

Munoz, Rick

From: Yunker, John A <John.Yunker@bakerhughes.com>
Sent: Thursday, March 19, 2015 1:18 PM
To: Vasquez, Michael; Munoz, Rick
Subject: Final RA Source Abandonment Report for Baker Hughes for the Murphy Exploration, OCS-G 16623 007 in Mississippi Canyon 582
Attachments: NRC_ Abnd Murphy Exploration Deep Seas OCS-G 16623 001 Baker Hughes Final Report Abandoned Feb202015.pdf

Gentlemen:

Please accept the attached report as Baker Hughes Final RA Source Abandonment Report for Murphy Exploration and Production, OCS-G 16623 007 ST00 BP00 in Mississippi Canyon Block 582. I will also FEDEX a copy overnight. Should you need anything else, please let me know.

Regards:

John A. "Tony " Yunker | Technical Support Engineer Principal II
Baker Hughes | Gulf of Mexico Region
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March 15, 2015



Nuclear Regulatory Commission Region IV
1600 E. Lamar Blvd.
Arlington, Texas 76011-4511
Attn.: Rick Munoz/Michael Vasquez

Re: NRC License No. 42-02964-01 Source Abandonment Report

(1) Date Occurrence: Tool stuck in hole on February 16, 2015 @ 18:00 hrs.

(2) Irretrievable Source Descriptions:

| | | |
|-----------------------------------|--------------------------|---------------------|
| 5 Ci (185 GBq) Americium-241/Be - | Serial Number: SN-73961B | QSA GLOBAL, AMN.CY3 |
| 2.5 Ci (92.5 GBq) Cesium-137 - | Serial Number: SN-80196B | QSA GLOBAL, CDC.CY4 |

(3) Surface Location & Well Identification:

| | |
|------------------------|---|
| Operator - | Murphy Exploration and Production Inc. |
| Rig - | Discoverer Deep Seas |
| Well - | OCS-G 16623 007 ST00BP00 |
| Field - | Mississippi Canyon Block 582 |
| Rig Surface Location - | N 28° 22' 39.641" and W 89° 27' 34.822" |
| General Area - | Offshore, Louisiana |

(4) Results of Efforts Immobilize: Pumped concrete to immobilize and seal hole.

(5) Recovery Efforts: Please reference the attached document.

(6) Depth of Source(s):

| | |
|--------------------|---|
| Americium-241/Be - | 11,294 feet Measured Depth (10,760 ft. TVD) |
| Cesium-137 - | 11,302 feet Measured Depth (10,767 ft. TVD) |

(7) Top of Cement: Approximately 10,525 feet Measured Depth (10,182 ft. TVD)

Proposed Cementing Procedure was as follows:

- ❖ Run in hole as per Murphy procedure with 5.875" x 5" drillpipe to +/-11,130 feet 10,643 feet TVD).
 - Verify pipe calculations with final pipe tally
- ❖ Hold safety meeting with all involved personnel.
- ❖ Break circulation with 13.8 lb/gal SMB using rig pumps. Circulate 2 bottoms up at 8-10 barrels/minute without losing returns.
 - If losses are observed, reduce rate to regain losses.

- ❖ Pressure test Halliburton unit and lines to 5000 psi.
- ❖ Pump 85 barrels of 14.5 lb/gal spacer with surfactants
- ❖ Mix and pump 125 bbl of 17.0 lb/gal cement slurry with red dye to set balanced plug Top of Cement at approximately 10,248 feet (plug length = 882 feet)
- ❖ Pump 17.5 barrels of 14.5 lb/gal spacer
- ❖ Displace with 212.9 bbl of 13.8 lb/gal synthetic based mud at 8 barrels/minute to spot balanced plug
 - Displacement volume short of balance point by 10 barrels to ensure pulling dry
 - Displace the last 10-15 barrels at 2 to 3 bpm.
- ❖ Pull out of hole to 9200 feet (approximately 1000 feet above cement plug top)
 - Lab test considers 90 minute shut-down (static time) to pull out of the hole to top of cement
- ❖ Drop foam wiper ball
- ❖ Circulate 2 drill pipe volumes
- ❖ Pull out of the hole
 - Wait on cement as per compressive strength chart.

Client elected pump cement plug and sidetrack the well.

Proposed cement procedure for cement squeeze job at 10,979 feet MD (10,524 feet TVD)

- ❖ Squeeze 16.4 lb/gal Lafarge Class H cement at 1.0634 ft³/sack
- ❖ Pump 4.163 ft³/sack of fresh water
- ❖ Pump various additives at 4.36 gal/sack of total mixed fluid
- ❖ Trip out of the hole

(8) Depth of Well: 11,370 ft. MD (10,817 ft. TVD)

(9) Other Information: N/A

(10) Agencies Notified: Nuclear Regulatory Commission

Thank you for your attention to this matter,

A handwritten signature in cursive script, appearing to read "John A. Yunker".

John A. Yunker
Radiation Safety Officer
[E-mail: john.yunker@bakerhughes.com](mailto:john.yunker@bakerhughes.com)

Murphy Exploration & Production Co - USA

OCS-G 16623 007 ST00BP00 & ST00BP01

Mississippi Canyon Block 582

Offshore, Louisiana

Submitted By:

Ryan Jeansonne

Gil Laird

Ed Rathgeb

Mark Herpin

Angie Tongtharadol

Jennifer Ashcraft

Date: 09 March 2015

Disclaimer

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Chronological Drilling Summary

16 February 2015

0000 Depth = 10892.39 feet, RunCirc = 31.5, OnBot = 7.9.
0010 Cycle pumps.
0020 DLK TTK Sample at 10742 feet (10836 bit depth) for 5 minutes.
0045 Cycle pumps.
0108 Back on bottom drilling.
0216 Back ream to clean hole and position TTK.
0241 Orient Toolface.
0247 Turning on compensators. Experienced some rig heave.
0259 DLK TTK Sample at 10845 feet (10939 bit depth) for 10 minutes.
0326 Cycle pumps and position pipe.
0337 DLK TTK Sample at 10832 feet (10926 bit depth) for 5 minutes.
0356 Cycle pumps.
0406 Back on bottom drilling.
0445 MWIN = 13.3 ppg.
0547 Downlink at 11020 feet. WF = -6%.
0725 Downlink at 11115 feet. WF = 0%, TI = 41.76°
0810 Take slow pump rates at 11145 feet.
0840 Pump sweep at 11151 feet.
0904 Off bottom to flow check drilling break at 11173 feet.
0921 Resume drilling.
1056 Gas 97 units at 11267 feet.
1155 Pump sweep at 11272 feet.
1220 Gas 140 units at 11298 feet.
1238 Downlink at 11315 feet. WF = -3.23%, TI = 41.94°
1305 Off bottom at 11346 feet to circulate before FPT.
1319 Turn on rig heave compensator.
1325 Work pipe to reduce torque and orient test pad.
1411 Begin test at 11203 feet.

1427 Cycle pumps for next test station toolface.
1443 Begin test at 11188 feet.
1510 Repeat test at 11190 feet.
1529 Cycle pumps for next test station toolface.
1546 Begin test at 11180 feet.
1613 Begin test at 11171 feet.
1705 Resume drilling at 11346 feet.
1729 Off bottom at 11370 feet to flow check drilling break.
1755 Shut in well and monitor for flow.
1924 MWIN = 13.6 ppg.

17 February 2015

0000 Depth = 11369.97 feet, RunCirc = 52.5 hrs, OnBot = 16.3 hrs.
0705 Pumps on, below tool power up.
0710 Begin working pipe. Possible jarring operations.
0730 Stage up flow rate to 81 gpm.
0754 Sync tool.
0759 Downlink ribs off, successful.
0817 Downlink survey replacement, Survey 18 into 3.
0831 Pumps off, tool off, jarring on tool.
0856 Stage up flow and sync tool.
0915 Pumps below tool power up.
0927 Pumps off, working pipe slowly.
0945 Sync tool, and circulate gas.
1145 MWIN = 13.8 ppg.
1402 Lower flow rate below tool power on.
1407 Slow pump rates.
1418 Jarring.
1600 Tool in sync.
1708 Lower flow rate below tool power on, jarring.
1905 Circulating in sync.

2125 Jarring.
2210 Jarring.
2326 Circulating in sync.

18 February 2015

0000 Depth = 11369.97 feet, RunCirc = 67.1 hrs, OnBot = 16.3 hrs.
0030 Jarring.
0232 Circulating in sync.
0548 Circulating with tool in sync.
0651 Pumps off and jarring.
0852 Circulating with tool in sync.
1009 Pumps off and jarring.
1111 Circulating with tool in sync.
1347 Pumps off and jarring.
1354 Circulating with tool in sync.
1427 Pumps off.
1440 Pumping Turbo Spot Pill.
1457 Circulating with tool in sync.
1511 Pumps off.
1600 Jarring.
2225 Running wireline.

19 February 2015

0000 Depth = 11369.97 feet, RunCirc = 74.7 hrs, OnBot = 16.3 hrs.
0342 Parted pipe at 11130 feet.
0615 Racked back one stand.
0646 Staging up pumps and circulating.
0817 Pumps off.
0850 Pulling out of the hole. **End AP Run 10.**
1711 Out of hole with just drill pipe. **End LWD Run 10.**
1720 Rig maintenance.

2050 Trip in hole with cementing assembly.

20 February 2015

0152 Begin cementing.
0600 Cement is set.
0630 Pulling out of hole with cementing assembly.
0641 Creating ST00BP01 in RtCtI.
0657 Changed Vertical Section Azimuth to 114.84 degree as per well plan.
0715 Called BEACON and informed them of change to ST00BP01.
1333 Out of hole with cementing assembly – waiting on cement.
1725 Tool below rotary table. **Begin LWD Run 11.**
1955 Shallow test at 600 gpm.
2236 Test downlink. Good.

21 February 2015

0444 Set bit depth.
0455 Washing down to top of cement. **Begin AP Run 11.**
0556 Slow Pump rates.
0622 Tool in sync.
0820 Circulating for hole issues.
0900 Circulating a sweep.
1027 Pumps off, begin pulling out of hole at 10979 feet MD (10,524 feet TVD). Unable to find solid cement.
1135 Pumping a slug.
1140 Continue pulling out of hole. **End AP Run 11.**
1300 Lost rig internet.
1420 Communications back on.
1830 Tool above rotary. **End LWD Run 11.**
1840 Prepare to perform squeeze cement job at 10,979 feet MD (10,524 feet TVD). Rig up for cementing operations.
1930 Trip in hole with cementing assembly.

22 February 2015

0117 Circulating.
0440 Cementing.
0542 Done with cementing.
0641 Pulling out of hole with cementing assembly. End cement squeeze job
0800 Slow pump rates.
0810 Circulating.
0822 Pumps off, continue pulling out of hole with cement assembly.
1305 Out of hole with cementing assembly.
1310 Rig service.
1330 Slip and cut drill line.
1510 Plug into OnTrak.
1545 Unplug from OnTrak.
1630 Tool below rotary. **Begin LWD Run 12.**
1755 Shallow test tool at 600 gpm.
2322 Set bit depth.
2325 Begin washing down to top of cement. **Begin AP Run 12.**
2352 Pumps off.
2358 Continue washing down.

23 February 2015

0000 Depth = 10405 feet, RunCirc = 0.7 hrs, OnBot = 0.0 hrs.
0007 Flow below tool threshold.
0015 Tool in sync.
0021 Flow below tool threshold.
0030 Tool in sync.
0054 Flow below tool threshold.
0100 Tool in sync.

0304 Downlink, BF = 51.613%, TI = 35.1°.
0310 Dressing cement at 10525 feet MD (10,182 feet TVD). Begin sidetracking well.
0317 Lower flow in to 530 gpm.
0340 Downlink ribs off.
0350 Circulating.
0623 Pulling back and circulating.
1365 Cycle pumps for connection.
1411 On bottom drilling.
1429 Downlink ribs on at 10525 feet.
1527 Downlink TI = 36.72 deg.
1544 Changed tie on survey to 10474.
1544 Downlink TI = 35.1 deg.
1601 Downlink TI = 36.72 deg.
1713 Cycle pumps for survey.
1731 Taking slow pump rates.
1750 Drop ball to open reamer.
1850 Downlink TI = 41.04°.
1919 Downlink TI = 42.12°.
2049 Downlink BF = 32.258%, WF = -3.226%.
2237 Downlink WF = 0%.

24 February 2015

0000 Depth = 10855 feet, RunCirc = 23.2 hrs, OnBot = 8.6 hrs.
0025 Downlink TI = 43.02°, WF = 9.677%.
0240 Taking slow pump rates.
0310 Downlink WF = 0%.
0610 Downlink TI = 41.94°, WF = -32.258%.
0659 Downlink WF = 41.935%.
0934 Off bottom at 11296 feet to pick up single joint.
1010 Back on bottom.

1210 Downlink WF = 0%.
1615 TD well section at 11530 feet.
1633 Downlink ribs off.
1645 Circulating.
1835 Take slow pump rates.
1849 Begin pulling out of hole for short trip.
2000 Service rig.
2045 Begin tripping back to bottom.
2200 Pump sweep.
2220 Pump sweep.
2225 Gas 225 units.

25 February 2015

0000 Depth = 11530 feet, RunCirc = 42.7 hrs, On Bot = 21.8 hrs.
0040 MWIN = 13.9 PPG.
0203 Begin pulling out of hole.
0225 Take slow pump rates.
0250 Simulate short trip at 11310 ft; monitor well.
0300 Trip back to bottom.
0310 Circulate.
0445 Flow check.
0454 Begin to pull out of hole.
0600 Bit inside casing. **End AP Run 12.**
0650 Pumping slug.
1345 Tool above rotary. **End LWD Run 12.**
1900 Tripping in hole to test BOP.

26 February 2015

0045 Plug into tool in derrick.
0715 Finish testing BOP.
0730 Pulling out of hole with testing assembly.

-
- 1300 Servicing rig floor.
 - 1355 Tool below rotary. **Begin LWD Run 13.**
 - 1508 Shallow test tool at 650 gpm.
 - 2209 Bit inside casing. **Begin AP Run 13.**

27 February 2015

- 0007 Tag bottom and circulate.
- 0240 Begin pulling out of hole.
- 0409 Bit inside casing. **End AP Run 13.**
- 1045 Tool above rotary. **End LWD Run 13.**
- 1100 Service rig floor.
- 1145 Rigging up to run casing.
- 1400 Begin running casing.
- 2355 Plug into run 13 BHA.

28 February 2015

- 0019 Plug into run 14 tools and program.
- 0134 Plug into ZoneTrak and AutoTrak.
- 0158 Plug into TesTrak.
- 0645 Begin cementing.
- 1253 Finish cementing.
- 1310 Pull out of hole with cementing assembly.
- 1430 Pickup bottom hole assembly.
- 1849 Plug into tool in derrick to verify, reset battery.
- 1850 TesTrak scribeline to OnTrak = 62 degrees.
- 2240 Load density source.
- 2245 Load neutron source.
- 2250 Tool below rotary. **Begin LWD Run 14.**
- 2345 Surface Test at 450 gpm; successful.
- 2350 Downlink TesTrak surface test; successful.

01 March 2015

0020 Begin tripping in hole.
0129 Cement testing.
0332 Continue tripping in hole.
1017 Set bit depth.
1026 Washing down to top of float collar. **Begin AP Run 14.**
1100 Tag top of float collar at 11380 ft.
1105 Begin drilling float collar.
1124 Reset bit depth with updated pipe tally.
1218 Decrease flow.
1221 Pumps off.
1227 Pumps on.
1356 Having decoding issue.
1405 Back in sync.
1726 Connection.
1800 Drilling new formation.
1832 Flow check.
1910 Circulate.
2108 Flow check.
2112 Static mud weight before FIT Min = 14.13 ppg, Max = 14.50 ppg.
2127 Rig up for FIT.
2133 Perform FIT.
2315 Rig FIT = 15.27 ppg. MWD FIT = 15.5 ppg.
2327 Static mud weight after FIT Min = 13.92 ppg, Max = 15.57 ppg.
2330 Rig down testing equipment.
2352 Downlink at 11544 ft, hold mode. Successful.
2357 Resume drilling

02 March 2015

0000 Depth = 11546 feet, RunCirc = 12.7 hrs, On Bot = 0.6 hrs.
0020 MWIN = 14.1 PPG

0158 Taking slow pump rates at 11632 feet.
0404 Off bottom to open reamer.
0414 Drop reamer ball.
0434 Decoding issues. Notified directional drill and will continue reaming hole before recycling pumps.
0500 Taking slow pump rates at 11709 feet.
0508 Resume drilling.
0633 Downlink TI = 42.12°, WF = -6.452%
0914 Downlink WF = -12.903%.
1039 Flow check (-).
1505 Downlink at 12294 feet, WF = 0%.
1732 Taking slow pump rates at 12266 feet.
1840 Downlink at 12294 feet, WF = 6.452%.
2125 Downlink at 12411 feet, WF = 0%.
2359 Bad decode after the connection while pumping up the survey; tool desynced.

03 March 2015

0000 Depth = 11520 feet, RunCirc = 34.7 hrs, On Bot = 19.2 hrs.
0003 Cycle pumps and still desynced.
0022 Cycle pumps and downlink diagnostic; unsuccessful.
0024 Contact Tech Support, John Anderson. Advise to hard reset by shutting pumps down for 10 mins and/or drill 15 more feet and cycle pumps.
0029 Shut pumps down for 10 mins.
0048 Tool still desync.
0050 Drill 10 feet without logging to troubleshoot.
0105 Recycle after drilling 10 feet. Tool still desynced.
0130 Pump sweep at 12529 feet.
0131 Spoke with company man; Section TD at 12529 feet.
0337 Begin pulling out of hole.
0611 Bit inside casing. **End AP Run 14.**

0730 Begin plugging into backup tools for Run 15.
1020 Plug into Run 15 string.
1438 Unload CCN neutron
1445 Unload ORD density.
1450 Tool above rotary. **End LWD Run 14.**
1500 Scribble for TesTrak = 52 degrees.
1540 Load CCN neutron
1545 Load ORD density.
1550 Tool below rotary. **Begin LWD Run 15.**
1740 Surface test.
1744 Downlink to test TresTrak.
1908 Plug into Run 14 Desynced tool.
1932 Fill up pipe test tool 450 gpm
2045 Begin laying down Run 14 tools.

04 March 2015

0000 Continue tripping in hole with Run 15 tools.
0059 Function test BOPs.
0147 Set bit depth and block height.
0225 Bit inside casing. **Begin AP Run 15.**
0251 CALX = 8.707; Caliper Correction Factor = 0.948.
0317 Activate reamer. TRPMX = 4323.
1216 Reamer is activated. TRPMX = 3798.
0418 Reset bit depth.
0452 Drilling new formation.
0458 Downlink at 12533 feet. Turn ribs on and adjust walk force.
0600 Off bottom at 12563 for flow check (-).
0605 Restart realtime processing to correct neutron compensated values.
0618 Resume drilling.
0621 Tool restart due to mud pump shut down issue. Resumed normal operation after pressure stabilized.

0757 Take slow pump rates after drilling stand down at 12610 feet.
0830 Pump sweep at 12617 feet.
0949 Off bottom at 12667 to circulate bottoms up before formation pressure testing.
1141 Begin gamma ream log to calculate pipe stretch correction. 1 foot total correction will be subtracted.
1150 Pull into position for first test and work torque out of drill string.
1156 Downlink to TesTrak for unconsolidated sand test.
1201 Begin test at pad depth of 12550 feet MD.
1206 Finish test confirmation.
1210 Work drill string and pull up to next test depth.
1219 Downlink repeat test at 12538 feet.
1223 Begin second test.
1228 Finish test confirmation.
1235 Cycle pumps to reset tool into drilling mode.
1241 Downlink ribs back into hold mode before getting back to bottom.
1247 Resume drilling.
1344 Flow check at 12705 feet (-).
1358 Off bottom at 12707 feet circulating before formation pressure testing.
1424 Working pipe to next test station.
1432 Downlink repeat test at 12685 feet.
1435 Downlink not recognized.
1438 Open BPA 2 wraps and resend downlink.
1441 Begin third test.
1446 Finish test confirmation.
1455 Moving to next test station.
1456 Downlink repeat test at 12670 feet.
1501 Begin fourth test.
1511 Finish test confirmation.
1520 Move to next test position.
1523 Downlink repeat test at 12657 feet.

1527 Begin fifth test.
1537 Finish test confirmation.
1540 Test indicated a lost seal.
1541 Working the pipe before retaking test.
1544 Downlink repeat test at 12660 feet.
1548 Begin sixth test.
1558 Finish test confirmation.
1611 Mud weight in at 14.5 ppg at 12706 feet.
1612 Resume drilling.
1659 Downlink ribs off at 12737 feet
1700 Circulating 14.5 mud weight around.
1853 Take slow pump rates at 12737 feet.
1919 Pull up to TesTrak test position.
1923 Downlink repeat test at 12721 feet.
1927 Begin seventh test.
1932 Finish test confirmation.
1941 Downlink repeat test at 12710 feet.
1944 Begin eighth test.
1954 Finish test confirmation.
2002 Downlink repeat test at 12695 feet.
2007 Begin ninth test.
2013 Finish test confirmation.
2038 Downlink; hold mode.
2045 On bottom drilling.

05 March 2015

0000 Depth = 12842 feet, RunCirc = 20.1 hrs, On Bot = 9.1 hrs.
0213 End drilling. Well TD at 12900 feet.
0216 Take slow pump rates at 12900 feet.
0227 Downlink ribs off.
0230 Pump sweep.

0244 Circulate bottoms up.
0330 Pump sweep.
0608 Begin short trip to 9 7/8" casing shoe.
0725 Bit inside casing shoe at 11530 feet. Service rig.
0825 Begin trip back to bottom.
0935 Washing down at 12800 feet.
0948 Tag bottom with 3 feet of fill.
0950 Pump sweep and begin circulating and conditioning mud system.
1310 Flow check before pulling out of hole.
1326 Begin pulling out of hole wet to 9 5/8" casing shoe.
1453 BHA is inside casing. Monitor well.
1512 Pump slug.
1525 Resume pulling out of hole. **End AP Run 15.**
2250 Unload neutron source.
2255 Unload density source.
2300 Tool above rotary table. **End LWD Run 15.**
2325 Plug into tools in offline derrick.
2405 Memory data is dumped but unable to verify tool due to surface computer issues. Rig operations dictate racking back tool until finished with casing operations.
2430 Begin casing operations.

06 March 2015

0000 Running 7-7/8" production liner.
2230 Plug into tool in derrick to perform verification.
2330 Rack back tool again to finish picking up tie-back casing.

07 March 2015

0000 Circulating before cement job.
1800 Tools from run 15 are laid down.

08 March 2015

0000 Trip in hole with polish mill before running tie-back casing.

0600 LWD crew rigging down sensors and equipment.

0000 Casing operations.

09 March 2015

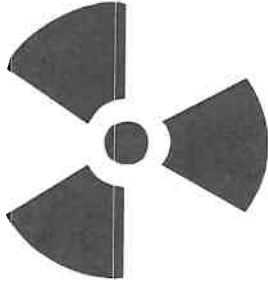
1700 LWD crew departs rig.

Murphy Exploration & Production.

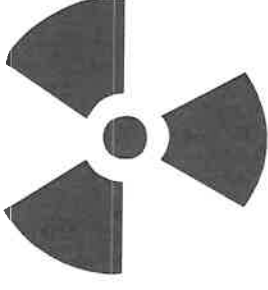
OCS-G 16623 007 ST00BP00

Mississippi Canyon Block 582

N 28 deg 22' 39.641" & W 89 deg 27' 34.822"



CAUTION



ONE 2.5 CURIE Cs-137 RADIOACTIVE SOURCE ABANDONED Feb 20, 2015 AT 11,302 FT MD. (10,767 FT TVD) AND ONE 5 CURIE

AM-241/Be RADIOACTIVE SOURCE ABANDONED Feb 20, 2015

AT 11,294 FT. MD (10,760 FT. TVD). TOP OF FISH AT

11,130 FT MD (10,637 FT TVD).

DO NOT ENTER WELL BEFORE CONTACTING

Nuclear Regulatory Commission