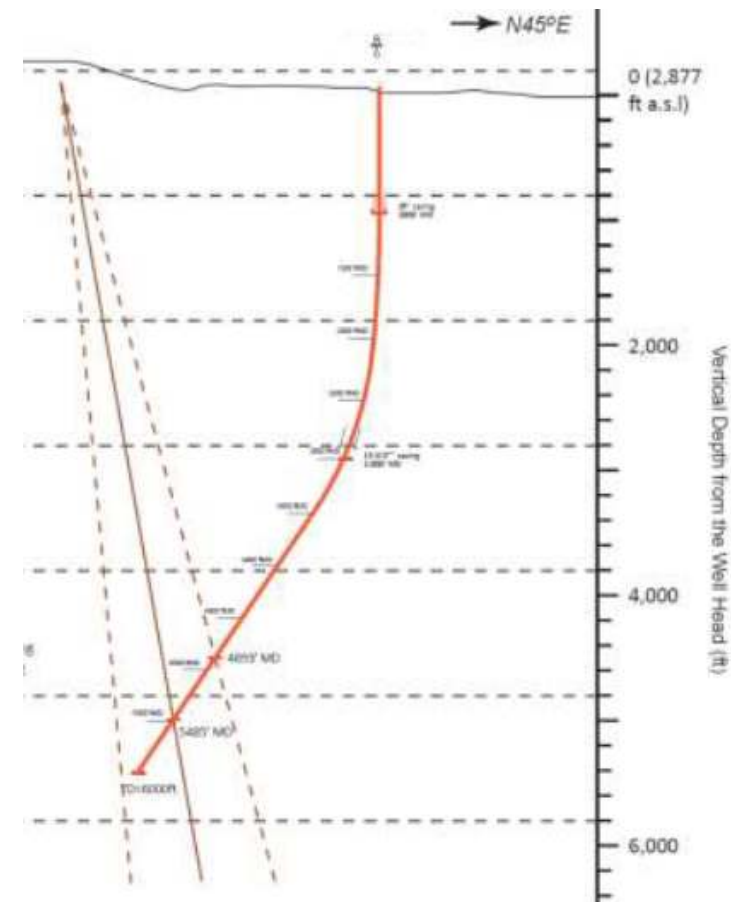
Yeo Min

Thursday, 22 September 2016 – Intercontinental Hotel, Jimbaran, Indonesia

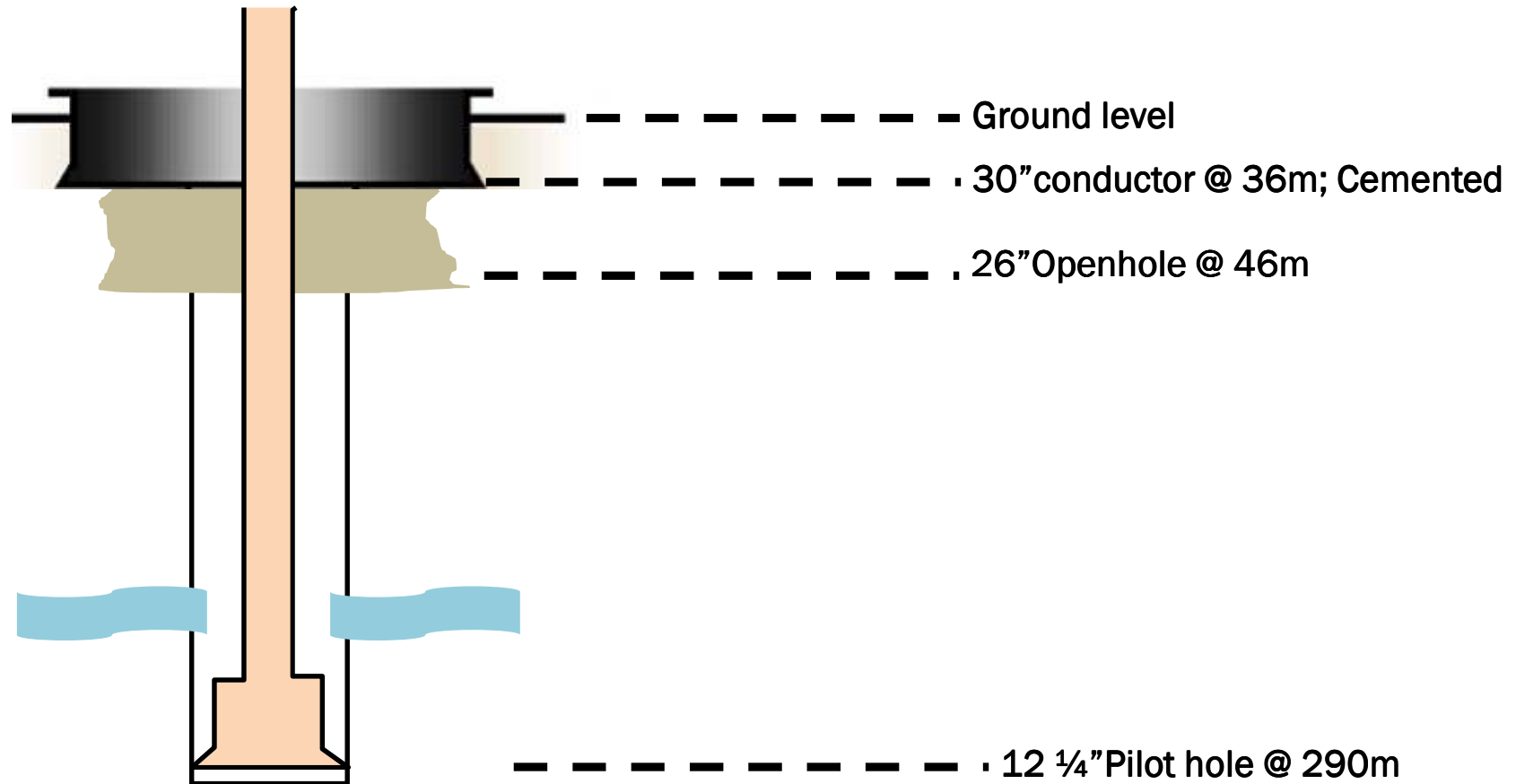
Excellence • Integrity • Proficiency

Well Plan

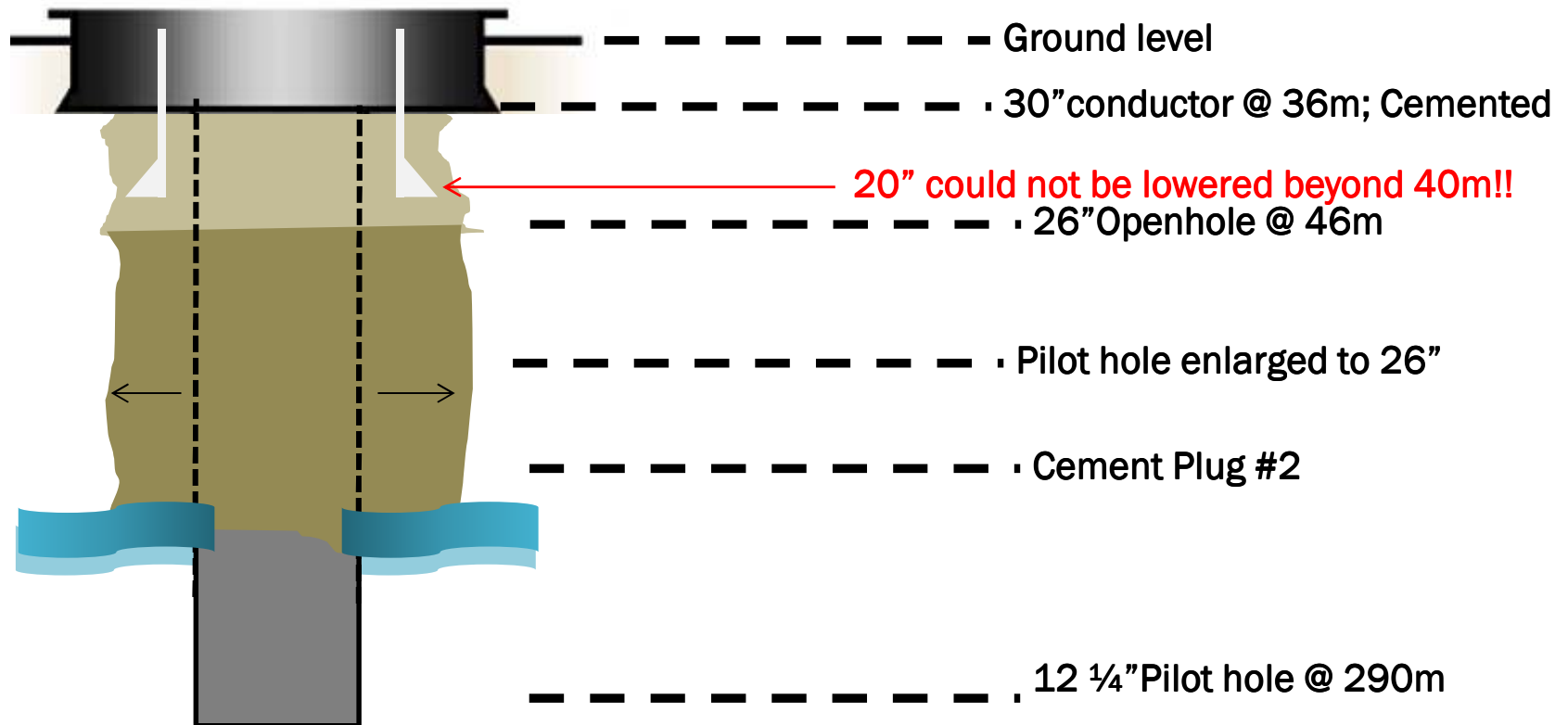
- Deviated geothermal development well
- Planned kick off point (KOP) at 305m
- Planned total depth of 1,830m
- 30" conductor pre-installed and cemented
- 21 1/4" BOP rated to 2000psi to be installed on 20" surface casing



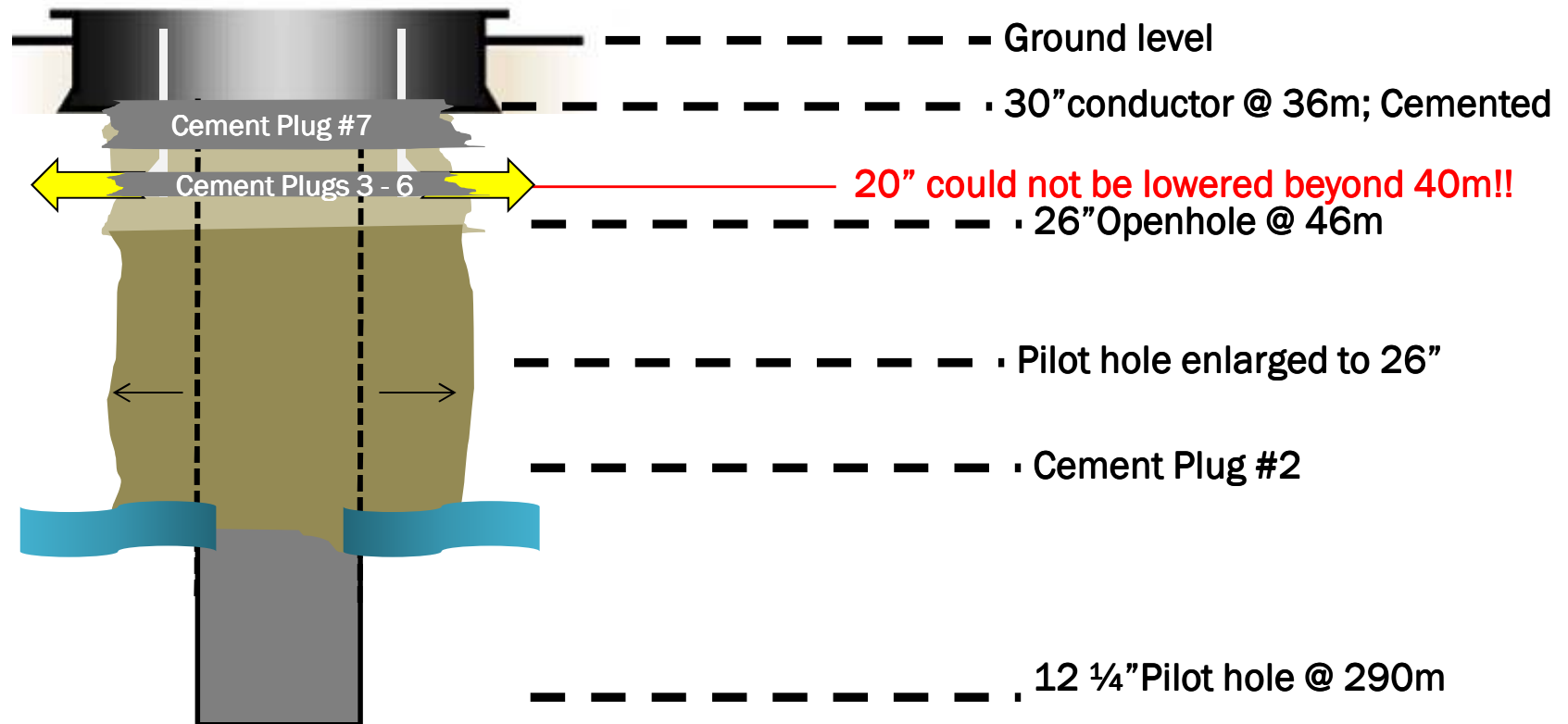
Operations I



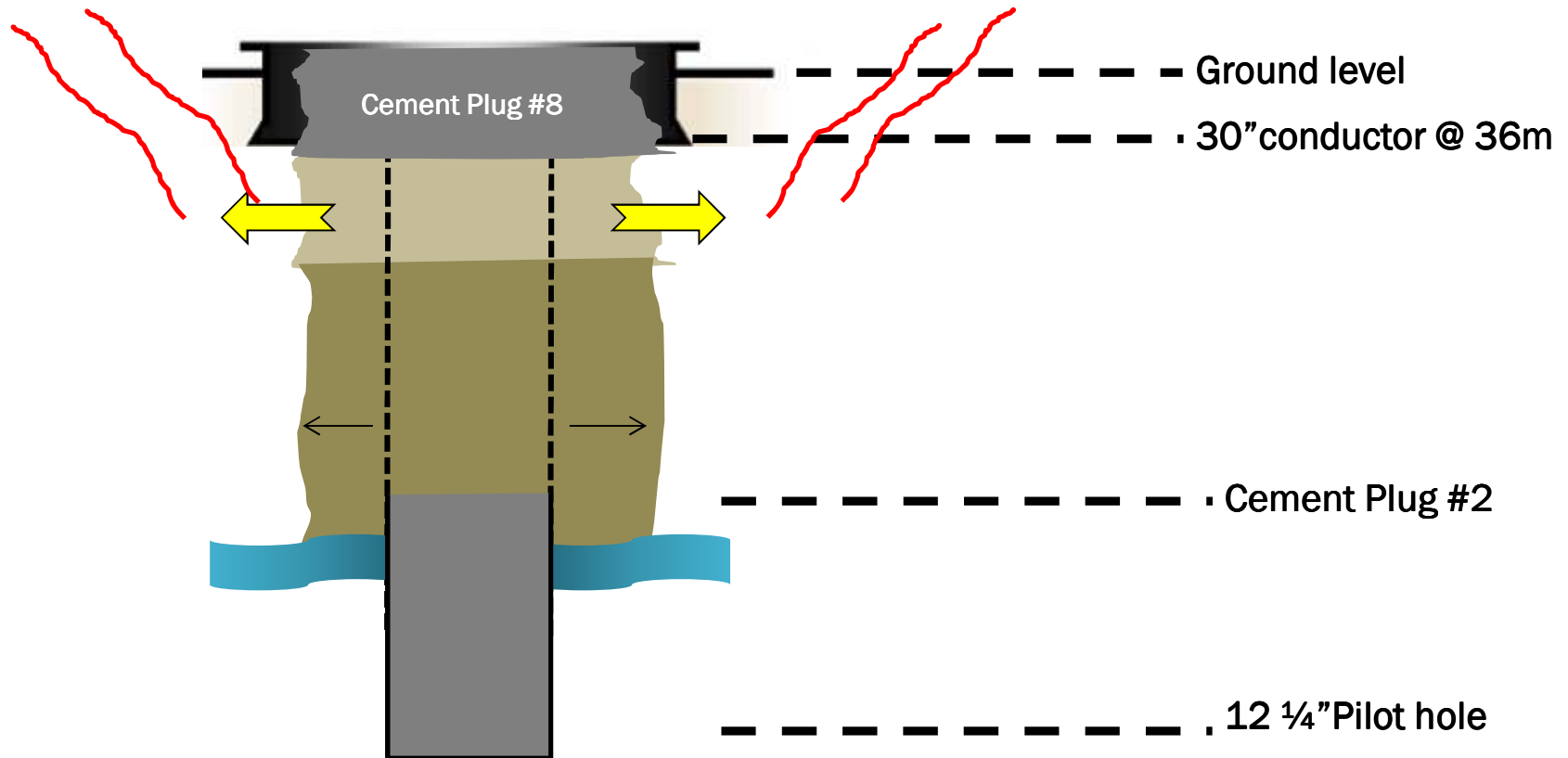
Operations II



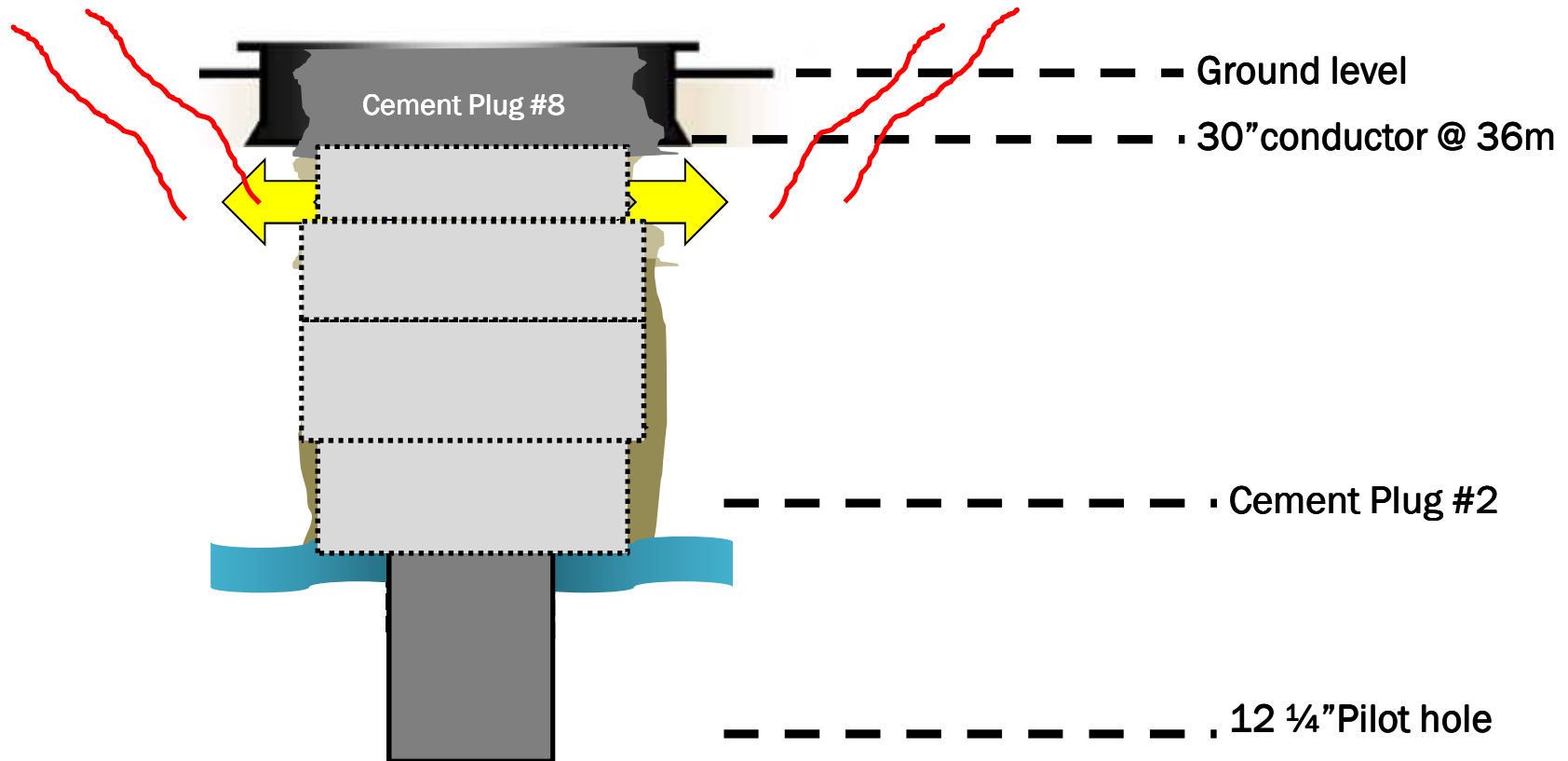
Operations III



Operations IV

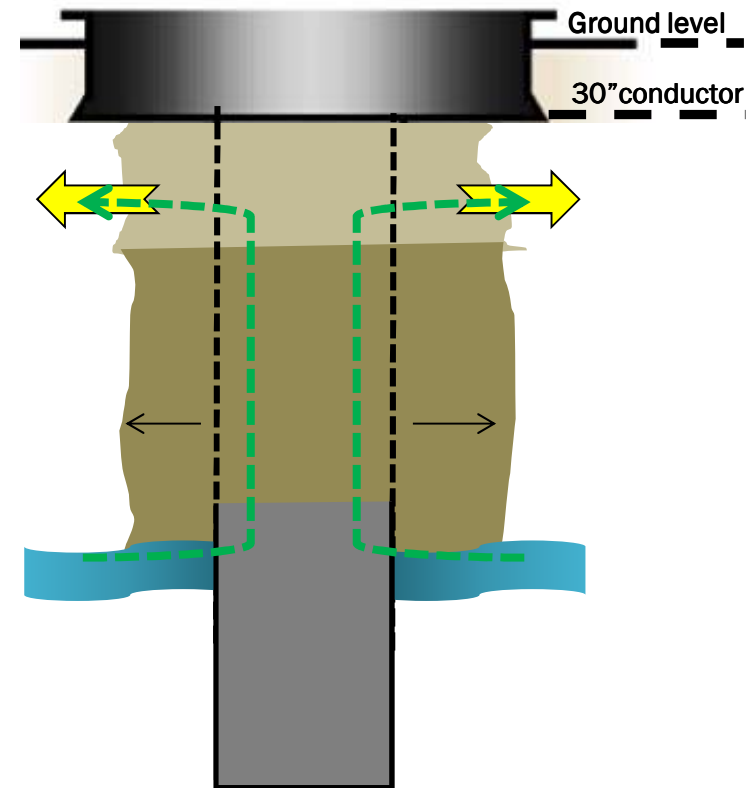


Re-Entry Operations



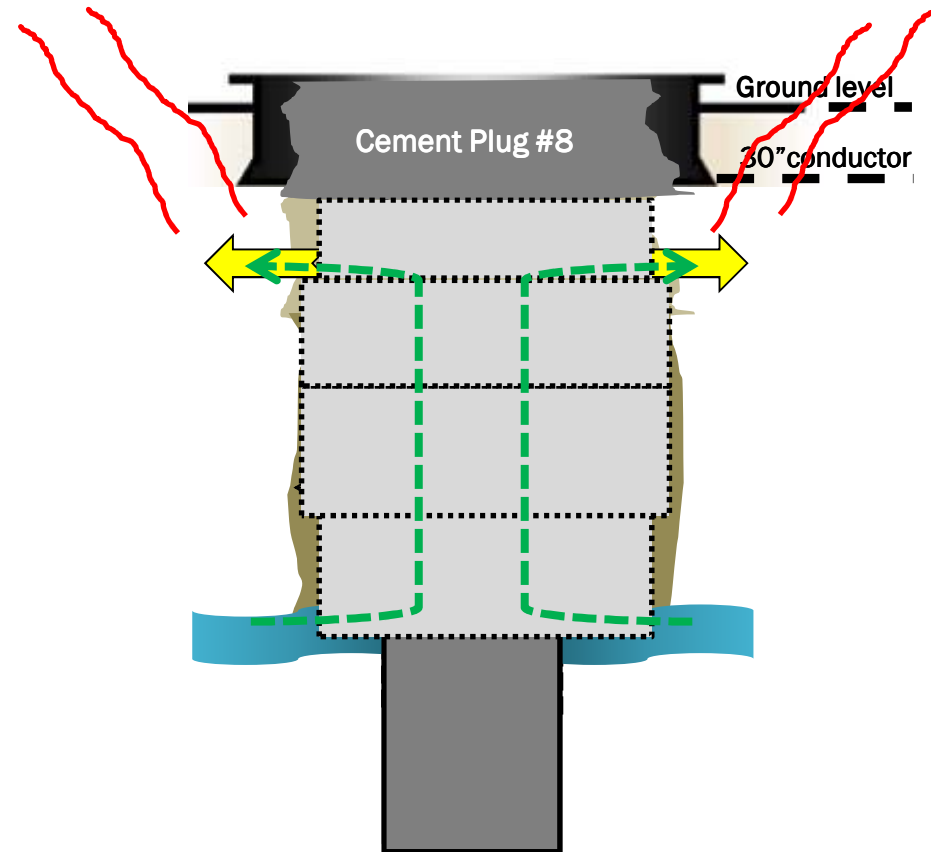
Findings 1

1. The well experienced its first influx on 24 April, 1800h. The influx zone is located at ~200m.
2. Plugging back the pilot hole on 30 April isolated the influx zone (cement plug #2)
3. Hole opening operations on 1 May 2016, exposed the well to the influx zone again.
4. At about 1200h on 1 May, a thief zone developed below the 30" conductor and an underground flow existed from the influx zone into the thief zone.



Findings 2

5. Before the integrity of CP#8 could be tested, an earthquake occurred on 11 May 2016 at 1200h. New gas vents & bubbling events were observed in the vicinity of the well.
6. The earthquake and pad grouting to stabilise the surface broaches caused by the earthquake delayed re-entry from 1200h on 11 May for 3 weeks.
7. The underground flow ceased entirely after the final cement plug #12 was placed in the well at 1200 hours on 21 June 2016.



Policy Wording

- The well was insured throughout the relevant period, under Policies subject to standard Energy Exploration and Development wording with the Underground Control of Well Endorsement attached.
- Policy Periods: 1 May 2015 to 30 April 2016 and from 1 May 2016 to 30 April 2017.
- The Combined Single Limit of Liability is US\$20,000,000, any one occurrence and the Assured's Retention is US\$500,000 any one occurrence as respects Section A.
- There shall be no indemnity or liability under this policy for: Any loss damage or expense caused by or attributable to earthquake or volcanic eruption; or fire explosion or tidal wave consequent upon earthquake or volcanic eruption.

Claim

The Assured has claimed for all cost incurred in respect of the well from 1800h on 24 April 2016 until 1200h on 21 June 2016.

| DESCRIPTION | Units | Quantity | Rate (US\$) | USD |
|-----------------------------|----------|----------|-------------|------------------|
| Drilling Rig | Days | 57.75 | 40,000 | 2,310,000 |
| Equipment Rental | Days | 57.75 | 20,000 | 1,155,000 |
| Drilling Services | Days | 57.75 | 10,000 | 577,500 |
| Drilling Fluid | Days | 57.75 | 8,000 | 462,000 |
| Cementing | Per Plug | 12 | 30,000 | 360,000 |
| Grouting – Surface Broaches | - | - | - | 90,000 |
| TOTAL GROSS CLAIM | | | | 4,654,500 |

Question 1

What is the relevance of the earthquake?

- a) The entire claim is excluded
- b) The cost of stabilising the pad is excluded
- c) No relevance. The well was already out of control.

Question 2

What is the period for which the well was out of control, as defined as the Policy?

- a) 1800h on 24 Apr to 1200h on 21 Jun (57.75 days)
- b) 1200h on 10 May to 1200h on 20 Jun (41 days)
- c) 1200h on 01 May to 1200h on 21 Jun (51 days)

Question 3

How many days should be approved as recoverable under the policy?

- a) 51 days
- b) 20 days
- c) 30 days

Question 4

How many cement plugs should be approved?

- a) 12 plugs
- b) 10 plugs
- c) 11 plugs

Question 5

What is the net claim payable?

- a) US\$ 2,140,000
- b) US\$ 3,778,000
- c) US\$ 1,360,000

Answer

| DESCRIPTION | Units | Quantity | Rate (US\$) | Claim (US\$) | Approved (US\$) | Adjuster's Notes |
|------------------------------------|----------|----------|-------------|------------------|------------------|---|
| Drilling Rig | Days | 56.75 | 40,000 | 2,310,000 | 1,200,000 | Approve 30 days at US\$40,000/day |
| Equipment Rental | Days | 56.75 | 20,000 | 1,155,000 | 600,000 | Approve 30 days at US\$20,000/day |
| Drilling Services | Days | 56.75 | 10,000 | 577,500 | 300,000 | Approve 30 days at US\$10,000/day |
| Drilling Fluid | Days | 56.75 | 8,000 | 462,000 | 240,000 | Approve 30 days at US\$8,000/day |
| Cementing | Per Plug | 12 | 30,000 | 360,000 | 300,000 | Approve 10 out of 12 plugs for COW |
| Grouting – Surface Broaches | - | - | - | 90,000 | 0 | Not approved as expense attributable to earthquake - Exclusion 4(e) |
| TOTAL GROSS CLAIM | | | | 4,654,500 | 2,640,000 | |
| Assured's Retention | | | 500,000 | | -500,000 | |
| TOTAL NET CLAIM RECOMMENDED | | | | | 2,140,000 | |



for your attention