DEPLOYMENT LOG for IceCube STRING # 58

Deployment Start: *at* 15:20 NZDT *on* 12-14-06

Deployment End: *at* _____ *on* 12-15-06

Target depth (DOM60): **2450** m Final depth: 2450 ?

Deployment Crew

Position	First Shift	Second Shift
Shift lead	Tom Ham	Gary Hill
DOM install 1 (high)	Gabriel	Jüttyes / Suzy
DOM install 2 (low)	Melan	Gabriel / Madeline John
~~DOM supply 1~~ / DOM install 3	~~SVEA~~ .	~~Claire~~ Melanie Z / Tom TT
DOM supply ~~2 / floater~~	Sven L	Claire P / Perry Sandstrom
Winch operator (cable & tower)	Stephen	Steve / Gus
Notary (logbook & photos)	Andres Tom (photos)	Andrés / Andrés'
PTS (monitoring / sensors)	Andres	"
Support (optional)	Bob Morse	Morse.

Time of shift change: 7pm

Summary/Comments:

3 drills

7

1.5 hrs

4 drills

8

10

Hole Handover

☑ Drill data reviewed

- ☐ maximum drift in x:_____ ☐ plot
- ☐ maximum drift in y:_____ ☐ plot
- ☑ maximum depth: 2505
- ☑ minimum radius: .75 ☐ plot
- ☐ plot of predicted radius vs depth and time

☑ Hole dimensions verified Time:_____

Drill Lead: AL
name / signature / date

Deployment Lead: Tom Ham
name / signature / date

☑ Handover complete

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: 15:20

- ☑ Cable winch anchored and ☑ operational
- ☑ Tower winch operational
- ☑ Tie off verified
- ☑ Yellow rope verified

- ☑ Deployment monitoring system (PTS) operational ☑ DDB# 1
- ☑ 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): everyone
- ☑ ☐ CPR trained: Dan, everyone
- ☐ ☐ Food runners: _____

call galley at 65521

- ☑ End of Main Cable brought into TOS and secured

Cable end attachments

- ☑ Measure well depth: 46.3 m
- ☑ Weights (5) attached
- ☑ Weight cable attached (weight stack complete) Time: 15:52

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

DOM position 60 DOM id: TP SY0079
(T, Long)

☑ Bottom shackle connected to weight stack Payout: 0
☑ Top shackle connected to 17 m steel cable
Photos: ☑ whole view

DOM position 59 DOM id: UP 4Y0024
(U, Short) Cable mark: taped

☑ Bottom shackle connected to 17 m cable
☑ Top shackle connected to Yale grip Δ(59-60): 16.92 (use laser ranger)
☑ Main cable end taped to 17 m steel cable
Photos: ☑ phi orientation ☑ whole view

Breakout 30 Time: 17:32
Depth:
Payout

- 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 #: 93437 Nipple ☑ on ☐ off
☑ Connected ☑ Operational ☑ Air pressure [PSI]: 9.82
☐ Cable mark: ☑ Distance to DOM59: 1.63

☐ All clear to lower cable ☺

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

DOM position 58 DOM id: TP 6P1427

(T, Long) Cable mark: 19 m

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(58-59): 16.95
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

DOM position 57 DOM id: UP 4Y0022

(U, Short) Cable mark: 35m

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(57-58): 16.89
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 29

Time:
Now 18:02
Last b/o
Δt [min]
Depth:
Paro
Payout

- 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 4Y0041

(T, Long) Cable mark: 52

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(56-57): 16.91
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 55 DOM id: UP 5Y0116

(U, Short) Cable mark: 69

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(55-56): 16.92
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 28 Time:

Now 18:24
Last b/o
Δt [min]
Depth:
Paro
Payout

- 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 6P1313

(T, Long) Cable mark: 86

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(54-55): 16.883
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 53 DOM id: UP 4Y0008

(U, Short) Cable mark: 103

☐ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(53-54): 16.91
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 27

Time:
Now 18:48
Last b/o
Δt [min]

Depth:
Paro 119
Payout

- 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 5P0995
(T, Long) Cable mark: 120

- ☑ Bottom shackle connected
- ☑ Top clutch connected at link # 20 Δ(52-53): 16.85
- ☑ Bow OK → ☐ clutch zip tied

Photos: ☑ phi orientation ☑ whole view

DOM position 51 DOM id: UP 6P1312
(U, Short) Cable mark: 137

- ☑ Bottom shackle connected
- ☑ Top clutch connected at link # 18 Δ(51-52): 16.91
- ☑ Bow OK → ☑ clutch zip tied

Photos: ☑ phi orientation ☑ whole view

Breakout 26

Time:
Now [illegible]:19:14
Last b/o ____
Δt [min] ____
Depth:
Paro 152
Payout 151

- 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 6P1245

(T, Long) Cable mark: 154

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(50-51): 16.93
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view
☑ Curved distance around DOM: 96" ☑ Vertical distance: 93"

DOM position 49

DOM id: UP 6P1304

(U, Short) Cable mark: 171

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(49-50): 16.89
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view
☑ Curved distance around DOM: 95" ☑ Vertical distance: 94"

Breakout 25

Time:
Now 19:37
Last b/o
Δt [min]

Depth:
Paro 187
Payout 184

- 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 6P1287
(T, Long) Cable mark: 188

☐ Bottom shackle connected
☐ Top clutch connected at link # _____ Δ(48-49): 17.108
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 47 DOM id: UP 6P1228
(U, Short) Cable mark: 188

☐ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(47-48): ~~17.108~~ 17.106
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 24

Time:
equator
Now 19.58
Last b/o _____
Δt [min] 21

Depth:
Paro ~~209.5~~ 218.46
Payout -85

- 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 46 DOM id: TP 6P1221

(T, Long) Cable mark: 222

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(46-47): 16.94
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☑ whole view

DOM position 45 DOM id: UP 6P1466

(U, Short) Cable mark: 239

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(45-46): 16.94
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 23 Time:

Now 20:20
Last b/o
Δt [min]

Depth:
Paro 254
Payout 250

- 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 6P1507

(T, Long) Cable mark: 256

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(44-45): 16.91
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 43 DOM id: UP 6P1292

(U, Short) Cable mark: 273

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(43-44): 16.9
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 22

Time:
Now 20:37
Last b/o
Δt [min]

Depth:
Paro 289
Payout 285

- 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 6P1289

(T, Long) Cable mark: 290

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(42-43): 16.82
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 41 DOM id: UP 5Y0114

(U, Short) Cable mark: 307

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(41-42): 16.97
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

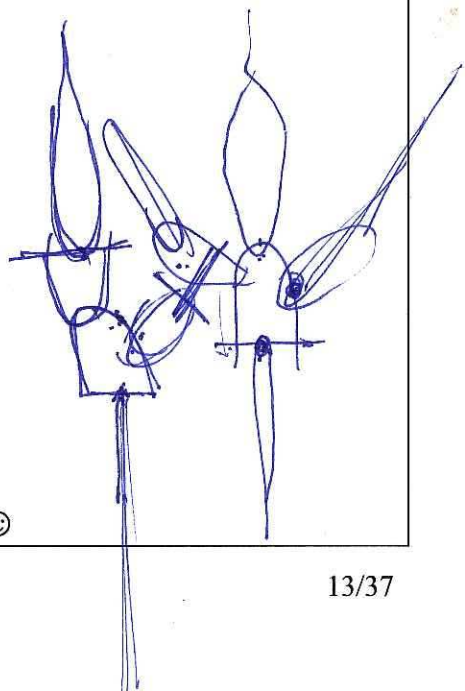
Breakout 21 Time:

Now 20:54
Last b/o
Δt [min]

Depth:
Paro 329
Payout 326

- 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 6P1365

(T, Long) Cable mark: 324

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(40-41): 16.96
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 39 DOM id: UP [illegible] 6P1494

(U, Short) Cable mark: 341

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(39-40): 16.84
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 20 Time:

Now 21:21
Last b/o
Δt [min]

Depth:
Paro 360
Payout 357

- 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 6P1469

(T, Long) Cable mark: 358

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(38-39): 16.9
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 37 DOM id: UP 6P1326

(U, Short) Cable mark: 374

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(37-38): 16.89
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 19

Time:
Now 21:36
Last b/o
Δt [min]

Depth:
Paro 390
Payout 385

- 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 6P1471

(T, Long) Cable mark: 392

☑ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(36-37): 16.90
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

61698

DOM position 35 DOM id: UP 6P1332

(U, Short) Cable mark: 408

☑ Bottom shackle connected
☑ Top clutch connected at link # 14 Δ(35-36): 16.96
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 18 Time:

Now 21:49
Last b/o
Δt [min]

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

Depth:
* Paro 407
Payout 419

- 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 ☺

* between breakout 19 and 18 paro stopped tracking payout. we dropped cable 3 breakouts and looked at relative changes in paro and cable. over 3 breakouts paro changed 6-7 m per breakout, payout changed 17 m. [illegible] problem

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

DOM position 34 DOM id: TP 5Y0119

(T, Long) Cable mark: 426

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(34-35): 16.94
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 33 DOM id: UP 6Y4326

(U, Short) Cable mark: 440

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(33-34): 16.92
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 17

Time:
Now 22:24
Last b/o
Δt [min]

Depth:
Paro 422
Payout 452

- 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 6P1433

(T, Long) Cable mark: 460

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(32-33): 16.88
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 31 DOM id: UP 6P1442

(U, Short) Cable mark: 476

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(31-32): 16.87
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 16 Time:

Now 22:45
Last b/o
Δt [min]

Depth:
Paro 446
Payout 485

- 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 6P1357
(T, Long) Cable mark: 494

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(30-31): 16.93
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

DOM position 29 DOM id: UP 6Y4294
(U, Short) Cable mark: 510

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(29-30): 16.92
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 15 Time:

Now 23:16
Last b/o
Δt [min]

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

Depth:
Paro 480
Payout 527

- 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:

Keller ☑ Connected ☐ Operational ☐ Air pressure [PSI]: 248.97
Ser.#: 0504003 ☑ Cable mark: 510 ☑ Distance to DOM29: 0.465

☐ All clear to lower cable ☺

* software did not have keller calibration constants after takin, ambient and after keller hit ~~pass~~ water, set scale to 0, fixed offset to match payout. then after ~50m set scale to match payout

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

DOM position 28 DOM id: TP 6Y4455

(T, Long) Cable mark: 528

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(28-29): 16.90
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 27 DOM id: UP 6P1240

(U, Short) Cable mark: 544

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(27-28): couldn't tk
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 14 Time:

Now 23:36
Last b/o
Δt [min]
Depth:
Paro 499
Keller
Payout 553

- 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 6P1439

(T, Long) Cable mark: 561

☐ Bottom shackle connected
☐ Top clutch connected at link #_____ Δ(26-27): 16.98
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 25 DOM id: UP 6P1512

(U, Short) Cable mark:

☑ Bottom shackle connec
☑ Top clutch conne 6): 16.94
☑ Bow OK → ☑
Photos: ☑ phi orie

1512 ?
check w Anders

Breakout 13 Time:

:49

- LongDOM
  - ☐ connector O-ring in
  - ☐ breakout O-ring in pla
  - ☐ connected

[min]

Depth:
Paro 518
Keller
Payout 586.81

- 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 6P1233

(T, Long) Cable mark: 595

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(24-25): 16.90
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 23 DOM id: UP 6P1286

(U, Short) Cable mark: 612

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(23-24): 16.88
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 12 Time:

Now 0:03
Last b/o
Δt [min]

Depth:
Paro 547
Keller 619
Payout 620

- 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 22 DOM id: TP 6P1511

(T, Long) Cable mark: 629

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(22-23): 16.91
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 21 DOM id: UP 6P1514

(U, Short) Cable mark: 646

☑ Bottom shackle connected
☑ Top clutch connected at link # 17 Δ(21-22): couldn't get
☐ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 11 Time:

Now 0:21
Last b/o
Δt [min]

Depth:
Paro 651
Keller
Payout 654

- 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 6P1203

(T, Long) Cable mark: 663

☑ Bottom shackle connected
☑ Top clutch connected at link # 17 Δ(20-21): 16.90
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view
☑ Curved distance around DOM: 94" ☑ Vertical distance: 92"

DOM position 19 DOM id: UP 6P1274

(U, Short) Cable mark: tape

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(19-20): 16.92
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view
☐ Curved distance around DOM: _____ ☐ Vertical distance: _____

Breakout 10

Time:
Now 0:38
Last b/o _____
Δt [min] _____

Depth:
Paro 686
Keller _____
Payout 688

- 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 6P1475

(T, Long) Cable mark: 697

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

DOM position 17 DOM id: UP 6P1272

(U, Short) Cable mark: 714

☑ Bottom shackle connected
☑ Top clutch connected at link # 17 Δ(17-18): 16.87
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 9 Time:

Now 0:51
Last b/o ____
Δt [min] ____

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

Depth:
Paro ____
Keller ____
Payout ____

- 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 SP0713

(T, Long) Cable mark: 731

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(16-17): 16.97
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 15 DOM id: UP 6P1218

(U, Short) Cable mark: 74?

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(15-16): 16.92
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 8

Time:
Now 1:03
Last b/o
Δt [min]

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

Depth:
Paro 746
Keller
Payout 756

- 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 4Y0063

(T, Long) Cable mark: 765

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(14-15): 16.91
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 13 DOM id: UP 6P1246

(U, Short) Cable mark: 782

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(13-14): 16.95
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 7

Time:
Now 1:18
Last b/o
Δt [min]

Depth:
Paro 789
Keller
Payout 789

- 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 6P1323

(T, Long) Cable mark: 799

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(12-13): 16.97
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

DOM position 11 DOM id: UP 6P1438

(U, Short) Cable mark: 816

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(11-12): 16.93
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 6

Time:
Now 1:58
Last b/o
Δt [min]
Depth:
Paro 817
Keller
Payout 823

- 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 4Y0055

(T, Long) Cable mark: 833

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(10-11): 16.87
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 9 DOM id: UP 5P0882

(U, Short) Cable mark: 850

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(9-10): 16.87
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 5 Time:

Now 2:09
Last b/o
Δt [min]

Depth:
Paro 853
Keller
Payout 857

- 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 8 DOM id: TP 5P0831

(T, Long) Cable mark: 867

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(8-9): 16.93
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 7 DOM id: UP 6P1458

(U, Short) Cable mark: 883

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(7-8): 16.95
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

Breakout 4 Time:

Now 2:20
Last b/o
Δt [min]

- 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

Depth:
Paro 888
Keller
Payout 891

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

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

DOM position 6 DOM id: TP 5Y0071

(T, Long) Cable mark: 901

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(6-7): 16.94
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 5 DOM id: UP SP1056

(U, Short) Cable mark: 917

☑ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(5-6): 17.00
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 3

Time:
Now 2:33
Last b/o
Δt [min]

Depth:
Paro 917
Keller
Payout 925

- 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 5P0941

(T, Long) Cable mark: 934

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(4-5): 16.94
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 3 DOM id: UP 6P1500

(U, Short) Cable mark: 951

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(3-4): 16.94
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 2

Time:
Now 2:43
Last b/o
Δt [min]

Depth:
Paro 936
Keller
Payout 959

- 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 2 DOM id: TP 6P1441

(T, Long) Cable mark: 969

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(2-3): 16.95
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

DOM position 1 DOM id: UP 6P1338

(U, Short) Cable mark: 985

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(1-2): 16.92
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 1

Time:
Now 2:58AM
Last b/o
Δt [min]

Depth:
Paro 973
Keller
Payout 993

- 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

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: 3:06 AM

☑ 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: 45.5

If the two well depth measurements agree:

☐ Switch to Setra well depth in monitoring system

Time: _____

using laser because we don't know where setra is or how to connect it

calibration

	cable mark 1151	
paro	1105	← depth of DOM60
payout	1160	← depth of DOM60

depth of DOM60 = (cable mark) − (cable mark @ DOM 58) + Δ(DOM 58 − DOM 60)
= cable mark − 19 + 34
= **cable mark + 15**

Now the String Drop begins

String Drop

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

@ 4:12 AM
cable mark 2397
well depth 45.2

☐ Switch cable winch to computer control

☐ Speed:_____ Time:_____ Depth:_____
☐ Speed:_____ Time:_____ Depth:_____
☐ Speed:_____ Time:_____ Depth:_____
☐ Speed:_____ Time:_____ Depth:_____
☐ Speed:_____ Time:_____ Depth:_____
☐ Speed:_____ Time:_____ Depth:_____

* stopping drop at cable mark 2420 →
2420 + 15 m (to DOM60) + 10 m (cable slack) + 5 m (anchor)

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

Depth by Paro[1]	Time	Well depth[1]	Depth by cable marks[2]	Depth by Payout[1]	Δdepth P-K[1]
1000 m					
1500 m					
2000 m					
2100 m					
2200 m					
2300 m					
2400 m					

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

☐ Switch to manual control @ 2400 m

☐ Well depth
@ 2420:_____
@ 2440:_____

☐ Position string at target depth of **2450** m Time:_____

☐ String secured with Yale grip and anchor chain Time:_____

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

☐ Distance from Paro to DOM60:

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

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

☐ Convert Paro pressure to string depth:

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

(use 6 decimals for exp's)

Ambient pressure (from p. 4): P_0 = _____ 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:	Paro	Keller	Payout	Cable marks
Reading	PSI	PSI	m	m
Offset	PSI	PSI	m	m
Well depth	45.2 m		This space is intentionally left blank	
Dist. to DOM60	m	m		
DEPTH (DOM60)				

Time: 4:35

Final depth (DOM60): _____

Deployment Closeout

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

Time: 4:40 Date: 12-15-06

Shift Lead: GRANT HILL [signature]
name / signature

Logger: Andres Morey [signature]
name / signature

PTS Lead: Andres Morey [signature]
name / signature

Deployment Manager: ______________________
name / signature

Safety Officer: ______________________
name / signature

IceCube On-ice Lead: ______________________
name / signature

note on PTS problems and the logic behind final depth calculations

* Since about 400 m, the paro started lagging behind the payout measurements. For a while around 800 m it looked like there was some agreement, but during the drop, the paro had measurement issues as well as communication issues.

Before beginning the drop we took a note of the ~~paro~~ depth of DOM 60 according to paro measurements and payout measurements. The values were 1105 and 1160 respectively. According to cable marker readings (cable marker + 15 m) DOM 60 was at a depth of 1166 and this did not include stretch in the cable.

The cable markers were very accurate throughout the deployment in tracking the distance between DOMs so we decided to use cable markers for our final ~~position~~ target position. We stopped the cable at cable marker 2420 which means DOM 60 is at 2435 m according to cable markers. Adding 10 m for cable stretch and another 5 for the tie off yale grip and dead man gives a target depth of 2450 m.

-Andres 12-15-06

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

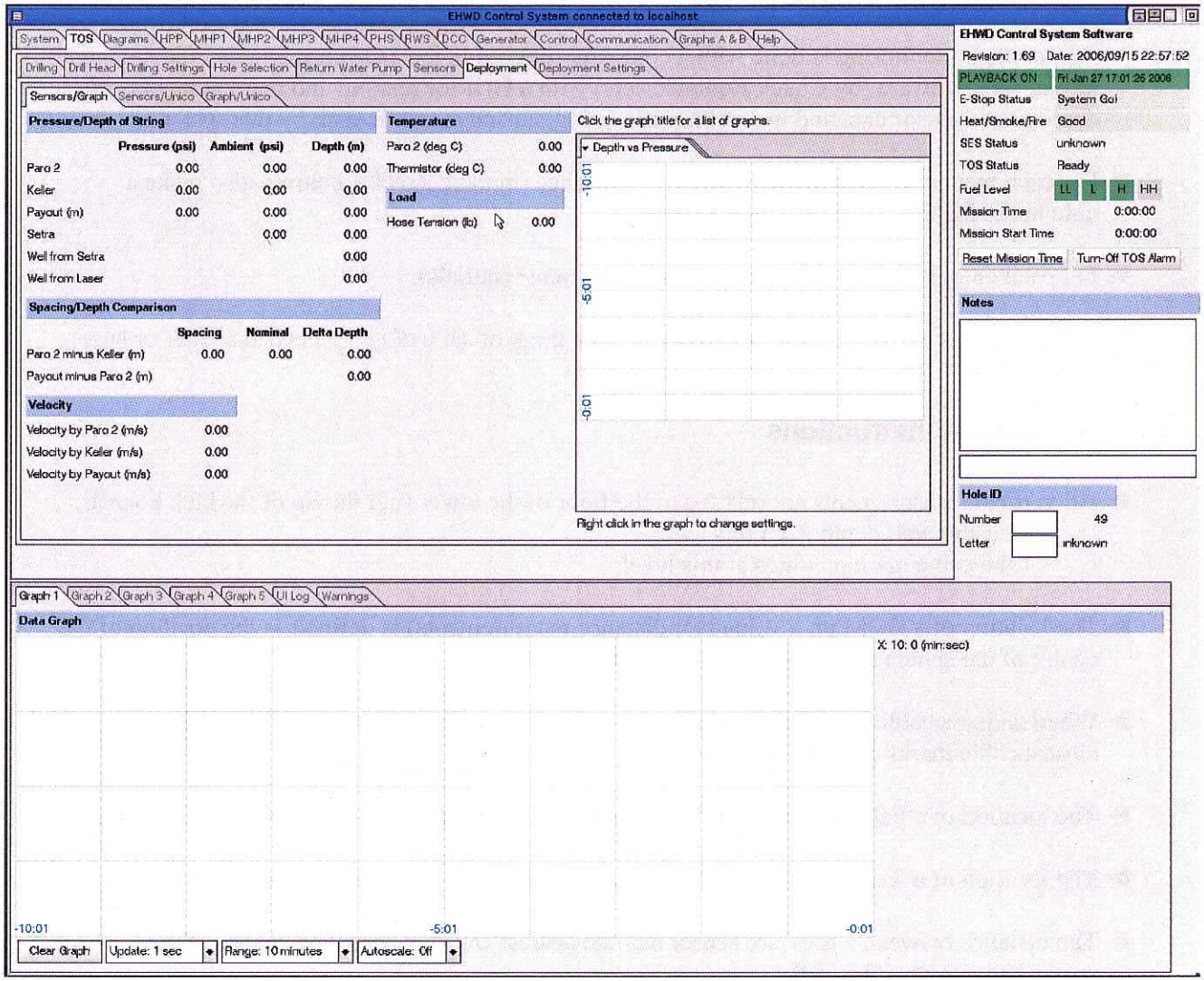
- All vertical measurements are relative to the floor of the tower (not the lip of the kick board).
  - Measure well depth from this level.
  - Take cable mark readings at this level.
- The location of a DOM on a string (for distance measurements) is defined as the position of the center of the sphere (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.

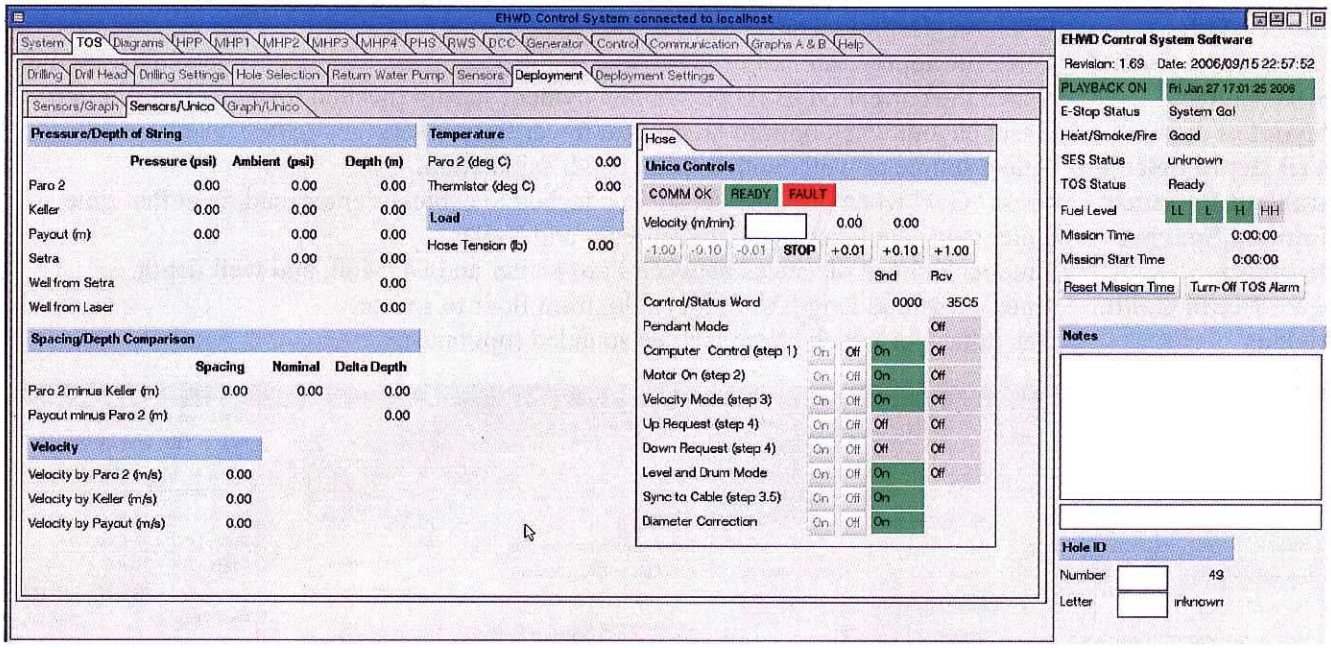
Pressure/Depth of String Current and ambient (air) pressures, and the corrected depths at DOM60.
Spacing/Depth Comparison Difference in depth from pressure data. *Should be stable during deployment!*
Velocity The deployment velocity calculated from recent pressure/payout readings.
Temperature Temperature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



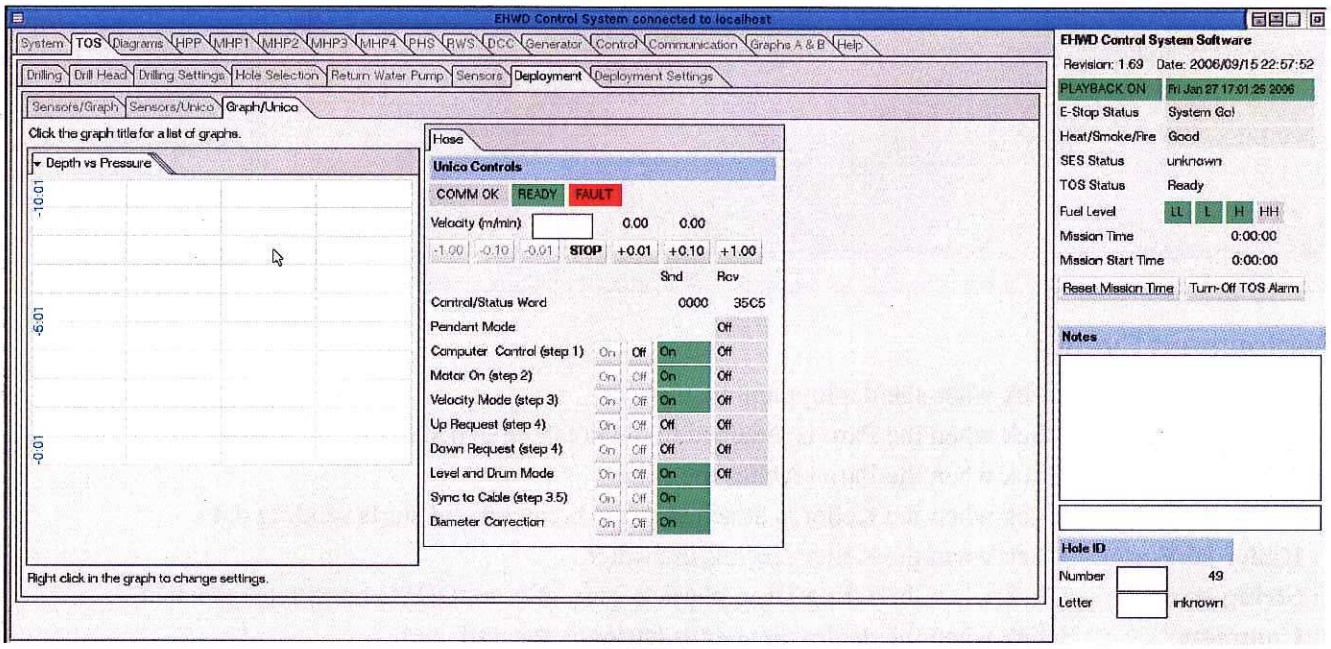
Screen Tab: TOS ► Deployment

► 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

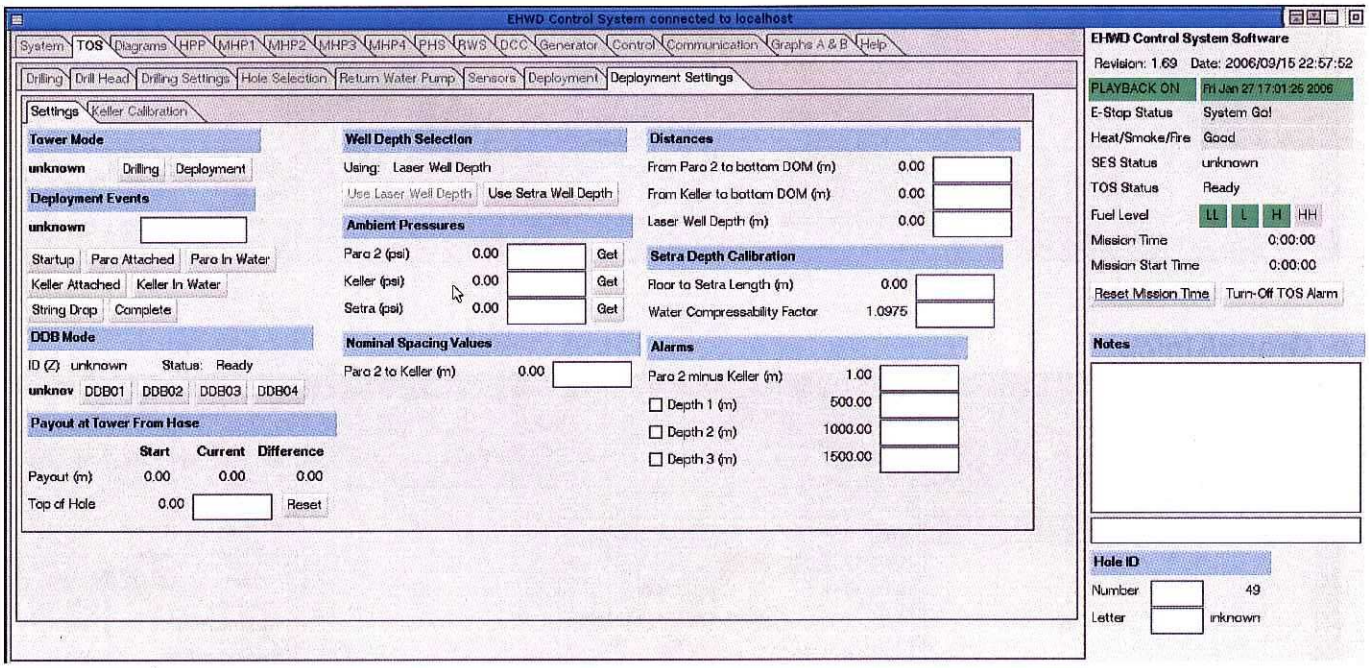


Screen Tab: TOS ▶ Deployment Settings

▶ 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).



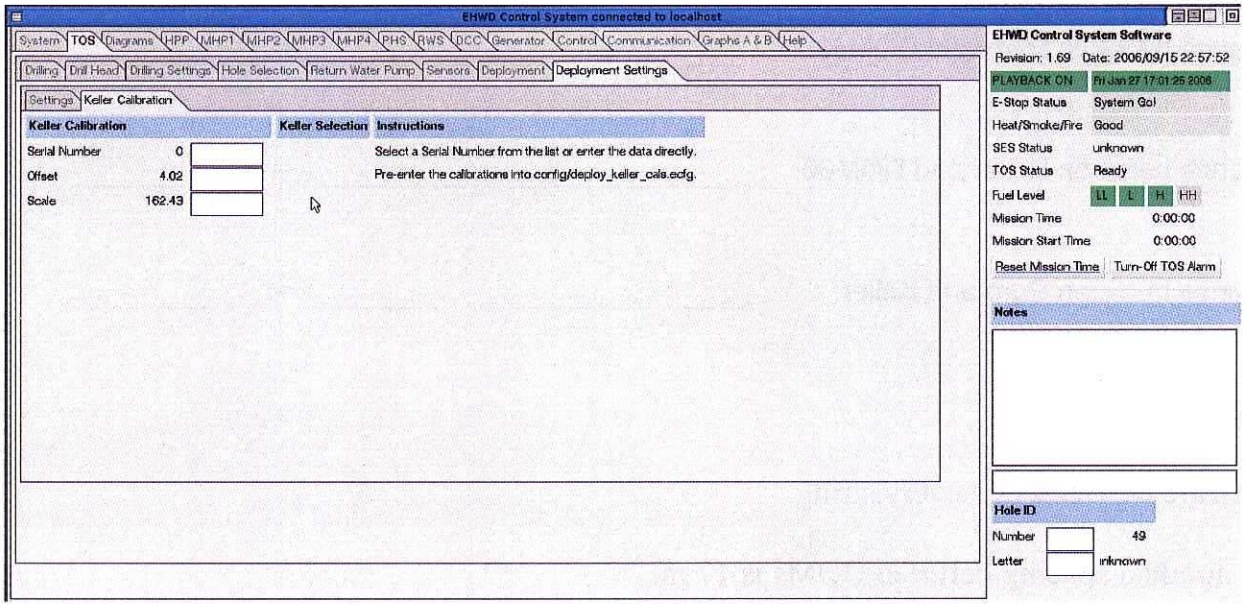
Deployment Events

☐ **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

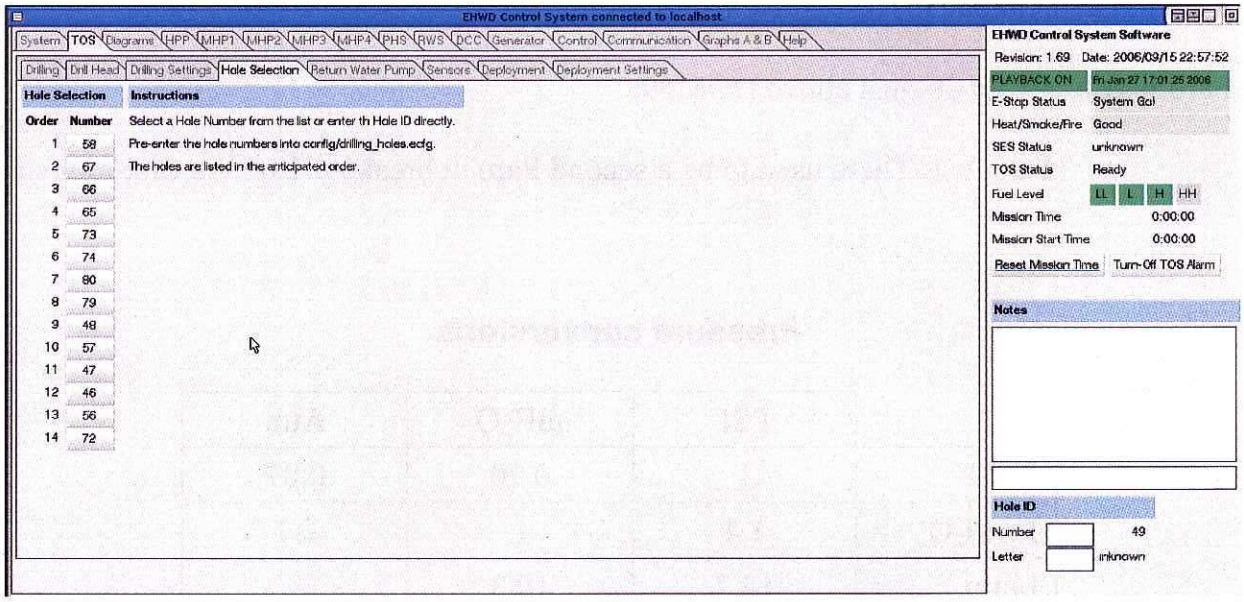
► Keller Calibration

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 # 58

DATE: 12-14-06

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. 15:20

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

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

ENTER: DDB# (select button)

Logbook: DDB# 1

☑ **Action**: Take a well depth measurement with the laser ranger.

ENTER: Well depth [m]

Logbook: Well depth 46.3 m

☑ **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 696

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

Logbook: Cable mark [m] N/A taped over

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

Logbook: Paro serial number 93437

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

☑ **Action**: Measure distance between Paro location and nearest DOM. 1.63m

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

ENTER: Distance [m] from Paro to *bottom* DOM (#60) 1.63 + 16.92 = 18.55

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

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

Logbook: Cable mark [m] cable taped

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

ENTER: Ambient pressure [PSI] for Paro

Logbook: Paro2 air pressure 10.02 psi

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 0504003

Logbook: Keller serial number

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

☐ **Action**: Measure distance between Keller and nearest DOM. 0.465

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

ENTER: Distance [m] from Keller to *bottom* DOM (#60) 527

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

527.465

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

Logbook: Cable mark [m] for Keller

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

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.

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)

☐ **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 Installation Traveler

Surface Cable# : 58 **Length (m) :** 725 m	**Start date:** / /
Surface to DOM Cable# : C8	**Start date:** 12/14/06

	Process Step	Doc. no. reference	Tech initials	Date Completed	Comments
1	Visual Inspection of Cables at Pole	9400-0006-QLP	MK		not present @ install

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

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

2	Trench Surface Cable Assembly (SCA)	9400-0006-QLP	MK		trenched during 05-06 season
3	Install SCA into Surface Junction Box (SJB)	9400-0006-QLP	MK		Installed during 05-06 season
4	Install SCA into ICL	9400-0075-PLN	MK	1/5/07	TICL to ICL conversion
5	Complete IceTop FCU Power and Data Installation Procedure	9400-005-QLP			05-06 season
6	Verify Connectivity of IceTop DOMs with Quad Connectivity Tester (QCT)		MK	1/8/07	
7	Pre-deployment Inspection Procedure		MK		not present
8	S2D Cable into SJB installation	9400-0007-QLP	MK		not present
9	Wet Connector Testing of Quads		MK	1/8/07	no "high" currents, currents not stable enough to get accurate readings 1 i < 5 μA
10	QCT Testing of Quads		MK	1/8/07	
11	SJB Final Inspection Complete (Ok to Bury)	9400-0007-FRM	MK	1/10/07	
12	Handoff to IceCube C &V Team		MK	1/11/07	

String Installation Traveler

String QCT and Wet Connector Test Form

String # 58 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					P	
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				

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DOMID	NAME		POSITION	COMMENTS
Peters_Kolsch	UP4Y0008	Droopy	53	
Anheuser_Busch	UP4Y0022	Droopy	57	
Alsfelder	UP4Y0024	Droopy	59	
Hoplophilia	UP5P0882	Droopy	9	
Scarlet_Fever	UP5P1056	Droopy	5	
Kia_Sportage	UP5Y0114	Droopy	41	
Koenigsegg_CCR	UP5Y0116	Droopy	55	
Pussytoes	UP6P1218		15	
Scabious	UP6P1228		47	
Statice	UP6P1272		17	
Amaryllis	UP6P1274		19	
Frankenstein	UP6P1280		23	
Le_Manoir_Du_Diable	UP6P1292		43	
Bloody_Birthday	UP6P1304		49	
Creep	UP6P1312		51	
Nushagak_River	UP6P1432		NA	Broken Connector
Koyukuk_River	UP6P1438		11	
Susitna_River	UP6P1442		31	
Koyuk_River	UP6P1458		7	
Kokolik_River	UP6P1466		45	
Stony_River	UP6P1476		NA	Spare
Sheenjik_River	UP6P1494		39	
Kuparuk_River	UP6P1500		3	
Sute_Neko	UP6P1512	Golden - 21 or 25	25	
Doroboh_Neko	UP6P1514	Golden - 21 or 25	21	
Gothika	UP6P1240		27	
Orion	UP6P1338		1	
Imhotep	UP6P1246		13	
Itzamna	UP6Y4326		33	
Keyhole	UP6P1332		35	
Homonculus	UP6P1326		37	
Akhushtal	UP6Y4294		29	
Baumschulenwegg	TP5Y0079	Droopy	60	
Lichtenberg	TP5Y0119	Droopy	34	
Braugold	TP4Y0041	Droopy	56	
Rolinck_Friedensreiter	TP4Y0055	Droopy	10	
Eichwalde	TP5Y0071	Droopy	6	
Aufsesser	TP4Y0063	Droopy	14	
Dr_Caligari	TP6P1287		48	
Kobuk_River	TP6P1441		2	
Kuskokwim_River	TP6P1427		58	
Martin_River	TP6P1475		18	
Kvichak_River	TP6P1507		44	
Leatherface	TP6P1245		50	
Dr_Satan	TP6P1313		54	
Pleurisy	TP5P0995	Droopy	52	
Juniper	TP6P1233		24	
Stasibasiphobia	TP5P0713	Droopy	16	
Sinophiliaish	TP5P0831	Droopy	8	
Leprosy	TP5P0941	Droopy	4	

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Redbud	TP6P1203		20	
Yellow_Jasmine	TP6P1221		46	
Tanana_River	TP6P1469		38	
Colville_River	TP6P1471		36	
Chitina_River	TP6P1433		32	
Chulitna_River	TP6P1439		26	
Nora_Neko	TP6P1511	Golden	22	
Cropsy	TP6P1289		42	
Eskimo	TP6P1323		12	
Frosty_Leo	TP6P1357		30	
Dragon_Nebula	TP6P1365		40	
Ix_Chel	TP6Y4291		NA	Spare
Caishen	TP6Y4455		28	