

August 20, 2014



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

Re: NRC License No. 17-27437-01 Source Abandonment Report

(1) Date Occurrence: Tool stuck in hole on July 18, 2014 @ 17:15 hrs.

(2) Irretrievable Source Descriptions:

5.0 Ci (185 GBq) Americium-241/Be -	Serial Number: SN-71057B	QSA GLOBAL, AMN.CY3
2.5 Ci (92.5 GBq) Cesium-137 -	Serial Number: SN-80461B	QSA GLOBAL, CDC.CY4

(3) Surface Location & Well Identification:

Operator -	Cook Inlet Energy Inc.
Rig -	Miller Rig 35
Well -	Redoubt Shoal No. 9
Field -	Prudhoe Bay
Rig Surface Location -	N 60° 41' 44.179" and W 151° 40' 13.609"
General Area -	Cook Inlet, Alaska (onshore)

(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 -	18,359 feet Measured Depth (12,884 ft. TVD)
Cesium-137 -	18,369 feet Measured Depth (12,691 ft. TVD)

(7) Top of Cement Plug: Approximately 17,847 feet Measured Depth (12,300 ft. TVD)

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#### Plug Cementing Procedure

Begin tripping in the hole to a depth of 17,847 feet MD (12,300 feet TVD) with tubing. Stop circulation, close valve, and pressure test flow lines. Batch the cement to verify density. Mix and pump 13.5 bbl of 11.5 lb/gal tuned spacer. Then pump 20.65 bbls of 15.8 lb/gal cement, calculated to build 400 foot cement plug. To balance the cement plug, pumped 6.5 bbls of 11.5 lb/gal spacer and then shut down the pumps. The rig took over the displacement at this point. Open the lines to pits to check for balanced plug. Once verified, the rig began pulling out of the hole at 1 joint per minute. Pull 3 stands then circulate 2 bottoms up. Pull out of hole for a bit and wait 24 hours to tag cement or until UCA tests shows greater than 1500 psi.

Client elected to sidetrack the well 400 feet above the fish.

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(8) Depth of Well: 18,459 ft. MD (12,755 ft. TVD)

(9) Other Information: N/A

(10) Agencies Notified: Nuclear Regulatory Commission

Thank you for your attention to this matter,



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

## **Redoubt Shoal #9.**

*Miller Rig #35*

*Cook Inlet Energy*

*Offshore, Alaska*

Submitted By:

James Cannon

Chris Mills

Mahdi Alsaleem

Ricky Daigle

Juan Vizcaino

Christophe Itjoko

Field Service Engineers

Date : 27 Feb 2014

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## **Disclaimer**

Baker Hughes does not guarantee the accuracy or correctness of interpretations provided in or from this report. Since all interpretations are opinions based on measurements, Baker Hughes shall under no circumstances be responsible for consequential damages or any other loss, costs, damages or expenses incurred or sustained in connection with any such interpretations. Baker Hughes disclaims all expressed and implied warranties related to its service which is governed by Baker Hughes' terms and conditions.

## **Chronological Drilling Summary**

**13 July 2014**

1350 Plug into OnTrak.  
1440 Unplug from OnTrak.  
1530 Loaded Density source.  
1533 Loaded Neutron source.  
1536 LWD tools below rotary. **Begin LWD Run 14.**  
1550 Tripping in with singles.  
2035 Trip to 2500 ft approximately.  
2040 Circulate to condition mud while waiting on pipes from boat.  
2312 Continue tripping in with singles.

**14 July 2014**

1450 Circulating into liner 1520 psi.  
1513 Increase flow rate.  
1526 Increase flow rate.  
1642 Tool powered on. Calibrate Caliper with liner ID.  
1742 Tag cement at 16996 ft.  
1744 Tool power off. Motor stalled.  
1747 Drilling out float and cement.

**15 July 2014**

0532 Drill to 17120 ft.  
0535 Ream and clean hole.  
0755 FORMATION INTEGRITY TEST.  
0918 Slow pump rate  
0930 Resume drilling with pump 1 at 72 spm/ 3462 psi / ECD 10.5 / 69 rpm /  
WOB 5.  
1005 Directional sensor out of liner.  
1417 KD at 17223.  
1438 Survey at 17163.70.  
1710 Picked up string.

- 2101 KD at 17321.16.
- 2121 Survey at 17262.33.

**16 July 2014**

- 0000 Depth at 17376 feet, RunCirc 34.2 hrs, Onbottom 14.0 hrs, ROP 26 ft/hrs, WOB 21 klbs, Torq 19500 ft/Lbs, Rotary 65 RPM, Flow 190 GPM
- 0144 KD at 17420.46.
- 0208 Survey at 17362.03.
- 0707 KD at 17518.03.
- 0733 Slow pump rates.
- 0743 Survey at 17459.29.
- 1308 KD at 17615.46.
- 1333 Survey at 17555.67.
- 1954 Survey at 17653.61 feet.

**17 July 2014**

- 0000 Depth at 17801 feet, RunCirc 57.7 hrs, Onbottom 34.3 hrs, ROP 32 ft/hrs, WOB 18 klbs, Torq 18500 ft/Lbs, Rotary 72 RPM, Flow 194 GPM.
- 0032 KD at 17812.64.
- 0055 Survey at 17752.76.
- 0520 KD at 17910.62.
- 0535 Survey at 17851.64
- 0540 Repairing top drive.
- 0607 Rack back a stand and circulate while waiting on rig.
- 0730 Begin wiper trip.
- 0825 In casing.
- 0850 Work in Top Drive
- 0920 Trip in hole in elevator
- 0955 Trip in hole reaming last stand
- 1017 Resume drilling
- 1459 KD at 18007.71.

1459 Survey at 17948.59.

1914 KD at 18105.15.

1939 Survey at 18045.98.

### **18 July 2014**

0000 Depth at 18203 feet, RunCirc 78.7 hrs, On bottom 50.5 hrs, ROP 24 ft/hrs, WOB 16 klbs, Torq 14500 ft/Lbs, Rotary 72 RPM, Flow 182 GPM.

0005 KD at 18204.72

0025 Survey at 18145.41.

0500 KD at 18302.82.

0522 Survey at 18243.05.

1254 KD at 18399.12.

1319 Survey at 18336.48.

1715 Stuck Pipe at 18459.26, Working string and jarring.

1850 Pump lube pill.

1907 PGAM failure.

### **19 July 2014**

0000 Depth at 18459 feet, RunCirc 102.3 hrs, Onbottom 64.9 hrs, ROP 00 ft/hrs, WOB 0 klbs, Torq 0 ft/Lbs, Rotary 0 RPM, Flow 250 GPM.

0005 Continue Jarring.

1635 Stop jarring and rig up wireline for free point.

2000 Running free point wireline.

2250 Pull out. Free point unsuccessful.

2300 Break down side entry swivel and cut off free point tool.

### **20 July 2014**

0030 Pull out wire and trouble shoot collar locator problem. Lost free point tools.

0100 Rig down wireline and side entry sub.



- 0200 Condition mud, circulate at 10458 feet and push free point tool to filter sub.
- 0320 Resume jarring.
- 0700 Rig repair – Top drive.
- 0750 Resume jarring.
- 0915 Run wireline freepoint tool again.
- 1525 Jarring to try to dislodge freepoint tool stuck in pipe.
- 1905 Took weight while tripping in with wireline equipment. Pump 400 psi.
- 1950 Continue tripping in.
- 2220 Reach top of lost freepoint tool. Pump 4000 psi to help anchor fishing tool.

#### **21 July 2014**

- 0215 Pull out with wireline fish and freepoint tool.
- 0245 Swapping fish assembly with severing gun.
- 0400 Circulate work pipe and resume jarring.
- 0600 Run severing gun.
- 1240 Jar to try to separate from fish.
- 1430 Second sever run.
- 1803 Severed from fish.
- 2000 Begin to pull out of hole.

#### **22 July 2014**

- 1803 Nuclear sources abandoned in hole. **End Run 14.**

#### **23 July 2014**

- 1615 Pick up tubes and trip in.
- 1715 Trip to 18238 ft.
- 1830 Circulate condition mud.
- 2245 Pump cement.

**24 July 2014**

0100 Pulling out.  
0215 Pull to 17085 ft  
0220 Ream and circulate.  
0515 Pull out.

**25 July 2014**

0255 Begin pickup MWD Run 15 BHA.  
0320 Make up motor bend.  
0415 Make up bit.  
0450 Scribe MWD to motor. SL 39.8.  
0540 MWD below rotary. **Begin Run 15.**  
0700 Surface test – Flow Rate 250 / 902 PSI.  
0707 Rig service and repair Top Drive.

**26 July 2014**

0115 Reset Hook load.  
0125 Reset Block Height and bit depth to 17100.81.  
0130 Continue tripping in.  
0351 Checkshot at 17454.32 / Inc. 49.69 deg / Azi.190.60 deg.  
0530 Tag cement at 17700 ft.  
0627 While drilling out cement, pick off bottom and kill pump due to false radiation alert. The mud monitor is reading 480 CPM with count increasing and an alert sound mistakenly taken to be from the mud monitor. Call RPS and survey the mud pits with Neutron and Gamma meters with readings at 0.0 mRem/hr. It appears that the sound was from the UPS. The mud monitor normally goes off from 2500 CPM.  
0640 Resume reaming to bottom and get stuck at 17711 ft.  
0655 Pull a few feet, cycle pumps and resume reaming to bottom slowly with free string.  
0730 Rig power down.  
0830 Cabin power on. Continue drilling out cement.

0944 Reset Block Height and Bit Depth at 17688.69.

1109 Kick off at 17840 ft.

### **27 July 2014**

0000 Depth at 17858 feet, RunCirc 21.2 hrs, Onbottom 12.7 hrs, ROP 1.5 ft/hrs, WOB 5 klbs, Torq 15500 ft/Lbs, Rotary 0 RPM, Flow 266 GPM.

0205 Mud motor stalled.

0355 KD at 17882.13.

0407 Checkshot at 17840.66.

0745 Switch pumps.

0833 Resume drilling

2251 Reset bit to 1796.43.

2314 Survey at 18001.36.

### **28 July 2014**

0000 Depth at 18051 feet, RunCirc 39.8 hrs, Onbottom 23.0 hrs, ROP 17 ft/hrs, WOB 6 klbs, Torq 15500 ft/Lbs, Rotary 0 RPM, Flow 260 GPM.

0143 KD at 18073.36

0200 Survey at 18033.09.

0311 Stop drilling 18112.

0321 Survey at 18071.66.

0330 Reaming at 18112.

0550 Begin backreaming to top of sidetrack.

2305 MWD above rotary. **End Run 15.** The short NM Flex collar between the motor and MWD tool is bend.

2330 Re-scribe MWD to motor. Scribeline is showing 318 degrees.

### **29 July 2014**

0000 Depth at 18112 feet, RunCirc 48.2 hrs, Onbottom 25.2 hrs,

0100 Lay down tools.

0130 Repairing Top Drive and rig service.

2100 Pumping cement.

**30 July 2014**

0100 Pull out.  
0800 Rig down cement equipment.  
0930 Begin pickup MWD Run 16 BHA.  
1250 Scribe MWD to motor. SL 352.6.  
1310 MWD below rotary. **Begin Run 16.**  
1725 Surface test – Flow Rate 230 / 980 PSI.

**31 July 2014**

0000 Depth at 18112 feet, RunCirc .4 hrs, On bottom 0 hrs,  
0100 Slip and cut.  
0300 Reset Hookload, BlockHeight and Bit Depth to 16815.92.  
0315 Continue tripping in.  
0325 Circulating at casing shoe.  
0424 O-ring blows on Stand Pipe.  
0430 Begin pulling to casing shoe.  
1005 Begin tripping back in.  
1025 Begin reaming to bottom.  
1230 Tag cement at 17597 ft.  
1738 Checkshot at 17769.86 ft.  
1742 Begin through with sidetrack.  
2040 Begin time drilling at 17840 ft.

**01 August 2014**

0000 Depth at 17844 feet, RunCirc 14.5 hrs, Onbottom 2.8 hrs, ROP 1.0  
ft/hrs, WOB 7 klbs, Torq 5400 ft/Lbs, Rotary 0 RPM, Flow 224 GPM.  
1510 Checkshot at 17805.79 ft.  
2313 Backream 5 feet from 17892.39 ft.

**02 August 2014**

0000 Depth at 17894 feet, RunCirc 38.4 hrs, Onbottom 25.6 hrs, ROP 1.0 ft/hrs, WOB 6 klbs, Torq 520 ft/Lbs, Rotary 0 RPM, Flow 228 GPM.  
0003 KD at 17893.96 ft.  
0010 Checkshot at 17841.10 ft.  
0022 Survey at 17847.45 ft.  
0304 Checkshot at 17858.31 ft.  
0517 Checkshot at 17876.23 ft.  
0841 Checkshot at 17898.33 ft.  
1422 Survey at 17942.55 ft.  
1907 Stop drilling at 18036.87 ft.  
1927 Survey at 17988.70 ft.  
1930 Begin reaming and circulate clean hole.  
2120 Pull out to change tools and bit.

**03 August 2014**

0000 Depth at 178037 feet, RunCirc 59.3 hrs, Onbottom 39.3 hrs,  
1230 MWD above rotary table. **End Run 16.**  
1300 Lay down tools.  
1515 Rig service prior to a BOP test.  
1937 BOP testing.

**04 August 2014**

0005 Pick up tools.  
0130 Plug into Ontrak.  
0225 Unplug from tool.  
0235 MWD below rotary table. **Begin Run 17.**  
0355 Surface test. Pumping 220 gpm – Good.  
0400 Continue trip in.  
0645 Continue tripping in.  
1530 Bit outside casing. **Begin AP Run 17.**

1550 Begin trip to bottom.  
1605 Work tight spot.  
1630 Begin ream to bottom.  
1819 Check shot survey confirming in new hole.  
1829 On bottom drilling.  
2003 Tool stopped pulsing.  
2005 Tool pulsing again.  
2127 KD at 18076.25 ft.  
2150 Survey at 18018.29 ft.

**05 August 2014**

0000 Depth at 18126 feet, RunCirc 7.7 hrs, Onbottom 4.1 hrs, ROP 36 ft/hrs,  
WOB 7 klbs, Torq 16000 ft/Lbs, Rotary 60 RPM, Flow 230 GPM.  
0211 KD at 18175.05.  
0212 Slow pump rate. Pumping 127gpm.  
0235 Survey at 18116.43 ft.  
0259 Stalled motor.  
0733 KD at 18272.84 ft.  
0808 Survey at 18213.89 ft.  
1609 KD at 18367.02 ft.  
1632 Survey at 18309.05 ft.

**06 August 2014**

0000 Depth at 18434 feet, RunCirc 31.4 hrs, Onbottom 24.5 hrs, ROP 8.5  
ft/hrs, WOB 7 klbs, Torq 15100 ft/Lbs, Rotary 60 RPM, Flow 230 GPM.  
0338 KD at 18462.51 ft.  
0417 Survey at 18403.90 ft.  
0505 High torque approximately 18600 ft.lbs at 18449.97 ft .Pick off bottom  
and pump 150 gpm  
0527 Resume drilling with torque at 15000, 2860 psi, 231 gpm.

- 0658 High torque approximately 18900 ft.lbs at 18481.67 ft. Pick off bottom and pump 220 gpm
- 0716 Resume drilling.
- 2026 High torque approximately 19000 ft.lbs at 18590.77 ft. Pick off bottom and pump 200 gpm
- 2045 Resume drilling.
- 2314 Check torque and drag at 18607.96 ft.

### **07 August 2014**

- 0000 Depth at 18618 feet, RunCirc 55.2 hrs, Onbottom 43.6 hrs, ROP 7ft/hrs, WOB 8 klbs, Torq 14600 ft/Lbs, Rotary 60 RPM, Flow 231 GPM.
- 0035 Check torque and drag at 18627.15 ft.
- 0238 Check torque and drag at 18645 ft.
- 0356 KD at 18652.40 ft.
- 0451 Survey at 18593.93 ft.
- 0549 Check torque and drag at 18660 ft.
- 0642 Check torque and drag at 18670 ft.
- 0755 Check torque and drag at 18684 ft.
- 1240 TD at 18746 ft.
- 1245 Circulate clean hole.
- 1520 Survey at 18680.68 ft.
- 1535 Begin pulling out.
- 2210 Tools inside casing.

### **08 August 2014**

- 0000 Depth at 18745.67 feet, RunCirc 75.2 hrs, Onbottom 53.6 hrs.
- 0343 Reset the bit depth at 11929.40 ft.
- 0347 Checkshot at 11864.44 ft; Inc = 50.03.
- 0357 Checkshot at 11814.99 ft; Inc = 50.80.
- 0404 Checkshot at 11770.57 ft; Inc = 54.18.
- 0425 Pumping dry job.
- xxx Continue pull out.

1305 Tool above rotary. **End Run 17.**

1310 Plug into tool.

1340 Unplug from tool.

1600 Plug into tool.

1715 Unplug from tool.

1735 Load Density source.

1740 Load Neutron source.

1745 Tool below rotary. **Begin Run 18.**

1815 Surface Test.

1830 Continue trip in.

1840 Service rig.

2020 Trip in.

2200 Slip and cut.

#### **09 August 2014**

0005 Tripping in.

1115 Calibrate Caliper.

1125 Continue trip in.

1220 Work tight spot.

1345 Wash last stand.

1425 Tag bottom.

1430 Circulate bottoms up.

1656 Begin MAD PASS up

#### **10 August 2014**

0245 Re-log to 17668 ft.

0248 Pump lube pill.

0256 Stop back reaming at 17636 ft.

0257 Ream back to bottom.

0435 Inside casing.



0445 Continue Pulling out of hole.

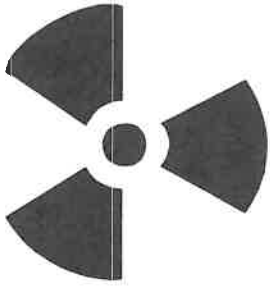
1600 Unload sources. Lay down BHA. Rig down.

## **Directional Survey Reports**

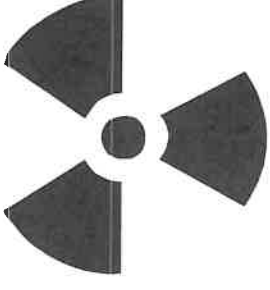
Cook Inlet Energy  
Readout Shoal #9

Prudhoe Bay

N 60 deg 41' 44.179" & W 151 deg 40' 13.609"



**CAUTION**



**ONE 2.5 CURIE Cs-137 RADIOACTIVE SOURCE ABANDONED July 23, 2014 AT 18,369 FT MD. (12,691 FT TVD) AND ONE 5 CURIE Am-241/Be RADIOACTIVE SOURCE ABANDONED July 23, 2014 AT 18,359 FT. MD (12,884 FT. TVD). TOP OF FISH AT 18,251 FT MD (12,608 FT TVD).**

**DO NOT RE-ENTER THIS WELL BEFORE CONTACTING**

Nuclear Regulatory Commission



## GLOBAL RADIATION SAFETY

RSF-1667

### Radiation Incident Report / LOST IN HOLE Report

(Email to the Radiation Safety Officer (Houston) within 24 hours)

Report Time / Date:	08:54	/	19 July 2014
Baker Hughes Job Number (If Applicable):	5916684		
Date and Time of Incident:	17:15	/	18 July 2014
Location of Incident:	RU9, Osprey Platform, Alaska		
Name of Persons Involved in Incident:	Christopher Mills (RPS), Christophe Itjoko, Juan Vizciano		
Name of Responsible Engineer:	Christopher Mills		
Equipment Involved in Incident:	Porosity Source SN-71057B, Density source SN-80461B		
Incident Summary (Facts Only):	Tools stuck in hole while drilling		

(For Example - Employee Radiation Exposure, Source Stuck In Hole, etc.)

Description of Incident (Facts Only) -> -> -> -> ->	No exposure. Drill string stuck in hole while drilling.
(Use additional pages if required)	Slot location: N 60°41'44.179", W 151°40'13.609"
	Bit Depth: 18449ft MD (12747ft TVD)
	Neutron Source Depth: 18359.40ft MD (12684.21ft TVD)
	Gamma Source Depth: 18369.64ft MD (12691.46ft TVD)
	Top of Fish: TBD

(For Sources "Stuck in Hole" complete the "Stuck In Hole Notification Form")

Actions Taken in Response to the Incident:	Notified company representative of required procedures
Employee (Print Name/ Signature/Date):	
Radiation Protection Supervisor: (Print Name/Signature/Date)	Christopher Mills
Location Manager (Print Name/Signature/Date):	

**\*\*Contact your Supervisor or a member of the Global Radiation Team for guidance in completing this form\*\***

**Radiation Incident Report  
Source Stuck In Hole Notification  
RSF-1667**

(scan to PDF and email to the Radiation Safety Officer (Houston) within 24 hours)

Report Time/Date:	08:54	/	19 July 2014
Job Number (If Applicable):	5916684		
Gamma Source Serial Number (and activity) or N/A:	SN-80461B (92.5 GBq)		
Neutron Source serial number (and activity) or N/A:	SN-71057B (185 GBq)		
Person Reporting & Contact #:	Christopher Mills, 806-787-3119		
Location / Base Reporting:	Osprey Platform, Alaska		
Rig / Platform (If Applicable):	Miller Rig 35 / Osprey Platform		
Well Name & Number (If Applicable):	RU9		
Operator / Customer (If Applicable):	Cook Inlet Energy		
Operator / Customer Contact Information (If Applicable):	CIE Company Man		
Name of Regulatory Authority that has jurisdiction:	NRC		
License Reference Number (If Applicable):	17-27437-01		
Radiation Protection Supervisor (RPS):	Christopher Mills		
Water Depth (If Applicable):	45'		
Total Hole Depth (MD & TVD) (If Applicable):	18459' MD, 12755' TVD		
Bit depth (MD & TVD)(If Applicable):	18449' MD, 12747' TVD		
Gamma Source Location / Depth (If Applicable):	18369' MD, 12691' TVD		
Neutron Source Location / Depth (If Applicable):	18359' MD, 12684' TVD		
Surface Casing information/ Depth & Diameter (If Applicable):	9 5/8", Surface to 9373' MD, 6782 TVD		
Casing information / Depth & Diameter (If Applicable)	7", 17090' MD, 11838' TVD		
Regulatory Authority Contact (Name & Date):	NRC Operations Center and Mr. D Vasquez Region IV		
Abandonment Authorized by (Name & Date):	Mr. Michael Vasquez July 21st 2014 @ 07:13		

**\*\*Contact your Supervisor or a member of the Global Radiation Team for guidance in completing this form\*\***