



Table of Contents

Appendix A: Contact List	2
Appendix B: Bit / Reamer Program.....	5
Appendix D: Dispensations.....	6
Appendix E: Decision Trees	13
Appendix F: Application for Revised New Well (APD)	28

	GoM Exploration Wells MC 252 #1 – Macondo Prospect Appendix	
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**Appendix A:
Contact List**

Primary Services	Company	Phone	Location	Field Contact	Office Contact	Phone
Casing Running	Weatherford	(337) 374-4713 (800) 252-3019 (337) 277-8386 (c)	Lafayette, LA	Ed Pryor	Bill Bruce	(281) 260-1382 (281) 467-9734 (c)
Cementing	Halliburton*	(800) 444-7830 (337) 572-4621	Lafayette, LA	Chris Daigle	Jesse Gagliano	(281) 366-6106 (281) 635-4798 (c)
Directional/Rotary Steerable/BHA/Jars	Sperry/Halliburton*				Chip Lacombe	(281) 504-8801 (281) 220-7164 (c)
Drilling Fluids	MI Drilling Fluids*	(800) 391-3147	Port Fourchon	Tab Haygood, Leo Linder, Gordon Jones	Maxie Doyle	(281) 988-1809 (281) 686-7247 (c)
Mud Logging	Sperry/Halliburton*	(800)-288-4371 (337) 837-7555	Broussard	Earl Fly	Skip Clark	(281) 871-6240 (713) 501-8913 (c)
MWD/LWD	Sperry/Halliburton*	(800) 288-4371			Greg Navarette	(281) 871-6204 (713) 430-6191 (c)
ROV	Oceaneering*	(985) 395-8525 (985) 518-5298	Morgan City	James Hotard	Brett Eychner	(832) 467-7698
Solids Control/Dryers	Swaco/MI*	(281) 988-1849 (281) 366-4017	Houston BP Office	Barrett Miles	Maxie Doyle	(281) 988-1809 (281) 686-7247 (c)
Trucking	ACE Trucking, Inc.	(800) 349-6562	Gulf Coast		Tim Broussard	
Wireline Logging	Schlumberger*	(985) 693-3161	Larose, LA	Jose Diaz	Carl Leweke	(281) 366-4837 (281) 415-9185 (c)
Wellhead – (Subsea)	Dril-Quip*	(713) 939-7711	Houston, TX		Barry Patterson	(713) 939-0047 (713) 898-9745 (c)



**GoM Exploration Wells
MC 252 #1 – Macondo Prospect
Appendix**



Specialty Services	Company	Telephone	Location	Field Contact	Office Contact	Phone #
Abandonment	Weatherford*	(504) 851-0600 (800) 729-0601	Houma	Chris Cuitrer	Bill Bruce	(281) 260-1382 (281) 467-9734 cell
BOP Test Tool - config	Nu-Tec Inc.	(318) 433-6843	Lake Charles	Brian Williams		
Casing Threads	TenarisHydril	(281) 449-2000 (800) 872-0992	Houston	Jon Barton	Jon Barton	(713) 585-3901 (713) 582-4073 cell
Communications	CAP Rock	(832) 668-2300 (504) 469-9233	Houston, St. Rose, LA			
Concentric Reamers Underreamers	Smith International*	(888) 876-2850 (985)876-2852	Houma	Gene Deroche David Voisin	Billy Northcutt Taylor Hennigan	(281) 233-5217 (281) 455-4229 cell (281) 233-5408 (713) 852-7948 cell
Drill Bits	Hughes	(337) 837-1414 (985) 396-4211	Lafayette Fourchon		Charles Ubaru	(713) 625-6394 (713) 615-3420 cell
	Reed Hycalog DPI	(832) 681-8000	Houston	Matthew Mitchell (337) 654-9684	Ernie Prochaska	(832)-422-4086 (281)-221- 1434 cell
	Security DBS Halliburton	(337) 837-1892	Houma	Timmy Lyons	Buddy Urech	(281) 871-6177 (713) 851-4205 cell
	Smith International	(800) 872-2487 (800) 645-2487	Broussard, LA	Kirk Robichaux	Godwin Gabriel	(281) 233-5792 (281) 630-0972 cell
Drilling Jars	Smith International HE	(337) 364-88141	New Iberia	Carl Viator	Glenn Martin	(281) 233-5784
Fishing Tools	Weatherford*	See Abandonment.				
	Smith International*	(800) 788-2487	New Orleans	Mel Adams	Mel Adams	(504) 596-6954 (504) 452-8349 cell
Float Equipment	Weatherford-Cermoco	(281) 859-7888	Houston	Chris Lopez	Bryan Clawson	(281) 260-1393 (713) 823-2385
	Davis Lynch	(281) 485-8301	Houston		Jeff Musslewhite	(281) 485-6814 (713) 824-1726 cell



GoM Exploration Wells
MC 252 #1 – Macondo Prospect
Appendix



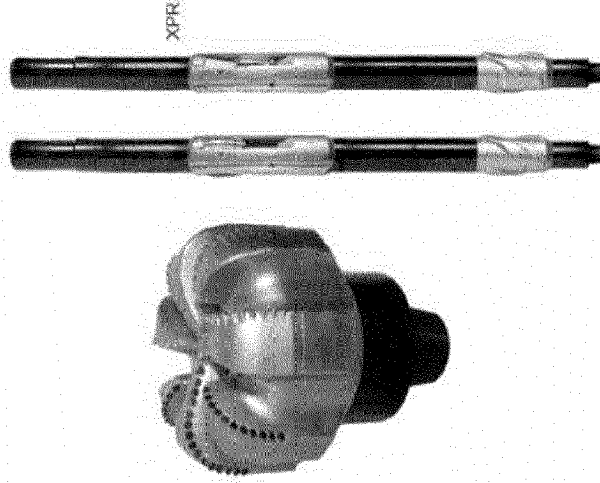
Specialty Services	Company	Telephone	Location	Field Contact	Office Contact	Phone #
Inspection Services	BP Contacts	(281) 560-8574	Houston		Byron Wolfe	(281) 456-5407
BP Yard	Casing & Equipment	(281) 456-5406	Houston	David Obermiller		(713) 385-6373 cell
Liner Equipment	Drill Pipe, BHA Tools	(281) 456-5407	Houston	Tom Seeley Byron Wolfe		
Liner Equipment	Weatherford*	(281) 874-6435	Houston	Darrell Cleboski	Darrell Cleboski	(281) 728-6382 cell
Location Survey	Halliburton Versaflex	(281) 988-2312	Houston	Georgia Brogdon	Georgia Brogdon	(713) 410-5240 cell
Packers / Retainers	C&C Technology*	(337) 261-0660	Lafayette	Eric Granger	Bruce Carter(BP)	(281)-366-3788 (713) 703-2958 cell
PBL Subs	Halliburton*	(800) 444-7830	Lafayette	Roman Victoriana	Phillip Costlow	(281) 366-7127 (281) 222-0989 cell
Rental Tools	Downhole Devices	(337) 839-2413 (337) 839-2414 fax	Broussard	John Broussard	Ross Landry	(337) 839-2413 (713) 822-1076 cell
Surge Reduction	Quail	(337) 365-8154	New Iberia	Mark White	Lyndon Bolen	(713) 725-8120
Torque Machine (Bucky)	Allis-Chalmers	(800) 631-2573 (281)-443-7664	Morgan City	Rob Duhon	Joe Van Matre Dwight Gross (LAST)	(337) 962-2490 cell (713)-408-2977 cell (281) 894-4422 (713) 408-2977 cell
Bulk Material Rack	Allamon Tool, Inc.	(877) 449-5433	Montgomery	Jerry Allamon Mark Davis	Vernon Goodwin	(877) 449-5433 (713) 818-4067
Well Location Signs	Offshore Energy Services OES	(800) 489-6202	Broussard		Brian Theriot	(337) 233-3442
Rig	Proline Systems	(337) 369-3343	New Iberia, LA			
	ABC Signs	(985) 475-6357 (985) 475-6369 fax	Golden Meadows	Melissa Collins		
	TOI	(281) 647-8533	Houston		Paul Johnson	(832) 587-8533 (281) 685-6524 cell




Appendix B:
Bit / Reamer Program

BP / Macondo - Bit and Reamer Program

- **26" x 32-1/2"**
 - Bit: CR1 Roller Cone
 - DTU: Smith 22000 DTU Underreamer
- **18-1/8" X 22" Section**
 - Bit: CR1 Roller Cone
- **18-1/8" X 22" Section**
 - Bit: 18-1/8" HCD507Z (N17515)
 - XPR Tool: Series 18 XPR 18-1/8" x 22" (E17198)
- **16-1/2" X 20" Section**
 - Bit: 16-1/2" QD507 (N17511)
 - XPR Tool: Series 16 XPR 16-1/2" x 20" (E17204)
- **14-3/4" X 16-1/2" Section**
 - Bit: 14-3/4" QD507 (N6251)
 - XPR Tool: Series 14 XPR 14-3/4" x 16-1/2" (E17277)
- **12-1/4"**
 - Bit: 12-1/4" QD507 (N5751)
 - XPR Tool: Series 12 XPR 12-1/4" x 14-3/4" (E17131) (back-up)



Appendix D: Dispensations


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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: x-small;">Asset/Project:</td> <td>GOM</td> <td style="font-size: x-small;">Type of Change:</td> <td>Dispensation</td> </tr> <tr> <td style="font-size: x-small;">Ref:</td> <td>Maianas</td> <td style="font-size: x-small;">Well (i.e., GC 823 #1 or N/A):</td> <td>MC 252 #1 (Macondo)</td> </tr> <tr> <td style="font-size: x-small;">Verifier:</td> <td>Haffe, Mark</td> <td style="font-size: x-small;">Priority:</td> <td>B (Medium) – Less than 1 week</td> </tr> <tr> <td style="font-size: x-small;">Coordinator:</td> <td>Wilson, Gabe S</td> <td style="font-size: x-small;">Policy / Paragraph #:</td> <td>BPA-D-003 section 5.3</td> </tr> <tr> <td style="font-size: x-small;">Desired Completion Date:</td> <td>07/10/2009</td> <td style="font-size: x-small;">Duration:</td> <td>Well</td> </tr> <tr> <td style="font-size: x-small;">Proceed with MOC?</td> <td colspan="3"> <input checked="" type="radio"/> Yes <input type="radio"/> No/Cancel <input type="radio"/> Clarify </td> </tr> </table>	Asset/Project:	GOM	Type of Change:	Dispensation	Ref:	Maianas	Well (i.e., GC 823 #1 or N/A):	MC 252 #1 (Macondo)	Verifier:	Haffe, Mark	Priority:	B (Medium) – Less than 1 week	Coordinator:	Wilson, Gabe S	Policy / Paragraph #:	BPA-D-003 section 5.3	Desired Completion Date:	07/10/2009	Duration:	Well	Proceed with MOC?	<input checked="" type="radio"/> Yes <input type="radio"/> No/Cancel <input type="radio"/> Clarify			
Asset/Project:	GOM	Type of Change:	Dispensation																						
Ref:	Maianas	Well (i.e., GC 823 #1 or N/A):	MC 252 #1 (Macondo)																						
Verifier:	Haffe, Mark	Priority:	B (Medium) – Less than 1 week																						
Coordinator:	Wilson, Gabe S	Policy / Paragraph #:	BPA-D-003 section 5.3																						
Desired Completion Date:	07/10/2009	Duration:	Well																						
Proceed with MOC?	<input checked="" type="radio"/> Yes <input type="radio"/> No/Cancel <input type="radio"/> Clarify																								

Title:
9-7/8" production casing collapse design

Scope:
Dispensation is requested from BPA-D-003 section 5.3 (as referenced in DWOP (13.2)).
The 9-7/8" production casing for Macondo does not meet the BP DWOP production collapse design requirements.
A dispensation is required to use the alternate fluid density below the packer for the production collapse load case.

Justification (include financial impact where appropriate):
The proposed production casing collapse design could impact the abandonment pressure planned for the well. It is very unlikely the casing below the packer would ever see "0" psi during the well's life expectancy.
DWOP design factors:
A/B Pkr: SFC 0.71, w/ 0 ppg fluid density below the packer
To improve these results we can increase the collapse resistance of the pipe or decrease the collapse load requirements. The A/B Pkr load case default is a design with PP external and zero (0) pressure internal, this would simulate a well that would not flow and was jetted of all fluid to below the perforations. This would certainly be a worst case scenario; however I have seen it happen so know it can occur. If we assume that we will not jet the well dry, the minimum internal load is from a column of dry gas at the abandonment pressure, and the external load is original PP the collapse load is acceptable. I assumed an abandonment pressure of 5150 psi at the perforations or about 3130 psi (assuming 0.1 psi/ft) at the wellhead, which is equivalent to about 4.9 ppg fluid density.
A/B Pkr: SFC 1.00, w/ 4.9 ppg fluid density below the packer
(per Steve Mosey, CPTG casing design specialist)

Risk Mitigation (attach risk documentation where appropriate):
To minimize risk of casing collapse failure late in well life, the well should plan for appropriate abandonment pressures.

 <p style="margin: 0;">Drilling & Completions MOC Review</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">MOC #:</td> <td>DCMOC-09-0054</td> </tr> <tr> <td style="font-size: small;">Date Initiated:</td> <td>6/22/2009</td> </tr> <tr> <td style="font-size: small;">Initiator:</td> <td>Haffe, Mark</td> </tr> </table>	MOC #:	DCMOC-09-0054	Date Initiated:	6/22/2009	Initiator:	Haffe, Mark						
MOC #:	DCMOC-09-0054												
Date Initiated:	6/22/2009												
Initiator:	Haffe, Mark												
<p>Level 1 Reviews</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Review</th> <th style="width: 25%;">Responsible Person</th> <th style="width: 25%;">Disposition</th> <th style="width: 25%;">Completed By</th> </tr> </thead> <tbody> <tr> <td>Gray, George E</td> <td>Gray, George E</td> <td><input checked="" type="radio"/> Agree <input type="radio"/> Disagree</td> <td>Gray, George E</td> </tr> <tr> <td>Sims, David C</td> <td>Sims, David C</td> <td><input checked="" type="radio"/> Agree <input type="radio"/> Disagree</td> <td>Sims, David C</td> </tr> </tbody> </table>		Review	Responsible Person	Disposition	Completed By	Gray, George E	Gray, George E	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Gray, George E	Sims, David C	Sims, David C	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Sims, David C
Review	Responsible Person	Disposition	Completed By										
Gray, George E	Gray, George E	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Gray, George E										
Sims, David C	Sims, David C	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Sims, David C										

 Drilling & Completions MOC Initiate	MOC #: DCMOC-09-0052 Date Initiated: 9/22/2009 Initiator: Haffle, Mark
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Asset/Project: <input type="text" value="GOM"/>	Type of Change: <input type="text" value="Dispersion"/>
Rig: <input type="text" value="Marianas"/>	Well (i.e., GC 023 #1 or N/A): <input type="text" value="MC 252 #1 (Macondo)"/>
Verifier: <input type="text" value="Haffle, Mark"/>	Priority: <input type="text" value="B (Medium) - Less than 1 week"/>
Coordinator: <input type="text" value="Wilson, Gabe S"/>	Policy / Paragraph #: <input type="text" value="BPA-D-003 sections 6.4 and 6.5.3"/>
Desired Completion Date: <input type="text" value="07/10/2009"/>	Duration: <input type="text" value="Well (Estimated at 98 days)"/>
Proceed with MOC? <input checked="" type="radio"/> Yes <input type="radio"/> No / Cancel <input type="radio"/> Clarify	

Title:
16" casing burst design

Scope:
Dispersions are requested from BPA-D-003 sections 6.4 and 6.5.3 (as referenced in DWOP (13.2 & 13.6)).
The 16" casing for Macondo does not meet the fracture at shoe (FAS) with gas gradient to surface burst load case or the Tri-axial requirements per the BP DWOP.
The FAS case gives a Burst SF=0.72 and a Tri-Axial SF=0.91.
The 16" casing will design for Burst and Tri-Axial requirements using the gas kick profile (GKP).
A dispersion is required to use the GKP load case for the 16" casing burst load case.

Justification (include financial impact where appropriate):
The fracture at shoe scenario assumes a PP equivalent to the FG with a gas gradient to the surface. This scenario has a very low probability of occurring.
Using a gas kick profile (GKP) approach with a 100 bbl influx (2.0 ppg kick intensity) and using 7.6 ppg base fluid density for back-up satisfies both the BP Burst and Tri-Axial design criteria.
Burst SF goes from 0.72 to 1.02.
Tri-Axial SF goes from 0.91 to 1.24.
(This result is close enough with the very conservative 7.6 ppg external fluid density, an increase of less than 1.0 ppg increases the SFR and SFVWF factors to greater than the recommended minimum of 1.10 and 1.25 respectively. Per Steve Morey, EPTG casing design specialist)

Risk Mitigation (attach risk documentation where appropriate):
To minimize risk of casing burst failure, kicks of greater magnitude and intensity will not be circulated to the surface.

 Drilling & Completions MOC Review	MOC #: DCMOC-09-0052 Date Initiated: 6/22/2009 Initiator: Haffle, Mark
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Level 1 Reviews

Review	Responsible Person	Disposition	Completed By
Gray, George E	Gray, George E	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Gray, George E
Sims, David C	Sims, David C	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Sims, David C

Asset/Project: <input type="text" value="GCM"/> Rig: <input type="text" value="Marianas"/> Verifier: <input type="text" value="Hatle, Mark"/> Coordinator: <input type="text" value="Wilson, Gabe S"/> Desired Completion Date: <input type="text" value="07/10/2009"/> Proceed with MOC? <input checked="" type="radio"/> Yes <input type="radio"/> No / Cancel <input type="radio"/> Clarify	Type of Change: <input type="text" value="Dispensation"/> Well (i.e., GC 823 #1 or N/A): <input type="text" value="Mc 252 #1 (Macondo)"/> Priority: <input type="text" value="3 (Medium) - Less than 1 week"/> Policy / Paragraph #: <input type="text" value="BPA-D-003 sections 6.4 and 6.5.3"/> Duration: <input type="text" value="Well (Estimated 98 days)"/>
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Title:
22" casing burst design

Scope:
Dispensations are requested from BPA-D-003 sections 6.4 and 6.5.3 [as referenced in DWOP (13.2 & 13.6)]
The 22" casing for Macondo does not meet the fracture at shoe (FAS) with gas gradient to surface Burst load case or the Tri-axial requirements per the BP DWOP.
The FAS case gives a Burst SF=0.83 and a Tri-Axial SF=0.99.
The 22" casing will design for Burst and Tri-Axial requirements using the gas kick profile (GKP).
A dispensation is required to use the GKP load case for the 22" casing burst load case.

Justification (include financial impact where appropriate):
The fracture at shoe scenario assumes a FP equivalent to the FG with a gas gradient to the surface. This scenario has a very low probability of occurring.
Using a gas kick profile (GKP) approach with a 100 lbf/ft² (2.0 ppg) kick intensity and using seawater density for back-up satisfies both the BP Burst and Tri-Axial design criteria.
Burst SF goes from 0.83 to 2.26.
Tri-Axial SF goes from 0.99 to 2.55.
(per Steve Morsy, EPTG casing design specialist)

Risk/Mitigation (attach risk documentation where appropriate):
To minimize risk of casing burst failure, kicks of greater magnitude and intensity will not be circulated to the surface.

Level 1 Reviews

Review	Responsible Person	Disposition	Completed By
Gray, George E	Gray, George E	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Gray, George E
Sims, David C	Sims, David C	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Sims, David C

Asset/Project: <input type="text" value="GoM"/>	Type of Change: <input type="text" value="Dispensation"/>
Rig: <input type="text" value="Marianas"/>	Well (i.e., GC 823 #1 or N/A): <input type="text" value="MC 252#1 (Macondo)"/>
Verifier: <input type="text" value="Halle, Mark"/>	Priority: <input type="text" value="E (MEDIUM) - Less than 1 week"/>
Coordinator: <input type="text" value="Wilson, Gabe S"/>	Policy / Paragraph #: <input type="text" value="BPA-D-001 13.14"/>
Desired Completion Date: <input type="text" value="07/10/2009"/>	Duration: <input type="text" value="Well (Estimated at 98 days)"/>
Proceed with MOC? <input checked="" type="radio"/> Yes <input type="radio"/> No / Cancel <input type="radio"/> Clarify	

Title:
Auto-Fill Float Equipment

Scope:
Auto-Fill Float Equipment may be run through hydrocarbon bearing zones without tripping auto-fill float equipment.
BP DWOP states, Auto-fill float equipment shall be tripped prior to running through any hydrocarbon bearing zone.
Hole conditions in narrow PFFG environments may lead to the operational practice of running the casing strings through the subject sections prior to converting the auto-fill float equipment.
Dispensation is requested to allow running 18", 16", 13 5/8", 11 7/8", and 9 7/8" through hydrocarbon bearing zones without tripping auto-fill float equipment (pending hole conditions) on an as needed basis.

Justification (include financial impact where appropriate):
Offset wells have encountered hydrocarbons in the subject hole sections. Disabling the auto-fill function may add unnecessary surge pressure and may contribute to significant mud losses & cementing problems if the float equipment is activated prior to reaching TD.
Due to the planned use of the Allamon bypass sub above the running tools, the vertical elongation of any pre-existing well bore influx will be greatly reduced if the auto-fill floats are not converted. Also, the closing & bell can be run in-place on the auto-fill tools, reducing the time necessary to convert (close) the equipment.

Risk/Mitigation (attach risk documentation where appropriate):
This change does not introduce additional risks or hazards to the liner running process. As noted above, well control safety will be enhanced and mud costs should be reduced.
There are no NMS regulations governing the use of auto-fill float equipment.

Level 1 Reviews

Review	Responsible Person	Disposition	Completed By
Gray, George E	Gray, George E	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Gray, George E
Sims, David C	Sims, David C	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Sims, David C

Asset/Project: <input type="text" value="GOM"/>	Type of Change: <input type="text" value="DISPENSER"/>
Rig: <input type="text" value="Marianas"/>	Well (i.e., GC 823 #1 or N/A): <input type="text" value="MC 252#1 (Macondo)"/>
Verifier: <input type="text" value="Hafie, Mark"/>	Priority: <input type="text" value="B (Medium) - Less than 1 week"/>
Coordinator: <input type="text" value="Wilson, Gabe S"/>	Policy / Paragraph #: <input type="text" value="BPA-D-003 Part 3 Sec. 6"/>
Desired Completion Date: <input type="text" value="07/10/2009"/>	Duration: <input type="text" value="Well (Estimated 96 Days)"/>
Proceed with MOC? <input checked="" type="radio"/> Yes <input type="radio"/> No / Cancel <input type="radio"/> Clarify	

Title:
Design Pore Pressure (DPP) requirements

Scope:
The Macondo casing design does not comply with the Design Pore Pressure (DPP) requirements specified in Part 3, Section 6 of the BP Casing Design Manual (BPA-D-003).
The BP Casing Design Manual calls for the use of DPP in the calculation of bottom hole pressure (BHP). DPP is given by the following formula: expected pore pressure x (1 + (1.64 x COV)) where COV = 0.12 for Macondo. In the calculation of BHP, DPP is then multiplied by 1.08.

Justification (include financial impact where appropriate):
For Macondo, this method is overly conservative. For example, if the expected pore pressure at the wellbore TD (20,200 ± TVD) is 14.4 ppg, DPP = 17.2 ppg. The calculated BHP is 1.08DPP or 18.6 ppg.
Dispensation is requested to permit drilling operations to proceed when the DPP kick intensity for a 100 bbl kick is too high for casing burst pressure ratings to meet/exceed a 1.15 design factor.
The DPP method is overly conservative, particularly since the DPP BHP exceeds the 18.6 ppg overburden pressure gradient at TD.

Risk/Mitigation (attach risk documentation where appropriate):
For the wellbore TD (±20,200 ± TVD), the 18 1/2 casing will design for a 100 bbl kick with 2.0 ppg intensity assuming a 7.6 ppg mud density backup fluid and no breakdown at the 18 1/2 shoe.

Level 1 Reviews

Review	Responsible Person	Disposition	Completed By
Gray, George E	Gray, George E	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Gray, George E
Sims, David C	Sims, David C	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Sims, David C

Asset/Project: <input type="text" value="GoM"/> Rig: <input type="text" value="Marianas"/> Verifier: <input type="text" value="Hafle, Mark"/> Coordinator: <input type="text" value="Wilson, Gabe S"/> Desired Completion Date: <input type="text" value="07/10/2009"/> Proceed with MOC? <input checked="" type="radio"/> Yes <input type="radio"/> No/Cancel <input type="radio"/> Clarify	Type of Change: <input type="text" value="DISPOSITION"/> Well (i.e., GC 823 #1 or N/A): <input type="text" value="MC 252 #1 (Macondo)"/> Priority: <input type="text" value="3 (Medium) - less than 1 week"/> Policy / Paragraph #: <input type="text" value="BPA-D-001-10.3 BPA-D-002-1.5.5"/> Duration: <input type="text" value="Well - 98 Days estimated"/>
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Title:
Kick Tolerance less than 25 bbbs with a 1.0 ppg kick intensity

Scope:
Kick tolerance less than 25 bbbs with a 1.0 ppg kick intensity will likely occur in multiple hole intervals while drilling the MC 252 #1, Macondo prospect.

The BP Drilling and Well Operations Policy states "Kick tolerances are to be calculated as described in the Well Control Manual (BPA-D-002). On all wells, the design kick tolerance shall be greater than 25 bbbs based on maximum anticipated pore pressure and planned mud weights. The Well Control Manual requires a 1.0 ppg kick intensity over expected pore pressure for exploration or appraisal well operations. Below are the estimated kick tolerances that do not meet the DWOP:

- Hole MW Kick size Kick Tolerance**
- 16-1/8" x 22", 10.6 25 bbbs 0.56 ppg
 - 16-1/2" x 20", 11.8 25 bbbs 0.33 ppg
 - 14-3/4" x 16", 13.1 25 bbbs 0.50 ppg
 - 12-1/4" x 14", 14.2 25 bbbs 0.37 ppg*
 - 10-5/8" x 12-1/4", 14.6 25 bbbs 0.49 ppg**

* For drilling to TD w/o contingency 11-7/8 SET liner.
** Only applies if contingency 11-7/8 SET liner is used

For MC 252 # 1, a kick tolerance of 25 bbbs is not achievable in all hole intervals. This well, like many other deepwater wells, has a minimal pore pressure to fracture gradient margin. This results in the cutting of multiple casing strings to achieve target depth.


Dispensation from meeting BP DWOP Policy of 25 bbbs kick size at 1.0 ppg intensity is requested.

Justification (include financial impact where appropriate):
The BP Well Control Manual states for deepwater drilling considerations, "Traditional kick tolerance calculation is based on circulating the kick out. Deepwater drilling is subject to particular complications due to tight mud weight/fracture margins and high choke line friction pressures, which would render some wells non-drillable if required to comply with policy. In such event, an alternative approach can be adopted based on keeping the problem downhole and utilizing slow kill rates, bullhead techniques or other emerging technologies as the well control method of choice."

Risk/Mitigation (attach risk documentation where appropriate):
Kick margin will be monitored on a continual basis during the drilling of the MC 252 #1 well. Slow pump rates have previously been proven successful in circulating out mixtures. If unable to circulate out influx at reduced rates, bullhead techniques may be required.

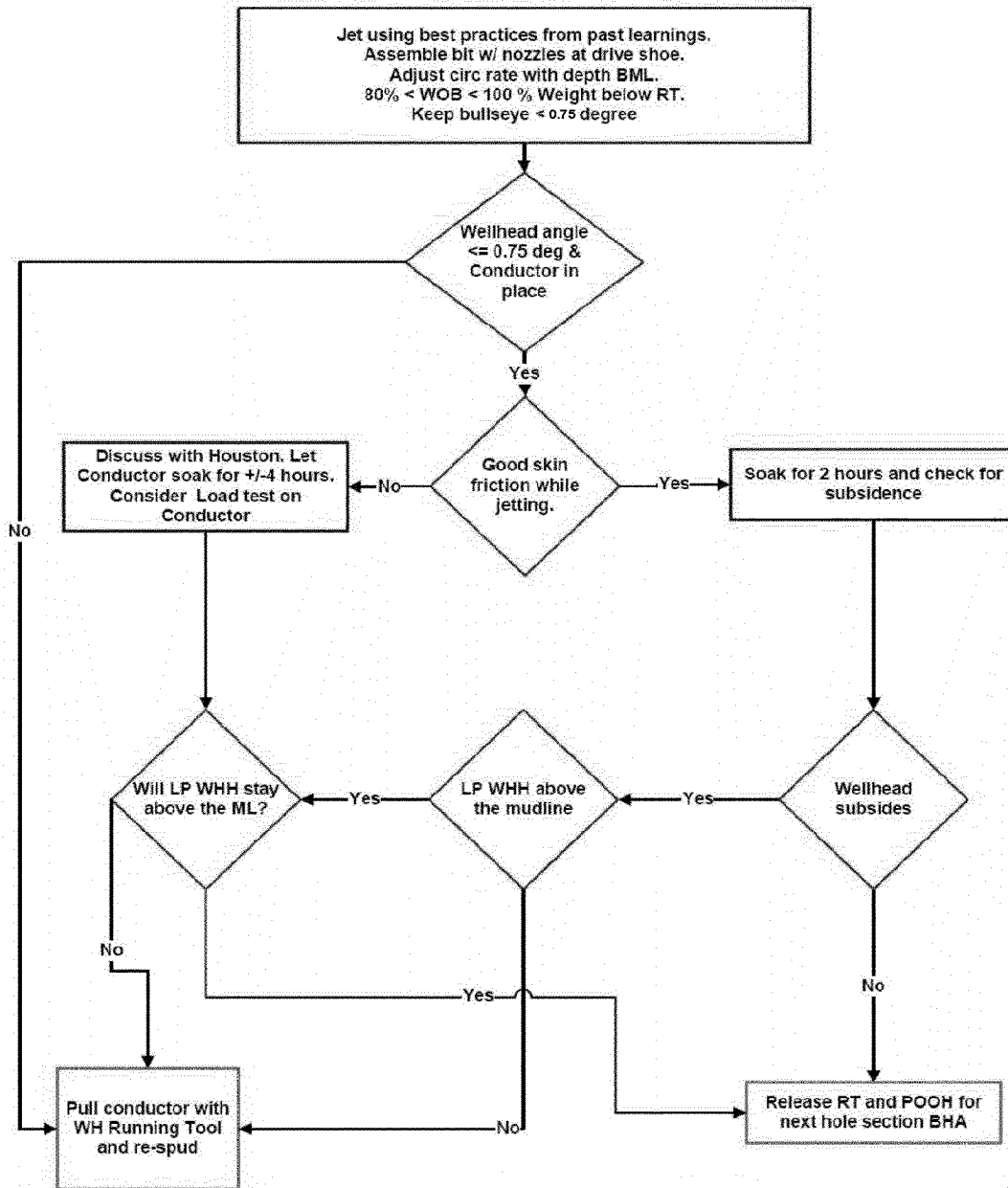
Level 1 Reviews

Review	Responsible Person	Disposition	Completed By
Gray, George E.	Gray, George E.	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Gray, George E.
Sims, David C.	Sims, David C.	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Sims, David C.

	Drilling & Completions MOC Initiate	MOC #: DCMOC-09-0050 Date Initiated: 6/22/2009 Initiator: Halle, Mark	
Asset/Project:	GOM	Type of Change:	Dispersal/ERT
Rig:	Matarias	Well (i.e., GC 823 #1 or N/A):	MC 252#1 (Macondo)
Vendor:	Halle, Mark	Priority:	B (Medium) – Less than 1 week
Coordinator:	Wilson, Gabe S	Policy / Paragraph #:	BPA-D-001 13.14
Desired Completion Date:	07/10/2009	Duration:	Well (Estimated at 90 days)
Proceed with MOC?	<input checked="" type="radio"/> Yes <input type="radio"/> No / Cancel <input type="radio"/> Clarify		
Title:			
Auto-Fill Float Equipment			
Scope:			
Auto-Fill Float Equipment may be run through hydrocarbon bearing zones without tripping auto-fill float equipment.			
B ² DWOP states, Auto-fill float equipment shall be tripped prior to running through any hydrocarbon bearing zone.			
Hole conditions in narrow PFFG environments may lead to the operational practice of running the casing strings through the subject sections prior to converting the auto-fill float equipment.			
Dispersion is requested to allow running 18", 16", 13-5/8", 11-7/8", and 9-7/8" through hydrocarbon bearing zones without tripping auto-fill float equipment (pending hole conditions) on an as needed basis.			
Justification (include financial impact where appropriate):			
Offset wells have encountered hydrocarbons in the subject hole sections. Disabling the auto-fill function may add unnecessary surge pressure and may contribute to significant mud losses & cementing problems if the float equipment is activated prior to reaching TD.			
Due to the planned use of the Allamton bypass sub above the running tools, the vertical elongation of any pre-existing well bore influx will be greatly reduced if the auto-fill floats are not converted. Also, the closing ball can be run in-place on the auto-fill tools, reducing the time necessary to convert (close) the equipment.			
Risk/Mitigation (attach risk documentation where appropriate):			
This change does not introduce additional risks or hazards to the liner running process. As noted above, well control safety will be enhanced and mud costs should be reduced.			
There are no MMS regulations governing the use of auto-fill float equipment.			
Level 1 Reviews			
Review	Responsible Person	Disposition	Completed By
Gray, George E	Gray, George E	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Gray, George E
Sims, David C	Sims, David C	<input checked="" type="radio"/> Agree <input type="radio"/> Disagree	Sims, David C

**Appendix E:
Decision Trees**

36" Structural Casing

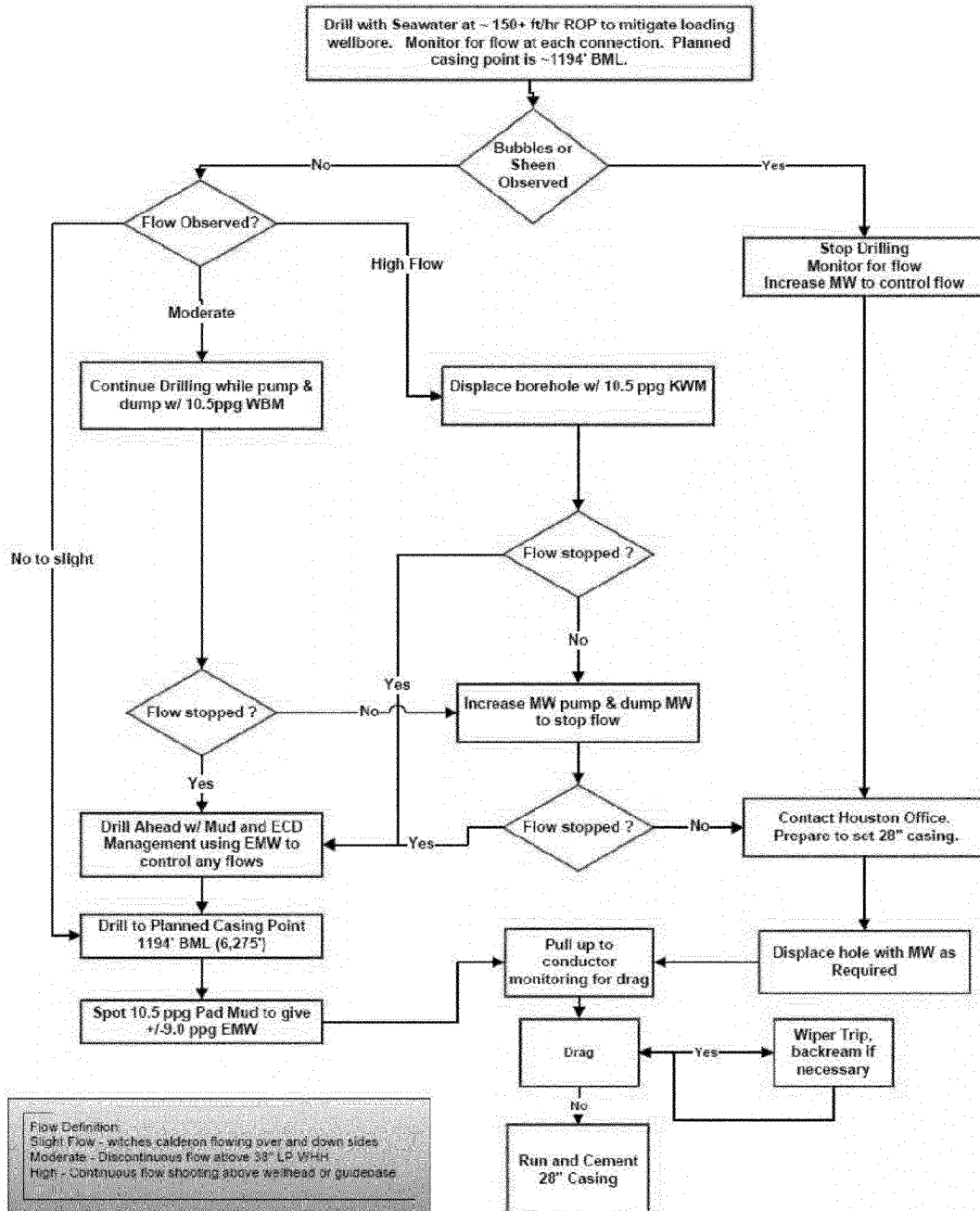




GoM Exploration Wells
MC 252 #1 – Macondo Prospect
Appendix



28" Casing (Riserless) Interval





GoM Exploration Wells

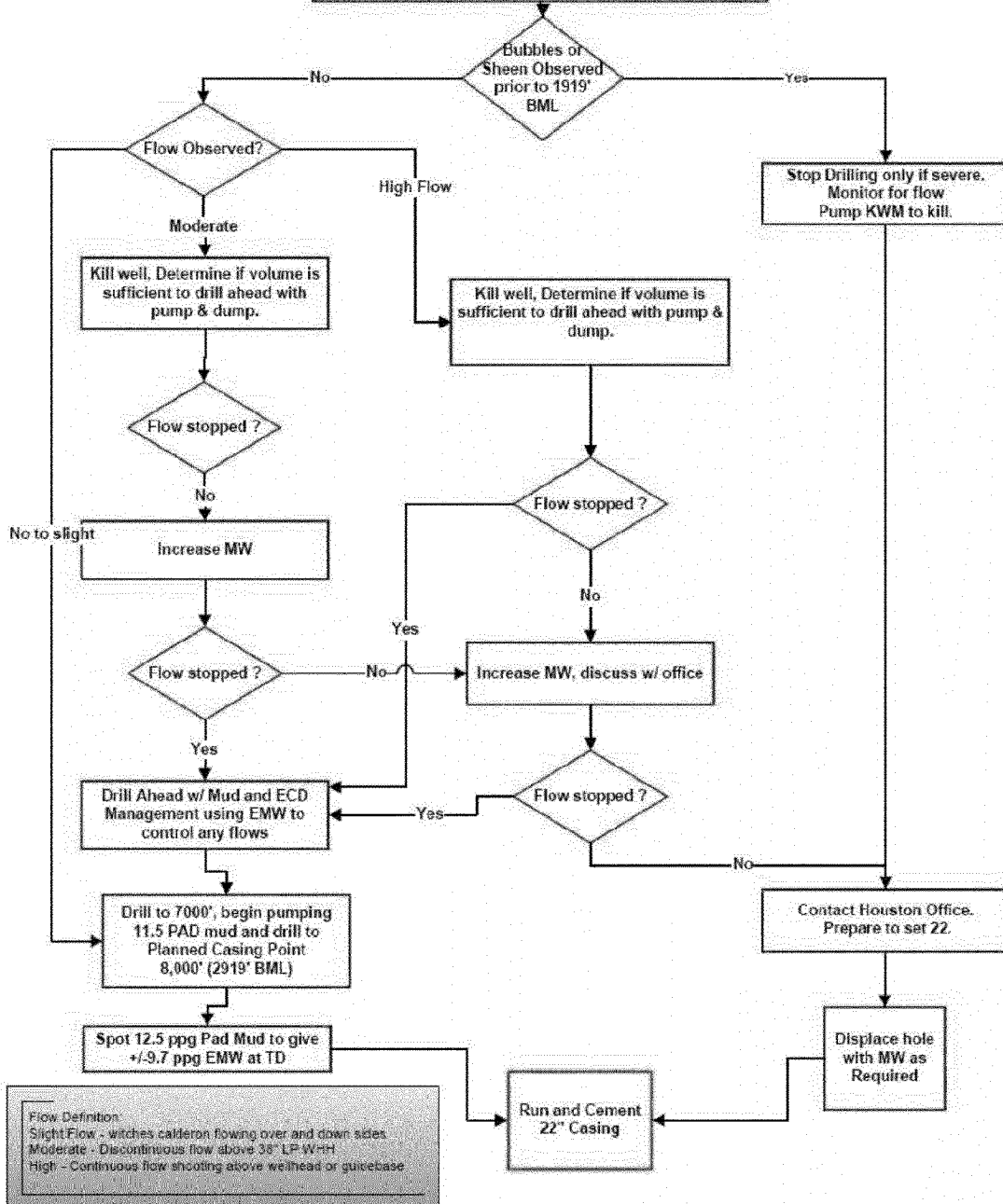
MC 252 #1 – Macondo Prospect

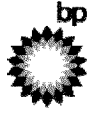
Appendix



22" Casing (Riserless) Interval

Drill with Seawater at 300-400 ft/hr ROP to get ECD to 9.2-9.4ppg. Monitor for flow at each connection. No sweeps, don't stop on connection to allow flow to stop unless severe flow is witnessed.

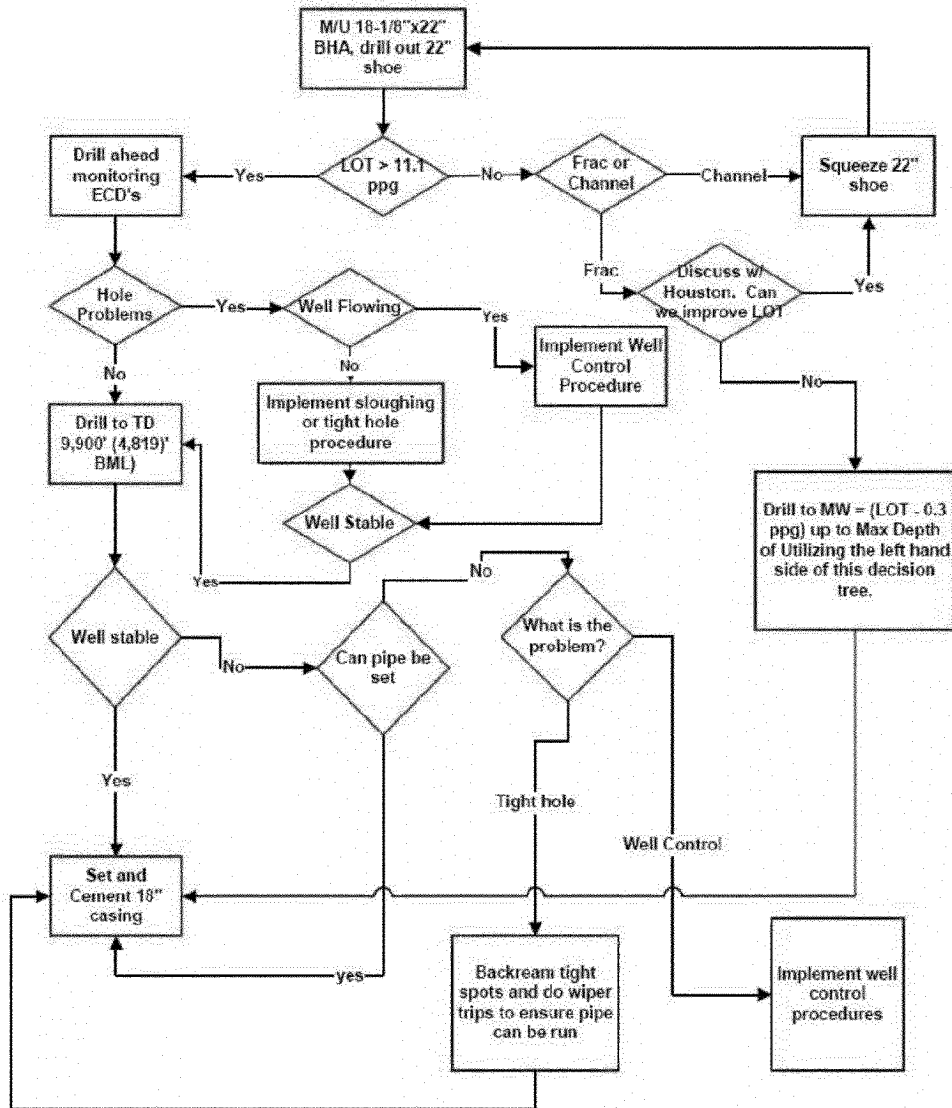




GoM Exploration Wells
MC 252 #1 – Macondo Prospect
Appendix



18" Decision Tree





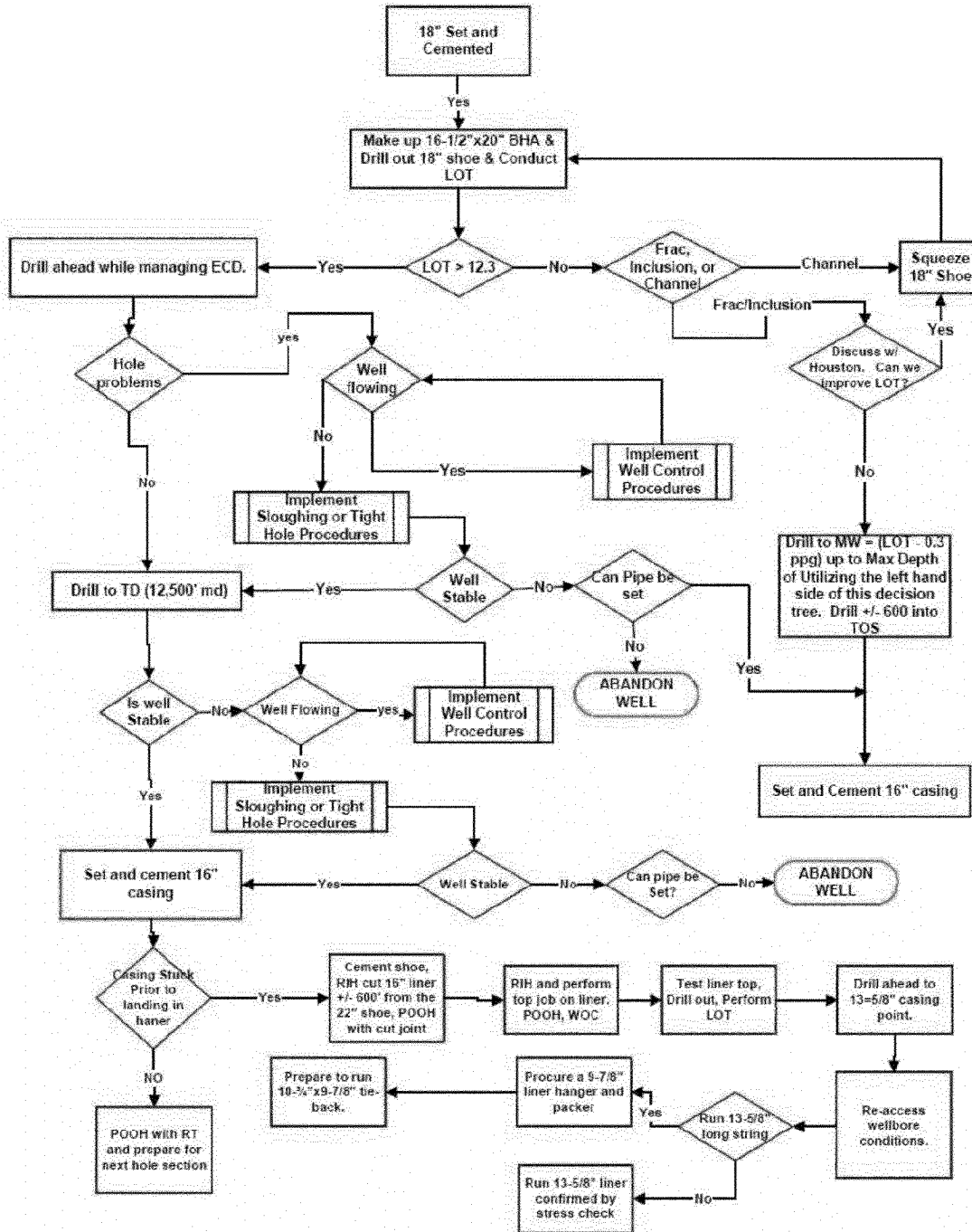
GoM Exploration Wells

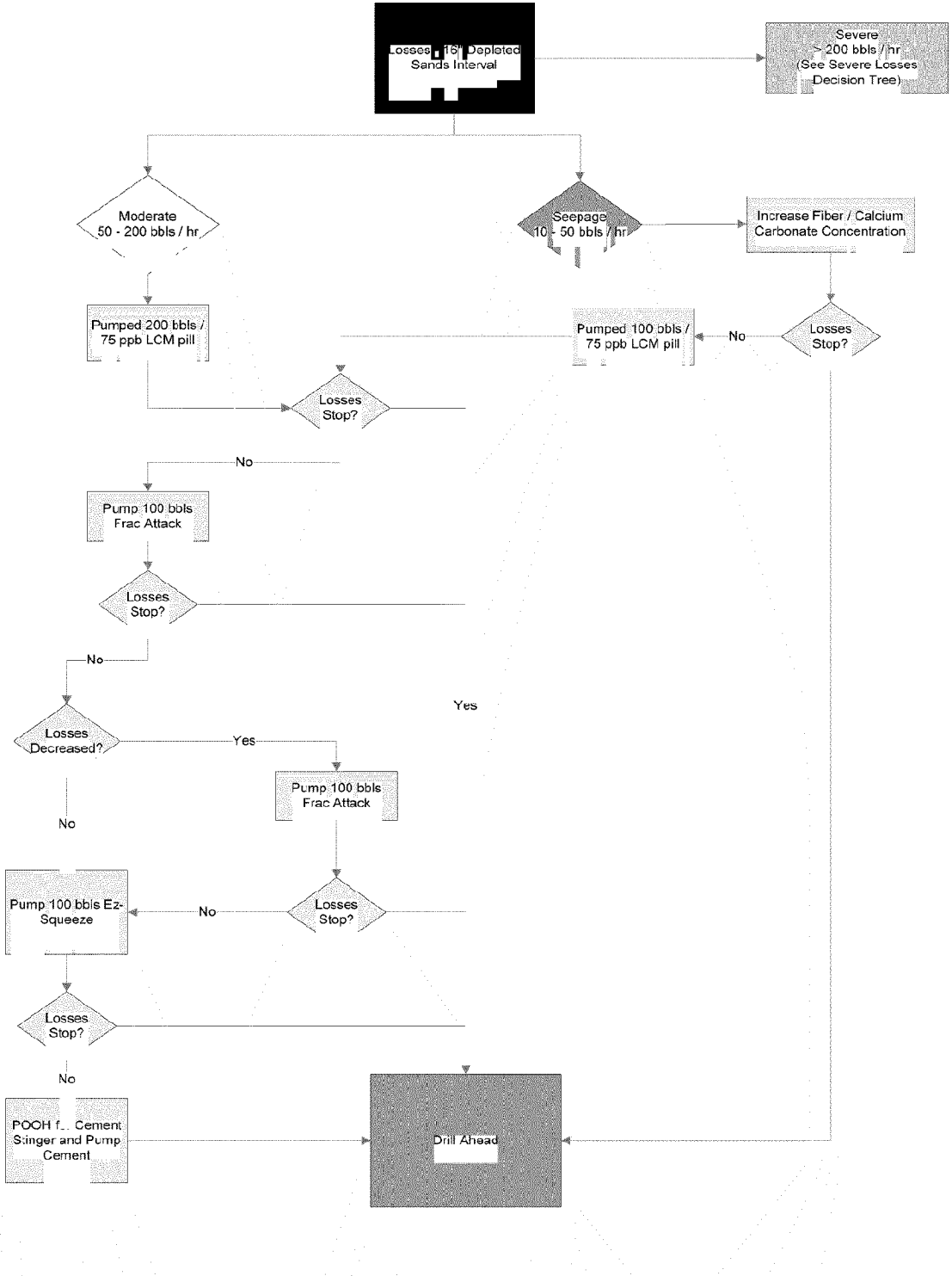
MC 252 #1 – Macondo Prospect

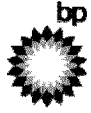
Appendix



16" Liner Decision Tree



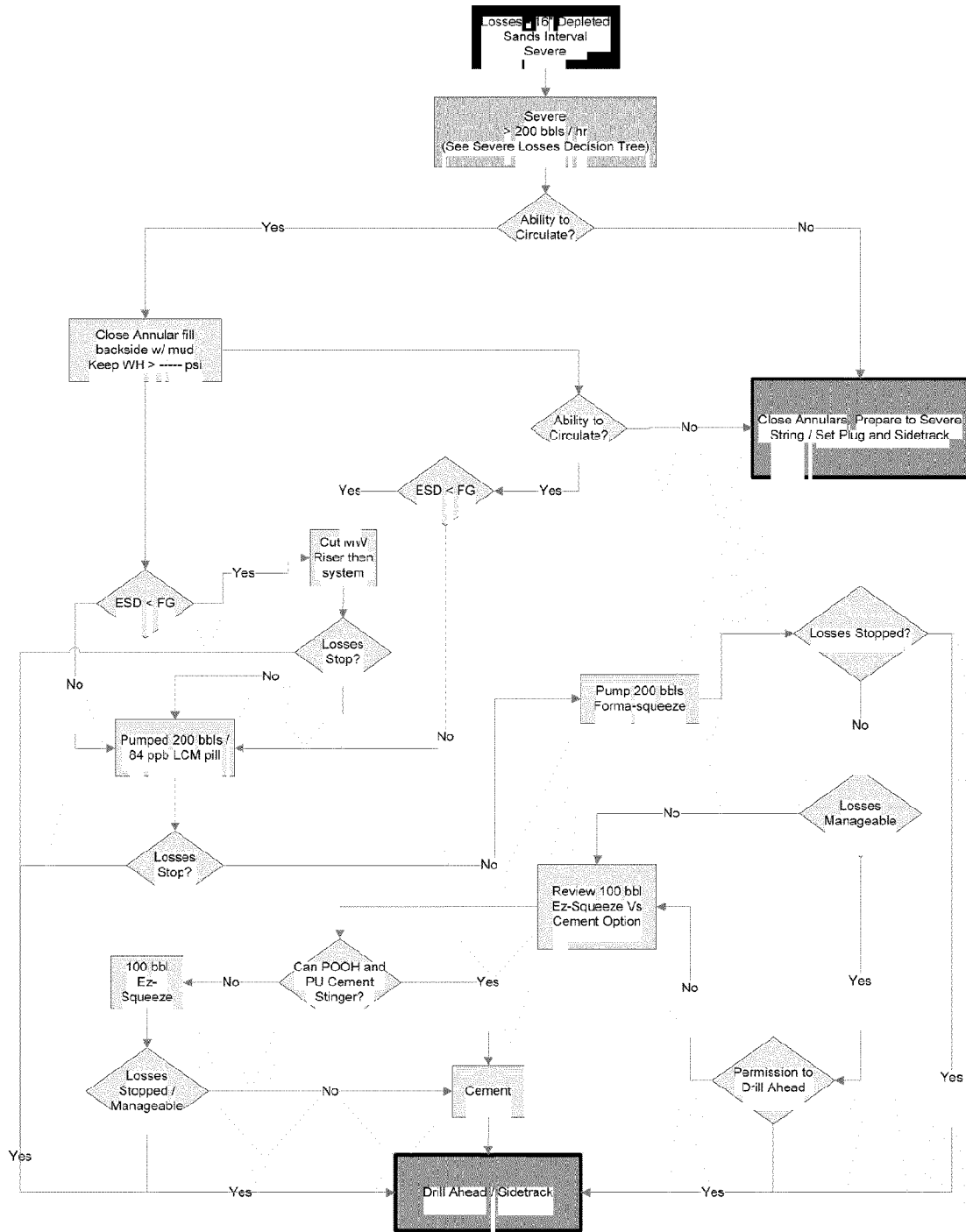


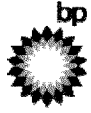


GoM Exploration Wells

MC 252 #1 – Macondo Prospect

Appendix





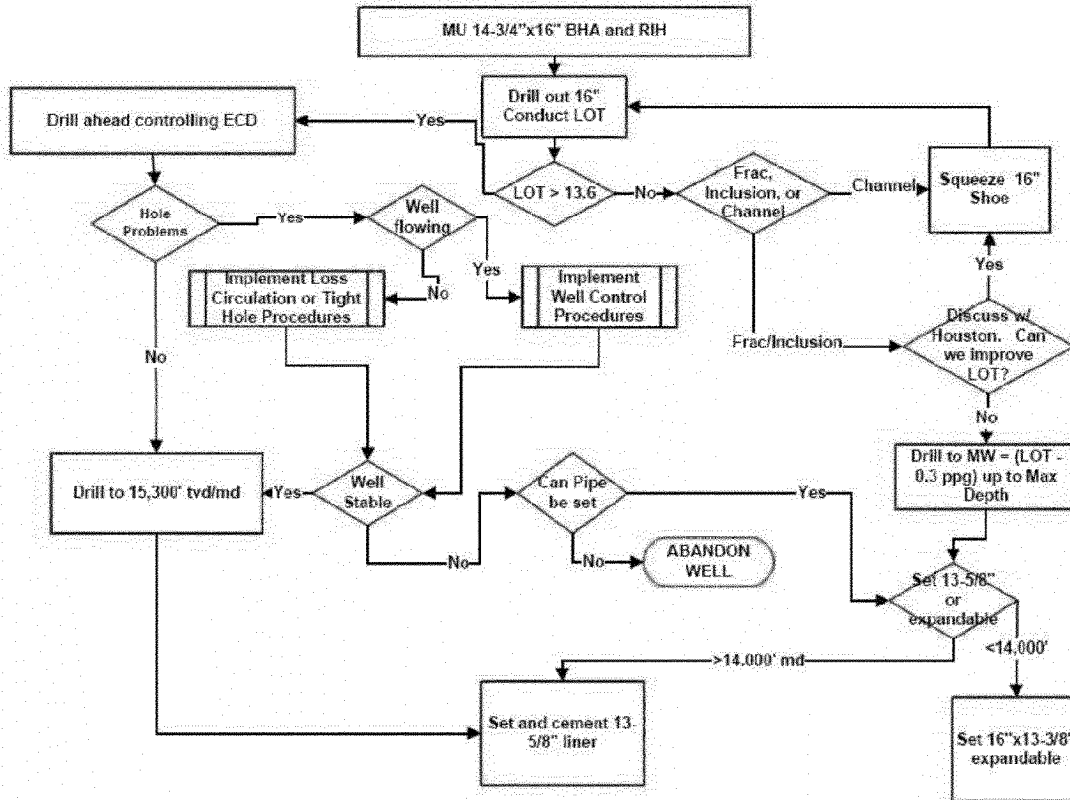
GoM Exploration Wells

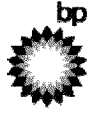
MC 252 #1 – Macondo Prospect

Appendix



13-5/8" Interval Decision Tree





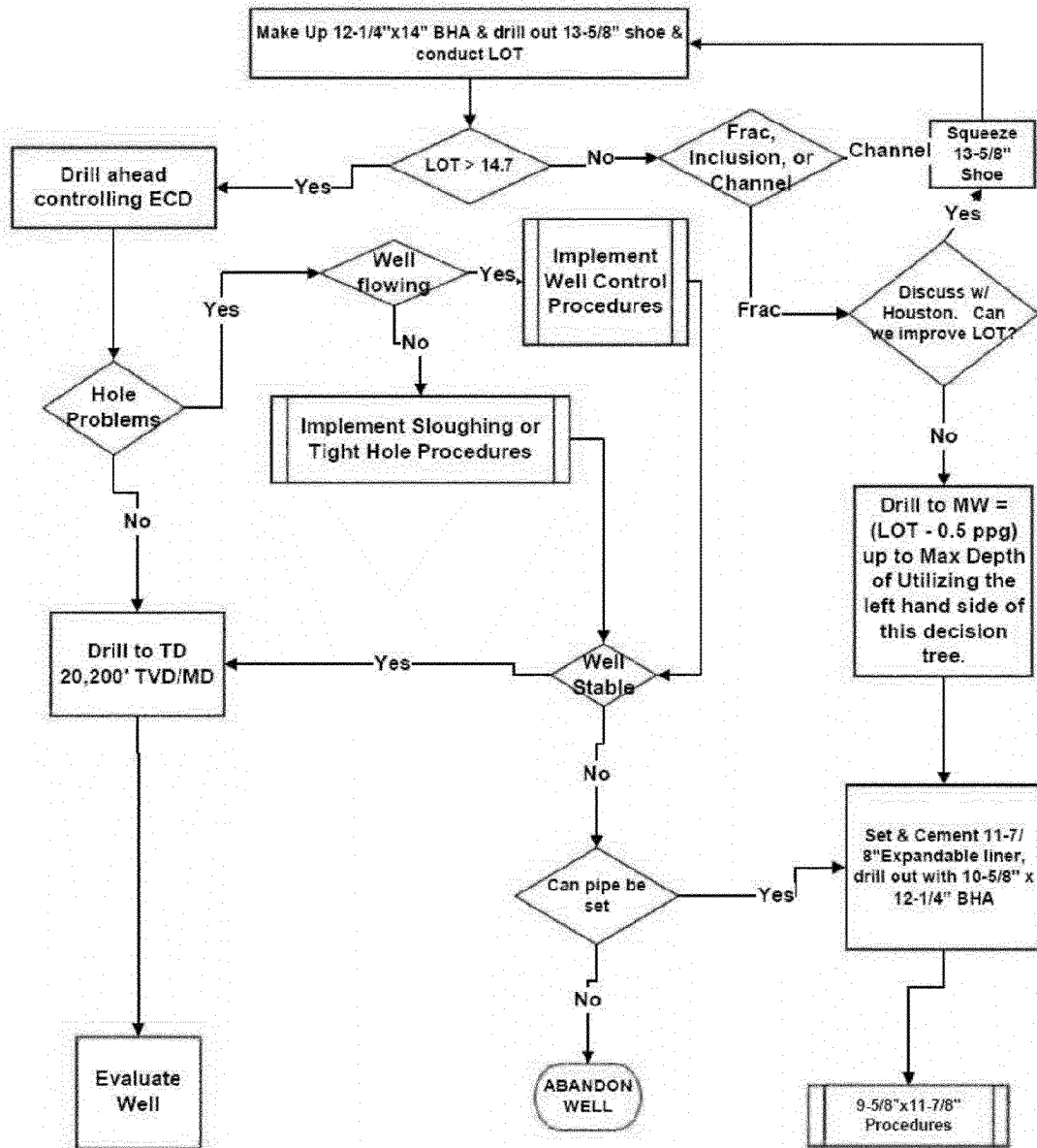
GoM Exploration Wells

MC 252 #1 – Macondo Prospect

Appendix



12-1/4" x 14" Interval Decision Tree

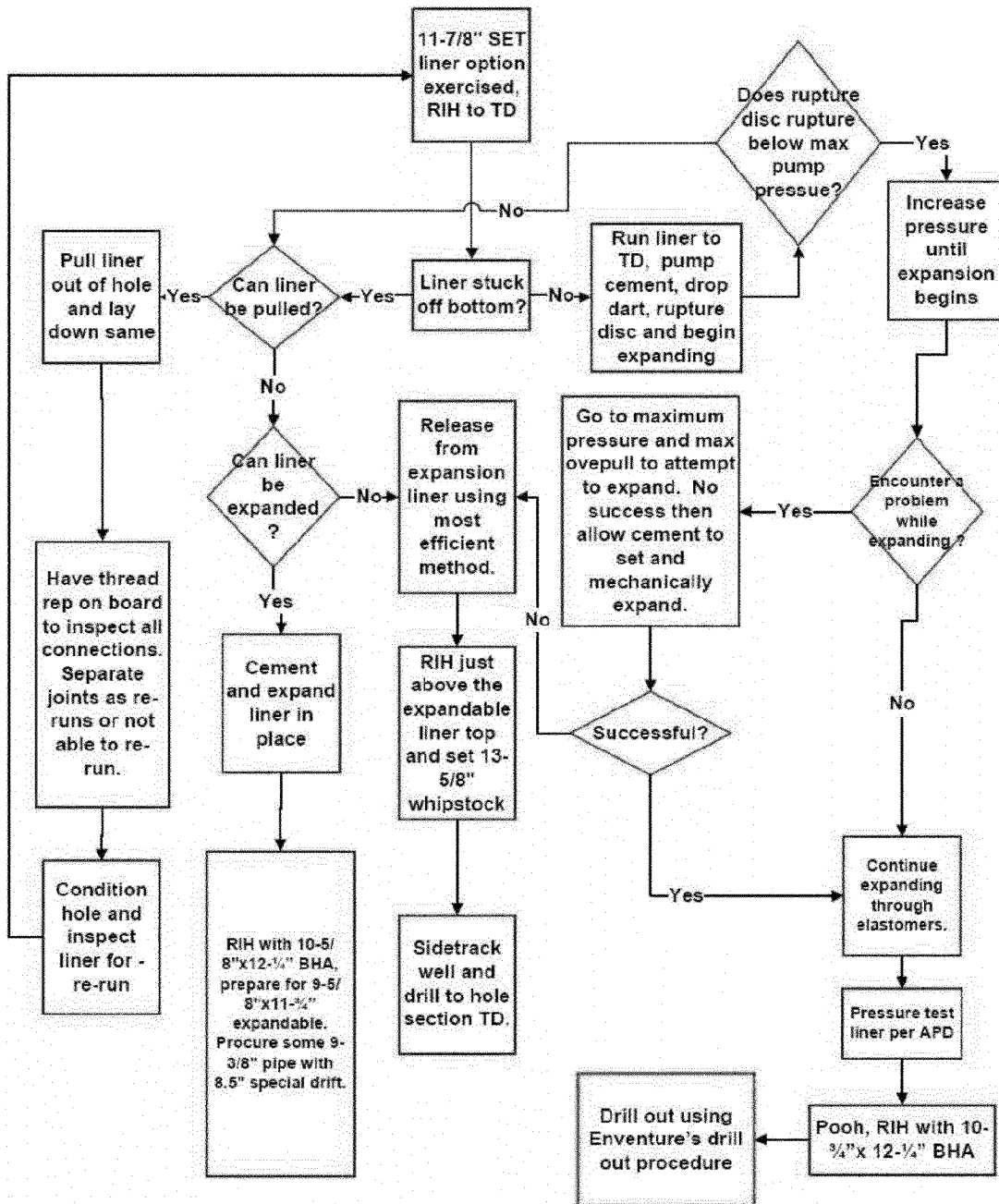




GoM Exploration Wells
MC 252 #1 – Macondo Prospect
Appendix



Expandable Contingencies

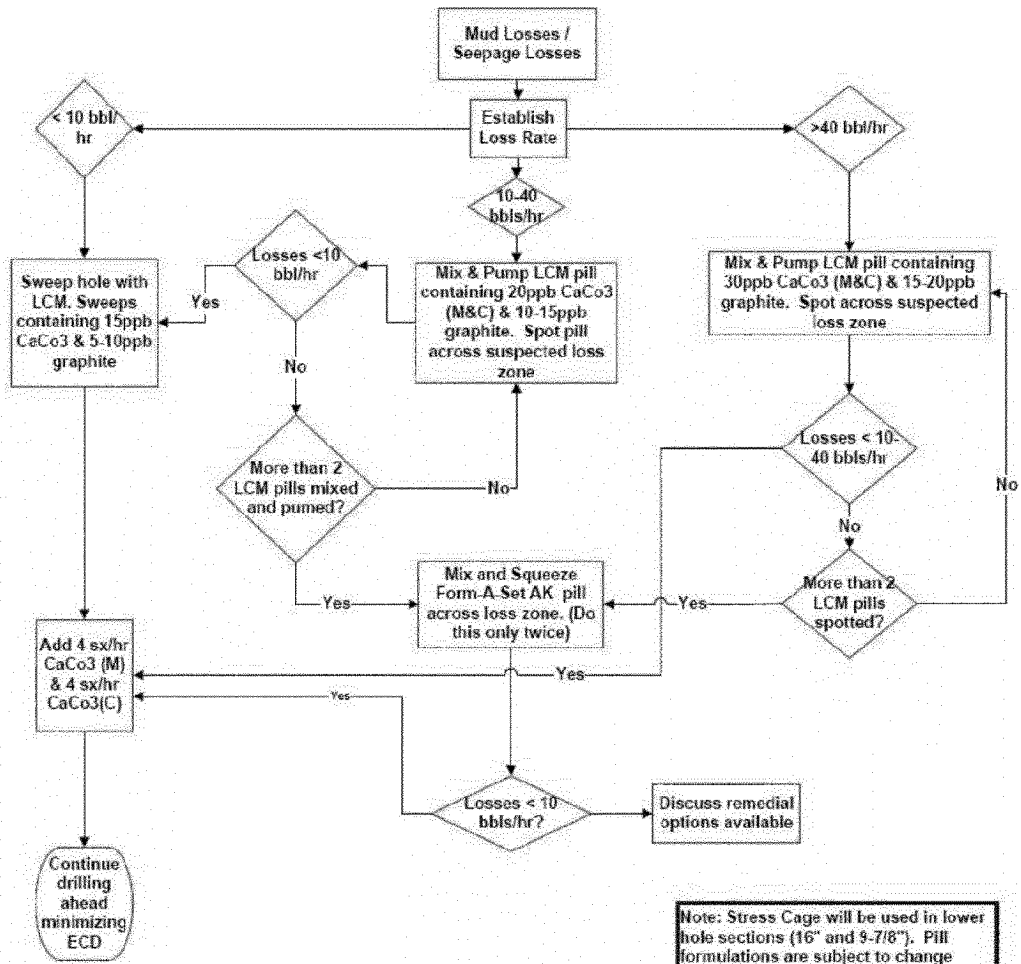




GoM Exploration Wells
MC 252 #1 – Macondo Prospect
Appendix

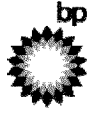


Loss Circulation Plan



Note: Stress Cage will be used in lower hole sections (16" and 9-7/8"). Pill formulations are subject to change when Stress Cage is being used.

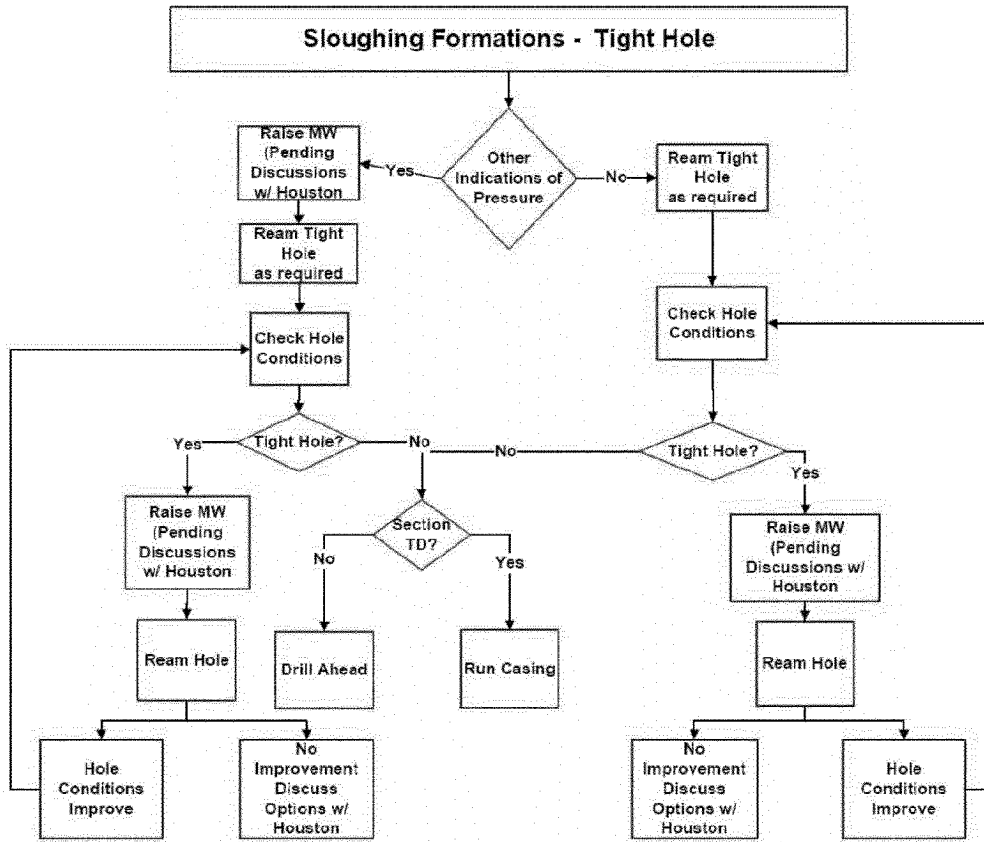
Note: Avoid Rapid movement of pipe causing surge pressures while circulating. Avoid rapid pump start up. In suspected loss circulation intervals, have 300-400 bbls of loss circulation pill ready consisting of: 10 lbs/bbl G-seal, 20 lbs/bbl Safe Carb 40, 20 lbs/bbl Safe Carb 250, 20 lbs/bbl Vinseal

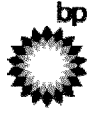


GoM Exploration Wells

MC 252 #1 – Macondo Prospect

Appendix

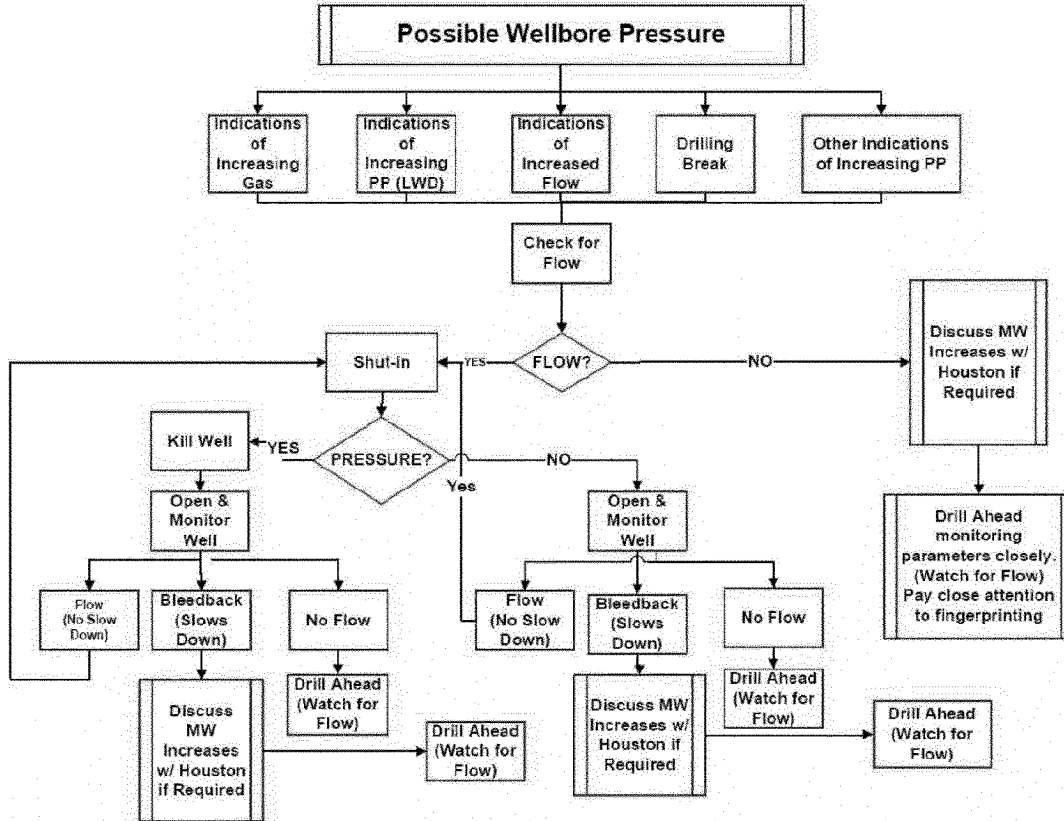




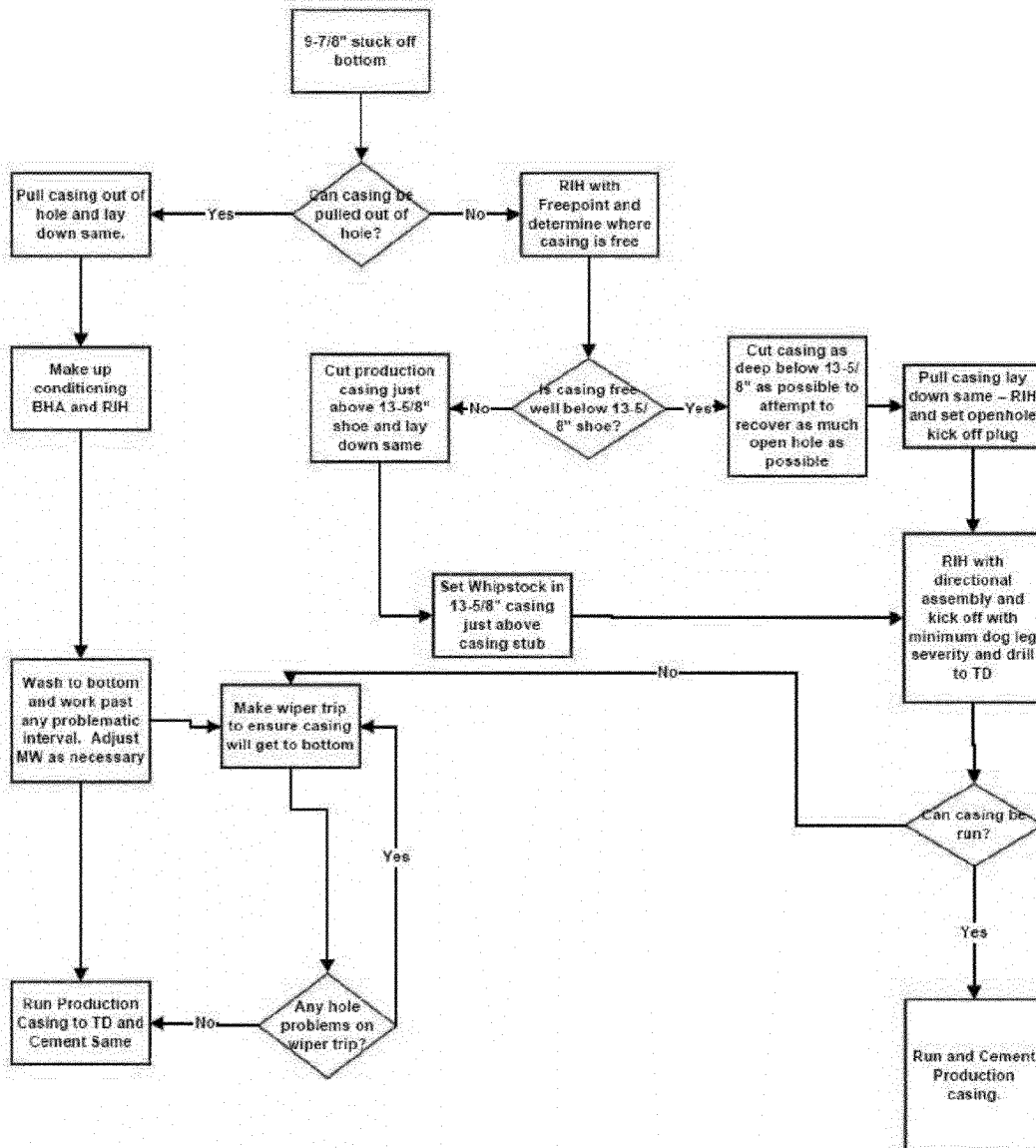
GoM Exploration Wells

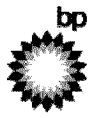
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Appendix



Stuck Production Casing





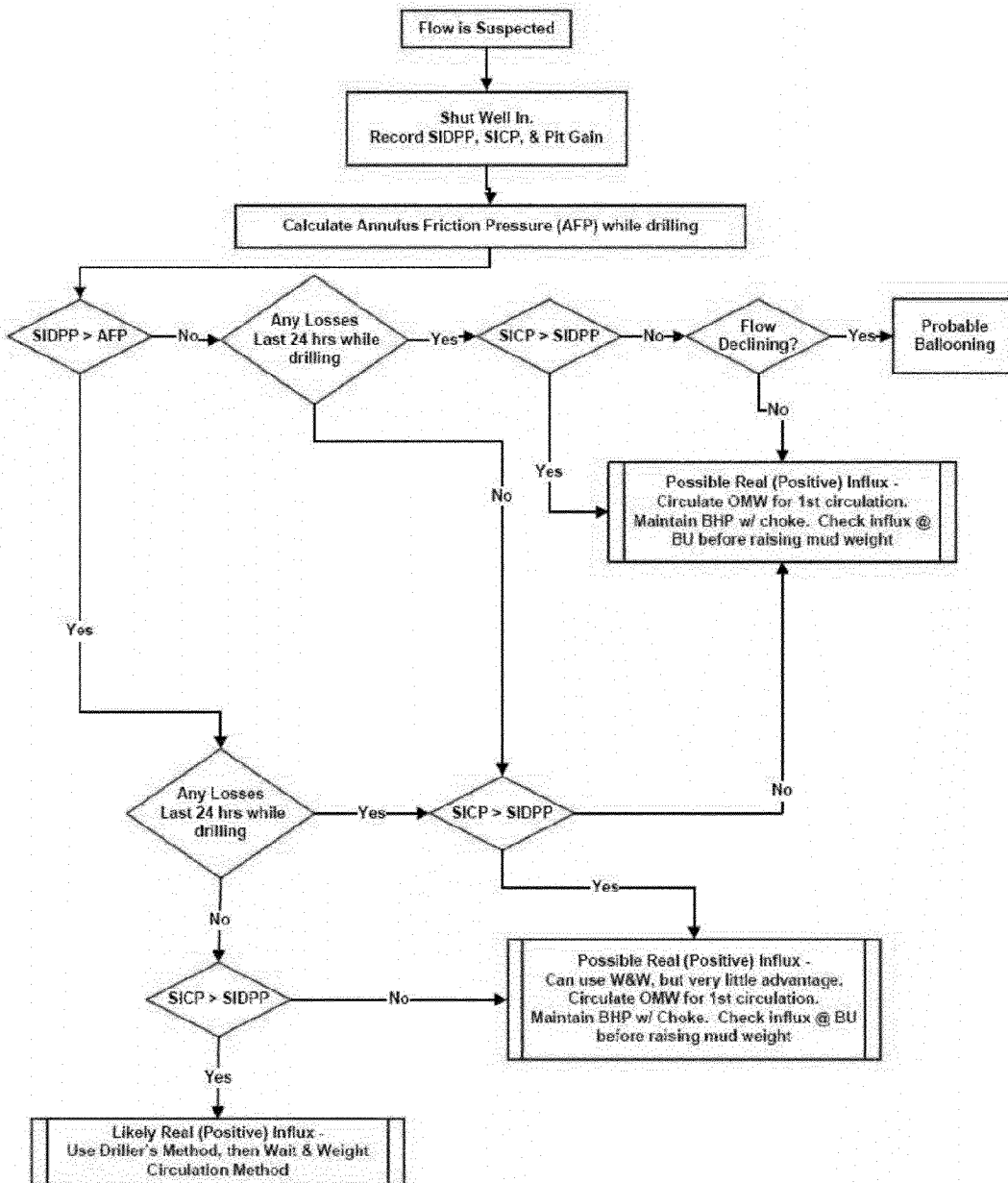
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MC 252 #1 – Macondo Prospect

Appendix



Ballooning vs. Real (Positive) Influx





GoM Exploration Wells
MC 252 #1 – Macondo Prospect
Appendix



Appendix F:
Application for Revised New Well (APD)

U.S. Department of the Interior
 Minerals Management Service (MMS)

OMB Control Number 1010-0141
 OMB Approval Expires 08/31/2008

Form MMS 123A/123S - Electronic Version
Application for Revised New Well

Lease G32306 **Area/Block** MC 252 **Well Name** 001 **ST** 00 **BP** 00 **Well Type** Exploration
Application Status Approved **Operator** 02481 BP Exploration & Production Inc.

Correction Narrative 01-25-10 -

- 1) Revise Annular Pressure test from 5000 psi to 3500 psi.
- 2) Request departure to stump test the 6-5/8" and 5-1/2" drill pipe but only the 6-5/8" drillpipe subsea. The only time the 5-1/2" will be run below the stack is as an inner string during the 16" casing job. Once the 16" string is landed out and cemented, the seal assemble will be set, and the inner string pulled out of the wellbore. During this time the 5-1/2" will be below the stack inside the casing

01-12-10 - Revision to use the Deepwater Horizon to finish drilling operations (Marianas sent to shipyard for repairs, no longer under BP contract).

Revised attachments include:

- 1) Horizon BOP schematic
- 2) Wellbore schematic with revised RKB
- 3) Revised Departure List (removed departure for 250.449 (f))
- 4) Revised Pore Pressure Plot with Horizon RKB

The casing information has been updated to reflect actual setting depths, mudweights, etc.



Attachments referring to the Marianas BOPs and mooring have been removed.

10-29-09 - Revised to show shallow setting depth and revised cement volume for the 16" casing.

Revision I: 10-15-09

This RPD is to request approval to replace the upper annular element from the originally approved standard element rated to 10k on 5-1/2" pipe to a 6-5/8" element which is rated to 7.5k on 5-1/2" and 10k on 6-5/8".

Please see the attached chart which shows the rating of each element. Our max annular tests per the approved APD will be 5k both on the stump test and down hole.

	GoM Exploration Wells MC 252 #1 – Macondo Prospect Appendix	
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U.S. Department of the Interior
Minerals Management Service (MMS)

OMB Control Number 1010-0141
OMB Approval Expires 08/31/2008

Form MMS 123A/123S - Electronic Version
Application for Revised New Well

Lease G32306 Area/Block MC 252 Well Name 001 ST 00 BP 00 Well Type Exploration
Application Status Approved Operator 02481 BP Exploration & Production Inc.

General Well Information

API Number 608174116900	Approval Date 01/29/2010	Approved By Frank Patton
Date of Request 01/25/2010	Req Spud Date 06/15/2009	Kickoff Point N/A
Water Depth (ft.) 4992	Drive Size (in) 36	Mineral Code Hydrocarbon
RKB Elevation 75	Drive Depth (ft.) 5361	Subsea BOP Yes
Verbal Approval Date		Verbal Approval By

Proposed Well Location



Surface Location

LEASE (OCS) G32306	Area/Block MC 252	Authority Federal Lease
Entered NAD 27 Data	Calculated NAD 27 Departures	Calculated NAD 27 X-Y Coordinates
Lat: 28.73836889	N 6857	X 1202802.892336
Lon: -88.36593389	E 1037	Y 10431702.916855
Surface Plan	Plan Lease (OCS) G32306	Area/Block MC 252

Bottom Location

LEASE (OCS) G32306	Area/Block MC 252	
Entered NAD 27 Data	Calculated NAD 27 Departures	Calculated NAD 27 X-Y Coordinates
Lat: 28.73836889	N 6857	X 1202802.892336
Lon: -88.36593389	E 1037	Y 10431702.916855
Bottom Plan	Plan Lease (OCS) G32306	Area/Block MC 252

Approval Comments

	GoM Exploration Wells MC 252 #1 – Macondo Prospect Appendix	
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U.S. Department of the Interior
Minerals Management Service (MMS)

OMB Control Number 1010-0141
OMB Approval Expires 08/31/2008

Form MMS 123A/123S - Electronic Version
Application for Revised New Well



Lease G32306 Area/Block MC 252 Well Name 001 ST 00 BP 00 Well Type Exploration
Application Status Approved Operator 02481 BP Exploration & Production Inc.

Geologic Information

H2S Designation Absent	H2S TVD
Anticipated Geologic Markers	
Name	Top MD
Reticulofenestra pseudoumbilicus	7060
Catinaster mexicanus	9100
Catinaster coalitus	13145
Discoaster kugleri	14153
Cyclicargolithus floridanus	17481
Globorotalia peripheroronda	18400
Sphenolithus heteromorphus	19120
Discoaster petaliformis	19594

Rig Information

RIG SPECIFICATIONS		ANCHORS	No
Rig Name	T.O. DEEPWATER HORIZON	ID Number	46428
Type	SEMISUBMERSIBLE	Constructed Year	2001
Function	DRILLING	Refurbished Year	
Shipyard	HYUNDAI		
RATED DEPTHS		Drill Depth	35000
Water Depth	10000		
CERTIFICATES		Coast Guard	07/27/2011
ABS/DNV	02/28/2011		
SAFE WELDING AREA		District	1
Approval Date	09/26/2001		
Remarks			

	GoM Exploration Wells MC 252 #1 – Macondo Prospect Appendix	
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U.S. Department of the Interior
Minerals Management Service (MMS)

OMB Control Number 1010-0141
OMB Approval Expires 08/31/2008

Form MMS 123A/123S - Electronic Version
Application for Revised New Well

Lease G32306 Area/Block MC252 Well Name 001 ST 00 BP 00 Well Type Exploration
Application Status Approved Operator 02481 BP Exploration & Production Inc.

Number	Question	Response	Response Text
1.	Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2	YES	
2.	If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	N/A	
3.	If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it	YES	
4.	If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for th	N/A	
5.	Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in comments for this question)	YES	NOI has been submitted but permit number has not yet been assigned.
6.	Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the plat	N/A	

	GoM Exploration Wells MC 252 #1 – Macondo Prospect Appendix	
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U.S. Department of the Interior
Minerals Management Service (MMS)

OMB Control Number 1010-0141
OMB Approval Expires 08/31/2008

Form MMS 123A/123S - Electronic Version
Application for Revised New Well

Lease G32306 Area/Block MC252 Well Name 001 ST 00 BP 00 Well Type Exploration
 Application Status Approved Operator 02481 BP Exploration & Production Inc.

Permit Attachments

File Type	File Description	Status
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Required Attachments



pdf	Drilling prognosis and summary of drilling, cementing, and mud processes	Attached
pdf	Directional Program	Attached
pdf	Proposed Well Location Plat	Attached
pdf	BOP & Diverter Schematics with Operating Procedures	Attached
pdf	Pore pressure (PP), Mud Weight (MW), and Fracture Gradient (FG) Plot	Attached
pdf	Proposed Wellbore Schematic	Attached
pdf	Engineering Calculation	Attached

Optional/Supplemental Attachments

pdf	Departure List	Attached
PDF	Application for Permit to Drill	Attached

Contacts Information

Name	Heather Powell
Company	02481 BP Exploration & Production Inc.
Phone Number	281-504-0984
E-mail Address	heather.powell@bp.com
Contact Description	Regulatory
Name	Scherie Douglas
Company	02481 BP Exploration & Production Inc.
Phone Number	281-366-6843
E-mail Address	scherie.douglas@bp.com
Contact Description	Regulatory

	GoM Exploration Wells MC 252 #1 – Macondo Prospect Appendix	
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U.S. Department of the Interior
Minerals Management Service (MMS)

OMB Control Number 1010-0141
OMB Approval Expires 08/31/2008

Form MMS 123A/123S - Electronic Version
Application for Revised New Well

Lease G32306 Area/Block MC 252 Well Name 001 ST 00 BP 00 Well Type Exploration
Application Status Approved Operator 02481 BP Exploration & Production Inc.

Well Design Information

Interval Number 1		Type Casing			Name		Conductor	
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD	Depth (ft) TVD	Pore Pressure (ppg)
1	28.000	218.0	X-52	2437	952	6217	6217	8.6
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)	32.500		Type	No Preventers		Annular Test (psi)	0	
Mud Weight (ppg)	8.6		Size (in)	N/A		BOP/Diverter Test (psi)	0	
Mud Type Code	Gelled Sea Water		Wellhead Rating (psi)	0		Test Fluid Weight (ppg)	0.0	
Fracture Gradient (ppg)	9.8		Annular Rating (psi)	0		Casing/Liner Test (psi)	0	
Liner Top Depth (ft)			BOP/Diverter Rating (psi)	0		Formation Test (ppg)	0.0	
Cement Volume (cu ft)	4636							

Interval Number 2		Type Casing			Name		Surface	
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD	Depth (ft) TVD	Pore Pressure (ppg)
1	22.000	277.0	X-80	7955	6670	5227	5227	8.6
2	22.000	224.0	X-80	6363	3876	7937	7937	9.3
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)	26.000		Type	Blowout		Annular Test (psi)	5000	
Mud Weight (ppg)	9.5		Size (in)	18.75		BOP/Diverter Test (psi)	6500	
Mud Type Code	Water Base		Wellhead Rating (psi)	15000		Test Fluid Weight (ppg)	8.6	
Fracture Gradient (ppg)	10.5		Annular Rating (psi)	10000		Casing/Liner Test (psi)	3400	
Liner Top Depth (ft)			BOP/Diverter Rating (psi)	15000		Formation Test (ppg)	10.5	
Cement Volume (cu ft)	6301							



GoM Exploration Wells

MC 252 #1 – Macondo Prospect Appendix





U.S. Department of the Interior
Minerals Management Service (MMS)

OMB Control Number 1010-0141
OMB Approval Expires 08/31/2008

Form MMS 123A/123S - Electronic Version Application for Revised New Well

Lease G32306 Area/Block MC252 Well Name 001 ST 00 BP 00 Well Type Exploration
Application Status Approved Operator 02481 BP Exploration & Production Inc.

Interval Number 3		Type Liner				Name Intermediate		
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) M.D. TVD		Pore Pressure (ppg)
1	18.000	117.0	P-110	6680	2110	8969	8969	10.0
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 22.000			Type Blowout			Annular Test (psi) 5000		
Mud Weight (ppg) 10.2			Size (in) 18.75			BOP/Diverter Test (psi) 6500		
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 10.2		
Fracture Gradient (ppg) 12.1			Annular Rating (psi) 10000			Casing/Liner Test (psi) 3000		
Liner Top Depth (ft) 7489.0			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 12.1		
Cement Volume (cu ft) 993								
Interval Number 4		Type Casing				Name Intermediate		
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) M.D. TVD		Pore Pressure (ppg)
1	16.000	97.0	P-110	6920	2340	12500	12500	11.4
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 20.000			Type Blowout			Annular Test (psi) 3500		
Mud Weight (ppg) 11.6			Size (in) 18.75			BOP/Diverter Test (psi) 6500		
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 11.6		
Fracture Gradient (ppg) 13.6			Annular Rating (psi) 10000			Casing/Liner Test (psi) 3300		
Liner Top Depth (ft)			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 13.6		
Cement Volume (cu ft) 930								
Interval Number 5		Type Liner				Name Intermediate		
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) M.D. TVD		Pore Pressure (ppg)
1	13.625	88.2	Q-125	10030	4800	15300	15300	12.9
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 16.000			Type Blowout			Annular Test (psi) 3500		
Mud Weight (ppg) 13.1			Size (in) 18.75			BOP/Diverter Test (psi) 6500		
Mud Type Code Synthetic Base			Wellhead Rating (psi) 15000			Test Fluid Weight (ppg) 13.1		
Fracture Gradient (ppg) 14.7			Annular Rating (psi) 10000			Casing/Liner Test (psi) 2000		
Liner Top Depth (ft) 12200.0			BOP/Diverter Rating (psi) 15000			Formation Test (ppg) 14.7		
Cement Volume (cu ft) 410								

	GoM Exploration Wells MC 252 #1 – Macondo Prospect Appendix	
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U.S. Department of the Interior
Minerals Management Service (MMS)

OMB Control Number 1010-0141
OMB Approval Expires 08/31/2008

Form MMS 123A/123S - Electronic Version
Application for Revised New Well

Lease G32306 Area/Block MC252 Well Name 001 ST 00 BP 00 Well Type Exploration
Application Status Approved Operator 02481 BP Exploration & Production Inc.

Interval Number 6		Type Open Hole			Name Open Hole			
Section Number	Casing Size (in)	Casing Weight (lb/ft)	Casing Grade	Burst Rating	Collapse Rating (psi)	Depth (ft) MD	Depth (ft) TVD	Pore Pressure (ppg)
1						20200	20200	14.0
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)	14.000		Type	Blowout		Annular Test (psi)	3500	
Mud Weight (ppg)	14.2		Size (in)	18.75		BOP/Diverter Test (psi)	6500	
Mud Type Code	Synthetic Base		Wellhead Rating (psi)	15000		Test Fluid Weight (ppg)	0.0	
Fracture Gradient (ppg)	16.1		Annular Rating (psi)	10000		Casing/Liner Test (psi)	0	
Liner Top Depth (ft)			BOP/Diverter Rating (psi)	15000		Formation Test (ppg)	0.0	
Cement Volume (cu ft)								

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq. Requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 27 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form for the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849