



NEWS RELEASE

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Impact Assessment of Offshore Facilities from Hurricanes Katrina and Rita

NEW ORLEANS – The Minerals Management Service today released its analysis of the effects of Hurricanes Katrina and Rita. Analysis of the damage assessment data, along with ongoing research requested by the agency, will be incorporated in plans for future hurricane seasons.

The Gulf of Mexico, one of the nation's largest sources of oil and gas production, was dealt a one-two punch by these hurricanes, causing destruction and substantial damage to offshore platforms within a four-week period in August and September.

MMS estimates that 3,050 of the Gulf's 4,000 platforms and 22,000 of the 33,000 miles of Gulf pipelines were in the direct path of either Hurricane Katrina or Hurricane Rita. Because of the large amount of infrastructure in the path of hurricane-force winds and waves, the amount of damage was substantial. In comparison with Hurricane Ivan in 2004, Hurricanes Katrina and Rita accounted for considerably more damage because of the paths taken by these two devastating storms. However, there was no loss of life or significant oil spills from wells on the outer continental shelf (OCS) attributed to either storm.

Hurricane Katrina, which was a category 5 hurricane when it entered the OCS, destroyed 46 platforms (Table 1) and damaged 20 others (Table 2). To date, 100 damaged pipelines and 211 minor pollution incidents on the OCS have been reported to MMS. Minor pollution incidents are defined as incidents involving less than 500 barrels of oil that do not reach the coast line. Included in the 100 damaged pipelines in Federal waters were 36 large diameter pipelines (10" or larger) that were damaged (Table 3). Twelve of these 36 have returned to service.

Hurricane Rita, which was a category 4 hurricane when it entered the OCS, destroyed 69 platforms (Table 4) and damaged 32 others (Table 5). To date, 83 damaged pipelines and 207 minor pollution incidents on the OCS have been reported to MMS. Included in the 83 damaged pipelines in Federal waters were 28 large diameter pipelines (10" or larger) that were damaged (Table 6). Ten of these 28 have returned to service.

MMS has requested research proposals on six subject areas related to the hurricanes and the damage to offshore oil and gas facilities. The six areas are the following: (1) Assess and evaluate pipeline movement or damage; (2) Assess and evaluate platform damage; (3) Provide hurricane hindcast data; (4) Evaluate and assess the performance of jack-up rigs; (5) Assess methods to eliminate hydrates in pipelines and risers during startups after a hurricane; and (6) Assess the response of waves and currents throughout the water column in the northern Gulf of Mexico slope and shelf.

“The overall damage caused by Hurricanes Katrina and Rita has shown them to be the greatest natural disasters to oil and gas development in the history of the Gulf of Mexico,” MMS Regional Director Chris Oynes said. He noted, “Just last year, in the devastating Hurricane Ivan, there were seven platforms destroyed, compared with the 115 platforms destroyed in Katrina and Rita.”

One hundred percent of Gulf oil production, which is approximately 1.5 million barrels a day, was shut-in during both storms and 94 percent of gas production, which is 10 billion cubic feet of gas a day, was shut-in during Hurricane Katrina. More than 90 percent of the manned platforms and 85 percent of working rigs were evacuated at one time. Daily production of about 396,000 barrels of oil and about 1.8 billion cubic feet of gas remain shut-in. For a long-term projection, approximately 255,000 barrels a day and 400 million cubic feet of gas a day will probably not be restored to production prior the start of the 2006 hurricane season.

Oynes noted that, “Assessments on pipeline and facility damages are still ongoing, and any updates will be reflected in future releases. It is likely that additional damage will be reported as underwater damage assessments are completed. These have been delayed because of overwhelmed support resources, such as diving equipment, support vessels, and remotely operated vehicles.”

MMS, an agency of the U.S. Department of the Interior, manages offshore oil and gas exploration as well as renewable and alternative energy sources such as wind, wave, and solar on 1.76 billion acres of the Outer Continental Shelf while protecting the human, marine, and coastal environments. The OCS provides 30 percent of oil and 21 percent of natural gas produced domestically, and sand used for coastal restoration. MMS collects, accounts for, and disburses mineral revenues from Federal and American Indian lands, and contributes to the Land and Water Conservation Fund and other special use funds, with Fiscal Year 2005 disbursements of approximately \$9.9 billion and more than \$153 billion since 1982.

MMS Main Website: www.mms.gov
Gulf of Mexico Website: www.gomr.mms.gov

*****MMS: Securing Ocean Energy & Economic Value for America*****

Table 1 – Platforms Destroyed by Hurricane Katrina

Katrina Destroyed Platforms				
Operator	Map Area	Block Number	Facility	Water Depth (Feet)
BP America Production Company	GI	40	B	83
BP America Production Company	GI	40	F	86
BP America Production Company	GI	47	C	88
BP America Production Company	GI	48	D	86
BP America Production Company	GI	41	A	91
BP America Production Company	GI	32	J	106
Newfield Exploration Company	MP	138	A	158
Southern Natural Gas Company	MP	298	B-Valve	222
Noble Energy, Inc.	MP	306	D	255
Apache Corporation	MP	312	JA	248
Dominion Exploration & Production, Inc.	MP	270	A	205
Energy Resource Technology, Inc.	PL	20	39	30
Apache Corporation	SP	62	A	340
Apache Corporation	SP	62	B	322
Marlin Energy Offshore, L.L.C.	ST	21	1	37
Marlin Energy Offshore, L.L.C.	ST	21	22	36
Marlin Energy Offshore, L.L.C.	ST	21	25	40
Marlin Energy Offshore, L.L.C.	ST	21	27	40
Marlin Energy Offshore, L.L.C.	ST	21	31	36
Marlin Energy Offshore, L.L.C.	ST	21	66	45
Marlin Energy Offshore, L.L.C.	ST	21	67	46
Marlin Energy Offshore, L.L.C.	ST	21	71	48
Marlin Energy Offshore, L.L.C.	ST	21	75	47
Marlin Energy Offshore, L.L.C.	ST	21	E	40
Chevron U.S.A. Inc.	ST	135	M	116
Chevron U.S.A. Inc.	ST	151	I	128
Chevron U.S.A. Inc.	ST	151	O	137
Apache Corporation	ST	161	A	117
Chevron U.S.A. Inc.	ST	176	A	140
Chevron U.S.A. Inc.	ST	151	G	137
Apache Corporation	ST	161	B	120
BP America Production Company	WD	69	C	121
BP America Production Company	WD	69	K	134
BP America Production Company	WD	95	#5 Well	150
Apache Corporation	WD	103	A	223
Apache Corporation	WD	103	B	228
Apache Corporation	WD	104	C	228
Anglo-Suisse Offshore Partners, LLC	WD	117	C	214
Anglo-Suisse Offshore Partners, LLC	WD	117	D	195
Anglo-Suisse Offshore Partners, LLC	WD	117	E	208
Anglo-Suisse Offshore Partners, LLC	WD	117	F	200
Anglo-Suisse Offshore Partners, LLC	WD	117	QRT	214
Apache Corporation	WD	133	B	285
El Paso Production GOM Inc.	WD	137	A	310
BP America Production Company	WD	94	G	153
BP America Production Company	WD	70	H	141

Area Key: GI-Grand Isle
SP- South Pass

MP- Main Pass
ST-South Timbalier

PL- South Pelto
WD-West Delta

Table 2 – Platforms Damaged by Hurricane Katrina

Katrina Damaged Platforms				
Operator	Map Area	Block Number	Facility	Water Depth (Feet)
Forest Oil Corporation	GI	76	A	150
Taylor Energy Company	MC	21	B - Simba	667
Shell Offshore Inc.	MC	194	A - Cognac	1023
TOTAL E&P USA, INC.	MC	243	A - Matterhorn	2850
Apache Corporation	MC	311	A	425
Shell Offshore Inc.	MC	807	A - Mars	2933
Newfield Exploration Company	MP	138	B	158
Williams Field Services	MP	261	JP (Canyon Station)	299
Chevron U.S.A. Inc.	MP	299	AA	207
Chevron U.S.A. Inc.	SP	77	A	216
Arena Offshore, LLC	SP	83	A	427
Exxon Mobil Corporation	SP	93	A	552
Exxon Mobil Corporation	SP	93	B	450
Marlin Energy Offshore, L.L.C.	ST	21	D	36
Newfield Exploration Company	ST	148	B	96
TOTAL E&P USA, INC.	VK	823	A - Virgo	1130
Anglo-Suisse Offshore Partners, LLC	WD	28	14	35
BP America Production Company	WD	95	X	150
Shell Offshore Inc.	WD	143	A - Process	369
Newfield Exploration Company	WD	152	A	373

Area Key:

GI – Grand Isle
 MC – Mississippi Canyon
 MP – Main Pass
 SP – South Pass
 ST – South Timbalier
 VK – Viosca Knoll
 WD – West Delta

Table 3 – Pipelines Damaged by Hurricane Katrina

Large Diameter Pipelines with Damage (10” or greater) in Federal Waters Only					
Operator	Map Area	Block Number (starting point)	Diameter (inches)	Product	Status
Tennessee Gas Pipeline Co	SS	198	26	Gas	Production resumed
Tennessee Gas Pipeline Co	SS	145	26	Gas	Production resumed
Venice Gathering System LLC	WD	41	26	Gas	Shut in
Venice Gathering System LLC	ST	151	26	Gas	Shut in
Southern Natural Gas Co	MP	298	26	Gas	Production resumed
Trunkline Gas Company LLC	GI	94	24	Gas	Shut in
Gulfterra Field Services LLC	VK	817	20	Gas	Production resumed
Tennessee Gas Pipeline Co	SS	168	20	Gas	Shut in
Southern Natural Gas Co	SP	62	20	Gas	Shut in
Tennessee Gas Pipeline Co	ST	37	20	Gas	Shut in
Southern Natural Gas Co	MP	306	18	Gas	Shut in
Equilon Pipeline Company LLC	MC	809	18	Oil	Production resumed
Equilon Pipeline Company LLC	MC	807	18	Oil	Shut in
Equilon pipeline Company LLC	MC	809	18	Gas	Production resumed
Chandeleur Pipeline Co	MP	42	16	Gas	Production resumed
Marlin Energy Offshore LLC	ST	20	14	Gas	Shut in
Enbridge Offshore (Gas Gathering)	MC	807	14	Gas	Shut in
Southern Natural Gas Co	SP	62	14	Gas	Shut in
Southern Natural Gas Co	MP	291	12-24	Gas	Shut in
Equilon Pipeline Company LLC	SP	62	12	Oil	Shut in
Gulf South Pipeline Co LP	ST	26	12	Gas	Shut in
Apache Corporation	WD	122	12	Bulk oil	Shut in
Equilon Pipeline Company LLC	WD	104	12	Oil	Shut in
Southern Natural Gas Co	WD	133	12	Gas	Shut in
Chevron Pipeline Co	MO	908	12	Gas	Production resumed

Tennessee Gas Pipeline Co	ST	55	12	Gas	Shut in
Chandeleur Pipeline Co	MP	41	12	Gas	Production resumed
Southern Natural Gas Co	MP	298	12	Gas	Production resumed
SPN Resources LLC	SP	60	10	Gas	Shut in
Transcontinental Gas Pipeline	SS	169	10	Gas	Production resumed
Total E&P USA Inc	MC	243	10	Gas	Shut in
Apache Corporation	WD	105	10	Gas	Shut in
Apache Corporation	SP	62	10	Gas	Shut in
Apache Corporation	SP	62	10	Lift	Shut in
Apache Corporation	ST	160	10	Gas	Shut in
Exxon Mobil Corporation	SP	93	10	Gas	Shut in

Area Key:

EI – Eugene Island
GC – Green Canyon
GI – Grand Isle
MC – Mississippi Canyon
MO – Mobile
MP – Main Pass
SM – South Marsh Island
SP – South Pass
SS – Ship Shoal
ST – South Timbalier
VK – Viosca Knoll
VR – Vermilion
WC – West Cameron
WD – West Delta

Table 4 – Platforms Destroyed by Hurricane Rita

Rita Destroyed Platforms				
Operator	Map Area	Block Number	Facility	Water Depth (Feet)
East Cameron Partners, LP	EC	71	8	53
Newfield Exploration Company	EC	151	C	80
The Houston Exploration Company	EC	160	A-AUX	85
Energy Partners, Ltd.	EC	160	C	84
Energy Partners, Ltd.	EC	161	A	85
Maritech Resources, Inc.	EC	195	A	103
Energy Resource Technology, Inc.	EC	222	A - PROD	110
PetroQuest Energy, L.L.C.	EC	222	D	123
Merit Energy Company	EC	254	B	164
Chevron U.S.A. Inc.	EC	272	A	182
Chevron U.S.A. Inc.	EC	272	A-AUX 1	182
Newfield Exploration Company	EC	286	B	186
Pioneer Natural Resources USA, Inc.	EC	322	A	230
Union Oil Company of California	EI	276	B-PRD	172
Union Oil Company of California	EI	276	D	176
B T Operating Co.	EI	294	A	204
Texaco Exploration and Production.	EI	313	B	240
Texaco Exploration and Production.	EI	313	C	230
Forest Oil Corporation	EI	314	F	230
Forest Oil Corporation	EI	314	J	230
Devon Energy Production Company	EI	330	S	254
Devon Energy Production Company	EI	333	A	231
Chevron U.S.A. Inc.	EI	338	A	253
Chevron U.S.A. Inc.	GC	237	A - Typhoon	2107
Forest Oil Corporation	HI	A 467	D	187
Forest Oil Corporation	SM	11	K	68
Forest Oil Corporation	SM	11	B	68
Forest Oil Corporation	SM	11	J	68
Newfield Exploration Company	SM	49	B	98
Union Oil Company of California	SM	66	E	134
Union Oil Company of California	SM	66	A	128
Union Oil Company of California	SM	76	B	140
Chevron U.S.A. Inc.	SM	90	A	163
Stone Energy Corporation	SM	108	D	183
Devon Energy Production Company	SM	128	A-PRD	228
Newfield Exploration Company	SS	69	16	28
Gulf of Mexico Oil & Gas Properties LLC	SS	148	H	44
Chevron U.S.A. Inc.	SS	169	A	54
W & T Offshore, Inc.	SS	177	C	92
Chevron U.S.A. Inc.	SS	181	K	67
Apache Corporation	SS	193	B	86
Taylor Energy Company	SS	218	D	112
Maritech Resources, Inc.	SS	219	C	113
SPN Resources, LLC	SS	253	A-AUX	165
Maritech Resources, Inc.	SS	269	A	170
Chevron U.S.A. Inc.	ST	51	CH	62

Energy Resource Technology, Inc.	ST	146	A	170
Apache Corporation	ST	161	D	120
Stone Energy Corporation	VR	131	5	56
Stone Energy Corporation	VR	131	CF	57
Energy Resource Technology, Inc.	VR	201	A	83
Samson Contour Energy E&P, LLC	VR	217	A	121
Chevron U.S.A. Inc.	VR	245	C - DRILL	131
Chevron U.S.A. Inc.	VR	245	B	126
Stone Energy Corporation	VR	255	A	158
Stone Energy Corporation	VR	255	B	152
St. Mary Energy Company	VR	273	A	185
Nexen Petroleum U.S.A. Inc.	VR	340	JA	227
Stone Energy Corporation	WC	45	5	28
Stone Energy Corporation	WC	56	CAIS # 15	34
BP Exploration & Production Inc.	WC	110	3	40
BP Exploration & Production Inc.	WC	110	1	40
BP Exploration & Production Inc.	WC	110	9	41
BP Exploration & Production Inc.	WC	110	10	40
Linder Oil Company	WC	168	CAIS # 2	44
Chevron U.S.A. Inc.	WC	172	E	47
Stone Energy Corporation	WC	176	2	49
Dynegy Midstream Services	WC	229	A	65
Forest Oil Corporation	WC	313	1	49

Area Key:

EC – East Cameron
EI – Eugene Island
GC – Green Canyon
HI – High Island
SM – South Marsh Island
SS – Ship Shoal
ST – South Timbalier
VR – Vermilion
WC – West Cameron

Table 5 – Platforms Damaged by Hurricane Rita

Rita Damaged Platforms				
Operator	Map Area	Block Number	Facility	Water Depth (Feet)
Conn Energy, Inc.	EC	229	A	115
Kerr-McGee Oil & Gas Corporation	EC	338	A	270
Chevron U.S.A. Inc.	EI	238	A - AUX	139
Forest Oil Corporation	EI	266	E	167
Forest Oil Corporation	EI	266	C	175
Forest Oil Corporation	EI	266	Facility	176
Forest Oil Corporation	EI	287	D	200
Forest Oil Corporation	EI	292	B	210
ConocoPhillips Company	GC	52	CPP	604
Forest Oil Corporation	HI	A 287	A	183
Newfield Exploration Company	SM	49	E	98
Taylor Energy Company	SM	73	A	132
Forest Oil Corporation	SM	106	A North	185
Gulf of Mexico Oil and Gas Properties LLC	SS	148	H	44
Merit Energy Company	SS	198	H - PRD	100
SPN Resources, LLC	SS	253	A	165
ATP Oil & Gas Corporation	SS	358	A	419
Exxon Mobil Corporation	ST	67	B	65
Forest Oil Corporation	ST	72	G	64
Forest Oil Corporation	VR	102	A	65
W & T Offshore, Inc.	VR	226	A	122
El Paso Production Oil & Gas Company	VR	250	C	145
El Paso Production Oil & Gas Company	VR	250	C - AUX 1	145
El Paso Production Oil & Gas Company	VR	250	E	145
El Paso Production Oil & Gas Company	VR	252	F	153
Maritech Resources, Inc.	VR	253	H	158
Nexen Petroleum U.S.A. Inc.	VR	321	A	205
Forest Oil Corporation	VR	380	A	340
Forest Oil Corporation	WC	205	AA-Q	60
Forest Oil Corporation	WC	205	A-P	60
Forest Oil Corporation	WC	205	A	60
Newfield Exploration Company	WC	522	A	177

Area Key:

EC – East Cameron
 EI – Eugene Island
 GC – Green Canyon
 HI – High Island
 SM – South Marsh Island
 SS – Ship Shoal
 ST – South Timbalier
 VR – Vermilion
 WC – West Cameron

Table 6 – Pipelines Damaged by Hurricane Rita

Large Diameter Pipelines with Damage (10” or greater) in Federal Waters Only					
Operator	Map Area	Block Number (starting point)	Diameter (inches)	Product	Status
Tennessee Gas Pipeline Co	VR	245	30	Gas	Production resumed
Equilon Pipeline Company LLC	ST	301	24	Oil	Production resumed
ANR Pipeline Co	SM	108	24	Gas	Shut in
ANR Pipeline Co	SM	137	24	Gas	Shut in
ANR Pipeline Co	VR	397	24	Gas	Shut in
Gulfterra Field Services LLC	GC	237	20	Gas	Production resumed
Transcontinental Gas Pipeline	SS	269	20	Gas	Production resumed
Williams Field Services Co	SS	269	16	Gas	Shut in
Chevron USA Inc	EI	252	16	Bulk oil	Production resumed
Tennessee Gas Pipeline Co	ST	50	16	Gas	Shut in
Tennessee Gas Pipeline Co	ST	24	16	Gas	Shut in
Transcontinental Gas Pipeline	WC	110	16	Gas	Production resumed
Gulf South Pipeline Company LP	EI	51	14	Gas	Shut in
Shell Oil Co	SM	58	12	Oil	Shut in
Equilon Pipeline Company LLC	EC	240	12	Oil	Shut in
Gulfterra Field Services LLC	GC	237	12	Oil	Shut in
Texas Eastern Transmission LP	EC	222	12	Gas	Shut in
Gulfterra Field Services LLC	MC	582	12	Gas	Shut in
Equilon Pipeline Company LLC	GI	115	12	Oil	Production resumed
Equilon Pipeline Company LLC	GB	426	12	Gas	Production resumed
Dynergy Midstream Services LIM I	WC	102	12	Gas	Production resumed
Tennessee Gas Pipeline Co	EI	338	12	Gas	Shut in
Chevron USA Inc	EI	338	12	Gas	Shut in
Dynergy Midstream Services LIM I	WC	229	12	Gas	Shut in

ANR Pipeline Co	SM	10	12	Gas	Production resumed
Marlin Energy Offshore LLC	ST	28	10	Bulk oil	Shut in
Transcontinental Gas Pipeline	SS	269	10	Gas condensate	Production resumed
Gulf South Pipeline Co LP	EI	95	10	Gas	Shut in

Area Key:

EC – East Cameron

EI – Eugene Island

GB – Garden Banks

GC – Green Canyon

GI – Grand Isle

MC – Mississippi Canyon

SM – South Marsh Island

ST – South Timbalier

VR – Vermilion

WC – West Cameron