DEPLOYMENT LOG for IceCube STRING # 72

Deployment Start: *at* 9.45 p.m *on* 09 Jan 2007

Deployment End: *at* 8:05 am *on* 10 Jan 07

Target depth (DOM60): **2450** m Final depth: 2452.1 by Paro

Deployment Crew

Position	First Shift	Second Shift
Shift lead	A. Karle O.	O
DOM install 1 (high)	~~M.~~ Krasberg	S. Heyob
DOM install 2 (low)	G. Gourie	John Hultb
~~DOM supply 1~~ / DOM install 3 (DOM supply)	M. Zimmerman	Ian P.
DOM supply 2 / floater	M. ~~Ben~~ Krasberg	
Winch operator (cable & tower)	D. Blithe	T. Gustafsson
Notary (logbook & photos)	F. Descamps O	F. Descamps/O
PTS (monitoring / sensors)	M. d'Agostino O	M. d'Agostino/J. Vandenbroucke
Support (optional)		

Time of shift change:

Summary/Comments:

2 drill 4 drill

5hrs 20m 5hrs

Hole Handover

☑ Drill data reviewed

- ☑ maximum drift in x: 0 - 4 ☐ plot
- ☑ maximum drift in y: 0 - -1,75 ☐ plot
- ☑ maximum depth: 2450 by Paro
- ☑ minimum radius: 0,5 ☐ plot
- ☐ plot of predicted radius vs depth and time

Mozel = 2541
Kalpa = 2518
PARO = 2458

? at 80 meters + 60 = 140m

☑ Hole dimensions verified Time: 9.20 pm

Drill Lead: Robert M. Moore
name / signature / date

Deployment Lead: Albrecht K.
name / signature / date

☑ Handover complete 9.35 pm

Hole Logging
(skip if not applicable)

☐ Logger drop started Time:_____ Speed:_____
☐ Logging started Time:_____ Speed:_____
☐ Logging ended Time:_____

☐ Estimated hole lifetime:_____

▶ Must reach target depth by _____ on _____

Deployment Startup

Time: 9.35 pm

- ☑ Cable winch anchored and ☑ operational
- ☑ Tower winch operational — Etops were checked
- ☑ Tie off verified
- ☑ Yellow rope verified

- ☑ Deployment monitoring system (PTS) operational ☑ DDB# 03
- ☑ Pressure sensors on hand: Paro and Keller, with backups
- ☑ Laser ranger, tape measure (metric) on hand

- ☑ Bleeder string installed (on quad connectors inside cable reel drum)

- ☑ Uphole pressure system on hand: Setra sensor and cable

- ☑ DOMs placed in racks
- ☑ Weight stack on hand: weights (5) and 2 m cable
- ☑ 17 m string extension steel cable on hand

Safety checks complete (☑ 1st shift ☐ 2nd shift)

- ☑ ☐ Crew safety briefing
- ☑ ☐ E-stop locations identified
- ☑ ☐ TOS evacuation procedures reviewed
- ☑ ☐ Mustering point identified
- ☑ ☐ Snow mobile driver(s): _____
- ☑ ☐ CPR trained: M. Kroeberg, ~~[illegible]~~ G. Gowrie, M. Zimmerman
- ☑ ☐ Food runners: —

call galley at 65521

- ☑ End of Main Cable brought into TOS and secured

Cable end attachments

X12

835 feet = 71.62 m comp. 73 m from drill

- ☑ Measure well depth: 231 a 230.1 feet → laser depth not working → using tape
- ☑ Weights (5) attached
- ☑ Weight cable attached (weight stack complete) Time: 10.45 pm

Photos: DOM ids (☑ long ☑ short); connectors ~~(☐ long ☐ short)~~

DOM position 60 DOM id: TP GH7523
(T, Long)

☑ Bottom shackle connected to weight stack Payout: ~~1~~ 21
☑ Top shackle connected to 17 m steel cable
Photos: ☑ whole view

DOM position 59 DOM id: UP GP1396
(U, Short) Cable mark: N/A

☑ Bottom shackle connected to 17 m cable
☑ Top shackle connected to Yale grip Δ(59-60): 17.677
☐ Main cable end taped to 17 m steel cable (use laser ranger)
Photos: ☐ phi orientation ☐ whole view

Breakout 30 Time: ~~11:27~~ 11h25 pm.
Depth:
Payout 18.21

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed ?
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed ?
  - ☑ connected

☑ Loose pigtails taped to cable

Paro Serial #: 104658 Nipple ☑ on ☐ off
☑ Connected ☑ Operational ☑ Air pressure [PSI]: 9.25
☑ Cable mark: NA ☐ Distance to DOM59: 0.922

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 58 DOM id: TP 6P1743

(T, Long) Cable mark: ~~[illegible]~~ NA

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(58-59): 16.879
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 57 DOM id: UP 5P0728

(U, Short) Cable mark: 6035

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(57-58): 16.909
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 29

Time:
Now 1145
Last b/o 1125
Δt [min] 20 min

Depth:
Paro ~~[illegible]~~ 90.30
Payout 55.44

- LongDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 56 DOM id: TP 6H7507

(T, Long) Cable mark: 0053

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(56-57): 16.957
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 55 DOM id: UP 6H7524

(U, Short) Cable mark: 0070

☑ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(55-56): 16.985
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 28 Time:

Now 11.55 pm
Last b/o 11.45
Δt [min] 90 min.

Depth:
Paro 90.28
Payout 85.09

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☒ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 54

DOM id: TP GP1343

(T, Long) Cable mark: 0088

☑ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(54-55): 16.900
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

here DOM ID was after 2 pictures

DOM position 53

DOM id: UP 644436

(U, Short) Cable mark: 0104

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(53-54): 16.950
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☑ whole view

Breakout 27

Time:

Now 19.10
Last b/o 11.55
Δt [min] 15 min

Depth:

Paro 190.39
Payout 191.48

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ ~~long~~ ☐ ~~short~~)

DOM position 52

DOM id: TP 5H0125

(T, Long) Cable mark: 0191

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(52-53): 16.954
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 51

DOM id: UP 5P0760

(U, Short) Cable mark: 0138

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(51-52): 16.947
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 26

Time:

Now 19.90
Last b/o 19.10
Δt [min] 10min

Depth:

Paro 155.52
Payout 155.18

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☐ connected

- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 50 DOM id: TP 5P0983

(T, Long) Cable mark: 155

lunch 12.20 pm - 1.10 pm

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(50-51): 10.968
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view
☐ Curved distance around DOM: ☐ Vertical distance:

DOM position 49 DOM id: UP 6Y4300 4

(U, Short) Cable mark: 172

→ connector marks were off-center

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(49-50): 16.960
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view
☐ Curved distance around DOM: ☐ Vertical distance:

Breakout 25

Time:
Now 1.20 am
Last b/o 1.10 lunch
Δt [min] 10 min

Depth:
Paro 187.86
Payout 186.09

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 48 DOM id: TP 5Y0151 → sleeve damaged

(T, Long) Cable mark: 191

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(48-49): 16.943
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 47 DOM id: UP 621310

(U, Short) Cable mark: 0136

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(47-48): 16.592
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 24 Time:

Now 9:35 am
Last b/o 9:20 am
Δt [min] 15 min

- LongDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☑ connected

Depth:
Paro 999.91
Payout 9962.28

- ShortDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 46 DOM id: TP 6P1241

(T, Long) Cable mark: 933

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(46-47): 16.938
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 45 DOM id: UP 6H7590

(U, Short) Cable mark: 940

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(45-46): 17.099
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 23 Time:

Now 1 45
Last b/o 1 35
Δt [min] 10 min

Depth:
Paro 956.53
Payout 955.93

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 44 DOM id: TP SP0571

(T, Long) Cable mark: 337

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(44-45): 16.997
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

DOM position 43 DOM id: UP 6P1340

(U, Short) Cable mark: 414

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(43-44): 16.944
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 22 Time:

Now 6:55 am
Last b/o 1:45 am
Δt [min] 10 min
Depth:
Paro 230.34
Payout 229.52

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☑ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ ~~short~~)

DOM position 42 DOM id: TP 4H0015

(T, Long) Cable mark: 292

☑ Bottom shackle connected

☑ Top clutch connected at link # 18 Δ(42-43): 16.959

☑ Bow OK → ☑ clutch zip tied

Photos: ☐ phi orientation ☐ whole view

failed at first try changed clutch

DOM position 41 DOM id: UP CY4334

(U, Short) Cable mark: 308

☑ Bottom shackle connected

☑ Top clutch connected at link # 18 Δ(41-42): 16.966

☑ Bow OK → ☑ clutch zip tied

Photos: ☑ phi orientation ☑ whole view

Breakout 21 Time:

Now 9 10 am

Last b/o 1 55 am

Δt [min] 15 min

Depth:

Paro 324.18

Payout 323.40

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☐ breakout O-ring in place and ☑ lubed
  - ☐ connected
- ShortDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☑ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (~~☐ long ☐ short~~)

DOM position 40 DOM id: TP 6Y4269

(T, Long) Cable mark: 326

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(40-41): 16.916
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 39 DOM id: UP 6P1942

(U, Short) Cable mark: 342

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(39-40): 16.947
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 20 Time:

Now 9.85 am
Last b/o 9.10 am
Δt [min] 12 min

Depth:
Paro 358.80
Payout 358.36

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 38 DOM id: TP 6P1257

(T, Long) Cable mark: 359

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(38-39): 16.933
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 37 DOM id: UP 5H0292

(U, Short) Cable mark: 376

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(37-38): 16.949
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 19 Time:

Now 1:32
Last b/o 1:15
Δt [min] 17 min

Depth:
Paro 3931
Payout 39389

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☑ short); connectors (☐ long ☐ short)

DOM position 36 DOM id: TP 6Y4343

(T, Long) Cable mark: 0393

☑ Bottom shackle connected
☑ Top clutch connected at link # 13 Δ(36-37): 16 938
☐ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☑ whole view

DOM position 35 DOM id: UP 6P1350

(U, Short) Cable mark: 0478

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(35-36): 16 975
☐ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 18 Time:

Now 2:43
Last b/o 1:32
Δt [min] 11 min
Depth:
Paro 526.9
Payout 496.49

- LongDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☐ connected
- ShortDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☑ Put two Kellers (one is for backup) in bucket of water/ice mix

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☐ short); connectors (☐ long ☐ short)

DOM position 34 DOM id: TP 5 H014 Z

(T, Long) Cable mark: 497

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(34-35): 16.981
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 33 DOM id: UP 6Y4976

(U, Short) Cable mark: 144

☑ Bottom shackle connected
☑ Top clutch connected at link # 13 Δ(33-34): 16.331
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 17

Time:

Now 9.50
Last b/o 9.47
Δt [min] 13 min

Depth:

Paro 460.99
Payout 459.10

- LongDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☑ short); connectors (☐ long ☐ short)

DOM position 32 DOM id: TP 61444 1

(T, Long) Cable mark: 461

☑ Bottom shackle connected
☑ Top clutch connected at link # 15 Δ(32-33): 16 943
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 31 DOM id: UP 5P1026 small DOM

(U, Short) Cable mark: [illegible]

☑ Bottom shackle connected
☑ Top clutch connected at link # 16 Δ(31-32): 1 951
☐ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 16 Time:

Now 3 05
Last b/o 1 45
Δt [min] 20 min

Depth:
Paro 495.00
Payout 496.58

- LongDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☐ short); connectors (☐ long ☐ short)

DOM position 30 DOM id: TP GH7521

(T, Long) Cable mark: 495.5

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(30-31): 16.922
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 29 DOM id: UP 6Y4330

(U, Short) Cable mark: 512

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(29-30): 16.945
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 15 Time:

Now 3.30 am
Last b/o 3.05 am
Δt [min] 95 min

Depth:
Paro 528.93
Payout 530.98

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

Thermistor ☑ Present ☐ Distance to DOM29: 0.927

Keller ☑ Connected ☑ Operational ☐ Air pressure [PSI]: -5.53
Ser.#: 06745 ☑ Cable mark: 513 ~~☐ Distance to DOM29:~~

Rope: 928.6247
Inf: -928.58208

☐ All clear to lower cable ☺

decided to go ahead,
Keller seemed to be working — look @ relative measurements.

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 28 DOM id: TP 6H7505

(T, Long) Cable mark: 530

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(28-29): 16.933
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 27 DOM id: UP 6P1324

(U, Short) Cable mark: unreadable

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(27-28): 16.913
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 14

Time:

Now 3:43 am
Last b/o 3:30 am
Δt [min] 13 min

Depth:

Paro 563.39
Keller 599.45
Payout 564.13

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☐ short); connectors (☐ long ☐ short)

DOM position 26 DOM id: TP 5H0251

(T, Long) Cable mark: 564

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(26-27): 16 935
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 25 DOM id: UP 6H7514

(U, Short) Cable mark: [illegible]

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(25-26): [illegible]
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 13 Time:

Now 350
Last b/o 343
Δt [min] 7 min

Depth:
Paro 597.45
Keller 599.55
Payout 599.95

- LongDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☑ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☐ short); connectors (☐ long ☐ short)

DOM position 24 DOM id: TP 6Y4431

(T, Long) Cable mark: 0598

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(24-25): 16.960
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 23 DOM id: UP 6P1394

(U, Short) Cable mark: 615

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(23-24): 16.312
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 12 Time:

Now 4.25
Last b/o 3.45
Δt [min] 30 min

Depth:
Paro 630.95
Keller 630.14
Payout 633.84

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

Is this the standard cradle or bag?

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 22

DOM id: TP 6P1345

(T, Long) Cable mark: 6315

☑ Bottom shackle connected
☐ Top clutch connected at link # 18
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Δ(22-23): 16.942

DOM position 21

DOM id: UP 6P1284

(U, Short) Cable mark: 0693

☑ Bottom shackle connected
☑ Top clutch connected at link # 15
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Δ(21-22): 16.967

Breakout 11

Time:

Now 9:19
Last b/o 9:25
Δt [min] 10 min

Depth:
Paro 665.74
Keller 665.29
Payout 668.29

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 20 DOM id: TP 6Y4429

(T, Long) Cable mark: 0666

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(20-21): 16.987
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view
☐ ~~Curved distance around DOM:~~ ☐ ~~Vertical distance:~~

DOM position 19 DOM id: UP 6P1398

(U, Short) Cable mark: 0652

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(19-20): 16.975
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view
☐ ~~Curved distance around DOM:~~ ☐ ~~Vertical distance:~~

Breakout 10 Time:

Now 4:35
Last b/o 4:15
Δt [min] 10 min

Depth:
Paro 699.81
Keller 699.48
Payout 20.47

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 18 DOM id: TP 69139

(T, Long) Cable mark: 720

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(18-19): 16.997
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 17 DOM id: UP 5H0256

(U, Short) Cable mark: 717

☑ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(17-18): 16.987
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☑ whole view

Breakout 9 Time:

Now 4:35
Last b/o 4:15
Δt [min] 90 min

Depth:
Paro 723.89
Keller 733.60
Payout 736.50

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 16 DOM id: TP 6P1353

(T, Long) Cable mark: 734

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(16-17): 16.963
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

DOM position 15 DOM id: UP SH0252

(U, Short) Cable mark: 732

☑ Bottom shackle connected
☑ Top clutch connected at link # 13 Δ(15-16): 16.950
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 8 Time:

Now 9.50 am
Last b/o 9.35 am
Δt [min] 15 min

Depth:
Paro 708.02
Keller 708.67
Payout 709.17

- LongDOM
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 12 DOM id: TP 6Y4475

(T, Long) Cable mark: 809

☑ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(12-13): 16.958
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 11 DOM id: UP 5H0122

(U, Short) Cable mark: 819

☑ Bottom shackle connected
☑ Top clutch connected at link # 11 Δ(11-12): 16.950
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 6 Time:

Now 5.12
Last b/o 5.00
Δt [min] 10 min

Depth:
Paro 836.36
Keller 836.09
Payout 839.13

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☑ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☑ lubed
  - ☐ breakout O-ring in place and ☑ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 14 DOM id: TP GP1333

(T, Long) Cable mark: 768

☑ Bottom shackle connected
☑ Top clutch connected at link # 13 Δ(14-15): 10.977
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 13 DOM id: UP GY4454

(U, Short) Cable mark: 785

☑ Bottom shackle connected
☑ Top clutch connected at link # 12 Δ(13-14): 10.965
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 7

Time:

Now 5:00
Last b/o 4:50
Δt [min] 10 min

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

Depth:

Paro 802.17
Keller 801.94
Payout 804.94

ok.

- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☐ short); connectors (☐ ~~long~~ ☐ ~~short~~)

DOM position 8 DOM id: TP 6P1341

(T, Long) Cable mark: 870

☑ Bottom shackle connected
☑ Top clutch connected at link # 13 Δ(8-9): 16.951
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 7 DOM id: UP 6H7504

(U, Short) Cable mark: 857

☑ Bottom shackle connected
☐ Top clutch connected at link # 15 Δ(7-8): 16.935
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 4 Time:

Now 5:35
Last b/o 5:25
Δt [min] 10 min

Depth:
Paro 904.59
Keller 905.99
Payout 907.88

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 10 DOM id: TP 6P 1319

(T, Long) Cable mark: 837

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(10-11): 16.989
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 9 DOM id: UP 6P1380

(U, Short) Cable mark: 853

☑ Bottom shackle connected
☑ Top clutch connected at link # 11 Δ(9-10): 17.003
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 5

Time:

Now 5:10 am
Last b/o 5:25 am
Δt [min] 15 min.

Depth:

Paro 890.63
Keller 871.14
Payout 873.44

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected
- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 4 DOM id: TP 6y4305

(T, Long) Cable mark: 338

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(4-5): 16.931
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 3 DOM id: UP 6p1374

(U, Short) Cable mark: 355

☑ Bottom shackle connected
☑ Top clutch connected at link # 15 Δ(3-4): 16.939
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 2 Time:

Now 5 55
Last b/o 5 45
Δt [min] 10 min

Depth:
Paro 973.18
Keller 974.47
Payout 976.35

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☐ connected

- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☑ short); connectors (☐ long ☐ short)

DOM position 6 DOM id: TP 6P1321

(T, Long) Cable mark: 905

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(6-7): 17.008
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 5 DOM id: UP 6Y4446

(U, Short) Cable mark: 391

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(5-6): 16.995
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 3

Time:
Now 5 [illegible]
Last b/o 5.95
Δt [min] 40 min

- LongDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

Depth:
Paro 938.44
Keller 939 44
Payout 941 44

- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☑ long ☐ short); connectors (☐ long ☐ short)

DOM position 2 DOM id: TP 6P1239

(T, Long) Cable mark: 979.5

☑ Bottom shackle connected
☑ Top clutch connected at link # 13 Δ(2-3): 16.960
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

5P1018 = new DOM

DOM position 1 DOM id: UP 6P1396

(U, Short) Cable mark: 934 replaced w/

☑ Bottom shackle connected
☑ Top clutch connected at link # 13 Δ(1-2): 16.[illegible]
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 1 Time:

Now 0 [illegible]
Last b/o 5 45
Δt [min] 85 min

- LongDOM
  - ☐ connector O-ring in place and ☑ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☑ connected

Depth:
Paro 1027.15 → 1028
Keller 1028 → 1
Payout 1010.73

- ShortDOM
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

67.816
67.905

No second Paro no more...

☑ Group photo

☑ All clear to lower cable ☺

Uphole Pressure Sensor (Setra)

After DOM1 is safely under the surface (> 50 m)

Time:_____

☐ Stop the cable winch

☐ Lower Setra pressure sensor into hole

☐ Distance to Setra from floor:_____

☐ Setra readout verified with monitoring system

☐ Well depth from Setra: _____

☐ Well depth from laser: _____

If the two well depth measurements agree:

☐ Switch to Setra well depth in monitoring system

Time:_____

Now the String Drop begins

String Drop start = 6.30 am.

*The target depth is **2450** m*

☐ ~~Switch cable winch to computer control~~ NO

☐ Speed: .36 m/s Time: 7:05a Depth: 1976
☐ Speed: .36 Time: 7:15a Depth: 2177
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____

Depth Monitoring (log on the fly – do not stop for this)

Depth by Paro[1]	Time	Well depth[1]	Depth by cable marks[2]	Depth by Payout[1]	Δdepth P-K[1]	stretch (m)
1000 m	6.30am	67.886	~ 989 +16	1040.73	~1.5m	0
1500 m		67.4				
2000 m		~~67.0~~ 67.0	1983 +16	2016.60	~ -7.0	1
2100 m						
2200 m	7:17am		2182 +16	2215.99	~ -7.44	2
2300 m						
2400 m						

[1]Read off monitoring screen
[2]Cable mark offset = _____ (at DOM59) – 17 m = -16 (at DOM60)
(from p.4)

~~done measured @ 58 → this first is just the value at the time when paro is ~~ depth~~

☐ Switch to manual control @ 2400 m

☐ Well depth
@ 2420: _____
@ 2440: _____

~~2216 = paro~~
~~cable mark = 2182 +16~~
~~= 2198~~
~~stretch = 18m~~

☑ Position string at target depth of **2450** m Time: ~~8:00~~ 7:45 am 1/10/07

☑ String secured with Yale grip and anchor chain Time: 8:05 am

DOM 57: 0035 so. 58 is 0018
DOM 56: 0053 59 is 0001
60 is -0016

Absolute depth with bottom Paro
(depth in *meters* and pressure in *PSI*)

☑ Distance from Paro to DOM60:

$d_{Paro\text{-}DOM59}$ = 1.0 (from p. 4)

$d_{Paro\text{-}DOM60}$ = ($d_{Paro\text{-}DOM59}$ + 17) m = 18 ← insert below

☐ Convert Paro pressure to string depth:

From software even though Dag says 9.25

K = $3.78151 \cdot 10^{-6}$ /PSI (compressibility of aerated water)

(use 6 decimals for exp's)

Ambient pressure (from p. 4): P_0 = 10.74 PSI → $\exp(-KP_0)$ = _____

Pressure reading (from screen): P = _____ PSI → exp(-KP) = _____

Subtract exponentials → = _____

× $1.85947 \cdot 10^5$

Paro depth in water → = _____ m

Add distance to DOM60 (above) → + _____ m

Add well depth → + _____ m

Depth of bottom DOM → = _____ m

Final depth estimates

◄---------- read off deployment screen ---------►

Time: 8:31	Paro	Keller	Payout	Cable marks
Reading	3398 PSI	2662 PSI	2465.2 m	2432 m
Offset	10.74 PSI	−4.25 PSI	−1.21 m	−16 m
Well depth	66.2 m		This space is intentionally left blank ↑ DOM 60	
Dist. to DOM60	18 m	[illegible] m		
DEPTH (DOM60)	2452.1	2460		

Final well depth after SPATS deployment: 64.5 m

Final Time: 8:31

Final depth (DOM60): 2452.1

Deployment Closeout

- ☑ Log entries complete
- ☑ String safely secured
- ☑ Hole covered and secured
- ☐ Equipment safely shutdown and secured
- ☐ Deployment data OK (in database)
- ☐ Site cleanup
- ☐ Deployment crew dismissed
- ☐ String deployment complete

Time:_____ Date: 1/10/07

Shift Lead: _____
name / signature

Logger: _____
name / signature

PTS Lead: _____
name / signature

Deployment Manager: _____ (Tom Ham)
name / signature

Safety Officer: _____
name / signature

IceCube On-ice Lead: _____
name / signature

stopped at

2387 = cable mark at floor

depth by Para 2 = 2406

cable mark		DoM
		~~59~~
		~~56~~
70	———	55
53	———	56
35	———	57
NA → 18	———	58
NA → 1	———	59
NA → −16	———	60

Now we're at 2387, so

~~depth~~ depth of DoM 60 previously to cable mark is 2387 + 16 = 2403 m

Para says 2406

• we want to go 39 m more

→ Para = 2445

cable mark = 2087 + 39

= 2126

stopped again at 2426 = floor cable mark

→ depth by c.m. = 2426 + 16 = 2442

depth by Para 2 = ~~2442~~ 2445

So depth is only 3 m

Keller gives 2455, but we know its ambient was wrong

IceCube Deployment Monitoring Check Sheet (IDMCS)

Version 4.0
December 12, 2006

Kurt Woschnagg, UCB

General instructions

- Read through this entire document before deployment starts.
- Deployment monitoring is done with a computer (housed in the TOS) running drill/deployment monitoring software (by Chuck Rentmeesters) with a GUI for readout and manual inputs. All deployment sensor data and manual inputs are logged and saved on disk by this system.
- For each manual entry into the monitoring interface (marked **ENTER** below), also make a note in the logbook (marked *Logbook* below).
- For each entry in the logbook, include time and name (initials).
- Write down as much useful information you can think of (it *will* all be needed sooner or later).

Measurement instructions

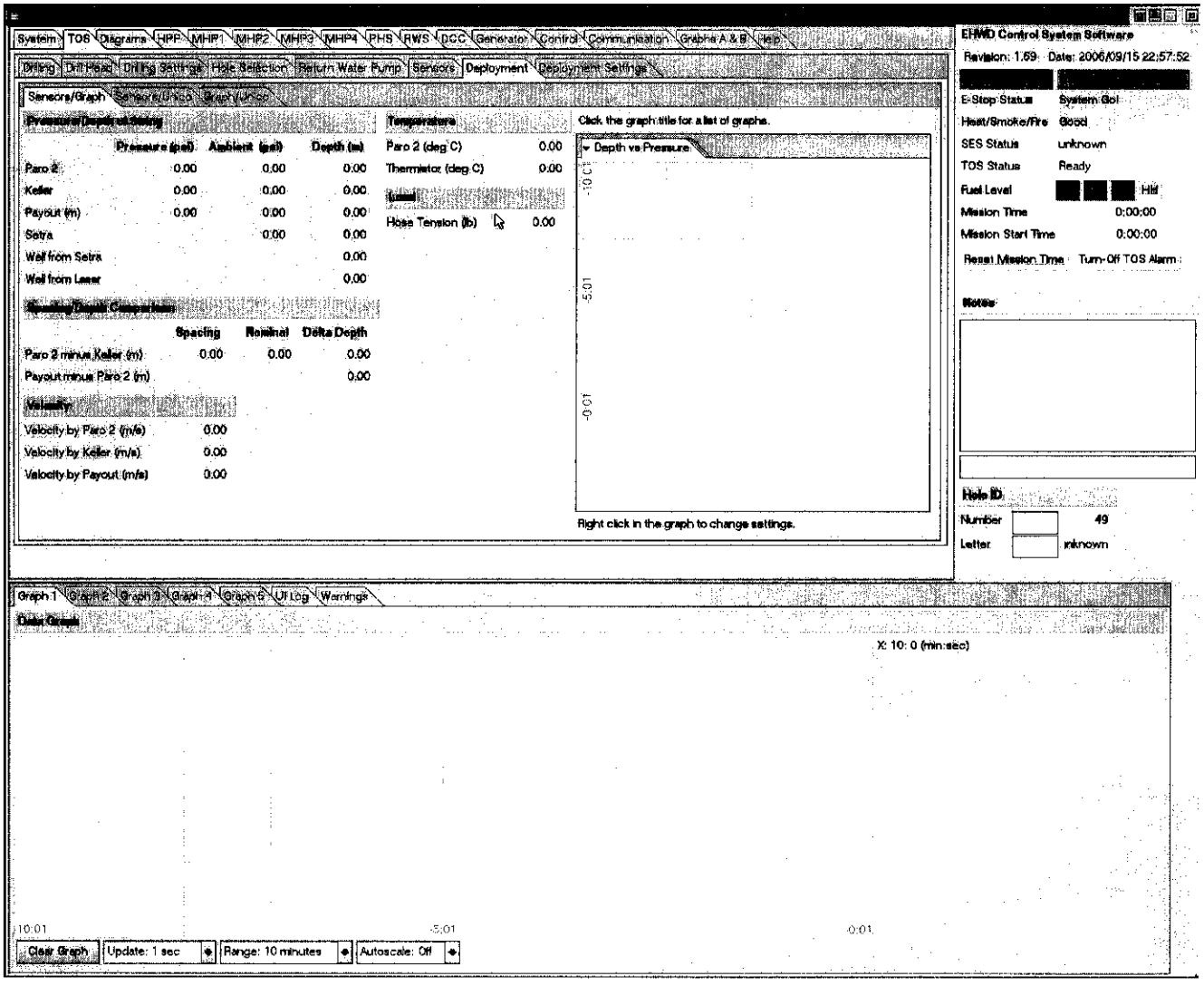
- All vertical measurements are relative to the floor of the tower (not the lip of the kick board).
  - Measure well depth from this level.
  - Take cable mark readings at this level.
- The location of a DOM on a string (for distance measurements) is defined as the position of the center of the sphere (at the equator defined by the harness).
- When taking a cable mark reading, estimate the location to nearest cm (0.01 m) with closest cable marks and tape measure.
- The location of a Paro is defined at the bottom of its body (at the little hole with the nipple).
- The location of a Keller is defined at the row of holes in the black plastic nose cap.
- The distance between a pressure sensor and the nearest DOM is positive/negative if the unit is above/below the DOM.
- Well depth is measured with a laser ranger (if possible), or with a tape measure (if not).
- The unit used for all distances and depths during deployment is **meters**.

Screen Tab: TOS ► Deployment

► Sensors/Graph

This is the main tab used during deployment monitoring. No input required on this tab.

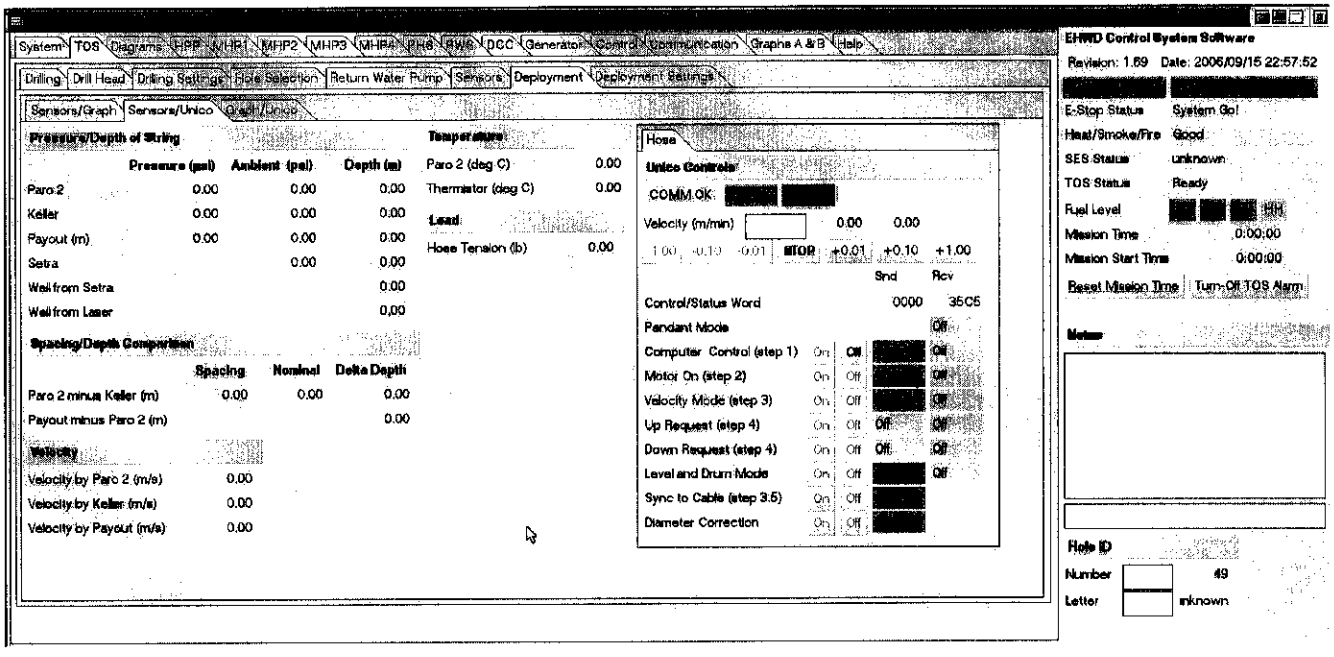
Pressure/Depth of String Current and ambient (air) pressures, and the corrected depths at DOM60.
Spacing/Depth Comparison Difference in depth from pressure data. *Should be stable during deployment!*
Velocity The deployment velocity calculated from recent pressure/payout readings.
Temperature Temperature readings.
Load Cable tension from load cell data.



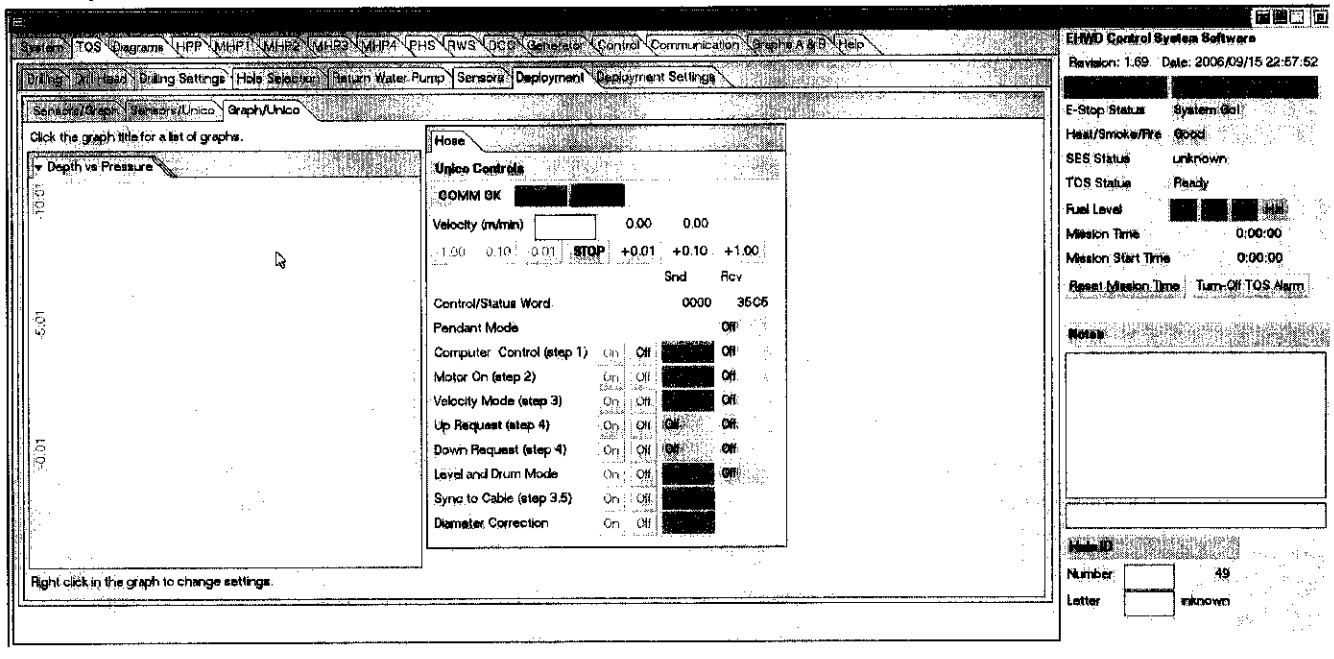
Screen Tab: TOS ► Deployment

► Sensors/Unico

This tab has the same data display as the main Sensors/Graph tab above, but instead of the graph window this tab has the controls for the Unico drive which controls the winch.



► Graph/Unico

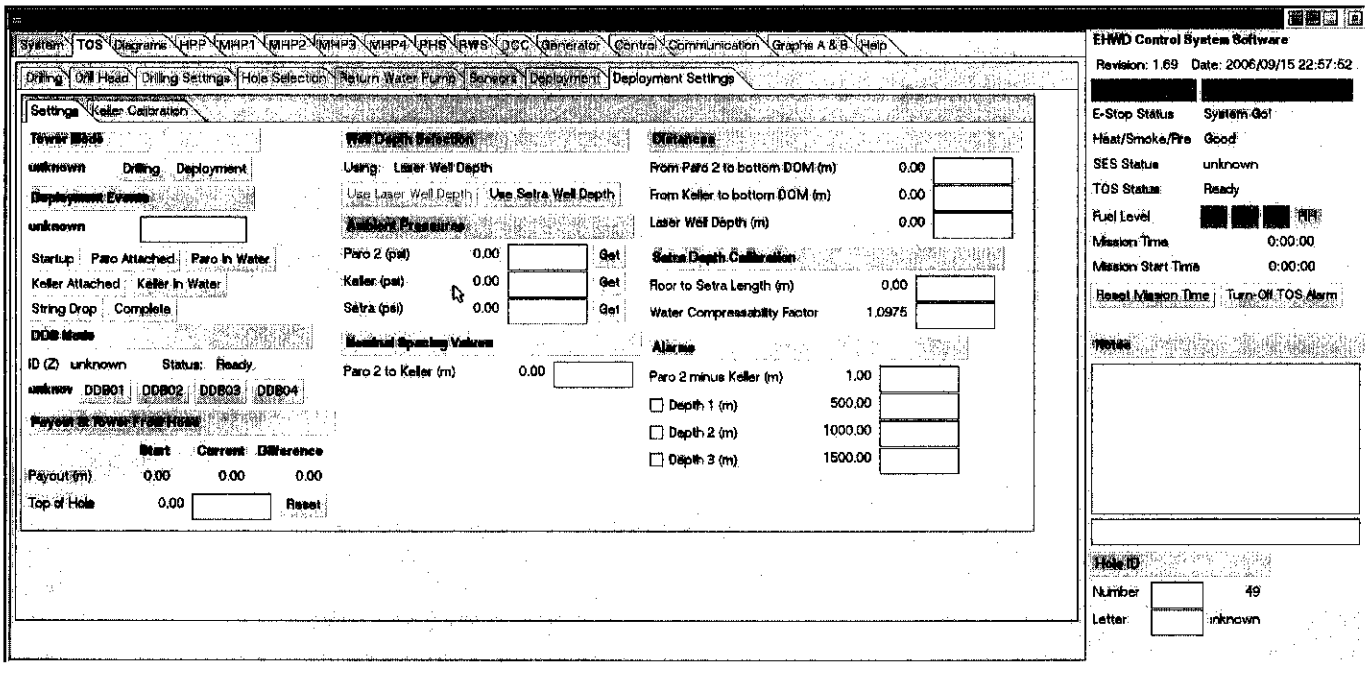


Screen Tab: TOS ▶ Deployment Settings

▶ Settings

This is the main tab for entering information that is needed for a correct depth calibration of the pressure data. Make sure you understand what all the entries mean before deployment starts.

Tower Mode	Click on "Deployment".
Deployment Events	Click the appropriate button when one of the predefined events occurs (see list below).
DDB Mode	Select the correct DDB ID before deployment startup (needed for Keller calibration).
Payout at Tower	Reset payout when bottom DOM is at tower floor level.
Well Depth Selection	Select source of well depth used in depth calculation.
Ambient Pressures	Press "Get" when pressure sensor is attached to cable, or enter reading at that time.
Nominal Spacing	Enter calculated distance between Paro and Keller.
Distances	Enter calculated distances between Paro/Keller and DOM60, and well depth.
Setra Depth Calib.	Enter measured length of Setra cable, from floor to sensor.
Alarms	Set values for which alarm is to be sounded (optional).



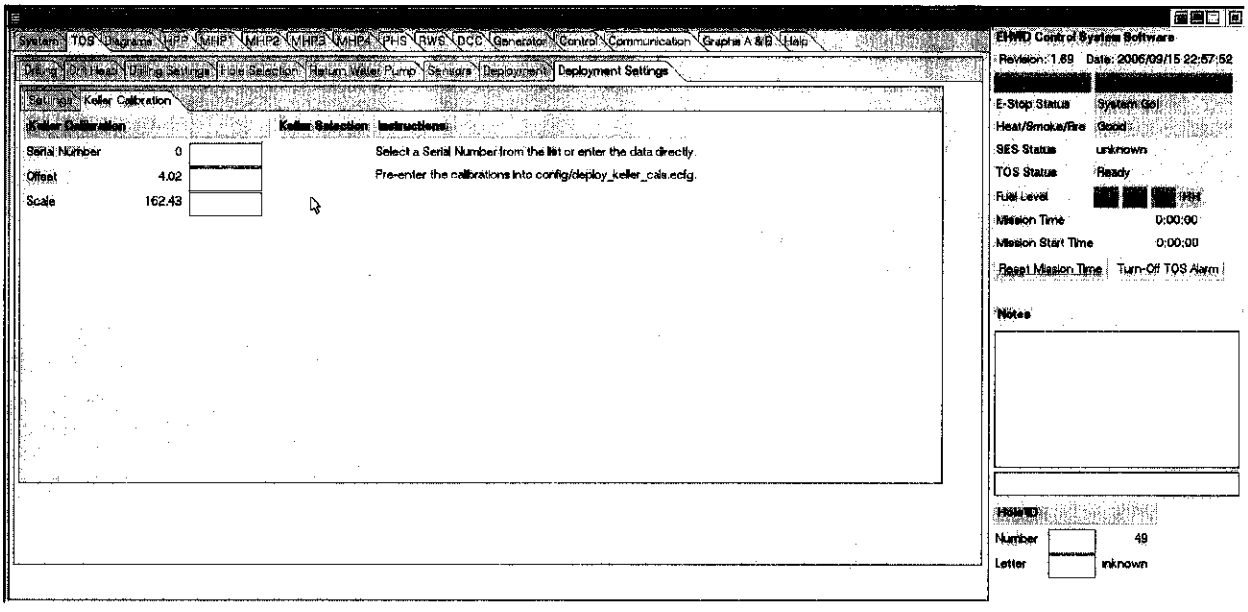
Deployment Events

☐ **Startup**	Click when the deployment begins.
☐ **Paro Attached**	Click when the Paro is attached to the breakout and starts sending data.
☐ **Paro In Water**	Click when the Paro reaches the water.
☐ **Keller Attached**	Click when the Keller is attached to the breakout and starts sending data.
☐ **Keller In Water**	Click when the Keller reaches the water.
☐ **String Drop**	Click when the String Drop phase begins, after all DOMs have been attached.
☐ **Complete**	Click when the deployment ends (string is secured, etc).

Screen Tab: TOS ▶ Deployment Settings

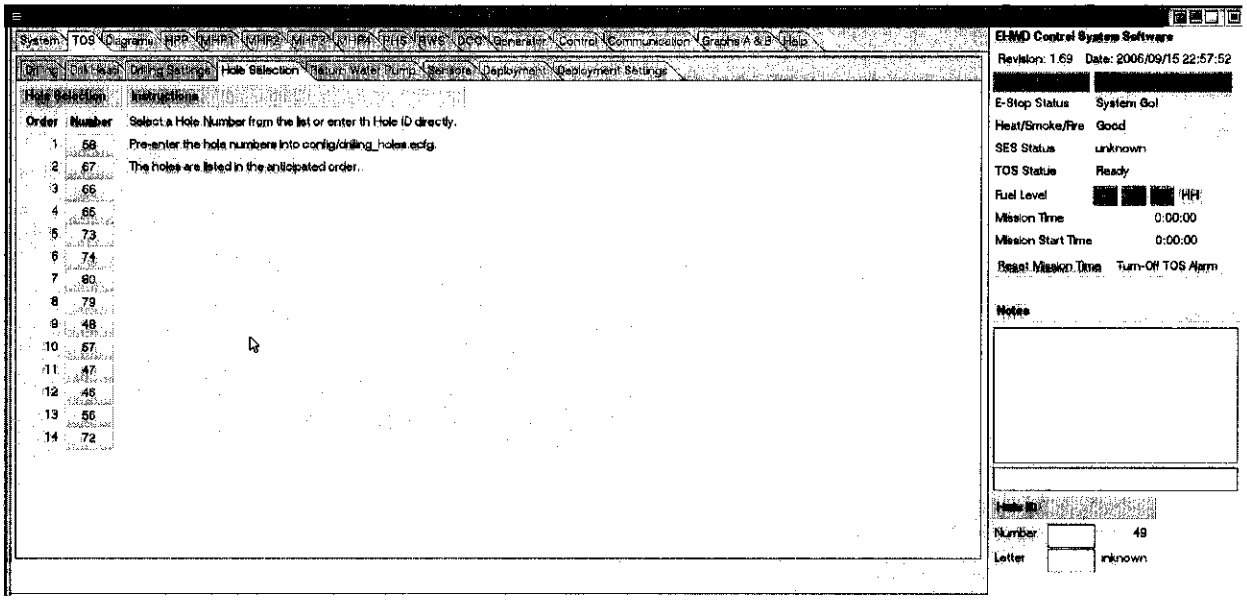
▶ Keller Calibration

On this tab you select the Keller ID by clicking on the appropriate button. The correct (pre-programmed) calibration constants will then be used for the Keller pressure reading.



Screen Tab: TOS ▶ Hole Selection

On this tab you select the hole/string number, *either* by clicking on the numbered button on the left *or* by entering it in the "Hole ID" field in the lower right hand corner.



Distances between devices

calculate manually and enter on Deployment Settings tab

Distance between Paro and DOM60: _____ = _____

Distance between Keller and DOM60: _____ = _____

Distance between Paro and Keller: _____ = _____

Notes:

There are 60 DOMs on every string.

The nominal spacing between DOMs is 17 m.

The nominal spacing between breakouts is 34 m.

Breakouts (1-30) and DOMs (1-60) are counted from the top.

The Keller is at breakout 15, just above DOM29.

The Paro is at breakout 30, just above DOM59.

(Fun Fact: There used to be a second Paro at breakout 1 on the first four strings)

Pressure conversions

	PSI	mH_2O	Atm
1 PSI =	1	0.70	0.07
1 mH_2O =	1.4	1	0.1
1 atm =	14.7	10.3	1

Check Sheet

STRING # 72

DATE: JAN. 9, 2007

Before Deployment

- ☑ **Action**: Locate laser ranger for well depth measurements.
- ☑ **Action**: Locate metric tape measure.
- ☑ **Action**: Locate one Paro and one Keller, *plus spares* of each.
- ☑ **Action**: Locate bucket (for cooling of Keller sensor with water/ice mix).
- ☑ **Action**: Fill bucket with snow and place in heated area to make slush.
- ☑ **Action**: Locate Setra uphole pressure assembly (sensor + cable).

Deployment Startup

- ☑ **Action**: Click "Deployment" button under "Tower Mode" on Deployment Settings tab.
- ☑ **Action**: Select string (=hole) number on Hole Selection tab.
- ☑ **Action**: Note deployment start time.

  Logbook: Time

- ☑ **Action**: Click "Reset Mission Time" on the right panel on the deployment screen.
- ☑ **Action**: Click "Startup" under Deployment Events.

DOM 56: 68 m above DOM 60

☑ **Action**: Note DDB id number (1, 2, 3, or 4).

ENTER: DDB# (select button)

Logbook: DDB#

☑ **Action**: Take a well depth measurement with the laser ranger. / or tape measure.

ENTER: Well depth [m] 71.62 m w/ tape measure

Logbook: Well depth

☑ **Action**: Reset Payout when DOM60 breaks the plane of the floor.

CLICK: "Reset" button (Top of Hole Reset) on Deployment Settings ▶ Settings tab.

Logbook: Payout Start value -1.21

☑ **Action**: Get cable mark reading at DOM59.

Logbook: Cable mark [m] NA

☑ **Action**: Attach Paro at breakout #30. (This is called "Paro2" on the monitoring screen).

Logbook: Paro serial number SN 104658

☑ **Action**: Click "Paro Attached" under Deployment Events.

☐ **Action**: Measure distance between Paro location and nearest DOM. DOM 59: .977

Estimate distance to *bottom* DOM by adding *n* 17-meter segments (*n* should be 1 for the Paro since nearest DOM is #59).

17.677
.977
18.654

.977 + 17.677 =

ENTER: Distance [m] from Paro to *bottom* DOM (#60)

Logbook: Distance to nearest DOM, nearest DOM#, estimated distance to DOM60 (18.654)

☑ **Action**: Get cable mark reading at Paro.

Logbook: Cable mark [m]

+ around DOM 55 or 56

☑ **Action**: Take Paro air pressure reading just before it breaks the water surface.

ENTER: Ambient pressure [PSI] for Paro

Logbook: Paro2 air pressure 10.74 between DOM 54 and 55

During Deployment

☑ **Action**: Click "Paro In Water" under Deployment Events.

☐ **Action**: Measure curved distance of main cable going around DOM (for at least two DOMs).

Logbook: Straight (vertical) distance for DOM segment, curved cable distance

☑ **Action**: Measure real distance between neighboring DOMs (for every pair) with laser ranger.

Logbook: DOM#'s, distance

☑ **Action**: Put Keller (and one spare) in bucket of water (at near freezing temperature) at least one hour before breakout #15 is reached.

Note: The Keller is not temperature corrected and must therefore be brought to the temperature of the water in the hole (0-2°C) before the air pressure offset is determined.

☑ **Action**: Attach Keller at breakout #15.

ENTER: Keller serial number 060675

Logbook: Keller serial number

☑ **Action**: Click "Keller Attached" under Deployment Events.

☑ **Action**: Measure distance between Keller and nearest DOM. .927m above DOM 29

Estimate distance to *bottom* DOM by adding *n* 17-meter segments (*n* should be 31 for Keller since nearest DOM is #29). 527+.927 = 527.927

ENTER: Distance [m] from Keller to *bottom* DOM (#60)

Logbook: Distance to nearest DOM, nearest DOM#, estimated distance to DOM60

☑ **Action**: Get cable mark reading at Keller.

Logbook: Cable mark [m] for Keller

before dom 25...

☐ **Action**: Determine Keller air pressure offset before (or just as) Keller hits water. -4.25

ENTER: Ambient pressure [PSI] for Keller

Logbook: Ambient Keller pressure

☑ **Action**: Click "Keller In Water" under Deployment Events.

☑ **Action**: Get cable mark reading at top DOM.

Logbook: Cable mark [m]

☑ **Action**: Measure well depth as soon as top DOM is under water. 67.884

ENTER: Well depth [m]

Logbook: Well depth [m], measurement method (laser/tape)

Between DOM attachment and String Drop

☐ **Action**: Lower Setra assembly into hole (after top DOM is at least 50 m under the surface).

☐ **Action**: Measure distance between Setra sensor and floor of tower (distance marked on cable).

ENTER: Distance Setra to floor [m]

Logbook: Distance Setra to floor

☐ **Action**: Measure well depth with Setra system and laser ranger and compare.

Logbook: Well depth from Setra [m], well depth from laser [m]

☐ **Action**: If the two well depth meaurements agree, switch from laser to Setra in monitoring system.

During String Drop

☑ **Action**: Click "String Drop" under Deployment Events.

☑ **Action**: Measure well depth manually (with laser ranger and/or tape measure).

(if shift lead allows: repeat several times during drop)

ENTER: Well depth [m]

Logbook: Well depth, measurement method (laser/tape) laser

☑ **Action**: Read cable marks at regular intervals.

Logbook: Cable mark [m]; depth readings [m] (Paro, Keller); time

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End of Deployment

☑ **Action**: Get final pressure readings from Paro and Keller when final depth has been reached.

Logbook: Pressure readings [PSI]; corrected depths [m] (from screen)

☑ **Action**: Get final well depth reading (laser and/or Setra).

HAS TO BE SIMULTANEOUS WITH FINAL PRESSURE READINGS!

Logbook: Well depth [m] (laser); well depth [m] (Setra)

☑ **Action**: Note deployment end time.

Logbook: Time

☑ **Action**: Click "Complete" under Deployment Events.

			STRING 72			
NAME	DOMID	REMARK	DEPLOYED POSITION	Cable Mark	Difference	Depth
Centralplan	TP6H7523		60	0		2452.1
Blind_Hookey	UP6P1396		59	17.67	17.67	2434.4
Cool Kand	TP6P1743	Lucie	58	32	14.33	2420.1
Achluophobiaish	UP5P0728	Droopy	57	35	3	2417.1
Ansgariegatan	TP6H7507		56	53	18	2399.1
Chapmansgatan	UP6H7524		55	70	17	2382.1
Rotten_Egg	TP6P1343		54	86.8	16.8	2365.3
Indra	UP6Y4436		53	104	17.2	2348.1
Trast	TP5H0125	Droopy	52	121	17	2331.1
Embryology	UP5P0760		51	138	17	2314.1
TheShock	TP5P0983	Droopy	50	155	17	2297.1
Jaguargott	UP6Y4304		49	172	17	2280.1
Westbrecuz	TP5Y0151		48	191	19	2261.1
Ghost_of_Jupiter	UP6P1310		47	206	15	2246.1
Coal_Sack	TP6P1241		46	223	17	2229.1
Cardellgatan	UP6H7520		45	240	17	2212.1
URISK	TP5P0571		44	257	17	2195.1
Spirograph	UP6P1340		43	274	17	2178.1
NN0015	TP4H0015	Droopy	42	292	18	2160.1
Ah_Chuy_Kak	UP6Y4334		41	308	16	2144.1
Alom	TP6Y4269		40	326	18	2126.1
Pelican	UP6P1242		39	342	16	2110.1
Buttercup	TP6P1257		38	359	17	2093.1
Hundgrundet	UP5H0222	Droopy	37	376	17	2076.1
Huehueteotl	TP6Y4343	Waived bad fit ((sunshine)	36	393	17	2059.1
Ant_Nebula	UP6P1350		35	410	17	2042.1
Bastulunsen	TP5H0147	Droopy	34	427	17	2025.1
Mahischa	UP6Y4276		33	444	17	2008.1
Mohini	TP6Y4441		32	461	17	1991.1
MINNESOTA	UP5P1026		31	478	17	1974.1
Cedersdalsgatan	TP6H7521		30	495.5	17.5	1956.6
Tonatiuh	UP6Y4330		29	512	16.5	1940.1
Amiralitetsbacken	TP6H7505		28	530	18	1922.1
Veil	UP6P1324		27	546.9	16.9	1905.2
Pellekobben	TP5H0251	Droopy	26	564	17.1	1888.1
Barnhusgatan	UP6H7514		25	581	17	1871.1
Bharata	TP6Y4431		24	598	17	1854.1
Poker	UP6P1394		23	615	17	1837.1
Owl_Nebula	TP6P1345	Waived STF	22	631.5	16.5	1820.6
Merope	UP6P1284		21	649	17.5	1803.1
Matali	TP6Y4429		20	666	17	1786.1
Shanghai_Rum	UP6P1398	Waived STF	19	683	17	1769.1
Flame	TP6P1359		18	700	17	1752.1
Skomakarkobben	UP5H0256	Droopy	17	717	17	1735.1
Little_Dumbbell	TP6P1353		16	734	17	1718.1
Prackharan	UP5H0252	Droopy	15	751	17	1701.1
Rosette	TP6P1333		14	768	17	1684.1
Cao_Guojiu	UP6Y4454		13	785	17	1667.1
Mandara	TP6Y4475		12	809	24	1643.1
Hustrukobben	UP5H0122	Droopy	11	819	10	1633.1
Eta_Carinae	TP6P1319		10	837	18	1615.1
Twin_Jet	UP6P1320	Waived STF	9	853	16	1599.1
Helix	TP6P1341		8	870	17	1582.1
Amarantertrappan	UP6H7504		7	887	17	1565.1
Boomerang	TP6P1321		6	905	18	1547.1
Lu_Dongbin	UP6Y4446		5	921	16	1531.1
Hunab_Ku	TP6Y4305		4	938	17	1514.1

Durak_Card	UP6P1374	**DEPLOY IN POS 1 - 10 !** (single reboot failure at -23) Waived Current diff.	3	955	17	1497.1
Dark_Horse	TP6P1239		2	972.5	17.5	1479.6
Saturn_Nebula	UP6P1346		1	989	16.5	1463.1
Photophobiaish	TP5P0587	Droopy				
Mad_Cow	TP5P0971	Droopy				
Diphtheria	TP5P0977	Droopy				
Mononucleosis	TP5P0993	Droopy				
Ah_Cun_Can	TP6Y4339					
Aeromonas	UP5P1048	Droopy				
Elephantiasis	UP5P1062	Droopy Waived Bad fit (adaptation) Waived Current diff.				
Scabies	UP5P1068	Droopy				
Tlaltecutli	UP6Y4340					
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Achluophobiaish	UP5P0728	Droopy	57	35	17	2401.1
Ansgariegatan	TP6H7507		56	53	18	2383.1
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Trast	TP5H0125	Droopy	52	121	17	2315.1
Embryology	UP5P0760		51	138	17	2298.1
TheShock	TP5P0983	Droopy	50	155	17	2281.1
Jaguargott	UP6Y4304		49	172	17	2264.1
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Ghost_of_Jupiter	UP6P1310		47	206	15	2230.1
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Flame	TP6P1359		18	700	17	1736.1
Skomakarkobben	UP5H0256	Droopy	17	717	17	1719.1
Little_Dumbbell	TP6P1353		16	734	17	1702.1
Prackharan	UP5H0252	Droopy	15	751	17	1685.1
Rosette	TP6P1333		14	768	17	1668.1
Cao_Guojiu	UP6Y4454		13	785	17	1651.1
Mandara	TP6Y4475		12	809	24	1627.1
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String Installation Traveler

Surface Cable# : 72 **Length (m) :** 558 m	**Start date:** 12 / 21 / 06
Surface to DOM Cable# : C16	**Start date:** 1 / 9 / 07

	Process Step	Doc. no. reference	Tech initials	Date Completed	Comments
1	Visual Inspection of Cables at Pole	9400-0006-QLP	MK	1/9/07	

Surface Cable Assembly Inspection **Pass** ☑ **Fail** ☐ **By:** MK

Surface to DOM Cable Assembly Inspection **Pass** ☑ **Fail** ☐ **By:** MK

2	Trench Surface Cable Assembly (SCA)	9400-0006-QLP		12/21/06	
3	Install SCA into Surface Junction Box (SJB)	9400-0006-QLP	TJM	12/28/06	
4	Install SCA into ICL	9400-0075-PLN		12/21/06	
5	Complete IceTop FCU Power and Data Installation Procedure	9400-005-QLP			
6	Verify Connectivity of IceTop DOMs with Quad Connectivity Tester (QCT)		MK	1/10/07	
7	Pre-deployment Inspection Procedure		MK	1/09/07	
8	S2D Cable into SJB installation	9400-0007-QLP	MK	1/10/07	
9	Wet Connector Testing of Quads		MK	1/10/07	
10	QCT Testing of Quads		MK	1/10/07	
11	SJB Final Inspection Complete (Ok to Bury)	9400-0007-FRM	MK	1/25/07	
12	Handoff to IceCube C &V Team		MK	1/12/07	

String Installation Traveler

String QCT and Wet Connector Test Form

String # 72 Name of Tester: Mike Kleist

	QCT Results # of DOMs (0, 1, 2)			Wet Connector Test Results (micro Amps)					
Quad name	# of DOMs WP0	# of DOMs WP1	Pass/ Fail	J	L	M	K	Pass/ Fail	Recheck Pass/ Fail
Q2	2	2	P			>180μA	>180μA	F	P 1/24/07
Q3	2	2	P					P	
Q4	2	2	P					P	
Q5	2	2	P					P	
Q6	2	2	P					P	
Q7	2	2	P					P	
Q8	2	2	P					P	
Q9	2	2	P					P	
Q10	2	2	P					P	
Q11	2	2	P					P	
Q12	2	2	P					P	
Q13	2	2	P					P	
Q14	2	2	P					P	
Q15	2	2	P					P	
Q16	2	2	P					P	
IceTop Quads									
ITQ1	1	1	P						
ITQ2	1	1	P						

Service Quads	Device Connected	Verified on	Tech Initials	Comments
Q1				
Q17				
Q18				
Q19				
Q20				