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UNITED STATES GOVERNMENT
MEMORANDUM

March 14, 2001

To: Public Information (MS 5034)

From: Plan Coordinator, FO, Plans Section (MS 5231)

Subject: Public Information copy of plan

Control #	-	N-06974
Type	-	Initial Plan of Exploration
Lease(s)	-	OCS-G10480 Block - 927 Desoto Canyon Area
Operator	-	Marathon Oil Company
Description	-	Wells A through D
Rig Type	-	DRILLSHIP

Attached is a copy of the subject plan.

It has been deemed submitted as of this date and is under review for approval.

Michael Tolbert
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/A	G10480/DC/927	3297 FNL, 3722 FEL	G10480/DC/927
WELL/B	G10480/DC/927	5130 FSL, 7207 FEL	G10480/DC/927
WELL/C	G10480/DC/927	3006 FSL, 4017 FWL	G10480/DC/927
WELL/D	G10480/DC/927	1862 FSL, 6099 FWL	G10480/DC/927

NOTED·SCHEXNAILDRE

Gulf of Mexico
Worldwide Deepwater Development

Marathon Oil Company

P.O. Box 3128
Houston, TX 77253-3128
Telephone 713/629-6600

MINERALS MANAGEMENT SERVICE
RECEIVED
FEB 15 2001
"Public Information"

February 13, 2001

U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

Attention: Mike Tolbert
Plans Unit

RE: Initial Exploration Plan for Lease OCS-G 10480, Desoto Canyon Block 927, OCS Federal Waters, Gulf of Mexico, Offshore, LA, AL and FL

Gentlemen:

By letters dated October 27, 2000 and amended November 22, 2000 and January 11, 2001, Marathon Oil Company (Marathon) submitted an Initial Exploration Plan for Lease OCS-G 10480, Desoto Canyon Block 927, Offshore, LA, AL and FL.

In further support of the referenced plan, enclosed your review and approval are enclosed documents in response to your facsimile dated January 30, 2001 requesting additional data and clarifications to the aforementioned plan:

1. Twenty-two (22) copies of the Initial Exploration with supporting Environmental Report, and Projected Air Emissions Report. Five (5) copies contain "Proprietary Information", and seventeen (17) copies with "Public Information" only.

2. Eighteen (18) copies of amended sections to the previously submitted Site Specific Hydrocarbon Spill Contingency Plan.

3. Two (2) working copies of Items No. 1 and No. 2 above which have been highlighted to reflect the revisions and/or additions noted.

Should additional information be required, please contact the undersigned, or our regulatory consultant, J. Connor Consulting, Inc., Attention: Jodie Connor or Connie Goers at (281) 578-3388.

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Minerals Management Service
Desoto Canyon Block 927 (Lease OCS-G 10480)
February 13, 2001

Sincerely,

MARATHON OIL COMPANY

Joseph J. Schneider /cjg

Joseph J. Schneider
Regulatory Compliance Representative

JJS:CJG
Enclosures

MARATHON OIL COMPANY

INITIAL EXPLORATION PLAN

LEASE OCS-G 10480

DESOTO CANYON BLOCK 927

SECTION A	*Contents of Plan*
SECTION B	*General Information*
SECTION C	*Geological, Geophysical & H2s Information*
SECTION D	*Biological Information*
SECTION E	*Wastes and Discharge Information*
SECTION F	*Oil Spill Response and Chemical Information*
SECTION G	*Air Emissions Information*
SECTION H	*Environmental Report*
SECTION I	*CZM Consistency*

SECTION A

Description
*Objectives/*Schedule
Location
OCS Plans Form
Well Location Plat
Bathymetry Map
Production Facilities
Drilling Unit

CONTENTS OF PLAN

LEASE DESCRIPTION/ACTIVITY

Lease OCS-G 10480 was acquired at the Eastern Gulf of Mexico Lease Sale No. 116 held on November 16, 1988. The subject lease is covered by a direct suspension of operations.

Marathon is the designated operator of the subject oil and gas lease.

OBJECTIVE/SCHEDULE

This Initial Exploration Plan provides for the drilling and potential completion of four (4) exploratory wells in Desoto Canyon Block 927 to test the target sands as detailed in Section C of this plan.

Activity	*Estimated Start Date*	*Estimated Completion Date*
Drill, Complete and Abandon Well Location A at Seafloor	04-01-01	05-18-01
Drill, Complete and Abandon Well Location B at Seafloor	05-19-01	07-18-01
Drill, Complete and Abandon Well Location C at Seafloor	07-19-01	09-01-01
Drill, Complete and Abandon Well Location D at Seafloor	09-02-01	11-08-01

It should be emphasized that this schedule is tentative in the meaning of Title 30 CFR 250.203-1. Additional exploratory drilling must be predicated upon the need to further define the structures and/or reservoir limitations.

WELL LOCATIONS

Included in this section as *Attachment A-1* is the Plan Information Form showing the approximate locations of the subject wells in this

Initial Exploration Plan. Included as *Attachments A-2 and A-3* are the Well Location Plat and Bathymetry Map.

DESCRIPTION OF DRILLING UNIT

Offshore exploratory activities are carried out from mobile drilling rigs. The five most common types of mobile rigs employed for exploratory drilling offshore are submersible drilling rigs, semi-submersible drilling rigs, jack-up drilling rigs, drillships, and drill barges.

The proposed wells will be drilled and completed with the dynamically positioned drillship "Cajun Express". The rig specifications will be made a part of the appropriate Applications for Permit to Drill.

Safety features on the MODU will include well control, pollution prevention, welding procedure, and blowout prevention equipment as described in Title 30 CFR Part 250, Subparts C, D, E, G and O; and as further clarified by MMS Notices to Lessees, and current policy making invoked by the MMS, Environmental Protection Agency and the U.S. Coast Guard. The appropriate life rafts, life jackets, ring buoys, etc., as prescribed by the U. S. Coast Guard will be maintained on the facility at all times.

In accordance with Title 30 CFR Part 250, Subpart O, an operator is to ensure Well Control Training is provided for lessee and contractor personnel engaged in oil and gas operations in the OCS Gulf of Mexico. Supervisory and certain designated personnel on-board the facility are to be familiar with the effluent limitations and guidelines for overboard discharges into the receiving waters, as outlined in the NPDES General Permit GMG280000 and/or Individual NPDES Permits.

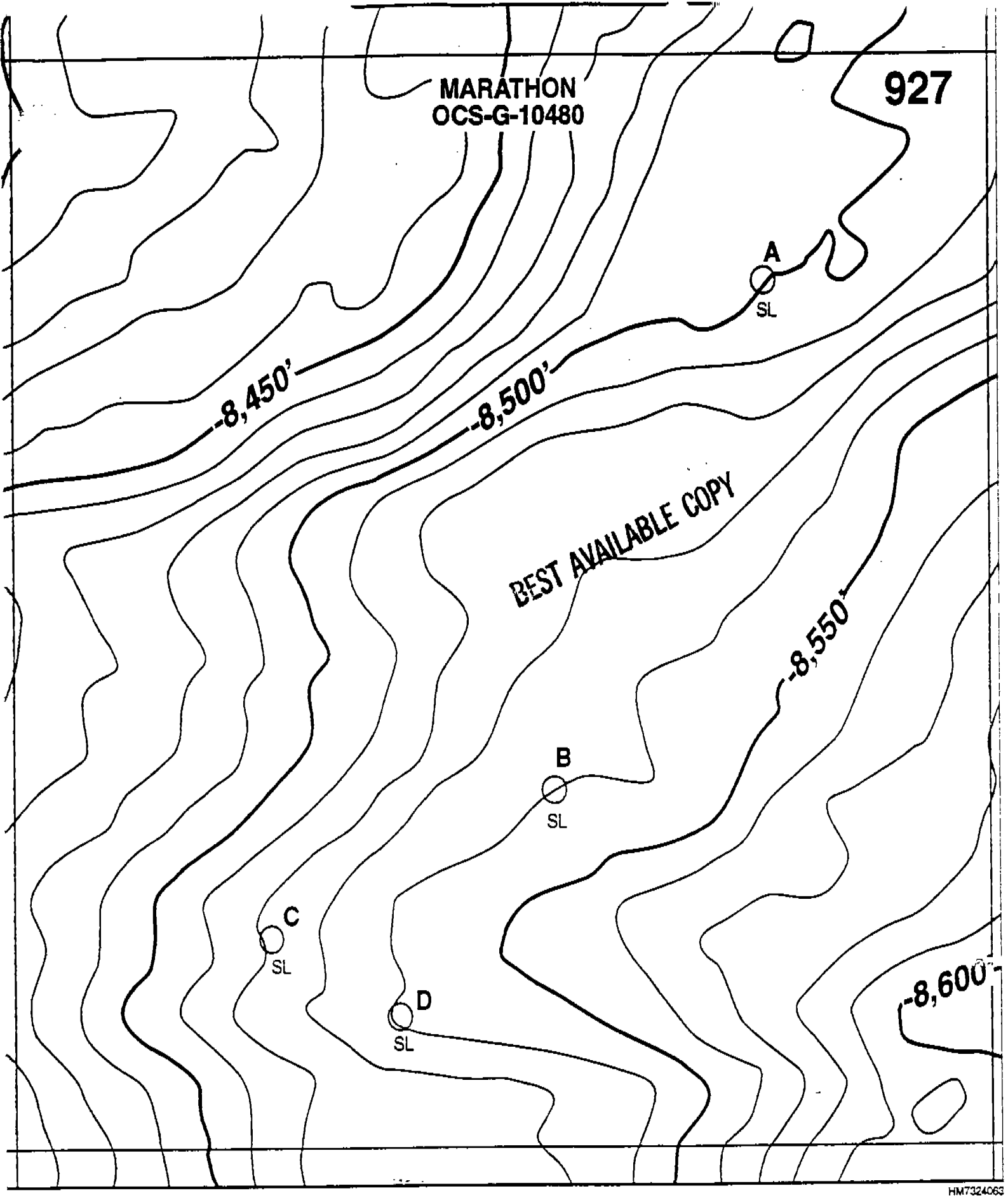
The operator is charged with the responsibility to not create conditions that will pose unreasonable risk to the public health, life, property, aquatic life, wildlife, recreation, navigation, commercial fishing, or other uses of the ocean. Some of these measures include

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installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris.

The MMS is required to conduct onsite inspections of offshore facilities to confirm operators are complying with lease stipulations, operating regulations, approved plans, and other conditions; as well as to assure safety and pollution prevention requirements are being met. The National Potential Incident of Noncompliance (PINC) List serves as the baseline for these inspections. The MMS also inspects the stockpiles of equipment listed in the operator's approved Oil Spill Response Plan that would be used for the containment and cleanup of hydrocarbon spills.

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C.I. = 10'

S .E: 1"=2000'

0 2000'

BATHYMETRY MAP

Marathon Oil Company
Desoto Canyon Block 927
Offshore Louisiana
OCS-G-10480
Plan of Exploration

Attachment A-3

OMB Control No. 1010-0049
Expiration Date:

OCS PLAN INFORMATION FORM
(USE SEPARATE FORM FOR EACH LEASE)

ORATION	X	DEVELOPMENT OPERATIONS COORDINATION DOCUMENT		DEVELOPMENT & PRODUCTION PLAN	

OPERATOR:	MARATHON OIL COMPANY	ADDRESS:	P. O. Box 3128, Houston, Texas 77253-3128
MMS OPERATOR NO.:			
CONTACT PERSON:	CONNIE GOERS	PHONE NO.	281-578-3388
PROPOSED START DATE:	04-01-01	RIG TYPE:	DISTANCE TO CLOSEST LAND (IN MILES): 109
NEW OR UNUSUAL TECHNOLOGY	YES:	NO: X	ONSHORE SUPPORT BASE(S): FOURCHON, LA
NARRATIVE DESCRIPTION OF PROPOSED ACTIVITIES:	DRILL AND POTENTIALLY COMPLETE WELL LOCATIONS A THROUGH D.		
		PROJECT NAME, IF APPLICABLE:	SOUTH BARRACUDA

PROPOSED WELL/STRUCTURE LOCATIONS

WELL / STRUCTURE NAME	SURFACE LOCATION	BOTTOM-HOLE LOCATION (FOR WELLS)
Platform _ or Well X Name: A	CALLS: 3297 F N L and 3722 F E L OF LEASE OCS G10480 , DESOTO CANYON AREA, BLOCK 927	:
	X: 1,390,198.37' Y: 10,181,822.63'	
	LAT: 28° 03' 19.40" LONG: 87° 46' 33.776	
	TVD (IN FEET): / MD (IN FEET): / WATER DEPTH (IN FEET): 8499'	
Platform _ or Well X Name: B	CALLS: 5130 F S L and 7207 F E L OF LEASE OCS G-10480 , DESOTO CANYON AREA, BLOCK 927	:
	X: 1,386,713.50' Y: 10,174,409.56'	
	LAT: 28° 02' 06.293" LONG: 87° 47' 12.148"	LONG:
	TVD (IN FEET): / MD (IN FEET): / WATER DEPTH (IN FEET): 8540'	

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OMB Control No. 1010-0049
Expiration Date:

OCS PLAN INFORMATION FORM
(USE SEPARATE FORM FOR EACH LEASE)

ATION	X	DEVELOPMENT OPERATIONS COORDINATION DOCUMENT		DEVELOPMENT & PRODUCTION PLAN	

OPERATOR:	MARATHON OIL COMPANY	ADDRESS:	P. O. Box 3128, Houston, Texas 77253-3128
MMS OPERATOR NO.:			
CONTACT PERSON:	CONNIE GOERS	PHONE NO.	281-578-3388

PROPOSED START DATE:	04-01-01	RIG TYPE:	DS			DISTANCE TO CLOSEST LAND (IN MILES):	109
NEW OR UNUSUAL TECHNOLOGY	YES		NO	X	ONSHORE SUPPORT BASE(S):	FOURCHON, LA	
NARRATIVE DESCRIPTION PROPOSED ACTIVITIES:	DRILL AND POTENTIALLY COMPLETE WELL LOCATIONS A THROUGH D.						
						PROJECT NAME, IF APPLICABLE:	SOUTH BARRACUDA

PROPOSED WELL/STRUCTURE LOCATIONS

WELL / STRUCTURE NAME	SURFACE LOCATION		BOTTOM-HOLE LOCATION (FOR WELLS)	
Pla _ or Well X Name: C	CALLS: 3006 F S L and 4017 F W L OF LEASE OCS G-10480 , DESOTO CANYON AREA, BLOCK 927		:	
	X: 1,382,097.48' Y: 10,172,285.93'			
	LAT: 28° 01' 44.961" LONG: 87° 48.03.518"			
	TVD (IN FEET):	MD (IN FEET):		WATER DEPTH (IN FEET): 8522'
Platform _ or Well X Name: D	CALLS: 1862' F S L and 6099 F W L OF LEASE OCS G-10480 , DESOTO CANYON AREA, BLOCK 927		:	
	X: 1,384,178.90' Y: 10,171,142.25'			
	LAT: 28° 01' 33.768" LONG: 87° 47' 40.203"			
	TVD (IN FEET):	MD (IN FEET):		WATER DEPTH (IN FEET): 8541'

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SECTION B

Contact
New or Unusual Technology
Bonding
Onshore Support Base
New Onshore Construction or Expansion of Support Facilities
Lease Stipulations

GENERAL

CONTACT

Inquiries may be made to the following authorized representative:

Jodie Connor or Connie Goers
J. Connor Consulting, Inc.
16225 Park Ten Place, Suite 700
Houston, Texas 77084
(281) 578-3388
e-mail address: Jodie@jccteam.com or connie@jccteam.com

NEW OR UNUSUAL TECHNOLOGY

Marathon does not propose utilizing any new or unusual technology during the proposed drilling and potential completion operations.

BONDING

In accordance with Notice to Lessees (NTL) 99-G04 which implements the requirements for general lease surety bonds contained in 30 CFR 256, Subpart I, Marathon has submitted to the Minerals Management Service a $3,000,000 Areawide Development Bond.

Additionally, NTL 98-18N addresses how MMS has the authority to require additional security to cover full plugging, site clearance and other associated lease liabilities which may be in excess of the general lease surety bonds. Marathon Oil Company is currently listed on the MMS exempt list for supplemental bonding requirements.

ONSHORE SUPPORT BASE

Desoto Canyon Block 927 is located approximately 104 miles from the nearest Louisiana shoreline and approximately 169 miles from

the onshore support base located in Fourchon, Louisiana. A Vicinity Plat showing the location of Desoto Canyon Block 927 relative to the shoreline and onshore base is included as ***Attachment B-1.***

Marathon will utilize onshore facilities located in Fourchon, Louisiana, which will serve as a port of debarkation for supplies and crews. No onshore expansion or construction is anticipated with respect to the proposed activities.

This base is capable of providing the services necessary for the proposed activities. It has 24-hour service, a radio tower with a phone patch, dock space, equipment, and supply storage base, drinking and drill water, etc. The base will also serve as a loading point for tools, equipment and machinery to be delivered to the MODU, crew change and transportation base, and temporary storage for materials and equipment The facilities typically include outdoor storage, forklift and crane service, dock, trailer facilities, and parking, as well as 24-hour service, a radio tower with a phone patch.

Support vessels and travel frequency during drilling and completion activities are as follows:

Support Vessel	Drilling and Completion Trips Per Week
Crew Boat	3
Supply Boat	4
Helicopter	7

Personal vehicles will be the main means of transportation to carry rig personnel from various locations to the Fourchon Area. They will then be transported to the MODU by the crew boat. A helicopter will be used to transport small supplies, and on occasion,

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personnel. The most practical, direct route permitted by the weather and traffic conditions will be utilized.

NEW ONSHORE CONSTRUCTION OR EXPANSION OF SUPPORT FACILITIES

The proposed operations do not mandate any immediate measures for land acquisition or expansion of the existing onshore base facilities.

Dredging and filling operations will not be required for the operations, nor will any new construction or expansion of onshore facilities be involved for the operations proposed in this Initial Exploration Plan.

LEASE STIPULATIONS

Oil and gas exploration activities on the OCS are subject to stipulations developed before the lease sale and would be attached to the lease instrument, as necessary, in the form of mitigating measures. The MMS is responsible for ensuring full compliance with stipulations.

Lease Stipulation No. 1

The archaeological resources area stipulation attached to the subject lease requires preparation of Cultural Resources Reports assessing the potential existence of any cultural resources.

By Letter to Lessees (LTL) dated September 5, 1995, Minerals Management Service designated Desoto Canyon Block 927 as an area having a low probability for historic/prehistoric archeological resources on the OCS. Therefore, an archeological resources report is not required based on data from prehistoric site remote-sensing surveys.

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Lease Stipulation No. 3

The military warning area stipulation has been applied to blocks in military warning areas to mitigate potential multiple-use conflicts. The stipulation reduces potential impacts, primarily those associated with safety, by curtailing OCS operations and support activities in areas where military operations are being conducted. One of the requirements of this stipulation is that the operator notify the military prior to conducting oil and gas activities; and if required, enter into an agreement to provide for positive control of boats, ships, and aircraft operating into the warnings areas.

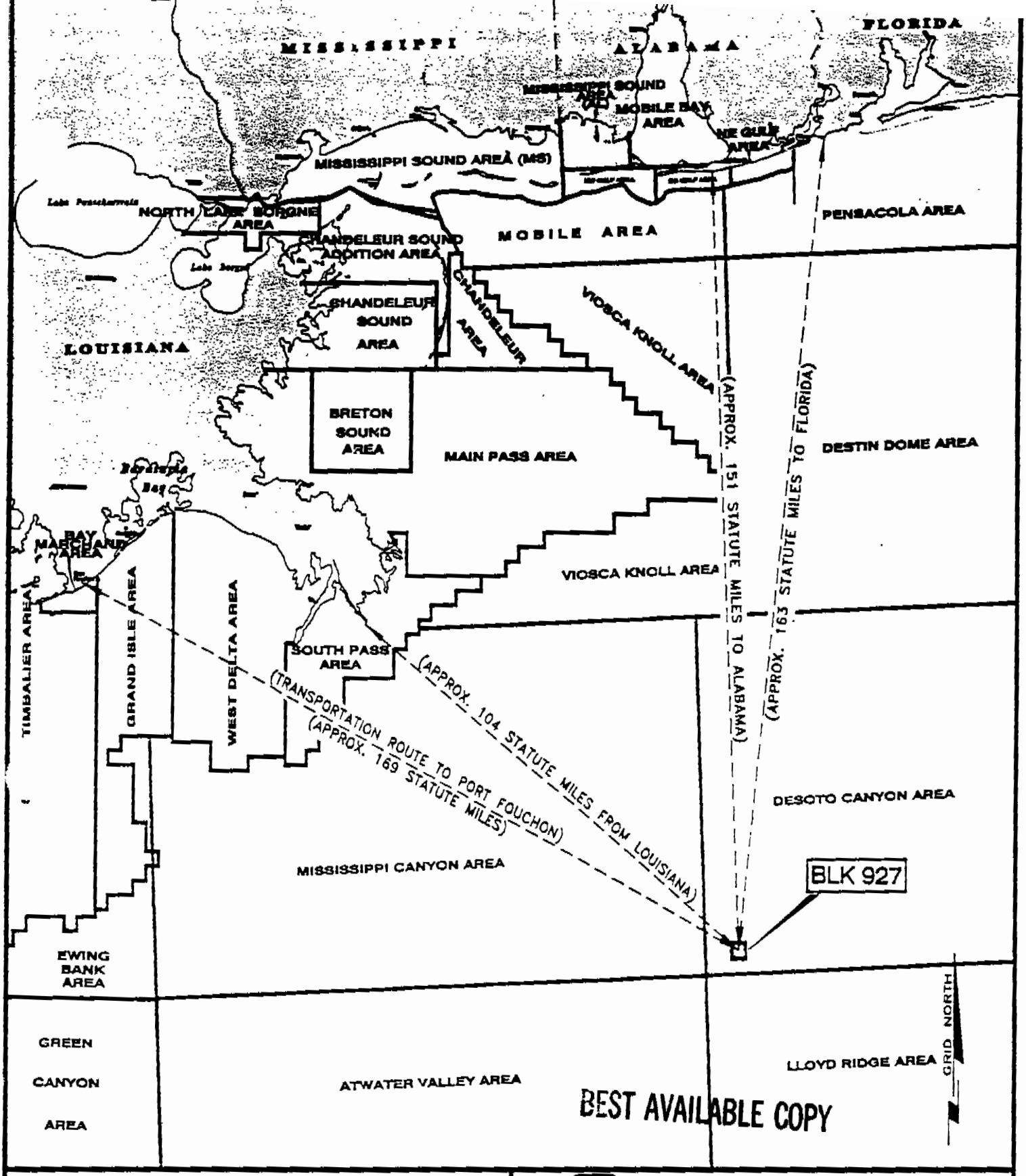
Marathon is in the process of filing notification to the Military Warning Area EWTA-3 of the proposed operations provided for in this plan.

Lease Stipulation No. 5

The Gulf of Mexico OCS Region (GOMR), after consultation with the U.S. Air Force, established a drilling window program in 1991 for exploratory activities on oil and gas leases that were obtained through Lease Sales 79, 94 and 116 and that contain in this lease stipulations. In accordance with this lease stipulation, the drilling window program ensures that exploration activities can be conducted predictably, orderly and safely without interfering with scheduled military activities or jeopardizing the national defense mission.

Under the drilling window scheme established in 1991 and in place since that time, the GOMR opens one group out of the five (Groups A thru E) every three months.

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Marathon Oil Company

VICINITY MAP
OCS-G-10480
BLOCK 827
DE SOTO CANYON AREA
GULF OF MEXICO

JOHN E. CHANCE & ASSOCIATES, INC.

GEODETIC DATUM: NAD 1927 PROJECTION: U.T.M. 16 GRID UNITS: US SURVEY FEET	1" = 150,000'
Job No.: 00-2516 | Date: 8/23/00 | Drwn: MCM	Chart: 1 Of: 1
Dwgfile: H:\2000\002516\CAD\MARINE\VC2516	

Attachment B-1

Printed: 8/23/00

ECTION C

Structure Contour Maps
Interpreted Seismic Lines
Geological Structure Cross Section
Shallow Hazards Report
Shallow Hazards Analysis
Stratigraphic Column
Time Versus Depth Tables
Hydrogen Sulfide

G & G INFORMATION

STRUCTURE CONTOUR MAPS

Current structure maps drawn to the top of the prospective hydrocarbon accumulation showing the surface and bottom hole locations of the subject wells are included in this section as *Attachments C-1 through C-3.*

INTERPRETED SEISMIC LINES

Included as *Attachment C-4* is a copy of the letter being submitted under separate cover this date depicting the migrated and annotated deep seismic lines within 500 feet of the surface location being proposed in this plan.

GEOLOGICAL STRUCTURE CROSS SECTION

Interpreted geological cross sections depicting the proposed well locations and the geologic name and age of the anticipated structure are included as *Attachments C-5 through C-9.* Such cross section corresponds to each seismic line being submitted under separate cover.

SHALLOW HAZARDS REPORT

Marathon contracted Geoscience Earth & Marine Services, Inc. (GEMS) to utilize the proprietary 3D seismic exploration data in determining the presence of seafloor areas prone to the growth of chemosynthetic organisms, subsurface amplitude anomalies indicative of the presence of overpressured sands, and shallow gas accumulations.

Two (2) copies of such report are being submitted under separate cover this date to the Minerals Management Service.

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SHALLOW HAZARDS ANALYSIS

Utilizing the 3D seismic exploration data a shallow hazards analysis was prepared for the proposed surface locations, evaluating seafloor and subsurface geologic and manmade features and conditions, and is included as ***Attachment C-10.***

STRATIGRAPHIC COLUMN

A generalized biostratigraphic/lithostratigraphic column from the seafloor to the total depth of the proposed wells is included as ***Attachment C-11.***

TIME VERSUS DEPTH TABLES

Included as ***Attachment C-12*** are the appropriate tables providing seismic time versus depth for the proposed well locations in areas where there is no well control.

HYDROGEN SULFIDE

In accordance with Title 30 CFR 250.417, Marathon requests that Desoto Canyon Block 927 be classified by the Minerals Management Service as an area where the absence of hydrogen sulfide has been confirmed.

The basis for this determination is included as ***Attachment C-13.***

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Gulf of Mexico
Worldwide Deepwater Development



P.O. Box 3128
Houston, TX 77253-3128
Telephone 713/629-6600

October 27, 2000

U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394

Attention: Bob Kuzela

RE: Site Specific 3D Seismic Hazards Study Review for Desoto Canyon Block 927 for Lease OCS-G 10480, OCS Federal Waters, Gulf of Mexico, Offshore, Louisiana, Alabama and Florida

Gentlemen:

In support of the above referenced report and supporting Initial Exploration Plan submitted to your office on this date under separate cover, enclosed please find three (3) copies of the following Site Specific 3D Seismic Study Review for the proposed drill site locations addressed in the subject plan.

Also enclosed are copies of the seismic lines for the drill site locations. The seismic lines have been included to aid in the verification of the absence of chemosynthetic communities.

Please be advised that Marathon Oil Company has submitted an Initial Exploration Plan on this date for Lease OCS-G 10480, Desoto Canyon 927 under separate cover.

Should you have any questions concerning this data, please contact our regulatory consultant Consulting, Inc., Attention: Connie Goers at (281) 578-3388.

Sincerely,

MARATHON OIL COMPANY

T. G. Stricklin

T. G. Stricklin
Regulatory Compliance Representative

TGS:CJG
Enclosures

Attachment C-4

Gulf of Mexico Exploration
Worldwide Exploration



P.O. Box 3128
Houston, TX 77253-3128
Telephone 713/629-6600

Mr. Donald C. Howard
United States Department of the Interior
Minerals Management Service
New Orleans District
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

October 25th, 2000

Re **Initial Exploration Plan**
Desoto Canyon Area Block 927 ("Barracuda Prospect")
Marathon Oil Company, OCS-G-10480
Well Locations A, B, C, and D
Offshore Alabama

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Dear Sir,

Fugro Geoservices, Inc. (Fugro) completed a shallow hazard survey for Marathon Oil Company over Desoto Canyon Block 927 and surrounding area in September 2000. Digital multifold 3D seismic data, acquired by Western in 1997, were used for this work.

Four potential drilling locations are proposed in Block 927 (Locations A, B, C, and D - Table 1). Locations A and C are for straight holes and locations B and D are for deviated holes. The total depths (TVDSS) of each well are as follows – Location A, 19,400 ft; Location B, 17,600 ft; Location C, 18,900 ft; and Location D, 23,500 ft.

The water depths in the block range from 8,400 ft to 8,600 ft (Fugro 2000 Report, Plate 12). The water depths at locations A, B, C, and D are estimated at 8,499 ft, 8,540 ft, 8,522 ft, and 8,541 ft, respectively. Regional slope in the block is less than 1° (2%) to the southeast, and the seafloor is smooth and featureless. A DP drilling vessel is planned to be utilized for drilling these wells.

Seafloor amplitude rendering using the 3D seismic data indicates that the areas at and surrounding all of the proposed well locations, at least for a distance of 1,000 ft, are all clear of any potential chemosynthetic communities or seabed irregularities such as faults (see Fugro report). Also, no man-made obstacles are known to exist within the study area.

Fugro analyzed the character of the shallow sediments to a depth of approximately 4,100-ft below the seabed at all four locations. Fugro mapped four horizons in the shallow section across the blocks. The depths to the tops of each of these sequences at the three proposed locations are shown on the accompanying Table 2.

No high amplitude seismic events that might indicate gas- or fluid charging were identified in Block 927 (see Fugro report). No subsurface faults are anticipated to be intersected in the shallow sections at Locations A, B, C, or D.

The shallow stratigraphy and the potential for shallow water flow in each of the mapped units are similar at each of the proposed locations, and can be summarized as follows:

A subsidiary of USX Corporation

Sequence 1 (Seabed to Horizon 10) – comprised of clay-prone mostly hemipelagic marine deposition with some thin interbedded mudflows. Thickness of the sequence ranges from 190 ft to 270 ft. Risk of shallow gas and shallow water flow (SWF) in this sequence is low.
Sequence 2 (Horizon 10 to Horizon 20) – consists of interbedded marine clay and thin clay-prone landslide/mudflow deposits. Thickness of the sequence varies from 475 ft to 710 ft. Risk of shallow gas and SWF in this sequence is low.
Sequence 3 (Horizon 20 to Horizon 30) – interpreted to be a rapidly deposited heterogeneous and complex mixture of potentially sand-prone channel and landslide deposits with thin intervals of hemipelagic marine clays. The sequence varies in thickness from 650 ft to 1080 ft. Risk of shallow gas is low and risk of SWF is moderate.
Sequence 4 (Horizon 30 to Horizon 40) – interpreted to be similar to the rapidly deposited Sequence 3 stratigraphy. Risk of shallow gas is low and risk of SWF is moderate to high.
Sequence 5 (Horizon 40 to Depth Limit of Investigation) – interpreted to be clay-prone landslide deposits. Thickness of the sequence is about 350 ft. Risk of shallow gas and SWF in this sequence is low.

Marathon will take full account of these potential shallow water flow hazards in the design of the drilling program for the chosen initial drill site at either location A, B, C, or D.

Subsurface pressures at the proposed locations have been estimated by seismic and paleotologic ties to the AT 471 #1 and AT 336 #1 wells and by analysis of seismic velocities at the proposed well sites. There is a possibility of overpressure (>12.5 ppg) near the TD of proposed locations A and D. Marathon will take account of this possible overpressure in the lower part of the wells in the design of the well bores. Marathon believes that there are no unmanageable shallow drilling hazards or overpressure risks at the proposed surface locations listed in Table 1.

Should you need additional information or have any questions, please contact,

Colin Turner
Deepwater Evaluation Supervisor
Gulf of Mexico Exploration
Marathon Oil Company
P.O. Box 3128
Houston, TX 77253-3128
Phone (713) 296-3016

Yours faithfully,

K.P. Williams

K.P. Williams,
Manager, Lease Evaluation
Gulf of Mexico Exploration

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Gulf of Mexico
Worldwide Deepwater Development

Marathon Oil Company

P.O. Box 3128
Houston, TX 77253-3128
Telephone 713/629-6600

October 25th, 2000

Initial Exploration Plan
Desoto Canyon 927 ("Barracuda Prospect")
Marathon Oil Company, OCS-G-10480
Well Locations A, B, C and D
Offshore Alabama

RE: Request for Classification of Probability of Encountering H_2S during Operations

H_2S Statement:

Marathon Oil Company (Marathon) respectfully requests, pursuant to 30CFR 250.417 (c), a determination from the Regional Supervisor that the proposed drilling operations under this plan will be classified as "Zones known to contain H_2S," "Zones where the presence of H_2S is unknown," or "Zones where the absence of H_2S has been confirmed."

Marathon offers the following information on wells drilled in the general area of Barracuda Prospect that have encountered Cretaceous section, to assist your office in making this determination:

To the best of our knowledge, there have not been any wells drilled in the surrounding area that penetrated the Cretaceous section and encountered H_2S problems. The following wells were considered:

AT 336 #1 penetrated the Upper Cretaceous at approximately 18,800' TVD.
MC 84 #1 penetrated the Upper Cretaceous at approximately 14,970' MD.
VK 736 #1 penetrated the Upper Cretaceous at 14,520' MD
VK 737 #1 penetrated the Upper Cretaceous at 13,620' MD
VK 786 #2 penetrated the Upper Cretaceous at 11,163' MD.

Therefore, Marathon Oil Company hereby recommends that the proposed operations at locations A, B, C and D in the above-referenced block will be in "Zones where the absence of H_2S is confirmed".

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BIOLOGICAL

The seafloor disturbing activities proposed in this Plan vary in water depth from 8400 feet to 8605 feet.

MAPS

Submitted under separate cover are the maps prepared using high resolution seismic information and/or 3-D seismic data to depict bathymetry, seafloor and shallow geological features, surface location of each proposed well and platform, positions of anchors and chains relative to the proposed operations, and a radius circle of 1000 feet around each proposed location.

ANALYSIS

Submitted under separate cover is the analysis of seafloor features and areas that could be disturbed by the activities proposed in this Plan.

Features or areas that could support high-density chemosynthetic communities are not located within 1000 feet of each proposed muds and cuttings discharge location.

Marathon proposes to use the dynamically positioned drillship "Cajun Express"; therefore there are no associated anchors or disturbances to the chemosynthetic community.

TOPOGRAPHIC INFORMATION

MMS and the National Marine Fisheries Service (NMFS) have entered into a programmatic consultation agreement for Essential Fish Habitat that requires that no bottom disturbing activities, including anchors or cables from a semi-submsersible drilling rig, may occur within 500 feet of the no-activity zone of a topographic feature. If such proposed bottom disturbing activities are within 500 feet of a no activity zone, the MMS is required to consult with the NMFS.

The activities proposed in this plan are not affected by a topographic feature.

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WASTES AND DISCHARGES

DISCHARGES

The disposal of oil and gas operational wastes is managed by USEPA through regulations established under three Federal Acts. The Resource Conservation and Recovery Act (RCRA) provides a framework for the safe disposal of discarded materials, regulating the management of solid and hazardous wastes. The direct disposal of operational wastes into offshore waters is limited by USEPA under the authority of the Clean Water Act. And, when injected underground, oil and gas operational wastes are regulated by USEPA's third program, the Underground Injection Control program. If any wastes are classified as hazardous, they are to be properly transported using a uniform hazardous waste manifest, documented, and disposed at an approved hazardous waste facility.

A National Pollutant Discharge Elimination System (NPDES) permit, based on effluent limitation guidelines, is required for any discharges into offshore waters. The major discharges from offshore oil and gas exploration and production activities include produced water, drilling fluids and cuttings, ballast water, and uncontaminated seawater. Minor discharges from the offshore oil and gas industry include drilling-waste chemicals, fracturing and acidifying fluids, and well completion and workover fluids; and from production operations, deck drainage, and miscellaneous well fluids (cement, BOP fluid); and other sanitary and domestic wastes, gas and oil processing wastes, and miscellaneous discharges.

All offshore discharges associated with Marathon's proposed operations will be conducted in accordance with the NPDES General Permit GMG280000 and/or Individual NPDES Permit.

Marathon is currently pursuing coverage under the NPDES General Permit GMG280000 for the discharges associated with the proposed drilling and completion activities. The types of discharges included in the permit application and the estimated

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average flow volumes are listed in the attached environmental report.

Wastes not discharged overboard will be transported to an appropriate treatment or disposal site, in accordance with all Federal, State and Local rules and regulations.

All discharges associated with drilling and completing the subject wells will be in accordance with regulations implemented by Minerals Management Service (MMS), U. S. Coast Guard (USCG) and the U.S. Environmental Protection Agency (EPA).

Annex V of the International Convention for the Prevention of Pollution from ships, also known as MARPOL Protocol, prohibits the dumping of all plastic wastes, including plastic packaging materials and fishing gear.

EPA's Region IV NPDES General Permit No. GMG280000 and/or Individual NPDES permits regulate overboard discharges, restrictions and limitations of waste generated from oil and gas operations in the Eastern Gulf of Mexico. Included as ***Attachment E-1*** is the estimated quantity and rates of discharges applicable to the drilling fluids/cuttings based on hole size interval and washout.

Discharges will contain no free oil and will be in compliance with and monitored as required by the permit. Any drilling fluid contaminated with oil will be transported to shore for proper disposal at an authorized disposal site as detailed on ***Attachment E-2.***

Solid domestic wastes will be transported to shore for proper disposal at an authorized disposal site as detailed on ***Attachment E-2***, and sewage will be treated on location by U. S. Coast Guard approved marine sanitation devices.

Mud may be discharged for purposes of dilution or at end of well. Surveillance of the fluid is accomplished through daily inventory of mud and chemicals added to the system; in addition to monthly

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and end-of-well LC50 toxicity tests required by EPA. Typical mud components are included as ***Attachment E-3.***

The major operational solid waste in the largest quantities generated from the proposed operations will be the drill cuttings and drilling fluids. Other major wastes generated will include waste chemicals, cement wastes, sanitary and domestic waste, trash and debris, ballast water, storage displacement water, rig wash and deck drainage, hydraulic fluids, used oil, oily water and filters, and other miscellaneous minor discharges.

These wastes are generated into categories, being solid waste (trash and debris), nonhazardous oilfield waste (drilling fluids, nonhazardous waste including cement and oil filters), and hazardous wastes (waste paint or thinners).

MARPOL 73/78, implemented by the U.S. Coast Guard, requires preparation, monitoring and record keeping requirements for garbage generated on floating and fixed facilities in OCS Federal Waters. The drilling contractor will maintain a Waste Management Plan, in addition to preparation of a Daily Garbage Log for the handling of these types of waste. MODU's are equipped with bins for temporary storage of certain garbage. Other types of waste, such as food, may be discharged overboard if the discharge can pass through 25-millimeter type mesh screen. Prior to off loading and/or overboard disposal, an entry will be made in the Daily Garbage Log stating the approximate volume, the date of action, name of the vessel, and destination point.

Domestic wastes such as wastewater originating from sinks, showers, laundries, and galleys are typically discharged overboard, and may be routed through a comminuter so that the discharge will not result in any floating solids. Sanitary wastes are composed of human body waste from toilets and urinals. The MODU and marine supply vessels are equipped with sewage treatment facilities. A typical MODU may discharge approximately 25 gal/man/day of domestic and treated sanitary waste. These wastes are expected to rapidly dilute and disperse.

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Rig wash and deck drainage discharges are monitored for visual sheens, and in some instances by the oil and grease content. The quantities from the MODU should be relatively low during the proposed drilling and completion operations.

The ballast water used in the pre-loading of certain rig types is a one-time event, and is estimated to run at approximately 1,200,000 gallons. The seawater is isolated and not exposed to contaminants. Cooling water for the drilling rig is designed so there is no contact with machinery. It is expected that approximately 336,000 gallons per day will be discharged.

Operational discharges from the supply vessels include bilge and ballast waters and potential fuel oil releases. MARPOL 73/78 have significantly limited operational discharges. The support vessel may still discharge oily bilge water, but their treatment process must severely limit the oil content. Approximately 22,000 liters/day could potentially be discharged from these vessels.

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03/06/2001 12:17 FAX 2815788895 J.CONNOR CONSULTING 012

Marathon Oil Company
Initial Exploration
Desoto Canyon Block 927 (Lease OCS-G 10480)

Wastes and Discharge Information

Type of Waste	Composition	Projected Amount (avgerage)	Disposal Method	Maximum Discharge Rate (Required if waste is discharge overboard)	Discharge Method (Required if waste is discharge overboard)	Name/Location of Facility (Required if waste is stored of disposed or onshore)
Drilling Fluids (Option A)	Synthetic-based drilling muds	13,210 bbls/well	Transport to shore	N/A	N/A	Fourchon, LA Shorebase; then to mud company for recycling
Drilling Fluids (Option B)	Water-based drilling muds	15,010 bbls/well	Discharge overboard	1000 bbls/hour	Normal discharge from surface processing equipment	N/A
Drill Cuttings (Option A)	Cuttings with ester-based synthetic drilling mud	3,312 bbls/well	Transport to Shore	N/A	N/A	Fourchon, LA Shorebase and on to Newpark Base
Drill Cuttings (Option B)	Cutting containing water based mud	4,417 bbls/well	Discharge overboard	1000 bbls/hour	Normal discharge from surface processing equipment	N/A
Excess Cement	Excess cement including additives and wastes from equipment washdown after cementing operation	50 bbls	Discharge overboard	N/A	Discharge at the Seafloor	NA
Well Treatment, Completion or w/o fluids[1]	CaBr/CaCl	1. 5000 bbls on the Rig 2. 500 bbls waste	Discharge overboard	N/A	Normal discharge from surface processing equipment	Excess transported to shore for credit or disposal
Sanitary Waste	Human body waste discharge from toilets and urinals	25 gal/day/person	Discharge Overboard	N/A	Normal discharge from surface processing equipment	N/A
Domestic Wastes	Discharge from galleys, sinks, showers (graywater)	25 gal/day/person	Discharge Overboard	N/A	Normal discharge from surface processing equipment	N/A
Deck Drainage	Platform washings, drains	Dependent upon Rainfall	Discharge Overboard after treatment by separator	12.5 bbls/hour (Maximum Separator Discharge)	N/A	N/A

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Marathon Oil Company
Initial Exploration
Desoto Canyon Block 927 (Lease OCS-G 10480)

Type of Waste	Composition	Projected Amount (avgerage)	Disposal Method	Maximum Discharge Rate (Required if waste is discharge overboard)	Discharge Method (Required if waste is discharge overboard)	Name/Location of Facility (Required if waste is stored of disposed or onshore)
Uncontaminated Seawater	Seawater returned to the sea without the addition of chemicals	37,000 bbls (drilling) 6411 bbls/day (cooling)	Discharged Overboard	N/A	Through overboard discharge line	N/A
Desalinization Unit Water[2]	Water associated with the process of creating freshwater from seawater	696 bbls/day (Production)	Discharged Overboard	N/A	Through overboard discharge line	N/A
Uncontaminated Ballast Water[3]	Seawater added to removed to maintain proper draft	19,600 bbls	Discharged Overboard	2600 m^3/Hr	Through normal ballast operations	N/A
Uncontaminated Bilge Water	Seawater added to removed to maintain proper draft	N/A	N/A	N/A	N/A	N/A
Uncontaminated Fresh Water	Freshwater which is discharged without the addition of chemicals	N/A	N/A	N/A	N/A	N/A
Muds, Cuttings and Cement at the Seafloor	Discharge that occurs at the seafloor prior to installation of the marine riser and during marine riser disconnect, abandonment and plugging operations	Gel -4800 bbls WBM - 7500 bbls Cuttings - 1970 Seawater & Caustic - 4800 bbls	Discharged at the seafloor	N/A	Normal discharge to the seafloor thru marine riser	N/A
Boiler Blowdown	Discharged from boilers necessary to minimize solids build-up	N/A	N/A	N/A	N/A	N/A
Diatomaceous Earth Filter Media	Filter media used to filter completion fluids or seawater	N/A	N/A	N/A	N/A	N/A

Marathon Oil Company
Initial Exploration
Desoto Canyon Block 927 (Lease OCS-G 10480)

Type of Waste	Composition	Projected Amount (avgerage)	Disposal Method	Maximum Discharge Rate (Required if waste is discharge overboard)	Discharge Method (Required if waste is discharge overboard)	Name/Location of Facility (Required if waste is stored of disposed or onshore)
Seawater or Freshwater to which Treatment Chemicals have been Added	N/A	N/A	N/A	N/A	N/A	N/A
Trash	Plastic, Paper, Aluminum, Glass, Food and Other Refuse	1 ton	Transport to shorebase	N/A	N/A	Riverbirch Landfill Avendale, LA

NOTE: Volumes are best-estimate projections as the Cajun Express is a new rig without operating history; these discharges will be monitored and volumes will be in accordance with the parameters outlined in the NPDES permit.

[1] At this time a Drill Stem Test is not anticipated.
[2] Desalinization water used aboard rig discharged through various streams, discharge dependent upon usage
[3] Ballast water based on rig moving from transit draft to drilling draft

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 02 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. L. Ralph Dartez, Region Manager
Gulf Coast Region
Marathon Oil Company
Post Office Box 3128
Houston, Texas 77253-3128

SUBJ: Notification of Coverage under GMG280000 for the
Outer Continental Shelf (OCS) of the Gulf of Mexico
DeSoto Canyon Block 927, OCS-G-10480,
Location "A" Lat 28: 03: 19.40, Long 87: 46: 33.776
NPDES General Permit No. GMG280565

Dear Mr. Dartez:

Acknowledgment is made of your letter dated January 23, 2001, in which you submitted a Notice of Intent (NOI) for coverage under National Pollutant Discharge Elimination System (NPDES) general permit (GMG280000). In accordance with Part I.A.4. of the general permit, Notification Requirements (Existing Sources and New Sources), your NOI fulfills the notification requirements in the general permit. Therefore, your NOI has been determined to contain the necessary information for Region 4 to include this facility under the general permit.

Permit coverage is hereby authorized under the New Source NPDES General Permit for the operational facility identified in your NOI. **The NPDES general permit number assigned to this operation is GMG280565, and will be effective on the date of this letter. Coverage afforded under the general permit does not authorize the discharge of non-aqueous drilling fluids or associated cuttings.**

This general permit has been appealed and EPA's approval of the above referenced notice of intent to discharge is conditioned upon the continued legal effect of the general permit. This permit has been contested, and some or all of its provisions may be stayed pending court review or subsequent agency action. In such case, any subsequent discharge may not be in compliance with the Clean Water Act. The general permit, however, will remain in full effect until such time as any court decision is made.

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If you have any questions, please contact Mr. Bill Truman of my staff at 404-562-9457.

Sincerely,

E. Stallings Howell

for Beverly H. Banister, Director
Water Management Division

cc: Chetlan Gala, CWA Enforcement

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 02 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. L. Ralph Dartez, Region Manager
Gulf Coast Region
Marathon Oil Company
Post Office Box 3128
Houston, Texas 77253-3128

SUBJ: Notification of Coverage under GMG280000 for the
Outer Continental Shelf (OCS) of the Gulf of Mexico
DeSoto Canyon Block 927, OCS-G-10480,
Location "B" Lat 28: 02: 06.293, Long 87: 47: 12.148
NPDES General Permit No. GMG280566

Dear Mr. Dartez:

Acknowledgment is made of your letter dated January 23, 2001, in which you submitted a Notice of Intent (NOI) for coverage under National Pollutant Discharge Elimination System (NPDES) general permit (GMG280000). In accordance with Part I.A.4. of the general permit, Notification Requirements (Existing Sources and New Sources), your NOI fulfills the notification requirements in the general permit. Therefore, your NOI has been determined to contain the necessary information for Region 4 to include this facility under the general permit.

Permit coverage is hereby authorized under the New Source NPDES General Permit for the operational facility identified in your NOI. **The NPDES general permit number assigned to this operation is GMG280566, and will be effective on the date of this letter. Coverage afforded under the general permit does not authorize the discharge of non-aqueous drilling fluids or associated cuttings.**

This general permit has been appealed and EPA's approval of the above referenced notice of intent to discharge is conditioned upon the continued legal effect of the general permit. This permit has been contested, and some or all of its provisions may be stayed pending court review or subsequent agency action. In such case, any subsequent discharge may not be in compliance with the Clean Water Act. The general permit, however, will remain in full effect until such time as any court decision is made.

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If you have any questions, please contact Mr. Bill Truman of my staff at 404-562-9457.

Sincerely,

E. Hastings Howell

for Beverly H. Banister, Director
Water Management Division

cc: Chetlan Gala, CWA Enforcement

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 02 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. L. Ralph Dartez, Region Manager
Gulf Coast Region
Marathon Oil Company
Post Office Box 3128
Houston, Texas 77253-3128

SUBJ: Notification of Coverage under GMG280000 for the
Outer Continental Shelf (OCS) of the Gulf of Mexico
DeSoto Canyon Block 927, OCS-G-10480,
Location "C" Lat 28: 01: 44.961, Long 87: 48: 03.518
NPDES General Permit No. GMG280567

Dear Mr. Dartez:

Acknowledgment is made of your letter dated January 23, 2001, in which you submitted a Notice of Intent (NOI) for coverage under National Pollutant Discharge Elimination System (NPDES) general permit (GMG230000). In accordance with Part I.A.4. of the general permit, Notification Requirements (Existing Sources and New Sources), your NOI fulfills the notification requirements in the general permit. Therefore, your NOI has been determined to contain the necessary information for Region 4 to include this facility under the general permit.

Permit coverage is hereby authorized under the New Source NPDES General Permit for the operational facility identified in your NOI. **The NPDES general permit number assigned to this operation is GMG280567, and will be effective on the date of this letter. Coverage afforded under the general permit does not authorize the discharge of non-aqueous drilling fluids or associated cuttings.**

This general permit has been appealed and EPA's approval of the above referenced notice of intent to discharge is conditioned upon the continued legal effect of the general permit. This permit has been contested, and some or all of its provisions may be stayed pending court review or subsequent agency action. In such case, any subsequent discharge may not be in compliance with the Clean Water Act. The general permit, however, will remain in full effect until such time as any court decision is made.

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If you have any questions, please contact Mr. Bill Truman of my staff at 404-562-9457.

Sincerely,

E. Stallings Howell

for Beverly H. Banister, Director
Water Management Division

cc: Chetlan Gala, CWA Enforcement

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 02 2001

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. L. Ralph Dartez, Region Manager
Gulf Coast Region
Marathon Oil Company
Post Office Box 3128
Houston, Texas 77253-3128

SUBJ: Notification of Coverage under GMG280000 for the
Outer Continental Shelf (OCS) of the Gulf of Mexico
DeSoto Canyon Block 927, OCS-G-10480,
Location "D" Lat 28: 01: 33.768, Long 87: 47: 40.203
NPDES General Permit No. GMG280568

Dear Mr. Dartez:

Acknowledgment is made of your letter dated January 23, 2001, in which you submitted a Notice of Intent (NOI) for coverage under National Pollutant Discharge Elimination System (NPDES) general permit (GMG280000). In accordance with Part I.A.4. of the general permit, Notification Requirements (Existing Sources and New Sources), your NOI fulfills the notification requirements in the general permit. Therefore, your NOI has been determined to contain the necessary information for Region 4 to include this facility under the general permit.

Permit coverage is hereby authorized under the New Source NPDES General Permit for the operational facility identified in your NOI. **The NPDES general permit number assigned to this operation is GMG280568, and will be effective on the date of this letter. Coverage afforded under the general permit does not authorize the discharge of non-aqueous drilling fluids or associated cuttings.**

This general permit has been appealed and EPA's approval of the above referenced notice of intent to discharge is conditioned upon the continued legal effect of the general permit. This permit has been contested, and some or all of its provisions may be stayed pending court review or subsequent agency action. In such case, any subsequent discharge may not be in compliance with the Clean Water Act. The general permit, however, will remain in full effect until such time as any court decision is made.

If you have any questions, please contact Mr. Bill Truman of my staff at 404-562-9457.

Sincerely,

E. Stanley Hardee

for Beverly H. Banister, Director
Water Management Division

cc: Chetlan Gala, CWA Enforcement

DRILLING FLUID ADDITIVES
PRODUCT CROSS REFERENCE

MILPARK	BAROID	M-I	DESCRIPTION
WEIGHT MATERIALS			
MIL-BAR	BAROID	M-I BAR	API bante, 4.2 specific gravity
DENSIMIX	BARODENSE	FER-OX	Macaceous nematite
W.O. 30	BARACARB	LO-WATE	Calcium carbonate
VISCOSIFIERS			
MILGEL	AQUAGEL	M-I GEL	API-grade Wyoming bentonite
MILGEL NT	AQUAGEL GOLD SEAL		Untreated Wyoming bentonite
SALTWATER GEL	ZEOGEL	SALT GEL	API-grade attapulgite
SUPER-COL	QUIK-GEL	KWIK-THIK	High-yield bentonite, treated
NEW-VIS			Organic polymer blend
XCD POLYMER	XCD POLYMER	XCD POLYMER	XC Dispersable
MIL-BEN	SHUR-GEL		Bentonite-OCMA Spec. DFCP4
DEFLOCCULANTS			
MIL-TEMP	THERMA-THIN DP	MELANEX-T	High-temperature deflocculant
NEW-THIN	THERMA-THIN	TACKLE (Liquid)	Polymeric deflocculant
UNI-CAL	Q-BROXIN	SPERSENE	Chrome lignosulfonate
UNI-CAL CF	Q-B II	SPERSENE CF	Chrome-free lignosulfonate
MIL-KEM	LIGNOX	RD 2000	Lime mud thinner
SAPP	SAPP	SAPP	Sodium acid pyrophosphate
OILFOS	BARAFOS	PHOS	Sodium tetraphosphate
MIL-THIN	THERMA-THIN	THIN X (Liquid)	Anionic copolymer thinner
FILTRATION CONTROL AGENTS			
BIO-LOSE			Modified polysacchande
CHEMTROL X	DURENEX	RESINEX	Polymer blend, high-temperature
FILTREX	BARANEX	RESINEX	Polyanionic lignin resin
LIGCO	CARBONOX	TANNATHIN	Lignite
LIGCON	CC-16	CAUSTILIG	Causticized lignite
MILSTARCH	IMPERMEX	MY-LO-GEL	Pregelatinized starch
NEW-TROL	POLYAC	SP-101	Sodium polyacrylate
PERMA-LOSE HT	DEXTRID	POLY-SAL	Nonfermenting starch, high-temp.
PYRO-TROL	THERMA-CHEK	POLY RX	Polymeric, high-temperature
KEM-SEAL	THERMA-CHEK		Copolymer, high-temperature
MIL-PAC	PAC R	POLYPAC	Polyanionic cellulose
MIL-PAC LV	PAC L	POLYPAC	Low-viscosity polyanionic cellulose
MILPARK CMC HV	CELLEX (High Vis)	CMC HV	Sodium carboxymethycellulose
MILPARK CMC LV	CELLEX	CMC LV	Sodium carboxymethycellulose
CORROSION CONTROL CHEMICALS			
MIL-GARD	NO-SULF	SULF-X	Basic zinc carbonate
MIL-GARD R	BARASCAV-L	SULF-X ES	Chelated zinc
NOXYGEN	COAT-888 BARACOR 113	OXYGEN SCAVENGER	Oxygen scavenger
SCALE-BAN	SURFLO-H35 BARACOR 129	SI-1000	Scale inhibitor
AMI-TEC	BARA FILM BARACOR 300 COAT-B1400 COAT-C1815	CONQOR 202 CONQOR 101 CONQOR 303	Film-forming amine
CARBO-DRILL OIL MUD ADDITIVES			
CARBO-MUL	INVERMUL NT VERSACOAT	VERSAWET	Emulsifier (and wetting agent) primarily
CARBO-MUL HT	EZ MUL NT		High-temperature emulsifier and wetting agent
CARBO-TEC	INVERMUL	VERSAMUL	Emulsifier
CARBO-GEL	GELTONE II	VERSAGEL	Organophilic clay nectonte
CARBO-VIS	GELTONE II	VERSAMOD	Organophilic clay
CARBO-TROL		VERSATROL	Filtration control agent
CARBO-TROL A-9	DURATONE HT	VERSALIG	Nonasphaltic filtration control, high-temperature
SURF-COTE	DRILTREAT or OMC	VERSAWET	Oil wetting agent for oil muds
CARBO-MIX	DRILTREAT		Nonionic emulsifier, high-activity
CARBO-TEC HW			HW oil mud emulsifier

DRILLING FLUID ADDITIVES
PRODUCT CROSS REFERENCE

MILPARK	BAROID	M-I	DESCRIPTION
SHALE CONTROL ADDITIVES			
ALPLEX			Aluminum complex
BIO-DRILL 1402			Oil mud alternative
NEW-DRILL	EZ MUD	POLY-PLUS	PHPA liquid
NEW-DRILL HP			Powdered PHPA
NEW-DRILL PLUS	EZ MUD DP		Powdered PHPA
SHALE-BOND	SHALE-BAN	HOLECOAT	Resinous shale stabilizer
PROTECTOMAGIC			Oil-soluble blown asphalt
PROTECTOMAGIC M	AK-70	STABIL-HOLE	Water-dispersants. Blown asphalt
SPOTTING FLUIDS			
BLACK MAGIC			Oil-base spotting fluid
BLACK MAGIC LT	EX SPOT		Low toxicity oil-base spotting fluid
BLACK MAGIC SFT		OIL-FAZE	Oil-base spotting fluid concentrate
MIL-FREE	SCOT-FREE/ ENVIRO-SPOT	PIPE-LAX	Liquid spotting fluid
BIO-SPOT	ENVIRO-SPOT		Nontoxic water-base spotting fluid
BIO-SPOT II			Nontoxic water-base spotting fluid
MIL-SPOT 2	SCOT-FREE	PIPE-LAX W	Weighted (oil-base) spotting fluid concentrate
LUBRICANTS			
AQUA-MAGIC			Low-toxicity lubricant
LUBRI-FILM	EP MUDLUBE	E.P. LUBE	Extreme-pressure lubricant
MIL-LUBE		LUBE-106	General lubricant
DETERGENTS/FOAMERS			
AMPLI-FOAM	DRILFOAM	FOAMER 80	Mist and stiff foaming agent
MIL CLEAN	BAROID RIG WASH BARA-KLEAN	KLEEN-UP	Biodegradeable detergent
MILPARK MD	CON-DET	DD	Drilling detergent
DEFOAMING AGENTS			
LD-8	BARA DEFOAM	DEFOAM-X	Hydrocarbon-base defoamer
W.O. DEFOAM	BARA BRINE DEFOAM	DEFOAM-A	Alcohol-base, saltwater muds
ALUMINUM STEARATE	Aluminum Stearate	Aluminum Stearate	Aluminum Stearate
LOST-CIRCULATION MATERIALS			
CHEK-LOSS			Seepage loss control differential sticking preventative
MIL-CEDAR FIBER	PLUG-GIT	M-I CEDAR FIBER	Cedar fiber
MIL-FIBER	FIBERTEX	M-I FIBER	Fiber blend
MILFLAKE	JELFLAKE	FLAKE	Shredded cellophane flake
MILMICA	MICATEX	MICA	(Muscovite) mica graded
MIL-PLUG		NUT PLUG	Ground pecan shells
MIL-SEAL	BARO-SEAL	KWIK SEAL	Blended lost-circualtion material
COTTONSEED HULLS	Cottonseed Hulls	Cottonseed Hulls	Cottonseed Hulls
PAPER			Ground paper
WALNUT SHELLS	WALL-NUT		Ground walnut shells
MAGNE-SET			Acid-soluble cement
WORKOVER AND COMPLETION FLUID ADDITIVES			
MUD-PAC	COAT-44 & 45	CONQOR 404 X-CORE	Corrosion (packer fluid) inhibitor
BRINE-PAC	BARACOR-A		Corrosion inhibitor clean brine fluids
W.O. 21L	LIQUI-VIS	VIS-L	Liquid HEC polymer
PRESERVATIVES			
DRYOCIDE			Dry (biodegradable) biocide
X-CIDE 207	BARA B466	BACBAN II & III	Biocide

X-CIDE 207 is a registered trademark of Petrotite Corporation.
DRYOCIDE is a registered trademark of Nalco Chemical Company
XCD (in XCD POLYMER) is a registered trademark of Marck & Co., Inc.
OILFOS is a registered trademark of Monsanto Company.

'CTION F

Oil Spill Response
Chemical Response

OIL SPILL RESPONSE AND CHEMICAL

Marathon Oil Company is the only entity covered under the Site Specific Hydrocarbon Spill Contingency Plan (HSCP) being submitted to the Minerals Management Service under separate cover this date. Activities proposed in this Exploration Plan will be covered by the Site Specific HSCP.

Marathon Oil Company's primary equipment provider is the National Response Center which is supported by the Independent Contractor Network (ICN) to provide closest available personnel to operate the equipment.

The worst case discharge (WCD) proposed in this EP is calculated at 10,000 barrels for a blowout in an exploratory well, or 2457 barrels from storage tank rupture.

Activities proposed in this EP are considered far-shore, (>10 miles from the shoreline). The Worst Case Discharge (WCD) scenario from the proposed activities in this Plan are:

Comparison of WCD's in OSRP to Proposed Operations

Category	Site Specific HSCP WCD	Site Specific HSCP WCD
Type of Activity		
Spill Location (Area/Block)		
Facility Designation		
Distance to Nearest Shoreline (miles)		
Volume		
Type of Oil (crude, condensate, diesel)		
API Gravity		

Chemical Information

The activities proposed in this plan have a worst case discharge greater than 1,000 barrels for a one-day period, the following additional information is provided relative Attachment A to Appendix F of the NTL No. 2000-G10:

Type Storage Tank (Including barge)	Tank Capacity (bbls)	Number of Tanks	Total Capacity (bbls)	Fluid Gravity (API)
No. 2 Fuel Oil				
Marine Diesel				
Oil Based Mud				
Inhibitors				
Produced Fluids				
TOTAL	-----	-----		----

[1]Four (4) tanks @ 2,457.3 barrels each and four (4) tanks at 381.1 barrels each

Fuel for the MODU operations will be transported via a supply vessel as follows:

a. Size of fuel supply vessel:	240'
b. Carrying capacity of fuel supply vessel:	200,000 gallons
c. Frequency that fuel supply vessel will visit the facilities:	4 times per week
d Routes that the fuel supply vessel will use to travel between the onshore support base and proposed facility:	Route is 169 miles - 6 miles to travel from Fourchon to the mouth of Bayou LaFourche, then approx. 163 miles direct route through the open Gulf to DC927

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The estimated total storage capacity of fuel tanks on the vessels supporting activities in this Plan are as follows:

a. Supply Boats	Included in 200,000 gallon capacity in #12 above.
b. Service Boats	--
c. Crew Boats	10,000 gallons

Marathon does not propose well testing operations and/or transfer of stored production, or handle, store or transport to or from the production or host facility any chemicals in quantities greater than Reportable Quantities as defined in Title 40 CFR Part 302.

AIR EMISSIONS

AIR EMISSIONS INFORMATION

Offshore air emissions related to the proposed activities result mainly from the drilling rig operations, helicopters and service vessels. These emissions occur mainly from combustion or burning of fuels and natural gas and from venting or evaporation of hydrocarbons. The combustion of fuels occurs primarily on diesel-powered generators, pumps or motors and from lighter fuel motors. Other air emissions can result from catastrophic events such as oil spills or blowouts.

Primary air pollutants associated with OCS activities are nitrogen oxides, carbon monoxide, sulphur oxides, volatile organic compound, and suspended particulate.

Included as ***Attachment G-1*** is the Projected Air Quality Emissions Report prepared in accordance with Appendix H of that certain Notice to Lessees (No. 2000-G10) addressing drilling and completion operations.

EXPLOR N PLAN (EP)
AIR QUALITY SCREENING CHECKLIST

COMPANY	MARATHON OIL COMPANY
AREA	DESOTO CANYON
BLOCK	927
LEASE	OCS G 10480
PLATFORM	NOT APPLICABLE
WELL	A-D
COMPANY CONTACT	CONNIE GOERS
TELEPHONE NO.	281 578 3388
REMARKS	DRILL AND POTENTIALLY COMPLETE WELL LOCATIONS A-D

"Yes"	"No"	Air Quality Screening Questions
	X	1. Are the proposed activities east of 87.5° W latitude?
	X	2. Are H_2S concentrations greater than 20 ppm expected?
	X	3. Is gas flaring proposed for greater than 48 continuous hours per well?
	X	4. Is produced liquid burning proposed?
	X	5. Is the exploratory activity within 25 miles of shore?
	X	6. Are semi submersible activities involved and is the facility within 50 miles of shore?
X		7. Are drillship operations involved and is the facility within 120 miles of shore?
	X	8. Will the exploratory activity be collocated (same surface location) on a production facility?

If ALL questions are answered "No":
Submit only this coversheet with your plan; a full set of spreadsheets is not needed.

If ANY of questions 1 through 7 is answered "Yes":
Prepare and submit a full set of EP spreadsheets with your plan.

If question number 8 is answered "Yes":
Prepare and submit a full set of **DOCD** spreadsheets showing the cumulative emissions from both the proposed activities and the existing production platform.

Attachment G-1

Fuel Usage Conversion Factors	Natural Gas Turbines		Natural Gas Engines		Diesel Recip. Engine		REF.	DATE
	SCF/hp-hr	9.524	SCF/hp-hr	7.143	GAL/hp-hr	0.0483	AP42 3.2-1	4/76 & 8/84

Equipment/Emission Factors	units	PM	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines	gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-1& 3.1-1	10/96
NG 2-cycle lean	gms/hp-hr		0.00185	10.9	0.43	1.5	AP42 3.2-1	10/96
NG 4-cycle lean	gms/hp-hr		0.00185	11.8	0.72	1.6	AP42 3.2-1	10/96
NG 4-cycle rich	gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-1	10/96
Diesel Recip. < 600 hp.	gms/hp-hr	1	1.468	14	1.12	3.03	AP42 3.3-1	10/96
Diesel Recip. > 600 hp.	gms/hp-hr	0.32	1.468	11	0.33	2.4	AP42 3.4-1	10/96
Diesel Boiler	lbs/bbl	0.084	2.42	0.84	0.008	0.21	AP42 1.3-12,14	9/98
NG Heaters/Boilers/Burners	lbs/mmscf	7.6	0.593	100	5.5	84	AP42 1.4-1, 14-2, & 14-3	7/98
NG Flares	lbs/mmscf		0.593	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring	lbs/bbl	0.42	6.83	2	0.01	0.21	AP42 1.3-1 & 1.3-3	9/98
Tank Vapors	lbs/bbl				0.03		E&P Forum	1/93
Fugitives	lbs/hr/comp.				0.0005		API Study	12/93
Glycol Dehydrator Vent	lbs/mmscf				6.6		La. DEQ	1991
Gas Venting	lbs/scf				0.0034			

Sulfur Content Source	Value	Units
Fuel Gas	3.33	ppm
Diesel Fuel	0.4	% weight
Produced Gas(Flares)	3.33	ppm
Produced Oil (Liquid Flaring)	1	% weight

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
MARATHON OIL COMPAN	DE SOTO CANYON	927	OCS G 10460	NOT APPLICABL	A D		CONNIE GOLRS	281 578 3388	

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	DAYS	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	50876	2457 3108	58975 46	24 00	216 00	35 86	164 51	1232 68	36 98	268.95	92.95	426.40	3195 10	95 85	697 11
	PRIME MOVER>600hp diesel	0	0	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0.00	0.00	0 00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0.00	0 00	0.00	0 00	0 00
	PRIME MOVER>600hp diesel	0	0	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0.00	0.00	0 00	0 00
	BURNER diesel	0			0	0	0 00	0 00	0 00	0 00	0.00	0 00	0.00	0.00	0 00	0 00
	AUXILIARY EQUIP<600hp diesel	1980	95 634	2295 22	24 00	216 00	4 36	6 40	61 06	4 68	13 21	11.30	16 59	158.26	12 66	34.25
	VESSELS>600hp diesel(crew)	2500	120 75	2898 00	6 00	93 00	1 76	8 08	60.57	1 62	13.22	0.49	2.26	16 90	0 51	3 69
	VESSELS>600hp diesel(supply)	3600	173 88	4173 12	10 00	123 00	2 54	11 64	87.22	2.62	19.03	1.56	7.16	53.64	1.61	11.70
	VESSELS>600hp diesel(tugs)	0	0	0 00	0 00	0 00	0 00	0 00	0.00	0 00	0 00	0 00	0.00	0 00	0 00	0 00
FACILITY INSTALLATION	DERRICK BARGE diesel	0	0	0 00	0	0	0 00	0 00	0 00	0 00	0 00	0.00	0.00	0.00	0.00	0.00
	MATERIAL TUG diesel	0	0	0 00	0	0	0 00	0 00	0 00	0.00	0.00	0.00	0 00	0.00	0 00	0 00
	VESSELS>600hp diesel(crew)	0	0	0 00	0 00	0 00	0 00	0 00	0 00	0.00	0.00	0.00	0 00	0.00	0 00	0 00
	VESSELS>600hp diesel(supply)	0	0	0 00	0 00	0 00	0 00	0 00	0.00	0 00	0 00	0 00	0.00	0 00	0 00	0 00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0 00					0 00	
DRILLING WELL TEST	OIL BURN	0			0	0	0 00	0 00	0.00	0.00	0 00	0.00	0 00	0.00	0 00	0 00
	GAS FLARE		0		0	0		0 00	0 00	0 00	0.00		0.00	0.00	0 00	0.00
2001 YEAR TOTAL							44.52	190.63	1441.53	46.30	314.41	106.30	452.41	3423.91	110.63	746.76
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES	104 0										3463.20	3463.20	3463.20	3463.20	75191.34

OMB Contro xxx-xxxx
Expiration Date: Pending

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
MARATHON OIL	DESOTO CANYON	927	OCS-G 10480	NOT APPLICABLE	A-D

Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
1999	0.00	0.00	0.00	0.00	0.00
2000	0.00	0.00	0.00	0.00	0.00
2001	106.30	452.41	3423.91	110.63	746.76
Allowable	3463.20	3463.20	3463.20	3463.20	75191.34

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ECTION H

Environmental Report

ENVIRONMENTAL REPORT

Included in this section as ***Attachment H-1*** is the Environmental Report prepared in accordance with Appendix H of that certain Notice to Lessees (NTL 2000-G10).

MARATHON OIL COMPANY

ENVIRONMENTAL REPORT

For Proposed

INITIAL EXPLORATION PLAN

DESOTO CANYON BLOCK 927

LEASE OCS-G 10480

BARRACUDA SOUTH PROSPECT

OFFSHORE, LOUISIANA, ALABAMA AND FLORIDA

Prepared by:

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(281) 578-3388

January 8, 2001

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APPENDIX 1

1. Findings from Marathon's assessment for each of the 10 chapters that should be addressed and may apply for consistency certification

APPENDIX 2 GEOPHYSICAL HAZARD SURVEYS

1. Copies of the Site Specific Shallow Hazards Report are being submitted under separate cover

APPENDIX 3 PLANS

1. Copies of the Site Specific Hydrocarbon Spill Plan (HSCP) are being submitted for approval under separate cover

APPENDIX 4 MAPS, DIAGRAMS AND PHOTOGRAPHS

1. Proposed Well Location Plats

2. Material Safety Data Sheets (MSDS') for diesel fuel

II. DESCRIPTION OF PROPOSED ACTION

A. GENERAL

Marathon Oil Company (Marathon) hereby submits this proposed Initial Exploration Plan, which provides for the drilling and potential completion of four exploratory wells (Well Locations A through D) in Lease OCS-G 10480, Desoto Canyon Block 927, Offshore, Louisiana, Alabama and Florida.

The proposed activities under this Initial Exploration Plan are scheduled to commence on or about April 1, 2001.

B. DESCRIPTION OF EQUIPMENT AND SUPPORT SYSTEMS

Marathon proposes to drill and complete the proposed wells with the dynamically positioned drillship "Cajun Express".

Marathon will use an existing onshore base located in Fourchon, Louisiana. The base has adequate facilities for marine and air transportation to handle the equipment required for the operations proposed in this Exploration Plan.

C. SCHEDULE

ACTIVITY	APPROXIMATE DATE
Commence Operations of Lease OCS-G 10480, Well Location A, Desoto Canyon Block 927	April 1, 2001
Commence Operations of Lease OCS-G 10480, Well Location B, Desoto Canyon Bock 927	May 19, 2001
Commence Operations of Lease OCS-G 10480, Well Location C, Desoto Canyon Block 927	July 19, 2001
Commence Operations of Lease OCS-G 10480, Well Location D, Desoto Canyon Bock 927	September 2, 2001

D. TRANSPORTATION ROUTES

During drilling and completion operations, a 2500 horsepower crewboat is expected to make 3 trips per week, a 3600 horsepower supply boat is expected to make 4 trips per week, and a 1800 horsepower helicopter is expected to make 7 trips per week to the drillsites.

The transportation route is 169 statute miles; this includes 6 miles to travel from Fourchon to the mouth of the Bayou Lafourche and approximately 163 miles to travel from the mouth of Bayou Lafourche through open gulf to the Desoto Canyon Block 927 offshore location sites.

E. PERSONNEL REQUIREMENTS

Vessels currently under charter to Marathon are expected to support the proposed operations. It is estimated that additional employees will be required for supply boat, crew boat and standby operations. The vessel crews will not require local housing as they will usually live on their respective vessels while working in the area and will return to their residence upon completion of each tour of duty. Some deck hands may be hired from the local labor pool. Some of the service firm employees may be hired locally. Most of these employees will return to their places of residence on their days off.

F. *TECHNOLOGY*

No new techniques or unusual technology will be required for these operations.

G. *RESPONSE PLANS*

A Site Specific Hydrocarbon Spill Contingency Plan prepared in accordance with the regulations contained in Title 30 Part 254 is being submitted to the Minerals Management Service under separate cover.

Marathon's primary equipment provider is the National Response Corporation (NRC). NRC's Independent Contractor Network (ICN) will provide closest available personnel to operate the equipment. In the event of a spill, major response equipment located in Mobile, Alabama would be utilized; this equipment would be staged out of Mobile for deployment directly to DC 927. In addition, 5 NRC Identified Deployment (ID) vessels would respond directly to DC 927 from various locations throughout the Gulf. Support activities (primarily personnel and communications) will be staged out of Marathon's existing shorebase in Fourchon, Louisiana.

In accordance with the regulations contained in Title 30 CFR 250.417, Marathon requests that Desoto Canyon Block 927 be classified by the Minerals Management Service (MMS) as an area where the absence of hydrogen sulfide has been confirmed. The basis for this determination is through the evaluation of wells detailed in the Initial Exploration Plan as Attachment C-8.

In the event MMS does not deem this area as an area where the absence of hydrogen sulfide has been confirmed, Marathon's operations will be in full compliance with the requirements of 30 CFR 250.417 in the Gulf of Mexico in zones known to contain H_2S. An H_2S Contingency Plan would be submitted and approved by the MMS New Orleans District Office prior to conducting any drilling and/or completion operations.

H. *DISCHARGES AND EMISSIONS*

The disposal of oil and gas operational wastes is managed by USEPA through regulations established under three Federal Acts. The Resource Conservation and Recovery Act (RCRA) provides a framework for the safe disposal of discarded materials, regulating the management of solid and hazardous wastes. The direct disposal of operational wastes into offshore waters is limited by USEPA under the authority of the Clean Water Act. And, when injected underground, oil and gas operational wastes are regulated by USEPA's third program, the Underground Injection Control program. If any wastes are classified as hazardous, they are to be properly transported using a uniform hazardous waste manifest, documented, and disposed at an approved hazardous waste facility.

A National Pollutant Discharge Elimination System (NPDES) permit, based on effluent limitation guidelines, is required for any discharges into offshore waters. The major discharges from offshore oil and gas exploration and production activities include produced water, drilling fluids and cuttings, ballast water, and uncontaminated seawater. Minor discharges from the offshore oil and gas industry include drilling-waste chemicals, fracturing and acidifying fluids, and well completion and workover fluids; and from production operations, deck drainage, and miscellaneous well fluids (cement, BOP fluid); and other sanitary and domestic wastes, gas and oil processing wastes, and miscellaneous discharges.

All offshore discharges associated with Marathon's proposed exploratory operations will be conducted in accordance with the guidelines applicable to the NPDES General Permit GMG280000 and/or Individual NPDES Permit.

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Marathon is pursuing coverage under the NPDES General Permit GMG280000 and/or Individual NPDES Permit. The types of discharges included in these permit applications and the estimated average flow volumes are listed below.

Drilling Fluids - Although drilling mud is generally recycled, excess mud is sometimes discharged overboard. The volume and rate of discharge depend upon downhole conditions. Volume is estimated from either pump rate or length of time, or from tank capacity if a bulk discharge occurs. The discharge of drilling fluids is classified as an intermittent discharge, with an estimated average flow of 250 barrels a day. Constituents of the mud are described in the list of mud additives included with the Exploration Plan.

Drill Cuttings - The drill cuttings are separated from the mud through the use of solids control equipment. Cuttings discharge rates and volumes will vary during the duration of the well, and are measured by estimating the volume of hole drilled. Constituents of drill cuttings include sand, shale and limestone from the wellbore. The discharge of drilling cuttings is classified as an intermittent discharge, with an estimated average flow of 60 barrels a day.

Excess Cement - Occasionally, excess slurry will be generated while cementing casing strings. The volume of cement discharges is calculated by subtracting the volume inside the well from the total volume pumped downhole.

Well Treatment, Completion or Workover Fluids - These fluids (primarily seawater that has been circulated downhole) are sometimes discharged when in excess. The discharge of workover, treatment and completion fluids is classified as an intermittent discharge, with an estimated average flow of **100 barrels a day** during the affected operations period.

Sanitary and Domestic Waste - The discharge of sanitary and domestic waste is classified as an intermittent discharge, with an estimated average flow of 40 barrels a day. The rate of discharge from the marine sanitation unit is approximately 25 gallons/man/day. An equal amount of domestic waste (from sinks, galleys, showers, laundries and ground food wastes) is normally discharged.

Deck Drainage - Consisting of rainwater and wash water with no free oil, the volume of deck drainage is calculated by multiplying average rainfall by exposed deck area.

Uncontaminated Water - This included non-contact cooling water, discharges from the firewater system, and freshwater maker blowdown. Ballast water, which is sometimes used to maintain the stability of a drilling rig, might also be discharged. These discharges are classified as miscellaneous discharges in the NPDES permit application.

Wastes not discharged overboard will be transported to an appropriate treatment or disposal site, in accordance with all Federal, State and Local rules and regulations.

I. STATE CERTIFICATION

The issues identified in the Louisiana Coastal Zone Management Program include the following coastal use guidelines: dredge and fill activity that intersects more than one waterbody, projects involving the use of State-owned lands or water bottoms, national interest projects, pipelines, and energy facility siting and development. Local governments (parishes) may assume management of uses of local concern by developing a local coastal program consistent with the CZM Act of 1978. Other coastal activities expressed by the State as concerns that could be relevant to a lease sale include wetland loss due to channel erosion from OCS traffic, activities near reefs and topographic highs, activities that might affect endangered, threatened, or commercially valuable wildlife;

and potential socioeconomic impacts due to offshore development.

The Alabama Coastal Area Act provides statutory authority to review all coastal resource uses and activities that have a direct and significant effect on the coastal area. Uses subject to the Alabama's CZM program are divided into regulated and nonregulated categories. Regulated uses are those that have a direct and significant impact on the coastal areas. These uses either require a State permit or are required by Federal law to be consistent with the management program. Uses that require a State permit must receive a certificate of compliance. Nonregulated uses are those activities that have a direct and significant impact on the coastal areas that do not require a State permit or Federal consistency certification. Nonregulated uses must be consistent with the ACAMP and require local permits to be administered by ADEM.

For purposes of the Coastal Zone Management Act, the entire State of Florida is identified as being within the coastal zone. The Florida Coastal Zone Management Act authorized the development of the coastal management program. A network of agencies comprises the coastal management agencies to represent a balanced statewide perspective including interests in coastal development, professional/academic coastal science, commercial fishing, environmental/coastal conservation, local government, coast/marine commerce, energy development, recreational fishing/boating, regional planning councils, water management districts, and environmental education. The purpose of the program is to protect historic and archaeological resources, freshwater fish, birds and both upland game and non-game animals, including endangered species; development, maintenance and protection of the transportation systems, and the saltwater fisheries and marine mammals.

The proposed activities comply with Louisiana's, Florida's, and Alabama's Coastal Zone Management Programs and will be conducted in a manner consistent with such Programs.

J. MEASURES FOR COMPLIANCE

The best available and safest technologies will be utilized throughout the project. This includes meeting all applicable requirements for equipment types, general project layout, safety systems, and equipment and monitoring systems.

All operations will be covered under a Minerals Management Service approved Hydrocarbon Spill Contingency Plan (HSCP).

All applicable Federal, State, and Local requirements regarding air emissions and water discharges for the proposed activities, as well as any other permit conditions, will be complied with.

The proposed activities described in detail in the Initial Exploration Plan will comply with Louisiana's, Florida's, and Alabama's Coastal Management Programs and will be conducted in a manner consistent with such Programs.

In accordance with Title 15 CFR 930.77(a), the State of Florida will be provided copies of the proposed Plan to determine consistency of the proposed activities in accordance with Florida's Coastal Zone Management Program.

K. NEARBY PENDING ACTIONS

Marathon is unaware of any other nearby pending actions (leasing actions, actual or planned operations for the development of overlying minerals other than oil and gas, or other present uses or proposals under consideration).

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L. MONITORING SYSTEMS

Safety features on the MODU will include well control, pollution prevention, welding procedure, and blowout prevention equipment as described in Title 30 CFR Part 250, Subparts C, D, E, G and O; and as further clarified by MMS Notices to Lessees, and current policy making invoked by the MMS, Environmental Protection Agency and the U.S. Coast Guard. The appropriate life rafts, life jackets, ring buoys, etc., as prescribed by the U. S. Coast Guard will be maintained on the facility at all times.

In accordance with Title 30 CFR Part 250, Subpart O, an operator is to ensure Well Control Training is provided for lessee and contractor personnel engaged in oil and gas operations in the OCS Gulf of Mexico. Supervisory and certain designated personnel on-board the facility are to be familiar with the effluent limitations and guidelines for overboard discharges into the receiving waters, as outlined in the NPDES General Permit GMG280000 and/or Individual Permit.

The operator is charged with the responsibility to not create conditions that will pose unreasonable risk to the public health, life, property, aquatic life, wildlife, recreation, navigation, commercial fishing, or other uses of the ocean. Some of these measures include installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris.

The MMS is required to conduct onsite inspections of offshore facilities to confirm operators are complying with lease stipulations, operating regulations, approved plans, and other conditions; as well as to assure safety and pollution prevention requirements are being met. The National Potential Incident of Noncompliance (PINC) List serves as the baseline for these inspections. The
MMS also inspects the stockpiles of equipment listed in the operator's approved Oil Spill Response Plan and/or Site Specific Hydrocarbon Spill Contingency Plan that would be used for the containment and cleanup of hydrocarbon spills.

M. MAPS

Well Location Plats depicting the location of the proposed wells are included in Appendix 4.

III. ALTERNATIVES TO THE PROPOSED ACTION

There are no alternatives to the proposed action. Marathon tailored the exploration activities in such a way to minimize environmental impacts. Utilization of a dynamically positioned drillship will cause minimal impact to the field. In accordance with the requirements of 30 CFR 250, Marathon addressed the project alternatives and concluded there were none. This is not to say that no alternatives were considered when designing the Exploration Plan. Marathon believes that the analysis and discussion provided in the Exploration Plan addresses the alternatives.

IV. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The following subtopics are a regional description of the environment and may or may not pertain to the specific environment in the proposed activity area.

A. PHYSICAL ENVIRONMENT

1. Environmental Geology and Hazards

Marathon's proposed exploratory activities are located approximately 104 statute miles southeast of the Mississippi River's Southwest Pass and about 165 statue miles south of

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Pascagoula, Mississippi. Water depths range form 8400 feet to 8600 feet. Most deepwater geologic features and conditions of potential engineering significance in the top hole section are caused by late Quaternary events and sediments.

Desoto Canyon Block 927 is located within the eastern Mississippi Fan (Dixon and Weimer, 1998) about 25 miles northeast of Atwater Valley, an extensive sediment transport pathway on the Louisiana continental slope. The Mississippi Fan is a mud-dominated, Pleistocene submarine fan that encompasses much of the continental slope in the northeastern Gulf of Mexico. The eastern fan is one of several Neogrene submarine fans deposited in the unconfined portion of the northern Gulf of Mexico (Dixon and Weimer, 1998). The eastern Mississippi Fan is bonded gradationally to the west by the western Mississippi Fan, to the north by the eastern extension of the Sigsbee Escarpment, and to the east by the Florida Escarpment.

The eastern Mississippi Fan is smaller and thinner than the western fan, which is composed of deposits derived from the ancestral Mississippi River since the late Miocene. According to Dixon and Weimer (1998), the eastern Mississippi Fan was derived from a shelf-edge delta system known as the Lagniappe Delta. This late Pleistocene delta was located just east of the modern Mississippi River Delta (Dixon and Weimer, 1998). The Lagniappe Delta was formed by either the Pleistocene Mississippi River or the ancestral Pearl, Pascagoula, and/or mobile rivers that presently drain into the Mississippi Sound (Dixon and Weimer, 1998 and Robalin, 2000).

Sediment distribution in the eastern Mississippi Fan was controlled by topographic expression of the Mississippi Fan Ford Belt is a northeast trend series of asymmetrical, southeast thrusting anticlines and associated overthrust faults (Hannan and others, 1999). In the Atwater Valley area, the fold belt developed during the late Oligocene to early Pliocene (Hannan and others, 1999), Salt deformation in the eastern Mississippi Fan is associated with the eastern Sigsbee Escarpment and isolated diapiric outliers.

Submarine mass movement features are common on the continental slope in the northern Gulf of Mexico. In Desoto Canyon Block 927 and vicinity, no evidence for recent mass movements or seafloor instability was identified, however, buried landslides of various thickness and distribution are common in the top-hole section.

Faults can provide conduits for gas and other fluids to migrate upwards. The fluids may travel along fault planes on the seafloor or may become entrapped within the sediment column. No subsurface high amplitude anomalies indicative of gas sands in the tophole section were identified within Desoto Canyon Block 927. The absence of faults in the tophole section, which would act as migration pathways for thermogenic gas, supports this conclusion.

Faults provide the conduit for fluids to migrate upward through the sediment column. Gas hydrates have been found in water depths exceeding about 1500 feet in the northern Gulf of Mexico (Brooks and others, 1989). When hydrates form on the seafloor they can, in many circumstances, be recognized or inferred by the subtle mounding of the seafloor surrounding the vent (Brooks and Bryant, 1986).

Chemosynthetic communities have become somewhat synonymous with zones of seafloor gas vents, hydrate accumulations, and outcrops of authigenic carbonate rock in the Gulf of Mexico. No seafloor high amplitude anomalies indicative of recent or active hydrocarbon macro-seepage were identified in Desoto Canyon Block 927. The nearest of these features is about 10,000 feet away from the area.

In September, 2000 Fugro Geosciences, Inc. prepared a Shallow Hazards Report assessing the shallow conditions that may impact exploratory drilling operations within

Desoto Canyon Block 927. A copy of this report is being submitted under separate cover. Shallow Hazards Analyses of the proposed drillsite locations are included as part of the Initial Exploration Plan.

2. *Meteorological Conditions*

Air temperatures have annual means of 19°C at Mobile and 20°C at Cape San Blas. The winter mean temperatures, seasonal low, are 12°C at Mobile and 14°C at Cape San Blas; summer mean temperatures, seasonal highs, are 25°C and 26°C respectively. The annual mean temperature at Pensacola, Florida is 19.9°C. It is important to remember that extreme temperatures and barometric pressures do occur that depart considerably from their average mean values (Florida A&M University, 1988).

Average annual precipitation along the NEGOM between New Orleans, Louisiana and Fort Myers, Florida is approximately 137 cm. The average annual precipitation at Pensacola, Florida is 1.55 m. Rainfall is fairly evenly distributed throughout the year, with the greatest amounts occurring during June, July, and August when the winds are predominantly out of the south and southeast.

Precipitation is frequent and abundant throughout the year but does show distinct seasonal variation. Stations along the coast record the highest precipitation values during the warmer months of the year. The warmer months usually have convective cloud systems that produce showers and thunderstorms; however, these thunderstorms rarely cause any damage or have attendant hale (USDOC, 1967; Brower et al., 1972). The month of maximum rainfall for most locations is July. Winter rains are associated with the frequent passage of frontal systems through the area. Rainfalls are generally slow, steady, and relatively continuous, often lasting several days. Snowfalls are rare, and when frozen precipitation does occur, it usually melts on contact with the ground. Incidence of frozen precipitation decreases with distance offshore and rapidly reaches zero.

Warm, moist Gulf air blowing slowly over chilled land or water surfaces brings about the formation of fog. Fog occurrence decreases seaward, but visibility has been less than 800 M due to offshore fog. Coastal fogs generally last 3 or 4 hours, although particularly dense sea fogs may persist for several days. The poorest visibility conditions occur during winter and early spring. The period from November through April has the lowest visibility. The number of days that visibility decreases to less than 400 m (heavy fog) in the Eastern Gulf decreases form 35 days/year in Pensacola to 1 day/year at Key West.

Prevailing winds in this region are from a southerly direction in spring and summer. During fall and winter, wind direction is mostly from a northerly direction because of the influence of cold fronts. These fronts tend to come at one to three day intervals. After the frontal passage, winds return to the prevailing southerly direction. On average, the summer speeds are lower than the winter speeds. Because of the greater speed of the northerly winds, the resultant wind velocity factor is from the north. Significant deviations from this pattern occur during tropical and extra tropical storms (Wolfe et al., 1988).

The Gulf of Mexico is part of the Atlantic tropical cyclone basin. Tropical cyclones generally occur in summer and fall seasons; however, the Gulf also experiences winter storms or extratropical storms. These winter storms generally originate in middle and high latitudes and have winds that can attain speeds of 15-266 m/sec (11.2-58.2 mph). The Gulf is an area of cyclone development during cooler months due to the contrast of the warm air over the Gulf waters and the cold continental air over the United States. Cyclogenesis or formation of extratropical cyclones in the Gulf of Mexico is associated with frontal overrunning (Hsu, 1992). The most severe extratropical storms in the Gulf

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originate when a cold front encounters the jet stream over the warm waters of the Gulf. Statistics of 100-year data of extratropical cyclones reveal that most activity occurs above 25°N in the western Gulf of Mexico. The mean number of these storms ranges from 0.9 near the southern tip of Florida to 4.2 over central Louisiana (USDOI, MMS, 1988). The Minerals Management Service's LATEX study contains an element to study the generation of extratropical storms in the Gulf.

The frequency of cold fronts in the Gulf exhibits similar patterns during the four-month period of December through March. During this time the area of frontal influence reaches 10°N. Frontal frequency is about none fronts perm month in February and about seven fronts per month in March. By May, the frequency decreases to about four fronts per month and the region of frontal influence retreats to about 15°N. During June-August frontal activity decreases to almost zero and fronts seldom reach below 25°N. (USDOI, MMS, 1988).

Tropical cyclones originate over the warm waters of the central Atlantic Ocean, Caribbean Sea or the Gulf of Mexico. From a climatic point of view, tropical storms provide a mechanism for transporting hear and water vapor from the tropics to midlatitudes. These storms are classified by the U.S. National Weather Service according to intensity. Tropical storms have wind speeds greater than 16 m/sec (35.8 mph); storms with wind speeds greater than 32 m/sec (71.6 mph) are called hurricanes. Tropical cyclones occur most frequently between June and November. Based on 42 years of data, there are 9.9 storms per year with 5.5 of those becoming major hurricanes in the Atlantic Ocean (Gray, written communication, 1992). Data from 1886 to 1986 show that 44.5 percent of the storms originating in the Atlantic basin, or 3.7 storms per year, will affect the Gulf of Mexico (USDOI, MMS, 1988). The same data, however, show that the storm activity affecting the Gulf has decreased over the past 40-45 years. The number of hurricanes directly hitting the Gulf States are as follows: Florida, 54; Alabama, 10; Mississippi, 8; and Louisiana, 24. (Herbert et al., 1992).

Visual No. 7 of the Final EIS for Sales 131, 135, and 137 shows the highest probabilities of at least one storm per season to be in the southern tip of Florida and west of the Mississippi River delta to Port Arthur, Texas. The coastline between Mississippi and west Florida also has areas of high probability for a hurricane hit.

3. Physical Oceanography

The Gulf of Mexico is a semi-enclosed basin connecting with the Caribbean Sea through the Yucatan Channel and the Straits of Florida. The northeastern Gulf of Mexico encompasses a variety of features found in this subtropical sea, including a continental shelf, Desoto Canton, a continental slope and riser, and an abyssal plain. Among topics addresses by recent and/or ongoing Minerals Management Service sponsored studies in the northeastern Gulf of Mexico region are water masses, circulation, seasonal hydrography, scales of variability, heat and salt budgets, forcing functions, the Loop Current, eddy monitoring, remove sensing, interaction between shelf and deeper offshore waters, river inflow, regional meteorology, and Desoto Canyon circulation and influence.

The most prominent source of mesoscale variability in the Eastern Gulf of Mexico is the Loop Current. Caribbean waters entering the Gulf through the Yucatan Channel are constrained by it's 1820-m effective sill depth. Once free of the Yucatan Channel, flow from the Tucatan current proceeds northward into the Gulf of Mexico becoming the Loop Current.

Loop current filaments have been observed on the shelf and intruding into the Desoto Canyon area.

In general, past current observations in the deep water Gulf of Mexico have revealed decreases in current speed with depth. During late 1999, a limited number of high speed current events, at times approaching 2 kn, were observed at depths exceeding 1500 m in the northern Gulf of Mexico.

Oceanographic conditions of the northeastern Gulf of Mexico's (NEGOM) shelf results from the interplay of regional meteorological processes, regional topography, influences from the Gulf's deepwater processes and river discharges.

Important meteorological processes influencing the regional oceanography are atmospheric pressure, air temperature, and winds. Even though all three variables vary diurnally and seasonally, only the seasonal variation will be considered in this description. Barometric pressure observations at two coastal stations near the western (Mobile, Alabama) and eastern (Cape San Blas, Florida) boundaries of the area of interest vary seasonally. Winter mean pressures are 1019.08 millibar (mb) at Mobile and 1019.15 mb at Cape San Blas; respective summer mean pressures are 1016.12 and 1016.95 mb. The annual mean barometric pressure is 1017.4 mb at Mobile and 1017.8 mb at Cape San Blas. A pressure gradient exists on average from west to east, which should give rise to a east-to-west sea surface slope. Air temperatures have annual means of 19°C at Mobile and 20°C at Cape San Blas. The winter mean temperatures, seasonal low, are 12°C at Mobile and 14°C at Cape San Blas; summer mean temperatures, seasonal highs, are 25°C and 26°C respectively. It is important to remember that extreme temperatures and barometric pressures do occur that depart considerably from their mean values. (Florida A&M University, 1988).

Prevailing winds in this region are from a southerly direction in spring and summer. During fall and winter, wind direction is mostly from a northerly direction because of the influence of cold fronts. These fronts tend to come at one to three day intervals. After the frontal passage, winds return to the prevailing southerly direction. On average, the summer speeds are lower than the winter speeds. Because of the greater speed of the northerly winds, the resultant wind velocity factor is from the north. Significant deviations from this pattern occur during tropical and extra tropical storms (Wolfe et al., 1988).

Regional topography in this area is dominated by the Desoto Canyon, which divides the area into western and eastern zones. The apex or head of this canyon coincides with the minimum width of the shelf. The western zone has its isobaths running in a northeast-southwest direction and a variable width. The eastern zone's isobaths run in a northwest-southeast direction and its width is more uniform. Along the coastline several bays discharge fresh or brackish water into the adjacent shelf. Even though their individual or combined discharge is many times smaller than the Mississippi River fresh water output, they have significant influence on their adjacent shelf.

Deepwater processes influencing the shelf circulation are Loop Current intrusions and associated mesoscale eddies. A recent study suggests three modes of Loop Current interaction with the shelf that depend on the intrusion's route. Loop Current eddies could affect the general circulation when they approach the slope and transfer momentum and water to the shelf. In that area, these interactions have occurrence frequencies of less than 5%.

The Mississippi River, the main contributor of fresh water to this area, contributes from 45 % to 63 % of its outflow to the region (Walker and Rouse 1993; Eleuterius and Criss 1994). Its influence can be found at the distances of up to 100 km east of the Delta in this shelf (Eleuterius and Criss 1994)

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Hydrography - This section summarizes information about the basic hydrography parameters: seawater temperatures and salinity. Both are needed to calculate seawater density and serve as tracers of water masses and indicators of oceanic circulation. These observations also are important in other oceanographic fields. The discussion, by necessity, examines the surface fields of each parameter and their vertical distributions.

The circulation on the Louisiana-Mississippi-Alabama shelf (LMAS) and adjacent region has been characterized using historical hydrographic data and current meter data. Generalized seasonal circulation patterns have been proposed. These patterns are based on objective data over the inner shelf, outer shelf, and upper slope. The midshelf patterns are more subjective.

Westward flows on the inner shelf, outer shelf and upper slope in the spring and summer are interpreted as the northern and southern portions of closed cyclonic and anticyclonic circulation cells, respectively. Spring and summer midshelf flow is eastward. This is consistent with flow around two counter-rotating circulation cells. The offshelf flow over the eastern LMAS shelf break has three possible fates. Some shelf water flows westward along the upper slope and may either recirculate around the anticyclonic cell, moving on shelf just east of the Mississippi Delta, or continue west across the Delta front. Some water moves offshelf and then up the Desoto Canyon, flowing onshore and then westward over the inner shelf. Finally, some may continue to flow southeastward along the eastern flank of the Canyon. A convergence on the western LMAS must occur between the onshore flow just east of the Delta and inner shelf moving south along the Chandeleur Islands. This water must then move eastward, across the LMAS toward the Desoto Canyon and the region of shelf break exchange.

The observed mean inner shelf flow patterns are consistent with wind-driven flow. Mean monthly winds, for an 11-year period (1974-1984), were from an eastern quadrant during most of the year (Schroeder and Wiseman, 1985). The mean easterly winds during the fall can be assumed to drive an inner shelf circulation similar to that observed in the spring and summer. At the same time, flow from west of the Delta turns on to the shelf just east of the Delta. The principal pattern of two counter-rotating cells on the shelf with onshore flow to the west and offshore flow to the east remains.

The anticyclonic circulation over the outer shelf and upper slope is not present during the winter. Winter shelf circulation appears to consist of a single cyclonic cell. Currents are eastward over the upper slope and westward over the inner shelf. There is weak offshelf flow all along the shelf break in winter.

Spring discharge from the Mississippi River disperses eastward along the shelf-break. A ridge of high dynamic topography results on the shallow isobaric surfaces. Circulation is clockwise around this ridge, eastward over the outer shelf and westward over the upper slope. Outer shelf and slope flow during summer and fall, is a continuation of that associated with spring runoff conditions. Most of the fresh water is gone from the outer shelf by winter. Weak offshelf and eastward flow over the outer shelf and upper slope are consistent with the dynamic topography.

The inner shelf circulation is parabathic cyclonic flow interrupted by periodic reversals associated with northwesterly winds. Peak current speeds observed during winter, spring and summer exceeded 0.3 m/s in either along-shore direction. Post-front wind direction and duration appeared to be related to the degree of spatial coherence in along-shore flow. Normal circulation relaxed as cold fronts moved through the region and wind directions shifted. Fast-moving fronts tended only to interrupt the existing flow, but longer periods of post-front winds from northwest reversed the inner shelf flow direction.

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Wave-induced sediment resuspension and advection by subtidal bottom currents are both necessary for net sediment transport on the inner shelf. Long-term hindcast wave statistics were analyzed. Sediment resuspension during high wave conditions can occur in water depths of 40 m or less. Sediment transport occurs primarily during prefrontal winds conducive to long waves and cyclonic inner shelf flow in the winter and spring.

Winds during the summer are weaker. Locally generated wind waves would resuspend shelf sediment at shallower water depths. Outer shelf and upper slope sediments are most likely to be resuspended only by hurricane condition waves or, possibly, by direct influence of the Loop Current.

Continued investigation is needed to understand the inner shelf-outer shelf exchange and midshelf flow. Observed shelf-break exchange is not documented by in situ current measurements, nor are the time and spatial scales of outer-shelf variability understood.

Sea Surface Temperature - The sea surface temperature (SST) is important because of its significant role in air-sea interactions and for surface seawater density. Data summaries of monthly mean SST (Dynalysis of Princeton, 1993; Florida A&M University, 1988; U.S. Navy, 1986; Robinson, 1973) show a seasonal variation of SST, a response to the seasonable change in solar of solar heating. The maximum monthly mean SST (28-31°C) occurs in July-August and the minimum monthly mean SST (15-22°C) in January-February. These temperature ranges represent values of SST from onshore to offshore. The lower values occur nearshore because of the shallower water depth. On the basis of these monthly SST averages, Florida A&M University (1988) identified two seasons; winter (December, January, February, and March) and summer (May, June, July, August, September, and October). April and November are transitional months. The small SST range in summer is due to the low wind speed, reduced vertical mixing, and high solar heating. These conditions lead to an almost isothermal Gulf of Mexico's sea surface. An isothermal Gulf surface hampers the use of satellite or remote sensing techniques to identified surface features such as warm or Loop Current eddies. The large SST range in winter is due to the high wind speeds and ensuing mixing, low solar heating, and the increasing water depth in the offshore direction. In consequence, water near or beyond the shelf's edge does not cool much in winter because of the greater water depth and heat distribution over a greater water volume.

The standard deviation of the SST surface fields (Dynalysis of Princeton 1993) confirms the above inferences about SST ranges in a generalized way. Greater values of temperature standard deviations occur in winter and early summer (1-2°C to 2-4°C) and are lowest in mid summer (< 0.8°C).

Aside the onshore-offshore SST gradient, the available data suggest an alongshore SST gradient in this region. The Florida A&M University (1988) mean SST monthly fields show a bending of isotherms toward the Cape San Blas area. Kelly (1991) and Molinari et al. (1979) noticed that isotherms in this region tend to be parallel to the isobaths. The resulting west to east SST variation between Mobile, Alabama and Cape St. George, Florida, reaches values of 2°C and the SST increases eastward. This gradient seems to exist in winter. The U.S. Navy (1986) SST fields also show a similar temperature variation, but only in the winter months of November and December. The SST fields of Dynalysis of Princeton (1993) display a much smaller gradient (0.2°C) but only in May.

Sea-surface temperature is nearly isothermal (about 30°C) in August, but sharp north-south horizontal gradients are present in January, ranging from 25° in the Loop core down to 14-15°C along the shallow northern coastal estuaries. August temperatures are 150m depth show a warm Loop Current and an anticyclonic feature in the Western Gulf (both about 18-19°C) grading horizontally into surrounding waters (the Gulf Common Water) at 15-16°C. The winter temperature pattern is similar, but about 1° colder. At

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1,000m water depth, the temperature remains close to 4.9°C year-round.

Vertical Temperature Profile - Data on vertical temperature profiles provide a consistent seasonal pattern of temperature variation. Because of the small temperature database, it is impossible to provide statistical measures (mean and variances) for these vertical profiles. It is important to keep in mind that water temperature increases offshore during winter because of the large thermal inertia of water and increasing water depth. In winter, the water column is nearly isothermal in nearshore areas with temperatures around 20-25°C and slightly warmer temperatures (1-3°C warmer) near the bottom. During spring and summer, the vertical profile of temperature indicates a two layer system or stratified water column. The surface layer reaches temperatures of 26-30°C and decreases by about 4°C in early summer and by 8°C in late summer when reaching 199 m water depths (Kelly, 1991; Molinari et al., 1979; Churgin and Halminski, 1974). Deviations from this pattern occur and are generally associated with Loop Current intrusions or fresh water advection (Kelly, 1991, Molinari et al., 1979).

Surface Salinity - Maps of monthly means surface salinity for the entire Gulf of Mexico have been prepared by Dynalysis of Princeton (1993). The salinity field in this area is the result of a mixture of Mississippi River water, low salinity water from the adjacent sounds and bays, and high salinity water from the deep Gulf of Mexico (Barry A. Vittor and Associates, 1985). The monthly mean surface salinity plots show that salinity in this region is mostly oceanic with value ranging from 33 to 36 ppt. A seasonal cycle, which is opposite that of the SST, is evident. Maximum salinity occurs in winter, reflecting the low fresh water input from the rivers and bays along the coastline. It is noteworthy to notice that this trend is contrary to open oceanic conditions where surface salinity and temperature are in phase. The minimum salinity occurs in midsummer. These plots and other available data (Eleuterius and Criss, 1994; Kelly, 1991; Churgin and Halminski, 1974) show an eastward increase of surface salinity. This gradient reflects the location and advection of fresh water inputs. The surface salinity gradient appears to vary seasonally; from November to February, it is directed from west to east; from February to May, it rotates anticyclonically; and becomes directed completely offshore in May to September. The cycle is completed with a cyclonic rotation during September to November and the re-establishment of the west-east gradient.

The standard deviation of the monthly means (Dynalysis of Princeton, 1993) is greater during winter (0.8 to 1.2 ppt) and smaller in summer (0.6 and 0.8 ppt). It is important to notice that larger variations of salinities occur. For example, in Eleuterius and Criss (1994), salinity values as low as 26 ppt over the shelf associated with advection of fresh water from the Mississippi River through the area.

Surface salinities along the northern Gulf display seasonal variations because of the cycles of freshwater input from local precipitation and rivers. During months of low freshwater input (fall-winter) months, deep Gulf water penetrates into the shelf, and salinities near the coastline range between 29 and 32 practical salinity units (psu). High, freshwater-input conditions (spring-summer months) are characterized by strong horizontal gradients and inner-shelf salinity values of less than 20 psu.

The water depths greater than 1400 m is relatively homogeneous with respect to salinity, which ranges from 34.963 to 34.976 psu as noted by a Texas A&M University data collection in the winter months of 1962.

Low salinity waters have been observed at the head of Desoto Canyon, and these are thought to originate either from Mississippi River waters transported there by deeper cyclonic flow or else from various Alabama or Florida rivers. Downwelling and upwelling are both known to occur in the Desoto Canyon region. Summer upwelling of cold water into regions having a seafloor depth of less than 100 m at the head of the

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canyon has been observed and is enhanced by canyon topography.

Vertical Salinity - Vertical salinity distributions indicate that seasonal salinity variations decrease with the depth over the shelf. Most of the vertical profiles examined over the shelf indicate salinity values of over 36 ppt (range of 36.6 to 36.5 ppt) in the deeper layers (Kelly, 1991; Churgin and Halminiski, 1974). The monthly means salinity plots at 100 m water depth show salinity values consistently between 36.3 and 36.45 ppt (Dynalysis of Princeton, 1993).

Hydrography Variations at Time Scales of Days - Temperature and salinity variations at time scales of days are well documented in cruises, for example see the reports of Eleuterius and Criss (1994) and Kelly (1991). In their summary of data collected from 1963-1965, Eleuterius and Criss (1994) present evidence of the Mississippi River outflow transported in a northeast direction bringing lenses or parcels of fresh water, and how saltier, warmer water enters the shelf through Desoto Canyon. They estimate the influence of Mississippi River water to about 100 km east of the Delta. Kelly (1991) discusses data from four cruises conducted from 1987 to 1989. The first cruise (February-March 1987) is an example of low salinity water influence from Mobile Bay. The cruise data of September-October 1987 shows warm, saltier water entering the shelf from the Southeast. The bottom waters are saltier, suggesting a transport of water westward and derived from a Loop Current intrusion. Data from the August 1988 cruise show an example of meteorological water conditioning. Saltier water on the shelf coupled with lower temperature is attributed as being formed locally by evaporation during drought conditions of that year.

Tidal Regime - The astronomical tide in the Gulf of Mexico can be characterized by a small amplitude and different behavior of the tidal components (Reid and Whitaker, 1981). The dominant tidal components in the Gulf of Mexico are the diurnal, luni-solar (K1), and principal lunar (O1) acting as Hemholtz modes, and the semidiurnal, principal lunar (M2) (Reid and Whitaker, 1981). The period of these components are T_{K1}=23.934 hrs; T_{O1}=25.819 hrs, and T_{M2}=12.421 hrs.

Sea levels along the GOM also exhibit a seasonal cycle. A time series of sea levels spanning 57 years (1923 - 1980) at Pensacola, Florida, shows a minimum sea level in January with a monotonic increase that peaks in September. The total sea level variation is about 24 cm (Hicks et al., 1983). A shorter sea level time series (22 years) displays a bimodal distribution variation of 8-9 cm. The minima occur in January and July. Two unequal maxima occur, a lower one in April and the higher one in September.

Another type of sea level change is caused by meteorological forces, which in the area of interest could be equal to or greater than the astronomical tides.

A much larger and pragmatically important sea level change, is the storm surge. The storm surge depends on the shelf topography, storm wind speed, and forward velocity. For the area of interest, about 2.3 storms can land every 100 years across a 10 nautical mile coastal segment. Of these two storms, one could be a hurricane (EM 1110-2-1412, 1986). For this region, the nominal storm surge is about 0.9 cm with a range of 0.6 to 1.6 cm above the astronomical tide for the 100-year hurricane. However, an analysis of storm surges for Texas to Florida, indicates that storm surges of about 4 m are possible during the 100-year flood (Kelley et al., 1984). In the Mississippi Sound, a storm surge of 1.5 m was measured (Barry A. Vittor & Associates 1985).

Information on tidal currents for the area of interest is scarce, but the available information indicates values of 15 cm/s (Clarke, 1994). Applying linear wave theory in this shelf-yield estimates of 15 cm/s at water depths of 100 m and 22 cm/s in waters 50 m deep.

Sea State - The GOM's wave climate is characterized as being generated inside the Gulf and with hurricanes as significant sources of wave energy (Friedrichs and Aubrey, 1992). Because of the generation areas and the shallow water effects there is a significant offshore-onshore wave energy. Wave measurements from NBC buoys in the eastern GOM reveal that offshore mean wave height (~1.2 m) is higher than the nearshore mean wave height (~1 m); this trend also holds for the maximum wave height; ~6 m offshore verses ~0.5 m nearshore. Aside from this onshore-offshore gradient, the wave height also varies seasonally. At the offshore station, the highest mean wave high (~1.6 m) occurs in winter; spring and fall have identical mean wave height of~1.4 m; and lowest in summer (~0.9 m). At nearshore stations, the seasonal cycle is similar to the winter mean wave height of ~1.4 m, ~1.3 m in spring, ~1.1 m in fall, and ~0.8 m in summer. The maximum wave height also displays a similar seasonal variation, highest in winter (>8m); lowest in summer (~1.8m); with spring and fall wave heights about equal (~4 m). The offshore-onshore gradient is also evident in the U.S. Navy (1986) data summary. The most frequent (57%) wave height nearshore areas are those of less than 0.6 m, followed by waves of 0.9-1.5 m (30%) and about equal frequencies (7-9%) for waves of 1.5-1.8 m and 2.1 -2.7 m. At offshore areas the frequency for wave heights of 0.9 m decreases to 48%, the waves of 0.9-1.5 m remain about equal, but the higher waves almost doubled in their occurrence frequency. Waves of 1.5-1.8 m have frequency of 13% and waves of 2.1-2.7 m increases to 9%.

A wave hindcast for the entire GOM shows that in this area the average significant wave height is about 1 m with a period of 5 seconds and most frequent direction between 135-157.5° (Hubertz and Brooks 1989). The largest hindcast waves are near 4.7 to 2.7 m and periods of 11 to 8.3 seconds. These larger waves are associated with directions varying from 138° to 210°. The wave height and period associated with the 100-year storm in this region are: maximum wave height 18-24 m, wave period is 11-15 seconds (U.S. Navy, 1986). Recent measurements of waves associated with Hurricane Andrew in the Gulf of Mexico revealed that the wave period could be as high as 16 seconds and another significant wave at the first harmonic caused by nonlinear dynamics (DiMarco et al., in press).

Regional Circulation - The main driving forces of the NEGOM regional circulation are winds, Loop Current, and related filament intrusions, and fresh water input from the Mississippi River and adjacent bays and estuaries. Kelly (1991) provides the most complete analysis of currents, sea levels, and wind stress for this shelf region. Over most shelf locations he found high coherence between winds and currents in the frequency range of 0.08 to 0.20 cycles per day (cpd) or periods of 5 to 13 days. At the inner shelf, the observations indicate simple Ekman response of the entire water column. At mid- and outer-shelf stations, the response is more likely a wind-forced wave with a similar frequency range. Over the slope, there is little coherence between currents and winds, and when high coherence exists, it occurs at specific frequencies. Based on the phase angles, a free and forced response seems to prevail in this region. The correlation between sea levels at Dauphin Island and wind stress was also high over a broad range of frequencies. In winter/spring the sea level responded to both the along- and cross-shelf wind stress components; in summer the sea level response was to along-shore stress only. The relationship between sea level and wind stress was studied more quantitively by Marmorino (1982). He found a high correlation in a frequency range similar to Kelly (1991). Further, he estimated that at Apalachicola and Pensacola, the sea level increases about 26-31 cm for a wind stress of 1 dyne/cm2 in the alongshore direction. Loop Current effects on the shelf occur mainly through intrusions, which tend to modulate the wind driven flow. Kelly (1991) found three modes of Loop Current interactions: a direct intrusion along Desoto Canyon, an intrusion of shelf water into one of the Loop Current filaments, and a direct intrusion of the Loop across the entire GOM and onto the shelf. Seawater density in this region is controlled essentially by salinity, which in turn is

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controlled by the fresh water input (Dinnel, 1988). Thus, fresh water inflow into the shelf contributes to the dynamic height anomalies calculated over this region by Dinnel (1988) and drives the geostrophic currents.

Mean seasonal surface currents derived from ship drift data for this region are presented, for example, in one by one degrees squares (U.S. Navy, 1986). Surface circulation based on these estimates indicates a westerly flow in the inner shelf area with speeds close to 50 cm/s throughout the year. In the outer shelf/upper slope region, the flow is mostly southwestward near the Mississippi River Delta in winter, summer, and autumn; in spring the flow is northerly. Near Cape San Blas, currents are mostly northerly in spring, summer, and autumn; in winter, the flow is southeasterly. The speed at the outer shelf is around 30 cm/s year round. Based on measurements and geopotential anomaly maps, Dinnel (1988) proposed a shelf circulation consisting of two cells across the shelf in spring, summer, and fall. The inner shelf cell is cyclonic and the outer shelf shell is anticyclonic. Both cells meet at the mid shelf where the flow is directed eastward. In winter, the outer shelf cell breaks down and only the inner shelf cyclonic cell persists. Also, onshore flow tends to accompany the summer regime circulation near flow tends to accompany the summer regime circulation near the Desoto Canyon, but offshore during spring and fall. In winter this flow is along the isobaths and directed northeast. Based on current measurements over the outer shelf, Kelly (1991) found no evidence for the outer shelf anticyclonic circulation. However, he found evidence for the inner shelf anticyclonic cell.

Combining the wind-driven circulation and the modulation effects of the Loop Current intrusions, Kelly (1991) proposed a tentative scheme for the mean shelf circulation consisting of a single cyclonic cell over the entire shelf extending to the outer shelf and slope. Eleuterius and Criss (1994) also proposed a similar anticyclonic cell over the entire shelf but with no seasonal variations. They based this conclusion on salinity data collected between 1963 and 1965. It is important to notice that either Dinnel's or the Kelly-Eleuterius-Criss' circulation scheme needs to be verified with field observations.

4. Water Quality

Water quality in the NEGOM area may be negatively affected by the migration of degraded coastal water quality conditions, by offshore discharges from shipping operations, by Mississippi River intrusions, and by changes in turbidity resulting in high-suspended solids and poor water clarity due to storm surges.

Coastal water quality in this area is affected by both industrial and municipal discharges and runoff. Compared to areas east and west of the Mississippi Sound, this area is still relatively unpolluted.

The greatest amount of industrial growth has occurred in Pascagoula River, Escatawpa River, and Bayou Casotte (Rabelais, 1992). Hydrocarbons were the most significant contaminants found in Mississippi Sound sediments. This was likely associated with the oil refinery and oil industrial complex. The pollutants found near the heavily industrialized areas of the rivers have not migrated out into the Sound. Low dissolved oxygen has been infrequently measured in the area during the warmer months. Blooms or red tides have occurred several times in the last 20 years in the Sound, sometimes resulting in fish kills. The Bayou Cassotte area has the greatest industrial contamination. A ship channel and harbor with industrial activities that include petroleum fuels; petrochemicals; metal processing and fabricating; and nitrogen, potassium, and phosphorus fertilizers characterize the area.

The estuarine and inner shelf areas of the Central Gulf are strongly influenced by freshwater flow from a number of major drainage systems, especially the Mississippi

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River and the Mobile-Tombigbee-Alabama river system. A complex geography of shallow sounds and bays and extensive tidal marshes protected by a chain of barrier islands acts to delay mixing, resulting in extensive areas of mesohaline conditions. Turbidity values are normally quite high, with suspended particles primarily composed of clay minerals (Hedges and Parker, 1976).

Mississippi Sound, adjacent to the coast of Mississippi, is subject to rapid changes in both temperature and salinity because of atmospheric variations, river discharges, rainfall, and tides. Within this estuarine system, significant stratification or water column inversions may occur at various times during the year. A slat wedge is detectable in all of the rivers in late summer and fall (Christmas and Eleuterius, 1973).

The Mississippi River input creates a lens of fresher, more turbid water. The most important characteristic of this fresh lens is its stratifying effect on the water column of nearshore waters. Hypoxic bottom-water conditions are frequently observed during summer months, particularly August, on the central Louisiana shelf. Mass mortality of organism and characteristic chemical changes also occur. Although the Mississippi and Alabama inner shelf has the potential for bottom water hypoxia, and low oxygen concentrations have been documented, such events are not considered frequent nor widespread as is the case off Louisiana (Rabelais, 1992).

The water at depths greater than 1400 m is relatively homogeneous with respect to temperature, salinity and oxygen. Temperature ranges from 4.0 to 4.5°C, salinity from 34.963 to 34.976 psu, and oxygen from 4.58 to 5.61 ml/l O2 (Nowlin, 1972).

Of importance is the flushing time of the Gulf of Mexico (Pequegnat, 1983). Oxygen in deepwater must come from the surface and be mixed into the deepwater by some mechanism. If the replenishment of the water occurs over a long period of time, the addition of hydrocarbons through the discharge from oil and gas activities could lead to creating low oxygen, and potentially hypoxic conditions in the deepwater of the Gulf of Mexico. The mechanism for maintaining the constant oxygen levels in the deep Gulf is unknown.

Limited analyses of trace metals and hydrocarbons for the water column and sediments exist. Hydrocarbon seeps are extensive through the continental slope and contribute hydrocarbons to the surface sediments and water column, especially in the Central Gulf of Mexico. In addition to hydrocarbon seeps, other fluids leak from the underlying sediments into the bottom water along the slope. These fluids have been identified to have three origins (1) seawater trapped during the settling of sediments, (2) dissolution of underlying salt diapers; and (3) deep-seated formation waters. The first two fluids are the source of authgenic carbonate deposits while the third is rich in barium and is the source of barite deposits such as chimneys.

5. *Air Quality*

Offshore air emissions related to the proposed production activities result mainly from construction operations and service vessels. These emissions occur mainly from combustion or burning of fuels and natural gas and from venting or evaporation of hydrocarbons. The combustion of fuels occurs primarily on diesel-powered generators, pump or motors and from lighter fuel motors. Other air emissions can result from catastrophic events such as oil spills or blowouts.

Primary air pollutants associated with OCS activities are nitrogen oxides, carbon monoxide. sulphur oxides volatile organic compound. and suspended particulate.

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The OSCLA (43 U.S.C. 1334(a)(8)) required the Secretary of the Interior to promulgate and administer regulations that comply with the National Ambient Air Quality Standards (NAAQS) pursuant to the Clean Air Act (42 U.S.C. 7401 et seq.) and to the extent that authorized activities significantly affect the air quality of any State. Under provisions of the Clean Air Act Amendments of 1990, U.S. Environmental Protection Agency's (USEPA) Administrator, in consultation with the Secretary of the Interior and the Commandant of the Coast Guard, will establish the requirements to control air pollution in OCS areas of the Gulf.

For sources located in areas under MMS jurisdiction, regulations are promulgated by 30 CFR 250.302, 250.303, and 250.304 and are applicable to Marathon's proposed exploration operations.

B. BIOLOGICAL RESOURCES

1. Coastal Habitats

Coastal environments include coastal barrier beaches and associated dunes and wetlands. The Mississippi Sound barrier islands have formed over the last three to four thousand years as a result of westward sand migration resulting in shoal and sand bar growth (Otvos, 1980). All islands within this setting are generally regressive or stable features with high beach ridges and prominent sand dunes. They are well vegetated, showing a southern maritime forest climax community of pine and palmetto. Although some of these islands may experience washover during major storms, washover channels are not common. Most of these islands show no trend toward erosion or thinning, although they do migrate westward in response to the westward moving longshore current. Dauphine Island is an exception to this generality in that the island is a long, narrow, transgressive sand deposit which is frequently overwashed by storms. The eastern end of the island is apparently migrating toward the mainland.

Barrier islands found along the Mississippi River Deltaic Plain were built and have been sustained by the series of overlapping river deltas that have extended onto the continental shelf over the last 6,000 years. Barrier island transgression or regression along the deltaic plain of the Mississippi River depends upon what stage the of the cycle the nearby land mass is experiencing. If the nearby delta is in the expanding stage, the deposits being pushed out onto the shelf are regressive. Once the river channel changes, subsidence and sea-level rise begin to convert these sediments in transgressive deposits as waves and washover channels form and divide barrier islands.

The coast of Chenier Plain is composed of sand beaches and coastal mudflats. The extensive mudflats seen in this area are the result of fine particle deposition from both the Mississippi and the Atchafalaya Rivers, where mud and fine particles are carried westward by the prevailing coastal current. In some cases, this fluid-saturated mud extends several hundred meters seaward from the edge of the salt marsh communities found along the shore absorbing wave energy and helping to protect these coastal wetland communities. Beaches in the Chenier Plain area are thin sand deposits present along the seaward edge of the marsh. The coastline of the Chenier Plain is relatively stable at this time.

The barrier islands and mainland beaches of the Florida panhandle typically are stable, with broad, high-profile beaches backed with high dunes. These beaches are some of the most beautiful seen along the GOM and represent a major economic asset to the State of Florida and the region in general. Throughout the Big Bend area east of Cape San Blas, the coast curves inward, away from the Gulf proper. The coastline in this area is one of the lowest energy coastlines in the world (Continental Shelf Associates, Inc., and Martel Laboratories, Inc., 1985). Typical barrier islands and beaches are not seen along this

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coast, and forested wetlands occur down to the water's edge.

Wetlands – Wetland inhabitants inshore of the Central and Western Planning Areas consists of seagrass beds; mangroves; fresh, brackish, and salt marshes; mudflats; forested wetlands of hardwoods; and cypress-tupelogum swamps. Wetland habitats may occupy only narrow bands along the shore, or they may cover vast expanses of the coastline. Seagrass beds, if present, are seen offshore in shallow water, while mangroves and marshes interface between marine and terrestrial habitats, and forested wetlands are found inshore, away from direct contact with the water.

High organic productivity, high detritus production, and extensive nutrient recycling characterize coastal wetlands. The wetlands environment provides habitat for a vast number of invertebrate, fish, reptile, bird, and mammal species. Two-thirds of the high-value fishes caught in the GOM spend at least some portion of their life cycle in the nearshore seagrass beds or salt marshes (USDOI MMS, 1990a).

Coastal marshes of Mississippi and Alabama occur primarily as discontinuous bands around bays, sound, and streams. The most extensive wetlands in these areas occur in the Eastern Pearl River and Pascagoula River deltas in Mississippi; the Tensaw River delta in Alabama; and Grand Bay of Mississippi Sound, which stretches across the Mississippi-Alabama border. Coastal wetlands in this area are protected from the Gulf by the outer barrier islands that define the Mississippi Sound, the Dog Keys. Dauphin and Pelican islands, Alabama for the barrier islands around Mobile Pass. The coastal marshes of the Florida panhandle and Big Bend consist primarily of hardwood swamps, such as those associated with Pensacola, Choctawatchee, and St. Andrews bays. Estuarine marshes and mangroves are also predominant in the Florida coastal bend. The stable substrate from Florida to Mississippi Sound provide for generally more stable wetlands, as compared to Louisiana wetlands, which are suffering from coastal erosion.

Submerged Vegetation – Seagrasses grow on sand bottoms in shallow, relatively clear water in areas with low wave energy. There are over 7,413,000 acres of seagrass in the GOM, approximately 98.5 percent of which is on the west Florida shelf. Inshore of the Central and Western GOM Planning Areas, the coastal waters of Mississippi and Alabama contain approximately 74,000 acres of seagrass growing along the inner edges of the barrier islands of the Mississippi Sound and along the shorelines of prominent bays. (Shew *et al.*, 1981; USDOI MMS, 1998a)

Seagrass beds are an extremely productive marine habitat and support a tremendously complex ecosystem, providing nursurey grounds for vast numbers of commercially and recreationally important fisheries species, including shrimp, black drum, snappers, groupers, spotted sea trout, southern flounder, and many others.

In addition to this submerged aquatic vegetation, the Big Bend, Northern Everglades, and Florida Bay all have extensive coastal wetland communities that front directly on the open waters of the Gulf. Plant communities dominating these wetlands range from salt

marshes and coastal hardwoods in the north to mangrove forests in the south (Continental Shelf Associates, Inc., and Martel Laboratories, Inc., 1986; Continental Shelf Associates, Inc., 1990, 1991).

2. *Offshore Habitats*

As stated in site specific geophysical survey reports prepared for each of the subject blocks, the sea floor sediments are reported to be sands. Sonar records indicate variability in the surficial soils. The surficial sediments are reported to be sands of the Mississippi-Alabama sand facies of the Mississippi Alabama-West Florida panhandle (MAFLA) sand deposit (USDOI, MMS, 1983: Visual No. 3). The model mixture for this facies is 93% terrigenous sand, 7% carbonate sand (calcarenite), and 0% silt and clay (Ludwick, 1964). Kyanite and staurolite dominate the heavy mineral assemblage. The increase in reflectivity probably indicates increase in grain size, possibly due to shell and shell hash.

In sand bottom areas, which support an epibiotal community, coarse rubble consisting of coralline algae, mollusc shell fragments, calcareous polychaete tubes and unattached biota, various sponges, soft corals, and bryosoans frequently accumulate in depressions and sand wave troughs. In addition, other frequently observed epibiota in sand bottom areas include red algae, crustaceans, asteroids, echinoids, and holothuroids. The photo documentation report also lists macroinfaunal sampling results from two sand bottom stations sampled by CSA in 1992 and compares them to the Mississippi-Alabama Marine Ecosystems Study. The two samples were sampled in sand and silty sand areas, and differed mainly with respect to individual abundance, diversity and richness were high at both stations, while individual abundances (density) were low to moderate. Both assemblages include a high abundance of surface and burrowing deposit feeders, and were consistent with species groups described by Barry A Vittor & Associates, Inc., in the Tuscaloosa Trend Regional Data Search and Synthesis Report.

The term sensitive offshore resources refers both to the water column and the sea floor. Sea floor (benthic) habitats are the most likely to be adversely affected by offshore oil and gas operations, especially live-bottom areas, deepwater benthic communities, and topographic features. The northeastern portion of the Central Gulf of Mexico exhibits a region of topographic relief, the "pinnacle trend," between 67 and 110 m (220 and 360 ft) depth. The pinnacles appear to be carbonate reefal structures in an intermediate stage between growth and fossilization. The region contains a variety of features from low to major pinnacles, as well as ridges, scarps, and relict patch reefs. It has been postulated that these features were built during lower stands of the sea during the rise in sea level following the most recent ice age. The heavily indurated pinnacles provide a surprising amount of surface area for the growth of sessile invertebrates and attract large numbers of fish.

The pinnacles are found at the outer edge of the Mississippi-Alabama shelf between the Mississippi River and Desoto Canyon. The bases of the pinnacles rise from the sea floor between 50 and 100 m with vertical relief occasionally in excess of 20 m. These features exist in turbid water and contain limited biotal coverage. Pinnacles photographed in 1985 showed biota similar to the transitional antipatharian-zone assemblage described by Rezak (CSA, 1985). These pinnacles may provide structural habitat for pelagic fish.

With the exception of the region defined as the pinnacle-trend areas, the substrate in waters shallower than 67 m of the Central Gulf is a mixture of mud and/or sand. The live-bottom survey required by MMS and conducted in the eastern portions of the area have also revealed sand or mud substrate. These areas are not conducive to "live-bottom" community growth since a hard substrate is needed for epifaunal attachment.

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Deepwater benthic chemosynthetic communities are remarkable in that they utilize a carbon source independent of photosynthesis and the sun-dependent photosynthetic food chain that supports all other life on earth. Although the process of chemosynthesis is entirely microbial, chemosynthetic bacteria and their production can support thriving assemblages of higher organisms through symbiosis. The principle organisms include tube worms, clams and mussels that derive their entire food supply from symbiotic chemosynthetic bacteria, which obtain their energy needs from chemical compounds in the venting fluids. These communities were first discovered in the Eastern Gulf of Mexico in 1983 at the bottom of the Florida Escarpment in areas of cold brine seepage.

3. Endangered, Threatened and/or Protected Species

Sea Turtles - Five species of sea turtles may be found in the NEGOM. The Kemp's Ripley *(Lepidochelys kempii),* leatherback turtle *(Dermochelys kempii),* and hawksbill turtle *(Eretmochelys imbricata)* are federally listed as endangered in both Florida and Alabama. The loggerhead turtle *(Caretta caretta) is* listed as threatened there, and the green turtle *(Chelonia mydas) is* endangered in Florida but threatened in Alabama. The leatherback turtle, green turtle, and loggerhead nest in Florida. Surveys in May-July showed that most sea turtles nesting in west Florida and Alabama were loggerheads and that numbers of nesting females of this species were low there compared to numbers on the southeast United States Atlantic Coast (Shoop et al., 1985). The loggerhead may mate in waters offshore from nesting beaches (Nelson, 1988). Turtles may use smell and vision to find mates. They use these senses to find food. Sea turtles intercoastal and estuarine waters where good vision may be necessary to find food in turbid conditions. Total suspended solids may exceed 60 mg/1 in estuaries and 200 mg/1 in rivers feeding estuaries (Ward and Armstrong, 1992). Loggerhead turtles feed on benthic invertebrates (Nelson, 1988). Leatherback turtles eat jellyfish and other transparent soft-bodied foods (Eisenberg and Frazier, 1983). Green turtles feed mostly on marine algae and on seagrasses, but jellyfish and other invertebrates are also taken (USDOI, FWS, 1980); the invertebrates may be incidentally captured with plant food. Hawksbill turtles feed on hard- and soft-bodied invertebrates, including jellyfish (USDOI, FWS, 1980). Kemp's Ripley turtles feed on fish and on hard and soft invertebrates (including jellyfish) (Pritchard and Marquez, 1973).

Birds - The piping plover (Charadrius melodus) is threatened in both Alabama and Florida. Breeding grounds are north of South Carolina. Young and adults depart for wintering grounds including the Gulf Coast shoreline by early September. Food items are invertebrates plucked from wet beach sand. The most important management is on the nesting grounds, where loss of sandy beaches has caused population decline. Destruction, modification, and disturbance of nesting habitat continues (USDOI, FWS, 1988).

The following account is taken from Gore and Chase (1989). The southeastern snowy plover (Charadrius alexandrius tenuirostris) is listed as threatened in both Alabama and Florida. The species nests on coastal sand beaches and interior alkali flats. Observed nest sites in the Florida panhandle ranged from the Florida-Alabama border eastward beyond Little St. George. At some locations more than 1.5 breeding pairs per kilometer were counted. Most nests are near the front dune and close to vegetation. Vehicles and humans may cause nest failure. Human activity is absent near the beaches of Eglin Air Force Base aircraft. This may account for a high nest count in part of this area.

The Roseate tern (Sterna dougalli) is listed as threatened in both Alabama and Florida. However, in the panhandle region it has only been sighted five times and is a transient (USDOI, FWS, 1995).

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For the least tern (Sterna antillarum) only the population of interior nesting colonies is endangered.

Beach Mice - These mice are subspecies of the old field mouse (Peromyscus polionotus) that occupy the lee side of mature coastal dunes of Florida and Alabama. The Alabama, Choctawhatchee, and Perdido Key subspecies are listed as endangered (the Alabama subspecies in Alabama, the Perdido Key subspecies in both Alabama and Florida, and the Choctawhatchee subspecies in Florida). The range of these subspecies is listed in USDOI, MMS (1994). The St. Andrew subspecies and Santa Rosa subspecies are candidates for listing in Florida. Beach mouse diet, habits, and reasons for population decline are given in USDOI, MMS (1994).

Gulf Sturgeon – Existing occurrences of Gulf sturgeon in 1996 extended from the Mississippi River to Charlotte Harbor in western Florida (Patrick, personel communication, 1996). Spawning has been documented in most of the major river system's of the fish's range. A Gulfwide genetic assessment of Gulf sturgeon was completed in 1995. The results indicate there are four and possibly five geographically distinct units of Gulf sturgeon possessing different genetic material.

Large Whales - Five baleen whales and one toothed whale are listed as endangered in the Gulf of Mexico. Of these, only the humpback "whale comes into water at continental shelf depths. Off the panhandle the only two humpback whale sightings were at water depths greater than 200 m (656 ft) on the continental slope (Jefferson et al., 1992). Sightings in the Gulf have been sporadic (USDOI, MMS, 1994, and USDOC, NMFS, 1991a).

Other Marine Mammals - Marine mammals are protected by the Marine Mammal Protection Act. Bottlenose dolphins are the most common delphinia in the nearshore waters of the continental shelf, and outer edge of the shelf (Mullin et al., 1991). There appear to be two ecotypes of bottlenose dolphins, a coastal form and an offshore form (Mead and Potter, 1990). However, at present, there is no evidence to support the assumption that inshore/offshore populations are genetically discrete. The Atlantic spotted dolphin is the only species, other than the bottlenose dolphin, that commonly occurs over the continental shelf (Mullin et al., 1991, 1994a; Davis et al., 1995).

4. Nonendangered and Nonthreatened Species

The offshore waters, coastal beaches, and contiguous wetlands of the northeastern Gulf of Mexico are populated by both resident and migratory species of coastal and marine birds. This analysis assumes five major groups in the area of concern: seabirds, shorebirds, marsh and wading birds, waterfowl, and raptors. Many specis are mostly pelagic, and therefore rarely sighted nearshore. Reported observations of the remaining species are within coastal and inshore habitats and are potentially more susceptible to potential deleterious effects resulting from OCS related activities. Fidelity to nesting sites varies from year to year long the Gulf Coast. Birds may abandon sites along the northern Gulf Coast because of altered habitat and excessive human disturbance.

Sea Turtles - Five species of sea turtles may be found in the NEGOM. The Kemp's Ripley *(Lepidochelys kempii),* leatherback turtle *(Dermochelys kempii),* and hawksbill turtle *(Eretmochelys imbricata)* are federally listed as endangered in both Florida and Alabama. The loggerhead turtle *(Caretta caretta) is* listed as threatened there, and the green turtle *(Chelonia mydas) is* endangered in Florida but threatened in Alabama. Leatherback, green, and loggerhead turtles nest in Florida. Surveys in May-July showed that most sea turtles nesting in west Florida and Alabama were loggerheads and that numbers of nesting females of this species were low there compared to numbers on the southeast United States Atlantic Coast (Shoop et al., 1985). The loggerhead may mate in

waters offshore from nesting beaches (Nelson, 1988). Turtles may use smell and vision to find mates. They use these senses to find food. Sea turtles intercoastal and estuarine waters where good vision may be necessary to find food in turbid conditions. Total suspended solids may exceed 60 mg/1 in estuaries and 200 mg/1 in rivers feeding estuaries (Ward and Armstrong, 1992). Loggerhead turtles feed on benthic invertebrates (Nelson, 1988). Leatherback turtles eat jellyfish and other transparent soft-bodied foods (Eisenberg and Frazier, 1983). Green turtles feed mostly on marine algae and on seagrasses, but jellyfish and other invertebrates are also taken (USDOI, FWS, 1980); the invertebrates may be incidentally captured with plant food. Hawksbill turtles feed on hard- and soft-bodied invertebrates, including jellyfish (USDOI, FWS, 1980). Kemp's Ripley turtles feed on fish and on hard and soft invertebrates (including jellyfish) (Pritchard and Marquez, 1973).

5. Breeding Habitats and Migration Routes

The offshore waters, coastal beaches, and contiguous wetlands of the northern Gulf of Mexico are populated by both resident and migratory species of coastal and marine birds.

They are herein separated into five major groups: seabirds, shorebirds, wading birds, marsh birds, and waterfowl. Many species are strongly pelagic, and therefore rarely seen from shore. The remaining species, which are most susceptible to potential deleterious effects resulting from OCS-related activities are found within coastal and inshore habitats (Clapp et al., 1982).

Seabirds are defined as those species that spend extended periods away from land and obtain all or most of their food from the sea while flying, swimming or diving (Nettleship, 1977). Some are coastal feeders and residents, whereas others remain offshore, foraging over deep water in pelagic regions (Nettleship, 1991). Within the GOM, the group comprises four taxonomic orders Gavilformes (loons), Podicipediformes (grebes), Procellariiformes (albatrosses, fulmars, pertels, shearwaters, and storm-petrels), Pelicanformes (pelicans, tropic birds, boobies and gannets, cormorants, and frigate birds), and Charadriiformes (phalaropes, gulls, terns, noddies, and skimmers) (Clapp et al., 1982; Harrison, 1983). Evolutionary histories of all these species have been principally marine (Fisher and Lockley, 1954; Lack 1968; Nelson, 1979). Many species migrate and are found within the Gulf region only seasonally. Others display more localized dispersal and nomadic types of geographic movement in order to exploit food resources, which are patch in distribution (Nelson, 1979). Seabirds, which nest along the Gulf Coast, typically aggregate into social assemblies, or colonies, with the degree of coloniallity varying between species (Parnell et al., 1988).

Shorebirds are a heterogeneous group belonging to the taxonomic order Charadriiformes. They rank among the world's greatest long-distance migrants, with species that seasonally traverse from the high Arctic to South America, to those that actually spill over into both Asia and the Old World (Pitelka, 1979). Within the GOM, shorebirds comprise five taxonomic families--Jacanidae (jacanas), Haematop Oodidae (oystercatchers), Recurvirostridae (stilts and avocets), Charadriidae (plovers), and Scolopadidae (sandpipers, snipes, and allies) Hayman et al., 1986). Few of the species nest in the Gulf area. Most species are only wintering residents and/or "staging" transients. Many coastal habitats along the GOM are critical for the survival of these birds, providing essential wintering grounds and staging areas where migrating shorebirds ready themselves physiologically (increasing body mass up to 100%) for migrational leaps and possibly to gain energy reserves for reproduction (Terborgh, 1989; Pitelka, 1979; Helmers and Castro, 1991). Suitability of habitat is coupled with the fact that shorebirds exhibit a high degree of site-fidelity, returning to their wintering and/or nesting sites year after year (Hayman et al., 1986).

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Marsh birds are omnivorous coastal and inshore species belongs to the taxonomic order Gruiformes, containing the families Gruidae (cranes) and Rallidae (rails, moorhens, gallinules, and coots). Cranes are long-legged and long-necked birds that resemble large herons.

The two North American species are the whooping crane (refer to description under Endangered and Threatened Species) and sandhill crane. They inhabit prairies, field, and marshes. Members of the Rallidae family are compact birds of cryptical habits. Gallinules, moorhens, and coots swim and are commonly found within ponds, lakes, marshes, and bays. True rails are highly elusive and rarely seen within the low vegetation of fresh and saline marshes, swamps, and rice fields (Bent, 1926; National Geographic Society, 1983; Ripley and Beehler, 1985).

Wading birds are conspicuous coastal and inshore species belonging to the taxonomic order Ciconiiformes, which contains the families Ardeidae (herons and egrets), Ciconiidea (storks), and Threskiornithidae (ibises and spoonbills) (Parkes, 1978). As a group they exhibit diverse foraging adaptations and strategies, and they are well distributed throughout the warmer regions of the globe. Most species nest in discrete colonies and many are virtually solitary outside of the nesting season (Mock, 1978).

Water fowl belong to the taxonomic order Anseriformes and include swans, geese and ducks. A total of 36 species are regularly reported along the north central and western Gulf coast, consisting of 1 swan, 5 geese, 11 surface feeding (dabbling) ducks and teal, 5 diving ducks (pochards) and 14 others (including the wood duck, whistling ducks, sea ducks, the ruddy duck, and mergansers) (Clapp et al., 1982; National Geographic Society, 1983; Madge and Burn, 1988). Many species annually migrate from wintering grounds along the Gulf Coast to summer nesting grounds to the north. These summer nesting grounds vary among species, ranging from low tundra in the Arctic to the broad belt across the northern plains of the U.,S., which is known as the prairie pothole region (Terborgh, 1989). Water fowl migration pathways have traditionally been divided into four parallel north-south paths, or "Flyways", across the North American continent. These flyways actually consist of a complex series of crisscrossing routes of individual species (Lincoln, 1979). The GOM coast serves as the southern terminus of both Central (Texas) and Mississippi (Louisiana, Mississippi, and Alabama) flyways. Many waterfowl species are to be found either offshore on large embayments during winter months, or while passing through during spring and autumn migrations. Other species prefer inshore areas, primarily the coastal marshes (Clapp et al., 1982).

Except for certain pochards such as redheads, most wintering waterfowl along the Gulf Coast are neither static nor confined to any specific area on the coast. Ongoing modification of wetland habitats throughout the coastal region is thought to be partly responsible for declines in the populations of wintering waterfowl (Wolington, 1988).

6. Areas of Biological Concern

Offshore Biological Resources

Flower Garden Banks

Located approximately 105 miles directly south of the Texas/Louisiana border, the Flower Garden Banks are the northernmost coral reefs in the United States. Perched atop salt dome structures rising above the sea floor, the Banks provide a hard surface for coral attachment where clear sunlit water, warm water temperatures, and a steady food supply have formed a shallow-water Caribbean reef complex, an ecosystem of unique biological diversity. The Flower Garden Banks were designated a National Marine Sanctuary in 1992. In 1996, Congress expanded the Sanctuary by adding a third smaller bank, Stetson

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Bank, located approximately 70 miles south of Galveston, Texas. Due to its unique location, the Flower Garden Banks National Marine Sanctuary provides a rich assemblage of plants and animals enjoyed by researchers and recreational divers alike. To protect the reef structures, the National Marine Fisheries Service (NMFS) has prohibited fishing with bottom longline, bottom trawl, dredge, pots or traps yea round.

Florida Keys National Marine Sanctuary

The Florida Keys National Marine Sanctuary (FKNMS) is the most extensive living coral reef in the United States. Located adjacent to the 126-mile island chain of the Florida Keys, the reefs are part of a marine ecosystem that supports one of the most unique and diverse assemblages of plants and animals in North America. Established as a national marine sanctuary in 1990, the FKNMS consists of 2,800 square nautical miles of coastal and oceanic waters, and the submerged lands thereunder, surrounding the Florida Keys. These coral reefs comprise the only living coral barrier reef in North America, and the third longest barrier reef in the world (following Australia and Belize). The FKNMS is part of a fragile interdependent ecosystem that includes mangroves and seagrasses on both the ocean and bay side of the Florida Keys, supporting tourism, commercial fishing, and the economic foundation of the Florida Keys communities

Florida Middle Ground

The Florida Middle Ground is a unique reef structure located on the western Florida shelf. Approximately 100 miles northwest of Tampa Bay, it consists of a number of large reef structures, the tops of which are in 70 to 90 feet of water. These reef structures are covered with dense algae, large sponges, and several species of coral. Over 170 species of fish have been observed in this area; the Florida Middle Ground has been observed to support as much biodiversity as many of the tropical reefs in the Florida Keys. To protect the reef structures, the NMFS has prohibited fishing with bottom longline, bottom trawl, dredge, pots or traps year round.

Madison & Swanson and Steamboat Lumps Special Management Areas

The Madison & Swanson and Steamboat Lumps Special Management Area are federally protected critical fish habitats for a variety of shelf-edge finfish, including economically important species of grouper such as gag, scamp and black grouper. All fishing is prohibited except for highly migratory species. The Madison and Swanson site is located 115 miles south of Panama City, Florida; the Steamboat Lumps site is located 104 miles west of Tarpon Springs, Florida.

Big Bend Seagrasses Aquatic Preserve

The Big Bend Seagrasses Aquatic Preserve consist mainly of a large, remote and undeveloped mass of submerged seagrasses and nearshore marshlands located along 150 miles of the northeast coast of the Gulf of Mexico, where the Florida peninsula joins the panhandle. Extending 9 miles into the Gulf, it contains numerous estuaries which nurture a diverse variety of flora and fauna. The whole of the preserve, with its seagrass beds and saltmarshes, provide a nursery area for finfish and shellfish, and a forage area for these same species as well as manatee, osprey, bald eagles, sea turtles, sturgeon, and dolphin. Managed by the Florida Department of Environmental Protection, the Preserve is also designated as an EPA Gulf of Mexico Ecological Management Site.

Central Winter Menhaden Spawning Ground

The menhaden, or pogy, is a member of the same group that contains herring. Menhaden are found in very large schools in the warmer inshore and near shore waters, following an

annual coastal migration each year. Their vast number support a very large fishery, providing both fish oil and meal for industrial/agricultural uses and bait vital to a large number of commercial and recreational fisheries.

Menhaden are an ecologically critical fish species. They consume and redistribute a significant amount of energy within and between estuaries and the coastal ocean. This is due, in part, to their tremendous numbers, their individual growth rates, filter feeding capacity, and seasonal movements. Menhaden are also an extremely important prey species for many predatory fish such as striped bass, bluefish, Spanish mackerel, tuna, and sharks. Because of their schooling behavior, they are also a favorite target for herons, egrets, ospreys, and eagles.

Coastal Resources

According to the most recent OSRAM data, the land segments potentially impacted by a spill from DC927 range from Cameron Parish, Louisiana east to Levy County, Florida. The shoreline types along these coastal areas include sand beaches, tidal mud flats and salt and brackish marshes. Important features found along these coastal environments include major estuaries, federal and state special management areas, and recreational beaches.

The tidal, sheltered waters of estuaries support a wide variety of wildlife, shore birds, fish, crabs, shrimp and other shellfish. Estuaries and coastal wetlands are critical habitats for tens of thousands of birds, mammals, fish and other wildlife, depending upon these habitats are places to live, feed, and reproduce. For example, Louisiana's coastal wetlands, which represent 40% of all the salt marshes in the contiguous United States, contribute 28% to the total volume of U.S. fisheries, provide winter habitat for one-half to two-thirds of the Mississippi Flyway waterfowl population and for many threatened and endangered species, and serve as the nursery ground for fish and shellfish for much of the nation's seafood consumption, as well as 40% of the nation's fur harvest. They provide for 400 million tons each year of waterborne commerce, and support and protect the multi-billion dollar a year oil and gas industry.

These wetland areas support various functions and values, including commercial and recreational fishing, hunting, ecotourism, critical migratory butterfly, songbird and waterfowl habitat, endangered and threatened species habitat, and waterborne commerce. Several special management areas are located throughout the Gulf Coast. These areas are briefly described in the following table.

COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
LOUISIANA	
Sabine National Wildlife Refuge	This refuge includes 125,000 acres of fresh and brackish marsh. Protected species include the bald eagle, brown pelican and Kemp's ridley sea turtle.
Cameron Prairie National Wildlife Refuge	Migratory waterfowl visit from October through March. The refuge is a nesting habitat for wading birds and alligators from April through September.

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COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
Lacassine National Wildlife Refuge	This area is used by migratory waterfowl as a wintering ground from October through March and as a nesting ground for both wading birds from April through August and alligators from May through September. Protected species include the bald eagle and the Louisiana black bear.
Rockefeller State Wildlife Refuge	Oyster beds in various lakes and bayous are found along the Gulf Coast. The refuge is an estuarine fish nursery and home to various types of birds, including waterfowl and raptors. Protected species include the American alligator.
Louisiana State Wildlife Refuge	This SWR encompasses 15,000 acres of marshland. Fur trapping and waterfowl are prevalent. Protected species include the least tern.
Shell Keys National Wildlife Refuge	This island habitat is a loafing area for seabirds and shorebirds. Protected species include the brown pelican and the least tern.
Marsh Island State Wildlife Refuge	This region is of great importance to waterfowl, raptors, estuarine fish and alligators. Protected species include the American alligator and several species of sea turtles.
Shell Keys National Wildlife Refuge	Shell reefs are present and serve as loafing areas for seabirds. Protected species include the brown pelican.
Atchafalaya Wildlife Management Area	Sensitive species include wading birds, raptors, shorebirds, waterfowl, brackish-water clams and various finfish. Protected species which can be found within the area boundaries include the bald eagle, pallid sturgeon, piping plover, brown pelican, American alligator, Kemp's ridley sea turtle, West Indian manatee and the Louisiana black bear.
Pointe Au Chien Wildlife Management Area	This 28,244-acre area serves as a refuge for migratory birds and various other wildlife. Protected species include the bald eagle and the American alligator.
Wisner Wildlife Management Area	Prevalent fish species include speckled trout, red fish, flounder, black drum, sheepshead and croaker; crab and shrimp are found in the waterways. Nutria, muskrat, mink, raccoon and otter are present. Protected species which frequent this WMA include the brown pelican.
Salvador Wildlife Management Area	Sensitive species include waterfowl, wading birds, shorebirds and finfish.

COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
Pass-a-Loutre Wildlife Management Area	Freshwater fish, including bass, bream, catfish, crappie, watermouth, drum and garfish, flourish in the interior marsh ponds. Saltwater species include redfish, speckled trout and flounder. Alligators are fairly common in the marsh. Furbearers present include nutria, muskrat, mink, raccoon and otter. The protected brown pelican occasionally visits this area.
Delta National Wildlife Refuge	This region primarily serves as a winter sanctuary for migratory waterfowl such as snow geese and more than eighteen species of ducks. This area also serves as a habitat for numerous wading and shorebirds, finfish, crab, alligator and white-tailed deer.
Breton National Wildlife Refuge	The Chandeleur Islands make up the largest portion of this NWR. Shoals along the Chandeleur Sound side provide wintering habitat for nearly 20,000 redhead ducks. Seagrass is also abundant along the Sound side of the islands. Nesting colonies of thousands of birds are found on the islands in the summer, including sandwich terns, laughing gulls and black skimmers.
Biloxi Wildlife Management Area	This area includes 39,583 acres of marshland habitat. Sensitive species include waterfowl, shorebirds, wading birds and finfish.
MISSISSIPPI	
Gulf Island National Seashore	This recognized area includes coastal shores stretching from Alabama to Florida. Protected species include the brown pelican, least tern, American alligator, Peridido Key beach mouse and the gopher tortoise.
Mississippi Sandhill Crane National Wildlife Refuge	Protected species include the Mississippi sandhill crane and the red-cockaded woodpecker.
ALABAMA	
Bon Secour National Wildlife Refuge	This refuge, located on Dauphin Island in Pelican Bay, serves as a habitat for various shorebirds, herons, egrets and raptors. Protected species include the bald eagle, brown pelican and the American alligator.
Gulf State Park	Sensitive avians include shorebirds, gulls, terns, herons, various waterfowl, cormorants and gannets. The brown pelican, a protected species, can be found in the vicinity of the park.

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COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
FLORIDA	
Fort Pickens State Park Aquatic Preserve	Sensitive finfish include red snapper, cobia, king and Spanish mackerel, Atlantic bonito and gag.
Point Washington Wildlife Management Area	Wildlife present includes waterfowl, bobcat, white-tailed deer and various small mammals. Protected species include the Choctawhatchee beach mouse.
Saint Andrews State Recreation Area	This area serves as a habitat for wading birds, shorebirds, waterfowl, songbirds, small amphibians and terrestrial mammals. Protected species include the Choctawhatchee beach mouse.
Saint Joseph Bay Aquatic Preserve	Sensitive species include the sunray venus clam, bay scallop and both gorgonian and fire corals.
T. H. Stone Memorial - Saint Joseph Peninsula State Park	Shorebirds, wading birds, raptors, bobcat, deer, reptiles, amphibians and small mammals can be found in this area. Protected species include the least tern, brown pelican and bald eagle.
Saint Vincent National Wildlife Refuge, Apalachicola Bay Aquatic Preserve, Apalachicola River & Bay Estuarine Sanctuary	These three overlapping, protected areas serve as habitats for wading birds, shorebirds, waterfowl, raptors and small mammals. Protected species include the bald eagle, brown pelican, piping plover, roseate tern, wood stork, red wolf, eastern indigo snake, American alligator, gopher tortoise, and both the loggerhead and leatherback sea turtles.
Alligator Harbor Aquatic Preserve	Sensitive species include the peregrine falcon, eastern oyster and various finfish. Seagrass is prevalent along the coastline.
Saint Marks National Wildlife Refuge	This 68,000-acre refuge is visited by waterfowl, various shorebirds, small mammals and the Florida black bear. Aquatic resources such as spotted seatrout, red drum and widemouth bass can be found in the surrounding waters. Protected species include the bald eagle and the red-cockaded woodpecker.
Big Bend Seagrasses Aquatic Preserve	This preserve consists mainly of a large, remote and undeveloped expanse of submerged seagrasses, spanning nearly 150 miles of the Florida coastline. Protected species which frequent the area include the bald eagle, piping plover, wood stork, red-cockaded woodpecker, eastern indigo snake, gulf sturgeon, West Indian manatee and the Kemp's ridley, leatherback, loggerhead and green sea turtles.
Aucilla Wildlife Management Area	Sensitive species include turkey, blue crab, finfish, bobwhite, bobcat, white-tailed deer, feral hog and various small mammals. Seagrass is prevalent along the coastline. Sponge colonies are abundant off the coast of this WMA.

COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
Tide Swamp Wildlife Management Area	Sensitive species include herons, egrets, waterfowl, osprey, turkey, bobwhite, bobcat, white-tailed deer and various small mammals. Seagrass is prevalent along the coastline. An eastern oyster bed is located off the coast of this WMA. Protected species include the bald eagle.
Steinhatchee Wildlife Management Area	Sensitive species include wading birds, shorebirds, turkey, bobcat, white-tailed deer, feral hog and small mammals. Seagrass is prevalent along the coastline. Protected species include the bald eagle and the West Indian manatee (along the Suwannee River).
Lower Suwannee National Wildlife Refuge	Numerous bird species, including wading and shore birds, as well as white-tailed deer, feral hog and various small mammals are abundant in the boundaries of this 52,000-acre refuge. Seagrass is prevalent along the coastline. Protected species include the bald eagle, Gulf sturgeon, eastern indigo snake, gopher tortoise, West Indian manatee and both green and loggerhead sea turtles.
Cedar Keys National Wildlife Refuge	This refuge is composed of thirteen offshore islands which serve as a colonial bird nesting site, nurseries for finfish and shellfish and habitat for small mammals. Seagrass is prevalent along the coastline. Protected species include the brown pelican, sea turtles and the West Indian manatee.
Gulf Hammock Wildlife Management Area	Sensitive species include the great egret, waterfowl, turkey, bobwhite, bobcat, white-tailed deer, feral hog and various small mammals. Seagrass is prevalent along the coastline. Unique vegetation is located in this area.
Crystal River National Wildlife Refuge	Comprised of twenty islands and several parcels of land, this refuge and its surrounding waters provide habitat for twenty-five percent of the nation's endangered manatee population. Seagrass is prevalent along the coastline. Protected species include the West Indian manatee.
Saint Martins Marsh Aquatic Preserve	Sensitive species include the eastern oyster and various finfish. Seagrass is prevalent along the coastline. Protected species include the West Indian manatee.
Chassahowitzka National Wildlife Refuge	This 30,500-acre refuge provides habitat for waterfowl, shorebirds, wading birds, songbirds, eastern oyster, game animals and small mammals. Seagrass is prevalent along the coastline. Protected species include the bald eagle, brown pelican, least tern, red-cockaded woodpecker, wood stork, American alligator, eastern indigo snake, gopher tortoise, West Indian manatee and green, Kemp's ridley and loggerhead sea turtles.

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C. *SOCIOECONOMIC CONDITIONS AND OTHER CONCERNS*

1. Economic and Demographic Conditions

Identifiable local employment effects will be located in the vicinity of Fourchon, Louisiana. Onshore support facilities for the proposed operations will be provided by the existing shorebase facilities located in Fourchon, Louisiana.

The principal population and industry centers are Mobile, Alabama and Pascagoula, Biloxi-Gulfport, Mississippi. Services accounted for 23.8% of total payroll for 1992, followed closely by the manufacturing industry accounting for 22.5% of total employment. Mining played a minor role, contributing less than 1% to both employment and payroll. Mississippi and Alabama coastal counties experienced the smallest impact of the 1986 decline in labor force.

Louisiana and Mississippi are expected to continue experiencing steady population growth through the year 2010. Alabama, which was once as densely populated as coastal Texas, is expected to have the lowest population density of the states in the GOM Region by 2010.

Community services in coastal Mississippi and Alabama include hospitals, schools, restaurants, hotels/motels, and utilities. The regional transportation system in coastal Mississippi and Alabama includes roads and highways, railroads, airports and waterways. Interstate 10 and U.S. 90 are the major highways serving the coastal area.

They are parallel to each other along the coast, linking the major urban centers. Rail lines provide coastal and inland access to coastal Mississippi and Alabama. Public airports are located in the major industry centers along the coast. Waterways linking the major ports provide access to international and domestic commerce. Coastal resources in Mississippi include harbors and ports.

2. Land Use

Louisiana's coast consists of vast areas of wetlands interlaced with many streams and channels. The wetlands extend form the shore landward for 5 to 30 miles and offer very little beach recreation. Settlement in this area is usually in a linear pattern along natural levees. Industrial development is concentrated around areas that support commercial fishing, oil and gas activities, and small rural communities. There is limited agricultural land use along the immediate Louisiana coastline, but farther inland there is considerable acreage devoted to sugar cane, cattle grazing, and aquaculture. Mississippi's coast consists of barrier islands, some wetlands, recreational beaches, and an intensive urban development servicing both tourist and residential interest. Alabama's coastal area has several popular recreational beaches, many small residential and fishing communities, and numerous motels accommodating seasonal tourists.

From Florida's western boundary east to Apalachicola, the coastal area is largely urbanized. Urban concentrations are highest from Pensacola to Panama City, particularly adjacent to popular recreational beaches. Development from Panama City to Apalachicola is less intense, and residential land use predominates. East of Apalachicola to south of Crystal Bay, the coastal area is even less developed. Wetlands, forested areas, and limited agricultural and residential land uses are noted in this stretch of coastline. South of Crystal Bay, urban development intensifies with commercial, residential, and industrial activities. Urban centers include Tampa, St. Petersburg, Sarasota, Fort Myers, and Naples. The Tampa Bay Area is the most industrialized coastal area. South of Naples and Marco Island, the coast is mostly undeveloped. Large open areas predominate in Southwest Florida, such as the Ten-Thousand Islands, the South Florida

Fresh Water Preserve, and the Everglades National Park.

3. Onshore Support Facilities

The proposed activities in Desoto Canyon Block 927 are located approximately 104 statute miles offshore and northwest of Plaquemines Parish, Louisiana in water depths ranging from 8400 feet to 8600 feet. Marathon will utilize its existing onshore facilities located in Fourchon, Louisiana. This will serve as the ports of debarkation for supplies and crews. No onshore expansion or construction is anticipated with respect to the proposed operations.

The onshore support bases are capable of providing the services necessary for the proposed activities. Both have 24-hour service, a radio tower with a phone patch, dock space, equipment and supply storage base, drinking and drill water, etc. Support vessels and travel frequency during drilling/ completion and production activities are as follows:

DRILLING/COMPLETION

Crew Boat	3 Trips Per Week
Supply Boat	4 Trips Per Week
Helicopter	7 Trips Per Week

4. Public Opinion

The public hearings of OCS Sale 79 were held in Mobile, Alabama, on October 6, 1982, where no one testified, and in Tampa, Florida, on October 7, 1982, where 18 persons testified. A total of 89 letters were received by the MMS regarding OCS Sale 79. The State of Florida's concerns discussed during the public hearing for OCS Sale 79 were as follows: (1) coastal related tourist economy, (2) coastal recreation, (3) commercial fishing and related coastal and offshore ecosystems, (4) endangered and threatened wildlife (manatees and sea turtles), and (5) designated environmentally unique, sensitive, and/or important areas. More recently, public comments regarding the MMS' proposed 5-year OCS oil and gas program for years 1997 - 2002 were predominantly negative toward drilling and production off the Florida coast. The Governor of the State of Florida voiced opposition to drilling and production off that coast.

In response to the draft EIS for Lease Sale 106, the governor of the State of Alabama supported energy programs that expedite oil and gas exploration and production of environmental concerns while providing careful and due considerations.

5. Navigation

Fairways play an important role in the avoidance of collisions on the OCS, particularly in the case of the larger oceangoing vessels, but not all vessels stay within the fairways. Many others, such as fishing boats and OCS support vessels, travel through areas with high concentration of fixed structures. In such cases the most important mitigation factor is the requirement for adequate marking and lighting of structures. After a structure has been in place for a while, it often becomes a landmark and an aid to navigation for vessels that operate in the area on a regular basis. Most ocean going vessels are equipped with radar capable of aiding navigation in all weather conditions. This has contributed to safe navigation on the OCS.

The MODU and marine vessels servicing these operations will be equipped with all U. S. Coast Guard required navigational safety aids to alert ships of its presence in all weather conditions.

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6. Military Warning/Use Areas

Lease Stipulation No. 3 requires control of electromagnetic emissions emanating from individual designated defense warning areas in accordance with requirements specified by the commander of the command headquarters to the degree necessary to prevent damage to, or unacceptable interference with, Department of Defense flight, testing or operation activities conducted within the warning area.

Desoto Canyon Block 927 is located within Military Area (ETWA-3). Marathon will enter into an agreement with the commander of the Eglin Air Force Base located in Florida for positive control boats and aircraft operating within Military Area (ETWA-3) during the proposed operations.

7. Commercial Fishing

Commercial fishers in the United States landed over 9.6 billion pounds of edible and industrial fishery products in 1996. Approximately 1.5 billion pounds of fishery products were harvested from the Gulf of Mexico by commercial fishers. Although the quantity of commercial landings from deep water is comparatively small, these species are of high value.

Unlike fishing in shallower parts of the Gulf, fisheries in the deep waters of the Gulf are not distributed over large areas; not all deepwater areas hold enough of the economically important species to support a fishery. Perhaps for this reason there are a greater variety of fisheries in the deep waters of the Gulf. These fisheries include the following:

- bottom longlining for snapper, grouper, and tilefish by commercial fishers and hook-and-line recreational fisheries for these same species;
- mid-water longlining for tunas, swordfish, and shark by commercial fishers and hook-and-line recreational fisheries for these same species;
- bottom trawling for royal red shrimp and mid-water trawling for butterfish; and
- bottom trapping for golden and red crabs

Besides the Mississippi Delta area, other well-known underwater topographic features, such as the Mississippi and DeSoto Canyons, and manmade structures, such as drilling rigs and production systems, attract target species and consequently attract recreational fisherman far offshore in pursuit.

The deep waters of the Gulf of Mexico appear to be a major spawning area for many of the fishery resources mentioned above. The complex currents of deep water critically affect the resultant offspring of all species above, but especially the highly migratory tunas and swordfish since they utilize the water column as a nursery ground. Information is limited about the early life histories of these species or of the many other species found in deepwater areas. Information on fish larve from deepwater areas of the Gulf of Mexico is limited. In the vicinity of Viosca Knoll and DeSoto Canyon, ichthyoplankton surveys are available from only two seasons and two errant locales.

8. Recreation

The northern Gulf of Mexico coastal zone is one of the major recreational regions of the United States, particularly for marine fishing and beach activities. Gulf Coast shorelines offer a diversity of natural and developed landscapes and seascapes. Major recreational resources include publicly owned and administered areas, such as national seashores, parks, beaches, and wildlife lands, as well as designated preservation areas, such as national seashores, parks, beaches, and wildlife lands, as well as designated preservation

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areas, such as historic and natural sites land landmarks, wilderness areas, wildlife sanctuaries, and scenic rivers. Gulf Coast residents and tourists from throughout the nation, as well as from foreign countries, use these resources extensively and intensively for recreational activity. Commercial and private recreational facilities and establishments, such as resorts, marinas, amusement parks, and ornamental gardens, also serve as primary-interest areas.

The Gulf States from Texas to Alabama account for about 1.3 million registered motorboats and over 3.5 million paid fishing license holders. The two major recreational areas most directly associated with the offshore leasing and potentially affected by it are the offshore marine environment and the coastal shorefront of the adjoining states. The major recreational activity occurring on the OCS is offshore marine recreational fishing and diving. Studies, reports, and conference proceedings published by MMS and others have documented a substantial recreational fishery, including scuba diving, directly associated with oil and gas production platforms. The recreational fishing associated with oil and gas structures stems from their function as high profile artificial fishing reefs. The NMFS Marine Recreational Fisheries Statistics Survey for the Gulf and Atlantic Coasts (USDOI, NMFS, 1990a) and a special report by Schmied and Burgess (1987) indicates there are about 4 million resident participants in marine recreational fishing and over 2 million tourists who angle for Gulf marine species. According to NMFS, over 40 percent of the nation's marine recreational fishing catch comes from the Gulf of Mexico, and marine anglers in the Gulf made over 15 million fishing trips in 1991, exclusive of Texas.

Along the coast of Florida, Alabama, and Mississippi there are numerous recreational beaches, parks, refuges, etc. Examination of the MMS' Multiple Use Map (USDOI, MMS, 1994) indicates that included in these areas are: Gulf Islands National Sea Shore, Fort Pickens Aquatic Preserve, Big Lagoon State Recreational Area, Perdido Key State Recreational Area, Gulf State Park, Bon Secour and Grand Bay National Wildlife Reserves, and Shepard State Park.

These parks, reserves, and recreational areas provide recreational and sporting opportunities for residents and visitors to the area. Recreational fishing is important to the NEGOM coastal residents, visitors and economy.

9. Archaeological Resources

Lease Stipulation No. 1 attached to the subject leases require preparation of a Cultural Resources Report assessing potential existence of any cultural resources. As stated in Minerals Management Service Letter to Lessees (LTL) dated September 5, 1995, effective November 21, 1994, a final rule was published in the Federal Register which added a new section, 30 CFR 250.126, titled "Archaeological Reports and Surveys", to Minerals Management Service Operating Regulations. This rule was developed to convert the requirements contained in Stipulation No. 1 into regulations that apply to all leases located with areas determined as having high probability for the occurrence of archaeological resources. The subject lease was designated by the Minerals Management Service as areas having a high probability for prehistoric archaeological resources on the OCS. Therefore, an archaeological resources report is required based on data from prehistoric site remote-sensing surveys.

In accordance with listing contained in the Letter to Lessees (LTL) dated September 5, 1995, Minerals Management Service determined that archaeological surveys and reports are not required for Desoto Canyon Block 927.

10. Other Commercial Uses

Marathon is not aware of any other planned commercial uses in Desoto Canyon Block 927.

11. Other Mineral Uses

Marathon is not aware of any other planned mineral uses in Desoto Canyon Block 927.

12. Pipelines and Cables

There are no existing pipelines or cables located within Desoto Canyon Block 927.

As a prudent operator, Marathon will conduct its operations in accordance with the provisions specified in Minerals Management Service Notice to Lessees 98-20 in order to avoid all pipelines and/or cables in the vicinity of the proposed operations.

13. Ocean Dumping

The Marine Pollution Research and Control Act of 1987 implements Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL). Most of the law's regulatory provisions became effective on December 31, 1988. Under provisions of the law, all ships and watercraft, including all commercial and recreational fishing vessels, are prohibited from dumping plastics at sea. The law also severely restricts the legality of dumping other vessel-generated garbage and solid waste items both at sea and in U.S. navigable waters. The USCG is responsible for enforcing the provisions of this law and has developed final rules for its implementation, calling for adequate trash reception facilities at all ports, docks, marinas, and boat launching facilities.

Final rules published under MPPRCA explicitly state that fixed and floating platforms, manned production platforms, and support vessels operating under a Federal oil and gas lease are required to develop Waste Management Plans and to post placards reflecting MARPOL, Annex V dumping restrictions. Waste Management Plans will require oil and gas operators to describe procedures for collecting, processing, storing, and discharging garbage and to designate the person who is in charge of carrying out the plan. These rules also apply to all oceangoing ships of 40 ft or more in length that are documented under the laws of the U. S. or numbered by a State and that are equipped with a galley and berthing. Placards noting discharge limitations and restrictions, as well as penalties for noncompliance, apply to all boats and ships 26 ft or more in length. Furthermore, the Shore Protection Act of 1988 requires ships transporting garbage and refuse to assure that the garbage and refuse is properly contained on board so that it will not be lost in the water from inclement wind or water conditions.

The disposal of oil and gas operational wastes is managed by USEPA through regulations established under three Federal Acts. The Resource Conservation and Recovery Act (RCRA) provides a framework for the safe disposal of discarded materials, regulating the management of solid and hazardous wastes. The USEPA has exempted many oil and gas wastes from coverage under hazardous wastes regulations under Subtitle C of RCRA. If covered, such wastes would be more stringently regulated under hazardous waste rules, i.e., industry would be responsible for the wastes from their generation to their final disposal. Exempt wastes include those generally coming from an activity directly associated with the drilling, production, or processing of a hydrocarbon product. Nonexempt oil and gas wastes include those not unique to the oil and gas industry and used in the maintenance of equipment.

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The direct disposal of operational wastes into offshore waters is limited by USEPA under the authority of the Clean Water Act. And, when injected underground, oil and gas operational wastes are regulated by USEPA's third program, the Underground Injection Control program.

An NPDES discharge permit, based on effluent limitation guidelines, is required for direct disposal of operational wastes into offshore waters. The major discharges from offshore oil and gas exploration and production activities include produced water, drilling fluids and cuttings, ballast water, and storage displacement water. Minor discharges from the offshore oil and gas industry include drilling-waste chemicals, fracturing and acidifying fluids, and well completion and workover fluids; and from production operations, deck drainage, and miscellaneous well fluids (cement, BOP fluid); and other sanitary and domestic wastes, gas and oil processing wastes, and miscellaneous discharges.

Marathon is currently pursuing an individual NPDES discharge permit from EPA Region IV for the discharges associated with the proposed drilling and production activities.

V. POTENTIAL ENVIRONMENTAL CONSEQUENCES

A. ACCIDENTAL HYDROCARBON DISCHARGES

Marathon proposes to drill four exploratory locations in Desoto Canyon Block 927. Given the known reservoir characteristics and casing/tubing sizes and characteristics of analog reservoirs from the area, the highest daily volume from an uncontrolled blowout for the highest capacity proposed well would be approximately 10000 BOPD with a gravity of 34.5° API.

The "Cajun Express" drillship has storage tanks on board with a total capacity of 2457 barrels of 45.4° API gravity marine diesel. The storage capacity of the fuel tanks on the MODU, the type and amount of material to be stored in each and their dimensions and layout are included in the MODU layout drawing and specifications included in the Exploration Plan.

A Material Safety Data Sheet for diesel fuel which depicts the boiling point range, API° gravity, volume percent of each distillation fraction and the viscosity in centipoise at 25° C is included in Appendix 4.

In conducting oil and gas operations in the Gulf of Mexico, Marathon is committed to the prevention of pollution. The focus of Marathon's Spill Response Program is prevention. However, should an oil spill occur, this OSCP is designed to help company employees respond quickly, safely and effectively to reduce damage to property and the environment. Response to an oil spill will require immediate notification to federal and state agencies. It will also require assembly of the Oil Spill Management Team, and possible mobilization of the Oil Spill Response Operating Team and spill response equipment.

Marathon is a member of National Response Corporation (NRC). The NRC provides both dedicated and Identified Deployment offshore vessels for spill response in the Gulf of Mexico. The dedicated fleet is permanently stationed at Galveston and Ingleside, Texas and Theodore, Alabama. The dedicated fleet is prepared to be underway in 2 hours, as required by OPA-90, from request for mobilization and all have permanently assigned personnel. The dedicated fleet is equipped with the necessary spill containment and recovery gear to effectively respond on request.

The Identified Deployment (ID) boat fleet consists of 5 offshore utility vessels under

charter to OCS operators and working in separate areas of the Gulf of Mexico. By charter agreement, these vessels can be redirected to conduct spill response operations immediately on request.

The Incident Commander and Alternates receive annual classroom training for familiarization with containment and recovery equipment, call-out procedures, the location and intended use of available response equipment, spill reporting procedures and deployment strategies. The Oil Spill Response Operating Team attends annual drills for familiarization with pollution control equipment or operations procedures. Additionally, a Spill Management Team tabletop exercise is also held on an annual basis.

Any person who sees oil or any other pollutant in/on the water in the vicinity of Marathon's operations will immediately report the incident to the person-in-charge that will then notify the Incident Commander. The Incident Commander or his designate will contact the appropriate government agencies and supply the information on the Oil Spill Report Form.

There is a very slight possibility of a diesel spill associated with the proposed operations. However, in the unlikely event of a diesel spill contacting land, cleanup workers would come from companies with existing contracts, and if necessary, from existing labor pools in the Gulf region. While on location, these employees would be in temporary quarters either at the onshore base or in a local motel. Additional supplies such as food, drinks, clothing, etc, may be necessary during cleanup operations. These demands on typical local services and equipment would be temporary.

Marathon has projected trajectories of a worst case discharge spill from the proposed operations in Desoto Canyon Block 927 utilizing information in Minerals Management Service's Oil Spill Risk Analysis Model (OSRAM) for the Eastern Gulf of Mexico, using the maximum conditional 30 day impact. The results of the trajectory are summarized in the Table on page 43.

Assuming a spill from the proposed facility will impact a resource, the potential direct, indirect, and cumulative impacts to environmental, socioeconomic, or biological resources are discussed below.

I. Coastal Barrier Beaches and Associated Dunes

Most barrier beaches in the Gulf of Mexico contain medium to coarse sand sediments. They are low-to-moderate energy environments with relatively low biological diversity. However, birds, wildlife, and humans make extensive use of them. Oil coming ashore on a sandy beach may penetrate into the sand, the depth of penetration depending on the viscosity of the oil and the porosity of the sandy sediments. The oil may be buried by new sand or eroded from the surface of the beach, depending on whether the beach is building or receding.

Oil that comes ashore on a sandy beach is usually removed easily from the shoreline with mechanical equipment. Removal of oil-contaminated sand from the shore may alter the shore profile. The natural shore profile may be restored naturally by along-shore transport of sand or it may require beach nourishment. Thus spilled oil on the sandy shore usually is less persistent and damaging than oil on other types of shorelines.

For tides to carry oil from a spill across and over the dunes, strong southerly winds would have to persist for an extended time prior to or immediately after the spill. Strong winds required to produce the high tides would also accelerate oil slick dispersal, spreading, and weathering, thereby reducing impact severity at the landfall site. Significant contact

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during abnormally high water levels by a spill associated with the proposed activity is unlikely. In addition, a study in Texas has shown that the disposal of oiled sand on vegetated sand dunes had no deleterious effects on the existing vegetation or on the recolonization of the oiled sand (Webb, 1988).

2. Wetlands

Wetlands, consisting primarily of salt marshes, may be located shoreward of barrier beaches in bays, or they may be in direct contact with the open coastal waters. Wetlands located behind barrier beaches provide a wide variety of habitats important to terrestrial, estuarine, and marine organisms and are common along most of the Texas coast. Coastal wetlands are encountered more frequently along the Louisiana coast. Barrier beaches become more prominent again to the east along the coasts of Mississippi, Alabama and Florida, and many wetlands have developed behind the barrier beaches of this region.

Wetlands located behind barrier beaches are much less vulnerable to offshore oil spills than coastal wetlands. Much of the oil drifting toward shore will be intercepted by the barrier beach. Net water flow through the channels between the ocean and protected waters behind the barrier beach often is toward the sea, impeding inward drift of an oil slick. However, oil slicks can enter bays and estuaries on the incoming tide. Spill response personnel are likely to have adequate time to deploy booms across entrance channels or treat the spill in various ways to remove it from the sea surface before it reaches shore.

Wetland habitats are more sensitive than barrier beaches to adverse effects from oil spills. Should oil reach a wetland, it is probable that the wetland would be harmed. Although there have been many studies of the effects of oil spills on coastal wetlands, particularly salt marshes, there is little consensus about the long term effects of the oil and the rate of recovery of the affected wetland. Oil may come into the marsh on the incoming tide and coat the surface of marsh grasses, particularly near the edge and channels. The coated grass may suffer some above-ground die-back. If oiling of the marsh is heavy, some of the oil, particularly if it is relatively fresh, may contaminate the marsh sediments, damaging the roots of marsh grasses. Destruction of the marsh grasses renders the marsh sediments vulnerable to erosion.

Three million hectares of high-salinity, submerged vegetation beds are estimated to exist in exposed, shallow coastal waters of the northern Gulf of Mexico. An additional 166,000 ha are found in protected, natural embayments and considered more protected from OCS impacts. The area off Florida, in the Eastern Planning Area, contains approximately 98.5 percent of all coastal seagrasses in the northern Gulf of Mexico; Texas and Louisiana contain approximately 0.5 percent; and Mississippi and Alabama have the remaining 1 percent of seagrass beds.

The coverage of seagrass beds in the Western and Central Gulf, as well as the Florida Panhandle, has diminished during recent decades. The primary factors believed responsible include dredging, dredged material disposal, trawling, water quality degradation, hurricanes, a combination of flood protection levees that have directed freshwater away from some wetlands, saltwater intrusion that moved growing conditions closer inland, and infrequent freshwater diversions from the Mississippi River into coastal areas during flood stage.

Ten years after spill contact, up to 85 percent of oil-impacted wetlands are projected to recover from oil-spill impacts; up to 15 percent of impacted wetlands are projected to be converted to open water. Oil spills are projected to cause minor, short-term dieback of submerged vegetation. The likelihood of impact decreases as water depth over the beds increases.

3. *Coastal Waters*

If a spill were to reach coastal waters, it could affect water quality in either a beach environment or a coastal wetland. Oil from a spill can be entrained in the water or nearshore sediments, creating a continuous source that would affect coastal water quality until all the oil is degraded by bacteria, dispersed by surf conditions, or buried in the sediments. If a slick were to reach or occur in shallow, protected bays or wetland areas, oil could accumulate in thick layers on clumps of marsh vegetation, protected pools, or embayments.

4. *Marine Waters*

Oil spills present a threat to the water quality of any area contacted by a spill. Historically, most oil spills have impacted water quality during the life of the spill and only for a short time afterwards. The majority of spilled oil floats on the surface as a slick because hydrocarbons are relatively insoluble in water. Typically 1-5 percent of the surface slick volume dissolves into the water column. Another 10-15 percent disperses naturally in the water column. Additional oil would mix into the water column, if dispersants were used to break up the slick. The relative amount of oil that resides in the water column is a function of the depth at which the oil is spilled, the point of release (surface vs. subsurface), the hydrographic conditions affecting the surface slick, and the amount of particulate matter in the water column. Oceanographic processes, bacterial action, and dilution of the oil should disperse the oil remaining in the water column after the surface slick is removed or moves away, dependent on the energy of the system being impacted.

5. *Nonendangered and Nonthreatened Species*

Spilled oil could affect marine mammals through various pathways: surface contact, oil inhalation, oil ingestion, and baleen fouling (Geraci, 1990). Indirect consequences of oil pollution on marine mammals are those effects associated with changes in the availability or suitability of various food sources (Hansen, 1992a). Some short-term (0-1 month) effects of oil may be (1) changes in cetacean distribution associated with avoidance of aromatic hydrocarbons and surface oil, changes in prey distribution and human disturbance; (2) increased mortality rates from ingestion or inhalation of oil; (3) increased petroleum compounds in tissues; and (4) impaired health (Harvey and Dahlheim, 1994).

Several mechanisms for long-term injury can be postulated: (1) initial sublethal exposure to oil-causing pathological damage; (2) continued exposure to hydrocarbons persisting in the environment, either directly or through ingestion of contaminated prey; and (3) altered availability of prey as a result of the spill (Ballachey et al., 1994) Long term effects may include (1) change in distribution and abundance because of reduced prey resources or increased mortality rates; (2) change in age structure because certain year-classes were impacted more by petroleum; (3) decreased reproductive rate; and (4) increased rate of disease or neurological problems from exposure to hydrocarbons (Harvey and Dahlheim, 1994)

Oil spill response activities include the application of dispersant chemicals to the affected area designed to break up oil on the water's surface into minute droplets that then break down in seawater. Virtually nothing is known about the effects of oil dispersant on cetaceans, except that removal of the oil from the surface would reduce the risk of contact and render it less likely to adhere to skin, baleen plates, or other body surfaces (Neff, 1990). The acute toxicity of most oil dispersant chemicals is considered to be low, when compared to the constituents and fractions of crude oils and refined products and studies have shown that the rate of biodegradation of dispersed oil is equal to or greater than that

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of undispersed oil (Wells, 1989).

6. Endangered and Threatened Species

The sperm whale is the only species seen with regularity in the Gulf of Mexico. Effects of spilled oil on cetaceans is included above.

7. Impacts on the Alabama, Choctawhatchee, and Perdido Key Beach Mice

The Alabama, Choctawhatchee, and Perdido Key Beach Mice are designated protected species under the Endangered Species Act of 1973. They occupy restricted habitat behind coastal dunes of Florida and Alabama (Ehrhart, 1978; USDOI, FWS, 1987). Direct contact with spilled oil can cause skin and eye irritation, asphyxiation from inhalation of toxic fumes, food reduction, food contamination, oil ingestion, and displacement from preferred habitat. Vehicular traffic and activity associated with oil-spill cleanup activities can degrade preferred habitat and cause displacement from these areas, or it can attract predators.

Because their preferred habitat is behind the barrier dunes, an oil spill would have to breach the dunes to reach either the mice or their preferred habitat. This could only occur if an oil spill coincided with a storm surge. The home range of the beach mice is designated habitat that receives particular consideration during oil-spill cleanup. Because of the critical designation and general status of protected species habitats, response efforts would be required to minimize adverse effects from vehicular traffic during cleanup activities and to maximize protection efforts to prevent spilled oil contact with beach mice habitat.

8. Impacts on Marine Turtles

Marine turtles in the Gulf of Mexico include loggerhead, Kemp's ridley, hawksbill, green, and leatherback. When an oil spill occurs, the severity of effects and the extent of damage to marine turtles are affected by geographic location, oil type, oil dosage, impact area, oceanographic conditions, meteorological conditions and season (NRC, 1985). Sea turtles exposed to petroleum products or tarballs may suffer inflammatory dermatitis, ventilatory disturbance, salt gland dysfunction or failure, red blood cell disturbances, immune responses, and digestive disorders or blockages (Vargo et al., 1986; Lutz and Lutcavage, 1989; Lutcavage et al., 1995). Exposure to oil can be fatal, particularly to juvenile and hatchling sea turtles. Direct contact with oil can harm developing turtle embryos.

Oil spills and oil-spill response activities, such as beach sand removal, can negatively affect marine turtles. Although oil-spill response activities such as vehicular and vessel traffic during nesting season are assumed to contact marine turtle habitats, harm to marine turtles is expected to be minimized because of protection efforts to prevent contact of these areas with spilled oil as mandated by OPA. These areas are expected to receive individual consideration during oil-spill cleanup.

9. Impacts on Coastal and Marine Birds

Birds that congregate in large numbers on the sea surface or in shore-side rookeries or that forage in large numbers in the intertidal zone are most vulnerable to marine oil spills. At least 42 seabird species and similar number of coastal bird species inhabit offshore and coastal waters of the Gulf of Mexico on a permanent or seasonal basis. Most are migrants or seasonal visitors to the Gulf. None of the species typically congregate in vast numbers on to the sea surface or in large rookeries on the shore. There are four waterbirds and two shorebirds living along the coast currently listed as endangered,

including the eastern brown pelican, the Mississippi sandhill crane, the whooping crane, the wood stork, the Eskimo curlew, and the piping plover. Of these endangered species, the pelican and the piping plover are the most vulnerable.

If exposed to oil, coastal and marine birds might realize significant impacts. Large congregations, rookeries, and foraging are particularly sensitive. Endangered waterbirds and shorebirds are extremely susceptible to oil in the coastal and intertidal zones, where oil contact resulting in serious injury or mortality is a significant impact.

10. Impacts on Commercial Fisheries

Nearshore waters and estuarine environments are important habitat to commercially important species. While pelagic eggs, larvae, and juveniles of commercially important fishery species are vulnerable to oil exposure, there are no apparent impacts to adult, harvestable stocks of those species where early life stages have been exposed to oil. Similarly, recruitment does not appear to be affected by oil exposure. Contamination of tissues of select fish species has minimal impact on health risk. Impacts to commercial fisheries from oil spills are adverse but not significant impact, localized, and short term in nature.

Large numbers of fish eggs and larvae have been killed by oil spills. However, fish over produce eggs on an enormous scale and the overwhelming majority of them die at an early stage, generally as food for predators. Even a heavy death from an oil spill has no detectable effect on the adult population, which is exploited by a commercial fishery. This has been confirmed during and after the *Torrey Canyon* spill off southwest England and the *Argo Merchant* spill off Nantucket. In both cases, a 90 percent death of fish eggs and larvae, pilchard and pollack, respectively, was observed in the affected area, but this had no impact on the regional commercial fishery (Baker et al., 1991).

11. Impacts on Recreational Resources and Beach Use

Beaches are a major resource that attracts tourists and residents to the Gulf coast for a variety of activities. Beach use is a major economic component for many of the Gulf's coastal communities, especially during the peak use seasons (i.e. spring, summer). Tourism in the Gulf's coastal zone (i.e., Texas, Louisiana, Mississippi, Alabama, and Florida) has been estimated at $20 billion/year (USEPA, 1991, as cited in MMS, 1997).

Impact severity will depend upon spill size, the nature of the oil coming ashore (e.g., highly vs. lightly weathered), the location and characteristics of recreational resource, season, the nature and extent of cleanup operations, and the amount of time a particular recreational area is closed due to cleanup and/or restoration activities. Impacts may be long term, depending upon spill location and relative sensitivity of the recreational resource affected (e.g., impacts to affected wetlands generally greater than similar spill exposure on a barrier beach).

12. Impacts on Archaeological Resources

Oil spills have the potential to affect both prehistoric and historic archaeological resources. Impacts to historic resources would be limited to visual impacts and, possibly, physical impacts associated with spill cleanup operations. Impacts to prehistoric archaeological sites would be the result of hydrocarbon contamination of organic materials, which have the potential to date site occupation through radiocarbon dating techniques, as well as possible physical disturbance associated with spill cleanup operations.

B. *IMPACTS CONCERNING THE PHYSICAL ENVIRONMENT*

1. Effects from Potential Geologic Hazards

Geologic hazards that may occur include sea floor instability, shallow gas in seafloor sediments and active faulting. Geologic hazards pose engineering and operations constraints and can usually be effectively mitigated through existing or new technology and design. Detailed post lease surveying and sampling on a site-specific basis are necessary to fully evaluate hazards in relation to offshore development and operations.

High Resolution Geophysical Surveys were performed in the areas of the proposed operations. The purpose of the surveys was to determine bottom and subbottom conditions within the lease areas and inspect for potential drilling hazards. Remote sensing equipment included a proton precession total field magnetometer, a 100 kHz dual channel side scan sonar, a 24 kHz echo sounder, and a 3.5 kHz subbottom profiler. Seismic data was obtained with a high resolution DFS-V seismic recording system and two 100 cubic inch sleeve guns.

2. Effect of General Weather Patterns

Storms and fog are the primary meteorological phenomena that can affect OCS offshore operations. Storms bring high winds, which can disrupt surface and air support and evacuation traffic, and rough seas that can damage equipment and help disrupt traffic.

Prior to construction of offshore structures, historic weather patterns and other meteorological conditions are analyzed, and based on a combination of parameters a platform, with an expected life of 20 years, is designed to withstand events expected to occur in not less than 100 years. Tropical storms, hurricanes, and winter storms can disrupt construction and movements of crew or supply boats and helicopters. Careful monitoring of weather conditions usually results in ample warning to offshore operators and service vessel operators of approaching dangerous weather systems.

Additionally, areas are occasionally affected by fog, which can severely restrict visibility. This poses a danger of collision to offshore structures from moving traffic, and may bring support vessel traffic to a halt. Dense fog would seldom be expected to last long enough to cause major delays in OCS operations.

3. Effect of Physical Oceanography

Ocean currents, tides, waves, storm surges, and deep water are elements of physical oceanography that can affect offshore operations. Ocean currents produce a steady force against vessels and structures engaged in activities on the OCS. Currents are generally not strong enough to pose a threat to the physical integrity of drilling rigs or production platforms. Offshore structures are designed to withstand currents in excess of the maximum currents and waves.

Tides may disrupt support vessel traffic during period of low water. Waves and storm surges have the potential to disrupt service vessel traffic. Storms and associated waves may cause cessation of some activities on rigs because of the danger to personnel transferring from shore boats, or the danger and potential spill hazards involved in off-loading fuel from vessels to rigs.

4. Effect on Water Quality

Impact-producing factors from Marathon's proposed exploratory operations that may lead to offshore water quality degradation include resuspension of bottom sediments through

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the overboard discharge of operations wastes during drilling and completion operations, vessel operations, and accidental spills or blowouts.

Contaminants from vessels transporting personnel and supplies to and from the offshore MODU can enter the Gulf through routine operational discharges or accidental spills. Service vessels routinely discharge sanitary and domestic wastes and bilge waters. Estimates of this traffic average three round trips per week for the crew boat and four round trips per week for the supply boat. Given the high level of traffic already occurring in this area of the Gulf, it is not anticipated that the incremental increase in traffic due to the proposed operations would result in any incremental change in water quality conditions. There is a very slight possibility of a diesel spill associated with the proposed operations. Based on historical occurrences and converted to probabilities, there is a 0.67 percent probability of a diesel spill greater than one but less than 50 bbls occurring; and a 0.13 percent probability of a diesel spill over 50 bbls occurring. A "worst case" spill scenario for Marathon's proposed operations is a total spill amount of 2,457 bbls of diesel fuel and 10,000 bbls of oil.

In the event there is a diesel spill from the DP System Drillship "Cajun Express", Marathon Oil Company will make every effort to respond as effectively as possible to the Worst Case Discharges outlined in their Site Specific Hydrocarbon Spill Contingency Plan (Plan). Two scenarios were used in this Plan – a potential blowout occurrence during drilling/completion operations, or a single diesel fuel storage tank rupture. Trajectory of a spill and the probability of it impacting a land segment have been projected utilizing Marathon Oil Company's WCD and information in the MMS Oil Spill Risk Analysis Model (OSRAM) in support of the Environmental Impact Statement (EIS) for Proposed Lease Sale 181 (OCS Report MMS 2001-007) using the maximum conditional probability for a 30 day impact. The results are tabulated below.

TRAJECTORY BY LAND SEGMENT				
Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	%
Desoto Canyon 927 exploratory drilling (104 miles from shore)	10480	LA08 Eastern Planning Area	U.S. Shorelines	39
			LOUISIANA/MISSISSIPPI/ALABAMA	
			Alabama State Offshore Waters	5
			Central Winter Menhaden Spawning Grounds	3
			Chandeleur Islands	6
			Flower Garden Banks	1
			Western Louisiana State Offshore Waters	13
			Eastern Louisiana State Offshore Waters	13
			Mississippi State Offshore Waters	3
			Mobile Bay	2
			Land Segment 11	1
			Land Segment 12	1
			Land Segment 13	1
			Land Segment 16	3
			Land Segment 17	4
			Land Segment 18	1
			Land Segment 19	5
			Land Segment 20	1
			Land Segment 21	5
			Land Segment 22	5
			Land Segment 23	3
			Land Segment 24	3
			FLORIDA	
			Big Bend Seagrass	3
			Florida Gulf Island National Seashore	4
			Florida Keys National Marine Sanctuary	2
			Florida Middle Ground	2
			Florida Panhandle State Offshore Waters	11
			Florida Peninsula State Offshore Waters	5
			Madison and Swanson Special Management Area	2
			Steamboat Lumps Special Management Area	1
			Land Segment 25	3
			Land Segment 26	3
			Land Segment 27	2
			Land Segment 28	2
			Land Segment 29	1
			Land Segment 31	1
			Land Segment 32	1
			Land Segment 33	1

The effect on water quality from the oil spills is determined by the amount on oil that resides within the contacted water body. Degradation of open water quality is directly proportional to the aerial extent, the volume, and the residence time of the oil in the water column. Most oil spills impact offshore water quality during the life of the spill and only for a short time afterwards. A number of weathering processes act to remove the oil from the surface of the water and water column within several months. Examination of the weathering of the diesel fuel oil projected to be used shows that the oils is of low volatility and is fairly persistent compared to crude oil spills that occur from GOM OCS operations.

The operations of the onshore support base at Fourchon, Louisiana and the commercial waste disposal facilities located in Louisiana may impact coastal water quality by routine point and nonpoint-source discharges. Process, cooling, boiler, and sewage water effluents are discharged during the life of the existing infrastructure and facilities. Effluents from onshore infrastructure are commonly discharged into surface waters after treatment. Anti-fouling marine paints used on vessels and structures at the service base

and marine terminal can be spilled or enter the marine environment slowly through deterioration of the painted surfaces. Domestic wastewater will be collected and delivered to a municipal treatment plant or will receive secondary treatment in an on-site package treatment plant.

If offshore wastes cannot meet NPDES permit requirements, they are transported onshore for disposal.

5. Potential Impacts of Air Quality

The potential degrading effects on air quality from onshore and offshore operational activities are drilling activities during exploration and delineation, service vessel operation; evaporation of volatile hydrocarbons from surface oil slicks; and fugitive emissions during hydrocarbon venting and offloading.

Emissions from temporary sources are related to vessel and rig emissions involved in exploration activities. Although these activities are mobile and temporary in nature they can emit relatively large amounts of pollutants over relatively short periods of time. Emissions of pollutants into the atmosphere from OCS activities are predicted to have concentrations that should not change the air quality status.

Marathon plans to use the "Cajun Express" dynamically positioned drillship for the drilling and completion of the proposed wells. Primary air pollutants associated with OCS activities are nitrogen oxides, carbon monoxide, sulphur oxides, volatile organic compound and suspended particulate. A Projected Air Quality Emissions Report, which provides for the drilling and potential completion of the four wells is included with the Initial Exploration Plan. As shown on the emissions calculations spreadsheet, the emissions from Marathon's proposed activities fall well below the allowable exemption determination.

In summary, the proposed action would cause little to no impact on the physical environment. Any impacts would be minimal and only temporary in nature.

C. IMPACTS ON THE BIOLOGICAL ENVIRONMENT

Pre-spill planning is accomplished by the Area Committees that consist of representatives from Federal and State governments, with input from industry, academia, environmental groups and the community. The Area Committees have written Area Contingency Plans that identify response resources, cleanup strategies and resources at risk within their jurisdiction. These plans also identify the appropriate conditions for the various spill response techniques.

The Area Committees have identified economically sensitive areas as those areas where business is conducted in or through and can be negatively impacted due to an oil or hazardous substance spill. The Area Committees have also identified the environmentally sensitive areas as those areas with an Environmental Sensitivity Index (ESI) ranking. The ESI ranking is shown in Marathon's Site-Specific Hydrocarbon Spill Contingency Plan for Desoto Canyon Block 927.

The MSO Morgan City and New Orleans zones are so rich in these habitats, the Area Committee has "triaged" the listed areas to focus response efforts in the early hours of a spill. Reference Maps and documents identifying both the "triaged" sensitive areas as well as the ESI, biological and historical information are available at Marathon's Lafayette office.

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Protection priorities are outlined in the Morgan City and New Orleans plans Geographic-Specific Tactical Response Plan (GSTRP). A copy of the GSTRP is located in Marathon's Lafayette Office.

1. Effects on Coastal Habitat

The major factors associated with the proposed operations that could adversely impact coastal habitats include oil spills; deepening and maintenance of navigation channels; and onshore infrastructure construction. In general, the greatest impact on coastal habitats has been wetlands loss. Other impacts include altered surface-water hydrodynamics, saltwater intrusion, reduced vegetative productivity, and accelerated erosion, which in turn, usually causes additional wetland loss as a secondary impact.

Where a small spill contacts barrier beaches, oiling is expected to be light to moderate, and sand removal will be minimized, causing no substantial or irreversible, long-term impacts on the physical shape and structure of barrier beaches and associated dunes. Offshore oil spills are not generally expected to damage inland wetlands greatly. Oil spills are projected to cause minor, short-term dieback of submerged vegetation. If a larger volume of spilled oil contacts a beach, its impacts will be proportionally greater. In general, beaches, intertidal shorefaces, and the organisms that use these habitats would be more heavily impacted for the short term. A die-off of poorly mobile organisms living in or on the sand would be greater geographically and in number, depending upon the nature of the oil contacting the beach. Still, populations of these organisms will usually recover within a year of the beach cleanup, if residues subside below their lethal concentrations.

2. Effects on Wetlands and Seagrasses

Three million hectares of high-salinity, submerged vegetation beds are estimated to exist in exposed, shallow coastal waters of the northern Gulf of Mexico. An additional 166,000 ha are found in protected, natural embayments and considered more protected from OCS impacts. The coverage of seagrass beds in the Western and Central Gulf, as well as the Florida Panhandle, has diminished during recent decades.

Wetland habitats of the northern Gulf of Mexico include fresh, brackish, and saline marshes; and fresh and saline forested wetlands. Wetlands provide habitat for a great number and wide diversity of invertebrates, fish, reptiles, amphibians, birds, and mammals, and are particularly important nursery grounds for many economically important fish and shellfish juveniles. The primary factors believed responsible for impacts to wetlands include dredging, dredged material disposal, trawling, water quality degradation, hurricanes, a combination of flood protection levees that have directed freshwater away from some wetlands, saltwater intrusion that moved growing conditions closer inland, and infrequent freshwater diversions from the Mississippi River into coastal areas during flood stage. Channels into the bays where support bases are located are largely through tidal passes and broad sounds and bays. Dredging related to maintenance of these navigation channels may have impacts upon wetlands. Wetlands located along the banks of natural or dredged channels have been heavily degraded by past dredging, bank stabilization, and industrial development along the channel banks. There should be no expansions of ports surrounded by wetlands as a result of these operations.

For every 50 barrels of oil spilled and contacting wetland vegetation under typical, non storm conditions, approximately 2.7 ha of wetland vegetation will experience die-back. Thirty percent of these damaged wetlands are assumed to recover within 4 years; 85 percent within 10 years. Under storm conditions, the slick would be more broadly dispersed such that much of the oil may be spread so thinly that less vegetative die-back

would occur per volume of oil coming ashore.

3. *Effects on Offshore Habitats*

The sessile and pelagic communities associated with the crest and flanks of the pinnacle and hard-bottom features would be adversely impacted by oil and gas activities if such activities took place on or near these communities without the Live Bottom (Pinnacle Trend) Stipulation. This stipulation does not prevent the recovery of oil and gas resources, but it does serve to protect valuable and sensitive biological resources. Live Bottom Stipulations have been made a part of the lease on blocks on or near these biotic communities so that impacts from nearby oil and gas activities were mitigated to the greatest extent possible. The proposed operations are not located within the area deemed by the Minerals Management Service as an area of high probability for live bottom communities.

The area off Florida, in the Eastern Planning Area, contains approximately 98.5 percent of all coastal seagrasses in the northern Gulf of Mexico; Texas and Louisiana contain approximately 0.5 percent; and Mississippi and Alabama have the remaining 1 percent of seagrass beds. In the event of an oil spill, minor, short-term dieback of submerged vegetation may occur. The likelihood of impact decreases as water depth over the beds increases.

4. *Effects on Endangered, Threatened, and/or Protected Species*

Sea Turtles - Generic impacts of noise from OCS-related activities are discussed in USDOI, MMS (1994). Sea turtles may be injured or killed after being entangled in plastic debris (USDOI, MMS, 1994). Jellyfish are eaten by all five species of sea turtles, especially leatherbacks. The five species may ingest plastic debris that resemble jellyfish. Lethal and sublethal impacts may follow (USDOI, MMS, 1994). However, the proposed action is not expected to result in impacts from ingestion of plastic debris or entanglement in it by sea turtles. No impacts should occur as the MMS prohibits disposal of debris into offshore waters by lessees (30 CFR 250.40.).

Potential impacts of coastal facility construction on turtle nesting beaches are discussed in USDOI, MMS (1984a). No impacts from construction are expected.

If a hydrocarbon spill would occur, the severity of effects and the extent of the damage to marine turtles would be characterized by geographic location, oil type, impact area, oceanographic conditions, meteorological conditions, and season (NRC, 1985; USDOI, MMS, 1987b). Oil spills can adversely affect marine turtles by toxic external contact, toxic ingestion or blockage of the digestive tract, disruption of salt gland function, asphyxiation, and displacement from preferred habitats (Vargo et al., 1986; Lutz and Lutcavage, 1989). Mitigation measures imposed on the operator should reduce the risk of a spill occurring and facilitate the containment and clean up of the spilled hydrocarbon limiting the potential effects to marine turtles.

Oil-spill response activities, such as vehicular and vessel traffic in shallow areas of seagrass beds and live-bottom communities, can adversely affect sea turtle habitat and cause displacement from these preferred areas. Oil spills and oil spill response activities, such as beach sand removal, can negatively affect marine turtles, however, effects would be minimal and temporary in nature.

Birds - It is expected that the effects from the major impact-producing factors on coastal and marine birds are negligible and of nominal occurrence.

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The brown pelican, arctic peregrine falcon, bald eagle, and piping plover may be impacted by helicopter and service-vessel traffic, entanglement in and ingestion of offshore oil- and gas-related plastic debris, and oil spills. The effects of these operations are expected to be sublethal. Oil spills of any size are expected to seldom contact threatened and endangered birds or their critical feeding, resting, or nesting habitats.

The roseate tern is a transient in the affected area and will not be analyzed. Similarly, for the least tern only the population nesting in the interior is endangered, so the species will not be analyzed.

The southeastern snowy plover is a candidate species in Alabama and Florida. The piping plover is threatened there. Plovers flying at high altitudes may collide with helicopters. Density of plovers is expected to be low; for example, in some cases snowy plover nests were less than 2 per km (Gore and Chase, 1989). Therefore impacts of helicopters are expected to be very low. Plovers may consume beach trash or become entangled in it, causing sublethal or lethal effects. However, Title 30 CFR 250.300 prohibits disposal of trash in the water during OCS operations. Therefore, impacts from disposal of trash by personnel of OCS-related activities are not expected.

Hydrocarbon Spills on All Birds - The magnitude of impact to birds following an oil spill depends on the size of the local bird population (oftentimes a function of season), their foraging behavior(s), whether or not the population is aggregated or dispersed into smaller subunits at the time of the spill, and the quantity of oil spilled and its persistence in the environment (NRC, 1985). The birds most vulnerable to direct effects include those species that spend most of their time swimming on and under the sea surface, and often aggregate in dense flocks (Piatt et al., 1990; Vauk et al., 1989). This group includes loons, grebes, sea ducks and pochards, and cormorants. Coastal birds, including shorebirds, waders, marsh birds, and certain waterfowl, may be the hardest hit indirectly through destruction of their feeding grounds and /or food source if the spilled oil reaches their habitat (Hansen, 1981; Vermeer and Vermeer, 1975). Mitigative measures are in place to lower the risk of spilled hydrocarbon from reaching these habitats.

5. Effects on Nonendangered and Nonthreatened Species

The cumulative effect on coastal and marine birds is expected to result in a discernible decline in the numbers of birds that form localized groups or populations, with associated change in species composition and distribution. Some of these changes are expected to be permanent, as exemplified in historic census data, and to stem from a net decrease in preferred and/or critical habitat. Unavoidable adverse impacts to non-endangered and non-threatened marine mammals due to activities associated with the proposed action (e.g., waster quality degradation, helicopter and vessel traffic, oil spills and spill response, and discarded trash and debris) would be primarily sub-lethal. Lethal impacts to non-endangered and non-threatened marine mammals are expected to be rare.

Large Whales - Humpback whale sightings indicate the species is only transient in the area of the proposed action, so the species will not be analyzed.

Other Marine Mammals - Hydrocarbon spills and spill response activities can adversely affect cetaceans. Direct contact with hydrocarbons can lead to irritation and damage of skin and soft tissues. Studies by Geraci and St. Aubin (1982 and 1985) have shown, however, that the cetacean epidermis functions as an effective barrier to noxious substances found in petroleum. Unlike other mammals, penetration of such substances in cetacean skin is impeded by tight intercellular bridges, the vitality of the superficial cells, the thickness of the epidermis, and the lack of sweat glands and hair follicles (Lofflan, personal communication, 1993). Inhalation of vapors can lead to irritation of respiratory membranes, lung congestion, and pneumonia (Geraci and St. Aubin, 1982; Hansen, 1985;

Geraci, 1990).

The probable effects on cetaceans swimming through the area would depend on a number of factors, including ease of escape from the vicinity, the health of the individual animal, and its immediate response to stress (Davis, personal communication, 1993; Wursig, personal communication, 1993). Spilled oil can also lead to the reduction or contamination of prey and temporary displacement from migratory routes. An analysis of stomach contents from captured and stranded odontocetes suggest that they are deep-diving animals, feeding predominantly on mesopelagic fish and squid or deep water benthic invertebrates (Heyning, 1989; Mead, 1989). Delphinids feed on fish and/or squid, depending upon the species (Mullin et al., 1991).

Reactions of cetaceans to spilled oil are varied, with evidence of both direct avoidance and obvious indifference in even heavily oiled areas. Several observations of cetaceans confronting spilled oil show them in the vicinity, and in some cases in the midst of a spill, behaving quite normally. At present, it is unknown whether these animals in such cases are simply not affected by the presence of oil, or perhaps are even drawn to the area in search of prey organisms attracted to the oil's protective surface shadow (Geraci, 1990). Controlled experiments on detection and avoidance response of bottlenose dolphin to oil films showed that dolphins can see oil at the surface and that they prefer to avoid it (Geraci et al., 1983; Smith et al., 1983; St. Aubin et al., 1985).

In the event that "oiling" of cetaceans should occur from a spill associated with the proposed operations, the effects would be primarily sub-lethal.

Beach Mice - Beach mouse subspecies of the old field mouse that live in the area of the proposed action are the Alabama, Perdido Key, Choctawhatchee, St. Andrew, and Santa Rosa subspecies. Beach trash and debris could be eaten by mice or could entangle them in their foraging habitat behind the dunes, causing sub lethal or lethal impacts. However, no impacts from OCS-related activities are expected because the MMS prohibits disposal of debris into offshore waters by lessees (30 CFR 250.300).

Direct contact with spilled oil can cause skin and eye irritation, asphyxiation from inhalation of toxic fumes, food reduction, food contamination, oil ingestion, and displacement from preferred habitat. Vehicular traffic and activity associated with oil-spill cleanup activities can degrade preferred habitat and cause displacement from these areas, or it can attract predators. Because the preferred habitat of Alabama, Choctawhatchee, and Perdido Key beach mice is behind the barrier dunes, an oil spill would have to breach the dunes to reach either the mice or their preferred habitat. This could occur only if an oil spill coincided with a storm surge.

Gulf Sturgeon - The Gulf sturgeon may be impacted only by oil spills. The discussion presented below on effect to commercial fisheries is germane to the Gulf sturgeon.

6. Impacts on Sensitive Offshore Resources

Live Bottoms (Pinnacle Trend) - There are no Live Bottom areas in the vicinity of Marathon's proposed operations.

Deepwater Benthic Communities - There are no Deepwater Benthic Communities in the vicinity of Marathon's proposed operations.

Topographic Features - There are no Topographic Features in the vicinity of Marathon's proposed operations.

In summary, the proposed action would cause little to no impact on the biological environment. Any impacts would be minimal and temporary in nature.

D. *IMPACTS ON SOCIOECONOMIC CONDITIONS AND CONCERNS*

1. Impacts to Economic and Demographic Conditions

Effects on Local Employment - It is estimated that up to two people will be utilized at the shorebase (Fourchon, Louisiana) in support of the proposed operations. The employees will man the shore base. They will rotate on a 7-days on/7-days-off schedule. Any part-time contract positions could be filled by local residents, depending upon personnel availability, qualifications, etc.

It is estimated that additional employees will be required for supply boat, crew boat and standby operations. The vessel crews will not require local housing as they will usually live on their respective vessels while working in the area and will return to their residence upon completion of each tour of duty. Some deck hands may be hired from the local labor pool. Some of the service firm employees may be hired locally. Most of these employees will return to their places of residence on their days off.

To summarize, the proposed operations will require additional personnel. Normally, most of these employees return to their homes when their tour of assignment is complete. Some may remain in the local area during their off-duty periods. No new families are expected to move permanently into the vicinity of the shore base as a result of the proposed action. While a few employees may be hired from the local labor pool, impacts to labor resources are expected to be negligible. In the unlikely event of a diesel spill contacting land, cleanup workers would come from companies with existing contracts and, if necessary, from existing labor pools in the area. It is expected that temporary cleanup workers would return to their homes following the completion of cleanup activities.

Effects on Local Population and Industry Centers - At the end of their respective tours of duty, the personnel manning the shore base would return to their places of residence. While on location, these employees would be in temporary quarters either at the onshore base or in a local motel. Vessel crews, including any transient personnel, would not require local housing, as they would live on the vessels and would return to their residences upon completion of each tour of duty. Contracted personnel would be housed in a local motel by the contract operator while on duty and would return to their homes in Louisiana, Texas, or other states when their tour of assignment is completed. Some may remain in the local area during their off-duty period. No new families are expected to move into the vicinity of the shore base (Racal Survey, 1987).

Because most of the personnel would be returning to their places of residence during their off-duty shifts, no significant effects on population centers and industry are expected to result from the proposed activity. Expenditures associated with operations at the shore base facility could contribute funds to the local and state economy. The existing facilities at the shore base are sufficient to engage in operations required to implement the proposed operations. No new support facilities will be required and no new land acquisition or expansion of existing support bases is anticipated as a result of the proposed operations.

In the unlikely event of a spill contacting, land, beach cleanup personnel are typically housed locally in hotels, motels, or temporary residences. The Site Specific OSCP states that Marathon Transportation Logistics Team will be responsible for ensuring that staging areas are established to service various operational areas and for making quartering and meal accommodations for personnel. Such operations would last less

than six (6) weeks. While the potential for impact is low, should such contact occur there could be a temporary need for housing of spill cleanup personnel.

2. *Impacts on Land Use*

Marathon will utilize an existing onshore support base located in Fourchon, Louisiana for the proposed operations. These facilities consist of commercially available public or private dockage. No new land areas are expected to be occupied and no increased demands on existing dock space would be anticipated.

In the unlikely event of a spill, there could be increased demands on existing dock space related to dockage of spill cleanup-related vessels. The degree of demand would increase with the size of the spill.

Significant amounts of commodities to be purchased include materials specialized for drilling operations. The vendors who would supply these materials have not all been determined, but it is expected that supplies will come from vendors in Alabama, Mississippi, Louisiana, and Texas. Specialized services and materials would be used during drilling operations. Many would exist in the area expressly for servicing such operations. It is expected that their use would not affect community demands for goods and services. Demands on typical local services and materials would be periodic and relatively small, therefore these demands would not be expected to significantly affect supplies in the area of the shore base.

Additional details of the types of vendors/contractors and specific demands for goods and services, which could be required to conduct the planned activities, are discussed in the Area-Wide Environmental Report (CSA, 1984). Short-term demands for such specialized services and materials associated with the proposed activity should not affect local supplies significantly.

Marathon's support activities to be centered in Fourchon, Louisiana are considered temporary in nature, and therefore, a long range impact on the cumulative effects is not anticipated.

3. *Impacts from the Construction of Onshore Support Facilities*

Marathon will use existing onshore support facilities in Fourchon, Louisiana. Therefore there will be no new construction onshore.

4. *Impacts of Public Opinion*

Copies of the Exploration Plan will be submitted to the Florida's Governors Office, the Alabama Department of Environmental Management and the Louisiana Coastal Zone Management Program to be published for public notice. Marathon will work diligently to adequately address the concerns of the public.

5. *Impacts on Navigation*

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Marathon proposes to use a 180 ft supply boat and a 120 ft. crew boat to support the proposed drilling and completion operations. Marathon anticipates that the supply boat and crew boat will make a maximum of 7 round trips per week from the shore base to the site.

6. Impacts Concerning Military Use

Marathon has contacted the Naval Air Station in Pensacola regarding the control of electromagnetic emission and operations of boats and/or aircraft into the designated Military Warning Area EWTA-3 in order to enter into an agreement with the military installation. This will minimize potential multiple use conflicts on the OCS. No environmental effects are anticipated from compliance with this lease stipulation.

7. Impacts on Commercial Fishing

The most significant potential effect on commercial fisheries would come from an accidental hydrocarbon release. Should Marathon have an accidental release, the slick from a worst case discharge should dissipate or be treated prior to reaching commercial fishing areas. Minimal lethal and sub lethal effects on commercial fisheries resources could result which may cause a slight economic loss to commercial fisheries for one to two fishing seasons.

8. Impacts on Recreation/Tourism

The proposed operations are located approximately 104 statute miles offshore and are temporary in nature. Therefore, visual aesthetic impacts are expected to be insignificant. Impacts to recreational fisheries are also expected to be insignificant due to both distance from shore and the temporary nature of the activities.

9. Impacts on Archaeological Resources

As mentioned above, the area of the proposed activities is considered to have a low potential for the occurrence of submerged prehistoric archaeological sites and historic shipwrecks. Therefore no impacts to offshore cultural resources are expected. Existing onshore support facilities will be utilized. Therefore, no impacts to onshore cultural resources are expected. Operational regulations under 30 CFR 250.26 provide further safeguards for the protection of known, or discovered, cultural resources. Should cultural resources be encountered, the operator is required to report such to MMS, and make every reasonable effort to preserve and protect that resource.

10. Impacts on Other Commercial Uses

Since the MMS is not aware of any other planned commercial uses within the area of the proposed operations, no environmental effects are anticipated to or from the proposed operations.

11. Impacts on Mineral Uses

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Since the MMS is not aware of any other planned mineral uses within the area of the proposed operations, no environmental effects are anticipated to or from the proposed operations.

12. Impacts Concerning Pipelines and Cables

As a prudent operator, Marathon will conduct its operations in accordance with the provisions specified in Minerals Management Service Notice to Lessees 98-20 in order to avoid all pipelines and/or cables in the vicinity of the proposed operations.

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13. Impacts on Ocean Dumping

The MMS's regulations prohibit the disposal of objects overboard (Title 30 CFR 250.300). These regulations also require the marking of equipment and other large items prior to shipment offshore. In addition, operators must remove all obstructions and clear the drill site (Title 30 CFR 250.500)

14. Impacts on the Onshore Environment

Marathon will use its existing onshore base facilities located in Fourchon, Louisiana for any activities associated with Desoto Canyon Block 927. The base has adequate facilities for marine and air transportation to handle the transportation of personnel and equipment for this Exploration Plan. There will be no new construction, dredging, or filling on State lands or waters.

In summary, the proposed action would cause little to no impact on socioeconomic conditions and concerns. Any impacts would be minimal and temporary in nature.

E. UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

The proposed operations may cause some unavoidable adverse environmental effects on air quality, geology and sediment quality, water quality, benthic communities and marine mammals, turtles and birds. However, effects from the proposed operations will be minor and temporary in nature.

Air Quality - Minor transient increases in air pollution due to drilling and construction activities would be short term and intermittent in the development phase. Emissions due to production operations, support vessels and helicopters would be minor and would occur along the transit routes.

Geology and Sediment Quality - Sediment disturbance and resuspension during rig placement are expected to occur during the primary drilling phase. Deposits of drilling muds and cuttings would occur at the drill sites, which would result in altered sediment texture and metal concentrations (mainly barium) within a few hundred meters around each drillsite. All of the sediment disturbance impacts would occur during the drilling phase, allowing for recovery (Shinn et al., 1993) without further disturbance. Possible deposition of debris accidentally lost overboard from the rig and service vessels could occur.

Water Quality - Minor, transient impacts on water quality would be intermittent resulting from waste discharges from service vessels. Transient turbidity would occur during the drilling rig placement. These turbidity impacts would be separated in time and space from each other.

Marine Mammals and Turtles - During all phases of the proposed project, the primary source of potential impacts to marine mammals is service vessel traffic. Impacts include potential startling or collisions of the mammals, birds and turtles with vessels and/or helicopters. Due to the low probability of such collisions, minimal impacts on the marine mammal population are expected.

Benthic Communities - Minor soft bottom impacts would occur during rig placement. Burial and smothering of benthic organisms by drilling muds and cuttings discharges are potential impacts mainly within a few hundred meters around each drillsite.

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VII. APPENDICES

- ***APPENDIX 1*** ***AVAILABLE INFORMATION***

  Findings from Marathon's assessment for each of the 10 chapters that should be addressed and may apply for consistency certification.

- ***APPENDIX 2*** ***SURVEYS***

  Shallow Hazard Report for Desoto Canyon Block 927 prepared by Fugro Geosciences, Inc. is being submitted under separate cover

- ***APPENDIX 3*** ***SITE SPECIFIC HYDROCARBON SPILL PLAN (HSCP)***

  Marathon's HSCP is being submitted under separate cover

- ***APPENDIX 4*** ***MAPS, DIAGRAMS AND PHOTOGRAPHS -***

  Proposed Well Location Plats included as Attachment A-2 and A-3 in the Initial Exploration Plan

  Material Safety Data Sheets (MSDS') for diesel fuel

APPENDIX 1

In accordance with Title 15 CFR 930.77(b)(1), (2) and (3), Marathon has assessed the probable coastal zone effects of the proposed development activities and their associated facilities to the relevant elements of the management program. The proposed activities are consistent with the requirements of the 10 chapters approved as part of the Florida Coastal Management Program.

Florida's Consistency Management Program was authorized by an amendment to Chapter 380 of the Florida State Statutes and consists of 26 chapters of existing State laws. Out of the 26 chapters, the State of Florida has identified 10 chapters that must be addressed in the application for consistency certification: Chapters 161, 253, 258, 267, 288, 370 373, 376, 380 and 403.

Following are the findings from Marathon's assessment for each of the 10 chapters that may apply and should be addressed for consistency certification.

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CONSISTENCY CERTIFICATION

MARATHON'S CERTIFICATE OF CONSISTENCY WITH
THE STATE OF FLORIDA COASTAL MANAGEMENT PLAN

Introduction

This consistency certification is an assessment by Marathon Oil Company (Marathon) of its proposed Initial Exploration Plan (EP) for the Desoto Canyon Block 927 lease block and their impact on the State of Florida's Coastal Management Plan. The Initial EP is supported by numerous studies performed by the government agencies and the oil and gas industry concerning impacts of oil and gas activities in the Gulf of Mexico and other offshore areas around the world.

Marathon plans to drill 4 exploratory wells in Desoto Canyon Block 927. The activities proposed in the Initial EP will occur in OCS waters offshore Alabama. The planned activities will have little, if any, effect beyond the area immediately adjacent to the proposed activity sites. Because all of the planned activities will occur far outside Florida state waters (163 miles from the Florida shoreline), the possibility that there will be any impacts to Florida's coastal areas is remote.

The wells will be drilled to between 17685 feet and 23500 feet total vertical depth into the Rob A and Rob E sandstone objectives. The expected hydrocarbons in the proposed wells will be natural gas with minimal condensate.

The exploratory activities will be conducted in accordance with MMS regulations, applicable Notices to Lessees, and conditions in the approved permits. All required Federal permits will be obtained and all activities will be conducted in compliance with such permits. Lease stipulations will further lessen potential impacts on the environment.

Consistency with the FCMP

The Florida Coastal Management Plan (FCMP) was authorized by an amendment to the Florida State Statutes and generally refers to other existing State laws. In recent years, Florida has referenced certain chapters as having specific applicability to offshore oil and gas activity.

The Florida Statues analyzed appear in Chapters: 161, 253, 258, 267, 288, 370, 373, 376, 380, and 403.

Chapter 161- Beach and Shore Preservation

Marathon will utilize the existing dock and port facilities in the Fourchon, Louisiana area during the proposed drilling and production operations. There will be no new construction, dredging, or filling on Florida's lands or waters. Marathon's operations will be over 163 miles from the nearest beach or shoreline of the State of Florida. Therefore, Florida's beaches and shoreline will not be affected by the proposed operations.

Chapter 253 - State Lands

This chapter, in part, defines State-owned and State-managed lands and grants authority to acquire and lease lands and to grant rights-of-way and easements.

During the drilling and completion operations in the Desoto Canyon Block 927 lease block, Marathon will not seek to lease, gain rights-of-way or easements across Florida State lands. The proposed exploratory

operations will be conduced offshore, Alabama and Marathon's existing shorebase is located in Fourchon, Louisiana and there will be no pipeline placement or other activities that would affect the use of Florida's State lands. Therefore, Florida's state lands will not be affected by the proposed operations.

Chapter 258 - State Parks and Aquatic Preserves

Chapter 258 specifies limitations on dredge-and-fill activities, discharges, erection of structures, and drilling for oil or gas within aquatic preserves. Marathon's Initial EP for the Desoto Canyon Block 927 lease block will occur outside any aquatic preserve. Likewise, all discharges will be outside any aquatic preserves and will be governed by a United States Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) permit. The effects of any discharges will be limited to a discrete area in proximity to the proposed drillsites. Therefore Florida's state parks and aquatic preserves will not be affected by Marathon's proposed activities.

Chapter 267 - Archives, History, and Records Management

Utilizing 3-D seismic data, Fugro Geoservices, Inc. prepared a Shallow Hazards Report. The report complies with the latest guideline established by the Minerals Management Service in Notice to Lessees (NTL) 2000-G10, 98-20, and 98-11 concerning information requirements for exploration plans, shallow drilling hazards, and chemosynthetic assessment (MMS, 2000, 1998a, and 1998b). The study area does not lie within a high probability zone for historic shipwrecks, and does not require an archaeological report according to NTL 98-06 (1998c). The purpose of the report was to identify and assess the seafloor and shallow geologic conditions that may impact exploratory drilling within Desoto Canyon Block 927. No man-made features are recorded for the Desoto Canyon Block 927 area in the Fugro database of man-made facilities and seafloor obstructions.

Marathon's activities are consistent with the provisions of Chapter 267.

Chapter 288 - Commercial Development and Capital Improvements

As stated earlier, Marathon will utilize the existing dock in Fourchon, Louisiana as their shorebase during the proposed drilling and completion operations. Marathon's proposed drilling and completion activities will have little, if any, effect on local businesses or Florida's general economy.

Chapter 370 - Saltwater Fisheries

This chapter provides for the preservation, management, and protection of saltwater fisheries and other marine life in Florida state waters. The marine and estuarine environment is also considered part of saltwater fisheries and is taken into account in this assessment. This activity will be approximately 150 miles from the nearest point of submerged state waterbottoms. The environmental report discusses in detail the minimal impact in close proximity to the specific areas of physical activity. A brief discussion of the effects of discharges in the Federal waters follows.

Liquid and solid wastes from the activities may temporarily affect water quality in the immediate vicinity of the Desoto Canyon Block 927 area. All discharges will be in compliance with the standards imposed by the EPA authorized NPDES permit. Water quality is expected to quickly return to normal in the area after drilling or other operations have been completed. There will be no impact on water currents and larval transport that will affect recruitment to nearshore nursery areas.

Discharge drilling muds and cuttings may increase the sedimentation rate around the drill site, possibly causing minimal burying or smothering of some benthic organisms. Results of previous monitoring programs, and modeling studies suggest that burial would most likely occur in an area less than one hundred

meters from the drill site, whereas less severe increases in sedimentation may extend out no more than one thousand meters. The impact of the discharges on the soft bottom biota is expected to be slight, though some burial of macroinfauna and macroepifauna may occur. Recovery is expected in time in that impacts are temporary all as more thoroughly described in the Environmental Report.

Drilling and completion operations in Desoto Canyon Block 927 could lead to temporary minor offshore water quality degradation from the resuspension of bottom sediments through rig emplacement and removal. Ballast water, fire control system test water, and cooling water which are seawater pumped into a closed system and are not exposed to any contamination will not cause any degradation to the area. There is a very low probability that a diesel spill may occur from the rig's storage tanks or during the transfer of fuel to the rig while conducting drilling operations, and the impact of these types of spills on Florida's Coastal Management Plan are discussed thoroughly in the Environmental Report.

Under normal operating conditions for the planned activity, there is little chance for adverse effects to Florida's saltwater fishing resources and only temporary effects in a very small discrete area on their habitat. Any effects of drilling or other activities should be temporary and localized in the vicinity of the activity. There will be no impact on areas of unique importance to Florida's recreational or commercial fisheries or concentrations of endangered or threatened species from the planned activity. Supervisory personnel have the option to modify the deployment and operation of equipment to more effectively respond to site-specific circumstances. Marathon's Site Specific Hydrocarbon Spill Plan outlines response actions for specific hypothetical spill events. The spill plan makes provisions for the use of a dispersant by boat or aerial application, but notes that before a dispersant can be applied, Federal and State authorities must grant permission. Additional items that are addressed in the plan include provisions for inspection and maintenance of response equipment; required spill response drills; procedures for spill notification to governmental agencies; inventories of locally and nationally available response equipment; hierarchy of response team organization; provisions for disposal of wastes; and options for monitoring and predicting spill movement.

Most importantly, Marathon will use state-of-the-art equipment and technology to prevent an oil spill and will comply with the USEPA NPDES permit to minimize the effect of discharges. If an oil spill occurs, Marathon has a contingency plan for its recovery and removal; therefore, Marathon's proposed activities are consistent with the concerns of Chapter 376.

Chapter 380 - Land and Water Management

Marathon's proposed exploratory operations will be conducted Offshore, Alabama, and will not affect water, sewer, solid waste disposal, transportation or other public facilities in Florida and will therefore have no impact on land an water management in Florida.

Chapter 403 - Environmental Control

Chapter 403 authorizes the Department of Environmental Regulations to regulate any pollution of the air and waters of the State of Florida. The principle concerns raised in this chapter of the FCMP are similar to those addressed in several chapters previously discussed: dredge-and-fill activities (Chapter 258), waste disposal (Chapter 376), and pollution control (Chapters 253, 258, 370, and 376). All planned activity will take place offshore, Alabama and outside of Florida state waters. There are no discharges required into waters of the State of Florida of any kind in support of this activity. All permitted water discharges will take place in Federal waters and will be regulated by a USEPA NPDES permit.

Chapter 403 also addresses air pollution. The Projected Air Quality Emissions, which provide for the drilling, completion and potential testing of up to 4 wells are includes in the Initial EP for Desoto Canyon Block 927.

The emissions contemplate maximum exploratory activities and are below the allowable exemption levels specified in the regulations. Offshore emissions will have an insignificant impact on air quality in the State of Florida. The proposed activities, therefore, are consistent with the requirements of Chapter 403

CERTIFICATION

The proposed activities described in detail in Marathon's Initial Exploration Plan for Desoto Canyon Block 927 will comply with Florida's approved Coastal Management Program and will be conducted in a manner consistent with such Program.

Marathon Oil Company

Thomas G Stricklin

Regulatory Compliance Representative

October 27, 2000

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TOTAL P 06

EXXON OFF ROAD DIESEL 2*

EXXON COMPANY, U.S.A.
A DIVISION OF EXXON CORPORATION

DATE ISSUED: 07/14/97
SUPERSEDES DATE: 01/24/97

MATERIAL SAFETY DATA SHEET

EXXON COMPANY, U.S.A. P.O. BOX 2180 HOUSTON, TX 77252-2180

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME
EXXON OFF ROAD DIESEL 2*

PRODUCT CODE
072700 - 00787

PRODUCT CATEGORY
Petroleum Distillate Fuel

PRODUCT APPEARANCE AND ODOR
Clear liquid, contains red dye
Faint petroleum hydrocarbon odor

MEDICAL EMERGENCY TELEPHONE NUMBER
(713) 656-3424

TRANSPORTATION EMERGENCY TELEPHONE NUMBERS:
(BAYTOWN) (281) 834-3296 (CHEMTREC) 1-800-424-9300

B. COMPONENTS AND HAZARD INFORMATION

COMPONENTS	CAS NO. OF COMPONENTS	APPROXIMATE CONCENTRATION
Fuels, diesel, No. 2	68476-34-6	100%

Contains dye to meet the IRS requirements for tax-exempt diesel fuel. No data are available on potential detrimental effects of the dye on product performance; Exxon therefore assumes no responsibility for such effects.

This product, as manufactured by Exxon, does not contain polychlorinated biphenyls (PCB's).

All components of this product are listed on the U.S. TSCA inventory.

See Section E for Health and Hazard Information.

See Section H for additional Environmental Information.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by Exxon

EXPOSURE LIMIT FOR TOTAL PRODUCT	BASIS
100 ppm (900 mg/m3) for an 8-hour workday	Recommended by Exxon

C. PRIMARY ROUTES OF ENTRY AND EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN
In case of skin contact, remove any contaminated clothing and wash skin with soap and water. Launder or dry-clean clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of

the appearance of the wound or its size, the individual should be evaluated immediat ly by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

INHALATION
Overexposure may cause gasping, nausea and disorientation.

Vapor pressure is very low. Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM)
COMBUSTIBLE - Per DOT 49 CFR 173.120
56.67°C (134°F)
ASTM D 93, Pensky Martens Closed Cup

AUTOIGNITION TEMPERATURE
Greater than 204°C (400°F)

NOTE: Non-marine product may be 52°C (125°F) minimum flash to meet No. 2 Diesel Fuel Oil (ASTM D 975). Seasonal blends may be as low as 38°C (100°F).

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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity	BASIS
0	2	0	Recommended by the National Fire Protection Association

HANDLING PRECAUTIONS
This liquid is volatile and gives off invisible vapors. Either the liquid or vapor may settle in low areas or travel some distance along the ground or surface to ignition sources where they may ignite or explode.

Keep product away from ignition sources, such as heat, sparks, pilot lights, static electricity, and open flames.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 0.9% Upper Flammable Limit 7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Tenth Edition (1991):

Use dry chemical, foam or carbon dioxide to extinguish the fire. "Water may be ineffective", but water should be used to keep fire-exposed containers cool. If a leak or spill has ignited, use water spray to disperse the vapors and to protect persons attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing of gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

NOTE: The inclusion of the phrase "water may be ineffective" is to indicate that although water can be used to cool and protect exposed material, water may not extinguish the fire unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other

decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Do not attempt to refill or clean containers since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)
Prolonged or repeated liquid contact with the skin will dry and defat the skin, leading to possible irritation and dermatitis.
High vapor concentrations (greater than approximately 1000 ppm, attainable at temperatures well above ambient) are irritating to the eyes and the respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death.

NATURE OF HAZARD AND TOXICITY INFORMATION
This product contains ethylbenzene. A draft report on a study conducted by the National Toxicology Program states that lifetime inhalation exposure of rats and mice to high concentrations of ethylbenzene (750 ppm) resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations of ethylbenzene (75 or 250 ppm). The draft report does not address the relevance of these results to humans.

Prolonged or repeated skin contact with this product tends to remove skin oils, possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria.

Product contacting the eyes may cause eye irritation.

Lifetime skin painting studies conducted by the American Petroleum Institute, Exxon and others have shown that similar products boiling between 175-370°C (350-700°F) usually produce skin tumors and/or skin cancer in laboratory mice. The degree of carcinogenic response was weak to moderate with a relatively long latent period. The implications of these results for humans have not been determined.

Limited studies on oils that are very active carcinogens have shown that washing the animals' skin with soap and water between applications greatly reduces tumor formation. These studies demonstrate the effectiveness of cleansing the skin after contact.

Potential risks to humans can be minimized by observing good work practices and personal hygiene procedures generally recommended for petroleum products. See Section I for recommended protection and precautions.

Contains light hydrocarbon components. Lifetime studies by the American Petroleum Institute have shown that kidney damage and kidney cancer can occur in male rats after prolonged inhalation exposures at elevated concentrations of total gasoline. Kidneys of mice and female rats were unaffected. The U.S. EPA Risk Assessment Forum has concluded that the male rat kidney tumor results are not relevant for humans. Total gasoline exposure also produced liver

tumors in female mice only. The implication of these data for humans has not been determined. Certain components, such as normal hexane, may also affect the nervous system at high concentrations (e.g., 1000-1500 ppm).

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

Inhalation of components of exhaust from burning, such as carbon monoxide, may cause death at high concentrations.

Long-term repeated exposure of laboratory animals to whole diesel exhaust has resulted in an increased incidence of lung cancer

Exposure to exhaust from burning and diesel exhaust should be minimized.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE
Petroleum Solvents/Petroleum Hydrocarbons - Skin contact may aggravate an existing dermatitis.

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE
160-350°C (320-650°F)

SPECIFIC GRAVITY (15.6°C/15.6°C)
0.86

MOLECULAR WEIGHT
Approximately 212 average

pH
Essentially neutral

POUR, CONGEALING OR MELTING POINT
-18°C (0°F)
Pour Point by ASTM D 97

VISCOSITY
2.7 cSt @ 40°C

VAPOR PRESSURE
Less than 1 mm Hg @ 20°C

VAPOR DENSITY (AIR = 1)
Greater than 5

PERCENT VOLATILE BY VOLUME
100

EVAPORATION RATE @ 1 ATM. AND 25°C (77°F) (n-BUTYL ACETATE = 1)
0.02

SOLUBILITY IN WATER @ 1 ATM. AND 25°C (77°F)
Negligible; less than 0.1%

G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc., as this presents a serious explosion hazard.

H. ENVIRONMENTAL INFORMATION

CLEAN WATER ACT / OIL POLLUTION ACT
This product may be classified as an oil under Section 311 of the Clean Water Act, and under the Oil Pollution Act. Discharges or spills into or leading to surface waters that cause a sheen must be reported to the National Response Center (1-800-424-8802).

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.

Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, combustible vapors from absorbed material.

THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL LAWS AND REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUTES:

THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355 (SARA Sections 301-304)
No TPQ for product or any constituent greater than 1% or 0.1% (carcinogen).

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372 (SARA Section 313)
No toxic chemical is present greater than 1% or 0.1% (carcinogen).

HAZARDOUS CHEMICAL REPORTING, EPA REGULATION 40 CFR 370 (SARA Sections 311-312)

EPA HAZARD CLASSIFICATION CODE:	Acute Hazard	Chronic Hazard	Fire Hazard	Pressure Hazard	Reactive Hazard	Not Applicable
		XXX	XXX			

TOXIC SUBSTANCE CONTROL ACT
This product may contain the following TSCA 12b reportable chemical substance(s):
2-Ethylhexanol CAS # 104-76-7

I. PROTECTION AND PRECAUTIONS — 21°C

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing, which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
To prevent fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system in accordance with (THE) National Fire Protection Association PUBLICATIONS.

To minimize fire or explosion risk from static charge accumulation and discharge, effectively bond and/or ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

Keep containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants.

In order to prevent fire or explosion hazards, use appropriate equipment.

Information on electrical equipment appropriate for use with this product may be found in the latest edition of the National Electrical Code (NFPA-70).

This document is available from the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts 02269.

PERSONAL HYGIENE
Minimize breathing vapor, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before re-use. Remove contaminated shoes and thoroughly clean before re-use; discard if oil-soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION AND OSHA RELATED LABEL INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents.

U.S. DOT HAZARDOUS MATERIALS SHIPPING DESCRIPTION
Transported by highway or rail:

Bulk packagings (capacity greater than 119 gallons)
Fuel Oil, Combustible Liquid, NA 1993, III

Non-bulk packagings (capacity less than or equal to 119 gallons)
Not regulated

Transported by air or marine vessel:

Bulk or non-bulk packagings
Gas Oil, 3, UN 1202, III

OSHA REQUIRED LABEL INFORMATION
In compliance with hazard and right-to-know requirements, where applicable OSHA Hazard Warnings may be found on the label, bill of lading or invoice accompanying this shipment.

DANGER!

COMBUSTIBLE

LONG-TERM, REPEATED EXPOSURE MAY
CAUSE SKIN CANCER

Note: Product label may contain non-OSHA related information also.

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The health and safety information presented herein must be used in conjunction with the pertinent standards for training, work practices and facilities design established by OSHA, NIOSH, NFPA, API, NEC, NSC, UNDERWRITERS, BUREAU OF MINES, and similar organizations.

The information and recommendations contained herein are, to the best of Exxon's knowledge and belief, accurate and reliable as of the date issued. Exxon does not warrant or guarantee their accuracy or reliability, and Exxon shall not be liable for any loss or damage arising out of the use thereof.

The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container.

The Environmental Information included under Section H hereof as well as the

Hazardous Materials Identification System (HMIS) and National Fire Protection Association (NFPA) ratings have been included by Exxon Company, U.S.A. in order to provide additional health and hazard classification information. The ratings recommended are based upon the criteria supplied by the developers of these rating systems, together with Exxon's interpretation of the available data.

FOR LUBRICANTS TECHNICAL ASSISTANCE CALL: 1-800-443-9966

FOR FUELS TECHNICAL ASSISTANCE CALL: 713-656-4955

FOR AN MSDS OR ASSISTANCE WITH AN MSDS, DIRECT INQUIRIES TO THE ADDRESS BELOW OR CALL:

MARKETING TECHNICAL SERVICES
EXXON COMPANY, U.S.A.
ROOM 2344
P. O. BOX 2180
HOUSTON, TX 77252-2180
(713) 656-5949

IF YOU HAVE AN IMMEDIATE NEED FOR AN MSDS, DIAL 1-800-298-4007 FOR A FAXED COPY.

COASTAL ZONE CONSISTENCY

COASTAL ZONE CONSISTENCY CERTIFICATIONS

Issues identified in the Louisiana Coastal Zone Management Program include the following: any dredge or fill activity that intersects more than one waterbody, projects involving the use of State-owned lands or water bottoms, national interest projects, pipeline, and energy facility siting and development.

Issues identified in the Alabama Coastal Zone Management Program include the following: review all coastal resource uses and activities that have a direct and significant effect on the coastal area. Uses subject to the Alabama's CZM program are divided into regulated and nonregulated categories. Regulated uses are those that have a direct and significant impact on the coastal areas. These uses either require a State permit or are required by Federal law to be consistent with the management program. Uses that require a State permit must receive a certificate of compliance. Nonregulated uses are those activities that have a direct and significant impact on the coastal areas that do not require a State permit or Federal consistency certification. Nonregulated uses must be consistent with the ACAMP and require local permits to be administered by ADEM.

Issues identified in the Florida Coastal Zone Management Program include the following: The Florida Coastal Zone Management Act authorized the development of the coastal management program. A network of agencies comprises the coastal management agencies to represent a balanced statewide perspective including interests in coastal development, professional/academic coastal science, commercial fishing, environmental/coastal conservation, local government, coast/marine commerce, energy development, recreational fishing/boating, regional planning councils, water management districts, and environmental education. The purpose of the program is to protect historic and archaeological resources, freshwater fish, birds and both upland game and non-game animals, including endangered species; development, maintenance

and protection of the transportation systems, and the saltwater fisheries and marine mammals.

Certificates of Coastal Zone Management Consistency for the States of Louisiana, Alabama and Florida are enclosed as ***Attachments I-1 thru I-3***. A copy of the Public Notice request for publication in the State Times Newspaper is included as ***Attachment I-4,*** as well as the appropriate Parish Journal being included as ***Attachment I-5.***

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

INITIAL EXPLORATION PLAN

DESOTO CANYON BLOCK 927

LEASE OCS-G 10480

The proposed activities described in this Plan comply with Alabama's approved Coastal Zone Management Program and will be conducted in a manner consistent with such Program.

MARATHON OIL COMPANY

Lessee or Operator

Certifying Official

January 11, 2001

Date

BEST AVAILABLE COPY

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

INITIAL EXPLORATION PLAN

DESOTO CANYON BLOCK 927

LEASE OCS-G 10480

The proposed activities described in this Plan comply with Florida's approved Coastal Zone Management Program and will be conducted in a manner consistent with such Program.

MARATHON OIL COMPANY

Lessee or Operator

Certifying Official

January 11, 2001

Date

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

INITIAL EXPLORATION PLAN

DESOTO CANYON BLOCK 927

LEASE OCS-G 10480

The proposed activities described in this Plan comply with Louisiana's approved Coastal Zone Management Program and will be conducted in a manner consistent with such Program.

Arrangements have been made with the Morning Advocate - State Times in Baton Rouge, Louisiana to publish a legal notice no later than November 10, 2000.

Additionally, arrangements have been made with The Daily Comet to publish a public notice of the proposed activities no later than November 10, 2000.

MARATHON OIL COMPANY

Lessee or Operator

Certifying Official

January 11, 2001

Date

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Gulf of Mexico
Worldwide Deepwater Development

Marathon Oil Company

P.O. Box 3128
Houston, TX 77253-3128
Telephone 713/629-6600

October 31, 2000

Morning Advocate State Times
Legal Ad Department-Public Notice
525 Lafayette Street
Baton Rouge, Louisiana 70804

Attention: Vicky Thompson

Gentlemen:

Please publish the following as a legal ad no later than November 10, 2000.

Public Notice of Federal Consistency review of a Proposed Initial Exploration by the Coastal Management Section/Louisiana Department of Natural Resources for the plan's consistency with the Louisiana Coastal Resources Program.

Applicant: Marathon Oil Company
P. O. Box 3128
Houston, Texas 77253-3128

Location: Marathon Oil Company
Lease OCS-G 10480
Desoto Canyon Block 927
Offshore, Louisiana, Alabama and Florida

Description: Exploratory activities will include the drilling and potential completion of Well Locations A through D. Support operations will be from an onshore base located in Fourchon, Louisiana. No ecologically sensitive species or habitats are expected to be affected by these activities.

A copy of the plan described above is available for inspection at the Coastal Management Division Office located on the 10th floor of the State Lands and Natural Resources Building, 625 North 4th Street, Baton Rouge, Louisiana. Office hours: 8:00 AM to 5:00 PM, Monday thru Friday. The public is requested to submit comments to the Louisiana Department of Natural Resources Coastal Management Division, Attention: OCS Plans, P. O. Box 44487, Baton Rouge, Louisiana 70804-4487. Comments must be received within 15 days of this notice or 15 days after the Coastal Management Section obtains a copy of the plan and it is available for public inspection. This public notice is provided to meet the requirements of the NOAA Regulations on Federal Consistency with approved Coastal Management Programs.

Attachment I-4

A copy of the published notice and bill should be submitted to the attention of the undersigned:

Marathon Oil Company
P. O. Box 3128
Houston, Texas 77253-3128

Please direct any questions concerning this request to the attention of the undersigned.

Sincerely,

MARATHON OIL COMPANY

T. G. Stricklin /cjg

T. G. Stricklin
Regulatory Compliance Representative

TGS:CJG

Gulf of Mexico
Worldwide Deepwater Development

Marathon Oil Company

P.O. Box 3128
Houston, TX 77253-3128
Telephone 713/629-6600

October 31, 2000

The Daily Comet
705 W 5th
Thibodeaux, Louisiana 70302

Attention: Doris Dome

Gentlemen:

Please publish the following as a legal ad no later than November 10, 2000.

Public Notice of Federal Consistency review of a Proposed Initial Exploration Plan by the Coastal Management Section/Louisiana Department of Natural Resources for the plan's consistency with the Louisiana Coastal Resources Program.

Applicant: Marathon Oil Company
P. O. Box 3128
Houston, Texas 77253-3128

Location: Marathon Oil Company
Lease OCS-G 10480
Desoto Canyon Block 927
Offshore, Louisiana, Alabama and Florida

Description: Exploratory activities will include the drilling and potential completion of Well Locations A through D. Support operations will be from an onshore base located in Fourchon, Louisiana. No ecologically sensitive species or habitats are expected to be affected by these activities.

A copy of the plan described above is available for inspection at the Coastal Management Division Office located on the 10th floor of the State Lands and Natural Resources Building, 625 North 4th Street, Baton Rouge, Louisiana. Office hours: 8:00 AM to 5:00 PM, Monday thru Friday. The public is requested to submit comments to the Louisiana Department of Natural Resources Coastal Management Division, Attention: OCS Plans, P. O. Box 44487, Baton Rouge, Louisiana 70804-4487. Comments must be received within 15 days of this notice or 15 days after the Coastal Management Section obtains a copy of the plan and it is available for public inspection. This public notice is provided to meet the requirements of the NOAA Regulations on Federal Consistency with approved Coastal Management Programs.

Attachment I-5

A copy of the published notice and bill should be submitted to the attention of the undersigned:

Marathon Oil Company
P. O. Box 3128
Houston, Texas 77253-3128

Please direct any questions concerning this request to the attention of the undersigned.

Sincerely,

MARATHON OIL COMPANY

T. G. Stricklin/cjg

T. G. Stricklin
Regulatory Compliance Representative

TGS:CJG

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HSCP Quick Guide

Preface

3 Introduction

4 Organization

Spill Response Opers. Center & Comms.

6 Spill Detection & Source Identification

7 QI, SMT, SROT & OSRO Notifications

8 External Notifications

9 Available Technical Expertise

10 Spill Assessment

11 Resource Identification

12 Strategic Response Planning

13 Resource Protection Methods

14 Mobilization & Deployment Methods

15 Oil & Debris Removal Procedures

16 Oil & Debris Disposal Procedures

Wildlife Rehabilitation Procedures

Dispersant Use Plan

In Situ Burning Plan

20 Chem. & Biological Response Strategies

Documentation

22

23

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31

MINERALS MANAGEMENT SERVICE
RECEIVED
NOV 14 2000
OPERATIONS
Plans Section, GOM OCS Region

Facility Information

Training Information

Drill Information

D Contractual Agreements

E Response Equipment

F Support Services & Supplies

G Notification & Reporting Forms

H Worst Case Discharge Scenarios

I Bibliography

J Media

K Forms

L

M

Q

R

S

T

U

V

W

X

Y

Z

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J. Connor
Consulting, Inc.

REMOVE AND REPLACE TABLE

Dated: January 10, 2001

TO:

MMS OIL SPILL RESPONSE PLAN
COMPANY NAME: Marathon Oil Company

CHANGES MADE IN RESPONSE
TO: MMS Comment Letter

Remove Pages		*Replace Pages*	
Section 2	All	Section 2	All
Section 6	All	Section 6	All
Section 11	All	Section 11	All
Section18	All	Section18	All
Section 19	All	Section 19	All
Section 20	All	Section 20	All
Appendix D	All	Appendix D	All
Appendix H	All	Appendix H	All
Appendix I	All	Appendix I	All

MINERALS MANAGEMENT SERVICE
RECEIVED
FEB 15 2001
FIELD
OPERATIONS
Plans Section, GOM OCS Region, New Orleans, LA



J. Connor
Consulting, Inc.

REMOVE AND REPLACE TABLE

Dated: February 11, 2001

TO:

MMS OIL SPILL RESPONSE PLAN
COMPANY NAME: Marathon Oil Company

CHANGES MADE IN RESPONSE
TO: Revisions to MMS OSRAM

Remove Pages		***Replace Pages***	
Section 2	All	Section 2	All
Section 9	All	Section 9	All
Section 11	All	Section 11	All
Appendix H	All	Appendix H	All

BEST AVAILABLE COPY

J. Connor
Consulting, Inc.

REMOVE AND REPLACE TABLE

Dated: March 5, 2001

TO:

MMS OIL SPILL RESPONSE PLAN
COMPANY NAME: Marathon Oil Company

CHANGES MADE IN RESPONSE
TO: Updated training records; revisions to equipment response times for WCD

Remove Pages		***Replace Pages***	
Section 2	Page 8	Section 2	Page 8
Appendix B	Page 3	Appendix B	Page 3
Appendix H	Pages 11 & 16	Appendix H	Pages 11 & 16

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SECTION 1 - HSCP QUICK GUIDE

This Quick Guide is a concise set of easy-to-follow instructions that include actions that should be immediately taken and notifications that must be made in the event Marathon Oil Company experiences an oil spill.

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PERSON IN CHARGE OF FACILITY RESPONSE ACTIONS

It is the responsibility of all company employees and contract personnel to be alert for and report all oil discharges (known or unknown sources). If the discharge is confirmed to be from Marathon Oil Company's facility, field operations personnel shall take immediate actions which may include the following:

Done Time

- ❑ _____ Stop the discharge if safe to do so.
- ❑ _____ Assess possible hazards:
  - ❑ Fire and explosion potential of vapors at or near the source
  - ❑ Potential toxic effects of the discharge
  - ❑ Damage to facility affecting safety
- ❑ _____ Protect personnel as necessary:
  - ❑ Sound alarm.
  - ❑ Shut off ignition sources.
  - ❑ Restrict access.
  - ❑ Evacuate as necessary.
  - ❑ Initiate rescue and response actions.
- ❑ _____ Report all discharges to company personnel:
- ❑ _____ Notify affected pipeline, platform operators.
- ❑ _____ Obtain sample of discharged material if requested by IC.
- ❑ _____ Perform surveillance using helicopter or vessel. If possible, photograph or video the area. Determine:
  - ❑ Size of slick
  - ❑ Description of slick
  - ❑ Location of leading and trailing edge of slick
  - ❑ Direction of movement
  - ❑ Threat to personnel, sensitive areas and coastline
  - ❑ Wildlife spotted in the area
- ❑ _____ Continue to correct the condition or procedure causing the discharge, if safe to do so.

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OIL SPILL AND HAZARDOUS SUBSTANCE RELEASE REPORT FORM

☐ Marathon Oil Company Region/Division/District _____

☐ Marathon Petroleum Company Division/District _____

☐ Marathon Pipe Line Company Division/District _____

☐ Other: _____

SPILL DATE MO DA YR	EST. SPILL TIME	AM PM	ESTIMATED SPILL VOLUME	TYPE OF MATERIAL SPILLED	SIGHTED BY	VOLUME RECOVERED

LOCATION OF SPILL: (Include State, County, Lease, Field, Rig/Platform)

_____

_____

_____

_____

_____

Onshore Section _____ Township _____ Range _____

Offshore OCS-G-No. _____ Latitude _____ Longitude _____

DESCRIPTION OF SPILL AREA, LOCATION & DIRECTION OF MOVEMENT: _____

_____

_____

WATER/GROUNDWATER AFFECTED ___ Yes ___ No If Yes, Name of water body affected: _____

Sheen/Slick Appearance (Color: silvery, barely visible, rainbow, dark black, etc.)

_____

_____

WEATHER: Clear _____ Cloudy _____ Fog _____ Rain _____ Snow _____ Ice _____

Wind: Velocity _____ mph, Direction _____ (N,SE,etc., From) Temperature _____

Waves: Height _____ ft., Direction _____ (N,SE,etc., To)

Current: Velocity _____ mph, Direction _____ (N,SE,etc., To)

Tides: _____ (ebb, flood, high, low, direction, velocity, etc.)

CAUSE OF SPILL: (Facts only, No Opinion or Speculation) _____

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_____

_____

_____

_____

RESPONSE PROCEDURES: (Containment, recovery & cleanup procedures): _____

_____

_____

_____

_____

STEPS TAKEN TO PREVENT RECURRENCE: _____

_____

_____

_____

_____

_____

APPARENT HAZARD TO LIFE and/or PROPERTY: _____

_____

_____

FACILITY DAMAGE OR INJURIES: _____

_____

_____

EMPLOYEE RESPONSIBLE FOR CLEANUP: _____

)TIFICATION OF REGULATORY AGENCIES:

.. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

B. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

C. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

D. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

PERSON MAKING CONTACT WITH AGENCIES: _____

IF CORPORATE OFFICE NOTIFIED:

rson Contacted _____ Time _____ Date _____

erson Filing Report: _____ _____ _____

Print Name Signature Date

FIGURE 1.2
VOLUME ESTIMATE

A. Locating a Spill

Spill size and volume estimations are essential for identifying potential oil spill trajectories, impact zones, and shoreline arrival times. Accurate monitoring of the oil slick is also important in documenting the nature and aerial distribution of oil so that meaningful decisions can be made regarding containment and recovery operations and the potential use of dispersants.

1) Data Acquisition

LOCATE	Use aircraft, whenever possible, to locate the spill source (latitude and longitude) and the aerial distribution of any resulting surface slicks.
MEASURE	Describe the approximate dimensions of the oil slick based on available reference points (i.e., vessel, platforms, islands, shoreline features, etc.). As necessary, use aircraft to derive coordinates of spill dimensions.

B. Determining the Size and Volume of a Spill

1) Oil Spill Volume Estimation

Reports of oil spills, both oral and written, will conform to the following guidelines:

a) Basic Definitions (These definitions correspond to the Spill Volume Estimation Form attached.)

- Sheen (Barely Visible, Silver Sheen, Slight Rainbow, Bright Rainbow): The oil is visible on the water as a silvery sheen or as rainbow colors. This is the smallest thickness of oil.
- Dark Colors (Dull Colors, Yellowish Brown, Light Brown): The oil is visible with dark colors; it will still have traces of the rainbow color but is not black or dark brown.
- Black/Dark Brown: Fresh oil after the initial spreading will have a black or very dark brown color. This is the greatest thickness of non-emulsified oil.

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FIGURE 1.2
VOLUME ESTIMATE

b) Spill Factors

The factors given in the following Spill Volume Estimation Form will be used to estimate the volume of oil on the water in the spill unless a more accurate amount is known by other means. These factors should be compared whenever possible to volumes estimated from the source of the spill, for example, piping volume, tank volume. Exact estimates of the volume of a spill are not possible by visual observation of the oil on the surface of the water. For this reason, the spill volumes determined from the following should be rounded off to avoid the appearance of an accurate determination.

c) Estimating Procedures

See the following Spill Volume Estimation Form and accompanying example to be used in determining an estimate of the amount of oil spilled.

BEST AVAILABLE COPY

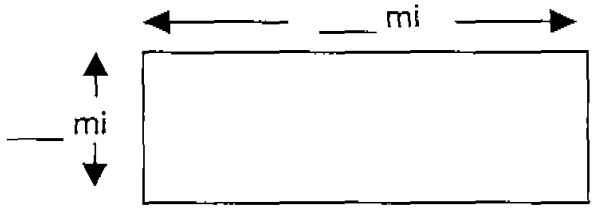
FIGURE 1.2

SPILL VOLUME ESTIMATION FORM

(See EXAMPLE on next page)

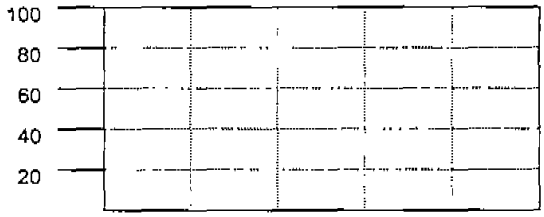
Spill size and volume estimations are essential for identifying potential oil spill impact zones and shoreline arrival times. To estimate the quantity of oil on water you must establish the size of the area affected by pollution, the percent of oil coverage within that area, and the appearance of oil. The appearance of oil determines gallons per square mile (based on the U.S. Coast Guard's field operations guide estimations table).

1) To establish the area affected by pollution.
   - Determine spill size (use aircraft if possible).
   - Draw an imaginary box around the oil.
   - Measure the length and width of the box (5,280 feet = 1 mile).
   - Multiply the length x width = (a) m^2.



= ___ mi^2 (a)

2) Extent of Oil Coverage
   - Envision the oil pushed together into one part of the box.
   - Estimate % of box containing oil = (b) % coverage.



= ___% coverage (b)

3) Multiply estimated area (a) x estimated coverage (b) = (c) total m^2:

___ (a) mi^2 x ___ (b) % coverage = ___ (c) total mi^2

4) Appearance of Oil:
   - Estimate the percent of the oil matching each color under appearance. Enter that number in the percentage blank (e.g. 50% dull, 30% brightly colored, 20% slightly colored).
   - Enter total mi^2 (Item c).
   - Multiply % appearance x gal/mi^2 x mi^2 for each appearance.
   - Enter sum for total gallons.

ESTIMATION TABLE

Appearance	%	x	Gal/ mi^2	x	mi^2 (c)	=	Gal.
Barely Visible		x	25	x		=	
Silvery		x	50	x		=	
Slightly Colored		x	100	x		=	
Brightly Colored		x	200	x		=	
Dull		x	666	x		=	
Dark		x	1332	x		=	
						Total Gallons	

5) Final Calculation (divide gallons by 42): ____ Total gal/42 = _____ bbls

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FIGURE 1.2

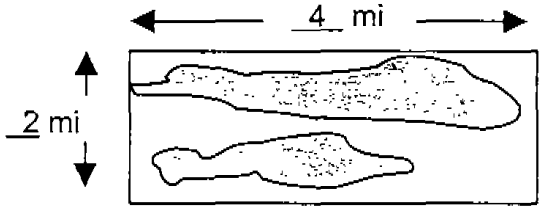
EXAMPLE SPILL VOLUME ESTIMATION FORM

Spill size and volume estimations are essential for identifying potential oil spill impact zones and shoreline arrival times. To estimate the quantity of oil on water you must establish the size of the area affected by pollution, the percent of oil coverage within that area, and the appearance of oil. The appearance of oi determines gallons per square mile (based on the U.S. Coast Guard's field operations guide estimations table).

FOR EXAMPLE:

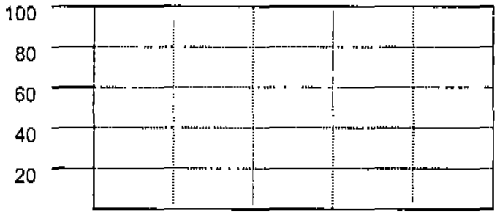
The slick size equals 4 miles x 2 miles – (1).
The coverage is 40% - (2).
The appearance is 50% dull, 30% brightly colored and 20% slightly colored – (4).

3) To establish the area affected by pollution.
- Determine spill size (use aircraft if possible).
- Draw an imaginary box around the oil.
- Measure the length and width of the box (5,280 feet = 1 mile).
- Multiply the length x width = (a) m^2.



= 8 mi^2 (a)

4) Extent of Oil Coverage
- Envision the oil pushed together into one part of the box.
- Estimate % of box containing oil = (b) % coverage.



= 40 % coverage (b)

3) Multiply estimated area (a) x estimated coverage (b) = (c) total m^2:

8 (a) mi^2 x 40 (b) % coverage = 3.2 (c) total mi^2

6) Appearance of Oil:
- Estimate the percent of the oil matching each color under appearance. Enter that number in the percentage blank (e.g. 50% dull, 30% brightly colored, 20% slightly colored).
- Enter total mi^2 (Item c).
- Multiply % appearance x gal/mi^2 x mi^2 for each appearance.
- Enter sum for total gallons.

ESTIMATION TABLE

Appearance	%	x	Gal/ mi^2	x	mi^2 (c)	=	Gal.
Barely Visible		x	25	x		=	
Silvery		x	50	x		=	
Slightly Colored	20	x	100	x	3.2	=	64
Brightly Colored	30	x	200	x	3.2	=	192
Dull	50	x	666	x	3.2	=	1065
Dark		x	1332	x		=	
					Total Gallons		1321

7) Final Calculation (divide gallons by 42):

1321 Total gal/42 = 31.45 bbls

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FIGURE 1.3
SPILL MANAGEMENT TEAM DUTIES

October 1999

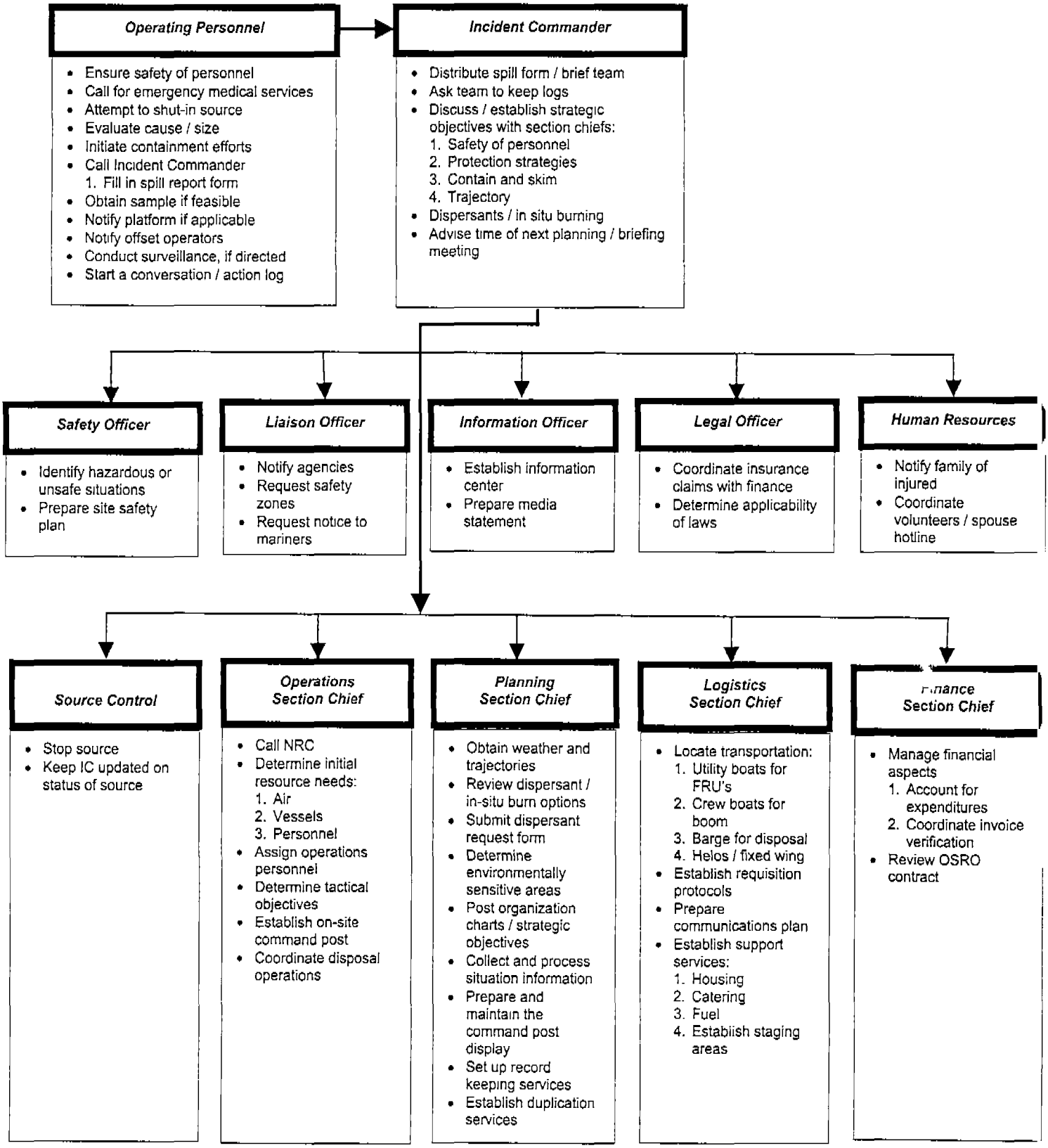
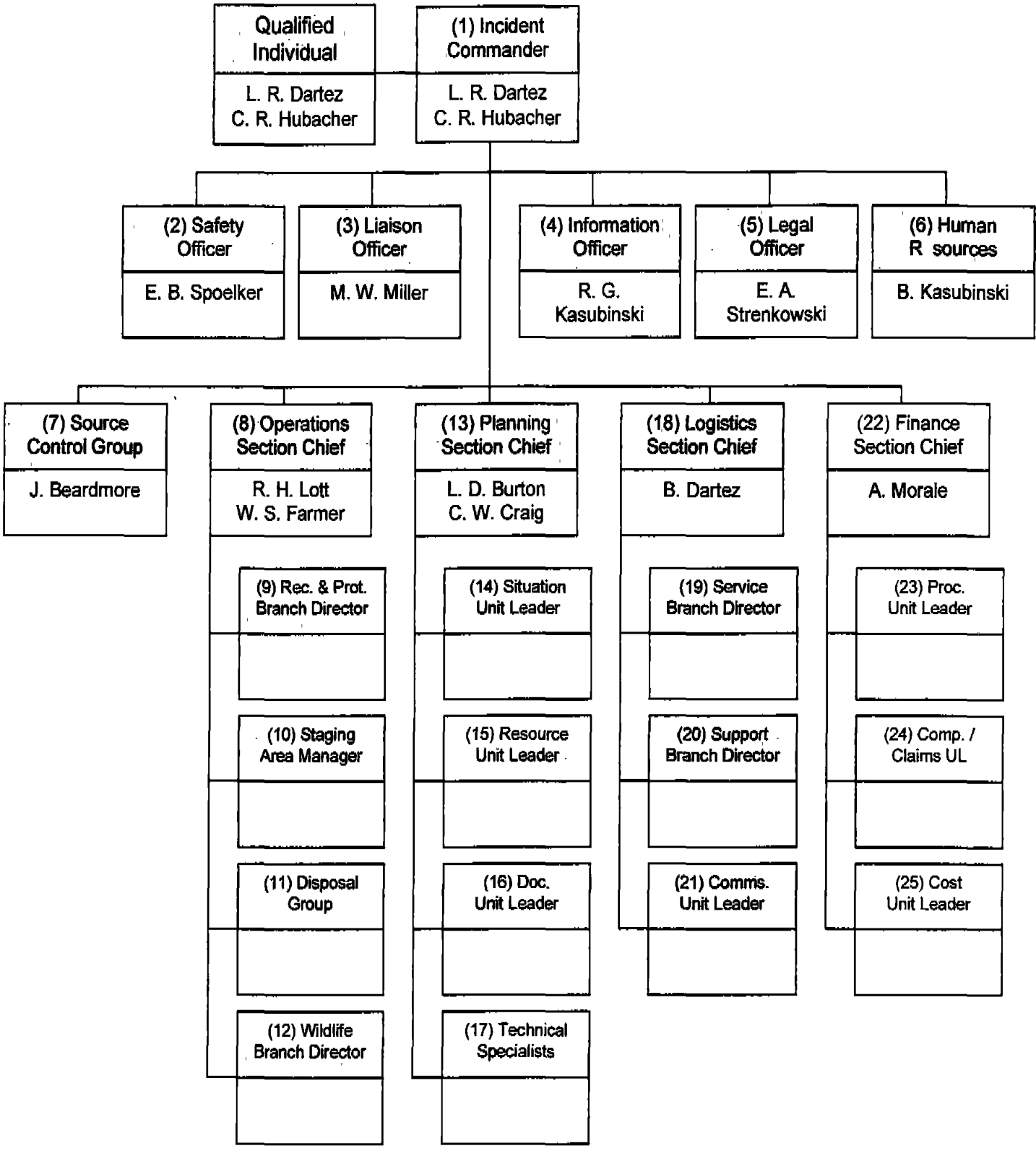


FIGURE 1.4
Emergency Management Team Organization Chart



Name and telephone numbers listed in ***FIGURE 1.5.***

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FIGURE 1.4
SMT CHECKLIST

POSITION	RESPONSIBILITIES	COMMENTS
INCIDENT COMMANDER	❑ Fill in Spill Report Form ❑ Assist field personnel (med-evac) ❑ Assemble Spill Management Team ❑ Brief team ❑ Assign duties (org. chart) ❑ Remind team to keep logs ❑ Establish objectives (chart) ❑ Name Incident ❑ Establish meeting times (chart)	
LIAISON OFFICER	❑ Notify agencies (chart) ❑ Request safety zones air/water (USCG) ❑ Request Notice to Mariners (USCG) ❑ Submit dispersant request to USCG ❑ Obtain approval to decant (USCG) ❑ Prepare written reports to agencies	
INFORMATION OFFICER	❑ Notify corporate executives ❑ Notify partners ❑ Notify company personnel ❑ Prepare for media interest ❑ Keep the public informed ❑ Coordinate efforts with USCG ❑ Identify community concerns	
HUMAN RESOURCES	❑ Notify family of injured (if company employee) ❑ Follow up on injured ❑ Coordinate volunteer activities	

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FIGURE 1.4
SMT CHECKLIST

POSITION	RESPONSIBILITIES	COMMENTS
SAFETY OFFICER	❑ Evaluate/monitor hazards ❑ Notify offset operators ❑ Obtain MSDS/Prepare Site Safety Plan ❑ Establish first aid posts ❑ Conduct safety inspections/investigate accidents ❑ Coordinate post incident debriefing	
SOURCE CONTROL	❑ Commence source control operations ❑ Verify amount spilled ❑ Calculate total potential ❑ Mobilize source control specialist ❑ Develop/obtain approval for repair plan	
OPERATIONS	❑ Direct surveillance operations ❑ Mobilize NRC (800) 899-4672 ❑ Equipment/operators/supervisors ❑ Take air monitoring equipment ❑ Obtain samples of spilled material ❑ Prepare shoreline for impact (pre-clean) ❑ Contact ASI (504) 851-6391 ❑ Spray/spotter aircraft and personnel ❑ Vessel for USCG SMART Team ❑ For assistance contact OOPS (504) 781-0804 ❑ Send company representative to site/staging ❑ Consider night time spill tracking - RTTI (504) 467-3434 ❑ Contact wildlife specialist/refuge mgrs. for info. ❑ Consider scare cannons (NRC) ❑ Consider wildlife trailer ❑ Call Wildlife Rehab (281) 332-8319 ❑ Prepare Air Operations Plan ❑ Develop waste disposal plans ❑ Set up decontamination stations	

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FIGURE 1.4
SMT CHECKLIST

POSITION	RESPONSIBILITIES	COMMENTS
LOGISTICS	❑ Locate utility/crew boats, helos ❑ Identify/set up staging areas ❑ Ensure temporary storage-recovered oil capacity ❑ Request mechanics/parts trailers (NRC) ❑ Prepare medical plan, source EMTs (ICS 206) ❑ Prepare communications plan (ICS 205) ❑ Obtain security @ ICP/staging areas ❑ Establish services ❑ Housing ❑ Catering ❑ Parts trailers/mechanics ❑ Fueling facilities	
PLANNING	❑ Call SpillNet (409) 267-3944 ❑ Request trajectories ❑ Show dispersant timeline ❑ Shoreline impact? Request sensitive areas ❑ Update w/weather forecasts/surveillance ❑ Prepare dispersants/insitu burning request form ❑ Post/update charts in Incident Command Post ❑ Commence NRDA operations (sampling) ❑ Prepare ICS 201 and IAP ❑ Set up secured filing system	
FINANCE	❑ Issue AFE number ❑ Prepare for claims ❑ Review contracts with spill vendors	

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FIGURE 1.5
SPILL MANAGEMENT TEAM – Marathon Oil Company

Address: 200 Corporate Drive, Lafayette, Louisiana 70505
Phone: (337) 233-8240 Fax: (337) 267-3243

See Corresponding Locations to follow this Table.
All Spill Management Team Members are company employees unless otherwise noted.

#	*Name/Position*	*Loc #*	*Office*	*Pager*	*Home*	*Cellular*
	Qualified Individual L. R. Dartez	1	Ext. 2200	(800) 769-7243 Pin # 930-2445	(281) 681-2134	-----
	C. R. Hubacher	1	Ext. 2517	(337) 272-8737	(713) 587-6361	-----
1	Incident Commander L.R. Dartez	1	Ext. 2200	(800) 769-7243 Pin # 930-2445	(281) 681-2134	-----
	C.R. Hubacher	1	Ext. 2517	(337) 272-8737	(713) 587-6361	-----
2	Safety Officer E. B. Spoelker	1	Ext. 2549	(713) 227-8697	(281) 251-3981	-----
3	Liaison Officer M. W. Miller	1	Ext. 2500	(337) 272-1074	(337) 993-3635	-----
4	Information Officer R. G. Kasubinski	1	Ext. 2302	(337) 236-2607	(337) 857-0955	-----
5	Legal Officer E. A. Strenkowski	1	Ext. 83+2529	(800) 769-7243 Pin # 930-2443	(281) 579-0915	-----
6	Human Resources Bob Kasubinski	2	(713) 296-2200	(800) 946-4646 Pin # 146-0114	(281) 693-2854	(713) 410-7881
7	Source Control Group Supv. Jerry Beardmore	1	Ext. 2559	(337) 272-1920	(337) 856-4194	(713) 516-2229
8	Operations Section Chief R. H. Lott W. S. Farmer	1 1	Ext. 2282 Ext. 2317	(337) 272-8740 (337) 272-8688	(337) 988-1287 (337) 856-9470	----- -----
9	Recovery & Prot. Branch Dir.					
10	Staging Area Manager					
11	Disposal Group					
12	Wildlife Branch Director					
13	Planning Section Chief L. D. Burton C. W. Craig	1 1	Ext. 2205 Ext. 2562	(337) 272-8749 (337) 733-2862	(337) 365-5710 (337) 856-8447	----- -----

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FIGURE 1.5
SPILL MANAGEMENT TEAM – Marathon Oil Company

Address: 200 Corporate Drive, Lafayette, Louisiana 70505
Phone: (337) 233-8240 Fax: (337) 267-3243

See Corresponding Locations to follow this Table.
All Spill Management Team Members are company employees unless otherwise noted.

#	*Name/Position*	*Loc #*	*Office*	*Pager*	*Home*	*Cellular*
14	Situation Unit Leader					
15	Resource Unit Leader					
16	Documentation Unit Leader					
17	Technical Specialists					
18	Logistics Section Chief B. Dartez	1	Ext. 2255	(337) 236-4060	(337) 893-7032	(337) 278-8779
19	Service Branch Director					
20	Support Branch Director					
21	Communications Unit Leader					
22	Finance Section Chief A. Morale	1	Ext. 2520	(337) 231-0849	(337) 264-9443	-----
23	Procurement Unit Leader					
24	Comp./Claims Unit Leader					
25	Cost Unit Leader					

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SPILL MANAGEMENT TEAM – These locations correspond with numbers listed above.		
#1	#2	#3
Marathon Oil Company 200 Corporate Drive Lafayette, Louisiana 70505	Marathon Oil Company 5555 San Felipe Road Houston, Texas 77056	

FIGURE 1.6
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

1 AGENCY NOTIFICATIONS

a) National Response Center

NAME	CITY, STATE	TELEPHONE NUMBERS	
USCG	Washington, D.C.	Office	(800) 424-8802 *
		Office	(202) 267-2675 *

b) Minerals Management Service

NAME	CITY, STATE	TELEPHONE NUMBERS	
New Orleans District	New Orleans, LA	Office	(504) 736-2505
		Office	(504) 538-0231 *
Pipeline Section	New Orleans, LA	Office	(504) 736-2591
		Office	(504) 423-5340 *

c) State Agencies

NAME	TELEPHONE NUMBERS	
AL - ADEM (Alabama Department of Environmental Management)	Office	(334) 450-3400
AL - AEMA (Alabama Emergency Management Agency)	Office	(800) 843-0699 *
FL - Dept. of Environmental Protection	Office	(904) 488-2974
	Office	(850) 413-9911 *
FL - Bureau of Emergency Response	Office	(904) 413-9911
LA - One Call	Office	(225) 925-6595 *
	Office	(225) 219-5800
MS - Emergency Management Agency	Office	(601) 352-9100
	Office	(800) 222-6362 *

d) United States Coast Guard

NAME	CITY, STATE	TELEPHONE NUMBERS	
MSO Mobile	Mobile, AL	Office	(334) 441-5286
		Office	(334) 441-5121 *
MSO New Orleans	New Orleans, LA	Office	(504) 589-4218
		Office	(504) 589-6261 *
MSO Panama City	Panama City, FL	Office	(904) 233-0366

e) Environmental Protection Agency / EPA

NAME	CITY, STATE	TELEPHONE NUMBERS	
Region IV	Atlanta, GA	Office	(404) 562-8700 *

FIGURE 1.6
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

2 EMERGENCY NOTIFICATIONS

a) USCG Search & Rescue

NAME	CITY, STATE	TELEPHONE NUMBERS	
Search & Rescue Team		Office	(504) 589-6225

b) Hospitals

Louisiana	Air Care - New Orleans, LA	Office	(504) 347-5511
	Air Med - Houma, LA	Office	(800) 259-1111
	W. Jefferson Medical Ctr. Marrero, LA	Office	(504) 347-5511
Mississippi	Family Medical Center, Inc. Pascagoula, MS	Office	(601) 762-0222
	MS Baptist Medical Center Jackson, MS	Office	(601) 968-1776
	St. Dominic Health Svcs. Jackson, MS	Office	(601) 982-0121
Alabama	Mercy Medical Mobile, AL	Office	(334) 626-2694
	Mobile Infirmary Medical Center Mobile, AL	Office	(334) 431-2400
	Providence Hospital Mobile, AL	Office	(334) 633-1000
	Springhill Memorial Hospital Mobile, AL	Office	(334) 344-9630
	Thomas Hospital Fairhope, AL	Office	(334) 928-2375
	Univ. of S. AL Medical Center Mobile, AL	Office	(334) 471-7000
	USA Children's/Women's Hosp. Mobile, AL	Office	(334) 415-1000
	USA Knollwood Park Hospital Mobile, AL	Office	(334) 660-5120

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FIGURE 1.6
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

3 MAJOR SPILL RESPONSE EQUIPMENT

Refer to APPENDIX D, "Contractual Agreements" for contracts with OSRO's.

a) National Response Corporation

NAME	CITY, STATE	TELEPHONE NUMBERS	
Dispatch	Calverton, NY	Office	(800) 899-4672
		Office	(516) 369-8644
		Fax	(516) 369-8655

b) Airborne Support Inc. Dispersant – (Contract in Place)

Howard Barker	Bourg, LA	Office	(504) 851-6391
		Fax	(504) 851-6393

4 SOURCE CONTROL SERVICES

a) Well Control Specialists

Boots & Coots, Inc.	Houston, TX	Office	(281) 931-8884
Cudd Pressure Control	Houston, TX	Office	(713) 877-1118
International Well Control	Houston, TX	Office	(713) 621-7911
Wild Well Control	Houston, TX	Office	(281) 353-5481

b) Diving Companies

Cal Dive	Morgan City, LA	Office	(504) 385-1104
Stolt Comex Seaway Inc.	Bell Chasse, LA	Office	(504) 361-3477 *
	Houston, TX	Office	(713) 466-0245 *
		Office	(713) 430-1100 *

5 SPILL CONSULTANTS, CONTRACTORS & EQUIPMENT

a) Spill Management Consultants

ERST/O'Brien's	Slidell, LA	Office	(504) 781-0804
Jim O'Brien/Ben Benson		Fax	(504) 781-0580

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FIGURE 1.6
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

NAME | CITY, STATE | TELEPHONE NUMBERS

b) Contractor Personnel & Equipment - ICN

Contractor	Location	Contact	Phone Number
Berry, Cliff	Fort Lauderdale, Fl	Cliff Berry	800-899-7745
Boots & Coots Special Serv.	LaPorte, Tx	Tony Stamper	281-470-0444
Diversified Environmental	Tampa, Fl	Gerry McCormick	813-248-3256
Environmental Rec. Group	Atlantic Beach, Fl	Jay Daniel	904-241-2200
Environmental Restoration LLC	Ellisville, Mo	Russ Gulledge	314-227-7477
Ferguson Harbor	Spanish Fort, Al	Paul Kearns	334-626-3295
Hepco	Memphis, Tn		901-345-6333
Industrial Cleanup Inc.	Lutcher, La	Rusty Johnson	800-436-0883
IT Corp	O'Fallon, Mo	Tom Knueven	314-272-3303
Miller Environmental	Corpus Christi, Tx	Charles Miller	361-289-9800
Miller Environmental	Sulphur, La	Matt Dartez	337-882-9800
Oil Mop Inc.	Port Allen, La	Ron Nigg	504-388-9992
Oil Mop Inc.	Belle Chase, La	Mark Barber	504-394-6110
Pneumatic Industrial Serv.	Orangefield, Tx	David McCoy	409-735-9121
Premium Electronics	LaPorte, Tx	Harold Bushy	713-470-9595
Southern Waste Services	Mobile, Al	Harry Marsh	334-662-0598
Southern Waste Services	Panama City, Fl	Harry Marsh	800-852-8878
Southern Waste Services	Savannah, Ga	Mr. Griffif	800-852-8878

FIGURE 1.6
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

6 ENVIRONMENTAL SERVICES

a) Weather Service

NAME	CITY, STATE		TELEPHONE NUMBERS
Alert Weather Service	Lafayette, LA	Office	(337) 233-5565
A. H. Glenn & Assoc.	New Orleans, LA	Office	(504) 241-2222
National Weather Service	Slidell, LA	Office	(504) 589-2808
Ed Roy Ltd.	Lafayette, LA	Office	(337) 233-3816

b) Trajectory Analysis

SpillNet	Anahuac, TX	Office	(409) 267-3872 *
David Morris		Fax	(409) 267-3945

c) Environmental Assessments / NRDA

Coastal Environments, Inc.	Baton Rouge, LA	Office	(225) 383-7451
		Fax	(225) 383-7925
ENTRIX	Houston, TX	Office	(713) 666-6223
J. Connor Consulting, Inc.	Houston, TX	Office	(281) 578-3388
Bea Stong		Fax	(281) 578-8895
Dr. Phil Sorenson	790 E. Broward Blvd.	Office	(954) 467-5920
Florida State University	Ft. Lauderdale, FL 33301		
Steimle & Associates	Metairie, LA	Office	(504) 831-2574
		Fax	(504) 835-9410

d) Oil Analysis

Analysis Laboratories, Inc.	Metairie, LA	Office	(504) 889-0710
		Office	(504) 455-2718
MBA Laboratory	Houston, TX	Office	(713) 928-0701
Herman Kresse		Fax	(713) 928-9063

e) Bird Rehab

IBRRC	Berkley, CA	Office	(510) 841-9086
Madeline Averett	Harper, TX	Office	(830) 864-4032
		Home	(830) 864-4934
		Pager	(800) SKY-PAGE
		Pin #	5464375
WR&E	Houston, TX	Home	(281) 332-8319
Sharon Schmalz		Pager	(713) 279-1417
		Pager	(713) 604-0303

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FIGURE 1.6
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

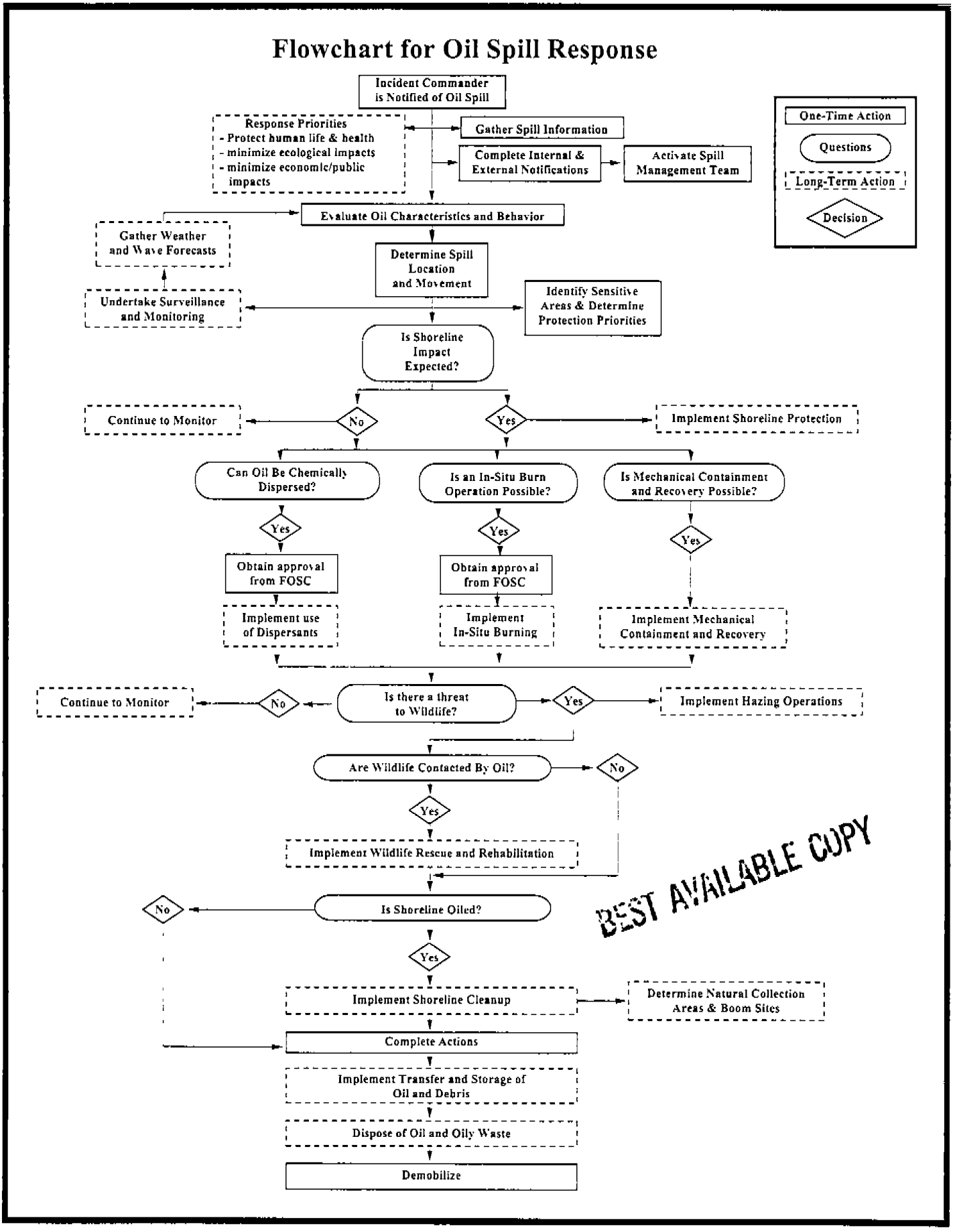
NAME	CITY, STATE	TELEPHONE NUMBERS	
f) Infrared Cameras			
Real Time Thermal Imaging	New Orleans, LA	Office	(504) 467-3434
Bob Melia		Pager	(800) 785-7078
7 TRANSPORTATION			
a) Vessels			
Otto Candies	Des Allemands, LA	Office	(504) 469-7700
Ralph McIngvale (So. States OS)	Houston, TX	Office	(281) 448-3693
David Wolford	New Orleans, LA	Office	(504) 581-1314
		Pager	(504) 840-9010
b) Aircraft / Helicopters			
Air Logistics	Venice, LA	Office	(504) 534-7481
	Galveston, TX	Office	(409) 740-3546
PHI	Gulf of Mexico Scheduling	Office	(800) 235-2452

FIGURE 1.7
RESPONSE OBJECTIVES

Objectives for Operational Period: _____
MAXIMIZE HEALTH AND SAFETY OF RESPONSE PERSONNEL
❑ Safety is first priority
❑ Perform site characterizations
❑ Restrict access to "Hot" & "Warm" zones to properly trained & equipped personnel
MINIMIZE HEALTH & SAFETY IMPACTS TO GENERAL PUBLIC
❑ Establish secure safety zones
❑ Issue Notice to Mariners
❑ Restrict air space over incident scene
❑ Conduct air & water quality monitoring, as necessary
CONTROL AND STABILIZE SOURCE
❑ Be prepared for fire
❑ Conduct damage assessment
❑ Commence source control operations
MAXIMIZE PROTECTION OF SENSITIVE AREAS
❑ Use SpillNet & ACP to identify sensitive areas
❑ Develop and implement protection strategies
❑ Prioritize areas, as necessary
DEVELOP A COMPREHENSIVE, INTEGRATED PLAN
❑ Obtain approval to use dispersants
❑ Obtain approval to commence in-situ burning
❑ Use high capacity recovery devices in the thickest concentrations
❑ Support on-water operations with surveillance and spotter aircraft
❑ Prepare shorelines for the arrival of oil
❑ Initiate wildlife protection operations
❑ Initiate NRDA operations
❑ Establish staging areas
❑ Develop disposal plans
❑ Integrate agency response personnel into SMT
❑ Keep public informed
❑ Be prepared to respond to claims
ICS 202

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FIGURE 1.8



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FIGURE 1.9 - SITE SAFETY ASSESSMENT

APPLIES TO SITE:

DATE: | **INCIDENT:**

PRODUCTS: *(ATTACH MSDS)*

SITE CHARACTERIZATION ❑ Marine vessel ❑ Pipeline ❑ Storage facility
❑ Truck/Rail car ❑ Other _____

Water ❑ Shoreline ❑ Wetlands ❑ Other _____
❑ Rocky ❑ Sandy ❑ Muddy ❑ Other _____
❑ River ❑ Creek ❑ Canal ❑ Bay ❑ Ocean

Land ❑ Mountains ❑ Hills ❑ Brushland ❑ Forest ❑ Grassland
❑ Other _____

Use ❑ Public ❑ Government ❑ Residential ❑ Commercial
❑ Recreational ❑ Industrial ❑ Farmland ❑ Other

Weather ❑ Temp _____ °F ❑ Wind/Dir. _____ mph ❑ Rain
❑ Snow ❑ Ice ❑ Other _____

Pathways for Dispersion ❑ Air ❑ Water ❑ Land ❑ Other ____

Site Hazards

❑ Chemical Hazards
❑ Slips, trips, falls
❑ Heat stress
❑ Cold stress
❑ Weather
❑ Drowning
❑ Heavy equipment
❑ Drum handling
❑ Wildlife/plants
❑ Hand/power tools
❑ Lifting
❑ Boats
❑ Helicopters
❑ Noise
❑ Pumps, hoses
❑ Steam, hot water
❑ Fire/explosion
❑ Poor visibility
❑ Motor vehicles
❑ Confined spaces
❑ Ionizing radiation
❑ Other: _____

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Air Monitoring

%LEL _____ %O2 _____ PPM Benzene _____ PPM H_2S _____
❑ Other (specify) _____

FIGURE 1.9 - SITE SAFETY ASSESSMENT

CONTROL MEASURES:

Engineering Controls

❑ Source of release secured ❑ Valve(s) closed ❑ Facility shut down
❑ Site secured ❑ Energy sources locked/tagged out
❑ Other _____

Personal Protective Equipment (PPE)

❑ PVC suits ❑ PE/TYVEK suits ❑ Respirator _____
❑ Nitrile gloves ❑ PVC gloves ❑ Other _____
❑ Rubber boots ❑ Hard hats ❑ Eye protection _____

Decontamination

❑ Stations established

Sanitation

❑ Facilities provided per OSHA 1910.120(n).

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Illumination

❑ Facilities provided per OSHA 1910.120(m).

Medical Surveillance

❑ Will be provided per OSHA 1910.120(f).

WORK PLAN: (Buddy system must be used.)

❑ Booming ❑ Skimming ❑ Vac. trucks ❑ Pumping ❑ Excavation
❑ Heavy equip. ❑ Sorbent pads ❑ Patching ❑ Hot work ❑ Shoring
❑ Appropriate permits issued
❑ Other (describe): _____

TRAINING:

❑ Verified site workers trained per OSHA 1910.120.

ORGANIZATION:

Incident Commander: (D) _____ Radio/Telephone: _____
(N) _____
Deputy IC: (D) _____ Radio/Telephone: _____
(N) _____
Safety Officer: (D) _____ Radio/Telephone: _____
(N) _____
Public Affairs Officer: _____ Radio/Telephone: _____

FIGURE 1.9 - SITE SAFETY ASSESSMENT

EMERGENCY PLAN:

❑ Alarm system: _____

_____

❑ Evacuation plan: _____

_____

❑ First aid locations: _____

_____

Notify the following as soon as possible:

❑ Hospital: _____ Phone: _____
❑ Ambulance: _____ Phone: _____
❑ Air ambulance: _____ Phone: _____
❑ Fire: _____ Phone: _____
❑ Police: _____ Phone: _____

PRE-ENTRY BRIEFING:

❑ Date/time completed: By: _____

❑ Hazards discussed (attach training documentation)
❑ Other topics: _____

DATE/TIME PLAN COMPLETED: BY

FIGURE 1.10

NRC CALL-OUT PROCEDURES

Notification and Activation

In the event of a spill, the person designated as the Qualified Individual (QI) or his/her designees have the sole authority to initiate National Response Corporation (NRC) response activities. NRC's 24-manned International Operations Center (IOC) in Calverton, New York is the focal point from which NRC response activities are initiated. The following telephone numbers are to be used in an emergency in order to notify NRC of a discharge or threat of discharge.

International Operations Center (IOC) - Calverton, NY

Toll-free Hotline (800) 899-4672 (For Oil Spills Only)		Telephone (631) 369-8644
Facsimile (631) 369-8655, or (631) 369-4908		**Telex** 469 173 80

E-Mail: iocdo@nrcxchange.nrcc.com

At the time the spill is reported, NRC requires that the QI complete and submit (facsimile) an Initial Spill Report to the NRC International Operations Center. This begins the documentation of the spill response. Once the client determines a need for NRC's services, the QI must complete and submit (by facsimile) the Authorization to Proceed to the IOC in order to activate NRC response activities.

Once NRC is notified of a spill or threat thereof, a line of communication will be set-up between NRC's Spill Management Team, the client's QI and the responsible party's Spill Management Team. NRC offers many different levels of spill management skills that may be tailored to the specific needs of the client.

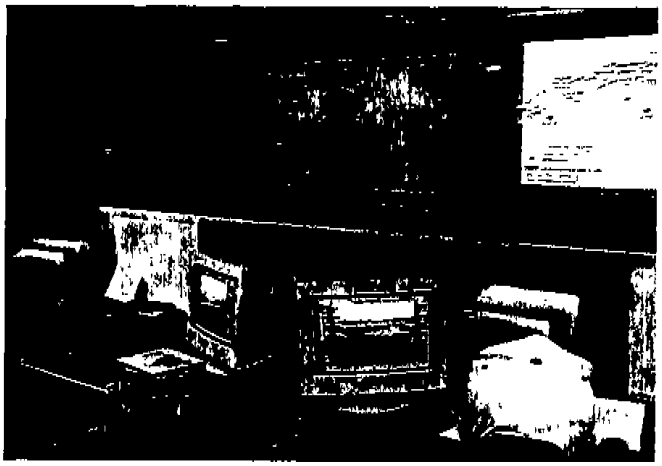
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FIGURE 1.10

NRC CALL-OUT PROCEDURES

Notification and Activation (Con't.)

Following receipt of the Authorization to Proceed, which activates NRC's response, mobilization of resources by the Independent Contractor Network (ICN) Participants will begin under the supervision of NRC's Gulf Coast Regional Manager. The amount of resources mobilized will depend on the needs and requests of the client. The resources will be transported, deployed and operated by the ICN Participants and their trained personnel, while under the direction of the Spill Management Team and National Response Corporation.



NRC established the Gulf of Mexico Operations Center (GoMOC) which can be used for response operations. Dimensions are 40 feet by 28 feet (total square feet equals 1,120).

GoMOC is equipped with 5 workstations, printers, a television set and electronic projector.

Gulf of Mexico Operations Center – Morgan City, LA

Toll-free Hotline (877) 334-4466		Telephone (504) 380-3166
Facsimile (504) 380-3163		Gulf of Mexico Operations Center is referred to as "GoMOC"

E-Mail: iocdo@nrcxchange.nrcc.com

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FIGURE 1.10

NRC
NATIONAL RESPONSE
CORPORATION

INITIAL SPILL REPORT

Documentation of initial drill and/or spill information.

DRILL ☐ ACTUAL ☐ NRC CONTROL #: _____

DATE AND TIME: _____

NAME OF CALLER: _____ POSITION/TITLE: _____

PHONE NUMBER: _____ FAX NUMBER: _____

VESSEL INFORMATION

VESSEL NAME: _____ LIST CALL SIGN: _____

OWNER/OPER: _____

FLAG/REGISTRY: _____ VRP ON BOARD: YES ☐ NO ☐

QI VERIFICATION: _____ PHONE NUMBER: _____

FAX NUMBER: _____

FACILITY INFORMATION FRP ON BOARD? YES ☐ NO ☐

OWNER/OPER: _____ ST. ADDRESS: _____

CITY OR TOWN: _____ PORT AREA: _____

QI VERIFICATION: _____ PHONE NUMBER: _____

FAX NUMBER: _____

TYPE CASUALTY: _____

DATE/TIME OF INCIDENT: _____

CURRENT CONDITION VESSEL/FACILITY: _____

LOCATION OF INCIDENT: _____

LATITUDE: _____ LONGITUDE: _____

BERTH FACILITY: _____ PHONE NUMBER: _____

NATIONAL RESPONSE CORPORATION, 446 EDWARDS AVENUE, P.O. BOX 609, CALVERTON, NY 11933
PHONE: (631) 369-8644 FAX: (631) 369-4908 IOC FAX: (631) 369-8655

FIGURE 1.10

NATIONAL RESPONSE CORPORATION

AUTHORIZATION TO PROCEED

Client Authorization of NRC services.

I hereby acknowledge receipt of National Response Corporation's rate schedule effective _____ and hereby authorize National Response Corporation to provide goods and services for this job, and also accept the terms of the rate schedule set forth and agree to pay according to said schedule any and all monies due and owing within ten (10) days from invoice date.

I understand that a finance charge of 1-1/2% per month, which is an annual percentage rate of 18%, will be charged on all past-due accounts.

In addition, I authorize NRC to arrange for disposal on my behalf, consistent with the following terms:

_____

_____

_____

_____

I will be responsible for all collection costs on past-due accounts, inclusive of attorneys fees.

JOB LOCATION: _____

JOB DESCRIPTION: _____

_____

AUTHORIZED SIGNATURE: _____

DATE: _____

NRC REFERENCE: _____

NATIONAL RESPONSE CORPORATION, 446 EDWARDS AVENUE, P.O. BOX 609, CALVERTON, NY 11933
PHONE: (631) 369-8644 FAX: (631) 369-4908 IOC FAX: (631) 369-8655

These 2 preceeding forms have been reproduced for use within an Oil Spill Response Plan and are not originals produced by NRC, however the language is the same.

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FIGURE 1.10

NRC OFFSHORE FLEET OPERATIONS

National response Corporation provides both dedicated and Identified Deployment offshore vessels for spill response in the Gulf of Mexico.

1) Dedicated Fleet

The dedicated fleet is permanently stationed at Galveston and Ingleside, Texas and Theodore, Alabama (which is near Mobile). These are the Oil Spill Response Vessel (**OSRV**) NRC Admiral and the Oil Spill Response Barges (**OSRBs**) NRC Valiant and NRC Defender. The dedicated fleet is prepared to be underway in 2 hours, as required by OPA-90, from request for mobilization and all have permanently assigned personnel. The dedicated fleet is equipped with the necessary spill containment and recovery gear to effectively respond on request.

2) Identified Deployment (ID) Boat Fleet

The Identified Deployment (ID) Boat fleet consists of 5 offshore utility vessels under charter to OCS operators and working in separate areas of the Gulf of Mexico. By charter agreement, these vessels can be redirected to conduct spill response operations immediately on request.

Each ID Boat carries the following so it can be deployed directly to a spill site without returning to a shorebase before responding:

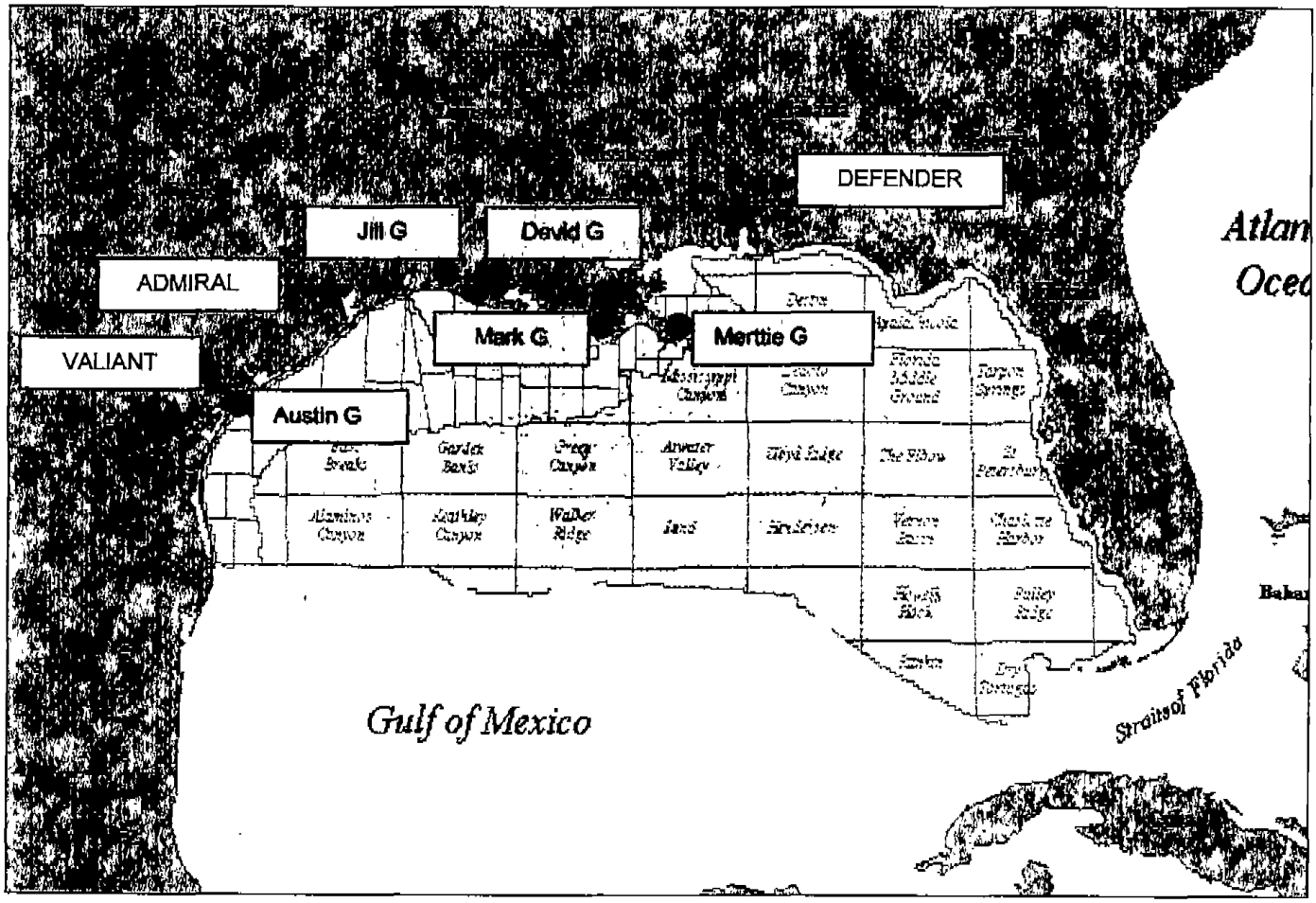
- Skimmer
- Spill containment boom
- Recovered oil storage bladder
- Crews trained in spill response and HAZWOPER

All dedicated vessels and ID Boats are equipped with computers networked to the Seacor/NRC vessel tracking system which can pinpoint the location of each vessel on a 24 hour, 7 day basis. This allows NRC International Operations Center and the Gulf of Mexico Operations Center to determine the closest vessel to a spill event and direct the movement and activities aboard the vessel when activated for a spill response. This system also has the ability to communicate with any or all of the vessels via onboard e-mail.

NATIONAL RESPONSE CORPORATION

FIGURE 1.10

MAJOR EQUIPMENT LOCATIONS



Oil Spill Response Vessel

NRC ADMIRAL – Galveston, TX

Oil Spill Response Barges

NRC VALIANT – Corpus Christi, TX

NRC DEFENDER – Mobile, AL

ID Boats

AUSTIN G – Ingleside, TX

JILL G – Cameron, LA

DAVID G – Intracoastal City, LA

MARK G – Cocodrie, LA

MERTTIE G – Venice, LA

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NATIONAL RESPONSE CORPORATION

FIGURE 1.10

OFFSHORE RESPONSE VESSEL & BARGES

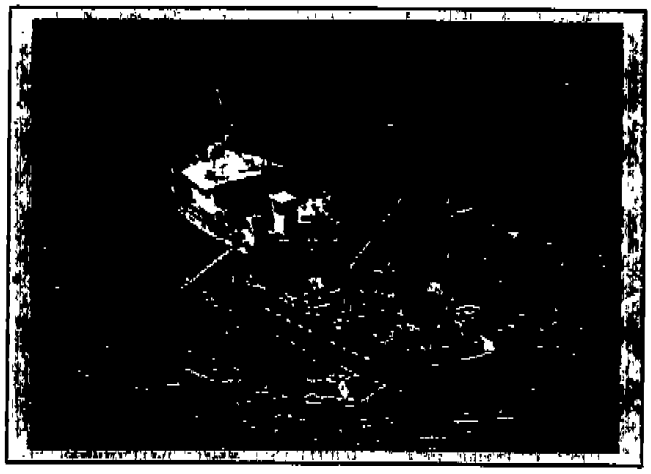
NRC ADMIRAL

Oil Spill Response Vessel - Galveston Texas
Speed: 10 kts

Skimmers:
- Marco XI C - Weir Mode..... 24,000 bbl/day derated
- *Belt Mode..... 10,768 bbl/day de*
- Rope Mop ..... 2,125 bbl/day derated

Storage:
- Total Storage .....300 bbl

Boom:
- Ocean Boom. (Oil Stop) ..... 2,500 ft of 43"
- Sweep Boom (Containment Systems) ... 100 ft of 43"



NRC VALIANT

Oil Spill Response Barge - Corpus Christi, Texas
Speed: Tug Speed

Skimmers:
- Marco XI C - Weir Mode..... 24,000 bbl/day derated
- *Belt Mode..... 10,768 bbl/day de*
- OWOCRS ..... 5,280 bbl/day derated

Storage:
- Total Storage .....20,872 bbl/day

Boom:
- Ocean Boom (Oil Stop) .....2,500 ft of 43"
- Sweep Boom (Containment Systems) ... 100 ft of 43"

Boat:
- Kvichak BHSS 102 ..... 28-ft boom handling



NRC DEFENDER

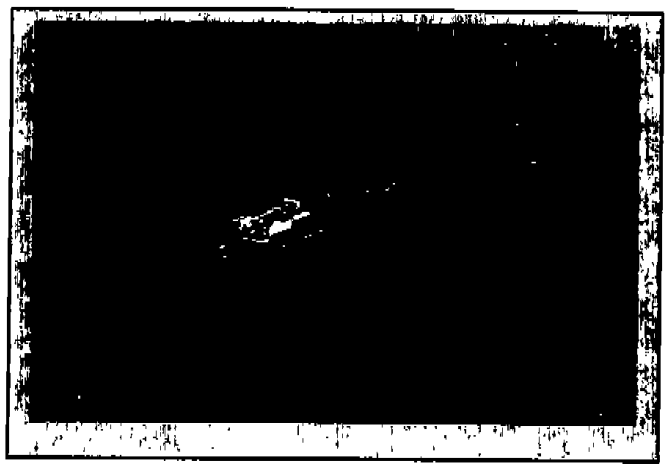
Oil Spill Response Barge - Mobile, Alabama
Speed: Tug Speed

Skimmers:
- Marco XI C - Weir Mode..... 24,000 bbl/day derated
- *Belt Mode..... 10,768 bbl/day de*
- Vikoma Cascade..... 5,465 bbl/day derated

Storage:
- Total Storage .....16,500 bbl

Boom:
- *Inflatable Ocean Boom (Oil Stop).....2,500 ft of 43"*
- Sweep Boom (Containment Systems) ... 200 ft of 43"

Boat:
- Kvichak BHSS 103 ..... 28-ft boom handling



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NATIONAL RESPONSE CORPORATION

FIGURE 1.10

ID BOATS

AUSTIN G

ID Boat - Ingleside, TX
Speed: 10 kts

Skimmer:
24" Drum Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage .....101 bbl
Boom:
Sweep..... 100 ft of 24"



JILL G

ID Boat – Cameron, LA
Speed: 10 kts

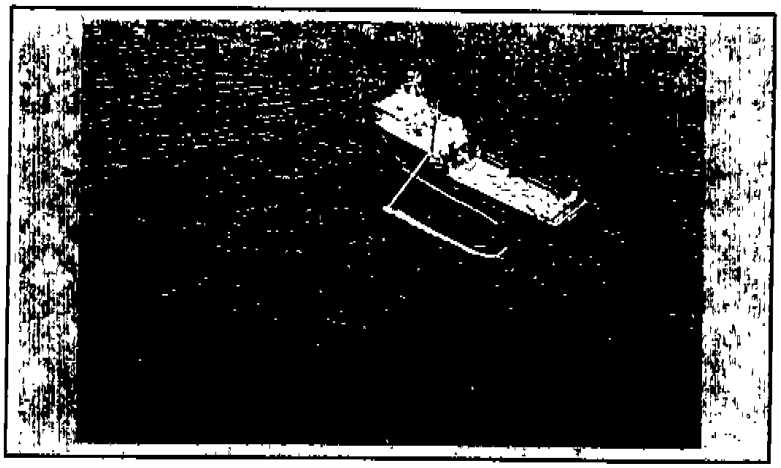
Skimmer:
ORD Disk Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage .....101 bbl
Boom:
Sweep..... 100 ft of 21"



DAVID G

ID Boat – Intracoastal City, LA
Speed: 9 kts

Skimmer:
ORD Disk Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage .....101 bbl
Boom:
Sweep..... 100 ft of 21"



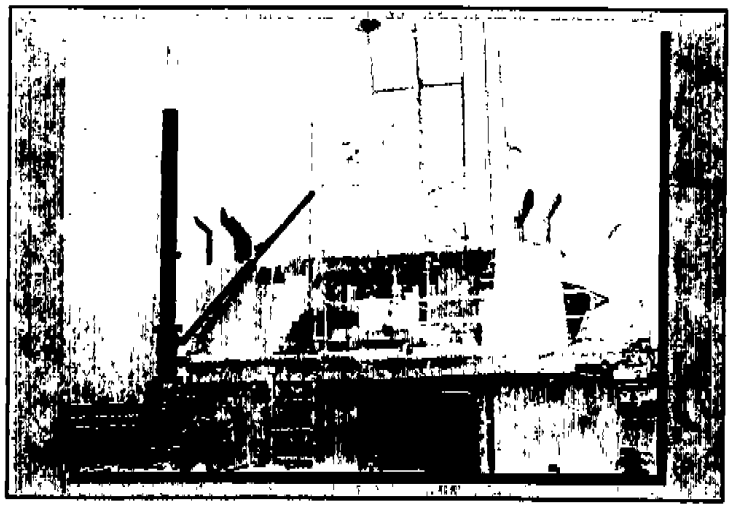
NRC
NATIONAL RESPONSE
CORPORATION

FIGURE 1.10

ID BOATS

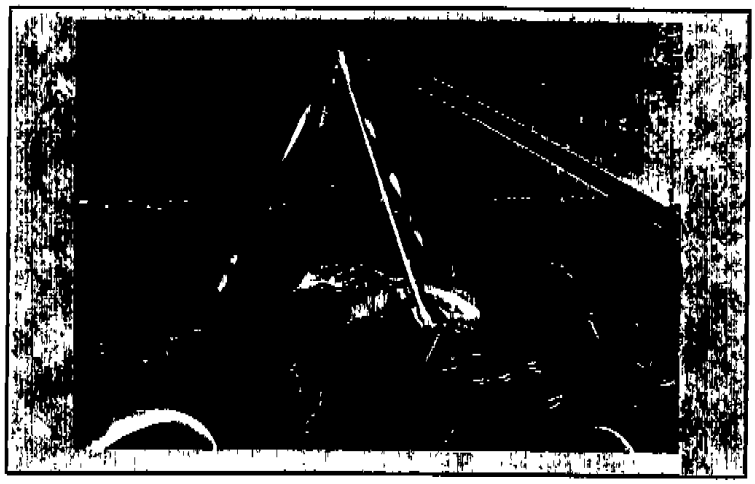
MARK G
ID Boat – Cocodrie, LA
Speed: 10 kts

Skimming:
ORD Disk Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage ..... 101 bbl
Boom:
Sweep ..... 100 ft of 21"



MERTTIE G
ID Boat – Venice, LA
Speed: 10 kts

Skimming:
ORD Disk Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage ..... 101 bbl
Boom:
Sweep ..... 100 ft of 21"



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NRC NATIONAL RESPONSE CORPORATION

FIGURE 1.10

MISCELLANEOUS RESPONSE EQUIPMENT

August 2000

Type	Qty.	Use	Description	Derating Bbl / day	Storage Bbls
SKIMMERS					
Marco Class XI-C Skimmer (Belt Mode & Weir Mode)	15	Rivers/Canals Inland/Nearshore Open Ocean	Model FS 110 VOSS Filterbelt Skimmer with Weir/U440 Capsul Pump	10,768 24,000	—
Vikoma Cascade Weir Skimmer	12	Rivers/Canals Inland/Nearshore Open Ocean	Model LP 3000 Weir Skimmer	5,465	—
Vikoma Fasflo Skimmer	18	Rivers/Canals Inland/Nearshore Open Ocean	Fast Current Weir Skimmer; Hydrofoil stabilized	3,154	—
Rope Mop Skimmer (4 Band & 8 Band)	17	Rivers/Canals Inland/Nearshore Offshore/Open Ocean	Model VMW 92-4; Vertical Rope Mop	1,495 2,125	—
MEG-5000 Weir Disk Skimmer	18	Inshore Waters	Self-contained combination oleophilic-disk and Weir Skimmer	1,371	25 bbls
BOATS & BARGES					
Boom Handling Skimmer Support Vessel	12	Rivers/Canals Inland/Nearshore Offshore/Open Ocean	Boom handling, towing, skimmer support and work platform	—	—
Shallow Water Recovery Barge	29	Rivers/Canals Inland/Nearshore Open Ocean	Temporary storage for recovered material; skimmer support and work platform	—	200 bbls
BOOM & DISPERSANT					
Ocean Boom – 82,200 feet	—	Inland/Nearshore Offshore/Open Ocean	Suitable for all floating oils	—	—
Inshore Boom – 100,000 feet	—	Rivers/Canals Inland/Nearshore Offshore/Open Ocean	Suitable for all floating oils	—	—
Dispersant Applicator	4	Offshore/Open Ocean	Suitable for all floating oils	—	—

FIGURE 1.11
CONVERSATION / ACTION RECORD

Date: _____ Page _____ of _____
Position: _____
Name: _____

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

FIGURE 1.11
CONVERSATION / ACTION RECORD

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Name: _____

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

FIGURE 1.11
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No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

FIGURE 1.11
CONVERSATION / ACTION RECORD

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Name: _____

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

FIGURE 1.11
CONVERSATION / ACTION RECORD

Date: _____ Page _____ of _____

Position: _____

Name: _____

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

FIGURE 1.12
TABLE 1 - PRODUCTION PLATFORMS AND SATELLITE STRUCTURES IN DESOTO CANYON 927

1	2	3	4	5	6	7		8	9	10	11	12	13
Area	Block	OCS #	Facility Name	Facility ID	Water Depth (feet)	Latitude	Longitude	Distance to Nearest Shore (miles)	API Gravity	* Rating	High Well (bbls)	All Storage (bbls)	Thru. Volume (bbls)
NO PRODUCTION PLATFORMS, EXPLORATORY DRILLING OPERATIONS ONLY													

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FIGURE 1.12
TABLE 2 - ROW PIPELINES IN DESOTO CANYON 927

1	2		3	4		5	6	7	8	9	10	11	12	13	14
From	Latitude	Longitude	To	Latitude	Longitude	Fed./St. Boundary (Yes/No)	Segment No.	ROW No.	Length (ft)	Size (in)	API Gravity	Leak Detection Sys.(Y/N)	Thru. Volume (bbls)	Distance to Shore (miles)	Appurt. Platform (Yes/No)
		N/A													

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B) RECORD OF REVISIONS

CHANGE NUMBER	DATE	SECTION	TYPE OF CHANGE	DESCRIPTION
1	01/05/01	2, 6, 11, 18, 19; App. D, H, I	AM	Changes pursuant to comments received from MMS
2	02/11/01	2, 9, 11; App. H	AM	Revisions in accordance with new MMS OSRAM
3	03/05/01	2; App. B, H	MD	Updated training records; changes to equipment response times for WCD

TYPE OF CHANGE (USE THE FOLLOWING CODES):

AU = Annual Update
BI = Biennial Update
AM = An amendment (a change to Site-Specific OSRP pending approval)
MD = A modification (a change to approved Site-Specific OSRP)

Updating Procedures

This HSCP will be maintained by the Environmental & Safety Coordinator in the Lafayette, Louisiana office.

1. Every 2 years, the HSCP will be updated to reflect personnel and telephone number changes, oil spill containment and cleanup equipment availability, and other new and relevant information.

2. Revisions to the plan must be submitted to MMS for approval within 15 days whenever:

   a) A change occurs which significantly reduces response capabilities;
   b) A significant change occurs in the worst case discharge scenario or in the type of oil being handled, stored, or transported at a facility;
   c) There is a change in the name(s) or capabilities of the oil spill removal organizations cited in the plan; or
   d) There is a significant change to the Area Contingency Plan(s).

3. Suggestions for corrections and modifications are solicited from all users of the plan and should be submitted directly to Dave Burton, Marathon Oil Company, 200 Corporate Drive, Lafayette, Louisiana 70505, phone number (337) 233-8240 extension 2205.

4. Modifications to the HSCP will be submitted to the Minerals Management Service (MMS) Regional Supervisor for Field Operations for review and approval.

5. Updated materials will also be transmitted to holders of the HSCP via cover letter which will instruct the holder to remove "old pages" from the plan and replace them with the appropriate revised pages.

6. These revisions will be recorded on the Record of Changes Form included in this Section.

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FIGURE 2.1 - ACRONYMS

ACP ..... *Area Contingency Plan*
CGA ..... *Clean Gulf Associates*
DOT ..... *United States Department of Transportation*
EPA ..... *Environmental Protection Agency*
FAA ..... *Federal Aviation Administration*
FOSC ..... *Federal On-Scene Coordinator*
FRU ..... *Fast Response Unit*
HAZWOPER ..... *Hazardous Waste Operations & Emergency Response*
HOSS ..... *High Volume Open-Sea Skimmer*
IAP ..... *Incident Action Plan*
IC ..... *Incident Commander*
ICP ..... *Incident Command Post*
ICS ..... *Incident Command System*
ID Boat ..... *Identified Boat*
JIC ..... *Joint Information Center*
MMS ..... *Minerals Management Service*
MSDS ..... *Material Safety Data Sheet*
MSO ..... *Marine Safety Office (US Coast Guard)*
MSRC ..... *Marine Spill Response Corporation*
NCP ..... *National Contingency Plan*
NRC ..... *National Response Center (US Coast Guard)*
NRC ..... *National Response Corporation*
NRDA ..... *Natural Resource Damage Assessment*
OCS ..... *Outer Continental Shelf*
OOPS ..... *O'Brien's Oil Pollution Services*
OPA 90 ..... *Oil Pollution Act of 1990*
OSHA ..... *Occupational Safety and Health Administration*
OSRO ..... *Oil Spill Removal Organization*
OSRP ..... *Oil Spill Response Plan*
P/L ..... *Pipeline*
PREP ..... *Preparedness for Response Exercise Program*
QI ..... *Qualified Individual*
ROW ..... *Right of Way Pipeline*
RRT ..... *Regional Response Team*
SMT ..... *Spill Management Team*
SOSC ..... *State On-Scene Coordinator*
SROT ..... *Spill Response Operating Team*
SWS ..... *Shallow Water Skimmer*
TX GLO ..... *Texas General Land Office*
USCG ..... *United States Coast Guard*
WCD ..... *Worst Case Discharge*

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SECTION 3 - INTRODUCTION

A. Types of Facilities Covered

This Hydrocarbon Spill Contingency Plan (HSCP) covers the following types of facilities in Desoto Canyon 927, Gulf of Mexico, under the jurisdiction of the Minerals Management Service (MMS):

TYPE FACILITY	CORPORATE NAME	MMS ID CODE
OCS leases	Marathon Oil Company	0724
OCS ROW pipelines	N/A	N/A

B. Purpose and Use

The purpose of this HSCP is to assist the Spill Management Team (SMT) to prepare for and respond quickly and safely to a hydrocarbon discharge or threat of a hydrocarbon discharge. The specific objectives of the HSCP are to:

- Define notification, activation and mobilization procedures to be followed when a spill or threat of a spill occurs.
- Describe positions on the SMT and define the roles and responsibilities of team members, including organizational structure and lines of responsibility to be adhered to during a spill response.

Although this plan contains procedures applicable to most foreseeable spill scenarios, actual conditions will dictate whether deviations from the plan are appropriate. SMT members are instructed to act accordingly.

This HSCP is consistent with the associated Area Contingency Plans (ACP).

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C. Facility Information Statement

APPENDIX A, "Facility Information" includes a listing of facilities covered by this HSCP at the time of plan submittal to the Minerals Management Service.

D. Contract Certification Statement

Marathon Oil Company hereby certifies contracts/agreements are in effect which will provide immediate access to appropriate spill response equipment and personnel.

National Response Corporation (NRC) secures and maintains pollution response equipment and materials. NRC is Marathon Oil Company's primary spil response equipment provider.

SECTION 4 - ORGANIZATION

A. Qualified Individual/Incident Commander

Marathon Oil Company's IC is also identified as the "Qualified Individual" as defined in OPA 90, and has the responsibility and authority to initiate spill cleanup operations, obligate funds to carry out response activities and act as liaison with the pre-designated Federal On-Scene Coordinator (FOSC). **APPENDIX B**, "Training Information" contains a description of the training the QI/IC has received.

B. Spill Management Team (SMT)

i. The organizational structure of the SMT is based on NIIMS ICS and is illustrated in **FIGURE 4.1**. The structure of this team is modular. A portion of the team may be utilized during a small incident or the entire team may be utilized during a large incident.

ii. SMT names and phone numbers are given in **FIGURE 7.1**. The QI and the IC are the same individual. The SMT duties, responsibilities and authorities are given in **FIGURE 4.2**.

iii. SMT members are employees of Marathon Oil company.

iv. **APPENDIX B**, "Training Information", contains a description of the training received by SMT members responsible for spill management decision making.

C. Oil Spill Removal Organizations (OSRO's) (making up Spill Response Operating Team)

NRC INDEPENDENT CONTRACTOR NETWORK (U.S. GULF OF MEXICO)

Company	Full Range Response	Other	Locations	Supervisor	Technical / Operator	Support / General
Airborne Support, Inc.		Dispersant Spraying Services, Equipment and Personnel	Houma, LA			
AirScan, Inc.		Remote Sensing; Spill Modeling	Titusville, FL			
American Pollution Control, Inc.	☆	Marine Spill Response; Offshore Vessel Support Services	New Iberia, LA	10	30	4
Coastal Fuels & Marketing / Coastal Tug & Barge, Inc.		Marine Environmental; Tugs; Barge Services	Pensacola, FL Mobile, AL Corpus Christi, TX		1 1	
Code 3, Inc./Boots & Coots Special Service	☆		Corpus Christi, TX El Paso, TX Ft. Worth, TX Harlingen, TX Houston, TX Laredo, TX San Antonio, TX	3 8	13 24	1 1
Dillon Environmental Services, Inc.			Ardmore, OK			
Eagle Construction			Houston, TX			
E S & H/Cenac Environmental Services	☆		Houma, LA Fourchon, LA New Iberia, LA Morgan City, LA Belle Chasse, LA Venice, LA Port Allen, LA Port Arthur, TX New Orleans, LA Arlington, TX	12	25	14
Ferguson Harbour, Inc.			Mobile, AL Jackson, MS Findlay, OH Nashville, TN Johnson City, TN Memphis, TN Birmingham, AL Atlanta, GA Columbus, OH Chattanooga, TN Houston, TX Port Arthur, TX New Orleans, LA Arlington, TX	4 6	4 20	7 10

NRC INDEPENDENT CONTRACTOR NETWORK (U.S. GULF OF MEXICO)

Company	Full Range Response	Other	Locations	Supervisor	Technical / Operator	Support / General Labor
Graham Marine, Inc.		Supplemental Offshore Vessels	Morgan City, LA			
Hydrochem Industrial Services, Inc.	☆		Decatur, AL Citronelle, AL Plaquemine, LA August, GA LaPlace, LA Gonzales, LA Prairieville, LA Port Lavaca, TX Channelview, TX Bossier City, LA Sulphur, LA Longview, TX Texas City, TX Victoria, TX La Porte, TX Corpus Christi, TX Freeport, TX Baytown, TX Missouri City, TX Houston, TX Deer Park, TX	75		250
I.T. Corporation/OHM Remediation Services Corporation	☆		Houston, TX Port Allen, TX	5	13	32
Industrial Cleanup, Inc.	☆		Garyville, LA Baton Rouge, LA Scott, LA	5 1	10 2	56
Miller Environmental Services, Inc.	☆		Corpus Christi, TX Sulphur, LA	11 4	27 14	25 6
MO-VAC Environmental		Mobile Storage; Transportation and Disposal of Recovered Oil and Other Hazardous Materials	McAllen, TX Alice, TX Brenham, TX Kennedy, TX Laredo, TX Luling, TX Zapata, TX	 3 3 2 2 2	 10 10 8 8 6	
Oil Mop, Inc./Natly Environmental Services	☆		Belle Chasse, LA Fourchon, LA Lafayette, LA Lake Charles, LA Morgan City, LA Port Allen, LA	3 2 2	10 6 4	
Oil Recovery	☆		Mobile, AL Baton Rouge, LA			
Pneumatic Industrial			La Porte, TX		4	
Premium Electronics Services, Inc.		Communications	Jefferson, LA	2	7	4
Rubark Environmental Services, Inc.	☆		Morgan City, LA			

NRC INDEPENDENT CONTRACTOR NETWORK (U.S. GULF OF MEXICO)

Company	Full Range Response	Other	Locations	Supervisor	Technical / Operator	Support / General Laborer
SEACOR Marine, Inc.		Supplemental Offshore Vessels				
Southern Waste Services, Inc.	☆		Panama City, FL Pensacola, FL Tampa, FL Mobile, AL Galveston, TX	3	10 2	
T & T Marine Salvage, Inc.	☆		Mereaux, LA	6	11	6
United States Environmental Services	☆		Port Allen, LA Channelview, TX	3		4
Waste Control Services	☆		Corpus Christi, TX			

Marathon Oil Company's Spill Response Operating Team consists of OSRO personnel. The team's duties are to assemble and operate cleanup equipment and contain and remove the slick, if possible. This team is trained on NRC equipment and prepared to respond to an oil spill. The team also has appropriate Hazwoper training. Refer to **APPENDIX B,** "Training Information", for a description of the training OSRO's have received. Refer to **FIGURE 7.2** for contact information.

D. Primary Equipment Provider

i. Marathon Oil Company is a member of NRC. NRC's equipment can be requested by the Incident Commander or Emergency Management Team member and then mobilized by NRC's Independent Contractor Network (ICN).

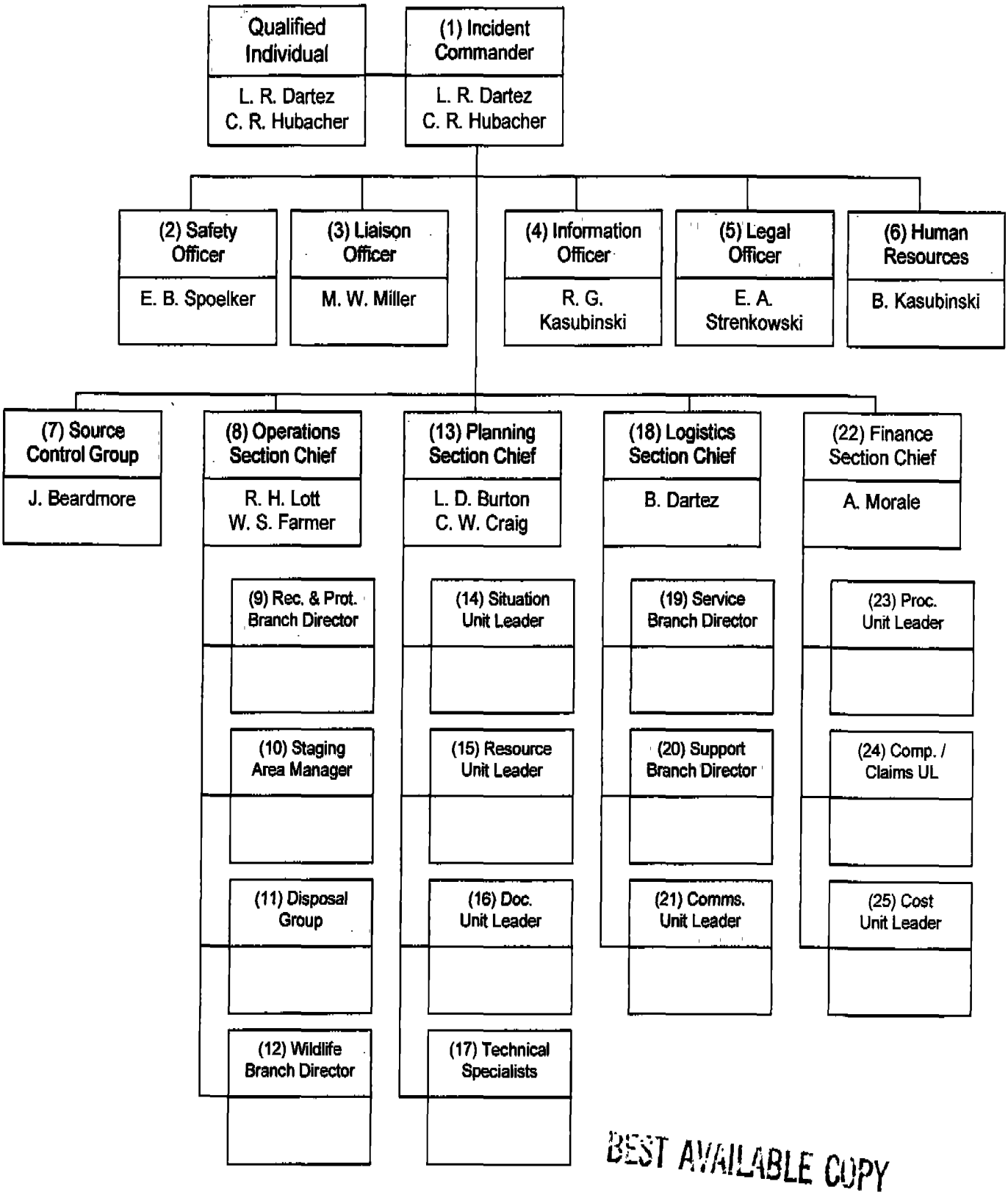
The OSRO's listed in **PARAGRAPH 4.C** may also provide response equipment, materials and supplies in addition to trained personnel. Refer to **APPENDIX E**, "Response Equipment" for a current inventory of OSRO available equipment and materials.

ii. The following support services may be required in the event of a spill:

Source Control	Spill Response Support	
Blowout & Firefighting Specialists	Oil Spill Equipment/ Consultants/Contractors	Biological/Chemical Sampling
Dive Companies	Vessels	Catering
Drilling Contractors	Helicopters	Hotels
Marine Contractors	Communications	Portable Tanks
Well Control Supplies	Photography	Land Transportation
	Trajectories/Spill Tracking	Vacuum Trucks
	Biological/Chemical Sampling	Wildlife & Marine Life Specialists
	Catering	Command Trailers
	Wildlife & Marine Life	

A telephone listing of "Support Services and Supplies" is included in **APPENDIX F**.

FIGURE 4.1
Emergency Management Team Organization Chart



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Name and telephone numbers listed in ***FIGURE 7.1.***

FIGURE 4.2
Spill Management Team Duties

October 1999

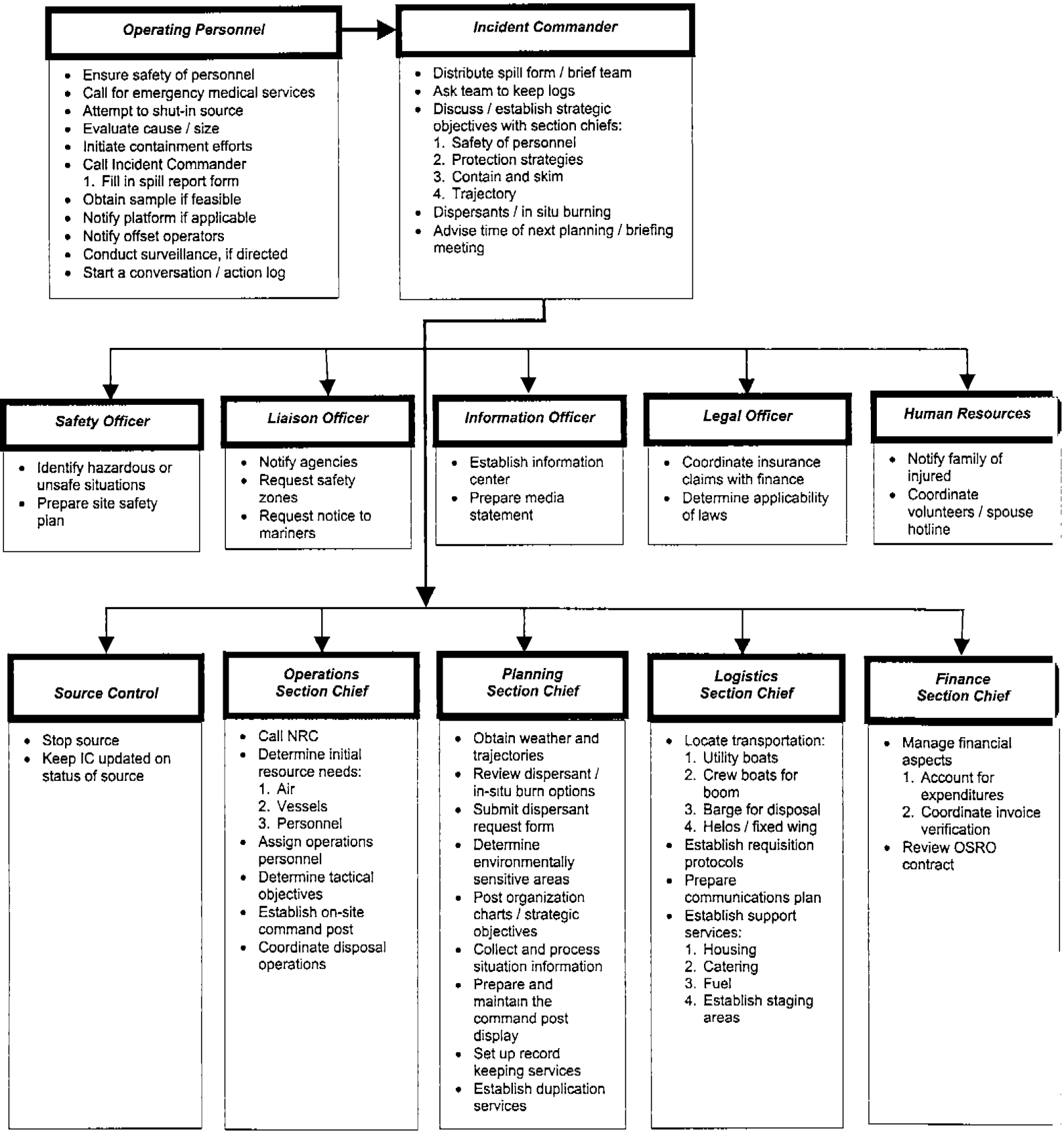


FIGURE 4.2

GENERAL PRINCIPLES & PROCEDURES

The Spill Management Team duties include general principles and procedures with which all response personnel should be familiar. Understanding and following these general procedures are the responsibility of each individual working within a Spill Management Team response structure.

☐ A Mobilization

___1. Receive assignment, notification, reporting location, reporting time and travel instructions from Incident Commander or Section Chief.
___2. Secure approval from your supervisor for ramp-up and call-out procedures.
___3. Transport personal response gear with you as needed (PPE, field gear, cold/foul weather gear, change of clothing, etc.).

☐ B Check-In and Check-Out

___1. Upon arrival at the incident, check-in at the designated check-in station. Check-in locations may be found at the Incident Command Post, Staging Areas and/or Helibases.
___2. Check out prior to departing the incident.

☐ C Safety

___1. Seek out and receive a safety briefing.
___2. Obtain a copy of, review, and sign the Site Safety Plan.
___3. During operations, report all accidents, near misses, or unsafe acts to supervisor and Safety Officer.

☐ D Operations

___1. Report to your immediate supervisor and receive assignment. Acquire work materials.
___2. Keep your immediate supervisor informed of all significant events/decisions.
___3. Follow the established chain of command.
___4. Use clear text and ICS terminology (no codes) in all radio transmissions.

FIGURE 4.2

GENERAL PRINCIPLES & PROCEDURES

☐ E Reporting

___1. Prepare a daily time report.
___2. Prepare a daily activity log.
___3. Supervisors complete a Unit Log for each day.
___4. Provide reports to immediate supervisor for routing via the chain of command.

☐ F Supervisory Functions

___1. Provide review and input to the Incident Action Plan (IAP) as it is developed and revised.
___2. Review IAP and estimate resource requirements for subsequent operating periods.
___3. Organize, assign, and brief personnel in accordance with the IAP.
___4. Ensure that all staff have reviewed and signed the Site Safety Plan, and have received a safety briefing.
___5. At the section chief level and above: identify and contact Federal, State and RP ICS section counterparts to coordinate response actions.
___6. Determine and acquire resources for the unit, branch, or section (personnel, equipment, supplies, etc.).
___7. Notify the Resource Unit of all status changes in personnel and equipment.
___8. Brief on-coming shift/relief personnel.
___9. Collect daily time reports from all staff and route through supervisor to Time Unit.
___10. Complete forms and reports required of the assigned position and send material through supervisor to Documentation Unit.
___11. Provide status updates to Situation Unit.
___12. Respond to demobilization orders. Brief subordinates regarding demobilization.

FIGURE 4.2

(1) INCIDENT COMMANDER

The Incident Commander is responsible for the overall management of the incident. The Incident Commander directs incident activities, including development and implementation of strategic decisions and approves ordering and releasing of resources.

☐ A Upon notification of incident, obtain the following information:

___ 1. Status of Incident:

- Have personnel been evacuated?
- What is location & mode?
- Is personnel safety an issue?
- Has source been stopped?
- Is spill contained?
- Is there potential for additional spillage?

___ 2. Number of injuries and immediate assistance including:

- Names of injured
- Extent of injuries
- Employer
- Confirm Med-Evac has been dispatched (if necessary)
- Name of hospital where injured are being transported
- Estimated time of arrival at hospital

___ 3. Fill out Spill Report Form. **FIGURE G.1**

___ 4. Obtain information on damage to facilities.

___ 5. Request facility personnel obtain a sample of spilled product, if feasible.

___ 6. Request status of field vessels/helicopters.

___ 7. Dispatch most feasible person to observe and track spill.

☐ B Call Spill Management Team (SMT) Section Chiefs to Incident Command Post.

___ 1. Advise Receptionist to send undirected calls to Recording Assistant.

___ 2. Distribute Spill Report and brief SMT regarding the incident.

FIGURE 4.2

(1) INCIDENT COMMANDER

___ 3. Ensure Command Staff and Section Chief positions are filled.	
☐ C Assess/discuss the situation. Establish immediate priorities.	
___ 1. Safety of personnel (field, responders, surrounding population) and Site Safety Plan development ___ 2. Source control ___ 3. Agency notifications ___ 4. Weather / trajectory of the spill ___ 5. Identification and protection of sensitive areas ___ 6. Continued surveillance of the situation	
☐ D Determine response strategies.	
___ 1. Mechanical ___ 2. In-Situ Burn ___ 3. Dispersant ___ 4. Natural Dispersion	**APPENDIX E** **SECTION 19** **SECTION 18**
If there is a threat of significant environmental impact, consider contacting Spill Consultant.	ERST/O'Brien Office: (504) 781-0804 Fax: (504) 781-0580
☐ E Conduct Planning/Assessment meetings on a regular basis.	
___ 1. Evaluate and adjust strategic and tactical objectives, as well as response priorities based upon input from SMT and FOSC.	
___ 2. Relay critical information to appropriate Sections.	
☐ F Coordinate IAP development based upon objectives and priorities identified.	
☐ G Implement a Unified Command System with agency responders, if requested.	
___ 1. Determine location of the Incident Command Post and which SMT members need to mobilize if necessary.	
☐ H Approve requests for additional resources and for release of resources.	

FIGURE 4.2

(1) INCIDENT COMMANDER

- [ ] I Decide on the use of trainees, volunteers, and auxiliary personnel.
- [ ] J Review the accuracy of information prior to release to the public. Be available for technical, incident-related questions, if necessary.
- [ ] K Review and approve written reports prior to submittal to regulatory agencies.
- [ ] L Coordinate with Finance Section Chief to:
  - ___ 1. Develop and review delegations of authority and expenditure approval limits.
  - ___ 2. Provide effective accounting, cost control and office support functions for the response operation.
- [ ] M Coordinate with Natural Resource Damage Assessment (NRDA) Team.
- [ ] N Provide relief personnel for essential SMT assignments.
- [ ] O Seek appropriate legal counsel.
- [ ] P Order the demobilization of the incident when appropriate.

FIGURE 4.2

(2) SAFETY OFFICER

The Safety Officer is responsible for monitoring and assessing hazardous and unsafe situations, in addition to developing measures for assurance of personnel safety.

☐ A Obtain briefing from Incident Commander.	
___ 1. Coordinate Search and Rescue Operations.	USCG-Search & Rescue (504) 589-6225
___ 2. Follow up on evacuated personnel until they reach safe harbor. Consider: • Debrief Team • Drug testing, if appropriate	
___ 3. Contact OSRO for safety support, if necessary.	
☐ B Consider safety of personnel at site, spill responders and surrounding population.	
___ 1. Establish Safety Zone as necessary.	
___ 2. Evaluate and monitor the following: • Oxygen levels • Explosive character • Toxicity of the air on scene • Splash and ingestion hazards	Air monitoring equipment on ID Boat and available from OSRO's.
___ 3 Determine if offset operators or public could be affected by the spill.	
☐ C Ensure the preparation and implementation of a Site Safety Plan.	
___ 1. Establish First Aid Posts.	
___ 2. Conduct Safety Inspections.	
___ 3. Verify personnel have correct PPE.	
___ 4. Monitor personnel for conformance with Site Safety Plan.	
☐ D Assist Service Branch Director (Logistics) with Medical Plan, if requested.	

FIGURE 4.2

(2) SAFETY OFFICER

- ☐ E Ensure response operations are conducted in compliance with HAZWOPER requirements.
- ☐ F Exercise emergency authority to stop and prevent unsafe acts, if necessary.
- ☐ G Develop and issue safety bulletins, alerts, etc. on issues affecting or likely to affect worker safety.
- ☐ H Investigate, report and record safety-related accidents that occur during response operations. Develop remedial actions to avoid future occurrences.
- ☐ I Demobilize as ordered.
- ☐ J Assist with investigation of cause of incident.

FIGURE 4.2

(3) LIAISON OFFICER

The Liaison Officer notifies Federal, State, and Local agencies of incident and remains the point of contact for personnel assigned to the incident from assisting or cooperating agencies.

☐ A Obtain briefing from Incident Commander.	
☐ B Notify Federal, State and Local Agencies as outlined.	**SECTION 8**
___ 1. Record names of agency personnel notified	
___ 2. Record time/date of each call, and appropriate spill # assigned to the incident.	
___ 3. Advise each agency that you will be the Responsible Party Contact.	
___ 4. Respectfully request review of all public statements prior to issuance by agencies, in order to ensure accuracy of data.	
☐ C Request agencies issue the following:	**SECTION 8**
___ 1. One mile Safety Zone in water (USCG-COTP) ___ 2. Five mile Safety Zone in air (FAA through USCG) ___ 3. Notice to Mariners (USCG) ___ 4. Approval to decant skimming systems (USCG)	
☐ D Identify representatives from each agency, including communications link and location.	
☐ E If requested by Planning Section Chief, contact US Coast Guard On-Scene Coordinator for dispersant approval.	
☐ F Participate in planning meetings. Provide current agency resource status information.	
☐ G Prepare "Initial" written reports to agencies as required. Obtain approval from Legal Officer and Incident Commander prior to submittal to agencies.	
☐ H Work with Logistics Section Chief to arrange tours and briefings for elected officials, if appropriate.	

FIGURE 4.2

(3) LIAISON OFFICER

☐	I	After clean up operations cease, obtain composite log from Documentation Unit Leader and prepare final written reports to agencies as required. Obtain approval from Incident Commander and Legal Officer prior to submittal to agencies.

FIGURE 4.2

(4) INFORMATION OFFICER

The Information Officer is responsible for developing and releasing information about the incident to the news media, incident personnel, as well as other appropriate agencies and organizations.

☐ A Obtain briefing and special instructions from Incident Commander	
☐ B Establish procedures for handling media relations and distribute guidelines to the Spill Management Team.	
☐ C Notify joint partners of incident.	
___ 1. Update partners on regular basis.	
☐ D Establish a single information center with agencies. This may be called the Joint Information Center (JIC).	**APPENDIX J**
___ 1. Gather information.	
___ 2. Resolve conflicting information	
___ 3. Staff telephone banks to accept and respond to media queries.	
___ 4. Prepare staff for walk-in questions and contacts.	
☐ E Arrange for necessary work space, materials, telephones, and staffing.	
☐ F Obtain copies of current ICS-209s and pollution reports.	
☐ G Counsel the Incident Commander on expected media interest, how media may perceive data.	
☐ H Identify community concerns.	
___ 1. Prepare for response to phoned in citizens' questions	
___ 2. Provide speakers to citizen groups as necessary and/or requested.	
___ 3. Hold informational public meetings as deemed necessary.	

FIGURE 4.2

(4) INFORMATION OFFICER

___ 4. Track community attitudes. Advise Incident Commander and address problems as needed.	
☐ I Prepare public statements, press releases and information on the incident. Obtain approval from Incident Commander before releasing information.	**APPENDIX J**
___ 1. Prepare Incident Commander for his role as chief spokesman.	
___ 2. Observe constraints on the release of information imposed by Incident Command.	
☐ J Prepare and disseminate news releases and Fact Sheets.	**APPENDIX J**
___ 1. Use recording devices when talking to media.	
☐ K Attend planning and briefing meetings to update information releases.	
☐ L Plan and execute news conferences between media and incident personnel.	
☐ M Work with Logistics Section Chief to organize media visits to operational sites, if necessary (or appropriate).	
___ 1. Provide escort service and ensure media personnel / VIPs have proper PPE.	
☐ N Select, retain and supervise public relations specialists as needed.	
☐ O Respond to special requests for information.	
☐ P Maintain a record of newspaper articles, radio and television broadcasts, press conferences and briefings. Submit the record to Documentation Unit Leader.	
☐ Q Ensure conflicting information is resolved, and bring media concerns to Incident Commander	
☐ R Demobilize as ordered.	

FIGURE 4.2

(5) LEGAL OFFICER

The Legal Officer is responsible for reviewing and advising the Incident Commander regarding matters pertinent to any liability, admission, or actions assumed or taken during incident response.

- ☐ A Obtain briefing and special instructions from Incident Commander.
- ☐ B Determine applicability of laws, legal exposures and appropriate legal defense strategies.
- ☐ C Ensure that representatives of the Legal Department are available to de-brief field personnel on events leading up to incident.
- ☐ D Determine company's legal relationship with all involved parties.
- ☐ E Advise Documentation Unit Leader regarding data gathered and preserved relevant to defense or settlement of future claims or litigation.
- ☐ F Determine photographic recording requirements.
- ☐ G Assist the Information Officer and the Finance Section Chief. Prepare responses to inquiries, claims and other legal matters.
- ☐ H Assist Finance with issuance of public advertisements, if required.
- ☐ I Prepare summary reports examining legal situation, key issues associated with the incident. Determine options and courses of action to be followed.
- ☐ J Review contracts prior to execution as required.
- ☐ K Provide the Incident Commander with legal advise on NRDA, wildlife issues, storage and disposal concerns, and the use of dispersant or in-situ burning operations, as appropriate.
- ☐ L Ensure contract response personnel are cognizant of communications restriction to outside agencies, the media, environmental groups and the general public.

FIGURE 4.2

(6) HUMAN RESOURCES

The Human Resources Officer is responsible for reviewing and advising the Incident Commander regarding matters pertinent to any personnel issue during an incident response.

☐ A Obtain briefing and special instructions from Incident Commander

☐ B In the event of personnel injuries or fatalities:

___ 1. If it is a company employee, initiate and maintain contact with the injured person(s) and their family.

___ 2. If it is Contractor personnel, initiate and maintain contact with their employer.

___ 3. Ensure that the name(s) of the injured or deceased WILL NOT BE released until families have been notified.

☐ C Coordinate volunteer requests and activities.

___ 1. Support of volunteers (coordinate with Logistics):

- Berthing
- Food while at work location
- Personal protective equipment
- Medical assistance
- Transportation
- Training

___ 2. Maintain a record of all volunteers:

- Names
- Addresses and phone numbers
- Assignments
- Training received

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☐ D Coordinate Drug and Alcohol testing, if instructed to do so by the Incident Commander.

☐ E Evaluate temporary personnel requirements.

☐ F Coordinate establishing a "Spouse" hotline for responders.

FIGURE 4.2

(7) SOURCE CONTROL/REPAIR SUPERVISOR

The Source Control Group Supervisor is responsible for coordinating and directing all source control and salvage activities related to the incident.

☐ A Obtain briefing from Operations Section Chief.	
☐ B If necessary, direct source control operations.	
___ 1. Well control activities if spill is associated with a well. (Obtain brief description and the following well control information): • Brief description of event • Time of incident • Location (platform, well, rig) • Point of flow exit (tbg, DP, csg, BOPE) • Well on fire? • Flow abrasive? • H2S flow? • Estimated flow rate of oil/condensate, gas, water	**Well Control Specialists**: Boots & Coots (281) 931-8884 Cudd Pressure Cont. (713) 877-1118 International Well Control (713) 621-7911 Wild Well Control (281) 353-5481
___ 2. Mobilization of divers, etc. if pipeline incident is involved.	**APPENDIX F**
___ 3. Repair of platform, if necessary	
☐ C Determine resource needs for source control/repair operations.	
☐ D Coordinate development of repair plan.	
___ 1. Obtain facility drawings.	
___ 2. Obtain agency approval (MMS)	
☐ E Determine resource requirements.	
___ 1. Support base	
___ 2. Personnel, equipment, vessels	
☐ F Direct and coordinate implementation of the repair plan.	
☐ G Brief the Incident Commander on activities.	

FIGURE 4.2

(8) OPERATIONS SECTION CHIEF

The Operations Section Chief activates and supervises tactical response operations in the field. He activates and executes the Site Safety Plan.

☐ A Obtain briefing and special instructions from Incident Commander, regarding:

___ 1. Status of incident
- Assist with personnel safety.
- Notify offset operators.
- Notifiy affected pipeline companies.

___ 2. Objectives

___ 3. Resources already called out

☐ B Send representative to field. Assist OSRO personnel and report status to Incident Commander.

☐ C Establish surveillance program.

___ 1. Track spill by use of small aircraft, helicopter, crew boat and/or supply vessels.

___ 2. Work with Logistics Section Chief to obtain resources necessary to support surveillance ops, including aircraft, maps, and communications equipment.

___ 3. Advise Planning Section of status as appropriate.

☐ D Contact NRC to discuss strategy, availability and location of equipment. Mobilize equipment.

☐ E Contact ASI to discuss mobilization of dispersant aircraft.

☐ F Report results of slick surveillance as follows:

___ 1. Status of source
___ 2. Size of slick
___ 3. Description of slick
___ 4. Leading edge of slick
___ 5. Direction of slick movements

FIGURE 4.2

(8) OPERATIONS SECTION CHIEF

___ 6. Status of response operations ___ 7. Threat to coastline ___ 8. Wildlife spotted in area	
☐ G Obtain samples of spilled oil.	Request from Field personnel and/or OSRO's on-site.
☐ H Work with Spill Consultants/OSROs to develop and implement offshore response strategies.	
☐ I Request resources needed to implement the Operations tactics as part of the Incident Action Plan development.	
☐ J Identify shoreline sites for immediate pre-cleaning. Requisition personnel to conduct pre-cleaning operations.	
☐ K Participate in planning meetings as required.	
☐ L Supervise the execution of the Incident Action Plan for Operations.	
☐ M Coordinate operations with those conducted by Federal and State agencies.	
☐ N Make or approve expedient changes to the Incident Action Plan during the operational period as necessary.	
☐ O Submit daily summary for each location to Situation Unit Leader.	Prepared by Recovery and Protection Branch Director.
☐ P Work with Planning to de-mobilize equipment not in use.	
☐ Q Assist in investigating the cause of the incident and the effectiveness of the spill response operations.	
☐ R Provide relief for essential employee assignments.	
☐ S Do not use collecting agent or dispersant without express approval from the Incident Commander.	

FIGURE 4.2

(9) RECOVERY AND PROTECTION BRANCH DIRECTOR

The Recovery and Protection Branch Director is responsible for overseeing and implementing the protection, containment and cleanup activities established in the Incident Action Plan.

☐ A Obtain briefing from Operations Section Chief regarding:

___ 1. Objectives
___ 2. Personnel resources assigned
___ 3. Equipment resources assigned
___ 4. Transportation resources assigned
___ 5. Communications plan

☐ B Participate in planning meetings as required.

☐ C Develop operations portion of Incident Action Plan.

☐ D Brief and assign operations personnel in accordance with Incident Action Plan.

___ 1. Maintain information on all contract personnel:
- Date hired
- Job performed
- Location of work performed
- Training provided (if any)
- Compensation rate/amount
- Date released

☐ E Supervise Recovery and Protection operations.

___ 1. Ensure safety of personnel

☐ F Advise responders:

___ 1. Who is in charge
___ 2. Type of product spilled and health and safety hazards associated with the product
___ 3. Location of the MSDS(s) and details of the Site Safety Plan
___ 4. Location of the first aid station
___ 5. Personal protection equipment required
___ 6. Potential environmental and physical hazards that exist
___ 7. Their job task and objectives

FIGURE 4.2

(9) RECOVERY AND PROTECTION BRANCH DIRECTOR

☐ G Determine need and request additional resources such as:

___ 1. Staging bases (offices & warehouses)
- Store equipment and spare parts.
- Repair or replace damaged or defective equipment.

___ 2. Berthing
___ 3. Decontamination stations
___ 4. Waste handling
___ 5. Potable water
___ 6. Food
___ 7. Fuel
___ 8. Protective clothing

☐ H Re-assign equipment to areas for greater effectiveness.

☐ I Arrange for handling for recovered oil and cleanup of NRC equipment.

___ 1. Portable tanks may be required to offload liquids from skimmers, etc.
___ 2. Contact Disposal Unit Leader for assistance with disposal issues and proper documentation.

☐ J Prepare daily summary for each location and submit to Operations Section Chief:

___ 1. Cleanup locations and type/amount of equipment deployed.
___ 2. Number of persons working at site(s)
___ 3. Amount of oil recovered over last 24 hour period.
___ 4. Problems encountered
___ 5. Level of effort for continued response operations

☐ K Review suggested list of resources to be released and initiate recommendation for release of resources.

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FIGURE 4.2

(10) STAGING AREA MANAGER

The Staging Area Manager is responsible for managing all activities within the designated staging areas.

- ☐ A Obtain briefing from Operations Section Chief.
- ☐ B Identify appropriate sites for staging areas:
  - ___ 1. Offshore equipment
  - ___ 2. Well control equipment
  - ___ 3. Shoreline / Inland equipment
  - ___ 4. Dispersant operations
  - ___ 5. Wildlife rehab center
  - ___ 6. Decontamination area
- ☐ C Work with Logistics to identify appropriate facilities for Staging Areas.
- ☐ D As requested by Incident Commander, provide information on Staging Area(s) (i.e., sq. footage, parking, access to Public, etc.).
- ☐ E Post signs, prepare maps for identification.
- ☐ F Establish check-in/check-out function as appropriate.
  - ___ 1. Maintain a record of equipment, materials and supplies received/assigned.
  - ___ 2. Maintain a record of persons checking in/checking out at Staging Area.
- ☐ G Demobilize or reposition staging areas as needed.

FIGURE 14.1

FIGURE 4.2

(11) DISPOSAL GROUP

The Supervisor of the Disposal Group is responsible for coordinating the on-site activities of personnel engaged in collecting, storing, transporting, and disposing of waste materials.

☐ A Obtain briefing from Operations Section Chief including:

___ 1. Status, nature and quantity of liquid and solid wastes being generated by response operations.

☐ B Implement waste management portion of Incident Action Plan.

☐ C Provide Planning Section Chief with information on recovery of liquid and solid wastes during offshore response operations.

☐ D Set up and manage decontamination sites.

☐ E Work with Liaison Officer regarding:

___ 1. Permits for transport.

___ 2. Store and dispose of liquid/solid waste.

- Determine staging area.
- Determine suitable disposal facilities.
- Consider recycling and waste reduction.
- Prepare Waste Management Plan.
- Work with state and local agencies for permit process.

___ 3. Ensure compliance with all hazardous waste laws and regulations.

☐ F Brief Operations Section Chief regarding waste handling activities:

- Federal/State regulations
- Nature and composition of waste
- Waste handling procedure
- Storage options and equipment
- Disposal options and facilities
- Approval procedures
- Safety and health considerations
- Logistics

☐ G Maintain accurate records of recovered and disposed material.

SECTION 16

FIGURE 4.2

(12) WILDLIFE BRANCH DIRECTOR

The Wildlife Branch Director is responsible for minimizing wildlife losses during spill responses, coordinating early aerial and ground reconnaissance of the wildlife at the spill site and recovering and rehabilitating impacted wildlife.

☐	A Obtain briefing from Operations Section Chief.	
☐	B Develop Wildlife Branch portion of the Incident Action Plan.	**SECTION 17**
☐	C Coordinate wildlife rescue and rehabilitation operations with federal and state resource agencies.	
☐	D Direct the construction, operation and demobilization of wildlife rehabilitation center, including procurement of staff and equipment, training and management.	
☐	E Identify USFWL approved personnel to conduct wildlife capture, transport, cleaning, rehabilitation, and release operations.	
☐	F Provide for the safety of personnel engaged in wildlife capture and rehabilitation operations.	
☐	G Maintain accurate, up-to-date information on wildlife capture and rehabilitation operations, including documentation of success and moralities.	
☐	H Review suggested list of resources to be released and initiate recommendation for release of resources.	
☐	I Report information about special activities, events, and occurrences to Operations Section Chief.	

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FIGURE 4.2

(13) PLANNING SECTION CHIEF

The Planning Section Chief is responsible for the collection, evaluation, dissemination and us of information about the development of the incident and use of resources. Information is needed to 1) understand the current situation, 2) predict probable course of spill events, and 3) determine available strategies for the incident.

☐ A Obtain briefing from Incident Commander.	
☐ B Activate Planning Section Units as necessary to support planning needs.	
___ 1. Request trajectories from SpillNet. ___ 2. Determine sensitive areas. ___ 3. Consider available strategies. ___ 4. Gather/display incident information.	
☐ C Coordinate immediate submission for Dispersant Pre-Approval Initial Call Checklist, or direct development of Dispersant Use Information Form (long form), if necessary.	**SECTION 18**
☐ D Collect and process situation information about the incident.	
___ 1. Monitor Situation Status Report prepared by Situation Unit Leader.	
☐ E Prepare ICS 201/202.	
☐ F Supervise preparation of the Incident Action Plan, if required.	**APPENDIX K**
☐ G Develop short range and long range tactical plans.	
☐ H Participate in Planning and other meetings as required.	
☐ I Establish information requirements and reporting schedules for all ICS organizational elements for use in preparing the Incident Action Plan.	

FIGURE 4.2

(13) PLANNING SECTION CHIEF

☐ J Call out and assign Technical Specialists where needed.

___ 1. Legal Specialist
___ 2. Resources at Risk (RAR) Technical Specialists
___ 3. Trajectory Analysis Specialist
___ 4. NRDA Representative
___ 5. Sampling Specialist
___ 6. Responder Training Specialist
___ 7. Disposal (Waste Management Specialist)
___ 8. Alternative Response Technologies (ART) Specialist

☐ K Assemble information on available strategies.

☐ L Provide periodic predictions on incident potential.

☐ M Prepare and distribute orders from Incident Command.

☐ N Instruct Planning Section Units in distribution and routing of incident information.

☐ O Ensure that information collection and reporting requirements are being met.

☐ P Prepare recommendations for release of resources for submission to members of Incident Command.

☐ Q Maintain Section records.

☐ R Demobilize in accordance with the Demobilization Plan.

FIGURE 4.2

(14) SITUATION UNIT LEADER

The Situation Unit Leader is responsible for the collection and evaluation of information about the current and possible future status of the spill and the spill response operations.

☐ A Obtain briefing and special instructions from the Planning Section Chief	
☐ B Call for trajectory analysis as follows:	
___ 1. Request a trajectory analysis.	
• Obtain updated trajectories based on surveillance and weather updates.	**SECTION 10**
☐ C Collect, maintain and display spill <u>movement</u> data for duration of incident.	
___ 1. Weather, slick surveillance, trajectory.	
___ 2. Maps depicting spill area, spill trajectories.	
___ 3. Provide updated spill surveillance data to trajectory Specialist as necessary.	
☐ D Collect, maintain and display spill <u>response</u> data including:	
___ 1. Spill Report.	
___ 2. Frequently used phone numbers.	
___ 3. Maps depicting response operations, staging areas, and other information as necessary.	
___ 4. Coordinate with appropriate Response Team Personnel to gather information for Incident Status Reports and Equipment Status Board.	**APPENDIX K**
• Status of manpower and equipment resources currently assigned, available and/or out of service. • Maps showing environmentally sensitive areas, protection strategies • Status of oily waste management operations, including quantity of oil spilled and quantity of oil, oily water, and debris recovered • Status of shoreline impacts	

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FIGURE 4.2

(14) SITUATION UNIT LEADER

- ☐ H Prepare the Incident Status Summary (ICS 209).
- ☐ I Provide status reports to appropriate requesters.

FIGURE 4.2

(15) RESOURCE UNIT LEADER

The Resource Unit Leader is responsible for maintaining the status of all resources (primary and support) at an incident. This unit is also responsible for preparing parts of the Incident Action Plan (ICS 203, 204), compiling the entire plan in conjunction with other members of the ICS, (e.g. Situation Unit, Operations, Logistics) and determining the availability of resources.

☐	A Obtain briefing and special instructions from the Planning Section Chief.	
☐	B Establish check-in function for equipment and personnel at incident locations.	
☐	C Prepare and maintain the Command Post display organization chart and resource allocation and deployment sections of display)	**APPENDIX K**
☐	D Establish contacts with incident facilities by telephone, electronic means or fax and begin maintenance of resource status.	
☐	E Gather, post, and maintain incident resource status.	
☐	F Maintain master roster of all resources checked in at the incident.	
☐	G Prepare Organization Assignment List (ICS 203) and ICS Organization Chart.	**APPENDIX K**
☐	H Prepare appropriate parts of assignment lists (ICS 204).	**APPENDIX K**
☐	I Provide status reports to appropriate requesters.	

FIGURE 4.2

(16) DOCUMENTATION UNIT LEADER

The Documentation Unit Leader is responsible for the maintenance of accurate, up-to date incident files. The Documentation Unit also provides duplication and copying services.

☐ A Obtain briefing and special instructions from the Planning Section Chief.

☐ B Work with the Financial Section Chief, Planning Section Chief, Command Staff and Incident Commander to develop special documentation guidelines for use by appropriate response personnel. Distribute guidelines.

☐ D Assist Incident Commander in maintaining accurate records of spill response decisions and actions.

☐ E Record the incident as it develops and identify, in detail, the actions taken, resources committed, and any problems encountered. The format of this report shall be as follows:

___ 1. Summary of Events – A chronological narrative of all events, including:

- The location of the oil discharge.
- The cause of the discharge or the release.
- The initial situation.
- Efforts to initiate response.
- The organization of the response, including Federal/ State participation.
- The resources committed.
- Treatment/disposal/alternative technology approaches pursued and followed.
- Public information/community relations activities.
- All directives or major actions instituted by Incident Commander.

___ 2. Effectiveness of Removal Actions by:

- Company
- State and local forces
- Federal agencies and special teams
- Contractors, private groups, and volunteers

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___ 3. Difficulties encountered – A list of problems affecting response.

FIGURE 4.2

(16) DOCUMENTATION UNIT LEADER

___ 4. Recommendations:

- Means to prevent a recurrence of the discharge or release.
- Improvement of response actions.
- Any recommended changes in the Spill Management Team Handbook.

___ 5. The following will be included as enclosures to the report:

- Maps, charts, photographs, or diagrams of the areas affected by the spill.
- Radio, telephone, and other applicable logs.
- Photographic documentation of the response, arranged chronologically.
- Any other documentation necessary to supplement information in the report.

___ 6. A copy of this report shall be forwarded to the Incident Commander.

☐ G Establish and organize incident files.

☐ H Establish duplication service and respond to requests.

☐ I File copies of all official forms, reports and news articles. **SECTION 21**

☐ J Maintain a file for newspaper articles, radio and television broadcasts, press conferences and briefings as provided by Information Officer.

☐ K Provide incident documentation to appropriate requesters. Obtain approval from Incident Commander before release of information.

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FIGURE 4.2

(17) TECHNICAL SPECIALISTS

T chnical Specialists are advisors with special skills needed to support the incident. Technical Specialists may be assigned anywhere in the ICS organization. If necessary, Technical Specialists may be formed into a separate unit. The Planning Section will maintain a list of available specialists and will assign them where needed.

The following are example position descriptions for Technical Specialists that might be utilized during an oil spill response.	
☐ A Resources at Risk (RAR) Technical Specialists are responsible for the identification of resources thought to be at risk from exposure to the spilled oil through the analysis of known and anticipated oil movement and the location of natural, cultural, and economic resources. The RAR Technical Specialists consider the relative importance of the resources and the relative risk to develop a priority list for protection.	J. Connor Consulting, Inc. Office: (281) 578-3388 Fax: (281) 578-8895
☐ B The Trajectory Analysis Specialist is responsible for providing to the Unified Command projections and estimates of the movement and behavior of the spill. The specialist will combine visual observations, remote sensing information, computer modeling as well as observed and predicted tidal, current and weather data to form these analyses. Additionally, the specialist is responsible for interfacing with local experts (weather service, academia, researchers, etc.) in formulating these analyses. Trajectory maps, overflight maps, tides and current data, and weather forecasts will be supplied by the specialist to the Situation Unit for dissemination throughout the Command Post.	SpillNet: (409) 267-3944 Fax: (409) 267-3945 Continental Shelf Assoc. Colorado office: 24 Hrs. (303) 438-0081 Fax: (303) 438-0971 Florida office: Office: (407) 746-7946 24 Hrs. (407) 478-1915 Fax: (407) 747-2954
☐ C The Natural Resource Damage Assessment (NRDA) Representative is responsible for coordinating NRDA needs and activities as they relate to ICS spill response operations. This includes close coordination with the trustee team for advising timely information on the spill and injuries to natural resources. Consult with Legal Specialist(s) and contact the trustees for possible coordination of NRDA or injury determination activities.	J. Connor Consulting, Inc. Office: (281) 578-3388 Fax: (281) 578-8895
☐ D The Sampling Specialist(s) are responsible for sampling plans for the coordinated collection, documentation, storage, transportation and submittal to appropriate laboratories for analysis or storage as is appropriate of samples collected at spill sites.	ERST/O'Brien Office: (504) 781-0804 Fax: (504) 781-0580

FIGURE 4.2

(17) TECHNICAL SPECIALISTS

☐ E	The Responder Training Specialist(s) ensures implementation of training assignments, monitors operational procedures, and evaluates training needs.	OSRO
☐ F	The Disposal (Waste Management) Specialist is responsible for providing the Planning Section Chief with a Disposal Plan that details the collection, sampling, monitoring, temporary storage, transportation, and disposal of all anticipated response wastes.	OSRO
☐ G	The Alternative Response Technologies (ART) Specialist(s) is responsible for evaluating the opportunities to use ART, including dispersant or other chemical counter measures, in-situ burning, and bioremediation. The specialist(s) will conduct the consultation and planning required to deploy a specific ART, and articulate the environmental tradeoffs of using or not using a specific ART.	ERST/O'Brien Office: (504) 781-0804 Fax: (504) 781-0580

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FIGURE 4.2

(18) LOGISTICS SECTION CHIEF

The Logistics Section Chief is responsible for all of the services and support needs of an incident, including obtaining and maintaining essential personnel, facilities, equipment and supplies as requested by, or in support of Incident Commander, Operations and/or Planning.

- ☐ A Obtain briefing from Incident Commander.
- ☐ B Locate and mobilize equipment, personnel and transportation as requisitioned by SMT.
- ☐ C Identify service and support requirement for planned and expected operations.
  - ___ 1. Advise Operations of types and capabilities of on-site equipment, personnel, and material assets.
  - ___ 2. Advise Operations of characteristics and capabilities of available equipment, personnel, and material assets.
  - ___ 3. Inform Operations of logistics shortfalls.
  - ___ 4. Inform Operations of assets received into/released out of operating area.
  - ___ 5. Communicate directly with contractors in the field to identify and resolve logistics requirements.
  - ___ 6. Support decontamination, reconstitution, and redeployment of equipment resources.
- ☐ D Provide input to and review Communications Plan, and Medical Plan.
- ☐ E Review Incident Action Plan and estimate Section needs for next operational period.
- ☐ F Ensure Incident Communications Plan is prepared.
- ☐ G Prepare service and support elements of the Incident Action Plan.
- ☐ H Receive Demobilization Plan from Planning Section.
- ☐ I Recommend release of unit resources in conformance with Demobilization Plan.

FIGURE 4.2

(19) SERVICE BRANCH DIRECTOR

The Service Branch Director, when activated, is under the supervision of the Logistics Section Chief, and is responsible for the management of all service activities at the incident including Communication, Medical, Food, Housing, Fueling, Water, Sanitation facilities, and Security.

☐ A Obtain briefing from Logistics Section Chief.

☐ B Determine level of service required to support operations.

___ 1. Prepare Medical Emergency Plan.

___ 2. Personnel (coordinate with OSROs)

- Provide field personnel with food and drink.
- Secure lodging.
- Assure sufficient potable water.
- Stock additional clothing.
- Provide restrooms, decontamination.

___ 3. Security

- Arrange for security at the following locations:
  Spill site
  Field operations sites
  Staging area(s)
  Warehouse(s)
  Wildlife rescue center(s)
  Other facilities, as necessary
  Provide executive protection as required
- Obtain and supervise contract security personnel. Coordinate security operations with local law enforcement.
- Establish a procedure to ensure rapid access to secured facilities for authorized personnel and vehicles.
- Maintain a record of all visitors to secured facilities.

☐ C Assign work locations and preliminary work tasks to Section personnel.

APPENDIX K

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FIGURE 4.2

(19) SERVICE BRANCH DIRECTOR

- ☐ D Provide input to and review Communications Plan, Medical Plan, Traffic Plan and Vessel Routing Plan.
- ☐ E Coordinate and process requests for additional resources.
- ☐ F Review Incident Action Plan and estimate Section needs for next operational period.
- ☐ G Advise on current service and support capabilities.
- ☐ H Prepare service and support elements of the Incident Action Plan.
- ☐ I Estimate future service and support requirements.
- ☐ J Receive Demobilization Plan from Planning Section.
- ☐ K Recommend release of unit resources in conformance with Demobilization Plan.

FIGURE 4.2

(20) SUPPORT BRANCH DIRECTOR

The Support Branch Director, when activated, is under the direction of the Logistics Section Chief, and is responsible for development and implementation of logistics plans in support of the Incident Action Plan, including providing personnel, equipment, facilities, and supplies to support incident operations.

☐ A Obtain briefing from Logistics Section Chief.	
☐ B Determine initial support operations in coordination with Logistics Section Chief and Service Branch Director.	
☐ C Source and mobilize spill response equipment as requisitioned. OPS Section Chief may have made an initial call out of equipment – Do not duplicate.	**APPENDIX E**
☐ D Source and mobilize trained personnel.	
___ 1. In an "uncontrolled" spill, only OSHA-Hazwoper trained personnel are authorized to perform containment and cleanup operations.	**SECTION 7**
___ 2. Determine: • Number of personnel available • Where are they coming from • Estimated time to arrive at staging area • Transportation necessary to get to staging area	
___ 3. Maintain information on all contract personnel: • Date contracted • Work performed • Work location • Training records • Compensation rate/amount • Date released	
☐ F Source and mobilize transportation. • Motor vessels for cleanup equipment • Utility boats for skimmers • Crew boats for boom deployment • Tug boats • Jackup boats for housing • Storage barges for temporary disposal	**SECTION 14** **APPENDIX F**

FIGURE 4.2

(20) SUPPORT BRANCH DIRECTOR

- Aircraft for transporting SMT cleanup personnel, slick surveillance and spotter.

☐ G Provide transportation for moving personnel and equipment from the staging area to the spill site. This may include:

- Helicopters
- Airplanes, amphibious aircraft
- Vessels
- Cars, vans, trucks

☐ H As needed, provide transportation services at the spill site for operations such as wildlife rescue, surveillance, salvage, waste disposal, etc.

☐ I Track movement of equipment, personnel, and material resources deploying to, operating within, and deploying from staging area. Maintain Equipment Status Board and provide as required to Situation Unit Leader. **APPENDIX K**

☐ J Manage equipment maintenance (scheduled/unscheduled) capability including spare parts inventory, mechanics.

☐ K Coordinate availability of remote sensing capability.

☐ L Maintain ready access to load limit information for aircraft and airfields. Ensure that adequate and appropriate loading/ unloading equipment is available.

☐ M Locate and activate Staging Areas, Field Command Posts, Incident Command Center, Wildlife Rehab Centers with Staging Area Manager (Ops). **FIGURE 14.1**

___ 1. Set up Command Center considering the following:

- Telephones and service
- Radios
- Sewage / wastewater
- Catering
- Video equipment
- Computers
- Tables / Chairs
- Consider Media Room separate from main Command Center
- Consider Mobile Offices

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FIGURE 4.2

(20) SUPPORT BRANCH DIRECTOR

- Parking
- Electrical service
- Security
- Helicopter landing pad
- Documentation forms
- Case logbooks
- Status board
- Charts / maps / reference publications
- Briefing area

___ 2. Provide services, i.e. lighting, portable generators, heaters.

___ 3. Advise SMT of the following:

- Name of facility
- Address
- Phone number
- Description
- Written directions to location.

☐ N If requested, arrange for video and photographic documentation of area before, during and post cleanup. Obtain a helicopter for photographer and coordinate with Operations Section Chief.

☐ O Determine if assigned Branch resources are sufficient.

☐ P Maintain surveillance of assigned unit work progress and inform Logistics Section Chief of activities.

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FIGURE 4.2

(21) COMMUNICATIONS UNIT LEADER

The Communications Unit Leader is responsible for developing plans for the effective use of incident communications equipment and facilities; installing and testing of communications equipment; supervision of the incident communications equipment; distribution of communications equipment to .incident personnel; and the maintenance and repair of communications equipment.

☐ A Obtain briefing from Service Branch Director or Logistics Section Chief.	
☐ B Determine level of service required to support operations. Source and mobilize as necessary: • Setup field communications. • Establish Incident Communications Center and Message Center. • Setup phone system in Command Center. • Maintain radio logs. • Ensure accountability for communications equipment (log).	
☐ C Advise communications capabilities/limitations.	
☐ D Prepare and implement the incident Radio Communications Plan (ICS 205).	**APPENDIX K**
☐ E Prepare telephone directory.	
☐ F Initiate request to FCC for temporary radio frequencies.	
☐ G Determine requirements and provide communications equipment for Security personnel.	
☐ H Implement request to establish 800 number access for Claims and Public Relations.	
☐ I Establish appropriate communications distribution/maintenance locations.	
☐ J Ensure communications systems are installed and tested.	
☐ K Ensure an equipment accountability system is established.	

FIGURE 4.2

(21) COMMUNICATIONS UNIT LEADER

- ☐ L Distribute communications plans to field personnel.
- ☐ M Ensure personal portable radio equipment is distributed per radio plan.
- ☐ N Recover equipment from relieved or released units and decon as necessary.

FIGURE 4.2

(22) FINANCE SECTION CHIEF

The Finance Section Chief is responsible for all financial and cost analysis aspects of the incident and for supervising members of the Finance Section.

- ☐ A Obtain briefing from Incident Commander.
- ☐ B Attend planning meeting to gather information on overall strategy.
- ☐ C Establish AFE # for response.
- ☐ D Identify and order supply and support needs for Finance
- ☐ E Develop and operating plan for the Finance Section
  - ___ 1. Ensure that a system is in place to properly manage the financial aspects of equipment acquisition and to account for expenditures.
  - ___ 2. Coordinate invoice verification, appropriate charge coding and system input for complete processing and payment.
  - ___ 3. Work with the Logistics Section Chief to coordinate needs for purchase orders, verification of receipts, invoices, and special payments.
  - ___ 4. Establish a cash working fund and activate a special checking account for required manual payments and local requirements.
- ☐ F Prepare work objectives for subordinates, brief staff, make assignments, and evaluate performance.
- ☐ G Inform members of the Unified Command and General Staff when Section is fully operational.
- ☐ H Meet with assisting cooperating agency representatives as required.
- ☐ I Provide input in all planning sessions on financial and cost analysis matters.
- ☐ J Participate in all demobilization planning.

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FIGURE 4.2

(23) PROCUREMENT UNIT LEADER

The Procurement Unit Leader is responsible for administering all financial matters pertaining to vendor contracts.

- ☐ A Obtain briefing from Finance Section Chief.
- ☐ B Contact appropriate unit leaders on incident needs and any special procedures.
- ☐ C Coordinate with local jurisdictions on plans and supply sources.
- ☐ D Develop Incident Procurement Plan.
- ☐ E Prepare and sign contracts and land use agreements as needed.
- ☐ F Establish contracts with supply vendors as required.
- ☐ G Interpret contracts/agreements and resolve claims or disputes within delegated authority.
- ☐ H Coordinate with Compensation/Claims Unit on procedures for handling claims.
- ☐ I Finalize all agreements and contracts.
- ☐ J Coordinate use of cash funds as required.
- ☐ K Complete final processing of invoices and send documents for payment.
- ☐ L Coordinate cost data in contracts with Cost Unit Leader.

FIGURE 4.2

(24) COMPENSATION/CLAIMS UNIT LEADER

The Compensation/Claims Unit Leader is responsible for the overall management and direction of all Compensation for Injury Specialist and Claims Specialists assigned to the incident.

☐ A Obtain briefing from Finance Section Chief.	
☐ B Establish contact with incident Safety Officer and Liaison Officer or Agency Representatives if no Liaison Officer is assigned.	
☐ C Prepare responses to inquiries, claims and other legal matters.	
1. Issue Public Advertisements as required.	
☐ D Determine the need for Compensation for Injury and Claims Specialists and other personnel if needed.	Notify Insurance Broker.
☐ E Obtain a copy of the Incident Medical Plan.	
☐ F Periodically review all logs and forms produced by Compensation/Claims Specialists to ensure that entries are thorough, accurate, timely, and in compliance with requirements and policies.	
☐ G Keep Finance Section Chief briefed on unit status and activity.	
☐ H Demobilize unit in accordance with Demobilization Plan.	
☐ I Coordinate insurance claims processing.	
☐ J Notify appropriate insurance underwriters.	
___ 1. Determine insurance coverage limits and estimated insurance recovery of incident response costs.	
___ 2. Supervise processing and investigation activities for claims.	
___ 3. Determine documentation requirements with underwriters.	
☐ K Maintain claims data to include settlement costs, number of claims, and potential future indemnities.	
☐ L Establish claims office and hotline if necessary.	

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FIGURE 4.2

(25) COST UNIT LEADER

The Cost Unit Leader is responsible for collecting all cost data, performing cost effectiveness analyses, and providing cost estimates and cost saving recommendations for the incident.

- ☐ A Obtain briefing from Finance Section Chief.
- ☐ B Obtain and record all cost data.
- ☐ C Prepare incident cost summaries.
- ☐ D Prepare resources-use cost estimates for Planning.
- ☐ E Make recommendations for cost savings to Finance Section Chief.
- ☐ F Maintain cumulative incident cost records.
- ☐ G Ensure that all costs documents are accurately prepared.
- ☐ H Complete all records prior to demobilization.
- ☐ I Provide reports to Finance Section Chief.

SECTION 5 - SPILL RESPONSE OPERATIONS CENTER (INCIDENT COMMAND POST) & COMMUNICATIONS

A. Incident Command Post

Marathon Oil Company maintains its Incident Command Post (ICP) within their Lafayette, Louisiana office which may be utilized during a spill event involving Desoto Canyon 927 operations. (Map is included as **FIGURE 5.1**)

COMPANY NAME	Marathon Oil Company
STREET ADDRESS	200 Corporate Drive Lafayette, Louisiana 70505

The ICP is equipped with appropriate work space, status boards, clock, maps, etc. for efficient operations. The Incident Command Post may later be relocated closer to the incident, and/or an additional field command post(s) may be set up in the vicinity of the spill area as needed.

B. Communications

The primary and secondary communication systems that will be used to direct and coordinate response to an oil spill are land telephone lines and cellulars. Field operations personnel will communicate via cellulars and portable radios (refer to **FIGURE 5.2** for frequency assignments).

The Incident Command Post has ample phone and fax machines.

PHONE NUMBER	(337) 233-8240
FAX NUMBER	(337) 267-3243
Primary Radio Frequency	To be announced
Secondary Radio Frequency	To be announced

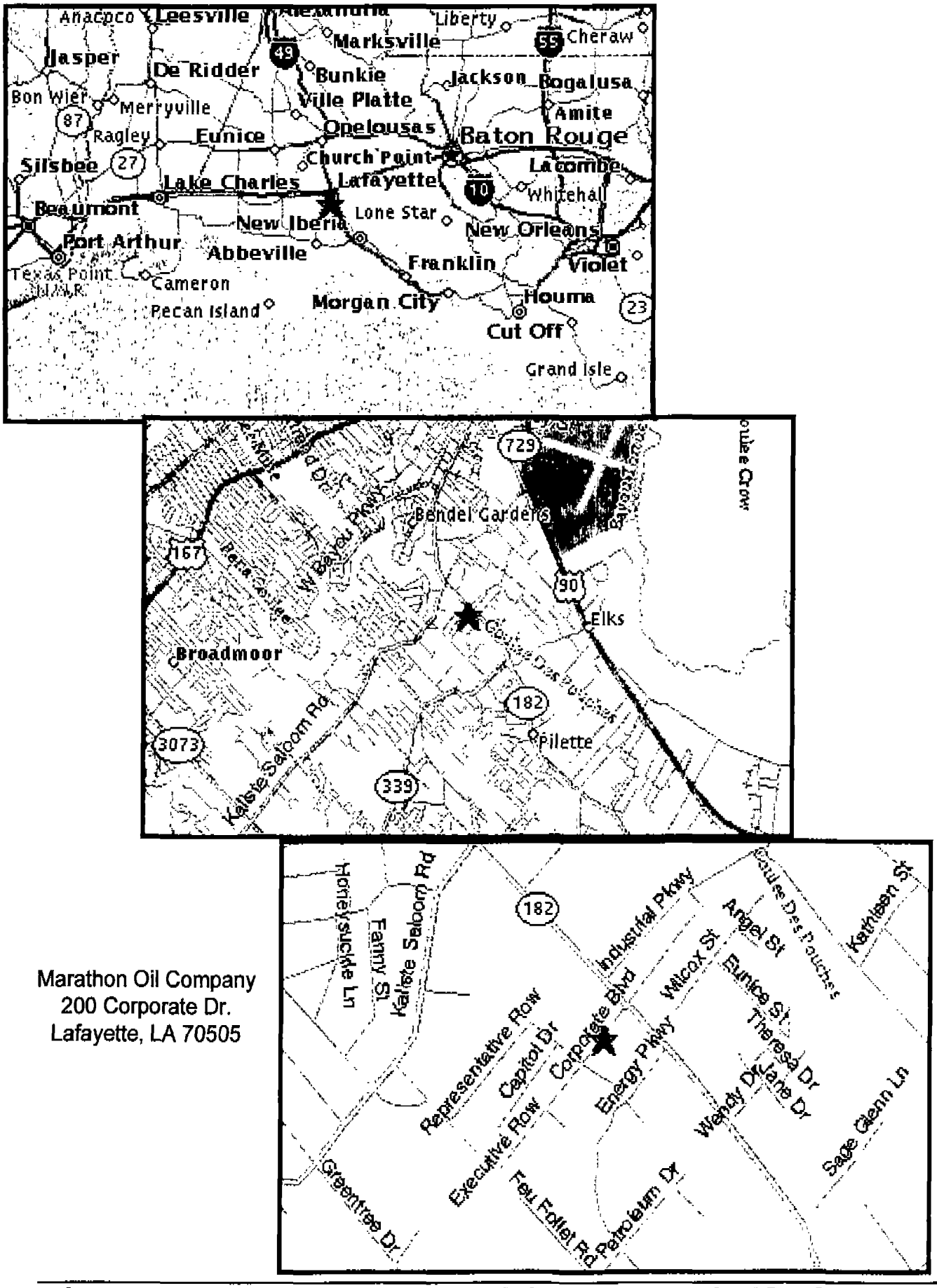
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The following company/leased communication systems may be used to help direct and coordinate the overall response operations:

	Cellular Telephone System / Portable Telephones
	VHF Radio
	Commercial Telephone System
•	Motorola UHF Portable Radios with Chargers & Accessories
•	Motorola VHF Portable Radios with Chargers & Accessories
•	Portable Communications Command Post with UHF, VHF, single-side-band, marine, aeronautical, telephone, and hard-line capacity

In the event of a large spill, National Response Corporation (NRC) Radio Communications system may be used. NRC Oil Spill Communications equipment is listed in **FIGURE 5.3**.

FIGURE 5.1
MAP TO COMMAND POST



Marathon Oil Company
200 Corporate Dr.
Lafayette, LA 70505

As in any potential catastrophic event, reliable and efficient communication is paramount. Numerous systems have been developed and designed to provide adequate coverage in the event of an offshore open ocean spill. The key to proper implementation is planning, coordination and standardization.

NRC field operations are conducted from Mobile Communications Centers (MCC's) designed to accommodate a full range of communications transceiving capability. Subsystems include satellite communications; airband VHF-AM, UHF-FM, VHF-FM & Marine, repeaters, single-side-band HF base stations with NECODE/DSC; cellular and terrestrial telephone, fax, and modem communications. The systems are designed to provide the necessary equipment mix for communications with the corporate IOC in Great River, New York: vessels, aircraft, shore-based cleanup operations, and local logistics support agencies.

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FIGURE 5.2
NRC's COMMUNICATION SYSTEM

Mobile Communications Center (MCC) Capabilities:

INMARSAT-M Satcom System (voice & fax capable)
High Frequency SSB Radiotelephone set w/Necode
Programmable UHF-FM radio sets (w/phone patch capability)(438-470 MHz)
Programmable VHF-FM radio sets (w/phone patch capability)(146-174 MHz)
PABX telephone system (24 line capable)
3-watt Cellular telephones w/fax or data interface
Programmable Handheld VHF-FM Marine Radios (136-178 MHz)
Programmable Handheld UHF-FM Radios (438-470 MHz)
Facsimiles
Laptop Computers w/color printer
Hardware & Software for programming radios

Offshore Response Vessel (OSRV) Capabilities:

INMARSAT-M Satcom System (voice & fax capable)
High Frequency SSB Radiotelephone Set w/Necode & Globe E-mail
VHF-FM Marine Radio Sets
Programmable VHF-FM Radio Set (146-174 MHz)
Programmable UHF-FM Radio Set (438-470 MHz)
Cellular telephones w/fax interface
Handheld VHF-FM Marine Radios & Programmable VHF-FM radios
Facsimile
Handheld VHF AirBand Radio
PA (Loud Hailer)
Computer & printer

Offshore Response Barge (OSRB) Capabilities:

INMARSAT-M Satcom System (voice & fax capable)
High Frequency SSB Radiotelephone Set w/Necode
VHF-FM Marine Radio Sets
Programmable VHF-FM Radio Set (146-174 MHz)
Programmable UHF-FM Radio Set (438-470 MHz)
Cellular telephones w/fax interface
Handheld VHF-FM Marine Radios & Programmable VHF-FM radios
Facsimile
PA (Loud Hailer)
Computer & printer

Identified Response Vessels (ID Boat) Capabilities:

High Frequency SSB Radiotelephone Sets W/Necode & Globe E-Mail
VHF-FM Marine Radio Sets
Cellular telephone
Computer & printer

FIGURE 5.3
NRC SPECIFIC FREQUENCY ASSIGNMENTS

NRC Specific Frequency Assignments:

The National Response Corporation primarily operates on frequencies that have been approved for use by the Petroleum Frequency Coordination Center as authorized by the FCC. NRC does not authorize all other frequencies for use unless specifically authorized by the NRC Communications Manager or his designated alternate. The FCC licenses the following frequencies; therefore NRC is authorized to transmit on them.

Primary Frequencies for Spills:

VHF-FM	UHF-FM
150.980 MHz	454.000 MHz
154.585 MHz	459.000 MHz
158.445 MHz	
159.480 MHz	

Primary Aeronautical Frequencies for Spills

VHF-AM
122.850 MHz
122.900 MHz

Long Range High Frequency (HF-SSB) Frequencies:

ITU Channel	452 - 4149.0 kHz	Channel 1252 - 12356.0 kHz
	652 - 6227.0 kHz	Channel 1652 - 16531.0 kHz
	852 - 8297.0 kHz	Channel 2252 - 22162.0 kHz
	Discrete 4637.5 kHz	

SECTION 6 - SAFETY AND SPILL PREVENTION PRACTICES

Best management practices for ensuring safe operations and spill prevention are established through the adoption of guidelines and operating procedures. All personnel have been instructed to check for pollution frequently during their tour of duty, and in the event pollution is spotted, to identify and shut off the source and make immediate notifications. Necessary guidelines and operating procedures are described below. Additional spill prevention and safety programs are described in the following documents (located onboard the *Cajun Express*):

- Shipboard Oil Pollution Emergency Plan
- Operations Manual
- Spill Prevention Control & Countermeasures (SPCC) Plan.

A. Operational Spill Prevention

Prior to bunker handling, all deck scuppers and open drains will be effectively plugged to prevent spilled oil from escaping from the vessel. Accumulations of water will be drained periodically and scupper plugs replaced immediately after the water has run off. Oily water is transferred to the slop tank or other suitable receptacle. Free floating oil or oil droplets on deck will be removed before draining using sorbents or other suitable equipment. Unless a permanent drip tray is provided, drip pans shall be placed under all vessel/shore connections to catch any leakage.

When not in use, sea and overboard discharge valves connected to the bunker and ballast systems will be securely closed and lashed (and may be sealed). In-line blanks will be inserted where provided. When lashing is not practical (as with hydraulic valves) some suitable means of marking shall be used to indicate clearly that valves so marked are to remain closed.

B. Fuel Transfer Procedures

The following procedures will be followed during all ship-to-rig fuel transfers [Reference: *Cajun Express* Shipboard Oil Pollution Emergency Plan (CFR 33 155.720; Marpol 73/78)]:

1. The Chief Mate or Dynamic Positioning Officer (DPO) on deck will be the Person In Charge (PIC) of the bunkering and responsible for the operation.
2. Determine how much fuel is to be transferred and into which tanks it will be received.

3. The delivery vessel will moor or dynamic position (DP) down current/down weather of the *Cajun Express.* If necessary, the heading of the *Cajun Express* may be changed if operations permit but under no circumstances will the station keeping ability of the *Cajun Express* be jeopardized. A capability plot will be done by the DPO prior to any heading change.
4. The fuel hose will be passed to the vessel with the valve at the end of the hose closed.
5. There will be no hotwork during fueling. Persons doing hotwork will be notified and the Permit to Work (PTW) suspended and signed prior to the start of fuelling. A PA announcement will be made prior to and after bunkering.
6. The Chief Mechanic on watch will be notified that refueling is taking place, into which tanks fuel will be taken and that no tank-to-tank transfers will be undertaken during bunkering.
7. The PIC will ensure that all valves are opened and when ready to receive will notify the delivery vessel to commence pumping.
8. A sample of the fuel will be taken at the manifold upon commencement of pumping, whenever the delivery vessel changes tanks and at the end of the transfer. The sample will be checked for clarity and water using detection paste. The samples will be kept in a safe place for one week.
9. Absorbent pads will be kept ready near the manifold.
10. A responsible person with a VHF radio will be stationed at the manifold to watch the hoses and connections during the entire bunkering.
11. The person on Bridge watch will monitor the tanks on the ballast console and have VHF communication with PIC. He/she will determine and monitor pumping rates.
12. The Dial gauges at the fuel tanks will be monitored and compared to ballast board readings frequently.
13. When topping up a tank the delivery vessel will be advised and requested to reduce the pumping rate. The dial gauge, ballast board and vents will be manned during top up. The tanks will not be filled above an 8.5 meter sounding.
14. When bunkering is completed the manifold valve will be closed. The valves to the delivery vessel will remain lined up to a tank and the sample valve at the manifold opened to vent the hose to the atmosphere.
15. Once the PIC is satisfied the hose is drained, he/she will advise the delivery boat to close the hose valve and disconnect.
16. All pertinent information during the operation will be entered in the Deck Logbook.

17. PIC will make the entries in the Liberian Oil Record Book immediately after bunkering is finished. Report all spills immediately to the Captain as per SOPEP.

Fuel flow diagrams, fuel transfer procedures, valving details, and safety precautions for the drill rig are listed in the drilling contractors SPCC plan. The SPCC plan for the *Cajun Express* is kept on site during drilling activities.

C. Well Control & Drilling Assurance Program

This section outlines preventative and recovery measures to minimize hydrocarbon spill potential which are applied to drilling operations. All well control discussions presented in this section are aimed at preventing spills from occurring (i.e., blowouts where hydrocarbons spill to the surface) during drilling operations.

1) Well Control During Planning

The process of well control commences before actual drilling operations with the planning and design of any well. Offset data from exploration and appraisal wells in the form of lithology, geological horizon depths, pore pressure/fracture gradients, hydrocarbon zones, potential loss zones, etc. allows for a more robust development well design. With good offset data:

- Appropriate precautions for shallow gas accumulations can be implemented in the well program.
- Correct mud weights (primary well control barrier) for drilling fluids can be selected for each hole section to prevent kicks while ensuring losses do not occur to potential thief zones.
- Hole sizes and hence casing sizes are selected to optimize production from the well while allowing well control incidents to be handled safely, i.e., kick tolerance. Kick tolerance is a safety factor utilized to allow for control of additional downhole formation pressure should it be encountered.
- Casing points are selected which allow weaker geological zones to be cased-off prior to drilling deeper; higher pressure sections which require higher mud weights to prevent the breakdown of formations at the shoe. If known loss zones exist, casing programs are designed to minimize effects of lost circulation.

- Casing weights, grades, and cementing programs are designed utilizing data and engineering calculations to withstand drilling, completion, production and well control conditions.

All the above planning parameters, in addition to MOC's policies and recommended practices, are at a minimum equivalent to MMS regulations.

2) Well Control During Drilling

There are two areas where the potential for loss of well control exists during drilling. The first is during the drilling of the surface hole, where the potential for a shallow gas blowout exists. It should be noted that shallow gas blowouts do not contain oil; as such, no spill of oil occurs at the surface. However, the incident is critical from a safety standpoint. The second is while drilling the below surface hole where a blowout can occur while drilling into the reservoir or other hydrocarbon bearing zones or during completion of the well. In both cases, kick identification and management are the primary tools utilized to prevent a blowout.

A) Well Control During Surface Hole Drilling

During surface hole drilling, a shallow gas blow-out can occur when a small, high-pressure volume of trapped gas is encountered. This causes a rapid unloading of the wellbore fluids (mud) and gas at surface in a very short time span. Shallow seismic surveys are carried out over the proposed drilling location to establish the presence of gas accumulations. Offset data is also valuable but accumulations tend to be localized, so caution is vital at all times in case an incident occurs. Detection during drilling or tripping (i.e., running the drillstring into or out of the hole) will be visible by monitoring the returns to the surface from the drilling fluid system, monitoring the volume of drilling fluid required to fill the wellbore, and monitoring the drilling fluid weight in and out of the well to detect any influx of gas into the wellbore.

No attempt is made to shut-in the well to contain the gas, as typically surface formations have insufficient strength to prevent gas broaching to surface from these shallow depths. Instead, the flow of gas is directed away from the rig floor using a diverter valve and diverter line which vents the gas at a safe distance from the drill rig to the atmosphere. Procedures are developed to keep pumping fluid to the drillstring wherever possible to try and

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establish primary well control, though most shallow blow-outs deplete rapidly and/or bridge-off.

B) Well Control While Drilling Below the Surface Hole

While drilling below the surface hole, causes of kicks include drilling into abnormally pressured formations with under weight drilling fluid, tripping (pulling or putting drill pipe in the hole) too fast, not filling the hole, mud losses due to lost circulation zones, etc. The majority of kicks occur not because of well design shortcomings or drilling, but because of human error, especially during tripping operations. To assist the drilling operations team in detecting and preventing kicks during this drilling period, certain rig equipment is employed:

- A mud return line flow meter giving a reading of increased mud returns when drilling at constant pump rate could be an indication of a kick being taken downhole.

- A pit volume totalizer (PVT) records the volume of mud in the mud system tanks and any changes in volume (gains or losses) set off alarms at the driller's console.

- Gas detection equipment is used around the drilling mud circulating system to sense the presence of gas breaking-out of the mud (which can be an indication of insufficient drilling fluid weight).

- A trip tank is utilized during tripping operations to accurately monitor mud volumes displaced from or pumped to the well as the drillstring is pulled out of, or run into, the well. This is a small tank with reduced cross-sectional area so that slight volume changes mean relatively large depth variances resulting in alarms being set-off at the driller's console.

- All the above mechanical indicators are continually monitored at the driller's console during drilling and tripping operations.

- For areas where high pressures and/or small hole sizes are being drilled, an early kick detection (EKD) system is utilized to detect much smaller volume changes in the fluid system.

- Mud logging services with formation sample catching, gas chromatography can indicate kicks and also confirm depths/formations being drilled. This greatly assists actual casing seat selection decisions consistent with well designs.

- Logging while drilling (LWD) tools assist in formation identification and actual casing seat selection decisions, as well as identifying potential hydrocarbon bearing zones.

Equipment alone will not prevent kicks from occurring. Personnel training is required to monitor drilling conditions, react correctly to anomalies and follow procedures to establish whether or not a kick has been taken.

If it has been established that a kick has been taken below surface hole and a well control incident is underway, blow-out prevention (BOP) equipment and procedures are used to remove the kick safely from the wellbore and prevent further kicks and possible escalation into a more serious incident such as a blow-out. BOP and casing installations conform MMS regulations (30 CFR 250 Subpart D). To assist the drilling operations team in managing kicks, certain rig BOP equipment is employed. In the event primary well control is lost, this surface equipment will be utilized for secondary containment of the fluid influx into the wellbore. The BOP equipment will contain fluids and pressures in the annulus and drill pipe, and the mud weight is raised to overbalance the bottom hole formation pressure. In addition, there are well kill procedures to circulate heavier mud into the well and remove the kick fluids safely. Blow-out prevention equipment and procedures are described below:

- A BOP stack is located above the wellhead and is used on all hole sections below surface hole. The BOP stack has a series of hydraulic (or manually) operated rams (pipe, variable and blind/shear) and annular preventers for closing in the well around the drillstring or open hole, plus actuated and manual valves and kill/choke lines. The shear ram can close on the drillstring and sever it to give a complete seal across the wellbore. The BOP essentially acts like a valve at the surface, containing all wellbore fluids and pressures while downhole operations are planned and executed safely. Redundancy exists in the BOP stack with additional ram preventers and valves.

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- The casing program is designed to allow safe well control procedures to be carried out during drilling, workover, and production operations; the cementing program isolates hydrocarbon zones, abnormally pressured formations, and lost circulation zones.

- A choke manifold is a system of piping and valves for handling fluids circulated from the wellbore in a controlled and safe manner. All valves in the system have a backup.

- Degassers are used to remove gas from drill fluids circulated to the surface from the well.

- The BOP stack and choke manifold have redundancy built in such that a ram, choke or valve failure will not mean a leak and potential blow-out of hydrocarbon.

- All BOP equipment is rated for the pressure regimes to be encountered in the development wells and is configured, regularly tested (witnessed by appropriate regulatory agencies) according to MOC policies and agency regulations.

Drilling operations may resume when normal conditions prevail. As with kick detection, equipment alone will not totally manage kicks. Training of personnel to react correctly to well control incidents and follow procedures to safely bring the well back under control is vital.

- Supervisory drilling staff are certified in well control, which includes theory and procedures for both prevention and handling of well control incidents. This includes both rig site personnel (toolpusher, driller, relief driller, company man, drilling engineer) and office personnel (drilling superintendent, senior drilling engineer, operations drilling engineer).

- Drills are carried out with all crews to close-in wells and simulate well control incidents. Well kill sheets are compiled and posted on the rig floor and updated once a tour for the drilling conditions prevalent at the time, i.e., hole sizes, drillstring, bottom hole assembly, mud weights, and slow pump rate. As hole conditions dictate, the well kill sheets are updated.

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- Operator policies and industry recommended practices have procedures for different kill techniques suitable for specific well control situations.

MOC's well control contingency plans provide guidelines on how to safely and effectively respond to and manage a well control incident. Personnel engaged in offshore operations have been trained to respond appropriately to a source control event. Safety, of course, is first priority. A source control group is named on the Spill Management Team and their duties are to assess the situation and contact well control specialists or divers, as necessary. These service providers are listed in **FIGURE 7.2** and **APPENDIX F**, "Support Services and Supplies."

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SECTION 7 - QI, SMT, SROT AND OSRO NOTIFICATIONS

A. Reporting Procedures

Field Personnel

Any person observing or becoming aware of an oil spill of any size must immediately report the incident to the person in charge of the facility. The person in charge of the facility will immediately report all spills (known or unknown source) to the Incident Commander. In order to save time, fill-in the Spill Report Form (**APPENDIX G**) while discussing the incident. Information not immediately known may be inserted on the form as soon as it becomes available. Do not delay reporting pending additional information.

Field personnel will take immediate actions which may include the following:

- Stop the discharge, if safe to do so.
- Assess possible hazards:
  - ❑ Fire and explosion potential of vapors at or near the source
  - ❑ Potential toxic effects of the discharge
  - ❑ Damage to facility affecting safety
- Protect personnel, as necessary:
  - ❑ Sound alarm.
  - ❑ Shut off ignition sources.
  - ❑ Restrict access.
  - ❑ Evacuate as necessary.
  - ❑ Initiate rescue and response actions.
- Report all discharges to company personnel:
- Notify affected pipeline, platform operators.
- Obtain sample of discharged material, if requested by IC.

- Perform surveillance using helicopter or vessel. If possible, photograph or video the area. Determine:
  - ❑ Size of slick
  - ❑ Description of slick
  - ❑ Location of leading and trailing edge of slick
  - ❑ Direction of movement
  - ❑ Threat to personnel, sensitive areas and coastline
  - ❑ Wildlife spotted in the area

- Continue to correct the condition or procedure causing the discharge, if safe to do so.

Observation of Oil from an Unknown Source

Should a pollutant/sheen of unknown origin be detected, immediate steps should be taken to determine the source and notify the responsible party.

Incident Commander

The Incident Commander (IC) will obtain information regarding the spill from field personnel and assemble certain members of the Spill Management Team (Command Staff and Section Chiefs). The Section Chiefs will notify and brief personnel in their Section. The Liaison Officer will complete regulatory notifications. The National Response Center will be notified of all spills (known or unknown).

B. Company Contact Information

QI/IC/SMT Members are listed in **FIGURE 7.1**.

C. Primary Organizations - Response Services

Refer to **FIGURE 7.2** for a list of the primary organizations that provide oil spill response services, material and supplies. Refer to **APPENDIX F**, "Support Services and Supplies," for a directory of additional personnel, materials and supplies, equipment and services.

D. Internal Spill Reporting Forms

Refer to **APPENDIX G**, "Notification and Reporting Forms" for a copy of the "Spill Report Form".

FIGURE 7.1
SPILL MANAGEMENT TEAM – Marathon Oil Company

Address: 200 Corporate Drive, Lafayette, Louisiana 70505
Phone: (337) 233-8240 Fax: (337) 267-3243

See Corresponding Locations to follow this Table.
All Spill Management Team Members are company employees unless otherwise noted.

#	*Name/Position*	*Loc #*	*Office*	*Pager*	*Home*	*Cellular*
	Qualified Individual L. R. Dartez	1	Ext. 2200	(800) 769-7243 Pin # 930-2445	(281) 681-2134	-----
	C. R. Hubacher	1	Ext. 2517	(337) 272-8737	(713) 587-6361	-----
1	Incident Commander L.R. Dartez	1	Ext. 2200	(800) 769-7243 Pin # 930-2445	(281) 681-2134	-----
	C.R. Hubacher	1	Ext. 2517	(337) 272-8737	(713) 587-6361	-----
2	Safety Officer E. B. Spoelker	1	Ext. 2549	(713) 227-8697	(281) 251-3981	-----
3	Liaison Officer M. W. Miller	1	Ext. 2500	(337) 272-1074	(337) 993-3635	-----
4	Information Officer R. G. Kasubinski	1	Ext. 2302	(337) 236-2607	(337) 857-0955	-----
5	Legal Officer E. A. Strenkowski	1	Ext. 83+2529	(800) 769-7243 Pin # 930-2443	(281) 579-0915	-----
6	Human Resources Bob Kasubinski	2	(713) 296-2200	(800) 946-4646 Pin # 146-0114	(281) 693-2854	(713) 410-7881
7	Source Control Group Supv. Jerry Beardmore	1	Ext. 2559	(337) 272-1920	(337) 856-4194	(713) 516-2229
8	Operations Section Chief R. H. Lott W. S. Farmer	1 1	Ext. 2282 Ext. 2317	(337) 272-8740 (337) 272-8688	(337) 988-1287 (337) 856-9470	----- -----
9	Recovery & Prot. Branch Dir.					
10	Staging Area Manager					
11	Disposal Group					
12	Wildlife Branch Director					
13	Planning Section Chief L. D. Burton C. W. Craig	1 1	Ext. 2205 Ext. 2562	(337) 272-8749 (337) 733-2862	(337) 365-5710 (337) 856-8447	----- -----

FIGURE 7.1
SPILL MANAGEMENT TEAM – Marathon Oil Company

Address: 200 Corporate Drive, Lafayette, Louisiana 70505
Phone: (337) 233-8240 Fax: (337) 267-3243

See Corresponding Locations to follow this Table.
All Spill Management Team Members are company employees unless otherwise noted.

#	Name/Position	Loc #	Office	Pager	Home	Cellular
14	Situation Unit Leader					
15	Resource Unit Leader					
16	Documentation Unit Leader					
17	Technical Specialists					
18	Logistics Section Chief B. Dartez	1	Ext. 2255	(337) 236-4060	(337) 893-7032	(337) 278-8779
19	Service Branch Director					
20	Support Branch Director					
21	Communications Unit Leader					
22	Finance Section Chief A. Morale	1	Ext. 2520	(337) 231-0849	(337) 264-9443	-----
23	Procurement Unit Leader					
24	Comp./Claims Unit Leader					
25	Cost Unit Leader					

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SPILL MANAGEMENT TEAM – These locations correspond with numbers listed above.		
#1	#2	#3
Marathon Oil Company 200 Corporate Drive Lafayette, Louisiana 70505	Marathon Oil Company 5555 San Felipe Road Houston, Texas 77056	

FIGURE 7.2
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

NAME	CITY, STATE	TELEPHONE NUMBERS	
1 AGENCY NOTIFICATIONS			
a) National Response Center			
USCG	Washington, D.C.	Office	(800) 424-8802 *
		Office	(202) 267-2675 *
b) Minerals Management Service			
New Orleans District	New Orleans, LA	Office	(504) 736-2505
		Office	(504) 538-0231 *
Pipeline Section	New Orleans, LA	Office	(504) 736-2591
		Office	(504) 423-5340 *
c) State Agencies			
AL - ADEM (Alabama Department of Environmental Management)		Office	(334) 450-3400
AL - AEMA (Alabama Emergency Management Agency)		Office	(800) 843-0699 *
FL - Dept. of Environmental Protection		Office	(904) 488-2974
		Office	(850) 413-9911 *
FL - Bureau of Emergency Response		Office	(904) 413-9911
LA - One Call		Office	(225) 925-6595 *
		Office	(225) 219-5800
MS - Emergency Management Agency		Office	(601) 352-9100
		Office	(800) 222-6362 *
d) United States Coast Guard			
MSO Mobile	Mobile, AL	Office	(334) 441-5286
		Office	(334) 441-5121 *
MSO New Orleans	New Orleans, LA	Office	(504) 589-4218
		Office	(504) 589-6261 *
MSO Panama City	Panama City, FL	Office	(904) 233-0366
e) Environmental Protection Agency / EPA			
Region IV	Atlanta, GA	Office	(404) 562-8700 *

FIGURE 7.2
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

2 EMERGENCY NOTIFICATIONS

a) USCG Search & Rescue

NAME	CITY, STATE	TELEPHONE NUMBERS
Search & Rescue Team		Office (504) 589-6225

b) Hospitals

Louisiana	Air Care - New Orleans, LA	Office (504) 347-5511
	Air Med - Houma, LA	Office (800) 259-1111
	W. Jefferson Medical Ctr. Marrero, LA	Office (504) 347-5511
Mississippi	Family Medical Center, Inc. Pascagoula, MS	Office (601) 762-0222
	MS Baptist Medical Center Jackson, MS	Office (601) 968-1776
	St. Dominic Health Svcs. Jackson, MS	Office (601) 982-0121
Alabama	Mercy Medical Mobile, AL	Office (334) 626-2694
	Mobile Infirmary Medical Center Mobile, AL	Office (334) 431-2400
	Providence Hospital Mobile, AL	Office (334) 633-1000
	Springhill Memorial Hospital Mobile, AL	Office (334) 344-9630
	Thomas Hospital Fairhope, AL	Office (334) 928-2375
	Univ. of S. AL Medical Center Mobile, AL	Office (334) 471-7000
	USA Children's/Women's Hosp. Mobile, AL	Office (334) 415-1000
	USA Knollwood Park Hospital Mobile, AL	Office (334) 660-5120

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FIGURE 7.2
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

3 MAJOR SPILL RESPONSE EQUIPMENT

Refer to APPENDIX D, "Contractual Agreements" for contracts with OSRO's.

a) National Response Corporation

NAME	CITY, STATE	TELEPHONE NUMBERS	
Dispatch	Calverton, NY	Office	(800) 899-4672
		Office	(516) 369-8644
		Fax	(516) 369-8655

b) Airborne Support Inc. Dispersant – (Contract in Place)

Howard Barker	Bourg, LA	Office	(504) 851-6391
		Fax	(504) 851-6393

4 SOURCE CONTROL SERVICES

a) Well Control Specialists

Boots & Coots, Inc.	Houston, TX	Office	(281) 931-8884
Cudd Pressure Control	Houston, TX	Office	(713) 877-1118
International Well Control	Houston, TX	Office	(713) 621-7911
Wild Well Control	Houston, TX	Office	(281) 353-5481

b) Diving Companies

Cal Dive	Morgan City, LA	Office	(504) 385-1104
Stolt Comex Seaway Inc.	Bell Chasse, LA	Office	(504) 361-3477 *
	Houston, TX	Office	(713) 466-0245 *
		Office	(713) 430-1100 *

5 SPILL CONSULTANTS, CONTRACTORS & EQUIPMENT

a) Spill Management Consultants

ERST/O'Brien's	Slidell, LA	Office	(504) 781-0804
Jim O'Brien/Ben Benson		Fax	(504) 781-0580

FIGURE 7.2
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

NAME | CITY, STATE | TELEPHONE NUMBERS

b) Contractor Personnel & Equipment - ICN

Contractor	Location	Contact	Phone Number
Berry, Cliff	Fort Lauderdale, Fl	Cliff Berry	800-899-7745
Boots & Coots Special Serv.	LaPorte, Tx	Tony Stamper	281-470-0444
Diversified Environmental	Tampa, Fl	Gerry McCormick	813-248-3256
Environmental Rec. Group	Atlantic Beach, Fl	Jay Daniel	904-241-2200
Environmental Restoration LLC	Ellisville, Mo	Russ Gulledge	314-227-7477
Ferguson Harbor	Spanish Fort, Al	Paul Kearns	334-626-3295
Hepco	Memphis, Tn		901-345-6333
Industrial Cleanup Inc.	Lutcher, La	Rusty Johnson	800-436-0883
IT Corp	O'Fallon, Mo	Tom Knueven	314-272-3303
Miller Environmental	Corpus Christi, Tx	Charles Miller	361-289-9800
Miller Environmental	Sulphur, La	Matt Dartez	337-882-9800
Oil Mop Inc.	Port Allen, La	Ron Nigg	504-388-9992
Oil Mop Inc.	Belle Chase, La	Mark Barber	504-394-6110
Pneumatic Industrial Serv.	Orangefield, Tx	David McCoy	409-735-9121
Premium Electronics	LaPorte, Tx	Harold Bushy	713-470-9595
Southern Waste Services	Mobile, Al	Harry Marsh	334-662-0598
Southern Waste Services	Panama City, Fl	Harry Marsh	800-852-8878
Southern Waste Services	Savannah, Ga	Mr. Griffif	800-852-8878

FIGURE 7.2
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

6 ENVIRONMENTAL SERVICES

a) Weather Service

NAME	CITY, STATE		TELEPHONE NUMBERS
Alert Weather Service	Lafayette, LA	Office	(337) 233-5565
A. H. Glenn & Assoc.	New Orleans, LA	Office	(504) 241-2222
National Weather Service	Slidell, LA	Office	(504) 589-2808
Ed Roy Ltd.	Lafayette, LA	Office	(337) 233-3816

b) Trajectory Analysis

SpillNet	Anahuac, TX	Office	(409) 267-3872 *
David Morris		Fax	(409) 267-3945

c) Environmental Assessments / NRDA

Coastal Environments, Inc.	Baton Rouge, LA	Office	(225) 383-7451
		Fax	(225) 383-7925
ENTRIX	Houston, TX	Office	(713) 666-6223
J. Connor Consulting, Inc.	Houston, TX	Office	(281) 578-3388
Bea Stong		Fax	(281) 578-8895
Dr. Phil Sorenson	790 E. Broward Blvd.	Office	(954) 467-5920
Florida State University	Ft. Lauderdale, FL 33301		
Steimle & Associates	Metairie, LA	Office	(504) 831-2574
		Fax	(504) 835-9410

d) Oil Analysis

Analysis Laboratories, Inc.	Metairie, LA	Office	(504) 889-0710
		Office	(504) 455-2718
MBA Laboratory	Houston, TX	Office	(713) 928-0701
Herman Kresse		Fax	(713) 928-9063

) Bird Rehab

IBRRC	Berkley, CA	Office	(510) 841-9086
Madeline Averett	Harper, TX	Office	(830) 864-4032
		Home	(830) 864-4934
		Pager	(800) SKY-PAGE
		Pin #	5464375
WR&E	Houston, TX	Home	(281) 332-8319
Sharon Schmalz		Pager	(713) 279-1417
		Pager	(713) 604-0303

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FIGURE 7.2
EXTERNAL PHONE LIST

* = 24 Hour Phone Number

March 2000

NAME	CITY, STATE	TELEPHONE NUMBERS	

f) Infrared Cameras

Real Time Thermal Imaging	New Orleans, LA	Office	(504) 467-3434
Bob Melia		Pager	(800) 785-7078

7 TRANSPORTATION

a) Vessels

Otto Candies	Des Allemands, LA	Office	(504) 469-7700
Ralph McIngvale (So. States OS)	Houston, TX	Office	(281) 448-3693
David Wolford	New Orleans, LA	Office	(504) 581-1314
		Pager	(504) 840-9010

b) Aircraft / Helicopters

Air Logistics	Venice, LA	Office	(504) 534-7481
	Galveston, TX	Office	(409) 740-3546
PHI	Gulf of Mexico Scheduling	Office	(800) 235-2452

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SECTION 8 - EXTERNAL NOTIFICATIONS

A. Reporting Procedures

It is Marathon Oil Company's policy to report all spills as required by regulations. Upon knowledge of a spill, the Incident Commander or his designate will notify the U.S. Coast Guard National Response Center, the Minerals Management Service, and other appropriate federal, state and local officials. The IC, or his designee, will also notify the responsible party (if known).

B. External Contact Information

Designated personnel will immediately report the incident to the federal and/or state agencies having jurisdiction over the location where the incident has occurred. Reporting requirements of the regulatory agencies are detailed in the following pages. As additional information becomes available, agencies will be notified through normal reporting channels.

If necessary, requests will be made to the USCG acting as Federal On-Scene Coordinator, for the following:

- One mile Safety Zone in Water .....(USCG-MSO)
- Five mile Safety Zone in Air.....(FAA through USCG-MSO)
- Notice to Mariners .....(USCG-MSO)
- Approval to Decant Skimming Systems .....(USCG-MSO)

Refer to **FIGURE 8.1** (Federal Reporting) and **FIGURE 8.2** (State Reporting) for contact information.

C. External Spill Reporting Forms

See **APPENDIX G**, "Notification and Reporting Forms", for copies of Spill Report Form.

FIGURE 8.1
FEDERAL REPORTING

1) USCG National Response Center (NRC)

To report to the USCG, call the 24-hour NRC hotline at (800) 424-8802 immediately if any of the following conditions occur:

- ✓ A sheen or slick is observed on the water, or
- ✓ A spill of oil or condensate from a DOT pipeline exceeds 50 bbls and/or causes injury, death, fire or damage of more than $50,000

Verbal reports to the NRC should note that a DOT pipeline was involved whenever applicable.

Reporting Updates

Report significant changes or new information to the appropriate USCG Marine Safety Office instead of the NRC. Include the NRC number assigned to the initial spill. Update other agencies as appropriate.

2) Minerals Management Service (MMS)

Notify the MMS in the following situations.

- ✓ Spills of *one barrel or more* of oil or any other liquid pollutant, or spills of unknown size, but thought to be one barrel or more
- ✓ A spill not originally reported to MMS but subsequently found to be one barrel or greater
- ✓ An oil spill of one barrel or more from any *OCS pipeline*. Between 8:00 a.m. and 4:30 p.m., call the MMS pipeline unit immediately. After hours, call one of the pipeline unit personnel at home.

Oral Report

Immediately call the appropriate MMS District and Pipeline Unit (if spill involves a pipeline). After working hours, call the after hours pager.

MMS Offices	Office	After Hours Pager
Pipeline Section	(504) 736-2591 (504) 736-2408 (Fax)	(504) 423-5340
New Orleans District 990 North Corporate Dr., #100 New Orleans, LA 70123-2392	(504) 736-2505 (504) 736-2501 (Fax)	(504) 538-0231

FIGURE 8.1
FEDERAL REPORTING

Written Report
For any spill of one barrel or more, file a written follow-up report with the District Supervisor. The District Supervisor must receive this confirmation within 15 days after the spillage has been stopped. All reports must include the cause, location, volume, and remedial action taken. Reports of spills of more than 50 barrels must include information on the sea state, meteorological conditions, size, and appearance of the slick.

3) USCG Marine Safety Office (MS0)/Marine Safety Detachment (MSD)

Notify the appropriate USCG Marine Safety Office on-scene coordinator whenever a response is required or cleanup equipment is called out.

USCG MSO / MSD	Phone Number
MSO-New Orleans, LA 1615 Poydras, 7th Floor New Orleans, LA 70112	(504) 589-4218 (504) 589-6261 (24 hrs)
MSO-Mobile, AL 150 North Royal, Suite 2001 Mobile, AL 70112	(334) 441-5286 (334) 441-5121 (Aft Hrs) (334) 441-6169 (Fax)
MSO-Miami, FL 100 Macarthur Causeway Miami, FL 33130	(305) 535-8743 (24 hrs) (305) 535-8740 (Fax)
MSO-Tampa, FL 115 Columbia Drive Tampa FL, 33606	(813) 228-2189 (24 hrs) (800) 638-2709 (24 hrs) (813) 228-2399 (Fax)
MSD-Panama City, FL / MSO Mobile P.O. Box 32043 Panama City, FL 32407-8043	(850) 233-0366

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FIGURE 8.2
STATE/LOCAL REPORTING

1) Mississippi Notifications

When a slick or sheen that threatens Mississippi state waters is observed, call the Mississippi state agencies shown in the table.

Agency	Phone Number
Mississippi Emergency Management Agency (MEMA) P.O. Box 4501 Jackson, MS 39296-4501	(601) 352-9100 (24 hrs) (800) 222-6362 (24 hrs)
Mississippi DEQ Bureau of Pollution Control (MDEQ) P.O. Box 10385 Jackson, MS 39289-0385 Oil and Hazardous Coordinator – Eric Deare	(601) 352-9100 (24 hrs) (800) 222-6362 (24 hrs)
Mississippi Department of Marine Resources (MDMR) 1141 Bayview Avenue, Suite 111 Biloxi, MS 39530 Lieutenant Frank Wescovich	(228) 374-5000 (228) 432-7708 (24 hrs)
Mississippi State Oil and Gas Board (MS&GB) 500 Greymont Avenue, Suite E Jackson, MS 39202 Kent Ford	(601) 354-7142 (24 hrs)

Mississippi County Civil Defense (MCCD)

When *five barrels or more* of crude oil or condensate are spilled, call the appropriate Mississippi CCD agency or sheriff's office immediately. See the table below.

Mississippi CCD & Sheriff's Offices	Phone Number
Hancock County	(228) 467-9226, 5101 or (800) 222-6362
Harrison County	(228) 865-4002, 7060
Jackson County	(288) 769-3111, 3063

FIGURE 8.2
STATE/LOCAL REPORTING

2) Alabama Notifications

When a slick or sheen that threatens Alabama state waters is observed, call ADEM immediately at (334) 450-3400 during office hours or (334) 242-4378 after office hours. In addition call the appropriate office of the AO&GB as shown in the table.

Agency	Phone Number
AL Department of Environmental Management (ADEM) Mobile Field Office 2204 Perimeter Road Mobile, AL 36615 Chief of Mobile Branch (John Carlton)	(334) 450-3400 (334) 242-4378(24 hrs)
AL Department of Environmental Management (ADEM) P.O. Box 301463 Montgomery, AL 36130-1463	(334) 260-2714 (800) 843-0699(24 hrs)
AL Oil and Gas Board (AO&GB) 4173 Commander Drive Mobile, AL 36615	(334) 438-4848 (334) 943-4326(24 hrs)
AL Oil and Gas Board (AO&GB) Tuscaloosa, AL P.O. Box "O" Tuscaloosa, Al 35486-9780	(205) 349-2852 (24 hrs)
AL Civil Defense Mobile, AL	(334) 460-8000
AL Dept. of Conservation & Natural Resources (ADCNR) State Lands Division 64 North Union Street, Room 464 Montgomery, AL 36130 Nancy Cone	(334) 242-3484

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FIGURE 8.2
STATE/LOCAL REPORTING

3) **Florida Notifications**

When a slick or sheen that threatens Florida state waters is observed, call the Florida Bureau of Emergency Response, State Warning Point and the Florida Marine Patrol at (850) 431-9911 immediately.

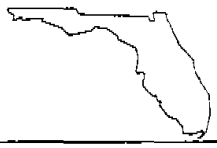
Agency	Phone Number
Florida Bureau of Emergency Response 2555 Shumard Oak Blvd. Tallahassee, FL 32399-2100	(850) 413-9911

4) **Local Notifications**

Any discharge which has significant impact on areas within their jurisdiction, or if their assistance is required.

Contact Information	Phone Number
Mobile, AL	
Sheriff's Department	(334) 690-8633
Police Department	(334) 434-7211
Fire Department	(334) 434-7311
Port Authority	(334) 441-7200
Emergency Management Agency	(334) 460-8000
Pensacola, FL	
Florida Highway Patrol, Okaloosa City	(850) 682-2762
Police Department	(850) 435-1900
Fire Department	(850) 435-1703
Pensacola Harbor Master	(850) 436-9711
Florida Marine Patrol, Okaloosa City	(850) 488-5757

SECTION 9 - AVAILABLE TECHNICAL EXPERTISE FOR SENSITIVE ENVIRONMENTAL INFORMATION

AFFECTED STATE	CONTACT INFORMATION	FIGURE	PAGE
LOUISIANA 	*Available Technical Expertise* *State & National Wildlife Refuges*	9.1 9.2	9-2 9-4
MISSISSIPPI 	*Available Technical Expertise* *State & National Wildlife Refuges*	9.3 9.4	9-7 9-8
ALABAMA 	*Available Technical Expertise* *State & National Wildlife Refuges*	9.5 9.6	9-9 9-11
FLORIDA 	*Available Technical Expertise* *State & National Wildlife Refuges*	9.7 9.8	9-12 9-14
ALL GULF COAST 	*Available Technical Expertise – Located Out of Area*	9.9	9-18

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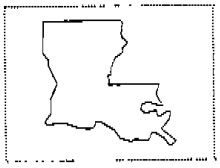


FIGURE 9.1
AVAILABLE TECHNICAL EXPERTISE
L O U I S I A N A

1. Department of Wildlife and Fisheries
   Office of Fisheries
   P. O. Box 98000
   Baton Rouge, LA 70898-9000 ..... Main No. ..... (225) 765-2801
   Assistant Secretary, Corky Perret
   Oil Spill Coordinator, Jim Hanifen ..... Main No. ..... (225) 765-2390

2. International Bird Rescue & Research Cntr. (Headquarters) ..... 24 Hrs ..... (510) 841-9086
   Office Hours Monday through Friday 9AM - 5PM PST
   699 Potter, Berkeley, CA 94710
   Jay Holcomb ..... Home ..... (707) 429-4052
   ..... Pager ..... (800) 759-7243
   ..... Pin No. 501-5856
   ..... Mobile ..... (510) 409-4598
   John Sky ..... Home ..... (415) 863-8424

3. Louisiana Department of Environmental Quality
   7900 Bluebonnet ..... Main No. ..... (225) 765-0219
   Baton Rouge, LA 70810
   Program Manager, David Brightbill
   Compliance Coordinator, John Clark
   Ambient Coordinator, Chris Piehler
   Oil Spill Coordinator, Roland Guidry ..... 24 Hrs ..... (225) 219-5900

4. U. S. Department of the Interior ..... Main No. ..... (505) 766-3065
   Office of Environmental Policy & Compliance
   Natural Resources Trustee
   P. O. Box 649
   Albuquerque, NM 87103
   Regional Environmental Officer,
   Glenn Sekavec ..... After Hrs. .... (505) 884-7450

5. U. S. Fish and Wildlife Service:

   a. U. S. Fish and Wildlife Service ..... Main No. ..... (337) 262-6630
   Ecological Services
   Field Office
   825 Kaliste Saloom Building II Suite 102
   Lafayette, LA 70508
   Field Response Coordinator, Buddy Goacher ..... After Hrs. ... (337) 235-6475
   Alternate, Paul Conzelman ..... After Hrs. ... (337) 984-3207
   Alternate, Russell Watson ..... After Hrs. ... (337) 988-6311

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FIGURE 9.1
AVAILABLE TECHNICAL EXPERTISE
L O U I S I A N A

b. U. S. Fish and Wildlife Service, Region IV .....Main No..... (404) 679-7137
(Call Field Office first and if unavailable, contact Region IV Office)
Ecological Services
1875 Century Blvd, Suite 200
Atlanta, GA 30345
Pollution Response Coordinator, Rick Dawson ...After Hrs. .... (404) 469-7233
.....Pager..... (800) 759-8888
.....Pin No. 507-2274
Sr. Contaminate Specialist & Contaminate .....Main No..... (404) 679-7127
Coordinator, Jerry O'Neal

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FIGURE 9.2
STATE & NATIONAL WILDLIFE REFUGES
L O U I S I A N A

Sabine NWR	
Sabine NWR MRH 107 Hackberry, LA 70645 (337) 762-3816 (phone) (337) 762-3780 (fax)	**Sabine National Wildlife Refuge** includes 125,000 acres of fresh and brackish marsh interspersed with low prairie ridges. The area is accessible by small boat or marsh buggy only. Protected species include the bald eagle, brown pelican and Kemp's ridley sea turtle.
Cameron Prairie NWR	
Cameron Prairie NWR 1428 Highway 27 Bell City, LA 70630 (337) 598-2216 (phone) (337) 598-2492 (fax)	**Cameron Prairie National Wildlife Refuge** consists of fresh marsh, coastal prairie and old rice fields. The eastern portion of the refuge is accessible only by boat. The refuge is visited by migratory waterfowl from October through March and serves a nesting habitat for wading birds and alligators from April through September.
Lacassine NWR	
Lacassine NWR 209 Nature Road Lake Aurthur, LA 70549 (337) 774-5923 (phone) (337) 774-9913 (fax)	**Lacassine National Wildlife Refuge** includes 32,970 acres of natural fresh water marsh and aquatic habitat. The area is used by migratory waterfowl as a wintering ground from October through March and as a nesting ground for both wading birds from April through August and alligators from May through September. Protected species include the bald eagle and the Louisiana black bear.
Rockefeller SWR	
Rockefeller SWR LADNR P.O. Box 44487 Baton Rouge, LA 70804-4487 (337) 538-2165 (phone) (337) 538-2276 (fax)	**Rockefeller State Wildlife Refuge** contains 84,000 acres of brackish to saltwater marshes and shallow lakes. There are few roads on the refuge; major access is by small boat or marsh buggy. Oyster beds are found along the Gulf Coast in various lakes and bayous. The refuge is an estuarine fish nursery and home to various types of birds, including waterfowl and raptors. Protected species include the American alligator.
Louisiana SWR	
Louisiana SWR LADNR P.O. Box 44487 Baton Rouge, LA 70804-4487 (337) 538-2165 (phone) (337) 538-2276 (fax)	**Louisiana State Wildlife Refuge** encompasses 15,000 acres of marshland. Fur trapping and waterfowl are prevalent. Protected species include the least tern.

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FIGURE 9.2
STATE & NATIONAL WILDLIFE REFUGES
L O U I S I A N A

Marsh Island SWR	
Marsh Island SWR LADNR P.O. Box 44487 Baton Rouge, LA 70804-4487 (337) 538-2165 (phone) (337) 538-2276 (fax)	**Marsh Island State Wildlife Refuge** contains over 56,000 acres of very pristine marshland. The island refuge is completely surrounded by oyster beds and mangroves. This region is also of great importance to waterfowl, raptors, estuarine fish and alligators. Protected species include the American alligator and several species of sea turtles.
Shell Keys NWR	
Shell Keys NWR 1010 Gause Blvd., Building 936 Slidell, LA 70458 (504) 646-7555 (phone) (504) 646-7588 (fax)	**Shell Keys National Wildlife Refuge** includes five acres of island habitat which is accessible only by boat. The refuge is comprised of sand and shell reefs which serve as loafing areas for seabirds and shorebirds. Protected species include the brown pelican and the royal tern.
Atchafalaya Delta WMA	
Atchafalaya Delta WMA P.O. Box 127 Krotz Springs, LA 70091 (337) 373-0174 (phone) (337) 373-0181 (fax)	**Atchafalaya Delta Wildlife Management Area** includes 137,000 acres of marshland and open water and is accessible only by boat. Sensitive species include wading birds, raptors, shorebirds, waterfowl, brackish-water clams and various finfish. Protected species which can be found within the area boundaries include the bald eagle, pallid sturgeon, piping plover, brown pelican, American alligator, Kemp's ridley sea turtle, West Indian manatee and the Louisiana black bear.
Pointe Au Chien WMA	
Pointe Au Chien WMA 1197 Highway 665 Montigut, LA 70377 (936) 594-5494 (phone)	**Pointe Au Chien Wildlife Management Area** consists of 28,244 acres and is accessible only by boat. Sensitive species include waterfowl, wading birds and snipe. Protected species include the bald eagle and the American alligator.
Wisner WMA	
Wisner WMA P.O. Box 98000 Baton Rouge, LA 70898-9000 (225) 765-2360 (phone)	**Wisner Wildlife Management Area** is composed of 21,621 acres of marshland which is accessible only by boat. Prevalent fish species include speckled trout, red fish, flounder, black drum, sheepshead and croaker; crab and shrimp are found in the waterways. Nutria, muskrat, mink, raccoon and otter are present. Protected species which frequent this WMA include the brown pelican.

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FIGURE 9.2
STATE & NATIONAL WILDLIFE REFUGES
L O U I S I A N A

Salvador WMA	
Salvador WMA 1600 Canal Street New Orleans, LA 70112 (504) 568-5885 (phone)	**Salvador Wildlife Management Area** is frequented by a variety of sensitive species, including waterfowl, wading birds, shorebirds and finfish.
Pass-a-Loutre WMA	
Pass-a-Loutre WMA LA Dept of Wildlife and Fish 400 Royal Street New Orleans, LA 70130 (504) 568-5885 (phone) (504) 568-5886 (fax)	**Pass-A-Loutre Wildlife Management Area** consists of 66,000 acres. It is accessible only by boat, however, the tributaries along the Mississippi River provide excellent traveling passages. Freshwater fish, including bass, bream, catfish, crappie, watermouth, drum and garfish, flourish in the interior marsh ponds. Saltwater species include redfish, speckled trout and flounder. Alligators are fairly common in the marsh. Furbearers present include nutria, muskrat, mink, raccoon and otter. The protected brown pelican occasionally visits this area.
Delta NWR	
Delta NWR Box 925 Venice, LA 70091 (504) 646-7555 (phone) (504) 646-7588 (fax)	**Delta National Wildlife Refuge** hosts 48,800 acres of marsh, shallow ponds, channels and bayous. The area is accessible only by boat. This region primarily serves as a winter sanctuary for migratory waterfowl such as snow geese and more than eighteen species of ducks. This area provides a habitat for numerous wading and shorebirds, finfish, crab, alligator and white-tailed deer.
Breton NWR	
Breton NWR Box 925 Venice, LA 70091 (504) 646-7555 (phone) (504) 646-7588 (fax)	**Breton National Wildlife Refuge** consists of Breton Island and the adjoining Chandeleur Islands, totaling about 18,273 acres. The Chandeleur Islands make up the largest portion of this NWR. Shoals along the Chandeleur Sound side provide wintering habitat for nearly 20,000 redhead ducks. Seagrass is also abundant along the Sound side of the islands. Nesting colonies of thousands of birds are found on the islands in the summer, including sandwich terns, laughing gulls and black skimmers.
Biloxi WMA	
Biloxi WMA 1600 Canal Street, Room 215 New Orleans, LA 70112 (504) 556-9890 (phone) (504) 568-5619 (fax)	**Biloxi Wildlife Management Area** hosts 39,583 acres of marshland and is accessible only by boat. Sensitive species include waterfowl, shorebirds, wading birds and finfish.

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FIGURE 9.3
AVAILABLE TECHNICAL EXPERTISE
M I S S I S S I P P I

1. Gulf Island National Seashore .....Main No..... (601) 932-5302

2. U. S. Department of the Interior .....Main No..... (404) 331-4524
   Office of Environmental Policy & Compliance
   75 Spring Street, S. W. - Suite 345
   Natural Resources Trustee
   Atlanta, GA 30303
   Regional Environmental Officer, Jim Lee.....After Hrs. .... (404) 939-8954

3. U. S. Fish and Wildlife Service

   a. U. S. Fish and Wildlife Service.....Main No..... (334) 441-5181
      Ecological Services (Field Office)
      P. O. Box 1190
      Daphne, AL 36526
      Resource Contaminate Assessment Specialist:
      Sharon Delchamps.....After Hrs. .... (334) 479-4799

   b. U. S. Fish and Wildlife Service, Region IV.....Main No..... (404) 679-7137
      (Call Field Office first and if unavailable, contact Region IV Office.)
      Ecological Services
      1875 Century Blvd, Suite 200
      Atlanta, GA 30345
      Pollution Response Coordinator, Rick Dawson ...After Hrs. .... (404) 469-7233
      .....Pager..... (800) 759-8888
      .....Pin No. 507-2274
      Sr. Contaminate Specialist and
      Contaminate Coordinator, Jerry O'Neal.....Main No..... (404) 679-7127

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FIGURE 9.4
STATE & NATIONAL WILDLIFE REFUGES
M I S S I S S I P P I

Gulf Island NS	
Gulf Island National Seashore 3500 Park Road Ocean Springs, MS 39564 (601) 875-9057 (phone)	**Gulf Island National Seashore** includes coastal shores stretching from Alabama to Florida. Protected species include the brown pelican, least tern, American alligator, Peridido Key beach mouse and the gopher tortoise.
MS Sandhill Crane NWR	
MS Sandhill Crane NWR 7200 Crane Lane Gautier, MS 39553 (601) 497-6322 (phone) (601) 497-5407 (fax)	**Mississippi Sandhill Crane National Wildlife Refuge** was established for the protection and recovery of the Mississippi sandhill crane and the restoration of its unique habitat, wet pine savanna. Protected species include the Mississippi sandhill crane and the red-cockaded woodpecker.

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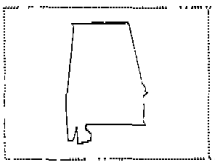


FIGURE 9.5
AVAILABLE TECHNICAL EXPERTISE
A L A B A M A

1. Alabama Department of Conservation - Fish .....Main No..... (334)-968-7575

2. Alabama Oil and Gas Board.....Main No..... (334) 415-2536

   a. Commanders Drive
   Mobile, AL 36615
   Chief Geologist, Ralph Hellmich .....After Hrs.... (334) 943-4326
   Field Agent, Jimmie McGowan .....After Hrs.... (334) 937-3224

   b. Tuscaloosa Office
   420 Hackberry Lane
   Tuscaloosa, AL 35486
   Asst. Oil & Gas Supervisor.....After Hrs.... (205) 339-8929

3. U. S. Department of the Interior .....Main No..... (404) 331-4524
   Office of Environmental Policy & Compliance
   Natural Resources Trustee
   75 Spring Street, S. W. - Suite 345
   Atlanta, GA 30303
   Regional Environmental Officer, Jim Lee.....After Hrs.... (404) 939-8954

4. U. S. Fish and Wildlife Service:

   a. U. S. Fish and Wildlife Service.....Main No..... (334) 441-5181
   Ecological Services
   Field Office
   P. O. Box 1190
   Daphne, AL 36526
   Resource Contaminate Assessment Specialist,
   Sharon Delchamps.....After Hrs.... (334) 479-4799

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FIGURE 9.5
AVAILABLE TECHNICAL EXPERTISE
A L A B A M A

b. U. S. Fish and Wildlife Service, Region IV .....Main No..... (404) 679-4000
(Call Field Office first and if unavailable, contact Region IV Office.)
Ecological Services
1875 Century Blvd, Suite 200
Atlanta, GA 30345

Pollution Response Coordinator, Rick Dawson ...Main No..... (404) 679-7137
.....After Hrs. .... (404) 469-7233
.....Pager..... (800) 759-8888
.....Pin No. 5072274
Sr. Contaminate Specialist and .....Main No..... (404) 679-7127
Contaminate Coordinator, Jerry O'Neal

c. U.S. Fish & Wildlife Service.....Main No..... (205) 690-2181
Mobile, AL

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FIGURE 9.6
STATE & NATIONAL WILDLIFE REFUGES
A L A B A M A

Bon Secour NWR	
Bon Secour NWR 12295 State Hwy 180 Gulf Shores, AL 36542 (334) 540-7720 (phone) (334) 540-7301 (fax)	**Bon Secour National Wildlife Refuge** includes beachdune, scrubdune, freshwater marsh, saltwater marsh and maritime forest. This refuge, located on Dauphin Island in Pelican Bay, serves as a habitat for various shorebirds, herons, egrets and raptors. Protected species include the bald eagle, brown pelican and the American alligator.
Gulf SP	
Gulf SP 20115 State Hwy 135 Gulf Shores, AL 36542 (334) 948-7275 (phone) (334) 948-5998 (fax)	**Gulf State Park** includes 6,150 acres of habitat for many sensitive avians, including shorebirds, gulls, terns, herons, various waterfowl, cormorants and gannets. The brown pelican, a protected species, can be found within the vicinity of the park.

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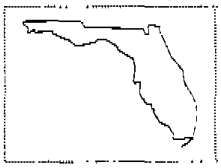


FIGURE 9.7
AVAILABLE TECHNICAL EXPERTISE
F L O R I D A

1. Big Lagoon State Recreation Area.....Main No..... (850) 492-1595
   12301 Gulf Beach Highway,
   Pensacola, FL 32507

2. Florida Department of Environmental Protection .....Main No..... (850) 488-2974
   (Call Florida Marine Patrol first and they will contact
   Department of Environmental Protection)
   Mail Station 659, Douglas Building .....24 Hrs..... (850) 413-9911
   Tallahassee, FL 32399-3000
   Bureau Chief, Phil Wieczynski
   Environmental Administrator, Carol Ann Bowen
   Oil Spill Coordinator, Greg Lee
   Alternates: Doug White, Jerry Wineridge, Keith Myhree

3. Florida Game & Fish Commission .....Main No..... (850) 265-3676

4. Florida Marine Patrol:

   a. Tampa .....24 Hrs..... (813) 272-2516
   (Southwest Florida)
   5110 Gandy Blvd.
   Tampa, FL 33611

   b. Panama City.....24 Hrs..... (850) 233-5150
   (Northwest Florida)
   Naval Coastal Sytems Center
   Building 432
   Panama City Beach, FL 32407

5. Gulf Island National Seashore .....Main No..... (850) 932-5302

6. National Park Service.....Main No..... (850) 934-2623
   Gulf Island National Seashore
   Gulf Breeze, FL
   Edison Woods, Dispatcher.....After Hrs. .... (850) 932-4760
   Escambia County Sheriff Dept. .....After Hrs. .... (850) 436-9620

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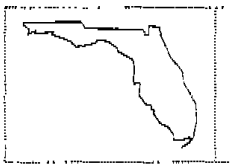


FIGURE 9.7
AVAILABLE TECHNICAL EXPERTISE
F L O R I D A

7. U. S. Department of the Interior .....Main No..... (404) 331-4524
   Office of Environmental Policy & Compliance
   Natural Resources Trustee
   75 Spring Street, S. W. Suite 345
   Atlanta, GA 30303
   Regional Environmental Officer, Jim Lee.....After Hrs. .... (404) 939-8954

8. U. S. Fish and Wildlife Service .....Main No..... (850) 769-0552

   a. Ecological Services
   Field Office
   Panama City, FL
   Resource Contaminate Assessment Specialist,
   Mike Brim.....After Hrs. .... (850) 769-1670

   b. U. S. Fish and Wildlife Service, Region IV .....Main No..... (404) 331-6343
   (Call Field Office first and if unavailable, contact Region IV Office.)
   Ecological Services
   Atlanta, GA
   Pollution Response Cood., Rick Dawson .....Main No..... (404) 679-7137
   .....After Hrs. .... (404) 469-7233
   .....Pager..... (800) 759-8888
   .....Pin No. 5072274
   Sr. Contaminate Specialist and
   Contaminate Coordinator, Jerry O'Neal .....Main No..... (404) 679-7127

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FIGURE 9.8
STATE & NATIONAL WILDLIFE REFUGES
F L O R I D A

Fort Pickens SP Aquatic Preserve	
Fort Pickens SP AP 7255 Hwy 90 East Milton, FL 32583 (850) 983-5359 (phone)	**Fort Pickens State Park Aquatic Preserve** encompasses 34,000 acres of shallow, saline waters, patchy seagrass beds and salt marshes. Sensitive finfish include red snapper, cobia, king and Spanish mackerel, Atlantic bonito and gag.
Point Washington WMA	
Point Washington WMA FL Fish & Wildlife Cons. Comm. Rt. 7 Box 440 Lake City, FL 32055 (904) 758-0525 (phone)	**Point Washington Wildlife Management Area** provides habitat for waterfowl, bobcat, white-tailed deer and various small mammals. Protected species include the Choctawhatchee beach mouse.
St. Andrews SRA SP Aquatic Preserve	
Saint Andrews SRA 7255 Hwy 90 East Milton, FL 32583 (850) 983-5359 (phone)	**Saint Andrews State Recreation Area State Park Aquatic Preserve** includes 25,000 acres of the largest expanse of seagrass beds in the Florida panhandle. This area serves as a habitat for wading birds, shorebirds, waterfowl, songbirds, small amphibians and terrestrial mammals. Protected species include the Choctawhatchee beach mouse.
St. Joseph Bay Aquatic Preserve	
St. Joseph Bay AP 350 Carroll Street Eastpoint, FL 32328 (850) 670-4783 (phone) (850) 670-4324 (fax)	**Saint Joseph Bay Aquatic Preserve** consists of 73,000 acres and is host to one of the richest and most abundant concentrations of marine grasses along the north Florida coast. Sensitive species include the sunray venus clam, bay scallop and both gorgonian and fire corals.
St. Joseph Peninsula SP	
Saint Joseph Peninsula SP 8899 Cape San Blas Road Port St. Joe, FL 32456 (850) 227-1327 (phone)	**Saint Joseph Peninsula State Park** includes 25,000 acres of land bounded by the Gulf of Mexico and St. Joe Bay. Shorebirds, wading birds, raptors, bobcat, deer, reptiles, amphibians and small mammals can be found in this area. Protected species include the least tern, brown pelican and bald eagle.

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FIGURE 9.8
STATE & NATIONAL WILDLIFE REFUGES
F L O R I D A

St. Vincent NWR, Apalachicola Bay Aquatic Preserve, River & Bay Estuarine Sanctuary	
St. Vincent NWR P.O. Box 447 Apalachicola, FL 32329-0447 (904) 653-8808 (phone) (904) 653-9893 (fax)	**Saint Vincent National Wildlife Refuge, Apalachicola Bay Aquatic Preserve and Apalachicola River & Bay Estuarine Sanctuary** are three overlapping, protected areas which serve as habitats for wading birds, shorebirds, waterfowl, raptors and small mammals. Protected species include the bald eagle, brown pelican, piping plover, roseate tern, wood stork, red wolf, eastern indigo snake, American alligator, gopher tortoise, and both the loggerhead and leatherback sea turtles.
Alligator Harbor Aquatic Preserve	
Alligator Harbor AP 350 Carroll Street Eastpoint, FL 32328 (850) 670-4783 (phone) (850) 670-4324 (fax)	**Alligator Harbor Aquatic Preserve** includes 14,366 acres of seagrass beds, salt marshes and nearshore coastal communities. Sensitive species include the peregrine falcon, eastern oyster and various finfish. Seagrass is prevalent along the coastline.
St. Marks NWR	
Saint Marks NWR P.O. Box 68 St. Marks, FL 32355 (904) 925-6121 (phone) (904) 925-6930 (fax)	**Saint Marks National Wildlife Refuge** consists of salt marshes, tidal flats, freshwater impoundments, hardwood swamps and pine flatwoods. This 68,000-acre refuge is visited by waterfowl, various shorebirds, small mammals and the Florida black bear. Aquatic resources such as spotted seatrout, red drum and widemouth bass can be found in the surrounding waters. Protected species include the bald eagle and the red-cockaded woodpecker.
Big Bend Seagrasses Aquatic Preserve	
Big Bend Seagrasses AP 3266 N. Sailboat Point Crystal River, FL 34428 (352) 563-0450 (phone)	**Big Bend Seagrasses Aquatic Preserve** consists mainly of a large, remote and undeveloped expanse of submerged seagrasses, spanning nearly 150 miles of the Florida coastline. Protected species which frequent the area include the bald eagle, piping plover, wood stork, red-cockaded woodpecker, eastern indigo snake, gulf sturgeon, West Indian manatee and the Kemp's ridley, leatherback, loggerhead and green sea turtles.

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FIGURE 9.8
STATE & NATIONAL WILDLIFE REFUGES
F L O R I D A

Aucilla WMA	
Aucilla WMA FL Fish & Wildlife Conservation Commission Rt. 7 Box 440 Lake City, FL 32055 (904) 758-0525	**Aucilla Wildlife Management Area** provides habitat for numerous species, including turkey, blue crab, finfish, bobwhite, bobcat, white-tailed deer, feral hog and various small mammals. Seagrass is prevalent along the coastline. Sponge colonies are abundant off the coast of this WMA.
Tide Swamp WMA	
Tide Swamp WMA FL Fish & Wildlife Conservation Commission Rt. 7 Box 440 Lake City, FL 32055 (904) 758-0525	**Tide Swamp Wildlife Management Area** provides habitat for herons, egrets, waterfowl, osprey, turkey, bobwhite, bobcat, white-tailed deer and various small mammals. Seagrass is prevalent along the coastline. An eastern oyster bed is located off the coast of this WMA. Protected species include the bald eagle.
Steinhatchee WMA	
Steinhatchee WMA FL Fish & Wildlife Conservation Commission Rt. 7 Box 440 Lake City, FL 32055 (904) 758-0525	**Steinhatchee Wildlife Management Area** provides habitat for wading birds, shorebirds, turkey, bobcat, white-tailed deer, feral hog and small mammals. Seagrass is prevalent along the coastline. Protected species include the bald eagle and the West Indian manatee.
Lower Suwannee NWR	
Lower Suwannee NWR 16450 NW 31st Place Chiefland, FL 32626 (352) 493-0238 (phone) (352) 493-1935 (fax)	**Lower Suwannee National Wildlife Refuge** consists of both fresh and saltwater marshes, hardwood swamps and upland pine. The area includes 30 miles of accessible refuge road. Numerous bird species, including wading and shore birds, as well as white-tailed deer, feral hog and various small mammals are abundant in the boundaries of this 52,000-acre refuge. Seagrass is prevalent along the coastline. Protected species include the bald eagle, Gulf sturgeon, eastern indigo snake, gopher tortoise, West Indian manatee and both green and loggerhead sea turtles.
Cedar Keys NWR	
Cedar Keys NWR 16450 NW 31st Place Chiefland, FL 32626 (352) 493-0238 (phone) (352) 493-1935 (fax)	**Cedar Keys National Wildlife Refuge** is composed of thirteen offshore islands which serve as a colonial bird nesting site, nurseries for finfish and shellfish and habitat for small mammals. Seagrass is prevalent along the coastline. Protected species include the brown pelican, sea turtles and the West Indian manatee.

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FIGURE 9.8
STATE & NATIONAL WILDLIFE REFUGES
F L O R I D A

Gulf Hammock WMA	
Gulf Hammock WMA FL Fish & Wildlife Conservation Commission Rt. 7 Box 440 Lake City, FL 32055 (904) 758-0525	**Gulf Hammock Wildlife Management Area** provides habitat for numerous sensitive species, including the great egret, waterfowl, turkey, bobwhite, bobcat, white-tailed deer, feral hog and various small mammals. Seagrass is prevalent along the coastline. Unique vegetation is located in this area.
Crystal River NWR	
Crystal River NWR 1502 S.E. Kings Bay Drive Crystal River, FL 34429 (352) 563-2088 (phone) (352) 795-7961 (fax)	**Crystal River National Wildlife Refuge** is comprised of twenty islands and several parcels of land. This refuge and its surrounding waters provide habitat for twenty-five percent of the nation's endangered manatee population. Seagrass is prevalent along the coastline. Protected species include the West Indian manatee.
St. Martins Marsh Aquatic Preserve	
Saint Martins Marsh AP 3266 N. Sailboat Pt. Crystal Island, FL 34428 (352) 563-0450 (phone)	**Saint Martins Marsh Aquatic Preserve** consists of 23,000 acres of open-water area from the Crystal River to the Homosassa River. This region is a significant area of primary production. Sensitive species include the eastern oyster and various finfish. Seagrass is prevalent along the coastline. Protected species include the West Indian manatee.
Chassahowitzka NWR	
Chassahowitzka NWR 1502 S.E. Kings Bay Drive Crystal River, FL 34429 (352) 563-2088 (phone) (352) 795-7961 (fax)	**Chassahowitzka National Wildlife Refuge** provides 30,500 acres of habitat for waterfowl, shorebirds, wading birds, songbirds, eastern oyster, game animals and small mammals. Seagrass is prevalent along the coastline. Protected species include the bald eagle, brown pelican, least tern, red-cockaded woodpecker, wood stork, American alligator, eastern indigo snake, gopher tortoise, West Indian manatee and green, Kemp's ridley and loggerhead sea turtles.

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FIGURE 9.9
AVAILABLE TECHNICAL EXPERTISE
O U T O F A R E A

1.	IBRCC, Berkley, CA	Main No.	(510) 841-9086
2.	National Park Service	Main No.	(404) 331-4998
3.	Tri-State Bird Rescue and Research, Inc.	Main No.	(302) 737-7241
	(Oil spill alert only)	Staff Phone	(302) 762-0762
	(Oil spill alert only)	Staff Phone	(302) 368-9336
		Pager	(800) 710-0696
		24 Hrs	(800) 710-0695
4.	U.S. Fish & Wildlife (Regional)	Main No.	(404) 331-3586

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SECTION 10 - SPILL ASSESSMENT

VOLUME ESTIMATE

A. Locating a Spill

Spill size and volume estimations are essential for identifying potential oil spill trajectories, impact zones, and shoreline arrival times. Accurate monitoring of the oil slick is also important in documenting the nature and aerial distribution of oil so that meaningful decisions can be made regarding containment and recovery operations and the potential use of dispersants.

1) Data Acquisition

LOCATE	Use aircraft, whenever possible, to locate the spill source (latitude and longitude) and the aerial distribution of any resulting surface slicks.
MEASURE	Describe the approximate dimensions of the oil slick based on available reference points (i.e., vessel, platforms, islands, shoreline features, etc.). As necessary, use aircraft to derive coordinates of spill dimensions.

B. Determining the Size and Volume of a Spill

1) Oil Spill Volume Estimation

Reports of oil spills, both oral and written, will conform to the following guidelines:

a) Basic Definitions (These definitions correspond to the Spill Volume Estimation Form attached.)

- Sheen (Barely Visible, Silver Sheen, Slight Rainbow, Bright Rainbow): The oil is visible on the water as a silvery sheen or as rainbow colors. This is the smallest thickness of oil.
- Dark Colors (Dull Colors, Yellowish Brown, Light Brown): The oil is visible with dark colors; it will still have traces of the rainbow color but is not black or dark brown.
- Black/Dark Brown: Fresh oil after the initial spreading will have a black or very dark brown color. This is the greatest thickness of non-emulsified oil.

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VOLUME ESTIMATE

b) Spill Factors

The factors given in the following Spill Volume Estimation Form will be used to estimate the volume of oil on the water in the spill unless a more accurate amount is known by other means. These factors should be compared whenever possible to volumes estimated from the source of the spill, for example, piping volume, tank volume. Exact estimates of the volume of a spill are not possible by visual observation of the oi on the surface of the water. For this reason, the spill volumes determined from the following should be rounded off to avoid the appearance of an accurate determination.

c) Estimating Procedures

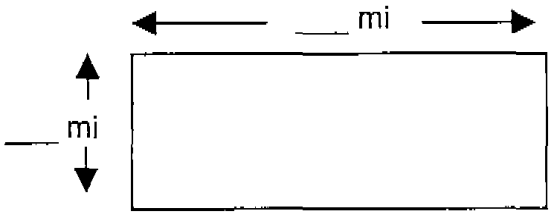
See the following Spill Volume Estimation Form and accompanying example to be used in determining an estimate of the amount of oil spilled.

SPILL VOLUME ESTIMATION FORM

(See EXAMPLE on next page)

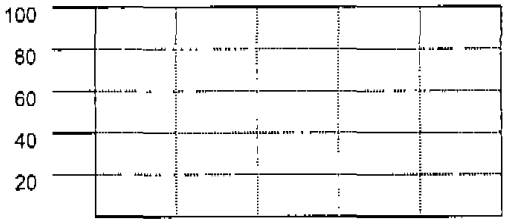
Spill size and volume estimations are essential for identifying potential oil spill impact zones and shoreline arrival times. To estimate the quantity of oil on water you must establish the size of the area affected by pollution, the percent of oil coverage within that area, and the appearance of oil. The appearance of oil determines gallons per square mile (based on the U.S. Coast Guard's field operations guide estimations table).

1) To establish the area affected by pollution.
   - Determine spill size (use aircraft if possible).
   - Draw an imaginary box around the oil.
   - Measure the length and width of the box (5,280 feet = 1 mile).
   - Multiply the length x width = (a) m^2.



= ___ mi^2
(a)

2) Extent of Oil Coverage
   - Envision the oil pushed together into one part of the box.
   - Estimate % of box containing oil = (b) % coverage.



= ___% coverage
(b)

3) Multiply estimated area (a) x estimated coverage (b) = (c) total m^2:

___ mi^2 x ___ % coverage = ___ total mi^2
(a) (b) (c)

4) Appearance of Oil:
   - Estimate the percent of the oil matching each color under appearance. Enter that number in the percentage blank (e.g. 50% dull, 30% brightly colored, 20% slightly colored).
   - Enter total mi^2 (Item c).
   - Multiply % appearance x gal/mi^2 x mi^2 for each appearance.
   - Enter sum for total gallons.

ESTIMATION TABLE

Appearance	%	x	Gal/ mi^2	x	mi^2 (c)	=	Gal.
Barely Visible		x	25	x		=	
Silvery		x	50	x		=	
Slightly Colored		x	100	x		=	
Brightly Colored		x	200	x		=	
Dull		x	666	x		=	
Dark		x	1332	x		=	
						Total Gallons	

5) Final Calculation (divide gallons by 42):

____ Total gal/42 = _____ bbls

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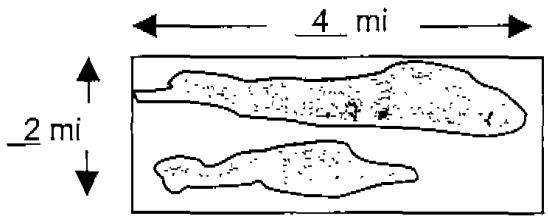
EXAMPLE SPILL VOLUME ESTIMATION FORM

Spill size and volume estimations are essential for identifying potential oil spill impact zones and shoreline arriva times. To estimate the quantity of oil on water you must establish the size of the area affected by pollution, the percent of oil coverage within that area, and the appearance of oil. The appearance of oil determines gallons per square mile (based on the U.S. Coast Guard's field operations guide estimations table).

FOR EXAMPLE:

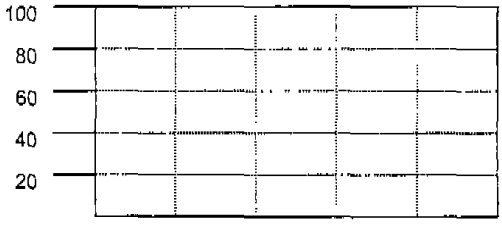
The slick size equals 4 miles x 2 miles – (1).
The coverage is 40% - (2).
The appearance is 50% dull, 30% brightly colored and 20% slightly colored – (4).

3) To establish the area affected by pollution.
- Determine spill size (use aircraft if possible).
- Draw an imaginary box around the oil.
- Measure the length and width of the box (5,280 feet = 1 mile).
- Multiply the length x width = (a) m^2.



= 8 mi^2 (a)

4) Extent of Oil Coverage
- Envision the oil pushed together into one part of the box.
- Estimate % of box containing oil = (b) % coverage.



= 40 % coverage (b)

3) Multiply estimated area (a) x estimated coverage (b) = (c) total m^2:

8 mi^2 (a) x 40 % coverage (b) = 3.2 total mi^2 (c)

6) Appearance of Oil:
- Estimate the percent of the oil matching each color under appearance. Enter that number in the percentage blank (e.g. 50% dull, 30% brightly colored, 20% slightly colored).
- Enter total mi^2 (Item c).
- Multiply % appearance x gal/mi^2 x mi^2 for each appearance.
- Enter sum for total gallons.

ESTIMATION TABLE

Appearance	%	x	Gal/ mi^2	x	mi^2 (c)	=	Gal.
Barely Visible		x	25	x		=	
Silvery		x	50	x		=	
Slightly Colored	20	x	100	x	3.2	=	64
Brightly Colored	30	x	200	x	3.2	=	192
Dull	50	x	666	x	3.2	=	1065
Dark		x	1332	x		=	
						Total Gallons	1321

7) Final Calculation (divide gallons by 42):

1321 Total gal/42 = 31.45 bbls

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C. Predicting Spill Movement

Trajectories

Utilizing information submitted from the field, the Incident Commander or his designate (Planning) will contact SpillNet to prepare a trajectory analysis. The following information will be submitted to SpillNet verbally or on the form shown in **FIGURE 10.2**.

- Latitude and longitude of the spill site
- Amount of oil spilled
- Type of oil spilled (API gravity)
- Type of release (i.e. continuous leak -- barrels/hr, instantaneous release -- how much)
- Duration of release (i.e. How long has the spill been going on?)
- Wind speed and direction at the location (if possible)

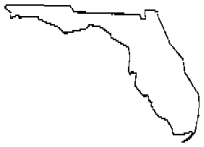
SpillNet, Inc. ANAHUAC, TEXAS OFFICE *David Morris:*	
Office Phone Number	(409) 267-3872
Home Phone Number	(409) 267-6478
24 Hour Phone Number	(800) 692-3982
Fax Number	(409) 267-3945

Results will be relayed from SpillNet to the Planning Section Chief via telephone, fax, email or modem. The Operations Section Chief will coordinate response operations accordingly (i.e. protection of shorelines, placement of containment equipment, etc.).

SpillNet will obtain updated weather forecasts, buoy data and the Nationa Weather Bureau satellite imagery from Internet services or by contacting the National Weather Bureau.

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National Weather Bureau Emergency 24 Hour Telephone Numbers:

NATIONAL WEATHER BUREAU		
STATE	AREA OF COVERAGE	LOCATION / PHONE NUMBER
ALL 	Gulf of Mexico (Sabine Pass, TX to Pensacola, FL)	Web site: http://weather.noaa.gov/weather/marine/gulf_mex.html New Orleans, Louisiana (504) 589-2808
FLORIDA 	Offshore Florida	Miami, Florida (305) 667-3108 (305) 666-4612

SpillNet's model can be run with projected weather conditions over the next several hours used as input.

SpillNet, Inc. offers computer trajectory models based on the Oilmap program from Applied Science Associates. SpillNet can relay trajectory information via fax or modem from each office or from remote locations. SpillNet personnel can be dispatched to the scene for additional trajectories or other spill response data (environmental sensitivities and protection strategies).

The SpillNet system will include sea current information supplied from ASA, LSU, Texas A&M, NOAA, Ship Drift or other available sources. The model will reflect evaporation, oil on surface, oil below surface, oil on shore, natural dispersion, etc. Oil mass balance information can be produced at any time during the trajectory run. Color hard copies or transparencies can be produced. Overflight information (GPS positioning) can be transformed into SpillNet trajectories further increasing location accuracy. Offshore response plans can be overlaid on top of the trajectory model and biological resources in the path of the slick can be determined. Distance vectors and ETA's to shoreline impact can be determined. SpillNet's mapping system includes 1994 maps of coastal Texas and Louisiana.

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D. Monitoring and Tracking the Spill Movement

1. Visible Monitoring of Slick

Continued surveillance during oil spill cleanup operations is important both as a means of monitoring operations and observing spill migration and spreading. Surveillance will be continued until response operations are complete.

In the event a spill has been reported but is not immediately found, surveillance should not be terminated until it is unlikely that the slick will ever be seen. This decision may depend on weather conditions, visibility, currents, proximity to environmentally sensitive areas, etc.

Surveillance personnel will report coordinates of the leading edge and trailing edge of the slick in order to update trajectories.

2. Night Time Spill Tracking

Aircraft with IFR are capable of mapping petroleum on water during the day or at night in all weather and showing this information on a computer screen, printing it out on a chart, and/or recording it on video tape.

Refer to **APPENDIX F**, Section M for contact information for "Real Time Thermal Imaging". The USCG may use their night time spill tracking equipment to assess the situation.

SpillNet

FIGURE 10.1
SPILL INFORMATION NEEDED FOR OIL SPILL TRAJECTORY

Call to activate Morris Environmental as soon as possible (409) 267-3872!
Please provide all or part of the following information as it becomes available.

INCIDENT INFORMATION

Contact: _____ Company: _____

Phone #: _____ Fax #: _____ Alternate #: _____

Email Address: _____ Source (*Circle One*): Platform Pipeline Rig Facility Vessel

Source Name & Location (*Name/Area/Block/Latitude/Longitude*): _____

Date/Time of Spill (*to closest hour*): _____

Type of Oil (*API, if known*): _____ Estimated Volume of Initial Release: _____

If Continuing Release, How Much? (*bbls/hr*): _____ For How Long: _____

Last Known Location of Spill (*Date/Time/Area/Block/Latitude/Longitude*): _____

Appearance of Slick, if Known: _____ Estimated Length and Width: _____

ON-SCENE WEATHER CONDITIONS

Present Time: _____ Air Temperature: _____

Wind Direction (from): _____ Wind Speed (*knots*): _____

Wave Height: _____ Water Temperature: _____

Current Direction (toward): _____ Current Speed (*knots*): _____

Cloud Ceiling (*feet*): _____ Water Depth (*feet*): _____

Forecast (*if known*): _____

Additional Information: _____

P.O. Drawer V, Anahuac, Texas 77514, Phone: (409) 267-3872, Fax: (409) 267-3945

SECTION 11 - RESOURCE IDENTIFICATION

A. Tools to Identify Significant Resources at Risk

First response efforts are improved by pre-identifying resources at risk, such as beaches, waterfowl, other marine and shoreline resources and areas of special economic or environmental importance that could be impacted by an oil spill. Copies of Area Contingency Plans (ACPs), reference maps and documents identifying sensitive areas as well as Environmental Sensitivity Indexes (ESI), biological and historical information are available in Marathon Oil Company's Lafayette office. Marathon Oil Company also has the following resources available:

1) MMS OSRA Model

Prior to conducting lease sales or approving industry operations on the Outer Continental Shelf (OCS), the MMS analyzes the potential environmental risks from the potential impact of an oil spill. An important part of this analysis is the estimation of the likelihood of oil spill contact with the shoreline. The MMS Oil Spill Risk Analysis model (OSRA) estimates the probabilities of oil spill contacts by simulating oil spill trajectories using observed oceanic winds and model ocean currents.

The MMS OSRA model depicts the probability that an oil spill originating from a certain location (or from within a specified area) will contact a specific environmental resource or land segment within a given time of travel. Conditional probabilities of contact with environmental resources and land segments within 3, 10 and 30 days were calculated for each of the hypothetical spill areas and are presented in the table below (refer to **FIGURE 11.1** for Land Segment Area Contacts). This Plan has been updated to include the most recent probability data available as described in OCS Report MMS 2001-007, "Oil-Spill Risk Analysis: Gulf of Mexico Outer Continental Shelf (OCS), in Support of the Enivronmental Impact Statement (EIS) for Proposed Lease Sale 181".

Maximum Conditional Probabilities for Eastern Planning Area			
Environmental Resource/Land Segment	3 Days	10 Days	30 Days
U.S. Shoreline	--	12	39
Louisiana/Mississippi/Alabama			
Alabama State Offshore Waters	--	2	5
Central Winter Menhaden Spawning Grounds	--	1	3

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Maximum Conditional Probabilities for Eastern Planning Area			
Environmental Resource/Land Segment	3 Days	10 Days	30 Days
Chandeleur Islands	--	3	6
Flower Garden Banks	--	--	1
Western Louisiana State Offshore Waters	--	7	13
Eastern Louisiana State Offshore Waters	--	8	13
Mississippi State Offshore Waters	--	1	3
Mobile Bay	--	1	2
Land Segment 11	--	--	1
Land Segment 12	--	--	1
Land Segment 13	--	--	1
Land Segment 16	--	1	3
Land Segment 17	--	1	4
Land Segment 18	--	1	1
Land Segment 19	--	3	5
Land Segment 20	--	--	1
Land Segment 21	--	2	5
Land Segment 22	--	1	5
Land Segment 23	--	1	3
Land Segment 24	--	1	3
Florida			
Big Bend Seagrasses	--	--	3
Florida Gulf Island National Seashore	--	--	4
Florida Keys National Marine Sanctuary	--	--	2
Florida Middle Ground	--	--	2
Florida Panhandle State Offshore Waters	--	2	11
Florida Peninsula State Offshore Waters	--	--	5
Madison and Swanson Special Management Area	--	--	2
Steamboat Lumps Special Management Area	--	--	1
Land Segment 25	--	--	3
Land Segment 26	--	--	3
Land Segment 27	--	--	2
Land Segment 28	--	--	2
Land Segment 29	--	--	1
Land Segment 31	--	--	1
Land Segment 32	--	--	1
Land Segment 33	--	--	1

-- = less than 0.5 percent

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2) Real-Time Trajectory Modeling and Data Bases

In the event of a spill, MOC would activate SpillNet, whose function is to run trajectory models of oil spills in an attempt to determine the shoreline areas which are most likely to be affected by a migrating hydrocarbon spill. SpillNet has prepared environmental sensitivity maps and shoreline response guides covering operations in the GOM area. SpillNet utilizes environmental sensitivity data compiled from various sources, including appropriate Area Contingency Plans, the U.S. Fish and Wildlife Service, RPI, NOAA and the Departments of Environmental Protection for the states of Texas, Louisiana, Mississippi, Alabama and Florida. Information concerning wildlife management areas, wildlife refuges, parks and sanctuaries is detailed, including points of contact, access information and park locations.

3) Map Sources - Area Contingency Plans

Under the National Contingency Plan, pre-spill planning is accomplished by the Area Committees, which consist of representatives from federal and state governments and include input from industry, academia, environmental groups and the community. The Area Committees have written Area Contingency Plans (ACPs) which identify response resources, cleanup strategies and resources at risk within their jurisdiction. These plans also identify the appropriate conditions for the various spill response techniques. The following ACPs may be applicable in the event that a spill originates at De Soto Canyon 927:

A) *MSO Morgan City ACP*

Coastal area of responsibility stretches from 92° 23' W longitude in Vermilion Parish, east along the coastline to 29° 18' N latitude, 90° 00' W longitude.

The most sensitive areas along the Gulf coast identified within the MSO Morgan City zone include:

- Atchafalaya Bay
- Attakapas Wildlife Management Area
- Caminada Pass
- East Cote Blanch Bay
- Grand Isle

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- Grand Isle Bay to Bay Champagne
- Isles Dernieres
- Marsh Island
- Paul J. Rainey Wildlife Sanctuary
- Shell Keys National Wildlife Refuge
- Timbalier and Terrebonne Bay
- West Cote Blanche Bay
- Wisner State Wildlife Management Area
- Vermilion Bay

B) *MSO New Orleans ACP*

Coastal area of responsibility stretches from 29° 18' N latitude, 90° 00' W longitude in Lafourche Parish, northeast to the Mississippi coast at 89° 10' W longitude.

There are a total of 12 shoreline classifications in the COTP New Orleans zone. The sensitivity of a particular coastal environment to oil spill damage is a function of shoreline geology and ecology. These are the same factors that control the selection of an appropriate cleanup method(s). In terms of the geology, the important variables are sediment type, landform morphology and exposure to waves and currents. In terms of the ecology, the important variables are biomass, species types, species diversity and species abundance.

The majority of Louisiana and Mississippi is considered to be environmentally sensitive. The references listed below should be used during incidents to determine the location of shoreline types, habitat types, biological resources, national and state wildlife refuges and parks. These references also provide Environmental Sensitivity Indexes (ESIs) for shoreline types.

For coastal Louisiana refer to:

> Research Planning, Inc., 1989. *Sensitivity of Coastal Environments and Wildlife to Spilled Oil, Louisiana: An Atlas of Coastal Resources.* B. Savitshy and T. J. Reilly. Columbia, SC. 98 maps.

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For coastal Mississippi refer to:

> Mississippi Department of Wildlife Conservation, Bureau of Marine Resources, 1984. *A Contingency Guide to the Protection of Mississippi Coastal Environments from Spilled Oil, Protection Priorities and Related Environmental Information*. C. M. Ladner and J. S. Franks. Long Beach, MS.

Louisiana and Mississippi are both characterized by numerous wildlife and fisheries areas. The table below lists some of the major wildlife and fisheries areas in the COTP New Orleans zone.

REGION	SENSITIVE AREA
Lake Ponchartrain	Manchac Wildlife Management Area
	Fountainbleu State Park and State Game Preserve
	Bayou Savage Management Area
Lake Salvador	Jean Lafitte National Historic Park and Reserve
	Salvador Wildlife Management Area
Barataria Bay	Grand Isle State Park
Lake Borgne	Fort Pike State Commemorative Area
Breton Sound	Biloxi Wildlife Management Area
	Breton National Wildlife Refuge
Atchafalaya River and Atchafalaya Basin	Atchafalaya National Wildlife Refuge
Mississippi Coast	Gulf Island National Seashore
	Cat Island, Ship Island, Horn Island
	Petit Bois Island

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C) *MSO Mobile ACP*

Coastal area of responsibility stretches from 89° 10' W longitude eastward to 83° 50' W longitude, including the states of Mississippi, Alabama and the Florida panhandle.

The Area Committee has identified economically sensitive areas as those areas where business is conducted in or through and can be negatively impacted due to an oil or hazardous substance spill. The Area Committee has also identified the environmentally sensitive areas as those areas with an ESI ranking as follows:

ESI #	SHORELINE HABITAT/USE
7	Exposed tidal flats
9 - A	Sheltered tidal flats
10 - A	Salt and brackish water marshes
10 - B	Freshwater marshes
10 - C	Freshwater swamps All National, State and local parks All Wildlife Reserves, Preserves and Refuges All areas identified as commonly used by biological resources Particularly all areas identified as commonly used by threatened or endangered species

The habitats listed above are abundant in MSO Mobile's zone. As a result, the Area Committee has "triaged" the above areas to focus response efforts in the early hours of a spill.

The descriptions of shorelines, prioritized areas, endangered and threatened species and all relevant fish, wildlife and sensitive area information for Alabama and Mississippi are contained in *The Sensitivity of Coastal Environments and Wildlife to Spilled Oil in Alabama* atlas, "A Contingency Guide to the Protection of Mississippi Coastal Environments to Spilled Oil" and in the *Gulf Coast Ecological Inventory* map for Mobile.

The descriptions of shorelines, prioritized areas, endangered and threatened species and all relevant fish, wildlife and sensitive area information for northwest Florida are contained in *The Sensitivity of Coastal Environments and Wildlife to Spilled Oil in West Florida*

atlas and in the *Gulf Coast Ecological Inventory* maps for Mobile, Tallahassee and Appalachicola.

D) MSO Tampa ACP

Coastal area of responsibility starts at the intersection of the Florida coast with longitude 83° 50' W, extending south along the coastline, with a southern boundary at the southern tip of Cape Romano.

The COTP Tampa zone contains Florida's largest open water estuary, Tampa Bay. The waters along the Gulf Coast of Florida are abundant with both animal and plant life. The following sensitive habitats and species can be found within MSO Tampa:

- Marine turtles (Endangered/Threatened)
- Manatees (Endangered)
- Mangroves/Salt Marsh
- Seabirds, Shorebirds, Diving Birds and Waterfowl
- Seagrass Beds
- Tidal Flats
- Sandy Beaches
- Aquatic Wildlife

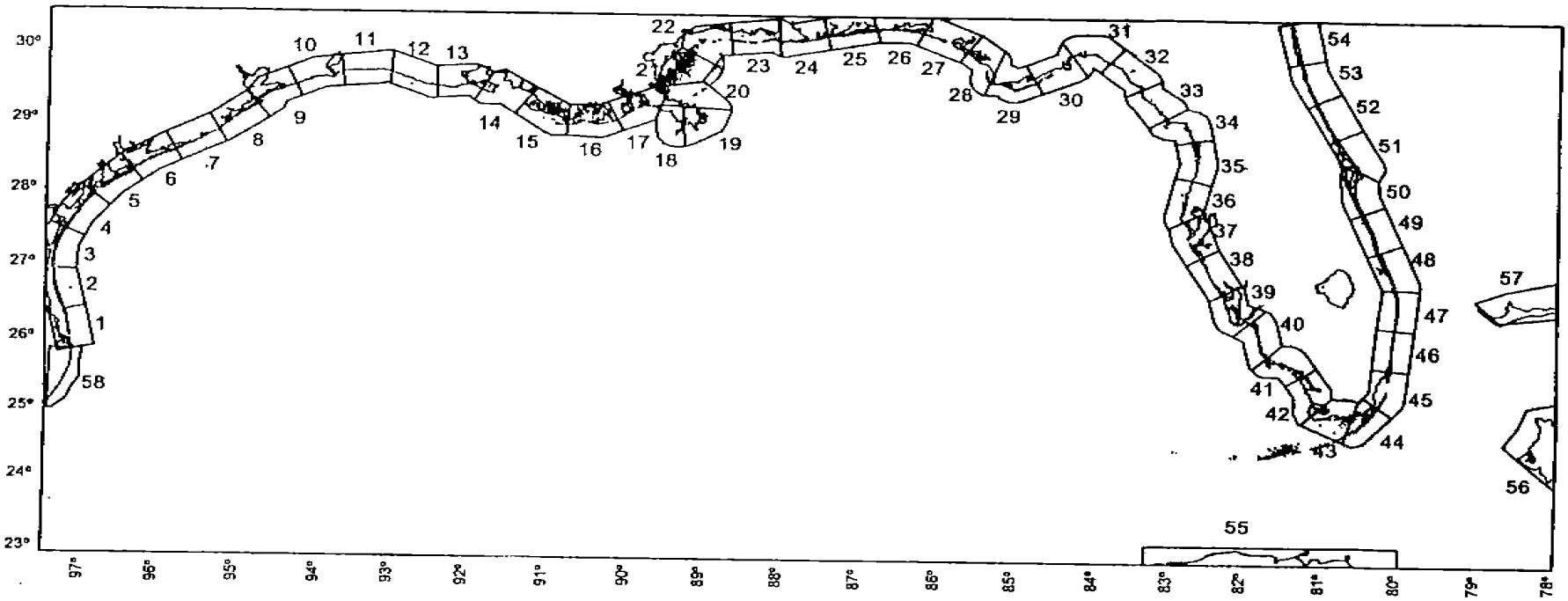
The Florida Department of Environmental Protection (FDEP), along with the Marine Spill Response Corporation (MSRC), jointly sponsored the development of the *Tidal Inlet Protection Strategies for Oil Spill Response Plan*. This plan provides inlet summary sheets listing the principal resources at risk, inlet sketch maps, site information records and aerial photographs of each inlet. Other resources for the MSO Tampa area include ESI maps, which can be obtained through NOAA.

4) Technical Specialists

Resource agencies and wildlife refuge managers can assist with the identification of wildlife and sensitive habitats. Technical Specialists are identified in **SECTION 9**.

FIGURE 11.1

LAND SEGMENT CONTACT AREAS



Division of the study area coastline into 58 land segments (segments 1-54 are equidistant and represent the U.S. coastline, and segments 55-58 represent international shoreline segments).

SECTION 12 - STRATEGIC RESPONSE PLANNING

After the Incident Commander gives the initial incident briefing, he sets the priority objectives for the response operation. Marathon Oil Company seeks to achieve the following primary objectives (A through G) in responding to any release of oil:

A. Determine Protection Priorities

1) Subtidal habitats:
   - Aquatic vegetation
   - Kelp beds
   - Coral reefs
   - Worm beds

2) Birds:
   - Rookeries and nesting sites
   - Waterfowl overwintering concentration areas
   - High concentration migration stopovers
   - High concentration resident bird colonies

3) Marine mammals:
   - Migration corridors
   - Population concentration areas

4) Terrestial mammals:
   - Concentration areas

5) Terrestial plants:
   - Threatened and endangered plants

6) Fish and shellfish:
   - Anadromous fish spawning streams
   - Sites important to beach and kelp spawning fish
   - Estuarine areas that are important fish nursery areas
   - Special concentration areas for estuarine and demersal fish
   - Shellfish seed beds, leased beds, high concentration areas
   - Crab, shrimp and lobster nursery areas

7) Reptiles:
   - Marine turtle nesting beaches
   - Alligator/crocodile concentration areas

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8) Recreation areas:
   - High-use recreational beaches
   - Marinas and boat ramps
   - High-use boating, fishing and diving areas

9) Management areas:
   - Nature preserves and reserves
   - Privately developed lands/facilities (nature conservancy areas)
   - Research natural area
   - State marine parks/federal marine sanctuaries
   - Wildlife management areas and refuges

10) Resource extraction areas:
   - Water intakes
   - Commercial fishing areas, including fin fish, crabs and mollusks
   - Aquaculture sites
   - Intertidal and subtidal mining leases
   - Subsistence harvest sites
   - Log storage sites

11) Cultural resources:
   - Archaeological and other historically significant sites
   - Native American reservations

B. Determine Appropriate Countermeasures

1) Assess the need for cleanup
2) Select the most appropriate cleanup method

C. Determine Type of Boom to be Used

1) Heavy duty offshore boom
2) Bottom seal boom
3) Sorbent boom
4) Fire boom
5) 18" Protection boom

D. Determine Natural Collection Areas and Boom Sites

1) Type of material to be contained
2) Conditions under which the boom will be deployed
3) Logistical requirements for deployment
4) Compatibility between various types of booms

5) Locations of access points for recovery equipment
6) Boom must be deployed in areas that have good anchoring locations for both the shore side and water side ends of the boom.

E. Determine Boom Deployment Techniques and Containment Systems

1) Boom deployment techniques:
   - DEFLECTION of pollutants to areas where cleanup can be conducted
   - COLLECTION of pollutants to aid in recovery operations
   - CONTAINMENT to prevent the spread of pollutants over a wide area
   - PROTECTION of environmentally/economically sensitive areas

2) Containment systems:
   - Booms
   - Earthen dikes or dams
   - Ditches
   - Logs
   - Boards

F. Determine Removal Technique

1) Skimmers:
   - Floating section heads
   - Floating weirs
   - Free vortex
   - Rotating drum or disc
   - Oleophilic belt
   - Oleophilic mop

2. Skimmer pumps:
   - Positive displacement pumps
   - Centrifugal pumps

3) Sorbents:
   - Mineral based
   - Natural organic
   - Synthetic organic

4) Chemical treating agents:
   - Collecting agents
   - Dispersants
   - Sinking agents (prohibited)
   - Burning agents
   - Biological agents

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5) Manual removal:
   - Passive collection with sorbents
   - Debris removal
   - Sediment removal
   - Ambient-water flooding (deluge)
   - Ambient-water/low-pressure washing
   - Ambient-water/high-pressure washing
   - Warm-water/moderate-to-high-pressure washing
   - Hot-water/high-pressure washing
   - Slurry sand blasting
   - Vacuum removal
   - Sediment reworking
   - Sediment removal, cleansing and replacement
   - Cutting vegetation

G. Determine Shoreline Cleanup Techniques/Strategies

1) No action
2) Manual removal
3) Passive collection with sorbents
4) Debris removal
5) Trenching
6) Sediment removal
7) Ambient-water flooding (deluge)
8) Ambient-water/low-pressure washing
9) Ambient-water/high-pressure washing
10) Warm-water/moderate-to-high-pressure washing
11) Hot-water/high-pressure washing
12) Slurry sand blasting
13) Vacuum
14) Sediment reworking
15) Sediment removal, cleansing and replacement
16) Cutting vegetation

A sample list of objectives for a specified period is given in **FIGURE 12.1**. Safety is paramount during all responses regardless of size and complexity.

Where containment and cleanup of the spill in the water is not successful, protection of shorelines and wetlands would be necessary. Priorities for protection would be established with input from Regional Response Team (RRT) representatives and state and federal natural resource trustees.

The Incident Commander sets the operational period (e.g., 24-hour shifts, sunrise to sunset) as well as the meeting schedule and shift schedule. Short-term responses (small in scope and/or duration) can often be coordinated using only ICS 201 Forms.

Longer-term, more complex responses will likely require the Planning Section Chief to arrange for transition into the Operational Period Planning Cycle. Certain meetings, briefings and information gathered during the cycle lead to the Incident Action Plan (IAP). The IAP provides tactical objectives, identifies resources, assigns personnel to positions within the response system, and provides task assignments to resources for specified future operations (commonly referred to as the Next Operational Period). Additionally, the IAP provides weather and spill projections and identifies safety issues. Operational periods are generally 24 hours, however, the time can be modified by the Incident Commander or Unified Command as needed. The IAP is a written document which must be approved by Unified Command. IAP forms are found in **APPENDIX K**. A typical ICS Planning Cycle is shown in **FIGURE 12.2**. **FIGURE 12.3**. summarizes the characteristics of a "Best Response".

FIGURE 12.1

STATUS BOARDS - RESPONSE OBJECTIVES
Objectives for Specified Operational Period

INCIDENT NAME: _____

MAXIMIZE HEALTH & SAFETY OF RESPONSE PERSONNEL

- ☐ 1) Safety is the first priority.
- ☐ 2) Perform site characterizations.
- ☐ 3) Restrict access to "hot" and "warm" zones to properly trained & equipped personnel.

MINIMIZE HEALTH & SAFETY IMPACTS TO THE GENERAL PUBLIC

- ☐ 1) Establish secure safety zones.
- ☐ 2) Issue notifications to mariners.
- ☐ 3) Restrict air space over the incident scene.
- ☐ 4) Conduct air and water quality monitoring, as necessary.

CONTROL & STABILIZE SOURCE

- ☐ 1) Be prepared for a fire.
- ☐ 2) Conduct a damage assessment.
- ☐ 3) Commence well control operations.

MAXIMIZE PROTECTION OF SENSITIVE AREAS

- ☐ 1) Use SpillNet and ACP to identify sensitive areas.
- ☐ 2) Develop and implement protection strategies.
- ☐ 3) Prioritize areas, as necessary.

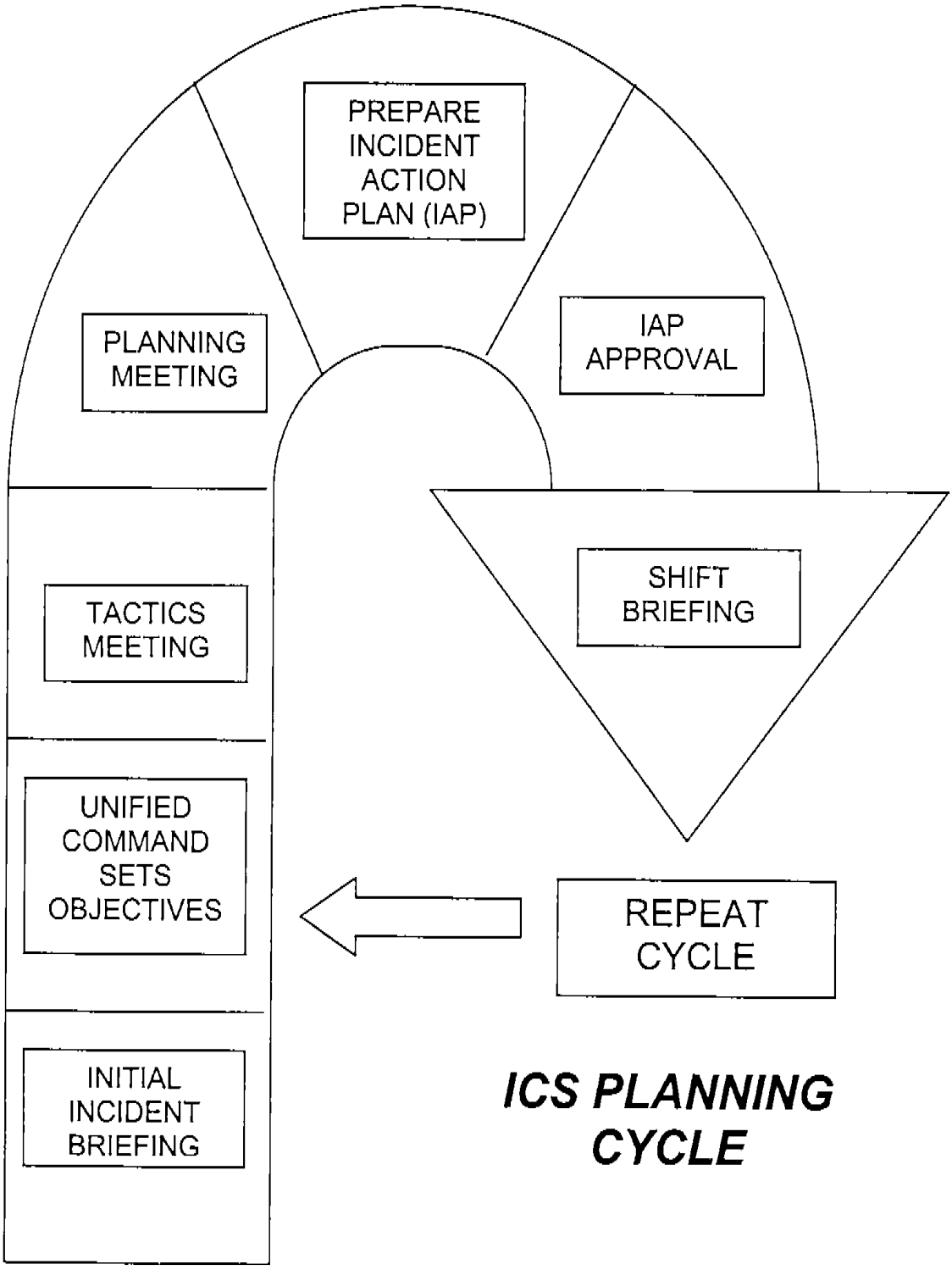
DEVELOP A COMPREHENSIVE, INTEGRATED PLAN

- ☐ 1) Obtain approval to use dispersants.
- ☐ 2) Obtain approval to commence in-situ burning.
- ☐ 3) Use high capacity recovery devices in thickest concentrations.
- ☐ 4) Support on-water operations with surveillance and spotter aircraft (continuously).
- ☐ 5) Prepare shorelines for the arrival of oil.
- ☐ 6) Initiate wildlife protection operations.
- ☐ 7) Initiate NRDA operations.
- ☐ 8) Establish staging areas.
- ☐ 9) Develop disposal plans.
- ☐ 10) Integrate agency response personnel into SMT.
- ☐ 11) Keep the public informed.
- ☐ 12) Be prepared to respond to claim issues.

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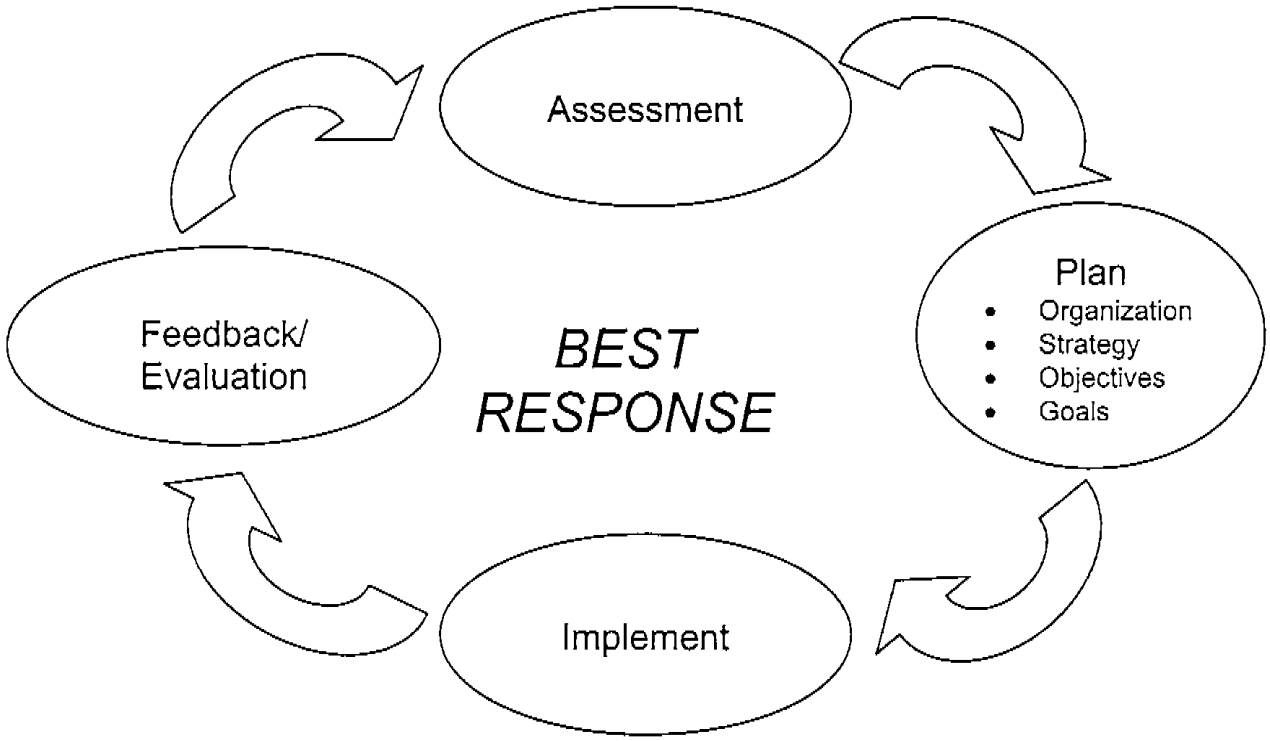
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FIGURE 12.2



ICS PLANNING CYCLE

FIGURE 12.3
BEST RESPONSE



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Best response is achieved when:

- *Resource damage minimized*
- *Sensitive areas protected*
- *Spill effectively contained and controlled*
- *Discharge from source minimized*
- *Accurate/timely information on impact to people, property, environment and economy*
- *Positive media coverage of response*
- *Positive meetings with stakeholders*
- *Economic impact to stakeholders minimized*
- *Prompt, correct handling of damage claims*
- *Stakeholders well informed of rights/issues*
- *Response Management System employed*
- *Response objectives established/communicated*
- *Sufficient/efficient resources brought to bear*
- *Leadership and responsibility is clear (minimal duplication)*
- *No response worker deaths, injuries, or mishaps*
- *No spill-related public injuries, illness or deaths*
- *Impacts on the economy minimized*

SECTION 13 - RESOURCE PROTECTION METHODS

A spill will have the least impact on an environment if it is contained in open water and not allowed to contact the shore.

Federal and state Natural Resource Trustees should be contacted when there is a possibility that a wildlife habitat will be affected by a discharge.

Protection resources will be committed to protect human life and health first, environmental concerns second, and economic concerns third. Economic concerns requiring protection would include beaches, facilities, and recreationa boat areas. In the effort to protect human life, the environment and economic interests, steps should be taken to:

1. Stop further pollution at the source
2. Contain the pollutant discharge released
3. Remove the product

The Incident Commander should select the most suitable devices and techniques for each incident.

The SpillNet data base depicts the protection response modes that are applicable for oil spill cleanup operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Implementation of the suggested procedures assures the most effective use of the equipment and will result in reduced adverse impact of oil spills on the environment. Supervisory personnel have the option to modify the deployment and operation of the equipment to more effectively respond to site specific circumstances.

Protection priorities are outlined in the Mobile area plan Geographic-Specific Tactical Response Plan (GSTRP). A copy of GSTRP is located in Marathon Oi Company's Command Post.

Natural collection points are those areas where a spilled product will accumulate with little or no assistance from responders. Examples of likely collection sites are landcuts, solid piers, sand bars, and debris piles. Utilization of natura collection areas can be very helpful, and cost effective if the collection points are accessible to removal equipment.

- It is expected that the barrier islands, narrow sandy islands that lie between the U.S. mainland and the Gulf of Mexico along the majority of the Gulf Coast, would act as a natural trap or collection area for any spills occurring offshore.

- Other natural collection points would depend on tide, current, and wind. River ports such as Pascagoula and Mobile often have large amounts of debris along their banks, especially during the spring rainy months. This debris would most likely collect a spilled pollutant, but could pose a disposal problem after the spill. Therefore, attempts to collect debris should be made prior to impact.

Animal Hazing

If birds, in a non-nesting area, are observed in an area of potential impact, they should be driven out of the area before the oil arrives. This may be done by deployment of "propane cannons" or by using airboats in shallow water areas. This type of activity should not be initiated without consultation with state fish and wildlife agencies or the U.S. Fish and Wildlife service. Hazing of birds from areas will most likely have to be continued for the first 48 hours of cleanup activity.

Bird Rehabilitation

Refer to **SECTION 17** for standard operating procedures for wildlife rehabilitation.

Nesting Protection

Nesting islands or shorelines with hatched waterfowl should be fenced so that the nestlings cannot enter the oiled water or shoreline. A fence should be placed above the high water line. This fence should be 1" X 1" vinyl coated and at least 3 feet high. The fence should be bent inward to prevent birds from climbing out. The fence should be supported by 3-foot high metal or wooden stakes. Once the contamination is cleaned up, the fencing must be removed. Personnel should not be allowed to linger near the nesting colony.

Shoreline Protection

Shallow water shoreline protection procedures are outlined in **FIGURE 13.1**.

FIGURE 13.1
Shoreline Protection Methods - OFFSHORE

OFFSHORE	METHOD	APPLICABILITY
EXCLUSION BOOMING	Deployed across or around oil Oil removed from water surface	To protect small bays, harbors, inlets or river mouths Currents less than 0.5 m/s, wave height less than 25 cm
DIVERSION BOOMING	Deployed at an angle to approaching oil Diverts oil away from sensitive areas	Where currents greater than 0.5 m/s, and wave heights less than 25 cm
CONTAIN-MENT BOOMING	Deployed around oil Oil removed from water surface	Current less than 0.5 m/s Not applicable for large slicks
SORBENT BOOMING	Deployed across approaching oil Oil absorbed by boom	Quiet waters Can be recycled and reused Small slicks
DISPERSION AGENTS	Reduce surface tension of oil by application of chemicals Oil is then dispersed more rapidly into the water	Requires permission of regulatory agencies Increases oil mobility, therefore, stranded oil has greater potential to penetrate beach sediments

FIGURE 13.1
Shoreline Protection Methods - ONSHORE

ONSHORE	METHOD	APPLICABILITY
SORBENTS	Applied manually or mechanically to the beach before oil is stranded Oil/sorbent is then removed manually or mechanically	Prevents penetration of oil into substrate Sorbent pads preferable to loose-fiber materials for ease of collection Synthetic products have higher absorption capacity than natural materials Can be recycled and reused Usually a labor-intensive method
SURFACE TREATMENT AGENTS	Applied to shore zone before oil is stranded Prevents oil from adhering to the substrate	Applicability and effectiveness not yet fully assessed May be difficult to apply on long sections of shore Oil must be flushed from the shore and agent removed if it does not degrade naturally
COLLECTION AGENTS	Applied along water line before oil is stranded Reduces natural dispersion of oil	Reduces area of shoreline contamination Reduces penetration into beach
DIKES AND/OR DITCHES	Ditch up to 1 m deep dug parallel to shore at upper limit of wave action Sediment removed used to build dike on landward side of the ditch On pebble-cobble beaches can fill ditch with sorbents to collect oil and prevent oil penetration	Prevents oil being washed onto the backshore Can be constructed mechanically along long beach sections Ditch acts as a collector of oil which can be removed with buckets, hand pumps, or vacuum pumps
DAMS	Used for shallow streams where booms cannot be deployed	Acts as a boom for exclusion of oil Can be constructed to allow water to flow through dam
VISCOUS SWEEP	Applied manually to the beach, rock jetties, etc.	Excellent with heavier oils Can be recycled and reused Reduces penetration into rocks

SECTION 14 - MOBILIZATION AND DEPLOYMENT METHODS

A major consideration during a spill is the organization and direction of the transportation of manpower, equipment and materials used in response operations. Examples of transportation needs are outlined in **FIGURE 14.1**.

1) Marathon Oil Company will work with local authorities (State Police) in establishing land routes which will expedite the movement of personnel, equipment, materials and supplies to the staging area and waste products from the staging area. See **FIGURE 14.2** for the List of Staging Areas.

2) Vessel companies are listed in **APPENDIX D**. If those companies do not have vessels available for contract, a listing of Exploration & Production Company Contacts is enclosed in this section (see **FIGURE 14.3**). This listing represents offshore operators that may have vessels available for sub contract.

NRC equipment is stockpiled in warehouses along the Gulf Coast. The criteria in selecting which NRC warehouse to mobilize equipment from includes location of spill, trajectory, availability of equipment, personnel, vessels and dock space. Equipment sites closest to the leading edge of the slick will be given first priority. Some of these warehouses are adjacent to docks enabling rapid loadout of the equipment onto vessels. Other equipment must be trucked to a staging area for loadout.

FIGURE 14.1
TRANSPORTATION METHODS - VESSELS, AIRCRAFT AND TRUCKING

VESSELS

Transportation Mode	Use	Special Considerations
1. Utility Boats	a. Deploy skimmers b. Boat spray system c. Temporary oil storage	Contain 65' deck space and ability to cruise @ 1 knot or less.
2. Crew Boats	Deploy boom.	Size depends on boom dimensions and water depth.
3. Tug Boats	a. Position storage barge(s).	
4. Tank Barges	Haul waste to disposal site.	

AIRCRAFT

Transportation Mode	Use	Special Considerations
1. Helicopters	a. Spray collectants b. Slick surveillance c. Personnel deployment	Need communication equipment.
2. Seaplanes	a. Slick surveillance b. Personnel deployment	
3. Airplane	a. Dispersant application b. Slick surveillance	Has aerial spray capabilities. Needs special navigation and communication equipment on board.

TRUCKING

Transportation Mode	Use	Special Considerations
1. Flatbed trucks	Haul equipment to staging area.	May be permit load.
2. Drop Deck trailers	Haul equipment to staging area.	May be permit load.
3. Tractors	Transport skimmers already mounted on trailers.	May be permit load.
4. Pickup trucks	a. Deliver equipment and supplies to staging areas. b. Deliver food and potable water.	
5. Tank trucks	Haul waste to disposal site.	Need permit.

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LIST OF STAGING AREAS - **FIGURE 14.2**

LOCATION	COMPANY NAME	PHONE	CRANE	TRAILER
LOUISIANA⇩				
Fourchon	Marathon Oil Company	(337) 233-8240 extension 3332	Yes	Yes

FIGURE 14.3
EXPLORATION & PRODUCTION COMPANY CONTACTS
* = 24 Hour Phone Number

Company	Coordinator(s)	Location	Telephone
AEDC	Jim McBee	Houston, TX	(713) 963-9101
AGIP	Bob Casto	Houston, TX	(713) 688-6281
Amerada Hess	E. J. Gaspard	Cameron, LA	* (337) 775-5153
Anadarko Petroleum	Ed Haas	Houston, TX	(281) 874-8763
Apache	David Carmony Kelly Perrin	Houston, TX Lafayette, LA	(713) 296-6324 * (337) 232-1702
Aviva America	Hubert Stone	Dallas, TX	(214) 691-3464
BHP Petroleum	Keith Winch	Houston, TX	(713) 961-8696
Blue Dolphin Pipeline	Vernon Luning	Houston, TX	(713) 621-3993
British-Borneo Exploration	Ron Frazer	Houston, TX	(713) 393-6185
BP Exploration	Tom Combs	Houston, TX	(281) 560-3433
Burlington Resources OS Inc.	Tim Mayon Ronnie Ratcliff	Jeanerette, LA Houston, TX	(337) 276-3030 (281) 878-1109
Chevron	Jim LaJaune Dispatcher Dispatcher Dispatcher	New Orleans, LA Leeville, LA Intracoastal City, LA Venice, LA	(504) 592-6542 * (504) 396-3191 * (337) 898-7444 (504) 534-6436
CNG	Al Spinks	New Orleans, LA	* (504) 593-7520
Coastal Oil & Gas	George Adams Rick LeBlanc P. J. Lege John Istre	Houston, TX Cameron, LA	(713) 877-6258 (337) 775-5245
Cockrell Oil	Lloyd Hetrick	Houston, TX	(713) 209-7300
CXY	Glenn Bingham	Dallas, TX	(972) 450 4607
EEX	Terry Prater	Dallas, TX	(281) 271-3231
Elf Exploration	John Illeman Roy Smith	Houston, TX	(713) 658-9811
Enron	Jerry Biggs	Houston, TX	(713) 853-5936
Exxon	Dispatcher	Grand Isle, LA	(504) 787-5251
Forcenergy	Greg Ruiz	Metairie, LA	(504) 838-7022
Freeport-McMoran	Carl Willis	Venice, LA	(504) 582-4000
Hall-Houston Oil	Jim Hackedorn	Houston, TX	(713) 228-0711
The Houston Expl. Co.	Bill Wright	Houston, TX	(713) 830-6825
Howell Petroleum	Jack Odiorne	Houston, TX	(713) 658-4100
I. P. Petroleum	Richard Pendleton Ed Schicktanz	Houston, TX Houston, TX	(713) 651-9261 (713) 651-9261
Kelley Oil Corp.	Bert Bates	Houston, TX	(713) 652-5200
Kerr McGee	Stan Aucoin	Morgan City, LA	* (504) 396-2911
King Ranch Oil & Gas	Sonny Bryan	Houston, TX	* (713) 752-5730
Marathon	Dispatcher	Berwick, LA Venice, LA	* (504) 385-0832 * (337) 233-8240
Mariner	Ken Burgess	Houston, TX	* (281) 584-5500 * (800) 882-4334
Mobil	Dispatcher	Morgan City, LA	* (504) 380-5514

FIGURE 14.3
EXPLORATION & PRODUCTION COMPANY CONTACTS
* = 24 Hour Phone Number

Company	Coordinator(s)	Location	Telephone
Murphy Expl. & Prod. Co.	Ken Soyez	New Orleans, LA	(504) 561-2533
Newfield Exploration	Jim Eisterhold	Houston, TX	(281) 847-6065
Ocean Energy	Ron Phillips	Lafayette, LA	(337) 993-4300
Pennzoil	Russell Louviere	Intracoastal City, LA	(337) 269-4394
Petrobras America	Roger Robinson	Houston, TX	(713) 781-9798
Prime Natural Resources	Mike Sholars Pat Lynch	Houston, TX Folsom, LA	(713) 513-3985 (504) 796-3262
Samedan Oil	Steve Shuman Bob Bemis	Houston, TX	(281) 876-6250 (281) 876-6215
Santa Fe Energy	David Hartell	Houston, TX	(713) 507-5000
Seneca Resources	Steve Conley John Kadlecek Bob Evans	Houston, TX	(713) 654-2613 (713) 654-2633 (713) 654-2607
Sonat	Randy Judd	Houston, TX	* (713) 940-4000
Statoil Expl. (US) Inc.	Kenneth James Ed Scott	Houston, TX	* (713) 843-1800
Stone Petroleum	Phil Lalande	Lafayette, LA	(337) 237-0410
Tatham Offshore	N. Gary Hobbs	Houston, TX	(713) 224-7400
Texaco	Dispatcher (on/s) Daniel Ledet (off/s)	Morgan City, LA	(504) 384-1860 * (504) 380-1210 (504) 380-1229
Union Pacific Resources Co.	Tim Gilblum Tony Gounah	Fort Worth, TX Lafayette, LA	(817) 877-7395 (337) 572-4010
Unocal	Greg Meaux Randy Abercrombie	Lafayette, LA Intracoastal City, LA Cameron, LA Emergency No. Galveston, TX	* (337) 295-6000 (337) 898-4504 (337) 775-2941 * (337) 295-6388 * (409) 239-7510
Vastar Resources	Dispatcher Lee Wilson John Reiter Dispatcher	Sabine, TX Venice, LA Harbor Island, TX	(409) 724-3400 (504) 534-6271 * (361) 289-4639
Walter Oil & Gas	Jack Horton	Houston, TX	(713) 659-1222

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SECTION 15 - OIL AND DEBRIS REMOVAL PROCEDURES

General Spill Response Considerations

The response techniques, or combination of techniques employed in a spill are dependent upon the product spilled, quantity, location, response time, weather conditions, responder capability, and availability of response equipment. Among the options available are:

1. Mechanical cleanup methods
2. Dispersants
3. In-Situ burning
4. Natural removal
5. Shoreline cleanup

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A. Offshore Procedures

1. **Mechanical Cleanup Methods** (Refer to **FIGURE 15.3** for Response Strategies Using NRC Equipment.)

   Mechanical oil spill response uses physical barriers (boom) and mechanical devices (skimmers) to redirect and remove oil from the surface of the water.

   - *Oil Containment Boom*: Spilled oil floating on the water's surface is affected by wind, currents, and gravity, all of which cause it to spread. Boom is used for concentrating oil so that it is thick enough to be skimmed, for keeping oil out of sensitive areas, or for diverting oil into collection areas.

   The success of booming as a strategy is dependent on currents, wind, and waves. Currents can draw the oil under the boom; waves may cause oil to splash over; wind and currents may cause the boom to sink or plane; and currents or debris may damage the boom.

   - *Skimmers:* Skimmers remove oil from the water's surface and are typically used with boom that concentrate the oil to make it thick enough to be skimmed efficiently. The effectiveness of the skimmer is determined by how quickly it can collect the oil, and how much water is mixed in with it. The oil collected by the skimmer is stored in a containment tank.

Advantages

- Physically removes oil from the environment.
- Allows recycling or proper disposal of recovered oil.
- Minimizes direct environmental impacts in open water areas.

Disadvantages

- Limitations of mechanical recovery exist. Wind, waves and currents may allow only a fraction of the spilled oil to be contained and recovered.
- The limitations of mechanical protection and recovery methods must be fully considered. Booms may fail and skimmers may clog.

2. Dispersants

Dispersants are specially designed oil spill products that are composed of detergent-like surfactants in low toxicity solvents. Dispersants do not actually remove oil from the water. Instead, they break the oil slick into small particles, which then disperse into the water where they are further broken down by natural processes. Dispersion of oil into the water column occurs naturally in untreated spills; dispersants just speed up the process. Dispersants also prevent the oil droplets from coming together again and forming another surface slick. Dispersants also reduce the ability of the oil to attach to birds and other animals, shoreline rocks, and vegetation. Fire and explosion hazards are lessened because dispersants reduce evaporation of volatile oil components. The effects of the rapidly diluted dispersed oil must be weighed against the effects of that oil if it were allowed to impact wildlife populations or the shoreline.

Dispersants may be applied to oil from airplanes, helicopters, or vessels. Dispersant spray systems are designed to provide the correct droplet size and dosage, as both are important factors in effective oil dispersal. The volume of dispersant applied is a fraction of the volume of oil treated, with a typical dispersant to oil ratio of 1:20.

When the oil is treated with dispersants, it initially disperses within approximately the upper 10 feet of the water column. The dispersed oil will be spread horizontally by tides and currents, rapidly decreasing the concentration of the oil. Many impacted water column populations will rapidly recover from the dispersed oil exposure because of their mobility. If these impacts are expected to be short term, these organisms are given a lower priority than bird and mammal populations and sensitive shoreline habitats, which when oiled recover quite slowly. Typically, dispersant use is reserved for deeper waters to ensure sufficient dilution of the oil and to prevent impacts on bottom-dwelling organisms. There may be cases where use in shallower environments can be justified to minimize impact to highly sensitive areas that are difficult to otherwise protect.

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Advantages

- Reduced impact of surface oil on shorelines, sensitive habitats, birds, mammals, and other wildlife.
- Rapid treatment of large areas.
- Reduced oil storage and disposal problems.
- Accelerated natural degradation processes.
- Use in high seas and currents is feasible.

Disadvantages

- Increased oil impacts on organisms in the upper 30 feet of water column.
- Time frame for effective use may be short.
- Application equipment may be unavailable.

3. In-Situ Burning

In-situ burning means the controlled burning of oil "in place." On open water, burning requires specialized fire resistant boom because uncontained oil rapidly spreads too thin to sustain combustion. In-situ burning requires less labor than most other techniques and can be applied in areas where other methods can not be used because of limited access to the spill location. Fire-resistant booms are subject to some of the same wind and sea limitations as mechanical removal, since a fire boom behaves much like a standard containment boom. However, burning rapidly removes large quantities of oil and, minimizes the need for recovery and storage.

The decision to use in-situ burning must consider the tradeoffs involved, including:

- the impact on air quality,
- the benefit of rapid oil removal
- the safety of the response workers, and
- the risk of secondary fires.

In-situ burns have typically removed over 90% of the contained oil during experiments and accidental burns of petroleum on water. The small percentage of the original oil volume left unburned is typically a viscous, taffy-like material that floats for a long enough period of time to be manually removed.

Advantages

- Reduces impact of surface oil on shorelines, sensitive habitats, birds, mammals, and other wildlife.
- Rapidly consumes oil in the burn.
- Reduces oil storage and disposal problems.

- Eliminates the air quality impacts of the volatile hydrocarbons that would otherwise evaporate.
- The products of combustion are diluted in the air above and downwind of the burn, dispersing rapidly at ground level to normal concentrations.

Disadvantages

- Use limited to correct atmospheric and sea conditions or offshore areas to protect public health.
- Equipment required for burning may not be readily available.
- Time frame for effective use may be short due to difficulty of igniting weathered oil.

4. Natural Removal

- To do nothing may sometimes be appropriate. No action is taken except for monitoring the movement of the spilled oil (i.e., Light hydrocarbons are volatile and highly flammable. Recovery may not be attempted because of fire hazards).

B. Shallow Water/Shoreline Procedures

1. Mechanical Cleanup Methods (Refer to **FIGURE 15.4** for Strategies Using NRC Equipment)

- *Open Ocean Boom*: In areas of shallow water, it may be possible to collect or corral the oil with ocean boom and take it to deeper water or low-current areas that have better skimmer access and higher recovery rates.

- *Bottom-seal Boom:* This boom is designed for deployment in very shallow water where traditional boom may foul on the bottom during low water levels. This boom's special features allow it to conform to the substrate, so that it can continue to act as a barrier to oil during changing tides or lower water levels. NRC's bottom seal boom uses ballast tubes that are filled with water and actually lay on the bottom to provide a seal against oil passage. Shallow water boom is effective in higher-current areas because the shallow skirt minimizes the drag in the current.

- *Sorbent Boom*: Sorbent boom is designed primarily to absorb oil although it can act as a protective measure against thin oil sheens under very quiet water conditions. Snare boom (pom-poms tied onto a line) is effective as a sorbent of more viscous oils under higher wave and current conditions. In any current, sorbent boom can contain only the thinnest sheens. When used with conventional booms, sorbents can be placed outside of the boom to pick up

small amounts of escaping oil, or inside the boom to absorb small amounts of contained oil.

- *Inland Boom*: Inland boom is the smallest conventional boom and is designed for deployment in very shallow water; as the draft is only 6-12 inches. It is normally deployed in more protected waters where there is little or no wave action.

2. Shoreline Cleanup

Oil types vary greatly and have a major influence on the degree of impact, ease of cleanup and persistence of the contamination. Lighter oils (diesel and condensate) will evaporate quickly, but tend to be more toxic and penetrate the shoreline sediments to a greater degree. Heavier crude oils are less toxic to shoreline ecosystems and do not penetrate finer sediments, but they are very persistent, difficult to clean and may smother shoreline organisms. Refer to **FIGURE 15.5** for a description of oil types.

The type of shoreline predicted to be impacted must be identified and mapped. Both state and federal mapping projects have successfully categorized much of the gulf of Mexico shoreline in terms of habitat sensitivity to spilled oil. The most widely used characterization scheme for shorelines is the NOAA Environmental Sensitivity Index (ESI). The ESI ranks shorelines in terms of their relative sensitivity to oil spill impacts, predicted rates of removal of stranded oil by processes such as waves and currents which naturally clean the shoreline, and ease of cleanup.

Shoreline types, from least to most sensitive are:

1. Exposed rocky cliffs & seawalls
2. Wave cut rocky platforms
3. Fine to medium-grained sand beaches
4. Coarse-grained sand beaches
5. Mixed sand and gravel beaches
6. Gravel beaches/riprap
7. Exposed tidal flats
8. Sheltered rocky shores/man-made structures
9. Sheltered tidal flats
10. Marshes

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FIGURE 15.1
SHORELINE CLEANUP PROCEDURES / TECHNIQUES

The following treatment methods do not require consideration by the interagency Regional Response Team (RRT):

Method	Description	Applicable Shoreline Types	When to use	Biological constraints	Environmental effects
1. NO ACTION	No action is taken. Monitoring continues.	All Where cleanup actions will do more harm than leaving the oil to be removed naturally.	Extremely remote or inaccessible shorelines. When natural removal rates are very fast.	May be inappropriate for areas where high numbers of wildlife use the intertidal zone or adjacent nearshore waters.	Intertidal – the same as oil. Subtidal – the same as oil.
2. MANUAL REMOVAL	Remove surface oil manually (hands, rakes, shovels, etc.). No mechanized equipment.	All	Light to moderate oiling conditions.	Foot traffic over sensitive areas is to be restricted. Shoreline access may be restricted (e.g. bird nesting, mammalian birthing).	Intertidal – minimal if surface disturbance by cleanup activities and work force movement is limited. Subtidal – none.
3. PASSIVE COLLECTION (SORBENTS)	Remove oil by absorption onto oleophilic material placed in the intertidal zone.	Can be used on any shoreline type especially rip-rap and on intertidal vegetation.	As a secondary treatment method after gross oil removal, and along sensitive shorelines where access is restricted.	None, although this method can be slow, thus allowing oil to remain in critical habitats during sensitive periods of time.	Intertidal – none, except for the oil remaining on the shoreline after the sorbents are no longer effective.
4. DEBRIS REMOVAL	Manual or mechanical removal of debris from the upper beach face and the zone above high tide beyond the normal wash of waves. Can include cutting and removal of oiled logs.	Any shoreline type where safe access is allowed.	When driftwood and debris is heavily contaminated and either a potential source of chronic oil release, an aesthetic problem, or a source of contamination for other organisms on the shoreline.	Disturbance to adjacent upland areas should be minimized. Foot traffic over sensitive intertidal areas (shellfish beds, algae mats, bird nesting areas, dunes, etc.) should be restricted. Shoreline access may be restricted (e.g., bird nesting, mammalian birthing).	Intertidal – none. Subtidal – none.
5. TRENCHING	Remove subsurface oil from permeable substrates by digging trenches to the depth of the oil and remove oil floating on the water table by vacuum pump or super sucker. Water flooding or high-pressure spraying at ambient temperatures can be used to flush oil to the trench.	Can be used on beaches ranging in grain size from fine sand to gravel.	When large quantities of oil penetrate deeply into permeable sediments and cannot be removed by surface flooding. The oil must be liquid enough to flow at ambient temperatures.	Trenches should not be dug in the lower intertidal when attached algae and organisms are abundant.	Intertidal – on gravel beaches, there may be a period of beach instability as the sediments are redistributed after the trenches are filled in. Subtidal – none.

FIGURE 15.1
SHORELINE CLEANUP PROCEDURES / TECHNIQUES

The following treatment methods do not require consideration by the interagency Regional Response Team (RRT):

Method	Description	Applicable Shoreline Types	When to use	Biological constraints	Environmental effects
6. SEDIMENT REMOVAL	Oiled sediments are removed by either manual use of hand tools or mechanical use of various kinds of motorized equipment. The oiled material must be transported and disposed of off-site.	Any shoreline with surface sediments. On rocky coasts, only manual removal is feasible. Equipment is to be used only on beaches.	When only very limited amounts of oiled sediments have to be removed. Should not be considered where beach erosion may result. Remove the sediments only to the depth of oil penetration, which can be difficult with heavy equipment.	Excavating equipment must not intrude upon sensitive habitats (**intertidal and supratidal areas should be considered for sediment removal**). Replaced material must be free of oil and toxic substances. Washing must not change the grain size of the replaced material.	Intertidal – May be detrimental if excessive sediments are removed without replacement. All organisms resident in the beach will be affected Subtidal – release of oil and fine-grained oily sediments to the water.
7. AMBIENT – WATER FLOODING (DELUGE)	Ambient seawater is pumped through holes in header pipes and flows down the beach face to the water. On porous beaches, water flows through the substrate pushing loose oil ahead of it. Oil is trapped by booms and picked up with a skimmer or other suitable equipment.	Beaches with sediments coarser than sand, and gently sloping rocky shorelines. Not applicable to mud, sand, vegetated, or steep rocky shorelines.	On heavily oiled shorelines when the oil is stiff fluid and loosely adhering to the substrate; and where oil has penetrated into cobble or boulder beaches.	Not appropriate at creek mouths. Where the lower intertidal contains rich biological communities, flooding should be restricted to tidal stages when the rich zones are under water to prevent secondary oiling.	Intertidal – habitat may be physically distributed and smothered. Organisms may be flushed into lower intertidal zones. Subtidal – oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms.
8. AMBIENT – WATER/LOW - PRESSURE WASHING	Low-pressure washing (<50 psi) is used to flush oil to the water's edge for pickup with skimmers or sorbents. It can be used with a deluge system on beaches to prevent released oil from re-adhering to the substrate.	On heavily oiled gravel beaches, rip-rap, and seawalls where the oil is still fresh and liquid. Also, in marshes and mangroves where free oil is trapped.	Where adhered oil is still fresh and must be removed due to continued release of oil.	May need to restrict use of flushing to certain tidal elevations so that the oil/water effluents do not drain across sensitive low tide habitats. In marshes, use only at high tide and either from boats or the high tide line to prevent foot traffic in vegetation.	Intertidal – Contaminants may be flushed into lower intertidal zone Subtidal – oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms.
9. AMBIENT-WATER/HIGH-PRESSURE WASHING	Similar to low-pressure washing except water pressure is up to 100 psi. Remove oil that has adhered to rocks or man-made structures. May require placement of sorbents directly below treatment areas.	Rip-rap and seawalls. Can be used to flush floating oil or loose oil out of tide pools and between crevices on rip-rap.	When low-pressure washing is not effective for removal of oil. When directed water jet can remove oil from hard to reach sites. To remove oil from man-made structures for aesthetic reasons.	May need to restrict use of flushing to certain tidal elevations so that the oil/water effluent does not drain across sensitive low tide habitats.	Intertidal – removes many organisms on surface. May drive oil deeper into the substrate. Contaminants may be flushed into lower intertidal zone Subtidal – oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms.

FIGURE 15.1
SHORELINE CLEANUP PROCEDURES / TECHNIQUES

The following treatment methods do not require consideration by the interagency Regional Response Team (RRT):

Method	Description	Applicable Shoreline Types	When to use	Biological constraints	Environmental effects
10. WARM WATER MODERATE TO HIGH-PRESSURE WASHING	Heated seawater (ambient to 90F) is applied at moderate to high. If not effective, "deluge" flooding and additional low or high-pressure washing can be used to float the oil to the water's edge for pickup. Oil is trapped by booms and picked up with skimmers or sorbents.	Gravel beaches, rip-rap, and seawalls that are heavily oiled.	When oil has weathered to the point that low pressure washing with ambient water is not effective for removal of adhered oil, which must be recovered due to continued release of oil. To remove oil from man-made structures for aesthetic reasons.	Must restrict use to certain tidal elevations so that the oil/water effluent does not drain across sensitive low tide habitats (damage can result from exposure to oil, oiled sediments, and warm water). Should be restricted adjacent to stream mouths, tide pool communities, and similar rich intertidal communities.	Intertidal – can kill or remove host organisms. Contamination may be flushed into lower intertidal zones that would otherwise not be oiled Subtidal – oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms.
11. HOT-WATER/HIGH-PRESSURE WASHING	Water heaters mounted offshore on barges or small land-based units, heat water to temperatures from 90°F to 170°F, which is usually sprayed by hand with high-pressure wands. Requires immediate use of vacuum trucks to remove the oil/water runoff or collection with skimmers or sorbents.	Gravel beaches, rip-rap, and seawalls.	When the oil has weathered to the point that even warm water at high pressure is not effective for removal of adhered oil. To remove oil from man-made structures for aesthetic reasons.	Restrict use to certain tidal elevations so that the oil/water effluent does not drain across sensitive low tide habitats. Should be restricted near stream mouths, tide pool communities, etc.	Intertidal – all attached organisms in the direct spray zone will be removed or killed, and significant mortality of the lower intertidal communities will result.
12. SLURRY SAND BLASTING	Use sandblasting equipment to remove oil from the substrate. May include recovery of used (oiled) sand in some cases.	Seawalls and rip-rap. Equipment can be operated from boat or land.	When heavy oil residue is remaining on the shoreline which needs to be cleaned for aesthetic reasons, and even hot-water wash is not effective.	Not to be used in areas of oyster/clam beds, or areas with high biological abundance, on the shoreline directly below or adjacent to the structures.	Intertidal – destruction of all organisms. Subtidal – possible smothering of subtidal organisms with sand. May introduce oiled sediments into the subtidal habitat.
13. VACUUM	Use of a vacuum unit with a suction head to recover free oil. Equipment ranges from small portable units to large supersuckers. Can be used with water spray systems to flush oil towards the suction head.	Can be used on any shoreline type that is accessible. May be mounted offshore on barges, onshore on trucks, or as individual units on boats or ashore at low tide.	When free, liquid oil is stranded on the shoreline (usually along the high tide line) or trapped in vegetation that is readily accessible.	Identify restrictions for areas where foot traffic and equipment operation s/b limited (rich intertidal communities). Monitor operations in wetlands with a site-specific list of restrictions.	Intertidal – minimal impacts if used properly and minimal substrate is removed Subtidal – none.

FIGURE 15.1
SHORELINE CLEANUP PROCEDURES / TECHNIQUES

The following treatment methods do not require consideration by the interagency Regional Response Team (RRT):

Method	Description	Applicable Shoreline Types	When to use	Biological constraints	Environmental effects
14. SEDIMENT REWORKING	Beach sediments are roto-tilled or otherwise mechanically mixed with the use of heavy equipment on gravel beaches. The oiled sediments in the upper beach area may be relocated lower on the beach to enhance natural cleanup during reworking by wave activity (berm relocation).	Beaches exposed to significant wave activity. Beaches with a significant sand fraction; large equipment can be used to relocate sediments up to boulder size.	On beaches with significant amounts of subsurface oil, where sediment removal is infeasible (due to erosion concerns or disposal problems); also where surface oil deposits have started to form pavements or crusts.	Beaches near shellfish harvest or fish spawning areas, or near bird nesting or concentration areas. Restricted to the upper part of the beach, to prevent disturbance of the biological communities in the lower intertidal area.	Interdial – Further expose organisms living below the original layer of oil. Repeated mixing over time could delay reestablishment of organisms. Relocated sediments would bury and kill organisms. There may be a period of beach instability as the relocated sediments are redistributed Subtidal – there is a potential for release of contaminated sediments to the near shore subtidal habitats.
15. SEDIMENT REMOVAL, CLEANSING, AND REPLACEMENT	Oiled sediments are excavated using heavy equipment on the beach at low tide. The sediments are loaded into a container for cleansing process. Rinsed materials are returned to the original area. Cleaning equipment must be placed close to beaches to reduce transportation problems.	Sand to boulder sized beaches, depending on the equipment. Beaches must be exposed to wave activity, so that the replaced sediments can be reworked into a natural distribution.	Applicable on beaches with large amounts of subsurface oil, where permanent removal of sediment is undesired and other cleanup techniques are likely to be ineffective.	Equipment must not intrude upon sensitive habitats. Only upper and supratidal areas s/b considered. Generally restricted in spawning areas. Constraints limiting placement of temporary sediment storage piles. Replaced material must be free of oil and toxic substances. Washing must not change grain size of the replaced material.	Intertidal – All resident organisms will be affected Equipment may disrupt wildlife. Beach instability may occur as the replaced sediments are redistributed Subtidal – May release oil and fine grained oily sediments into the water. Concern to tidal flushing of beach sediments and exposed excavations.
16. CUTTING VEGETATION	Manual cutting of oiled vegetation using weed eater, and removal of cut vegetation with rakes. The cut vegetation is bagged immediately for disposal.	Marshes composed of emergent, herbaceous vegetation.	Use when the risk of oiled vegetation contaminating wildlife is greater that the value of the vegetation that is to be cut, and there is no less destructive method to remove or reduce the risk to acceptable levels.	Strict monitoring of the operations must be conducted to minimize the degree of root destruction and mixing of oil deeper into the sediments. Access to bird nesting areas should be restricted during nesting seasons.	Intertidal – Loss of habitat for many animals. Reduced plant growth for up to two years in cut areas. Vegetation may not regrow, resulting in erosion and permanent loss of the habitat. Trampled areas will recover slowly. Subtidal – Increased sediment load (long term) as a result of increased erosion in the intertidal area.

FIGURE 15.2
SHORELINE CLEANUP PROCEDURES / TECHNIQUES

The following treatment methods require approval from the Regional Response Team (RRT) prior to implementation:

Method	Description	Applicable Shoreline Types	When to use	Biological constraints	Environmental effects
17. CHEMICAL OIL STABILIZATION WITH ELASTOMERS	The primary purpose is to stabilize the oil, keeping it from spreading or escaping, causing oiling elsewhere. May reduce the solubility of the light (and more toxic) fractions, by locking them into the polymer. This reduces both air and water exposure. Depending on the beach type and equipment used, recovery may be enhanced.	Suitable on shorelines of low permeability where heavy oil has pooled on the surface, except vegetated shorelines.	When heavy concentrations of liquid oil are on the substrate and adjacent water body, and physical removal cannot be completed prior to the next tide so that the oil is likely to move to a more sensitive shoreline type. Should be used in conjunction with booming or other physical containment.	Not suitable for vegetated or rip-rap shore types. Should be avoided when birds or other wildlife cannot be kept away from the treated shoreline. The congealed oil may stick to vegetation and wildlife, increasing physical damage to both. On rip-rap the congealed oil may remain in crevices where it may hamper recovery and prolong the release of sheens.	May enhance smothering effect of oil on intertidal organisms. Consider only for heavily oiled beaches where smothering effects are already maximal. Congealed oil may stick to vegetation and wildlife increasing physical damage.
18. CHEMICAL PROTECTION OF BEACHES	Certain types of water-based chemicals, some of which are similar in composition to dispersants, are applied to beaches in advance of the oil.	Coarse and fine-grained sand beaches, seawalls and piers (particularly those of historical significance), eroding bluffs, wave-cut platforms, and rip-rap.	When oil is projected to impact an applicable shoreline, particularly those that have high recreational or aesthetic value.	May not be suitable for nutrient-rich environments, particularly in confined waters. The toxicity of each product should be evaluated prior to consideration for use.	Long-term environmental effects are unknown. Toxic effects can be anticipated.
19. CHEMICAL CLEANING OF BEACHES	Special formulations, which can be characterized as weak dispersants, are applied to the substrate, as a presoak and/or flushing solution, to soften weathered or heavy oils to aid in the efficiency of flushing treatment methods. The intent is to be able to lower the temperature and pressure required to mobilize the oil from the substrate.	On any shoreline where deluge and water flushing procedures are applicable.	When the oil has weathered to the point where it will not flow using warm to hot water. This approach may be most applicable where flushing decreases in effectiveness as the oil weathers.	Requires extensive biological testing for approval. Treated oil will be dispersed in the water column, and impact water column and subtidal organisms. Test to show beach cleaner does not reduce overall recoverability. May be restricted where suspended sediment concentrations are high, adjacent to wetlands and tidal flats, or near sensitive subtidal resources.	If more oil is dispersed into the water column, there could be more oil absorbed onto suspended sediments and transferred subtidal habitats, particularly along sheltered shorelines. Intertidal habitats might survive better, if cooler water temperatures are possible.
20. IN-SITU BURNING OF SHORELINES	Oil on the shoreline is burned, usually when it is on a combustible substrate such as vegetation, logs, and other debris. Oil can be burned off of nonflammable substrates with the aid of a burn promoter.	On any shoreline except tidal flats.	Early in the spill event, after ensuring that the product is ignitable.	Use in the upper intertidal or supratidal zones. It should not be used to burn PCBs, wastes containing > 1000 ppm of halogenated solvents, or other substances regulated by EPA.	Little is known about the relative effects of burning oiled wetlands. Burning may cause significant air pollution. The combustion products may travel great distances before deposition.

FIGURE 15.2
SHORELINE CLEANUP PROCEDURES / TECHNIQUES

The following treatment methods require approval from the Regional Response Team (RRT) prior to implementation:

Method	Description	Applicable Shoreline Types	When to use	Biological constraints	Environmental effects
21. NUTRIENT ENHANCEMENT	Nutrients are applied to the shoreline in one of several methods: soluble inorganic formulations that are dissolved in water and applied as a spray at low tide, requiring frequent applications; slow release formulations that are applied as a solid to the intertidal zone and designed to slowly dissolve; and oleophilic formulations that adhere to the oil itself, thus they are sprayed directly on the oiled areas.	Could be used on any shoreline type where safe access is allowed.	On moderate to heavily oiled shorelines, after other techniques have been used to remove as much oil as possible; on lightly oiled shorelines where other techniques are not effective; and where nutrients are a limiting factor in natural degradation. Potentially for the treatment of subsurface oil.	N/A in shallow water, poorly flushed, restricted embayments, or where toxicity of nutrients (ammonia) is of concern. There m/b no risk of oxygen depletion. Use s/b restricted adjacent to stream mouths, tide pools, etc. Contact toxicity of oleophilic formulations may restrict areas of direct application. Other chemicals in the formulations could be toxic to aquatic organisms.	Tests showed interstitial oxygen concentrations did not limit the supply of oxygen available to the bacteria. Fertilizer did not harm near shore environment. Inipol was initially toxic to intertidal organisms directly contacted.
22. MICROBIAL ADDITION	Formulations containing hydrocarbon-degrading microbes and fertilizers are added to the oiled area. Indigenous organisms s/b killed by the oil, so new microbial species need to be added to begin the process of biodegradation. To date, microbial addition has not been shown to work better than fertilizer alone in field tests.	Could be used on any shoreline type where safe access is allowed.	N/A in shallow water, poorly flushed, restricted embayments, or where toxicity of nutrients (ammonia) is of concern. There m/b no risk of oxygen depletion. Use s/b restricted adjacent to stream mouths, tide pool communities, etc. Other chemicals in the formulation could be toxic to aquatic organisms.		

FIGURE 15.3
OFFSHORE RESPONSE STRATEGIES USING NRC EQUIPMENT

EQUIPMENT	USE FOR:
1) Offshore Response Vessels (OSRVs): NRC ADMIRAL	A) Skimming oil offshore with a readily available seaworthy workboat. B) Ideal skimming in 3 to 4 foot seas. Heavier seas permissible under suitable conditions. C) The most immediate mechanical skimming means to respond offshore. Draft of workboat determines the water depth for use in bays, 6 to 8 feet of water the minimum.
2) Identified Boats (ID Boats): AUSTIN G DAVID G JILL G MARK G MERTTIE G	A) Rapid response skimming offshore until other equipment arrives. B) Skimming offshore in seas up to 4 feet in an advancing or stationary mode.
3) Offshore Response Barge (OSRB): NRC DEFENDER NRC VALIANT	A) Provides large capacity temporary storage as well as a platform for Supplemental Offshore Skimming Systems (SOSS).
4) Ocean Boom: 43" Inflatable Boom 42" Hard Boom NRC Owns & Controls 82,200 feet.	A) Containment of oil for recovery by skimmers. B) Preventing spilled oil from spreading. C) Precautionary measure in case oil may be spilled. 1) Towing speed is 3 knots ("U" configuration) and 7 knots (end first). 2) Can be operated in inland waters, nearshore and offshore (open ocean to sea state 4). 3) Section length is 100' containment and 50' sweep. 4) Inflatable air requirements are 1 psi (operating) and 150 CFM (inflation).
5) Boat Sprayer System for Dispersants	A) Spraying "Low-mixing energy" dispersants, from the bow of the workboats, onto oil slicks. B) Fresher, not very weathered, less viscous, crude oils (usually not mousse).

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FIGURE 15.3
OFFSHORE RESPONSE STRATEGIES USING NRC EQUIPMENT

	EQUIPMENT		USE FOR:
6)	Exxon Corexit 9527/9500 - Oil Dispersant Inventory and Logistics	A)	Sprayed from aircraft or vessels to break up oil spills on water. 1) Must have USCG approval.
7)	Chemical Dispersants Aircraft Spraying	A)	Rapid application of dispersant and/or coverage of large areas.
		B)	Sea conditions that are unacceptable for other equipment and methods.
		C)	Very distant or remote job sites.
		D)	More beneficial spray patterns.
		E)	Spill treatment in non-navigable waters.
		F)	Spills of a size sufficient to keep equipment in use.
8)	Oil Sorbents (3M Brand Sorbent Pads)	A)	Absorption of thin oil slicks or rainbows of oil.
		B)	Wiping oil off structures, rock shorelines, vegetation, vessels, other oil spill equipment, etc. 1) Can be wrung out and reused. 2) Can be recycled thus reducing disposal cost and volume.
		C)	Can be used in lieu of straw and other particulates difficult to retrieve and dispose.
		D)	A floating barrier to aid other containment and recovery devices.
		E)	Can be used in congested or restricted areas.
9)	Viscous Type Absorbents	A)	Absorption of heavier oils.
		B)	Wiping off rocks or structures, etc.
		C)	Floating barrier.

FIGURE 15.4

OIL TYPES - Oil can be divided into five general types with the following properties:

GROUP 1 - Very Light Refined Products
(e.g., gasoline, naphtha, solvents, Avgas 80/100)

1. Very volatile and highly flammable (flash point near 0 degrees - 73 degrees F/40 degrees C).
2. High evaporation rates; complete removal by evaporation is likely.
3. Low viscosity; spread rapidly to a thin sheen.
4. Specific gravity less than 0.80; floats on water.
5. High acute toxicity to biota; can cause localized, severe impacts to water-column and intertidal resources.
6. Will penetrate substrate, causing subsurface contamination.
7. Recovery usually not attempted because of fire hazards.
8. Exclusion booming of sensitive areas must be completed rapidly.

GROUP 2 - Diesel-Like Products and Light Crude Oils
(e.g. no. 2 fuel oil, jet fuels, kerosene, marine diesel, West Texas crude, Alberta crude)

1. Moderately volatile (flash point varies from 100 to 125 degrees F/40- 65 degrees C).
2. Light fractions (up to two-thirds of the spill volume) will evaporate.
3. Low to moderate viscosity; spread rapidly into thin slicks.
4. Specific gravity of 0.80-0.85, API gravity of 35-45, so slicks will float on the water surface except under turbulent mixing conditions.
5. Moderate to high acute toxicity to biota; product-specific toxicity related to type and concentration of aromatic compounds in the water-soluble fraction.
6. Will coat and penetrate substrate; some subsurface contamination.
7. Stranded oil tends to smother organisms.
8. Containment/recovery from the water is most effective early in the response.

GROUP 3 - Medium Oils and Intermediate Products
(e.g., North Slope crude, South Louisiana crude, intermediate fuel oils, lube oil)

1. Moderately volatile (flash point higher than 125 degrees F/=52 degrees C).
2. Up to one-third will evaporate.
3. Moderate to high viscosity.
4. Specific gravity of 0.85-0.95; API gravity of 17.5-35.
5. Variable acute toxicity, depending on amount of light fraction.
6. Can form stable emulsions.
7. Will coat and penetrate substrate; heavy subsurface contamination likely.
8. Stranded oil tends to smother organisms.
9. Recovery from the water and shoreline cleanup is most effective early in the response.

GROUP 4 - Heavy Crude Oils and Residual Products
(e.g., Venezuela crude, San Joaquin Valley crude, Bunker C, no. 6 fuel oil)

1. Slightly volatile (flash point grater than 150 degrees F/65 degrees C).
2. Little product loss by evaporation (usually less than 10-15 percent).
3. Very viscous to semi-solid; may become less viscous when warmed in sunlight.
4. Specific gravity of 0.95-1.00; API gravity of 10-17.5; so slicks will float initially and sink only after weathering or incorporating sediment.
5. Low acute toxicity relative to other oil types.
6. Form stable emulsions.
7. Little penetration of substrate likely.
8. Stranded oil tends to smother organisms.
9. Recovery from the water and shoreline cleanup difficult during all stages of response.

GROUP 5 - Very Heavy Residual Products

1. Very similar to all properties of Group 4 oils, except that the specific gravity of the oil is greater than 1.0 (API gravity less than 10). Thus, the oil has a greater potential to sink when spilled.

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Applications for Shoreline Cleanup Methods

This section provides shoreline cleanup matrices for use in the selection process of a particular cleanup method(s).

Four matrices have been constructed for the major categories of oil (very light, light, medium, and heavy) and are shown in the following tables. Each matrix can be used as a cleanup advisory tool. The matrix is only a general guide for cleanup method selection and must be used in conjunction with field observation, scientific advice, and practical experience. The countermeasures listed are not necessarily the best under al circumstances, and any listed technique may need to be used in conjunction with other techniques.

Selection of Method

Selection of a specific cleanup method to be used is based upon the degree of oil contamination, shoreline types, and the presence of sensitive resources. Extremely sensitive areas are limited to manual cleanup methods or natural remediation. It is important to note that the primary goal of the cleanup is the removal of oil from the shoreline with no further injury or destruction to the environment. The three codes used in the matrices are defined as follows:

A	(ADVISED):	Method which best achieves the goal of minimizing destruction or injury to the environment.
P	(POSSIBLE):	Viable and possibly useful but may result in limited adverse effects to the environment.
	SHADED AREA:	Do not use this method.

Shoreline Cleanup Matrix for Very Light Oil (FIGURE 15.5)

SHORELINE CLEANUP MATRIX Very Light Oil	SHORELINE TYPES											
	Coastal Structures	Bluffs	Fine Sand Beach	Coarse Sand Beach	Shell Beach	Perched Sand Beach	Perched Shell Beach	Sandy Tidal Flat	Muddy Tidal Flat	Forested Swamp	Fresh Marsh	Salt Marsh
CLEANUP METHOD	1	2	3	4	5	6	7	8	9	10	11	12
No Action	A	A	A	A	A	A	A	A	A	A	A	A
Manual Debris Removal	A	A	A	A	P	P	P	P	P	P	P	P
Manual Sediment Removal		P	P	P	P	P	P	P				
Manual Sorbent Application	A	P	P	P	P							
Manual Scraping		P	P	P		P		P				
Manual Vegetation Cutting												
Motor Grader/Elevating Scraper		P	P	P	P							
Elevating Scraper		P	P	P	P							
Motor Grader/Front-End Loader		P	P	P	P							
Front-End Loader: Rubber-Tired or –Tracked		P	P	P	P							
Bulldozer: Rubber-Tired Front-End Loader		P	P	P	P							
Backhoe		P	P	P	P							
Beach Cleaner		P	P	P	P							
Dragline/Clamshell		P	P	P	P							
Cold Water Deluge Flooding	A	P	P	P	P	P	P	P	P	A	A	A
Low Pressure Cold Water Washing	A		P	P	P					A	A	A
High Pressure Cold Water Washing	A											
Low Pressure Hot Water Washing	A		P	P	P							
High Pressure Hot Water Washing	A											
Steam Cleaning	A											
Sand Blasting	A											
Vacuum	A	P	P	P	P	P	P	P	P	P	P	P
Trenching/Vacuum		P	P	P	P			P				
Sediment Removal, Cleaning, & Replacement												
Push Contaminated Substrate into Surf												
Pavement Breakup												
Disc into Substrate												
Burning												
Chemical Oil Stabilization												
Chemical Protection of Beaches												
Chemical Cleaning of Beaches												
Nutrient Enrichment	P	P	P	P	P	P	P	P	P	P	P	P
Bacterial Enrichment	P	P	P	P	P	P	P	P	P	P	P	P

A (ADVISED): Method which best achieves the goal of minimizing destruction or injury to the environment.

P (POSSIBLE): Viable and possibly useful but may result in limited adverse effects to the environment.

SHADED AREA: Do not use this method.

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Shoreline Cleanup Matrix for Light Oil (FIGURE 15.6)

SHORELINE CLEANUP MATRIX Light Oil	SHORELINE TYPES											
	Coastal Structures	Bluffs	Fine Sand Beach	Coarse Sand Beach	Shell Beach	Perched Sand Beach	Perched Shell Beach	Sandy Tidal Flat	Muddy Tidal Flat	Forested Swamp	Fresh Marsh	Salt Marsh
CLEANUP METHOD	1	2	3	4	5	6	7	8	9	10	11	12
No Action	P	P	P	P	P	P	P	P	P	P	P	P
Manual Debris Removal	A	A	A	A	P	P	P	P	P	P	P	P
Manual Sediment Removal		P	P	P	P	P	P	P				
Manual Sorbent Application	A	P	A	A	P	P	P	P	P	P	P	P
Manual Scraping	A	P	A	A	P	P	P	P	P			
Manual Vegetation Cutting											P	P
Motor Grader/Elevating Scraper		P	A	A	P	P	P	P				
Elevating Scraper		P	A	A	P	P	P	P				
Motor Grader/Front-End Loader		P	A	A	P	P	P	P				
Front-End Loader: Rubber-Tired or –Tracked		P	A	A	P	P	P	P				
Bulldozer: Rubber-Tired Front-End Loader		P	A	A	P	P	P	P				
Backhoe		P	A	A	P	P	P	P				
Beach Cleaner		P	A	A	P	P	P	P				
Dragline/Clamshell		P	A	A	P	P	P	P				
Cold Water Deluge Flooding	A	P	A	A	P	P	P	P		A	A	A
Low Pressure Cold Water Washing	A	A	A	A	P	P	P	P		P	P	P
High Pressure Cold Water Washing	A			P				P		P	P	P
Low Pressure Hot Water Washing	A	P	P	P	P	P	P	P				
High Pressure Hot Water Washing	A			P				P				
Steam Cleaning	A											
Sand Blasting	A											
Vacuum	A	P	P	P	P	P	P	P	P	P	P	P
Trenching/Vacuum		P	P	P	P			P				
Sediment Removal, Cleaning, & Replacement			P	P								
Push Contaminated Substrate into Surf			P	P	P							
Pavement Breakup			P	P	P							
Disc into Substrate			P	P								
Burning												
Chemical Oil Stabilization												
Chemical Protection of Beaches												
Chemical Cleaning of Beaches												
Nutrient Enrichment	P	P	P	P	P	P	P	P	P	P	P	P
Bacterial Enrichment	P	P	P	P	P	P	P	P	P	P	P	P

A (ADVISED): Method which best achieves the goal of minimizing destruction or injury to the environment.

P (POSSIBLE): Viable and possibly useful but may result in limited adverse effects to the environment.

▒ SHADED AREA: Do not use this method.

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Shoreline Cleanup Matrix for Medium Oil (FIGURE 15.7)

SHORELINE CLEANUP MATRIX Medium Oil	SHORELINE TYPES											
	Coastal Structures	Bluffs	Fine Sand Beach	Coarse Sand Beach	Shell Beach	Perched Sand Beach	Perched Shell Beach	Sandy Tidal Flat	Muddy Tidal Flat	Forested Swamp	Fresh Marsh	Salt Marsh
CLEANUP METHOD	1	2	3	4	5	6	7	8	9	10	11	12
No Action	P	P	P	P	P	P	P	P	P	P	P	P
Manual Debris Removal	A	A	A	A	P	P	P	P	P	P	P	P
Manual Sediment Removal		P	P	P	P	P	P	P				
Manual Sorbent Application	A	P	A	A	P	P	P	P	P	A	A	A
Manual Scraping	A	P	A	A	P	P	P	P	P			
Manual Vegetation Cutting										P	P	P
Motor Grader/Elevating Scraper		P	A	A	P	P	P	P				
Elevating Scraper		P	A	A	P	P	P	P				
Motor Grader/Front-End Loader		P	A	A	P	P	P	P				
Front-End Loader: Rubber-Tired or –Tracked		P	A	A	P	P	P	P				
Bulldozer: Rubber-Tired Front-End Loader		P	A	A	P	P	P	P				
Backhoe		P	A	A	P	P	P	P				
Beach Cleaner		P	A	A	P	P	P	P				
Dragline/Clamshell		P	A	A	P	P	P	P				
Cold Water Deluge Flooding	A	A	A	A	P	P	P	P	P	A	A	A
Low Pressure Cold Water Washing	A	P	P	P	P	P	P	P		P	P	P
High Pressure Cold Water Washing	A			P				P				
Low Pressure Hot Water Washing	A	P	P	P	P	P	P	P				
High Pressure Hot Water Washing	A			P				P				
Steam Cleaning	A											
Sand Blasting	A											
Vacuum	A	P	A	A	P	P	P	P	P	P	P	P
Trenching/Vacuum		P	P	A	P			P				
Sediment Removal, Cleaning, & Replacement			P	P								
Push Contaminated Substrate into Surf			P	P	P							
Pavement Breakup			P	P	P							
Disc into Substrate			P	P								
Burning	P	P	P	P	P						P	P
Chemical Oil Stabilization	P	P	P	P	P	P	P	P				
Chemical Protection of Beaches	A	P	P	P	P	P	P			P	P	P
Chemical Cleaning of Beaches	A	P	P	P	P	P	P			P	P	P
Nutrient Enrichment	P	P	P	P	P	P	P	P	P	P	P	P
Bacterial Enrichment	P	P	P	P	P	P	P	P	P	P	P	P

A (ADVISED): Method which best achieves the goal of minimizing destruction or injury to the environment.

P (POSSIBLE): Viable and possibly useful but may result in limited adverse effects to the environment.

▒ SHADED AREA: Do not use this method.

Shoreline Cleanup Matrix for Heavy Oil (FIGURE 15.8)

SHORELINE CLEANUP MATRIX Heavy Oil	SHORELINE TYPES											
	Coastal Structures	Bluffs	Fine Sand Beach	Coarse Sand Beach	Shell Beach	Perched Sand Beach	Perched Shell Beach	Sandy Tidal Flat	Muddy Tidal Flat	Forested Swamp	Fresh Marsh	Salt Marsh
CLEANUP METHOD	1	2	3	4	5	6	7	8	9	10	11	12
No Action	P	P	P	P	P	P	P	P	P	P	P	P
Manual Debris Removal	A	A	A	A	P	P	P	P	P	P	P	P
Manual Sediment Removal		P	P	P	P	P	P	P				
Manual Sorbent Application	A	P	A	A	P	P	P	P	P	A	A	A
Manual Scraping	A	P	A	A	P	P	P	P	P			
Manual Vegetation Cutting										P	P	P
Motor Grader/Elevating Scraper		P	A	A	P	P	P	P				
Elevating Scraper		P	A	A	P	P	P	P				
Motor Grader/Front-End Loader		P	A	A	P	P	P	P				
Front-End Loader: Rubber-Tired or –Tracked		P	A	A	P	P	P	P				
Bulldozer: Rubber-Tired Front-End Loader		P	A	A	P	P	P	P				
Backhoe		P	A	A	P	P	P	P				
Beach Cleaner		P	A	A	P	P	P	P				
Dragline/Clamshell		P	A	A	P	P	P	P				
Cold Water Deluge Flooding	A	A	A	A	P	P	P	P	P	A	A	A
Low Pressure Cold Water Washing	A	P	P	P	P	P	P	P		P	P	P
High Pressure Cold Water Washing	A			P				P				
Low Pressure Hot Water Washing	A	P	P	P	P	P	P	P				
High Pressure Hot Water Washing	A			P				P				
Steam Cleaning	A											
Sand Blasting	A											
Vacuum	A	P	A	A	P	P	P	P	P	P	P	P
Trenching/Vacuum		P	P	A	P			P				
Sediment Removal, Cleaning, & Replacement			P	P								
Push Contaminated Substrate into Surf			P	P	P							
Pavement Breakup			P	P	P							
Disc into Substrate			P	P								
Burning	P	P	P	P	P						P	P
Chemical Oil Stabilization	P	P	P	P	P	P	P	P				
Chemical Protection of Beaches	A	P	P	P	P	P	P			P	P	P
Chemical Cleaning of Beaches	A	P	P	P	P	P	P			P	P	P
Nutrient Enrichment	P	P	P	P	P	P	P	P	P	P	P	P
Bacterial Enrichment	P	P	P	P	P	P	P	P	P	P	P	P

A (ADVISED): Method which best achieves the goal of minimizing destruction or injury to the environment.

P (POSSIBLE): Viable and possibly useful but may result in limited adverse effects to the environment.

SHADED AREA: Do not use this method.

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SECTION 16 - OIL AND DEBRIS DISPOSAL PROCEDURES

Disposal is one of the most difficult problems associated with the cleanup of oil spills. In many cases, the volume of oil-fouled debris may equal that of the total oil recovered. The fate of recovered oil generally depends on its type, degree or contamination with debris, and state of weathering. In some instances, relatively fresh oil that has not been contaminated by significant amounts of water and/or debris may be refined.

If time permits, debris should be removed from a shoreline prior to impact.

Special procedures and preventative measures are required in the handling of recovered oil and oil contaminated materials from a spill site. This section discusses guidelines and procedures for the handling, storage, and disposal of recovered oil and oiled debris. A Waste Management Plan is included as **FIGURE 16.1**.

A. OIL/WATER/DEBRIS SEPARATION

FIGURE 16.2 depicts separation methods for recovered oil/water/debris. The figure also depicts methods that may be employed to separate free and/or emulsified water from the oily liquid waste.

B. TEMPORARY STORAGE OF RECOVERED OIL

1) Oil recovered at sea via skimmer(s) is transferred to portable tanks onboard recovery vessels or barges. It is important to ensure temporary storage devices are of sufficient size to allow continued operations. Temporary storage methods are identified in **FIGURE 16.3**. Storage capacities of tanks associated with NRC equipment are given in **FIGURE E.4**. If storage capacities are not sufficient, an ocean going barge could be used as a central transfer point for skimmer tanks. Contact NRC for barges and see those listed in **APPENDIX F**.

2) The skimmer tanks allow for gravity separation of the oil from the water. The separated water is transferred through a hose and discharged forward of the recovery pump. This method is called "decanting". This process is vital to the efficient mechanical recovery of spilled oil because it allows maximum use of limited storage capacity, thereby increasing recovery operations. The Liaison Officer must obtain approval from the USCG and respective State agencies prior to decanting (see Liaison Officer Duties **SECTION 4**).

3) Oiled debris collected at sea requires specific handling. Contaminated materials should be placed in leakproof, sealable containers on the recovery vessels and transported to appropriate facilities for processing, recycling, or disposal.

4) Oil recovered from seashore areas will typically contain substantial quantities of water and debris. Excess water, sand, and other beach materials greatly increase the quantity of waste and its associated cost for transportation, processing, and disposal. To remedy this, different methods can be employed at the cleanup site to separate oiled debris from excess materials which may be returned to the shoreline. Using screens, filters, conveyor systems, and settling tanks, oil/water mixtures can be drained from debris and collected in temporary containers for further treatment.

5) Clean sand and beach materials can be separated from oiled materials and returned to the shoreline. Not only is this cost effective from an operations perspective, it also provides an efficient means of returning clean, excavated material back to the shoreline as a restorative measure.

6) Oil spills often occur in remote sites that are some distance from transportation routes and storage facilities. In these situations, temporary on-scene storage arrangements may be required. Oil may be stored in Baker tanks, tank trucks, 55-gallon drums, bladders, or empty fuel storage tanks. Such tanks permit decanting of water from the oil. If suitable containers are not available, oily waste may be temporarily stored in pits dug in the soil (FOSC and SOSC shall be contacted prior to doing this). These pits should be lined with plastic sheeting to prevent oil leakage and soil penetration. To minimize contamination of surrounding areas from leaching oil, storage sites should not be located on or adjacent to revines, gullies, streams, or the sides of the hills, but rather in areas with minimal of slope.

C. RECYCLING

1) If the oil is relatively unweathered and uncontaminated, it may be classified as recyclable. If recycling is possible, the oil should be transported under a regular bill of lading to a recycling facility.

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D. DISPOSAL REGULATIONS

1) Oil and oily wastes that are contaminated or excessively weathered wil require transport to an approved disposal site. Any transport or disposal of material that is considered hazardous waste must follow the requirements of the Resource Conservation and Recovery Act (RCRA).

2) Regulatory Guidelines

   a. Only state licensed hazardous material haulers are used to transport recovered oil. These licensed waste haulers must have a US EPA ID number and a state transporter ID number.

   b. Uniform Hazardous Waste Manifest must be filled out by the waste generator for each truckload of oily wastes hauled away for disposal.

   c. When completing the manifest, Marathon Oil Company is listed in the manifest as the generator. The manifest should be signed by the designated Marathon Oil Company representative, and marked with the statement: "This material is being disposed of by Marathon Oi Company as part of a response action in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300)".

   d. Recovered waste oil must be properly packaged and labeled prior to transport in accordance with 40 CFR 262.30.

   e. Recovered oil, or oily debris will not be transported from a site location until the State Oil & Gas Board of Alabama has approved a Certificate of Eligibility to Transport (Form OGB-25) for that transporter.

      Each shipment of recovered waste (oil/oily debris/spent solvents) from a site location to the final disposal site will be accompanied by a Waste Liquids Manifest (Form OGB-26).

      At the time of transport, Marathon Oil Company will initiate the manifest by completing and signing Part 1. After the transporter completes and signs Part II, Marathon Oil Company will mail the appropriate copy to the Board within ten (10) days. All other copies shall accompany the waste shipment.

Upon receipt of the waste liquids, the disposal company shal complete and sign Part III of the manifest. The transporter shall then retain the transporter's copy.

Upon completion of the manifest, the disposal company shall retain the disposer's copy and mail Marathon Oil Company's copy to Marathon Oil Company and original copy to the Board within ten (10) days.

Marathon Oil Company, the transporter and the disposal company will maintain file copies of the completed manifest for a period of at least three (3) years.

the disposal company's fully permitted facility will process, recycle, and/or dispose of the wastes within its permitted process.

E. DISPOSAL TRANSPORTATION AND DESIGNATED SITES

1. Transportation of oil and oily waste may be accomplished via tank truck or vacuum truck. OSRO's for the OSC's AOR have (or can obtain) trucks certified for waste oil transport.

2. Oil or oily debris recovered from a spill site may only be disposed of at authorized sites (refer to **FIGURE 16.4**).

FIGURE 16.1
WASTE MANAGEMENT PLAN

Always work safely in an environmentally sound manner. Minimize waste. Consider waste management and generation in all actions. Never mix waste; always segregate. Report any accident or incident to your supervisor immediately. Reference the Waste Management Plan for specific process required for each waste type.

A. INTRODUCTION

Incident Name: _____

Date of Incident: _____

Time of Incident: _____

Individual in Charge of Site: _____

B. SITE DESCRIPTION

Location of Site: _____

Description of Site Including Surrounding Area (beach, marsh, etc. - attach map): _____

Access/Limitations (highway/bridge limitations, boat/shallow water, etc. - attach maps): _____

Any Additional Information / Considerations: _____

Present Weather Conditions: _____

12-Hour Forecast: _____

24-Hour Forecast: _____

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FIGURE 16.1
WASTE MANAGEMENT PLAN

C. SITE-SPECIFIC SAFETY PLAN

This plan must be completed and attached before starting any physical work. One plan must be completed for each waste handling/storage area.

D. TYPE OF WASTE GENERATED FROM RESPONSE OPERATIONS

Wastes generated by oil spill cleanup fall into several different types. Use the following to identify your wastes. Remember - never mix wastes!

Waste Stream	Sources
Non-Hazardous	
Oily Liquid	Offshore and onshore recovery operations; vessels, vehicle, aircraft and equipment operations; personnel and equipment decontamination operations; waste storage and disposal area storm water runoff control operations; wildlife washing operations; equipment demobilization operations.
Non-Oily Liquid	Sewage collection operations; gray water collection operations; laundry operations; oil/water separation operations; wildlife rehabilitation operations.
Oil Solids	Offshore and onshore recovery operations; debris removal operations; in-situ burning operations; site restoration operations; personnel and equipment decontamination operations; equipment demobilization operations; wildlife capture, cleaning and rehabilitation operations.
Non-Oily Solids	Offshore and onshore recovery operations; debris removal operations; garbage collection operations; construction operations; site restoration operations; wildlife capture, cleaning and rehabilitation operations; equipment demobilization operations.
Hazardous	
	Vessels, vehicle, aircraft and equipment operations; dispersant use operations; wildlife rehabilitation operations.

E. CONTAINERIZED AND STORED WASTE

Waste accumulated at spill cleanup sites will have to be containerized and stored. Use **F through K** of possible waste streams to identify temporary storage techniques. Note that each waste stream will have to be classified as to its hazardous nature. Additionally, each container will have to be properly identified and marked for hazard communications as well as properly marked and labeled to meet Department of Transportation requirements before shipment. All hazardous waste must be transported immediately to the nearest shore base for continued storage.

FIGURE 16.1
WASTE MANAGEMENT PLAN

F. **TEMPORARY WASTE SITES** will have to be identified and established. These sites will need to be in close proximity to the cleanup site. Security requirements must be considered along with the access to outside transportation. These storage areas should be established with the following being considered: distance to living/working areas (cleanup operations as well as the general public), tidal influx, local wildlife impact, security, cleanup of spilled product and rainwater runoff. The following section should be completed for each temporary storage site. To establish security, contact the Logistics Section Chief.

Site Location	Security	Access

G. **COMPANY-APPROVED TREATMENT, RECYCLING AND DISPOSAL FACILITIES** are listed below. Prior contact must be made with the facility as soon as the waste is identified and an estimated volume is established.

Company Name, Address, Phone Number	Contact (Complete When Called)	Type Waste Approved For

H. **COMPANY-APPROVED WASTE TRANSPORTERS** should be used to haul all waste. The following is a list of transporters presently being used to transport wastes. The shipper must ensure that all Department of Transportation requirements are met. Additionally, all waste must be accompanied by a properly completed manifest or shipping paper. All containers must be secure and strong. All dump trucks or rolloff bins should be lined to prevent spillage or contamination of other areas.

Company Name, Address, Phone Number	Contact (Complete When Called)	Type Waste Approved For

FIGURE 16.1
WASTE MANAGEMENT PLAN

I. **WASTE MATERIAL MUST BE CONTROLLED WHEN ENTERING AND LEAVING** the storage area. The following can be used to accomplish this task.

Waste Type	Type / # Containers	Control Number	Date IN	Date OUT	Transporter	Disposer	Type of / Manifest #

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FIGURE 16.1
WASTE MANAGEMENT PLAN

J. If **ADDITIONAL HELP OR ASSISTANCE** is required, immediately contact your on-scene safety or environmental representative or contact the Disposal Group, the Operations Section Chief or the Safety Officer.

K. **EQUIPMENT, MANPOWER AND EXPENDITURES** must be controlled and documented. The following can be used for this purpose. If additional assistance is required in cost control, contact the Finance Section Chief. If additional assistance is required in purchasing or locating equipment or supplies, contact the Logistics Section Chief.

EQUIPMENT

Waste Handling Equipment	Vendor	S.O. #	Days Used	Cost Per Day	Total Cost

MANPOWER

Waste Handling Equipment	Vendor	S.O. #	Days Used	Cost Per Day	Total Cost

OTHER COSTS (Fuel, Tools, Repair, Container Rental/Purchase, etc.)

Waste Handling Equipment	Vendor	S.O. #	Days Used	Cost Per Day	Total Cost

FIGURE 16.1
WASTE MANAGEMENT PLAN

TOTAL COST = [ ]

L. **WASTE MANAGEMENT SITES** are identified in **this Section**.

M. Report all **ACCIDENTS/INCIDENTS** immediately to your supervisor. Always work safely and in an environmentally sound manner.

FIGURE 16.2
Oil/Water/Debris Separation Strategies

The different types of wastes generated during response operations require different disposal methods. Waste shall be separated by material type for temporary storage prior to transport. The following table lists some of the options available for separating oily wastes into liquid and solid components. The table also depicts methods that may be employed to separate free and/or emulsified water from the oily liquid waste.

TYPE OF MATERIAL	SEPARATION METHODS
(1) LIQUIDS	
Non-emulsified oils	Gravity separation of free water
Emulsified oils	Emulsion broken to release water by: • heat treatment • emulsion breaking chemicals • centrifuge • filter/belt press
(2) SOLIDS	
Oil mixed with sand	• Collection of liquid oil leaching from sand during temporary storage • Extraction of oil from sand by washing with water or solvent • Mechanical sand cleaner • Removal of solid oils by sieving
Oil mixed with cobbles, pebbles or shingle	• Screening • Collection of liquid oil leaching from beach material during temporary storage • Mechanical sand/gravel cleaner • Extraction of oil from beach material by washing with water or solvent
Oil mixed with wood, plastics, seaweed and sorbents	• Screening • Collection of liquid oil leaching from debris during temporary storage • Flushing of oil from debris with water
Tar balls	Separation from sand by sieving

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FIGURE 16.3
TEMPORARY STORAGE METHODS

Container	On-shore	Off-shore	Solids	Liquids	Notes
Barrels	✓	✓	✓	✓	May require handling devices.
Tank Trucks	✓			✓	Consider road access onshore. Barge-mounted offshore.
Dump/Flat Bed Trucks	✓		✓		Require impermeable liner and cover. Consider flammability of vapors at mufflers.
Barges		✓	✓	✓	Liquids only in tanks. Consider venting of tanks.
Oil Storage Tanks	✓	✓		✓	Consider problems of large volumes of water in oil.
Bladders	✓	✓		✓	May require special hoses or pumps for oil transfer.
Pits	✓		✓	✓	Liner(s) required.
Roll-off Bins	✓		✓		Require impermeable liner and cover.
Mud Tanks	✓	✓	✓	✓	500 gallon - 500 Bbls
Frac Tanks	✓	✓	✓	✓	Portable, can be deployed anywhere.

Class I disposal sites are designated to accept oil and oily waste and have beer granted the necessary state permit to do so. The following is a list of waste/salvage oi storage, disposal and recycling facilities:

FIGURE 16.4
CLASS I DISPOSAL SITES

STATE	CITY	NAME	PHONE
Alabama	Theodore	Environmental Treatment Team	(334) 443-6324
Louisiana	Baton Rouge	LA Oil Recycle Reusse, Inc.	(504) 357-2285
	Belle Chasse	Maritime Oil Recovery, Inc.	(504) 361-8991
	Cameron	Romero Brothers Salvage	(318) 569-2303
	Church Point	J & J Trading Company	(318) 668-4775
	Iota	Marco of Iota, Inc.	(318) 779-2509
	Jeanerette	Massey Crude Oil	(318) 276-5163
	Lafayette	Newpark Environmental	(318) 984-4445
	Lake Charles	Hydro-Vac	(318) 433-1385
		K & G Petroleum Services	(318) 433-9486
		Rebel Energy, Inc.	(318) 433-4619
	Livonia	Reliable Production Services	(504) 383-1100
	New Orleans	International Petroleum	(504) 254-9021
	Oil City	Diversified Petroleum, Inc.	(318) 985-6298
	Rayville	Rickland Oil Salvage, Inc.	(318) 728-6703
	Walker	Woodside Land-Fill	(504) 665-8225
Mississippi	Gautier	Waste Oil Collectors	(228) 497-4585
	Pass Christian	Pecan Grove	(228) 255-5553

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SECTION 17 - WILDLIFE REHABILITATION PROCEDURES

1. BIRD RESCUE AND REHABILITATION

If a spill results in damage to wildlife, Marathon Oil Company will utilize the services of either Wildlife Rehab & Education, Inc. (WR&E) or International Bird Rescue Research Center (IBRRC). Refer to **FIGURE 17.1**, WR&E's Standard Operating Procedures for Wildlife Rescue and Rehabilitation and **FIGURE 17.2**, IBRRC's Standard Operating Procedures for Wildlife Rescue and Rehabilitation.

Notification: Only trained personnel from the U.S. Fish and Wildlife Service or the State Parks and Wildlife Departments, or rehabilitators permitted by these agencies are allowed to capture and rehabilitate oiled wildlife. During a spill incident, personnel from the Federal and State Wildlife Services within Unified Command will determine when and if wildlife will be rescued and rehabilitated. Refer to **SECTION 9** for Federal and State Agency contacts as well as Wildlife Rehabilitation Specialists.

Capture: Capturing oiled wildlife may be done from a boat with a dip net or netting on the bank or shore. Animals should not be chased into the vegetated areas and oiled wildlife should not be followed into vegetation. Once captured, oiled animals will be wrapped in absorbent pads to prevent preening or further ingestion of the oil. Animals will be placed in a vented box and taken to a designated cleanup area. Protected wildlife may only be cleaned by federal and state permitted oiled wildlife rehabilitators.

Treatment Centers: If more than 20 oiled animals per day are being captured and brought in for cleaning, state and federal agencies may authorize the construction of a wildlife treatment facility. If treatment centers are not available nearby, temporary facilities must be built in local warehouses or other large buildings that offer electricity, hot water, and ventilation.

Bird Rehab:

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- Minimizing stress is critical for ensuring that captured birds survive. Rescue parties will usually contact rehabilitation workers even before they arrive, to make sure that they are prepared to care for the captured birds immediately. This ensures that the birds are treated as quickly as possible.

- Once a bird has been brought to a rehabilitation center, certain basic procedures are followed. First, oil is flushed from its eyes and intestines. Heavily oiled birds are wiped with absorbent cloths to remove patches of oil. Rehabilitation workers also conduct an initial examination to detect broken

bones, cuts, or other injuries. Stomach-coating medicines may be administered orally to prevent additional absorption of oil inside the bird's stomach. The bird is then warmed and placed in a quiet area. Curtains are often hung to limit its contact with people.

- Nutrition is essential for the recovery of oiled birds. Wild birds will generally learn to feed themselves from pans or other containers as soon as they begin to feel healthy. In many cases, however, the birds must be force-fed until they are able to feed on their own.

- After a bird is alert, responsive, stable and its body's fluid balance restored to normal, detergent is gently stroked into its feathers to remove the oil. An oiled bird may require three or more washings to remove the oil entirely.

- After its feathers are completely rinsed, the bird is placed in a clean holding pen lined with sheets or towels. The pen is warmed with heat lamps, and hung with curtains to minimize human contact. If behavior appears normal and a bird's condition remains stable, it is allowed to swim. The bird then begins to preen and realign its feathers to restore them to their original structure, helping the bird to become waterproof again.

Prior to Release: Before a bird can be considered for release, it must "pass" the waterproofing test. That is, it must demonstrate buoyancy (the ability to float) and water-repellency (the ability to keep water away from its body). Once a bird passes the test, it is slowly exposed to temperatures comparable to outside weather. Its weight and muscle structure should be average for its species, and it should show no signs of disease. Rehabilitated birds are banded by the US Fish and Wildlife Service, and are released early in the day to an appropriate habitat.

2. Handling of Oiled Sea Turtles

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Discovery: A sea turtle might get oiled in a massive spill when the water surface is covered with mousse or unweathered oil. It would do so when coming up to breath. In these cases the forequarters of the animal may be covered in oil. A more usual occurrence is with the smaller animals (up to "dinner-plate" size) during their pelagic phase. Here they bite into sticky tar balls among the Sargassum weed, sometimes gluing their jaws shut. Do not attempt to pry their jaws open (it is exceptionally difficult to do this). If their nostrils are clear, they will be able to breathe. Often an animal will wash ashore where it will become further oiled on its underside, limbs and carapace.

Avoid Dangerous Contact: There is a certain amount of danger to personnel in handling live sea turtles. Their jaws are very powerful and even small animals can bite painfully. A larger animal can remove a finger with one bite. Large

animals have powerful front limbs which they slap vigorously when lifted. The slapping limbs will cause great pain if you lift the animal on either side of the carapace. A claw on the front of each limb is used to tear food. It can easily tear hands, too, as can metal ID tags some turtles may have on the railing edge of each front limb. Many large sea turtles, especially loggerheads, have epizoans covering their carapaces. Often these are sharp barnacles and a struggling turtle can inflict wounds in this way. Occasionally loggerheads will also sport marine leaches around their necks or cloacal region. The turtle rescuer may find themselves wearing leaches after handling a live loggerhead. They do not suck blood but cause some consternation when one discovers them. Wear gloves when handling sea-turtles, especially the big ones.

Lifting Oiled Sea Turtles: Most turtles found locally are juveniles or subadults. Often, loggerheads (the most common locally) will weigh in from 50 to 150 lbs. The record here is 275 lbs., but loggerheads and greens could exceed 400 lbs. Handling such a large, strong animal is difficult. Under about fifty pounds, a person can pick up a turtle with one hand holding the front-center of the carapace where it joins the fleshy neck, and one hand holding the rear of the carapace above the tail. Heavier than that requires two people grasping the carapace at the sides (this way you get slapped) or by each taking a front limb and the carapace rear. The limbs will try to move so be careful not to let go.

Transporting Oiled Sea Turtles: Hatchlings can be put in a clean container with sea-water deep enough for them to swim. If they are very weak, the water should be shallow. They should be transported inside a vehicle's cab with someone other than the driver holding the container. Large juveniles can be transported in a plastic container with the animal resting on a clean piece of foam soaked in sea water. A lid can cover the container but holes must be provided to allow air flow into the container. Again, these should be carried inside the vehicle. Larger animals can be put In sturdy cardboard or wooden boxes with little room for them to move their front limbs (i.e. the box will constrain their attempt to escape). Their bodies should not be allowed to dry out, especially in sunlight. Really big animals may have to be transported in the bed of a pickup truck. They will try to escape and can move surprisingly fast. They will try to climb the sides of the truck bed. Keep covered with wet towels and always have someone in the back with the animal. Do not drive fast for the safety of both the animal and the person in the back. Do not put the animals on their backs! They can remain out of the water for a long time. They can tolerate fresh water if necessary. They can bend their necks to snap at you, but are not as flexible as some of the fresh-water turtles. Wash your hands thoroughly after handling.

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SUPPLIES SOURCES

Local supermarket and department stores as appropriate.

Most supplies are readily available locally. Detailed lists of supplies can be obtained from rehabbers. A list of supplies will include, but not be limited to, some of the following:

- Protective gloves and eye goggles for personal safety
- Long handled, fine mesh dip nets
- Cardboard pet carriers or boxes
- Towels, rags, absorbent pads, diapers
- Newspapers

- Dawn detergent
- Tables
- Wash basins
- Baby scales
- Metric scales
- Heaters, pet dryers

- Toxaban and oral fluids through veterinary outlets
- Means of heating oral fluids in winter (hot plate)
- Feeding catheters
- Eye wash, artificial tears
- Safety pins (for diapers)
- Lubricating jelly
- Oral thermometers

- Garbage bags (for trash and corpses)
- Record forms
- Clip boards, binders, pencils, etc.

Feeds will be available from several sources. Fresh seafood items are available at local supermarkets. Long term economy may be achieved by purchasing from bait stands or shrimper bycatch, but beware of compounding problems with improperly cared for (spoiled) seafood.

FIGURE 17.1

WR&E

WILDLIFE REHAB & EDUCATION, INC.
Oiled Wildlife Response Team

Sharon Schmalz 951 Power Street League City, Texas 77573	
Home Phone	(281) 332-8319
Pager	(713) 279-1417
Pager	(713) 604-0303

Standard Operating Procedures

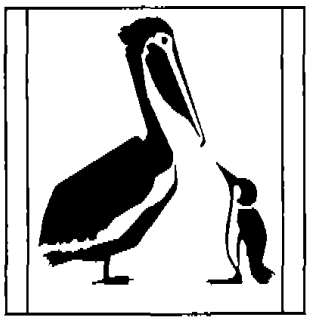
1. When it is first determined that bird rescue and rehabilitation operations may be needed, Planning will notify the Wildlife Rehab & Education (WR&E) office as soon as possible.

2. The WR&E Oiled Wildlife Response Team will advise state and federal agencies and Marathon Oil Company if a rehabilitation facility needs to be set up.

3. THE WR&E Response Team will supervise the medical care, cleaning, aftercare and release of the oiled wildlife and act as liaison with state and federal agencies and Marathon Oil Company regarding the oiled wildlife response.

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FIGURE 17.2



INTERNATIONAL
BIRD RESCUE RESEARCH CENTER
699 Potter St., Aquatic Park, Berkeley, CA 94710
510 841-9086 - 510 841-9089 Fax

STANDARD OPERATING PROCEDURE

Standard Operating Procedure to activate IBRRC response is as follows:

1. When it is first determined that bird rescue and rehabilitation operations may be needed, notify the IBRRC Berkeley office as soon as possible. If you reach the answering service, they wil immediately contact Jay Holcomb (Director), John Sky (Berkeley Office Manager), Millicent Wood (Southern California Representative) and Madeline Averett (Gulf States Representative) by telephone and beeper.

CONTACT TELEPHONE NUMBERS

IBRRC Headquarters - Northern California

- Initial Contact
  699 Potter Street, Berkeley, California 94710
  (Office Hours: Monday - Friday 9:00 AM - 5:00 PM PST)
  24 Hour Number ..... (510) 841-9086

- Contact
  Jay Holcomb
  Home ..... (707) 429-4052
  Pager ..... (800) 759-7243
  Pin Number 501-5856
  Mobile Phone ..... (510) 409-4598
  John Sky
  Home ..... (415) 683-8420

Southern California

- Initial Contact
  Millicent (Mimi) Wood
  Home ..... (818) 951-3656
  Pager ..... (800) 759-7243
  Pin Number 277-2079
  Mobile Phone ..... (213) 369-9535

FIGURE 17.2

Gulf States
Texas Oiled Wildlife Response Program- TOWRP (business line) ..... (214) 377-9001
(Office Hours: Monday and Friday only)

- Initial Contact
  Madeline Averett
  Pager ..... (800) 759-7243
  Pin Number 546-4375

Washington
Alice Berkner
Home ..... (206) 665-6433
Curt Clumpner
Home ..... (206) 325-7242
Pager ..... (800) 759-7243
Pin Number 279-3165

Alaska
Alaska Wildlife Response Center ..... (907) 562-1326
(Facility Only - No Personnel)
Personnel in Berkeley ..... (510) 841-9086
Tami Thomas (Can activate the AWRC) ..... (907) 377-0606

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2. The first IBRRC personnel notified will call the responsible party (RP) and acquire details about the oil spill (i.e. amount of oil spilled, length of coastline impacted, number of birds already affected, etc.).

3. The first IBRRC personnel contacted will in turn place the IBRRC Response Team on alert. The Director of IBRRC will decide which response team members will be sent for the initial response based upon the information given by the RP. If there is an IBRRC regional response team member located near the area of the spill, she/he will be identified and alerted first, whenever possible. This IBRRC representative will arrive at the spill site or command center as soon as possible, usually within five hours of the original call for assistance. Where travel time permits, IBRRC guarantees a presence at the spill site within 24 hours of the original call for response.

4. IBRRC will be responsible for the set up and management of the search and collection program, the oiled bird rescue centers and satellite facilities (stabilization centers) required during the spill and all volunteer management. IBRRC's staff / response team members are trained and experienced wildlife specialists who have cared for an extensive variety of wildlife and have managed large numbers of people during oil spills.

5. Once IBRRC staff arrives on scene and assesses the impact on wildlife, a meeting will be held with the RP and U.S. Fish & Wildlife to discuss and make plans regarding how best to proceed with the various aspects of the wildlife capture and rehabilitation program. IBRRC works under permit from State and Federal fish and wildlife agencies. These agencies must be informed of plans and observations on a daily basis. IBRRC staff is added or dismissed only with concurrence from the RP.

FIGURE 17.2

STANDARD OPERATION PROCEDURE (Continued)

1, Notify Appropriate Parties
- Wildlife trustee agencies (federal/state)
  a) Request input to strategies
- Trained oiled wildlife rehab specialists
- Local residents with knowledge of area
  a) Fishermen
  b) Wildlife groups
- Local volunteer organizations

2. Surveillance
- Maps
- Air transportation
  a) Sea planes
  b) Helicopters
- Ground transportation
  a) Boats

3. Strategies
- Suitable facility
  a) Adequate space
  b) Air circulation
  c) Office area
  d) Kitchen area
- Location of facility
  a) Close to staging area
  b) Away from high traffic area
  c) Secure area
- Number of personnel
  a) Initial assessment team
  b) Additional personnel
  c) Volunteers

4. Search and Rescue
- Safety briefing
- Supplies
  a) Animal transport carriers
  b) Long handled nets
  c) PPE required
- Aircraft for over flights
- Vessels for capture
- Ground transportation
  a) Personnel
  b) Animals
- Communications
  a) Radios
  b) Cellular telephones
  c) Pagers
- Maps

5. Operations
- Facility
- Mobile units
  a) Bird washing trailer
  b) Incident command trailer
- Water supply
  a) Adequate pressure
- Pens, pools and cages
  a) Carpenters
  b) Plumbers
  c) Electricians
- Supplies
  a) Order
  b) Delivery
- Security
- Training of volunteers
  a) Classroom space
- Nearby lodging & meals for personnel
- Waste disposal
  a) Holding tank
  b) Vacuum truck

6. Demobilization

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SECTION 18 - DISPERSANT USE PLAN

A. Dispersant Inventory

NRC stockpiles two (2) types of dispersant, *COREXIT 9527* and *COREXIT 9500*. Both products are included on the NCP Product Schedule. *COREXIT 9527* was developed in the 1970's and is the most widely tested and used dispersant in the world. *COREXIT 9500* was developed in the early 1990's and is more effective on heavier crude and has an environmentally friendlier solvent system. A summary of the physical properties of *COREXIT 9500* and *COREXIT 9527* is provided below:

COREXIT 9500

- Specific gravity at 60°F:.....0.95
- Density at 60°F:..... 7.93 lb/gal
- Flash point:..... 176°F
- Pour point:.....-71°F
- Viscosity at 32°F:..... 177 cst
- Viscosity at 60°F:..... 70 cst
- Viscosity at 100°F:..... 27 cst
- Solubility in fresh water: ..... soluble

COREXIT 9527

- Specific gravity at 60°F:.....0.995
- Density at 60°F:..... 8.29 lb/gal
- Flash point:..... 162°F
- Pour point:.....-45°F
- Viscosity at 100°F:..... 22 cst
- Viscosity at 150°F:..... 9 cst
- Solubility in fresh water: ..... soluble
- Solubility in hydrocarbon solvents: ..... soluble
- Solubility in sea water:..... slightly soluble

NRC STOCKPILE		
TYPE	**QUANTITY**	**LOCATION**
9527	5,000 gallons	Cameron, Morgan City, Leeville & Venice, LA
9500	2,000 gallons	Through ASI (Houma-Terrebonne Airport)

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In the event NRC dispersant inventories become depleted, a minimum inventory of 200 drums of *COREXIT 9500* is stockpiled in Sugarland, Texas, with sufficient raw materials on hand to immediately manufacture an additional 200 drums. For *COREXIT 9500* and *COREXIT 9527*, 800 drums per day can be manufactured 3 days after receipt of an order.

NALCO/Exxon Energy Chemicals
7705 Highway 90A
Sugarland, Texas 77487

Telephone: (800) 333-3714 (Order Center)
(281) 263-7200 (After hours)

B. Toxicity Data

Toxicity values presented for the various species represent the results of a bioassay used to determine dispersant toxicity to these species (LC 50 test). The LC 50 value given is the concentration (ppm) causing 50 percent mortality over a given period of time. Following is the toxicity summary for the dispersant:

Toxicity Summary (24, 48, & 96 Hour LC 50, PPM)
COREXIT 9527 / 9500

Species		Hours Exposed	9527	9500
1)	Zebra Fish (Brachydanio)	24	550	> 400
2)	Mummichog (Fundulus)	96	99 – 124	140
3)	Brine Shrimp (Artemia)	48	52 – 104	21
4)	Mysidopsis Bahia (Mysid)	48	24.1	32.2

C. Application Equipment

#	Equipment	Quantity/ Type	Location	Contractor	Phone No.
1	Aircraft Spraying	(2) DC 3 (1) DC 4	Houma	ASI	(504) 851-6391
2	Dispersant Spotter Aircraft	(1) Aero Commander	Houma	ASI	(504) 851-6391

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D. Application Methods

1) Aerial Spraying:

Aircraft provide the most rapid method of applying dispersants to an oil spill and a variety of aircraft can be used for spraying. For aerial spraying, *COREXIT 9527/9500* is applied undiluted. A typical treatment rate is two to ten US gallons per acre or a DOR (dispersant to oil ratio) of 1:50 to 1:10. However, this can vary depending on the type of oil, degree of weathering, temperature and thickness of the oil slick. Typical application altitudes of 50 to 100 feet have been used, although higher altitudes may be effective under certain conditions. Actual effective altitudes will depend on the application equipment, weather and aircraft.

Careful selection of spray nozzles is critical to achieve desired dose levels, since droplet size must be controlled. Many nozzles used for agricultural spraying are of low capacity and produce too fine a spray. A quarter-inch open pipe may be all that is necessary if the aircraft travels at 120 mph (104 knots) or more, since the air shear at these speeds will be sufficient to break the dispersant into the proper sized droplets.

2) Boat Spraying:

COREXIT 9527/9500 may also be applied by workboats equipped with spray booms mounted ahead of the bow wake or as far forward as possible. The preferred and most effective method of application from a workboat is to use a low-volume, low-pressure pump so the chemical can be applied undiluted. Spray equipment designed to provide a five to ten percent diluted dispersant solution to the spray booms can also be used.

COREXIT 9527/9500 should be applied as droplets, not fogged or atomized. Natural wave or boat wake action usually provides adequate mixing energy to disperse the oil.

Recent tests have indicated that a fire monitor modified with a screen cap for droplet size control may also be useful for applying *COREXIT 9527/9500*. Due to the increased volume output and the greater reach of the fire monitor, significantly more area can be covered in a shorter period of time.

E. Approval Procedures and Conditions for Use

De Soto Canyon 927 is physically located within the area of responsibility of the Region IV Regional Response Team (RRT IV). However, spill trajectory indicates the potential for movement of a slick into the area of responsibility of the Region VI Regional Response Team (RRT VI). A description of the dispersant approval procedures and conditions for use respective to both Regional Response Team areas IV and VI follows.

Current National Response Team (NRT) policy provides the USCG Federal On-Scene Coordinator (FOSC) with pre-authorization to use dispersants in response to oil discharges within both RRT IV and RRT VI. This pre-authorization allows the FOSC to employ dispersants in an attempt to:

a. Prevent or substantially reduce a hazard to human life;

b. Minimize the environmental impact of the spilled oil; or

c. Reduce or eliminate economic or aesthetic losses which would otherwise presumably occur without the use of this response technique.

The decision to use dispersants within the pre-authorization protocols rests solely with the pre-designated FOSC and cannot be further delegated.

Region IV - Dispersant Protocols

1) Dispersants will only be used when they are expected to prevent or minimize substantial threat to public health or welfare, or to mitigate or prevent environmental damage.

2) Generally, pre-authorization exists 3 nautical miles seaward of any land mass, providing that the water is at least 10 meters in depth (see **FIGURE 18.1** for reference map). However, some special management areas are excluded from pre-authorization. Three zones have been established to delineate locations and conditions under which dispersant application operations may take place in waters of federal Region IV:

<u>Green Zone - Pre-Approved Zone (Decision lies with the FOSC)</u>

- Must meet <u>all</u> of the following requirements:
  - Waters are not within a "Yellow" or "Red" zone.
  - Waters are at least 3 miles seaward of any shoreline.
  - Waters are at least 10 meters in depth.

Yellow Zone - Waters Requiring Case-By-Case Approval by RRT IV

- Waters are not within a "Red" zone
- Meets any of the following requirements:
  - Waters fall under state or special federal management jurisdiction (e.g., NMS, NWR, SP).
  - Waters are within 3 nautical miles of a shoreline and/or falling under state jurisdiction.
  - Waters are less than 10 meters in depth.
  - Waters are in mangrove or coastal wetland ecosystems (including both submerged algal and seagrass beds), or directly over coral communities which are in less than 10 meters of water.

The FOSC is only granted authority to conduct dispersant operations in the Yellow zone when concurrence has been given by EPA and the affected states(s), and after consultation with DOC and DOI.

Red Zone - Exclusion Zone

- Dispersant use is prohibited unless application is necessary to prevent or mitigate a risk to human health and safety and/or an emergency modification of policy is made on an incident-specific basis.
- No Red zones are currently defined.

3) The USCG will immediately notify the RRT IV members and consider their advice when evaluating the decision to use dispersants.

4) Only those products specifically listed in the EPA National Contingency Plan's (NCP) Product Schedule as dispersants will be considered for use during dispersant application operations (Corexit 9500 and 9527 are approved).

5) Prior to commencing application operations, an on-site survey will be conducted, in consultation with natural resource specialists, to determine if any threatened or endangered species are present in the projected application area or otherwise at risk from dispersant applications.

6) The USCG FOSC must comply with all Occupational Health and Safety Administration (OSHA) regulations.

7) Information on the Documentation/Application Form (**FIGURE 18.2**) shall be completed for all dispersant applications and provided to RRT IV members in a timely manner for documentation and informational purposes.

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8) The FOSC will activate the Special Monitoring of Applied Response Technologies (SMART).

Region VI - Dispersant Protocols

1) Dispersant operations are pre-approved only for offshore waters which are at least 3 nautical miles from the shoreline and no less than 10 meters in depth. The FOSC may activate the RRT VI Pre-approved Dispersant Use Decision Making Process. If the spill is inside the 10 meter contour line or the 3 mile line, the USCG must refer to the RRT VI for dispersant approval.

2) Only those products specifically listed in the EPA National Contingency Plan's (NCP) Product Schedule as dispersants will be considered for use during dispersant application operations (Corexit 9500 and 9527 are approved).

3) Pre-approval is for aerial application only. If other application techniques are desired (e.g., sprayed from vessels), approval by the RRT VI is required before those techniques can be employed.

4) Pre-approval allows for maximum dispersant spray coverage of suitable slick areas (those regions of a slick having visibly thick oil, as opposed to a sheen).

5) Aerial dispersant application must provide for a dispersant controller who is over the spray zone(s) in separate aircraft from the dispersant spray aircraft. The controller must be qualified and be able to direct the dispersant spray aircraft in carrying out the operation inclusive of avoiding the spraying of birds (by 1,000 feet horizontal distance), marine mammals and turtles that may be present in the application area.

6) The Planning Section Chief should discuss dispersant application with the FOSC, fill in the Dispersant Approval Checklist (**FIGURE 18.3**) and fax the form to the FOSC for approval.

7) The FOSC will activate the Special Monitoring of Advanced Response Technologies (SMART) team.

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F. Dispersant Spray Procedures

Dispersant spray procedures are outlined in **FIGURE 18.4** and a checklist for dispersant observations is outlined in **FIGURE 18.5**. A Dispersant Safety Plan is included as **FIGURE 18.6**.

FIGURE 18.1
REGION IV REGIONAL RESPONSE TEAM DISPERSANT PRE-APPROVAL ZONES

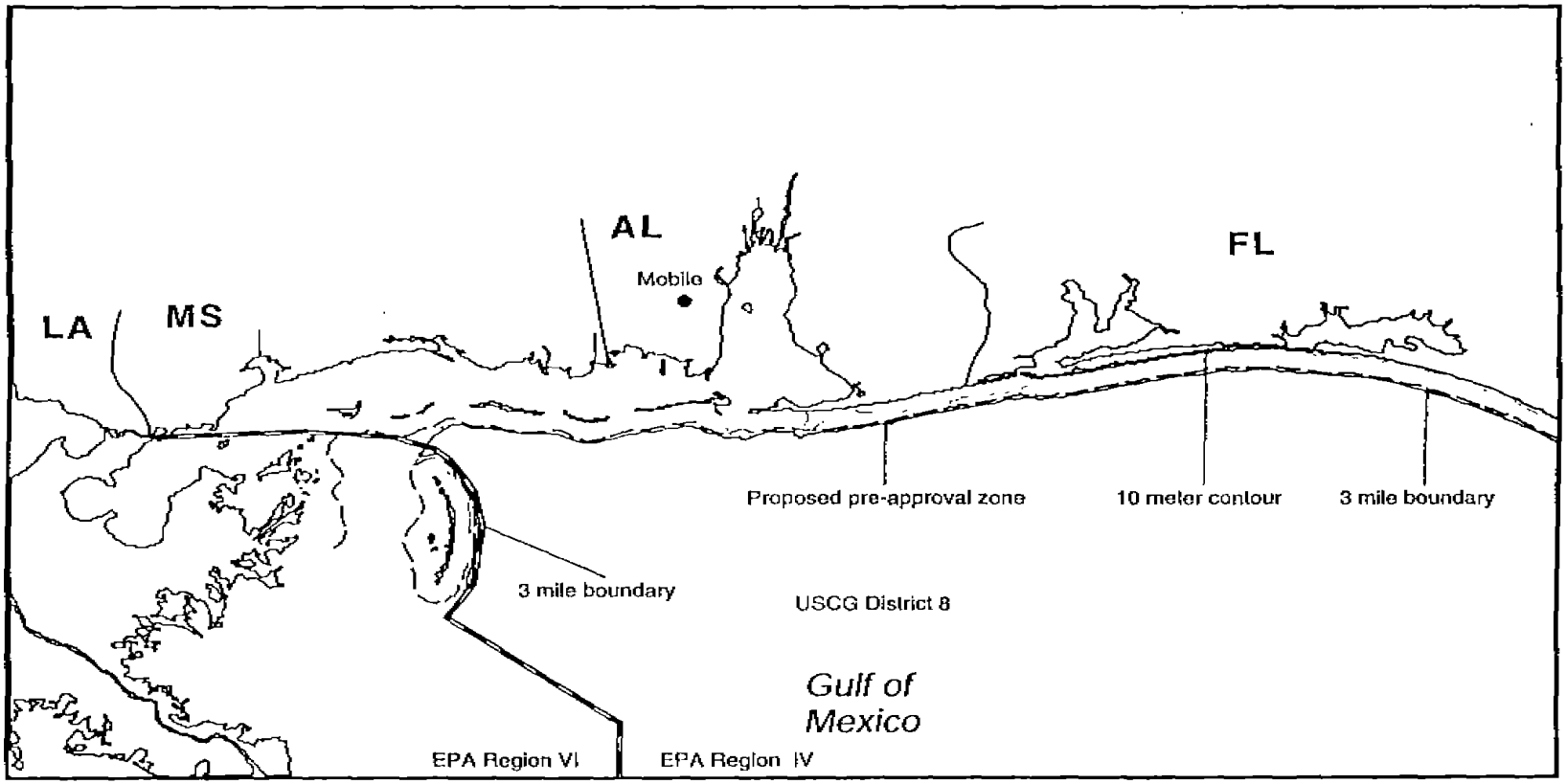
Region IV Regional Response Team

Dispersant Pre-Approval Zones
prepared by NOAA

Nautical miles
0 20

USE ONLY AS A GENERAL REFERENCE

Graphic does not show precise locations of boundaries



LA, MS, AL, FL map2

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FIGURE 18.1
REGION IV REGIONAL RESPONSE TEAM DISPERSANT PRE-APPROVAL ZONES

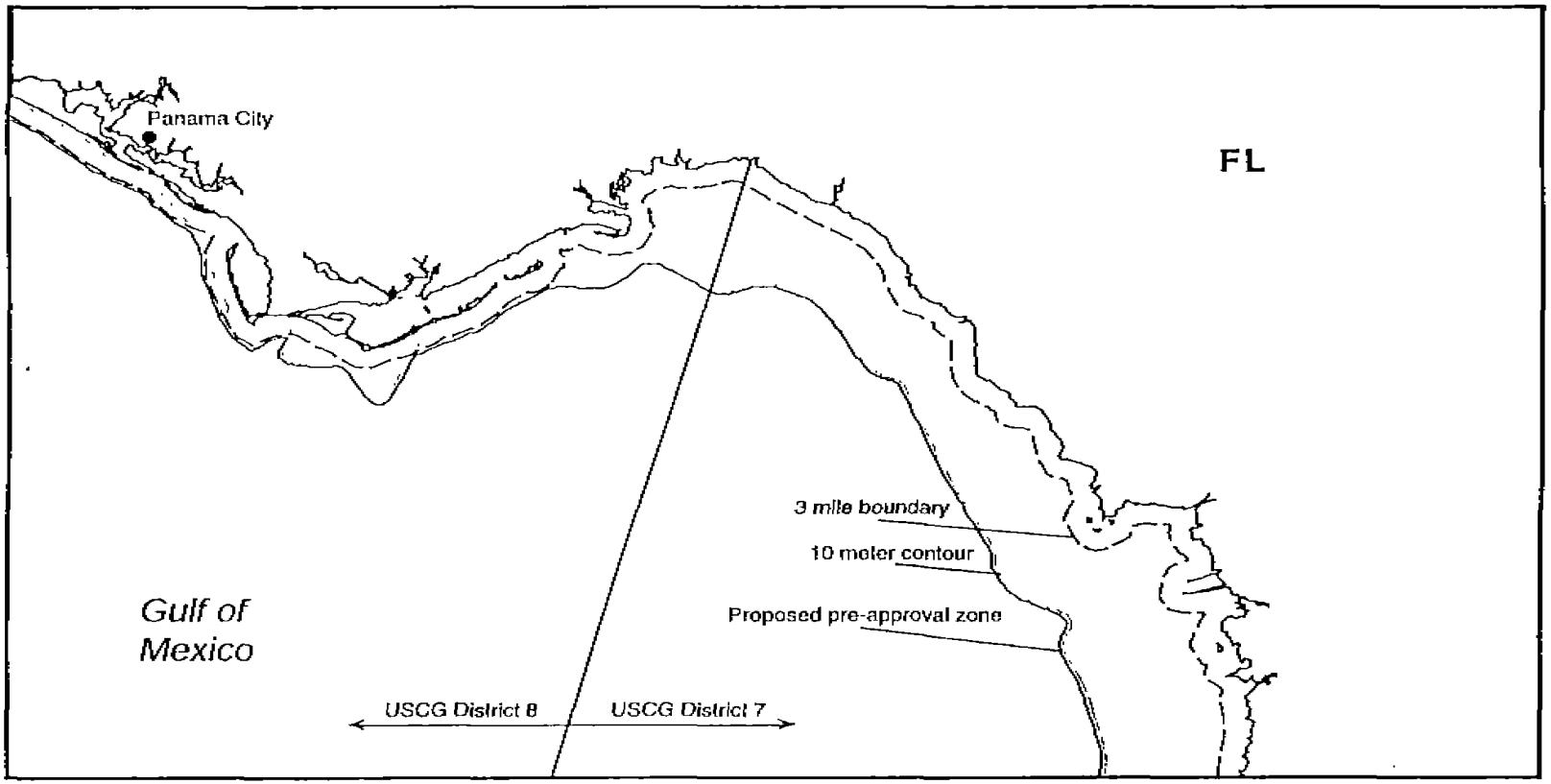
Region IV Regional Response Team

Dispersant Pre-Approval Zones
prepared by NOAA

Nautical miles
0 20

USE ONLY AS A GENERAL REFERENCE

Graphic does not show precise locations of boundaries



Upper Western Florida map

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FIGURE 18.2
RRT REGION IV DOCUMENTATION/APPLICATION FORM FOR DISPERSANT USE

Name of spill incident: _____

Responsible Party (if known): _____

Date and Time of spill Incident: _____

I. OIL TYPE:

1. Spilled product name (if known): _____

2. Viscosity: _____

3. API Gravity: _____

4. Pour point: _____

5. % Evaporation in: (24 hours) _____

(48 hours) _____

6. Did oil emulsify within the operational period? _____

** Any information from visual overflights of the slick, including estimations of slick thickness, should be included here. All additional available information pertaining to physical characterization of spilled oil should be included here.

II. ENVIRONMENTAL CONDITIONS:

1. Wind speed _____

2. Wind direction _____

3. Visibility _____

4. Ceiling _____

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FIGURE 18.2
RRT REGION IV DOCUMENTATION/APPLICATION FORM FOR DISPERSANT USE (Continued)

III. DESCRIPTION OF SPILL INCIDENT AND SPILL SITE:

Note all relevant details concerning the spill incident and spill site here. Be sure to note whether the spill was a one-time or continuous release, the amount of cargo remaining aboard the vessel, the stability of the vessel, and sensitive environmental conditions in the vicinity of the vessel. An estimated amount of oil on the water should be made, if possible, by using available information on the area of the slick and the estimated slick thickness (as indicated by the color of the slick). Also included should be a description of the location of the spill site, including the nearest major port.

IV. DESCRIPTION OF AREA OVER WHICH DISPERSANTS WERE APPLIED:

1. Distance from shoreline _____

2. Depth of water _____

3. Jurisdiction (i.e. federal or state) _____

4. Special management zone area (as defined in LOAs) _____

5. Safety zone established in operational area _____

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FIGURE 18.2
RRT REGION IV DOCUMENTATION/APPLICATION FORM FOR DISPERSANT USE (Continued)

V. AVAILABILITY OF PERSONNEL AND EQUIPMENT:

1. Availability of application and spotter aircraft: _____

   Source: _____

   Point of contact: _____

   Type: _____

   Travel time to spill: _____

2. Type of aircraft used _____

3. Aircraft's dispersant load capability _____

4. Availability of qualified personnel _____

   Source: _____

   Point of contact: _____

   Travel time to spill _____

5. Time required for delivery to the aircraft staging area _____

_____

VI. INFORMATION ON DISPERSANT PRODUCT:

1. Name of dispersant: _____

2. Manufacturer: _____

3. Amount available: _____

4. Source: _____

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FIGURE 18.2
RRT REGION IV DOCUMENTATION/APPLICATION FORM FOR DISPERSANT USE (Continued)

** A Material Safety Data Sheet of the product should be attached here.

VII. IMPLEMENTATION OF RECOMMENDED MONITORING PROTOCOLS:

1. Was the Gulf Strike Team's Special Monitoring of Applied Response Technologies deployed _____

** A full report documenting the activities and results of any monitoring activities should be attached here.

FIGURE 18.3
DISPERSANT PRE-APPROVAL INITIAL CALL CHECKLIST

Complete the following information as well as possible in preparation for the initial phone call to the Coast Guard MSO.

Date/Time of Call to MSO: ____/____/____ @ _____ (24-hour clock)

Name of MSO Rep Taking Call: _____

Phone Number: _____ City: _____

Name of Co. Rep Making Call: _____

Primary Phone No. for Return Call: _____

Alternate Number: _____

Company Address: _____

Spill Information

Date and Time of Spill: ____/____/____ @ _____ (24-hour clock)

Location: Latitude: _____ N Longitude: _____ W

Block Name and Number: _____

Type of Release: Instantaneous: ☐ or Continuous: ☐

Oil: Name: _____ (if known)

API Gravity: _____° Pour Point: _____° C or F (if known)

Amount Spilled: _____ Gallons or Barrels (estimated)

Flow Rate if Continuous: _____ bbl/hr or gal/min (estimated)

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On-Scene Weather

Wind Direction (from): _____ Wind Speed: _____ knots

Surface Current (to): _____ Speed: _____ knots

Visibility: _____ Nautical Miles (need minimum of 3 Nautical Miles)
Ceiling: _____ Feet (need minimum of 1,000 feet)

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FIGURE 18.3
DISPERSANT PRE-APPROVAL INITIAL CALL CHECKLIST

Complete the following information as well as possible in preparation for the initial phone call to the Coast Guard MSO.

Dispersant Spray Operations

- Marathon Oil Company is a member of National Response Corporation.
- Marathon Oil Company intends to activate standing contract with Airborne Support Inc.

Dispersant Name:
- ☐ 9500 – 28,955 gallons Sugarland, Texas
- or
- ☐ 9527 – 5,665 gallons Houma, Louisiana

Aircraft Type:
- ☐ DC-3 – 1,000 gallons Multi-Engine
- or
- ☐ DC-4 – 2000 gallons Multi-Engine

Airborne Support Company
P.O. Box 487
Bourg, Louisiana 70343-0487

Telephone: (504) 851-6391
Fax: (504) 851-6393

Time to First Dispersant Drop on the Oil (hours): _____

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FIGURE 18.4
DISPERSANT SPRAYING PROCEDURES

A Decision / Approval

1) Estimate oil spill volume
2) Review Dispersant Pre-Approval Parameters
3) Request and receive permission from Federal On-Scene Coordinator (FOSC)
4) Review USCG conditions for beginning dispersant application

B Logistics

1) Procure: (see list of Equipment, Materials, Services)

- Application Vehicle - (boat, aircraft)
- Spotter aircraft
- Observer aircraft (USCG)
- Dispersant
- Bulk storage tanks and pumps
- Communications between spray craft and spotter

2) Secure trained personnel necessary for operations

3) Load dispersant onto airplane or boat

C Application

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1) Proceed to the spill site and direct the application of the dispersant. (The person in charge of the application will be in the spotter aircraft and will direct the crew on the boat or the pilot of the spray aircraft).

2) Perform all of the necessary monitoring tests after the application of dispersant. (U.S. Coast Guard will perform sampling at the site)

3) After the spraying operation is finished, clean up all vessels, aircraft and tanks and dispose of any contaminants. Any unused dispersant can be returned if the drum seals are not broken and the drums are not damaged.

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FIGURE 18.5
CHECKLIST FOR DISPERSANT OBSERVATIONS

A OBSERVER

1 Name _____

2 Business Address and Phone _____

_____

B SPILL INFORMATION

1 Spill Date _____

2 Spill Time _____

3 Where Spill Originally Occurred and Source _____

_____

4 Type of Oil (if known) (e.g., name of Crude or Product) _____

_____

5 Quantity of Oil Spilled (if known) _____

C SITUATION AT TIME OF DISPERSANT AND APPLICATION

1 Date _____

2 Time _____

3 Location where Dispersant was Applied: _____

(a) Relative to Surroundings (e.g., latitude and longitude, distance to nearby platforms or land areas, etc.)

_____

(b) Relative to Spill (e.g., leading edge, northwest quadrant, etc.)

_____

4 Area of Sea Covered by Spill _____

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FIGURE 18.5
CHECKLIST FOR DISPERSANT OBSERVATIONS (Continued)

5 Spill Description (Continuous slick? Windrows? Scattered patches?) _____

6 Wind Speed and Direction _____

7 Air and Water Temperatures _____

8 Visibility _____

9 Precipitation _____

10 Sea State

(a) Wave Height _____

(b) Emulsification _____

(c) Oil Thickness _____

D DISPERSANT USE

1 Condition of Oil onto which Dispersant was Applied
(e.g., color, was the oil patchy or continuous?) _____

2 Application Rate in US gallons per acre _____

3 Swath Width and Speed of Application Aircraft:

(a) Swath Width: _____ Feet

(b) Speed: _____ Knots

4 Dispersant Pump Rate: _____ Gpm

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FIGURE 18.5
CHECKLIST FOR DISPERSANT OBSERVATIONS (Continued)

5 Total Amount of Dispersant Used: _____ Gallons

6 Time Dispersant Application Began: _____

7 Time Dispersant Application Ended: _____

E OBSERVATIONS

1 What Happened when the Dispersant Contacted the Spill:

(a) Immediately _____

(b) After 10 Minutes _____

(c) After an Hour _____

2 Estimated Percent of Oil Dispersed _____

3 Did any of the Oil Resurface? _____ How Much? _____

4 Any other Observations? (e.g., sea color, wave pattern?) _____

5 List any Problems during Application _____

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FIGURE 18.5
CHECKLIST FOR DISPERSANT OBSERVATIONS (Continued)

6 Did Sea or Weather Conditions change significantly during the Dispersant Application? Please Describe.

7 Describe Photo Documentation. (What types of Photos were taken and Where are they Available?)

FIGURE 18.6
Dispersants Safety Plan

This plan provides guidelines covering several aspects on the use of dispersants. The information is for guidance purposes only and does not take into account every possible hazard with distinctive and individual products. It is stressed that every product has to be supplied complete with a material safety data sheet (MSDS) containing detailed information covering each one of the items mentioned below. Should these statements differ from the ones reported in the material safety data sheet provided by the suppliers, THE DATA SPECIFIED IN THE MATERIAL SAFETY DATA SHEET OF THE PRODUCT SHALL ALWAYS PREVAIL. The dispersant being used is _____. This dispersant is being applied neat, with no dilution. The Material Safety Data Sheet is attached.

LOADING SAFETY

Dispersants are not particularly hazardous to humans, but are chemicals which must be handled correctly, particularly due to their strong degreasing action. ALL FEDERAL AND STATE FIXED-WING AIRCRAFT AND HELICOPTER SAFETY RULES WILL BE FOLLOWED.

1) The handling crew must wear:
   - Chemical splash goggles or face shield
   - Polyvinylchloride Chemical Protective Gloves, as specified in the MSDS
   - Polyethylene coated tyvek, chemical protective clothing

2) If possible, handling should be done:
   - In ventilated areas
   - Keeping to windward

   If this is not possible:
   - Appropriate respiratory protection must be worn if ventilation is poor or for nuisance odors. An air purifying respirator with organic vapor cartridges must be used.

3) Storage:
   - Dispersants shall be stored away from heat sources and if possible not in direct sunlight.

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FIGURE 18.6
Dispersants Safety Plan

4) Fires:
- Will be extinguished by use of chemical powder, BC class or carbon dioxide extinguisher, or by foam.
- A fire extinguisher at least 20 BC will be available during transfer operations.
- Conductive delivery hoses, or bonding and proper grounding is required during loading operations.

5) Leaks:
- Must be stopped immediately.
- Spilled material should be contained by means of sand, soil or other inert absorbent materials.
- The polluted area should be defined by suitable fencing - any spilled dispersant will make deck areas slippery.

DELIVERY SAFETY

1) Aircraft and Airspace Coordination:

- The dispersant spray aircraft and all spotter aircraft, resupply, personnel transfer, observation and other aircraft in the affected area will coordinate radio frequencies with each other and the command net.
- Prior to spraying the dispersant, the affected area will be announced over the radio, all cleanup vessels, boundary marking vessels, and other response equipment and personnel will be given adequate time to retreat to a safe area.

2) On Water Personnel:

- NO PERSONNEL OR VESSELS WILL BE ALLOWED TO SHELTER IN PLACE
- All personnel and equipment will retreat to upwind of the delivery area, if at all possible.
- The vessel nearest the sprayed area will run active organic vapor monitoring devices. Other personnel and area monitoring devices may be required based upon local circumstances.
- In the event that a vessel gets sprayed, the following section on emergency procedures will be followed as applicable.
- An investigation as to why the vessel was sprayed will ensue.

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FIGURE 18.6
Dispersants Safety Plan

- Required follow up personal medical monitoring or biological monitoring will be undertaken.

3) First Aid and Emergency Procedures:

Inhalation:

- The injured person shall be immediately removed from the polluted area and transferred to a clean and ventilated environment.
- Call emergency medical support at once.
- If breathing stops, artificial respiration is necessary.

Contact with the skin:

- Wash with water for at least 15 minutes.
- Do not apply anything to the eyes unless prescribed by a doctor.
- Have the injured person undergo a medical check as soon as possible.

Ingestion:

- Do not induce vomiting.
- Do not give any alcohol, milk or fatty foods.
- Nothing shall be given orally to an unconscious person.
- Administer water as a diluting agent.
- Have the injured person attended by a doctor at once.

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SECTION 19 - IN-SITU BURNING PLAN

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A. In-Situ Burning Equipment

QUANTITY	EQUIPMENT	LOCATION PHONE NO.	OWNER / (AVAILABILITY)
500'	43" Fireproof Boom	Harvey, LA (504) 347-8888	Oil Stop (Available for purchase)
500'	43" Fireproof Boom	J. O'Brien - Pascagoula, MS (504) 781-0804	MSRC (Available for purchase)
500'	43" Fireproof Boom	J. O'Brien - Galveston, TX (504) 781-0804	MSRC (Available for purchase)

B. The Decision Process

As is the case when any non-traditional cleanup method is considered, extensive evaluation and planning is required before implementation can occur. The determination to use in-situ burning as a response technique can be made by the following:

1) Analyzing the spill situation in question and comparing it to the parameters that will support product combustion (determine if the product will respond to in-situ burning),

2) Assessing threats to human health/welfare and natural resources,

3) Assessing availability of resources that will be required for in-situ burn operations and estimating long-term costs to determine if in-situ burning is feasible,

4) Reviewing general guidelines for in-situ burning to obtain additional information, and

5) Weighing the advantages and disadvantages of in-situ burning against the advantages and disadvantages of other remediation/response methods.

The location of the spill and the on-scene weather, particularly wind direction, are the two most important factors to consider during the decision process.

A minimum oil thickness of 2-3 mm is required for a successful burn. Once the oil thickness approaches the 1-2 mm range, too much heat is lost to the water to facilitate combustion. Oil in the open sea rapidly achieves its maximum pool radius or equilibrium thickness. Light crude oils will spread to approximately 0.01

to 0.1 mm and heavy oils 0.05 to 0.5 mm in a matter of a couple of hours. To achieve the thickness necessary for burning, oil either has to be burned almost immediately after a spill or the oil thickness must be increased utilizing fire retardant booms.

FIGURE 19.1 shows an In-Situ Burn Decision Tree, which is intended as a summary of the most important issues influencing the decision to burn. It should be recognized that failure to meet one or more constraints in the Decision Tree does not necessarily lead to a "No Burn" decision. With the passage of time, conditions may change which would then make in-situ burning a feasible response technique.

C. Operational Considerations

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Before deliberate ignition, the wind and/or direction of tow will be considered to ensure that no one is within or near any potentially high concentrations of petroleum vapor. Numerous experimental test burns with fresh and slightly weathered oils have revealed that even the lightest breeze is sufficient to limit the size of any initial vapor flash upon ignition of slicks contained within open test tanks and booms. If an oil layer is to be ignited under very still air conditions (where vapors could accumulate over a large area and/or to a significant height), special care should be taken to ensure that the ignition system is released from a safe distance.

If necessary, globules of burning, gelled fuel from a heli-torch can be released from heights of several hundred feet, hand-held igniters can be released from vessels located hundreds of feet upstream/upwind of the target oil, and flare guns can be used from hundreds of feet away if the oil to be ignited is fairly fresh. In most situations, the problem with the containment and burning of oil spilled at sea is not accidental ignition, but rather the difficulty of achieving deliberate ignition. Within minutes to a few hours, most crude oils in a choppy sea will be sufficiently weathered that substantial heat will be required to produce adequate vapor for sustained combustion.

Burning agents are generally wicks or sorbents which insulate the oil from the water and allow the oil to burn continuously. Highly flammable oil soluble liquids and burn-off torches are two examples of burning aids. A torch producing a high-temperature flame can be used to clean shorelines and tidal pools. Torches are effective but slow, capable of cleaning only about 150 square feet per hour.

A heavy oil, such as No. 6, may be diluted with lighter products and ignited. Diluting with gasoline is not recommended because of the possible flash hazard.

Low boiling point solvents cannot be used to burn heavy oils upon water - the cooling effect of the water extinguishes the flame over a short period of time.

D. Environmental Effects

When determining the net environmental effect of mechanical cleanup methods, marine and coastal habitats are always considered. For in-situ burning, the effect that the remediation process has on the atmosphere also becomes a major concern. Therefore, the net environmental effect of in-situ burning is best assessed when habitats in the marine, coastal and atmospheric environments are considered.

Research has failed to yield sufficient evidence of negative health or environmental effects resulting from in-situ burning of hydrocarbons. However, a number of studies have examined both the composition and environmental fate of general burn emissions. These studies have shown that while at least a portion of emissions from burning (e.g., particulate carbon, sulfur dioxide) may pose a threat to wildlife or human health in the area immediately downwind of a burn site, exposure conditions drop below threshold levels a few kilometers downwind of the burn site.

The primary by-products of the in-situ burning of oil are carbon dioxide and water vapor. About 90% to 95% of the carbon by-product is released into the atmosphere as carbon dioxide, while the remaining 5% to 10% of the original volume of oil burned is released as particulates of 10 micrometers or less (PM-10). Small amounts of gaseous pollutants are also emitted (e.g., carbon monoxide, sulfur dioxide, nitrogen oxides), as are polycyclic aromatic hydrocarbons (PAHs). However, concentrations of these pollutants should remain well below the level of concern, and would be closely monitored during an actual burn operation.

Field experiments have suggested that most of the atmospheric pollutants of concern produced by an in-situ burn are primarily concentrated around the area of the fire, with the exception of the particulate matter in the smoke plume. If inhaled at high levels, this material can cause respiratory distress in the elderly or in persons with impaired lung function. Although these particles dissipate and will typically remain suspended at a high altitude, safety plans have been established to monitor particulate levels to ensure the protection of public health.

Burn residue that remains on the water surface or enters the water column could affect pelagic organisms. Should the residue sink, benthic communities could be affected as well. Moller (1992) reported that much of the residue remaining after the accidental burn aboard the *Haven* settled to the seafloor. This type of

precipitated residue could have a negative impact on the organisms that inhabit or feed off of the bottom substrates. Moller provides an example of an affect which was noted in the *Honam Jade* burn off of South Korea, in which sinking burn residue adversely affected crab cultivation pens.

While burn residues may threaten aquatic resources to some degree, the volume of residue left after a burn would be greatly reduced from that of the parent spill, and the residue appears to be no more toxic than the naturally weathered, unburned oil.

E. Safety Provisions

1) Training

Each individual involved with the controlled burning of oil at sea will complete classroom and hands-on training. The training will be appropriate for the type and level of responsibility assigned to the individual.

2) Boom Handling

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a) The key to a successful and safe deployment of fire containment boom is the planning and practicing of procedures that are simple and least sensitive to environmental and operational constraints. Experience has shown that booms can be deployed quickly and safely if the following considerations are recognized and planned for in advance:

- Storage of boom in protected containers as close as possible to the potential area of use. This will minimize personnel exposure and response time for last-minute maintenance and transport of the boom.

- Preparation of the boom so that the most effective length is stored with all connectors secured, tow bridles in place, and proper lengths of tow line already connected or immediately available. This will reduce the need for personnel to work on the boom or its support systems while it is under tension and/or in the water.

- Stacking of the boom in its container so that it can be pulled out quickly without snagging or twisting. A single twist of the boom can render it nearly useless for oil containment at or near the

twist, and attempting to untwist the boom by hand once the boom is in the water can be dangerous.

- Anticipation of the drag forces from vessel-induced or natural currents if the boom must be partially deployed or held in place to connect additional sections or make adjustments. Avoid standing on or holding the boom during adjustments - use proper tie-downs and anchor points to eliminate tension in the portion of boom being worked on. Select tie-downs, tow lines or tow posts with consideration of the average and peak drag forces that might be experienced during deployment and use of any fire containment boom.

- Provision of adequate communications between personnel on the boom-towing vessels and those tending the movement of boom out of its container. Personnel should agree in advance on an alternate communications plan involving a few basic hand signals to be used if radio contact is lost.

b) Standard safety considerations will also be used during the towing of any boom under open-ocean conditions. The following factors will be emphasized during the planning and implementation of any at-sea burn:

- Adequate line will be used to provide a safe distance and reaction time for the full range of potential burn situations that could develop.

- Aerial support involving fixed-wing aircraft and/or helicopters will be available so that communications can be maintained regarding the location of the boom-towing vessels relative to the oil to be collected and burned, other oil slicks and other vessels in the same general area and the anticipated region of influence from combustion products once the oil is ignited.

- The vessels towing fire containment boom will be positioned during all phases of an at-sea burn so that there is an absolute minimal chance of being surrounded by or contacting concentrations of oil that could pose a threat due to either accidental or deliberate ignition. The positioning of the boom-towing vessels will take into account the size, thickness and volatility of any nearby slicks, as well as any vapor clouds that

could involve the vessels, the contained burning oil and/or any other potential ignition sources.

- Prior to ignition, all personnel on site will be positioned upwind or crosswind from the target slick, well outside the anticipated path of the smoke plume. Personnel on vessels near the burn site will be prepared to move indoors and/or wear protective face masks should their vessel unexpectedly be caught in a portion of the smoke plume. Such exposures should be minimal or nonexistent with proper attention to wind conditions and vessel location.

- Should a particular spill situation involve the potential use of fire containment boom in an attached mode close to the spill source, personnel and equipment will be kept at a safe operating distance from any unexpected explosion or premature ignition of oil at or within the source.

- Any contained oil is ignited only after all "predetermined" burn requirements are met and confirmed *via* radio link with all key participants. As with any marine spill response operation, the safety of personnel on location depends on both a clear and concise plan of operations and on reliable communications.

Once the contained oil is ignited, the operator of each boom-towing vessel will maintain a burn watch. Proper attention to the status of the burn, the speed and positions of the towing vessels, and the proximity of the burn operations to other vessels and slicks will allow the operator of each vessel to respond quickly to any unexpected events. The operators of the towing vessels will have a pre-approved and agreed-upon plan of action if it becomes necessary to modify the size and rate of the burn, to provide assistance to the sister towing vessel or to terminate the burn. All personnel on each vessel will be aware of those potential actions in order to minimize reaction time, confusion and risk of exposure to unsafe conditions.

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The key to a successful and safe in-situ burn program is good communication. It is essential that the operators of the boom-towing vessels and all other personnel directly involved with the control of the burn have a dedicated radio link for their own communications on the status of the burn. A separate communications link will be established for information flow

between the operators of the towing vessels and other non-control participants (e.g., aerial spotters, monitoring and sampling personnel).

3) Unwanted Ignition and Secondary Fires

The unwanted ignition of oil might involve the accidental or premature ignition of floating oil contained within the fire containment boom or of oil that has collected elsewhere to sufficient thickness for ignition and sustained combustion. Such ignition is highly unlikely with proper consideration of the proximity of all potential ignition sources to any slicks that could burn. During the early phases of a spill response when oil may be relatively fresh and volatile, the usual care given to vapors and ignition sources is necessary. Up until the time of deliberate ignition, the concern for accidental ignition would be no different than that for conventional oil containment efforts.

Because of the difficulty of igniting weathered, floating oil layers, the concerns for accidental ignition and secondary fires are typically minimal. However, if a deliberate burn was planned either nearshore, along a shoreline or river bank, in a marsh or onshore, the potential for secondary fires should be considered carefully. The proximity of ignitable vegetation, trees, docks, and other facilities would need to be examined with respect to the initial movement of vapors (prior to ignition) and the potential movement of burning oil.

4) Personnel Exposure

Care will be taken throughout any in-situ burn operation to ensure that all personnel and equipment are protected from any harmful exposure to heat and/or combustion products. Anyone that could be exposed will be provided with adequate personal protective equipment (e.g., respirators, masks, goggles, protective clothing). Federal OSHA standards for the assessment of hazards and standard operating procedures will be used for the selection of proper personal protective equipment.

During in-situ burning operations at sea, it is normally quite easy for vessels and aircraft to remain well outside any zone of potentially dangerous exposure to heat or combustion products. However, because of the brief exposures that could result from unplanned events such as wind shifts, vessel power failures and oil and emission sampling procedures, personnel will be trained in how to avoid exposures and what action is necessary should exposure be unavoidable. With respect to heat

exposure, distances to safely separate operating personnel from a contained fire will be specified by project supervisors.

The safety of response and non-response personnel will strongly depend on strict adherence to the site specific safety plan(s) and the availability and proper use of reliable communications equipment prior to and throughout any in-situ burn program. Such communications will be needed to warn all participants, observers, government representatives and the general public about the intent to burn oil. Proper notification will help prevent the unexpected movement of aircraft and vessels into pre-designated restriction zones. In addition, routine status reports to airplanes, boats and radio and television stations will help reduce the type of over-reaction and misinterpretation that often occurs during such highly visible and controversial activities.

F. Approval Procedures and Conditions for Use

De Soto Canyon 927 is physically located within the area of responsibility of the Region IV Regional Response Team (RRT IV). However, spill trajectory indicates the potential for movement of a slick into the area of responsibility of the Region VI Regional Response Team (RRT VI). A description of the in-situ burning approval procedures and conditions for use respective to both Regional Response Team areas IV and VI follows.

Current National Response Team (NRT) policy provides the USCG Federal On-Scene Coordinator (FOSC) with pre-authorization to initiate in-situ burning in response to oil discharges within both RRT IV and RRT VI. This pre-authorization allows the FOSC to employ burn techniques in an attempt to minimize both the short-term risks of further impact of the spilled oil and the long-term risks of persistent toxicity to marine and coastal biota.

Region IV - In-Situ Burn Protocols

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1) Generally, pre-authorization exists 3 nautical miles seaward of any shoreline (see **FIGURE 18.1** for reference map). However, some special management areas are excluded from pre-authorization. Three zones have been established to delineate locations and conditions under which in-situ burn operations may take place in waters of federal Region IV:

   A Zone - Pre-Approved Zone (Decision lies with the FOSC)
   - Must meet all of the following requirements:
     - Waters are not within a "B" or "R" zone.
     - Waters are at least 3 miles seaward of any shoreline.

- Waters falling exclusively under federal jurisdiction and seaward of any state waters.

B Zone - Waters Requiring Case-By-Case Approval by RRT IV

- Waters are not within an "R" zone
- Meets any of the following requirements:
  - Waters fall under state or special federal management jurisdiction (e.g., NMS, NWR, SP).
  - Waters are within 3 nautical miles seaward of any shoreline.
  - Waters are less than 30 meters in depth that contain living coral reefs.
  - Waters are in mangrove or coastal wetland ecosystems (including both submerged algal and seagrass beds).

R Zone - Exclusion Zone

- In-situ burning is prohibited except when necessary to prevent or mitigate a risk to human health and safety (RRT IV approval is required).
- No R zones are currently defined.

2) The Responsible Party (RP) is required to complete an In-Situ Burning Authorization Form and provide the required information to the FOSC. This information will then be forwarded to the RRT IV team members for approval (see **FIGURE 19.2**).

3) The In-Situ Burning Authorization Form should not be delayed if required information is unknown at the time that the form is completed. Missing information may be forwarded to the FOSC or the RRT IV team members when the information becomes known.

4) The FOSC will activate the Special Monitoring of Applied Response Technologies (SMART). Monitoring of in-situ burn operations is mandatory.

5) An effective on-site survey and consultation with Natural Resource Specialists must be conducted prior to the commencement of burning.

6) A post-incident report must be submitted within 45 days of any in-situ burn operation.

Region VI - In-Situ Burn Protocols

1) The RP is required to complete an In-Situ Burning Authorization Form and provide the required information to the FOSC. This information will then be forwarded to the RRT IV team members for approval (see **FIGURE 19.2**).

2) The FOSC can permit the RP to employ in-situ burning techniques seaward of 3 miles from the coastlines of both Louisiana and Texas, with areas excluded offshore in the vicinity of certain reefs and a protected area off Grand Isle, Louisiana.

3) RRT VI approval for areas less than 3 miles seaward of any shoreline (e.g., bays, lakes, sounds, rivers) is given strictly on an incident-specific basis.

4) A checklist and guidelines have been developed for in-situ coastal wetland burning (see **FIGURE 19.3**).

5) SROMP must be in place prior to the start of any in-situ burn if there is a possibility that the burn plume will cross over any populated or environmentally sensitive areas.

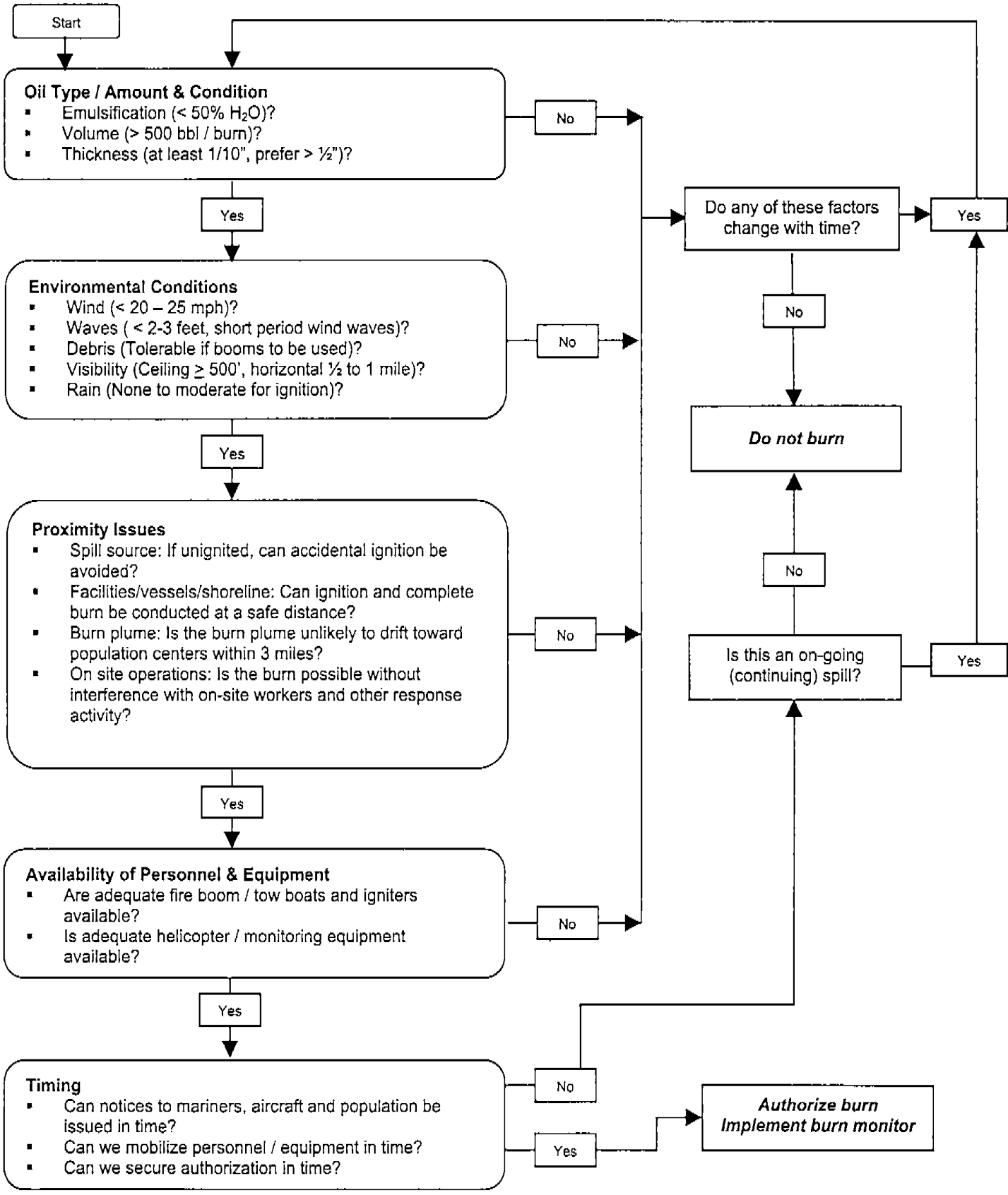
6) The Texas Natural Resource and Conservation Commission (TNRCC) must be notified of any in-situ burn activities conducted in the state waters of Texas.

G. Operational Requirements

An operational checklist an be found at the end of this section (see **FIGURE 19.4**) which outlines the various conditions, equipment and personnel which are required prior to the initiation of any in-situ burn operation.

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FIGURE 19.1
IN-SITU BURN DECISION TREE



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FIGURE 19.2 - OIL SPILL RESPONSE CHECKLIST: IN-SITU BURNING

The following checklist is provided as a summary of important information to be considered by the Federal On-Scene Coordinator (FOSC) in reviewing any request to conduct in-situ burning in response to an offshore oil spill in the Gulf of Mexico:

1) SPILL DATA
(to be completed by Responsible Party and submitted to FOSC)

A) Name of Incident: _____

B) Date and time of Incident: Mo/Day/Yr: _____ Time: _____

C) Incident Type:

Grounding _____ Transfer Operations _____
Collision _____ Blowout _____
Pipeline Rupture _____ Explosion _____
_____ Other _____

D) Did Spill Source Ignite? Yes: _____ No: _____
Is Source Still Burning? Yes: _____ No: _____

E) Spill Location:
Latitude: _____ Longitude: _____

F) Distance (miles) & Direction to Nearest Land: _____

G) Products Released: _____

H) Product(s) Easily Emulsified? Yes: _____ No: _____
Uncertain: _____

I) Product(s) already Emulsified upon Release? No: _____

Light Emulsion (0-20%) _____ Moderate Emulsion (21-50%) _____
Heavy Emulsion (>5%) _____ Unknown Emulsion _____

J) Estimated Volume(s) of Product Released: _____ Gals/bbls
_____ Gals/bbls

K) Estimated Volume(s) of Product that Could Still be Released:
_____ gals _____ Bbls _____
_____ gals _____ Bbls _____

L) Release Status:

Continuous: _____ Estimated Rate: _____
Intermittent: _____ Estimated Rate: _____

1 time only ("batch" spill); flow now stopped: _____

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FIGURE 19.2 - OIL SPILL RESPONSE CHECKLIST: IN-SITU BURNING

M) Estimated Area of Spill:

Approx. Date/Time: _____ Surface Area _____ Sq Miles (Stat _____ Naut. _____)

Approx. Date/Time: _____ Surface Area _____ Sq Miles (Stat _____ Naut. _____)

Approx. Date/Time: _____ Surface Area _____ Sq Miles (Stat _____ Naut. _____)

2) WEATHER AND WATER CONDITIONS AT TIME & LOCATION OF SPILL
(To be completed by Responding Party and submitted to FOSC)

A) Temperature: Air _____ (deg F) Water _____ (deg F)

B) Weather: Clear _____ Partly Cloudy _____ Heavy Overcast _____

Rain: Heavy _____ Moderate _____ Light _____

Fog: _____ Type & Amount at Spill Source _____

Type & Amount at Burn Site _____

C) Tidal Condition: Slack Tide _____ Flood _____ Ebb _____

D) Dominant Surface Current (net drift):

Speed _____ (Knots)

Direction (to) _____ (True Compass Heading)

E) Wind Speed: _____ Knots Wind Direction (from) _____

F) Expected Transition Time between On-Shore & Off-Shore Breeze:

_____

G) Sea State:

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Flat Calm _____ Light Wind-Chop _____

Wind - Waves: <1 Ft _____ 1-3 ft _____ >3 ft _____

Swell (estimated height in feet) _____

H) Water Depth (in feet): _____

FIGURE 19.2 - OIL SPILL RESPONSE CHECKLIST: IN-SITU BURNING

I) Other Considerations:

General Visibility _____
Rip Tides / Eddies _____
Floating Debris _____
Submerged Hazards _____

NOTE:
See Section 4 of this Checklist for Weather and Water Conditions Forecast (to be completed by NOAA Scientific Support Coordinator). See Section 5 of this Checklist for Predicted Oil Behavior (to be completed by NOAA Scientific Support Coordinator). Responding Party has option of also submitting information on Predicted Oil Behavior to FOSC.

3) PROPOSED BURNING PLAN
(To be completed by Party Responding to Spill)

A) Location of Proposed Burn with respect to Spill Source:

_____

B) Location of Proposed Burn with respect to nearest Ignitable Oil Slick(s):

_____

C) Location of Proposed Burn with respect to nearest Land:

_____

D) Location of Proposed Burn with respect to Commercial Fishing Activity, Vessel Traffic Lanes, Drilling Rigs and / or other Marine Activities / Facilities:

_____

_____

_____

E) Risk of Accidental (Secondary) Fires:

_____

F) Risk of Reducing Visibility at Nearby Airstrip(s) or Airport(s):

_____

G) Distance to, location and type of nearest Population Center(s) (e.g. Recreational Site, Town, City, etc.):

_____

H) Methods that will be used (prior to ignition) to Notify Residents in areas where smoke could conceivably drift into or over such areas:

_____

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FIGURE 19.2 - OIL SPILL RESPONSE CHECKLIST: IN-SITU BURNING

I) Type of Igniter proposed for use: _____

J) Helicopter(s) needed to deploy igniters? Yes _____ No _____

Name of Company and type of Helicopter to be used: _____

FAA approval already granted to Company for use of Igniter: Yes _____ No _____

Awaiting FAA Approval or Verification of prior approval: Yes _____ No _____

K) Burning Promoters or Wicking Agents proposed for use? Yes _____ No _____

If yes, give type and amount: _____

L) Describe proposed Method of Deployment for Igniter(s): _____

Burning Promoter(s): _____

Wicking Agent(s): _____

M) Describe Method for Containment, if any: _____

N) Proposed Location of Oil Containment relative to Spill Source: _____

O) Proposed Burning Strategy:

_____ Immediate Ignition at or near Source

_____ Ignition away from source after Containment and Movement to Safe Location

_____ Ignition of uncontained slick(s) at a Safe Distance

_____ Controlled Burning in Boom or natural collection site at / near Shore

_____ Possible need for Multiple Ignition Attempts

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FIGURE 19.2 - OIL SPILL RESPONSE CHECKLIST: IN-SITU BURNING

P) Estimated Amount of Oil to be Burned: _____

Q) Estimated Duration of each Burn: _____

Total Possible Burn Period: _____

R) Estimated Smoke Plume Trajectory: _____

S) Method for Collecting Burned Oil Residue: _____

T) Proposed Storage & Disposal of Burned Oil Residue: _____

4) WEATHER AND WATER CONDITION FORECAST FROM TIME OF SPILL
(To be completed by NOAA SSC)

A) Wind Speed (Knots):

24-Hour Projection: _____
48-Hour Projection: _____

B) Wind Direction (from):

24-Hour Projection: _____
48-Hour Projection: _____

C) Sea Conditions:

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24-Hour Projection:

Flat Calm _____ Light Wind-Chop _____

Wind-Waves: <1 Ft _____ 1-3 Ft _____ >3 Ft _____

Swell (estimated height in feet) _____

48-Hour Projection:

Flat Calm _____ Light Wind-Chop _____

Wind-Waves: <1 Ft _____ 1-3 Ft _____ >3 Ft _____

Swell (estimated height in feet) _____

FIGURE 19.2 - OIL SPILL RESPONSE CHECKLIST: IN-SITU BURNING

D) Tidal Information:

Date _____ High (time/height) _____ / _____
Low _____ / _____

Date _____ High (time/height) _____ / _____
Low _____ / _____

Date _____ High (time/height) _____ / _____
Low _____ / _____

E) Predicted Dominant Current (net drift):

Speed (Knots): _____ Direction (to): _____

5) PREDICTED OIL BEHAVIOR
(To be completed by NOAA SSC)

A) Unburned Oil Forecast:

Estimated Trajectory (Attach Sketch if Necessary):

_____

B) Expected area(s) and time(s) of land fall:

Location _____ Date / Time _____

Location _____ Date / Time _____

Location _____ Date / Time _____

Location _____ Date / Time _____

C) Estimated Percent Naturally Dispersed and Evaporated:

Within first 12 Hours: _____

Within first 24 Hours: _____

Within first 48 Hours; _____

6) RESOURCES AT RISK
(To be completed by resource agencies)

A) Habitats

Sheltered Tidal Flats _____
Coastal Marshes _____
Etc. _____

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FIGURE 19.2 - OIL SPILL RESPONSE CHECKLIST: IN-SITU BURNING

B) Biological Resources

Are marine mammals, turtles, or concentrations of birds noted in the burn area?	Yes _____	No _____
Endangered / Threatened Species?	Yes _____	No _____
Non - Endangered / Threatened Species?	Yes _____	No _____
C) Historic and Archaeological Resources?	Yes _____	No _____
D) Commercial Harvest Areas?	Yes _____	No _____

7) FEDERAL ON-SCENE COORDINATOR'S EVALUATION OF RESPONSE OPTIONS
(To be completed by FOSC)

A) Is In-Situ Burning likely to result in the Elimination of Significant Volumes of Spilled Oil?	Yes _____	No _____
B) Will the use of In-Situ Burning interfere with (or in any way reduce the effectiveness of) mechanical recovery and / or dispersant application?	Yes _____	No _____
If yes, do the potential Benefits of Burning outweigh the potential reductions in effectiveness of mechanical / dispersant use?	Yes _____	No _____
C) Can In-Situ Burning be used Safely, and with an anticipated overall Reduction in Environmental Impact (compared with the decision not to burn)?	Yes _____	No _____

8) FEDERAL ON-SCENE COORDINATOR'S DECISION REGARDING IN-SITU BURNING
(To be completed by FOSC)

A) _____ Do not Conduct In-Situ Burn
B) _____ In-Situ Burn may be Conducted in Limited or Selected Areas
C) _____ In-Situ Burn may be Conducted as Requested

NOTE:
If the FOSC approved of In-Situ Burning, Local Media and Residents in Areas within the Potential Smoke Plume Trajectory must be Notified Prior to Initiating the Burn.

Signature of FOSC: _____
Printed Name of FOSC: _____

Time / Date of Decision: _____

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FIGURE 19.3

Oil Spill Response Checklist for Coastal Wetland In-Situ Burning

The following checklist is provided as a summary of important information to be considered by the On-Scene Coordinator (OSC) in reviewing any request to conduct in-situ burning in a coastal wetland. It may be completed by the Responsible Party with input from resource managers and/or SSC. If the Burn is recommended by the Responsible Party and the State and approved by the OSC, the checklist may be faxed to the RRT (DOI, DOC, EPA and State) for immediate consideration.

Name of incident: _____

Date and time of incident: _____

Name of Product Spilled (specific gravity, API or MSDS attached if available):

_____

Total Volume of Oil Spilled: _____

Total Volume of Oil to be Burned: _____

Oil Thickness Over Water: _____

Wetland Type (e.g., salt marsh) and Dominant Plant Species:

_____

_____

Description of Incident:

_____

_____

_____

_____

_____

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Description and size of Area to be Burned (include location of proposed burn with respect to spill source; an attached sketch, survey or picture of area would be helpful):

_____

_____

_____

_____

_____

Environmental Concerns and Recommendations (include environmental trade-offs, water depth in marsh, past management practices, possible impending weather, presence of wildlife, alternate or additional clean-up methods):

_____

_____

_____

_____

_____

_____

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FIGURE 19.3

Oil Spill Response Checklist for Coastal Wetland In-Situ Burning (Continued)

Local Air Quality Personnel Notified (name and number): _____

Land Owner Notified (name and number): _____

Distance to Nearest Population Center: _____

Environmental Review Personnel (name and number):

_____

Site Safety Plan Reviewed: _____

Present and Forecasted Weather:

_____

Status of Spill Source:

_____

Description of Operations (include how the fire will be contained, controlled and ignited):

_____

_____

_____

_____

Method to Recover Burn Residue:

_____

_____

_____

_____

_____

Monitoring to be Performed:

_____

_____

Signatures:

_____
On-Scene Coordinator

_____
Responsible Party

_____
State Incident Commander (IC)

_____
Other

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FIGURE 19.4
OPERATIONAL CHECKLIST: IN-SITU BURNING

The following list is provided as a condensed "checklist" of critical conditions, concepts or pieces of equipment that will be considered by the responsible party, prior to the initiation of an in-situ burn in the Gulf of Mexico.

1) Approval and Notification Considerations:

- ❑ Approval "checklist" completed and submitted to federal and state RRT and FOSC.
- ❑ Any other burn plan or permit / approval requests completed and submitted to appropriate agencies.
- ❑ All approvals received from federal, state and local organizations.
- ❑ U.S. Coast Guard notified regarding Notice to Mariners for proposed burn time and locations in which no unauthorized vessels would be allowed.
- ❑ FAA notified regarding Notice to Aviators for proposed burn time and locations in which no unauthorized aircraft would be allowed.
- ❑ Local public radio and television announcements of intent to burn, along with information on estimated times, duration of burn(s), potentially affected areas, possible health effects, and unauthorized zones for public use.
- ❑ State or local emergency service groups on standby for any possible assistance in notifying or evacuating certain populations.

2) Oil and Environmental Conditions:

- ❑ Oil type and condition -- sufficiently combustible under existing weather conditions.
- ❑ Visibility -- suitable for vessels and aircraft in carrying out burn. Consideration given to number of daylight hours left to initiate burn.
- ❑ Sufficient time available to mobilize response personnel, transport and deploy equipment, ignite and complete burn(s).
- ❑ Timing and conditions appropriate for consideration of night-time burn(s). Possibility of night-time oil collection with burns initiated at daybreak.

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FIGURE 19.4
OPERATIONAL CHECKLIST: IN-SITU BURNING

❑ Burning operations safe and practical in light of spill status (ignited versus non-ignited, proximity to shore, mobile or fixed structures, etc).

❑ Burning safe and practical in light of:

- Vessel traffic lanes
- Spill source stabilization efforts
- Any personnel evacuation efforts

❑ Burning compatible with:

- Mechanical cleanup operations
- Dispersant application techniques
- Shoreline protection and cleanup activities

3) Personnel Requirements:

❑ All personnel trained and qualified for burning operations.

❑ All personnel briefed and familiar with burn plan.

❑ Full response team(s) and supervisor(s) for vessels on location or enroute.

❑ Qualified pilot and support personnel for aerial support functions on location or enroute (e.g. reconnaissance, heli-torch operations, etc).

❑ Backup fire control team on location or enroute.

❑ Everyone has protective clothing, respirators, flotation devices, etc.

4) Vessel requirements:

❑ Two fire boom towing vessels available for each U-configuration.

❑ One fire control vessel available for each burn region. More than one vessel possibly needed should individual burns be widely separated.

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FIGURE 19.4
OPERATIONAL CHECKLIST: IN-SITU BURNING

❑ Backup support vessel(s) as needed for personnel transport, refueling operations, recovery and storage of burn residue, transport, deployment and recovery of fire boom, boom towing vessels, etc.

5) Aircraft requirements:

❑ Helicopter(s) as appropriate for number of burns anticipated, modes of ignition to be employed and distances to be covered from staging area(s) to assigned region(s) of coverage.

❑ Fixed-wing aircraft as appropriate to supplement helicopter operations involving oil reconnaissance missions, direction of vessels to collection sites, monitoring of smoke plume trajectories, etc.

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6) Fire boom and igniter requirements:

❑ Inspected and ready-to-deploy fire containment boom (typically 500 feet to 1,000 feet per U-configuration), along with long tow lines (typically 500 feet to 800 feet per tow vessel), towing bridles and anchoring systems as appropriate.

❑ Backup fire containment boom (500 feet to 1000 feet per U-configuration), along with additional lengths of boom for any modes of deployment (e.g. containment at spill source, deflection booming into designated nearshore burn sites, exclusion booming, etc).

❑ Inspected and ready-to-deploy heli-torch(es) as needed for any aerial ignition activities (backup drums available for rapid turn-around).

❑ Batch mixers for gelling large quantities of fuel mix for heil-torche(es) if necessary (backup fuel supplies such as Jet-A gasoline, or crude oil and gelling mix.

❑ Supply of hand-held igniters (at least 10 per vessel and helicopter) for potential use (backup supply of at least 200 igniters or a means of acquiring / constructing additional units on short notice).

FIGURE 19.4
OPERATIONAL CHECKLIST: IN-SITU BURNING

7) Communications requirements:

- ❑ Dedicated radio links (and equipment) with specific frequencies for vessel-to-vessel and air-to-surface communications.
- ❑ Dedicated radio links (and equipment) with specific frequencies for vessel-to-vessel and vessel-to-command communications.
- ❑ Repeater stations as appropriate for distant or blocked communication paths.

8) Fire safety considerations:

- ❑ Possible use of dedicated personnel / vessels with vapor emission monitoring equipment (explosimeter).
- ❑ Backup fire fighting vessels (if necessary) for unique situations involving a burning spill source and / or unusual potential exposures of personnel / vessels to burning oil.
- ❑ Small fire fighting packages (extinguishers, monitors, foam, etc.) aboard the boom towing boats for backup use in the event of an emergency on or near one of the response vessels.

SECTION 20 - ALTERNATIVE CHEMICAL & BIOLOGICAL RESPONSE STRATEGIES

Biodegradation is the process by which microorganisms chemically alter and break down organic molecules into other, generally less harmful substances. Bioremediation is a treatment technology that utilizes either indigenous or introduced microorganisms to reduce the concentration and/or toxicity of hydrocarbons through the process of biodegradation.

The Responsible Party (RP) may request FOSC approval for the use of bioremediation or the application of a bioremediation-enhancing agent within RRT Regions IV and VI. Following concurrence from the RRT and consultation with the impacted natural resource trustees, the RP may initiate activity after the Bioremediation Use Authorization Form is completed and approved by the FOSC. However, Marathon Oil Company does not anticipate using bioremediation as a possible response countermeasure for spills that either enter or threaten to enter RRT Regions IV or VI.

SECTION 21 - DOCUMENTATION

In order to document the operational and support aspects of oil spill response actions each member of the Spill Management Team will keep a Conversation/Action Record (**FIGURE 21.1**) of their activities. Considerable care should be taken to ensure that these forms are filled-out accurately and maintained responsibly for future reference.

One of the most important tasks of the Spill Management Team is to accurately record the history of the cleanup operation. The purpose of documentation is to protect the company, minimize expenditures and use the log as a basis for critiquing the response. It is important to record the extent of the spill, orders received from the Federal/State on Scene Coordinator, and a review of the cleanup activities each day. All information should be channeled to the Documentation Unit Leader who will set-up files.

Standards for Records

- ✓ **Factual** - Response documentation is a record of what happened during the response. It is not a forum for analyses, conclusions, opinions or comments.
- ✓ **Accurate** - Records which are not accurate cannot be relied upon.
- ✓ **Complete** - Records which are not complete do not tell the whole story.
- ✓ **Clear** - The documentation will be used at a later date in support of the company's attempts to recover costs.
- ✓ **Concise** - Emergency response is often fast paced and generates a lot of data. Do not fill files with unnecessary items.
- ✓ **Identified** - All records, including meeting minutes, should identify the person reading them, in case it becomes necessary to revisit the records.
- ✓ **Dated** - All entries should reflect a time and a date in order to reconstruct sequences of events at a later date.

Privileged Records

In addition to the foregoing, the Legal Officer may request that you create a *privileged record*; that is, a record which is not subject to subpoena or discovery in a court of law. Any such record should be clearly marked "Privileged Document, Attorney Client Communication" and hand delivered to the Legal Officer.

Distribution of Records

Records, other than privileged records, should be retained by the group that created them and a copy distributed as follows:

- ✓ Non–cost records - Documentation Unit
- ✓ Cost records - Finance Unit

Destruction of Records

No records whatsoever may be discarded or erased without the prior approval of the Legal Officer. If you have doubts about a record, resolve your doubt *before* creating it (it may not be factual).

Interpretation

The Legal Officer will be consulted for any questions concerning guidelines.

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GUIDELINES FOR INCIDENT FILES

1) Identify necessary types of files based on issues deemed important in the context of the incident.

2) The files should be named and organized so that they are identified and easily accessible.

3) If the information might be important later, save it and file it.

4) Do not be afraid to duplicate information/documents in more than one type of file.

5) A mix of Composite Files and Subject Files will provide the best archive coverage and will facilitate accessing information in the archives.

COMPOSITE FILES

A Composite File consists of information from more than one category which is collated on the basis of time, geographic location or some other factor (e.g., a Daily File might consist of a six (6) part folder containing Pollution Reports, Situation Reports, Weather and Tides Information, Overflight Results, Daily Incident Action Plans, Health and Safety Messages, etc. for a given day arranged in a standard way).

Suggested Composite Files:

1) Daily Files
   - Pollution/Situation Reports
   - Weather, Tides
   - Overflight Results
   - Daily Incident Action Plans
   - Public Affairs
   - Safety

2) Message Files

3) Correspondence Files

4) Division/Task Force Files
   - Zone Descriptions
   - Shoreline Surveys
   - Oiling Maps
   - Daily Shoreline Cleanup Reports
   - Final Sign off Report
   - Photographs & Miscellaneous

SUBJECT FILES

A Subject File consists of all information generated during the response which falls under a particular limited topic (e.g., all Pollution Reports, all Health and Safety Materials, etc.).

Suggested Subject Files (And others as deemed necessary)

1) Contract Administration Files (one file per contract)
   Copy of the Contract w/ all subsequent modifications
   Correspondence
   Invoices
   Reconciliation documents

2) Personnel and Equipment Use Documentation (one file per day)
   Contractor Prepared Daily Cost Reports ("cost dailies")

3) Agency Correspondence

4) Purchase Requests (Small Purchase Requests)

5) Financial Management

6) Legal (This file should be labeled as "Attorney/Client Privileged Materials - Do Not Release Without Consulting Originating Legal Office")

7) Personnel Records

8) Daily Incident Action Plans

9) Health and Safety
   Site Safety Plans
   OSHA Correspondence/Issues
   Accident/Injury Reports

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10) Public Affairs
11) Trajectories
12) Salvage and Lightering
13) Disposal
14) Overflight Results
15) Property Records
16) Pollution Reports
17) Fire Fighting
18) Weather and Tides
19) Cost Documentation
20) Business Cards/Calling Cards

FIGURE 21.1
CONVERSATION / ACTION RECORD

Date: _____ Page _____ of _____

Position: _____

Name: _____

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

No.	Time:	Phone: ❑ Fax: ❑ Other: ❑	Incoming: ❑ Outgoing: ❑	Person/Telephone #:	Title:	Representing:

TABLE 1 - PRODUCTION PLATFORMS AND SATELLITE STRUCTURES IN DESOTO CANYON 927

1	2	3	4	5	6	7		8	9	10	11	12	13
Area	Block	OCS #	Facility Name	Facility ID	Water Depth (feet)	Latitude	Longitude	Distance to Nearest Shore (miles)	API Gravity	* Rating	High Well (bbls)	All Storage (bbls)	Thru. Volume (bbls)
NO PRODUCTION PLATFORMS, EXPLORATORY DRILLING OPERATIONS ONLY													

TABLE 2 - ROW PIPELINES IN DESOTO CANYON 927

1	2		3	4		5	6	7	8	9	10	11	12	13	14
From	Latitude	Longitude	To	Latitude	Longitude	Fed./St. Boundary (Yes/No)	Segment No.	ROW No.	Length (ft)	Size (in)	API Gravity	Leak Detection Sys.(Y/N)	Thru. Volume (bbls)	Distance to Shore (miles)	Appurt. Platform (Yes/No)
		N/A													

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TABLE 1 - LEGEND

1) Provide the 2-letter MMS area designation of the facility (e.g., MP, PS, WC).
2) Provide the OCS Block No. of the facility (e.g., 25, 251, A-375).
3) Provide the OCS Lease No. of the facility (e.g., 091, 0425, G-10112).
4) Provide the facility designation (e.g., No. 2, A, JA).
5) Provide the 5-digit MMS complex identification number for the facility.
6) Provide the water depth at the site of the facility in feet.
7) Provide the latitude and longitude of the facility in degrees and decimal minutes (e.g., 28° 25.35' N, 90° 09.08' W).
8) Provide the distance from the facility to the nearest shoreline in miles.
9) Provide the API Gravity of the densest oil being produced or stored at the facility.
10) * Enter the appropriate worst-case discharge volume rating (e.g., A,B,C,D, or E). This table requires determination of a potential worst case discharge rating. To arrive at the rating, estimate the facility worst case discharge volume that could occur, select the appropriate rating from below, and enter the rating in column 10. Volumes should be estimated using criteria in 30 CFR 254.47. Please note that if your worst case discharge volume is in excess of 20,000 barrels (Rating E) or if the well included in your worst case volume calculations has a daily production rate of greater than 2,500 barrels per day, you must complete Columns 11, 12, and 13 of this table for that facility.

Rating	*Volume (bbls)*
A =	0 - 1000
B =	1001 - 3000
C =	3001 - 10000
D =	10001 - 20000
E =	20001 +

11) If "Rating" in column 10 is "E" or if high rate well has a daily flow rate greater than 2,500 barrels, provide the rate that oil is being produced in barrels per day from an uncontrolled flow of the highest capacity well at the facility.
12) If "Rating" in column 10 is "E" or if high rate well has a daily flow rate greater than 2,500 barrels, provide the total volume in barrels of all tanks on the facility used for the storage of oil including production (e.g., fuel oil including diesel fuel, corrosion inhibitors).
13) If "Rating" in column 10 is "E" or if high rate well has a daily flow rate greater than 2,500 barrels, provide the throughput volume in barrels of oil per day of the lease term pipelines that depart the facility.

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TABLE 2 - LEGEND

1) Provide the 2-letter MMS area designation and the OCS Block No. of the originating point of the ROW pipeline (e.g., WC425, HI A-375).
2) Provide the latitude and longitude of the originating point of the ROW pipeline in degrees and decimal minutes (e.g., 28° 25.35' N, 90° 09.08' W).
3) Provide the 2-letter MMS area designation and the OCS Block No. of the terminus of the ROW pipeline (e.g., WC 425, HI A-375).
4) Provide the latitude and longitude of the terminus of the ROW pipeline in degrees and decimal minutes (e.g., 28° 25.35 N, 90° 09.08" W)
5) Indicate whether the ROW pipeline either terminates or originates at the Federal/State boundary (i.e., yes, no).
6) Provide the 5-digit MMS Segment No. of the ROW pipeline (e.g., 00006, 01234, 11456).
7) Provide the OCS ROW No. of the ROW pipeline (e.g., 092, 0436, G 10992).
8) Provide the length of the ROW pipeline in feet.
9) Provide the internal diameter of the ROW pipeline in inches.
10) Provide the API Gravity of the oil being transported by the ROW pipeline.
11) Indicate whether the ROW pipeline is monitored by a leak detection system (i.e., yes, no).
12) Provide the throughput volume in barrels of oil per day of the ROW pipeline.
13) Provide the distance to shore of the point of the ROW pipeline that is nearest to the shoreline in miles.
14) Indicate whether the ROW pipeline has an associated appurtenance platform(s) (i.e., yes, no).

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APPENDIX B - TRAINING INFORMATION

A. Training Agenda for Managers of Spill Management Team

The Incident Commander, Operations Section Chief, Planning Section Chief, and their alternates (Spill Managers) will receive the following training on an annual basis:

1. The location, intended use, operational and logistical requirements as well as deployment strategies of primary equipment named in the OSRP

2. Trajectory information

3. Regulatory agency notification requirements

Records of their most recent training are in **FIGURE B.1**

B. Training Agenda for Spill Management Team Members

Spill Management Team members, other than those considered spill managers, will receive the following training on an annual basis:

1. Notification procedures

2. Communication systems used for notifications

3. Location/set up of Incident Command Post

4. Authority of Incident Commander

5. Organizational structure that will be used to manage the response actions

6. Responsibilities and duties of the Spill Management Team member within the organizational structure, in accordance with designated job responsibilities

7. Recordkeeping

C. OSRO Training

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A listing of OSRO personnel trained on CGA equipment is included as **FIGURE B.2**.

D. Training Record Storage

Training records of the Spill Management Team members employed by Marathon Oil Company will be stored with the following contact at described location:

LOCATION OF REQUIRED TRAINING RECORDS	
CONTACT NAME	Dave Burton
COMPANY NAME	Marathon Oil Company
STREET ADDRESS	200 Corporate Drive
CITY, STATE & ZIP	Lafayette, Louisiana 70505
PHONE NUMBER	(337) 233-8240 extension 2205

FIGURE B.1

TRAINING RECORDS – IC, EMT (training due annually)				
Title	Name	Location	Date	Type of Training
Incident Commander:	L. R. Dartez	Lafayette	11/08/00	NRC/SMT
Alternate:	C. R. Hubacher	Lafayette	11/08/00	NRC/SMT
Operations Section Chief:	R. H. Lott	Lafayette	11/16/99	NRC/SMT
Alternate:	W. S. Farmer	Lafayette	11/08/00	NRC/SMT
Planning Section Chief:	L. D. Burton	Lafayette	11/08/00	NRC/SMT
Alternate:	C. W. Craig	New Orleans	11/08/00	NRC/SMT

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FIGURE B.2
PERSONNEL TRAINED ON NRC EQUIPMENT
ICN (Independent Contractor Network – Gulf Coast Area)

Contractor	TX	LA	MS	AL	FL
Airborne Support, Inc.		☆			
AirScan, Inc.					☆
American Pollution Control, Inc.		☆			
Cape Canaveral Marine Services, Inc.					☆
Cliff Berry, Inc.					☆
Boots & Coots Special Services	☆				
Eagle Construction	☆				
Diversified Environmental Services, Inc.					☆
Environmental Recovery					☆
ES&H		☆			
Ferguson Harbour, Inc.			☆	☆	
Florida Spill Response Corporation					☆
Garner Environmental	☆	☆			
Graham Marine, Inc.	☆	☆	☆	☆	
HEPACO, Inc.				☆	
Hydrochem Industrial Services, Inc.	☆	☆		☆	
Industrial Cleanup, Inc.		☆			
IT Corporation	☆				☆
Miller Environmental Services, Inc.	☆	☆			
MO-VAC Environmental	☆				
Nalty Environmental Services		☆			
Oil Mop, Inc.	☆	☆		☆	

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FIGURE B.2
PERSONNEL TRAINED ON NRC EQUIPMENT
ICN (Independent Contractor Network – Gulf Coast Area)

Contractor	TX	LA	MS	AL	FL
Oil Recovery				☆	
Pneumatic Industrial	☆				
Premium Electronic Services, Inc.	☆				
Rubark Environmental Services, Inc.		☆			
SEACOR Marine, Inc.		☆			
Southern Waste Services, Inc.				☆	☆
T & T Marine Salvage, Inc.	☆				
U.S. Environmental Services, LLC		☆			

TRAINING OF ICN PERSONNEL

National Response Corporation relies upon the Independent Contractor Network (ICN) Participants not only for the storage and care of equipment, but also to supply experienced personnel to man oil spill recovery operations. For this reason, NRC has established an on-going semi-annual program to train ICN Participants to deploy and operate response equipment.

The two-day equipment training program is divided into two sections. The first section is a classroom study, defining the safe deployment, application and operation of each piece of NRC equipment. Equipment storage and maintenance, along with operational specifications (such as pump capacities, performance capacities and hydraulic power requirements) are also discussed. Those in attendance are given manuals which describe, in detail, the information presented in the classroom presentation. The second section of the training program is an actual "hands-on" deployment and operation of NRC equipment. At this time, the principles of oil recovery are addressed. The participants will actually off-load, assemble, deploy, operate and disassemble each piece of NRC-owned equipment.

Because NRC stores similar equipment through the United States, the trained personnel from one area may be used anywhere they are needed. The recovery equipment used to outfit NRC's Oil Spill Recovery Vessels (OSRV's) is identical to the land-based equipment and is also operated during equipment training. Therefore, any employee that has completed an equipment training is capable of operating response equipment aboard an OSRV.

APPENDIX C - DRILL INFORMATION

A. Exercise Program

1) Response exercises will be designed to:

   a. Provide spill response personnel with an opportunity to apply training and brush up on their skills;
   b. Test response plan for shortcomings, errors or bottlenecks that can be improved on; and
   c. Build on or learn from previous exercises or actual spill response events

2) Spill response exercises will take three forms:

SPILL RESPONSE EXERCISES		
a.	***Notification Exercise:*** Marathon Oil Company will conduct IC Notification Exercises at all offshore platforms manned 24 hours per day. Field personnel initiating the drill will document who was called, the time and date of the notification, and any phone number changes necessary as a result of the exercise. (**FIGURE C.1** contains the documentation form.)	Annually
b.	***Spill Management Team Tabletop Exercise:*** SMT tabletop exercises will be held in order to test the Team's knowledge of the OSRP, and the individual roles on the team. The exercise will be announced, however the scenario will remain unannounced. Fifteen components of PREP (Preparedness for Response Exercise Program) will be tested in a three year period. The drill will be documented using the form in **FIGURE C.2**, and lessons learned will be discussed. A government initiated unannounced exercise will take the place of the annual in-house tabletop exercise.	Annually
c.	***Equipment Deployment Exercise:*** Marathon Oil Company will verify that the major equipment providers identified in this plan participate in annual equipment deployment either as a result of an actual spill, training, or an exercise. Deployment will include a representative example of equipment as outlined in PREP.	Annually

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3) Record of Exercises

Marathon Oil Company will maintain records of all exercises for a period of three years. Records will be stored in Marathon Oil Company's Lafayette, Louisiana office.

FIGURE C.1
PREP INTERNAL EXERCISE DOCUMENTATION FORM
Notification Exercise

1) Date Performed: _____

2) Exercise or Actual Response: _____

3) Facility Initiating Exercise: _____

4) Name of Person Notified: _____

Is this person identified in your response plan as qualified individual or designee (Incident Commander)? _____

5) Time initiated: _____

Time in which qualified individual or designee responded: _____

6) Method used to contact:
_____ Telephone _____ Pager _____ Radio
_____ Other: _____

7) Description of notification procedure: _____

_____

_____

_____

_____

_____

_____
Certifying Signature*

Note - Retain this form for a minimum of 3 years.

* Certification - is the act of confirming that an exercise (1) was completed; (2) was conducted in accordance with the PREP guidelines, meeting all objectives listed; and (3) was evaluated using a mechanism that appraised the effectiveness of the response or contingency plan.

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FIGURE C.2
PREP INTERNAL EXERCISE DOCUMENTATION FORM
Spill Management Team Tabletop Exercise

1) Date(s) performed: _____

2) Actual response: _____ Exercise: _____ Announced: _____ Unannounced: _____

3) Location: _____

4) Time Started: _____ Time Completed: _____

5) Response plan scenario used (check one):
Average Most Probable Discharge: _____ Maximum Most Probable Discharge: _____ Worst Case Discharge: _____

Size of (simulated) spill: _____

6) Describe how the following objectives were exercised:

a) Spill management team's knowledge of oil-spill response plan: _____

b) Proper notifications: _____

c) Communications system: _____

d) Spill Management Team's ability to access contracted Oil Spill Removal Organizations (OSRO's):

e) Spill Management Team's ability to coordinate spill response with On-Scene Coordinator, state and applicable agencies:

f) Spill Management Team's ability to access sensitive site and resource information in the Area Contingency Plan:

FIGURE C.2
PREP INTERNAL EXERCISE DOCUMENTATION FORM
Spill Management Team Tabletop Exercise

7) Identify which of the 15 core components of your response plan were exercised during this particular exercise:

		YES	NO
A	Organizational Design		
1.	Notifications		
2.	Staff Mobilization		
3.	Ability to operate with the response management system described in the plan		
B	Operational Design		
4.	Discharge control		
5.	Assessment of discharge		
6.	Containment of discharge		
7.	Recovery of spilled material		
8.	Protection of sensitive areas		
9.	Disposal of recovered material and contaminated debris		
C	Response Support		
10.	Communications		
11.	Transportation		
12.	Personnel support		
13.	Equipment maintenance and support		
14.	Procurement		
15.	Documentation		

8) Description of lesson(s) learned and person(s) responsible for follow-up of corrective measures:

Lessons Learned	Person Responsible for Follow-Up And Corrective Measures

Certifying Signature *

Retain this form for a minimum of 3 years.
* Certification - is the act of confirming that an exercise (1) was completed, (2) was conducted in accordance with the PREP guidelines, meeting all objectives listed and (3) was evaluated using a mechanism that appraised the effectiveness of the response or contingency plan.

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APPENDIX D - CONTRACTUAL AGREEMENTS

Contractual Agreements

Proof of any contracts or membership agreements with OSRO's, cooperatives, spill-response service providers, or Spill Management Team members who are not employees that are cited in the Plan are outlined in **FIGURE D.1**.

Gulf Coast Region
Production United States

Marathon Oil Company

200 Corporate Boulevard
Lafayette, Louisiana 70508-3847
Telephone 337/233-8240

FIGURE D.1

PROOF OF CONTRACTUAL AGREEMENTS

* * * * *

I hereby certify that Marathon Oil Company currently has a contract or membership agreement with the following Service Providers:

Service	Company	Beginning Date	Ending Date
Equipment Provider	NRC*	5/1/95	9/31/05
Response Personnel	NRC's ICN	5/1/95	9/31/05
Trajectory & Sensitivities	Morris Environmental	5/1/95	12/31/01

* Includes access to Airborne Support, Inc. dispersant resources

The subject contract or membership agreement provides immediate access to available personnel and/or equipment on a 24-hour per day basis.

Signed: A D Burton

Title: E + S Coordinator

Date: 1/5/01

APPENDIX E - RESPONSE EQUIPMENT

A. Equipment Inventory

Marathon Oil Company's offshore response strategy is built around the oil spill containment and recovery equipment provided by National Response Corporation (NRC) and supported by the Independent Contractor Network (ICN). Refer to **FIGURE E.1**.

The Incident Commander may contact other service companies in the event additional equipment, materials or personnel would be necessary to contain, control and remove the spill. **APPENDIX F** contains a list of support services and supplies.

A Spill Response Equipment Inventory list of NRC and contractor equipment (by MSO area) is included in this section. This list will be utilized to locate response equipment and personnel from Oil Spill Removal Organizations on the Gulf Coast. (See **FIGURES E.2** through **E.3**.)

B. Inspection and Maintenance Programs

National Response Corporation (NRC) ensures the inspections and testing of each piece of pollution response equipment (that lends itself to testing) monthly and repairs are made immediately. Records of equipment inspections and test results are maintained at each NRC base and are available for inspection by Minerals Management Service (MMS) personnel.

In addition to the monthly inspections and tests, each type of pollution response equipment is deployed at least once every 3 years to assure readiness of the equipment. Records of equipment deployed are maintained at each NRC base and available to MMS personnel.

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FIGURE E.1

NRC CALL-OUT PROCEDURES

Notification and Activation

In the event of a spill, the person designated as the Qualified Individual (QI) or his/her designees have the sole authority to initiate National Response Corporation (NRC) response activities. NRC's 24-manned International Operations Center (IOC) in Calverton, New York is the focal point from which NRC response activities are initiated. The following telephone numbers are to be used in an emergency in order to notify NRC of a discharge or threat of discharge.

International Operations Center (IOC) - Calverton, NY

Toll-free Hotline (800) 899-4672 (For Oil Spills Only)		Telephone (631) 369-8644
Facsimile (631) 369-8655, or (631) 369-4908		**Telex** 469 173 80

E-Mail: iocdo@nrcxchange.nrcc.com

At the time the spill is reported, NRC requires that the QI complete and submit (facsimile) an Initial Spill Report to the NRC International Operations Center. This begins the documentation of the spill response. Once the client determines a need for NRC's services, the QI must complete and submit (by facsimile) the Authorization to Proceed to the IOC in order to activate NRC response activities.

Once NRC is notified of a spill or threat thereof, a line of communication will be set-up between NRC's Spill Management Team, the client's QI and the responsible party's Spill Management Team. NRC offers many different levels of spill management skills that may be tailored to the specific needs of the client.

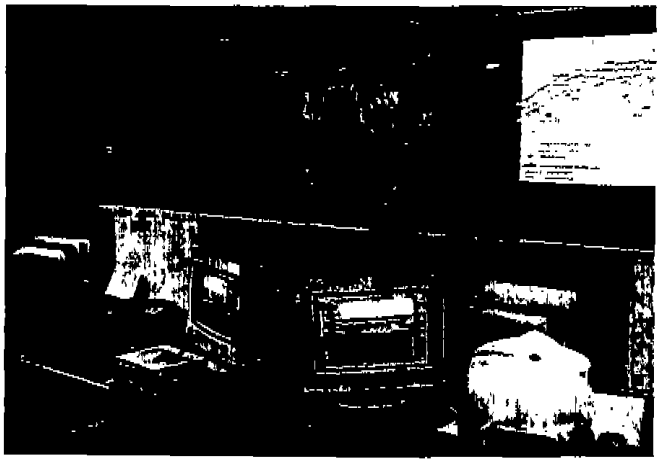
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FIGURE E.1

NRC CALL-OUT PROCEDURES

Notification and Activation (Con't.)

Following receipt of the Authorization to Proceed, which activates NRC's response, mobilization of resources by the Independent Contractor Network (ICN) Participants will begin under the supervision of NRC's Gulf Coast Regional Manager. The amount of resources mobilized will depend on the needs and requests of the client. The resources will be transported, deployed and operated by the ICN Participants and their trained personnel, while under the direction of the Spill Management Team and National Response Corporation.



NRC established the Gulf of Mexico Operations Center (GoMOC) which can be used for response operations. Dimensions are 40 feet by 28 feet (total square feet equals 1,120).

GoMOC is equipped with 5 workstations, printers, a television set and electronic projector.

Gulf of Mexico Operations Center – Morgan City, LA

Toll-free Hotline (877) 334-4466		Telephone (504) 380-3166
Facsimile (504) 380-3163		Gulf of Mexico Operations Center is referred to as "GoMOC"

E-Mail: iocdo@nrcxchange.nrcc.com

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FIGURE E.1

NATIONAL RESPONSE CORPORATION

INITIAL SPILL REPORT

Documentation of initial drill and/or spill information.

DRILL ☐ ACTUAL ☐ NRC CONTROL #: _____

DATE AND TIME: _____

NAME OF CALLER: _____ POSITION/TITLE: _____

PHONE NUMBER: _____ FAX NUMBER: _____

VESSEL INFORMATION

VESSEL NAME: _____ LIST CALL SIGN: _____

OWNER/OPER: _____

FLAG/REGISTRY: _____ VRP ON BOARD: YES ☐ NO ☐

QI VERIFICATION: _____ PHONE NUMBER: _____

FAX NUMBER: _____

FACILITY INFORMATION FRP ON BOARD? YES ☐ NO ☐

OWNER/OPER: _____ ST. ADDRESS: _____

CITY OR TOWN: _____ PORT AREA: _____

QI VERIFICATION: _____ PHONE NUMBER: _____

FAX NUMBER: _____

TYPE CASUALTY: _____

DATE/TIME OF INCIDENT: _____

CURRENT CONDITION VESSEL/FACILITY: _____

LOCATION OF INCIDENT: _____

LATITUDE: _____ LONGITUDE: _____

BERTH FACILITY: _____ PHONE NUMBER: _____

NATIONAL RESPONSE CORPORATION, 446 EDWARDS AVENUE, P.O. BOX 609, CALVERTON, NY 11933
PHONE: (631) 369-8644 FAX: (631) 369-4908 IOC FAX: (631) 369-8655

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FIGURE E.1

NATIONAL RESPONSE CORPORATION

AUTHORIZATION TO PROCEED

Client Authorization of NRC services.

I hereby acknowledge receipt of National Response Corporation's rate schedule effective _____ and hereby authorize National Response Corporation to provide goods and services for this job, and also accept the terms of the rate schedule set forth and agree to pay according to said schedule any and all monies due and owing within ten (10) days from invoice date.

I understand that a finance charge of 1-1/2% per month, which is an annual percentage rate of 18%, will be charged on all past-due accounts.

In addition, I authorize NRC to arrange for disposal on my behalf, consistent with the following terms:

_____

_____

_____

_____

I will be responsible for all collection costs on past-due accounts, inclusive of attorneys fees.

JOB LOCATION: _____

JOB DESCRIPTION: _____

_____

AUTHORIZED SIGNATURE: _____

DATE: _____

NRC REFERENCE: _____

NATIONAL RESPONSE CORPORATION, 446 EDWARDS AVENUE, P.O. BOX 609, CALVERTON, NY 11933
PHONE: (631) 369-8644 FAX: (631) 369-4908 IOC FAX: (631) 369-8655

These 2 preceeding forms have been reproduced for use within an Oil Spill Response Plan and are not originals produced by NRC, however the language is the same.

FIGURE E.1

NRC OFFSHORE FLEET OPERATIONS

National response Corporation provides both dedicated and Identified Deployment offshore vessels for spill response in the Gulf of Mexico.

1) Dedicated Fleet

The dedicated fleet is permanently stationed at Galveston and Ingleside, Texas and Theodore, Alabama (which is near Mobile). These are the Oil Spill Response Vessel (**OSRV**) NRC Admiral and the Oil Spill Response Barges (**OSRBs**) NRC Valiant and NRC Defender. The dedicated fleet is prepared to be underway in 2 hours, as required by OPA-90, from request for mobilization and all have permanently assigned personnel. The dedicated fleet is equipped with the necessary spill containment and recovery gear to effectively respond on request.

2) Identified Deployment (ID) Boat Fleet

The Identified Deployment (ID) Boat fleet consists of 5 offshore utility vessels under charter to OCS operators and working in separate areas of the Gulf of Mexico. By charter agreement, these vessels can be redirected to conduct spill response operations immediately on request.

Each ID Boat carries the following so it can be deployed directly to a spill site without returning to a shorebase before responding:

- Skimmer
- Spill containment boom
- Recovered oil storage bladder
- Crews trained in spill response and HAZWOPER

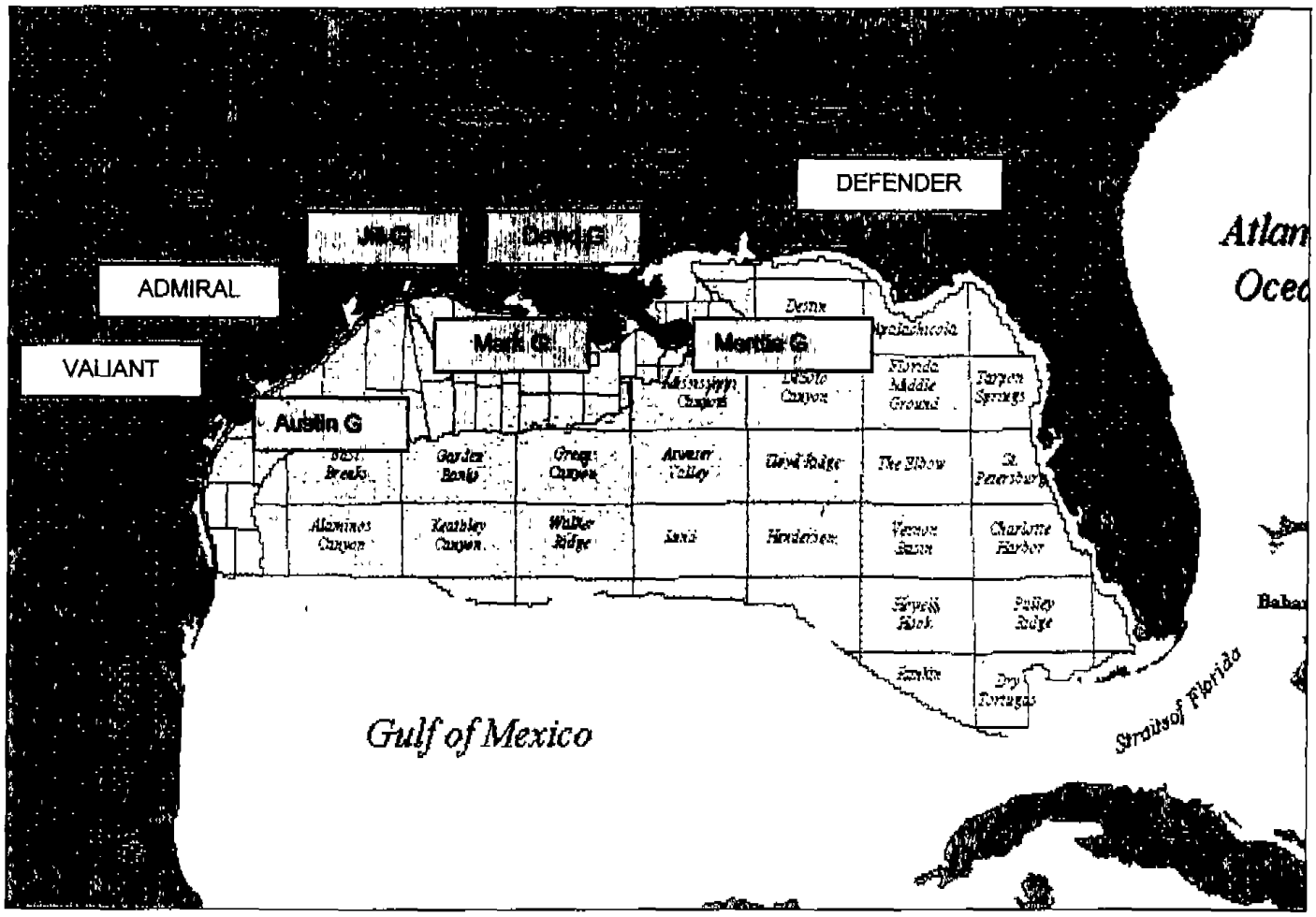
All dedicated vessels and ID Boats are equipped with computers networked to the Seacor/NRC vessel tracking system which can pinpoint the location of each vessel on a 24 hour, 7 day basis. This allows NRC International Operations Center and the Gulf of Mexico Operations Center to determine the closest vessel to a spill event and direct the movement and activities aboard the vessel when activated for a spill response. This system also has the ability to communicate with any or all of the vessels via onboard e-mail.

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NATIONAL RESPONSE CORPORATION

FIGURE E.1

MAJOR EQUIPMENT LOCATIONS



Oil Spill Response Vessel

NRC ADMIRAL – Galveston, TX

Oil Spill Response Barges

NRC VALIANT – Corpus Christi, TX

NRC DEFENDER – Mobile, AL

ID Boats

AUSTIN G – Ingleside, TX

JILL G – Cameron, LA

DAVID G – Intracoastal City, LA

MARK G – Cocodrie, LA

MERTTIE G – Venice, LA

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NRC
NATIONAL RESPONSE
CORPORATION

FIGURE E.1

OFFSHORE RESPONSE VESSEL & BARGES

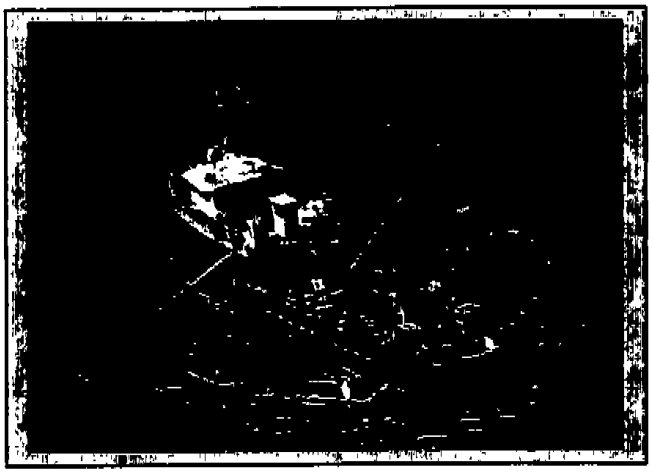
NRC ADMIRAL

Oil Spill Response Vessel - Galveston Texas
Speed: 10 kts

Skimmers:
- Marco XI C - Weir Mode..... 24,000 bbl/day derated
- Belt Mode..... 10,768 bbl/day derated
- Rope Mop ..... 2,125 bbl/day derated

Storage:
- Total Storage .....300 bbl

Boom:
- Ocean Boom. (Oil Stop) .....2,500 ft of 43"
- Sweep Boom (Containment Systems) ... 100 ft of 43"



NRC VALIANT

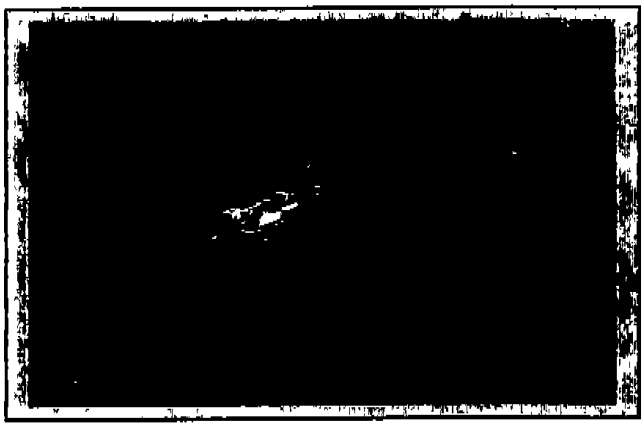
Oil Spill Response Barge - Corpus Christi, Texas
Speed: Tug Speed

Skimmers:
- Marco XI C - Weir Mode..... 24,000 bbl/day derated
- Belt Mode..... 10,768 bbl/day derated
- OWOCRS ..... 5,280 bbl/day derated

Storage:
- Total Storage .....20,872 bbl/day

Boom:
- Ocean Boom (Oil Stop) .....2,500 ft of 43"
- Sweep Boom (Containment Systems) ... 100 ft of 43"

Boat:
- Kvichak BHSS 102 ..... 28-ft boom handling



NRC DEFENDER

Oil Spill Response Barge - Mobile, Alabama
Speed: Tug Speed

Skimmers:
- Marco XI C - Weir Mode..... 24,000 bbl/day derated
- Belt Mode..... 10,768 bbl/day derated
- Vikoma Cascade..... 5,465 bbl/day derated

Storage:
- Total Storage .....16,500 bbl

Boom:
- Inflatable Ocean Boom (Oil Stop).....2,500 ft of 43"
- Sweep Boom (Containment Systems) ... 200 ft of 43"

Boat:
- Kvichak BHSS 103 ..... 28-ft boom handling



NATIONAL RESPONSE CORPORATION

FIGURE E.1

ID BOATS

AUSTIN G

ID Boat - Ingleside, TX
Speed: 10 kts

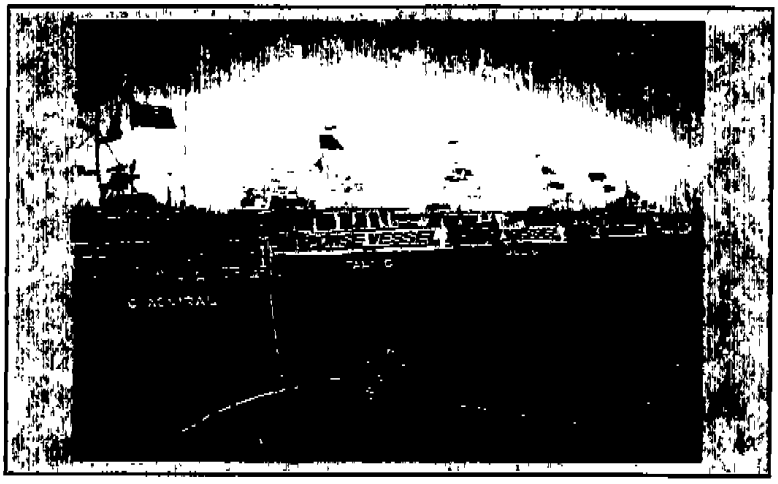
Skimmer:
24" Drum Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage ..... 101 bbl
Boom:
Sweep ..... 100 ft of 24"



JILL G

ID Boat – Cameron, LA
Speed: 10 kts

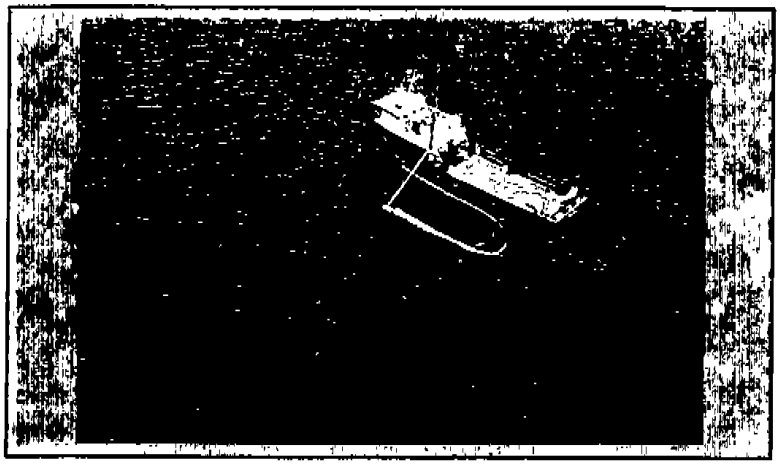
Skimmer:
ORD Disk Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage ..... 101 bbl
Boom:
Sweep ..... 100 ft of 21"



DAVID G

ID Boat – Intracoastal City, LA
Speed: 9 kts

Skimmer:
ORD Disk Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage ..... 101 bbl
Boom:
Sweep ..... 100 ft of 21"



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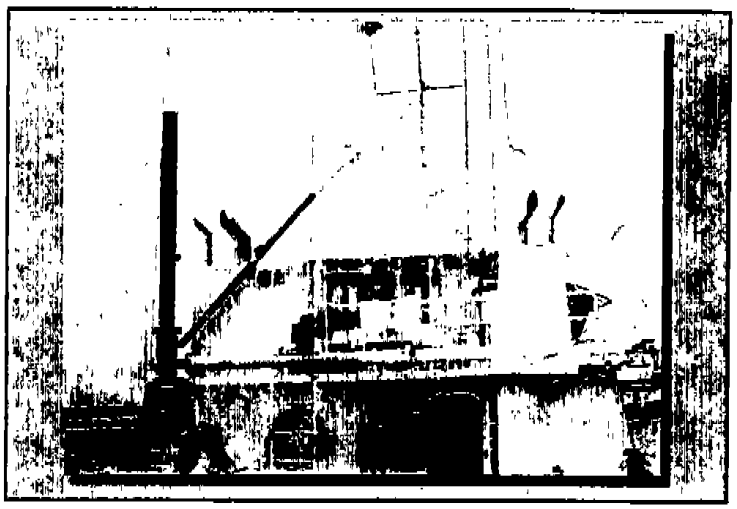
NATIONAL RESPONSE CORPORATION

FIGURE E.1

ID BOATS

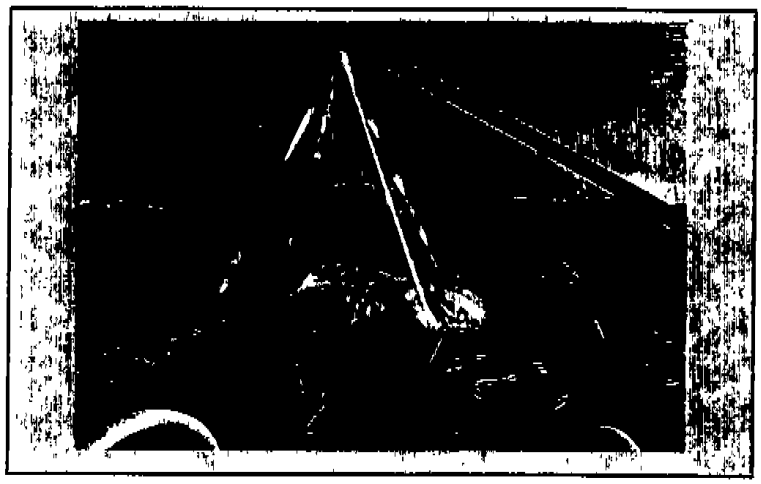
MARK G
ID Boat – Cocodrie, LA
Speed: 10 kts

Skimming:
ORD Disk Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage ..... 101 bbl
Boom:
Sweep ..... 100 ft of 21"



MERTTIE G
ID Boat – Venice, LA
Speed: 10 kts

Skimming:
ORD Disk Skimmer ..... 1,954 bbl/day derated
Storage:
Total Storage ..... 101 bbl
Boom:
Sweep ..... 100 ft of 21"



NATIONAL RESPONSE CORPORATION

FIGURE E.1

MISCELLANEOUS RESPONSE EQUIPMENT

August 2000

Type	Qty.	Use	Description	Derating Bbl / day	Storage Bbls
SKIMMERS					
Marco Class XI-C Skimmer (Belt Mode & Weir Mode)	15	Rivers/Canals Inland/Nearshore Open Ocean	Model FS 110 VOSS Filterbelt Skimmer with Weir/U440 Capsul Pump	10,768 24,000	—
Vikoma Cascade Weir Skimmer	12	Rivers/Canals Inland/Nearshore Open Ocean	Model LP 3000 Weir Skimmer	5,465	—
Vikoma Fasflo Skimmer	18	Rivers/Canals Inland/Nearshore Open Ocean	Fast Current Weir Skimmer; Hydrofoil stabilized	3,154	—
Rope Mop Skimmer (4 Band & 8 Band)	17	Rivers/Canals Inland/Nearshore Offshore/Open Ocean	Model VMW 92-4; Vertical Rope Mop	1,495 2,125	—
MEG-5000 Weir Disk Skimmer	18	Inshore Waters	Self-contained combination oleophilic-disk and Weir Skimmer	1,371	25 bbls
BOATS & BARGES					
Boom Handling Skimmer Support Vessel	12	Rivers/Canals Inland/Nearshore Offshore/Open Ocean	Boom handling, towing, skimmer support and work platform	—	—
Shallow Water Recovery Barge	29	Rivers/Canals Inland/Nearshore Open Ocean	Temporary storage for recovered material; skimmer support and work platform	—	200 bbls
BOOM & DISPERSANT					
Ocean Boom – 82,200 feet	—	Inland/Nearshore Offshore/Open Ocean	Suitable for all floating oils	—	—
Inshore Boom – 100,000 feet	—	Rivers/Canals Inland/Nearshore Offshore/Open Ocean	Suitable for all floating oils	—	—
Dispersant Applicator	4	Offshore/Open Ocean	Suitable for all floating oils	—	—

FIGURE E.2
NRC INDEPENDENT CONTRACTOR NETWORK (U.S. GULF OF MEXICO)

Company	Full Range Response	Other	Locations	Supervisor	Technical / Operator	Support / General Laborer
Airborne Support, Inc.		Dispersant Spraying Services, Equipment and Personnel	Houma, LA			
AirScan, Inc.		Remote Sensing; Spill Modeling	Titusville, FL			
American Pollution Control, Inc.	☆	Marine Spill Response; Offshore Vessel Support Services	New Iberia, LA	10	30	4
Coastal Fuels & Marketing / Coastal Tug & Barge, Inc.		*Marine Environmental; Tugs;* Barge Services	Pensacola, FL Mobile, AL Corpus Christi, TX		1 1	
Code 3, Inc./Boots & Coots Special Service	☆		Corpus Christi, TX El Paso, TX Ft. Worth, TX Harlingen, TX Houston, TX Laredo, TX San Antonio, TX	3 8	13 24	1 1
Dillon Environmental Services, Inc.			Ardmore, OK			
Eagle Construction			Houston, TX			
E S & H/Cenac Environmental Services	☆		Houma, LA Fourchon, LA New Iberia, LA Morgan City, LA Belle Chasse, LA Venice, LA Port Allen, LA Port Arthur, TX New Orleans, LA Arlington, TX	12	25	14
Ferguson Harbour, Inc.			Mobile, AL Jackson, MS Findlay, OH Nashville, TN Johnson City, TN Memphis, TN Birmingham, AL Atlanta, GA Columbus, OH Chattanooga, TN Houston, TX Port Arthur, TX New Orleans, LA Arlington, TX	4 6	4 20	7 10
Graham Marine, Inc.		Supplemental Offshore Vessels	Morgan City, LA			

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FIGURE E.2
NRC INDEPENDENT CONTRACTOR NETWORK (U.S. GULF OF MEXICO)

Company	Full Range Response	Other	Locations	Supervisor	Technical / Operator	Support / General Labor
Hydrochem Industrial Services, Inc.	☆		Decatur, AL Citronelle, AL Plaquemine, LA August, GA LaPlace, LA Gonzales, LA Prairieville, LA Port Lavaca, TX Channelview, TX Bossier City, LA Sulphur, LA Longview, TX Texas City, TX Victoria, TX La Porte, TX Corpus Christi, TX Freeport, TX Baytown, TX Missouri City, TX Houston, TX Deer Park, TX	75		250
I.T. Corporation/OHM Remediation Services Corporation	☆		Houston, TX Port Allen, TX	5	13	32
Industrial Cleanup, Inc.	☆		Garyville, LA Baton Rouge, LA Scott, LA	5 1	10 2	56
Miller Environmental Services, Inc.	☆		Corpus Christi, TX Sulphur, LA	11 4	27 14	25 6
MO-VAC Environmental		Mobile Storage; Transportation and Disposal of Recovered Oil and Other Hazardous Materials	McAllen, TX Alice, TX Brenham, TX Kennedy, TX Laredo, TX Luling, TX Zapata, TX	 3 3 2 2 2	 10 10 8 8 6	
Oil Mop, Inc./Natly Environmental Services	☆		Belle Chasse, LA Fourchon, LA Lafayette, LA Lake Charles, LA Morgan City, LA Port Allen, LA	3 2 2	10 6 4	
Oil Recovery	☆		Mobile, AL Baton Rouge, LA			
Pneumatic Industrial			La Porte, TX		4	
Premium Electronics Services, Inc.		Communications	Jefferson, LA	2	7	4
Rubark Environmental Services, Inc.	☆		Morgan City, LA			
SEACOR Marine, Inc.		Supplemental Offshore Vessels				

FIGURE E.2
NRC INDEPENDENT CONTRACTOR NETWORK (U.S. GULF OF MEXICO)

Company	Full Range Response	Other	Locations	Supervisor	Technical / Operator	Support / General Laborer
Southern Waste Services, Inc.	☆		Panama City, FL Pensacola, FL Tampa, FL Mobile, AL Galveston, TX	3	10 2	
T & T Marine Salvage, Inc.	☆		Mereaux, LA	6	11	6
United States Environmental Services	☆		Port Allen, LA Channelview, TX	3		4
Waste Control Services	☆		Corpus Christi, TX			

FIGURE E.3 - SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
Corpus Christi Area								
CC Area Oil Spill Control Assoc. Corpus Christi, TX Ph: (361) 882-2656		(1) 28' Skimmer (5) 44 to 300 GPM (1) 24' Skimmer Barge		(500') 24" (11,500') 18"		12/24/60 bbl Storage Bladders (1) Tank Barge (1) 60 bbl Tank Trailer (1) 75 bbl Tank Truck		(1) 71' Fireboat (1) 28' (6) Work Boats (1) 21' Airboat
Marine Salvage & Services Port Isabel, TX Ph: (210) 943-2648					3100'	(1) Vacuum Truck (1) 20,000 gallon Barge (70) 2250 gal Bladders		
Miller Environmental ☆ Corpus Christi, TX Ph: (361) 289-9800	(2) FRU's	(4) 16 yd Super Suckers (1) Saucer Skimmer (9) 70 bbl Vac Trucks (1) 130 bbl Vac Truck		(2000') 10" (3000') 18"		(200) 55 gallon DOT Drums (10) 85 gallon Overpak Drums (100) 20 yard Roll Off Boxes (2) 400 bbl Vertical Tanks (1) 500 bbl Frac Tank		(5) Jon Boats (1) Push Boat 24' (1) Airboat 14' (2) Response 16'
National Response Corp. Corpus Christi, TX Ph: (800) 899-4672		(1) Barge - Valient		(100') 18"				
Spill Response Inc. Port O'Connor, TX Ph: (361) 782-7651				(1000') 18"				(1) Jon Boat
TGLO Aransas Pass, TX Ph: (361) 758-7228		(3) Drums (1) JBF		(4300') 18"		(6) Fast Tanks (3) Bladders	(40) Bird Scare Guns	
U.S. Coast Guard - MSO Corpus Christi, TX Ph: (361) 888-3193		(2) Desmi 250		(1000') 24" (2000') 18"		(1) 600 bbl Barge		
U.S. Naval Station Ingleside, TX Ph: (361) 929-2918		(1) Belt		(13,000') 24"				
Waste Control Services ☆ Corpus Christi, TX Ph: (361) 289-6466		(1) Drum (1) Rope Mop (1) Wier (1) Duck Bill		(2000') 18"				(1) Alum. Work 23' (2) Jon Boats (1) Airboat 18' (1) Response 18'

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FIGURE E.3 - SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
Galveston Area								
Garner Envir. Svcs. Houston, TX Ph: (713) 920-1300		(3) Disc (5) Weir		(1000') 6" (9100') 18" (300') 24"		(1) 80 bbl Vacuum Truck	(1) Communi-cation Table	(1) Flat Bottom (5) Bay Boats (8) Jon Boats
Garner Envir. Svcs. LaMarque, TX Ph: (409) 935-0308		(1) Weir (1) Rope Mop	(2800') 36" (2000') 48"	(10,500') 18" (500') 6.5"		(8) 80 bbl Vacuum Trucks (4) 80 bbl Super Suckers (1) 80 bbl Skid Tank		(4) Jon Boats (2) Bay Boats
Waste Control Services Channelview, TX Ph: (800) 832-7536		(1) Pipe Skimmer (1) Rope Mop Skimmer (1) Mini-Max (1) Duck Bills		(1000') Containment (500') Fire (500') Tow		2700 gallon		(2) Jon Boats (1) Lowe 15'

FIGURE E.3 - SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
Port Arthur Area								
Garner Envir. Svcs. Port Arthur, TX Ph: (409) 983-5646		(2) Weir (1) JBF 3001 Skimmer		(9500') 18"				(6) Jon Boats (1) 26'
Laidlaw Envir. Svcs. Port Arthur, TX Ph: (409) 796-1388				(7000') 18"		(6) 80 bbl Vacuum Trucks (12) 55 bbl Vacuum Trucks (4) 500 bbl Frac Tanks		(15) Jon Boats (2) Air Boats

FIGURE E.3 - SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
Morgan City Area								
AMPOL Port of Iberia, LA Ph: (800) 482-6765	(1) GT 185 (1) MOSS unit (1) Vikoma	(3) Hand Held (2) Rope Mop		(1300') 18" (8400') 18" (4000') 24" (1000') 10"		(2) 750 gal Storage Tanks (2) 2000 gal Storage Tanks	(2) Rolo-Pac w/Spare Turn Table (1) Boat Spray System	(6) Jon Boats (14) 35' - 185'
AMPOL Houma, LA Ph: (800) 482-6765	(1) GT 185 (1) MOSS unit			Hydraulic Boom (1300') Expandi (720') Expandi		(1) 2000 gallon Tank	(1) Boat Spray System	(2) Utility Boats
CENAC Barge & Towing Houma, LA Ph: (504) 872-2413						25,000 bbl Open Ocean Barge 24,000 bbl Open Ocean Barge 23,000 bbl Open Ocean Barge 11,000 bbl Inland Barge 9,500 bbl Inland Barge		
Envir. Equip., Inc. Houma, LA (Site 1) Ph: (504) 868-3100		(3) Weir		(2800') 18" (2000') 18"				(7) Jon Boats (1) Whaler 21'
Envir. Equip., Inc. Houma, LA (Site 2) Ph: (504) 868-3100						(1) 12,000 bbl Tank Barge		(1) Fireboat (25) Barges (1) Pontoon Vessel (6) Flats
Envir. Equip., Inc. Lockport, LA (Site 3) Ph: (504) 868-3100				(1000') 18"		(7) Vacuum Trucks (15) 286 bbl Storage Tanks		
ES&H Cenac Env. ☆ Consulting Services Houma, LA Ph: (504) 851-5350		(12) Slickbar Manta Ray (1) Skimpack (4) Slick Skim (1) Skickbar Slurp (4) Drum		(10,000') 18"				(15) Jon Boats (4 of them are over 25')
Industrial Cleanup Inc. Lafayette, LA Ph: (800) 436-0883				(3000') 18"				(4) Jon Boats

FIGURE E.3 - SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
Morgan City Area								
Industrial Cleanup Inc. Dulac, LA Ph: (800) 436-0883				(1000') 18"				(1) Jon Boat
Industrial Cleanup Inc. Morgan City (Berwick), LA Ph: (800) 436-0883		(1) Rope Mop (1) I-4D Mop Skimmer (1) II-4 Skimmer		(1000') 18" (800') 18"	(1) 200'	(1) 41 bbl Tank (2) 500 bbl Frac Tank	Immediate Response Unit	(2) Jon Boats (1) Boat 26'
Oil Mop, Inc. Abbeville, LA Ph: (800) 645-6671				(1000') 18"				(1) 115 HP 20'
Oil Mop, Inc. Houma, LA Ph: (800) 645-6671		(1) Rope Mop (1) I-4D Mop Skimmer		(10000') 18"	(1) 200'		Immediate Response Unit	(2) Jon Boats
Oil Mop, Inc. Intracoastal City, LA Ph: (800) 645-6671		(1) Rope Mop (1) I-4D Mop Skimmer		(2000') Shoreline	(1) 200'	(5) 30 bbl Barge	Immediate Response Unit	(2) Jon Boats
Oil Mop, Inc. ☆ Morgan City, LA Ph: (800) 645-6671		(4) Rope Mops (1) Disc	(2000') 36"	(15000') 18"		(30) 55 gal Drums (2) 500 bbl Frac Tank (2) 4 bbl Marine Portable Tanks (5) 24 bbl Cutting Tanks	Immediate Response Unit	(6) Jon Boats
Oil Mop, Inc. New Iberia, LA Ph: (800) 645-6671		(1) II-9 Skimmer System		(20000') 18"		(2) Storage Bladders		
PSC Industrial Services Golden Meadow, LA Ph: (504) 475-7770		(1) Guzzler		(2500')		200 bbl		(1) 16' (2) 14'
PSC Industrial Services Morgan City, LA Ph: (504) 631-3325		(1) Guzzler		(2200')		2750 bbl Portable Storage		(1) 16' (2) 14'

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FIGURE E.3 - SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
New Orleans Area								
AMPOL New Orleans, LA Ph: (800) 482-6765	(1) 260' GT (1) MOSS unit	(5) Walosep Skimmers (1) Lamor 2 Cassettes	Hydraulic Boom Reel 1300' Expandi 4300 720' Expandi 300			(2) 2000 gallon Storage Tank	(1) Helo Spray Bucket (1) 3500 bbl Dracone Barge	
Garner Envir. Svcs. New Orleans, LA Ph: (504) 254-2444		(2) Weir (1) Disc		(5000') 18" (200') 9"		(2) Trailer Loads of Various Sorbent Products		(4) Jon Boats (16") (1) 20' (1) 30'
Grand Isle Shipyards Galliano, LA Ph: (504) 475-5238			(1000') 36"	(5000') 18" (2000') 6-8"		(50) Bags of Pads (1) Trailer with Various Products		(2) Jon Boats
☆ Industrial Cleanup Inc. Baton Rouge, LA Ph: (800) 436-0883		Skimmer Barrier		(2400') 18"		16,000 gallon		(3) Jon Boats
Industrial Cleanup Inc. Grand Isle, LA Ph: (800) 436-0883				(2000') 18"		1020 bbl Dracones Bladder		(1) Jon Boat
Industrial Cleanup Inc. Fourchon, LA Ph: (800) 436-0883				(3200') 42" (1000') 18"				
Industrial Cleanup Inc. Venice, LA Ph: (800) 436-0883			(2000') 42"	(1000') 18"		1020 bbl Dracones Bladder		(1) Jon Boat
Industrial Cleanup Inc. Westwego, LA Ph: (800) 436-0883	(9) FRU's	(11) Shallow Water Units	(12,000') 42"	(15,000') 18" (2400') 12"				(10) Jon Boats

FIGURE E.3 - SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
New Orleans Area								
Oil Mop, Inc. ☆ B. Rouge/Port Allen, LA Ph: (800) 645-6671		(1) Rope Mops (1) I-4D Mop Skimmer		(3000;) 18" w/Trailer (1000') 18" (5500') 18"	(1) 200'	(30) 55 gal Storage Drums (3) 500 bbl Frac Tanks (2) 41 bbl Marine Portable Tanks (5) 24 bbl Cutting Tanks	Immediate Response Unit	(2) Jon Boats (1) 26' Work Barge
Oil Mop, Inc. ☆ Belle Chase, LA Ph: (800) 645-6671		(1) I-4D Mop (1) Rope Mop (4) Skimmers		(5700') 18" (1000') 18"	(1) 200'	(2) 41 bbl Marine Portable Tanks (2) 500 bbl Frac Tanks (5) 24 bbl Cutting Tanks (30) 55 gal Storage Drums	Immediate Response Unit	(2) Jon Boats (1) Work Barge 26'
Oil Oil Mop, Inc. ☆ Fourchon, LA Ph: (800) 645-6671		(1) Rope Mop (1) I-4D Mop Skimmer		(1000') 18"	(1) 200'		Immediate Response Unit	(2) Jon Boats 15'
Oil Mop, Inc. Venice, LA Ph: (800) 645-6671		(1) Rope Mop (1) I-4D Mop Skimmer		(1000') 18"	(1) 200'		Immediate Response Unit	(2) 16' Jon Boats
PSC Industrial Services Reserve, LA Ph: (800) 797-9992		(1) MARCO (4) Pelicans 24" (3) Skim Paks (2) MK-140 (2) MK-II40		(500') 18" (23,000') 18" (2000') 24"		500 bbl		(1) 24' (3) 20' (2) 18' (4) 16'
PSC Industrial Services Venice, LA Ph: (504) 534-2008		(2) Guzzlers (1) 70 bbl Vac Truck		2500'		1500 bbl		(3) Jon Boats
Rubark Envir. Svcs. Inc. New Orleans, LA Ph: (504) 944-9965		(5) Pump/Skimmers 2" (1) Pump/Skimmers 3"	(500') 36"	(13,500') 18" (500') 10"		500 bbl		(6) 16' Workboat (1) 17' Workboat (2) 20' Workboat

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FIGURE E.3 – SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
Mobile Area								
PSC Industrial Services Mobile, AL Ph: (800) 797-9992		(2) Pelican 24"	(1000')	(3000')		200 bbl		(2) 18'

FIGURE E.3 – SPILL RESPONSE EQUIPMENT INVENTORY

☆ = ICN – Independent Contractor Network

March 2000

Company	Offshore Skimmers	Inland Skimmers	Boom >24"	Boom 4"-24"	Viscous Sweep	Product Storage	Misc.	Small Vessels
Florida Area								
Southern Waste Serv. Inc. ☆ Panama City, FL Ph: (800) 852-8878	7 Weir	4 TDS 118 6 136 5 36"	2,000' 29"	4,000' 18"	15,000'	3 Frac Tanks 500 bbls		7 vessels
Southern Waste Serv. Inc. ☆ Pensacola, FL Ph: (800) 852-8878		2 TDS 136	4,000' 29"	1,000' 18"	5,000'	1 Frac Tanks 500 bbls		4 vessels
Southern Waste Serv. Inc. ☆ Tampa, FL Ph: (800) 852-8878		1 TDS 136	2,600 29"	5,000' 18"	100,000'	4 Frac Tanks 500 bbls		7 vessels

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APPENDIX F

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January 2000

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**** Denotes a 24 hour number***

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A. BIOLOGICAL AND CHEMICAL SAMPLING

Analysis Laboratories, Inc. - Metairie, LA ..... (504) 889-0710
Coastal Energy and Environmental Resources - Baton Rouge, LA ..... (225) 383-7451
Core Labs - Corpus Christi, TX ..... (361) 289-2673
EDI Environmental Services - Lafayette, LA ..... (337) 264-9810
Gulf Coast Testing - Corpus Christi, TX ..... (361) 882-5411
Sherry Labs - Lafayette, LA ..... (337) 235-0483
Jordan Labs - Corpus Christi, TX ..... (361) 884-0371
Louisiana Geological Survey - Baton Rouge, LA ..... (225) 925-5800
M. B. A. Laboratory - Houston, TX ..... (713) 928-2701
Southern Petroleum Laboratories - Lafayette, LA ..... (337) 237-4775
Steimle & Associates - Metairie, LA ..... (504) 831-2574
Texas A & M Dept. of Biology - College Station, TX ..... (409) 845-3346

B. BLOWOUT AND FIREFIGHTING SPECIALISTS

(1) Firefighting Boats

Edison Chouest Offshore, Inc. - Galliano, LA ..... (504) 632-7144 *

(2) Jackup Boats

Cross Offshore Marine, Inc. - New Orleans, LA ..... (504) 394-3506 *
Cudd Pressure Control
- Houston, TX ..... (713) 877-1118 *
- Houston, TX – Toll Free ..... (800) 899-1118 *
- Robstown, TX ..... (361) 387-8521
- Robstown, TX – Toll Free ..... (800) 762-6557 *

Danos & Curole - Larose, LA ..... (504) 693-3313
Global Industries
- New Iberia, LA ..... (337) 367-3483
- Toll Free ..... (800) 525-3483

Power Offshore Services - Belle Chasse, LA ..... (504) 394-2900 *

(3) Firefighting Experts

Boots & Coots-International Well Control - Houston, TX ..... (800) WELL-911*
Cudd Pressure Control
- Houston, TX ..... (713) 877-1118 *
- Toll Free ..... (800) 899-1118 *

Wild Well Control - Spring, TX ..... (281) 353-5481 *

C. CATERING SERVICE

Energy Catering - Houma, LA ..... (504) 879-3328
Eurest Support Services
- Lafayette, LA ..... (337) 233-9153 *
- Toll Free ..... (800) 443-5630 *

Universal Ogden Services
- New Orleans, LA ..... (504) 733-5761 *
- Toll Free ..... (800) 352-5808

D. COMMUNICATIONS

Able Communications - Houston, TX ..... (281) 485-8800
ATN Signals, Inc.
- Alvin, TX ..... (281) 331-4444 *
- Toll Free ..... (800) 284-1558 *

Auto Com
- Lafayette, LA ..... (337) 232-9610 *
- Toll Free ..... (800) 284-1840 *

Coastel Communications - Lafayette, LA ..... (337) 989-0444 *

Data Com
- Lafayette, LA – Toll Free ..... (800) 375-1562 *
- Lafayette, LA ..... (337) 234-3438 *
- Morgan City, LA ..... (504) 384-3737 *
- Morgan City, LA – Toll Free ..... (800) 914-3737 *

IWL Communications - St. Rose, LA ..... (504) 469-9233

Microanadigicom - Lafayette, LA – Toll Free ..... (800) 822-6484 *

Petro Com Cellular
- Houston, TX ..... (713) 939-1900 *
- Lafayette, LA ..... (337) 234-4484 *
- New Orleans, LA – Toll Free ..... (800) 233-8372 *
- New Orleans, LA ..... (504) 736-9400 *

Sola
- Lafayette, LA ..... (337) 232-7039 *
- Lafayette, LA – Toll Free ..... (800) 252-3086 *

Tomba Communications
- CGA Equipment/Marrero, LA ..... (504) 340-2448 *
- Metairie, LA ..... (504) 349-4040 *

Victoria Communications Services, Inc. - Victoria, TX ..... (361) 575-7417

E. DIVING COMPANIES

Cal Dive International
- Houston, TX ..... (281) 618-0400
- Morgan City,LA ..... (504) 330-0300

Epic Companies - Harvey, LA ..... (504) 340-5252 *

Global Industries
- Houma, LA ..... (504) 876-7592
- Houma, LA – Toll Free ..... (800) 256-7587 *
- Houston, TX ..... (713) 952-3483 *
- New Iberia, LA ..... (337) 367-3483
- New Orleans, LA ..... (504) 523-0077

Oceaneering International, Inc. - Morgan City, LA ..... (504) 395-5247 *

Professional Divers of New Orleans - New Orleans ..... (504) 391-1351 *

Russell-Veteto Engineering - Corpus Christi, TX ..... (361) 887-8851 *

Stolt Comex Seaway, Inc.
- Belle Chasse, LA ..... (504) 361-3477 *
- Houston, TX ..... (713) 466-0245 *
- Houston, TX ..... (713) 430-1100 *

Sub-Sea International - Belle Chasse, LA ..... (504) 656-2400*

Underwater Services - Aransas Pass, TX ..... (361) 888-8874 *

F. DRILLING CONTRACTORS

Global Industries - Lafayette, LA ..... (337) 989-0000 *

Global Marine Drilling Co. - Houston, TX ..... (281) 496-8000 *

Marine Drilling Company - Houston, TX ..... (281) 243-3000 *

Noble Drilling - Houston, TX ..... (713) 974-3131

R & B Falcon – Houston, TX ..... (281) 496-5000

Rowan Drilling Company - Houston, TX ..... (713) 621-7800

BEST AVAILABLE COPY

G. HOTELS

(800) Numbers

Best Western	(800) 528-1234
Courtyard (Marriot)	(800) 321-2211
Days Inn	(800) 325-2525
Embassy Suites	(800) 362-2779
Hilton Hotels	(800) 445-8667
Holiday Inn	(800) 465-4329
Hyatt Hotels	(800) 228-9000
Marriott Hotels	(800) 228-9290
Ramada Inn	(800) 272-6232
Sheraton Hotels	(800) 325-3535

Texas

Corpus Christi

Holiday Inn - 1102 S. Shoreline, Emerald Beach	(361) 883-5731

Galveston

Galveston Island Hilton – 54th at Seawall	(409) 744-5000
Holiday Inn – 5002 Seawall Blvd.	(409) 740-3581
Hotel Galvez – 2024 Seawall	(409) 765-7721
San Luis – 5222 Seawall Blvd.	(409) 744-1500

Houston

Holiday Inn – 165101 45 & FM 1960	(281) 821-2570
Hotel Sofitel – 425 N. Beltway	(281) 445-9000
Radison Hotel – Hobby Airport, 9100 Gulf Freeway	(713) 943-7979

Port Aransas

Bay Tree Condominiums – 900 N. Station Street	(361) 749-5859
Casa Del Cortes Beach Hotel – Park Road 53	(361) 749-6942
Cline's Landing – 1000 Station Street	(361) 749-5274
Mustang Towers Condos – Highway 361	(361) 749-6212
Seaside Inn – Sandcastle Road on Beach	(361) 749-4105

Rockport

Calm Harbor Real Estate – 3805 Highway 35 South	(361) 729-1367
Hunt's Castle – 901 S. Water	(361) 729-2273
Key Allegro Rentals	(361) 729-2333
- 1800 Bayshore	(361) 729-6588
- Toll Free	(800) 348-1627
Kontiki Beach Condos & Motel	(361) 729-4975
N. Fulton Beach Road	(800) 242-3407

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Louisiana

Abbeville

Travel Lodge – Sunbelt Lodge, 1903 Veterans Memorial	(337) 898-1453

Cameron

Cameron Hotel – P.O. Box 447	(337) 775-5442

Cocodrie
CoCo Marina & Motel – Rt. 56, end of road ..... (504) 594-6626

Grand Isle
Rainbow Motel – 9/10 mile east of Bridge ..... (504) 787-3515
Sand Dollar Motel – Rt. 1, east end of island ..... (504) 787-2893
Sun and Sand Cabins – 1 mile east of Bridge ..... (504) 787-2456

Houma
Holiday Inn Holidome – 210 S. Hollywood Road ..... (504) 868-5851
Houma's Red Carpet Inn – U.S. 90 West ..... (504) 876-4160
Plantation Inn – 1381 West Tunnel Blvd. ..... (504) 868-0500
Ramada Inn – 1400 West Tunnel Blvd. ..... (504) 879-4871

Lafayette
Hotel Acadiana ..... (337) 233-8120
- 1801 W. Pinhook Rd. ..... (800) 826-8386
Holiday Inn Central ..... (337) 233-6815
- 2032 N.E. Evangeline Thrwy. ..... (800) 942-4868
Lafayette Hilton & Towers – 1521 Pinhook Road ..... (337) 235-6111
LaQuinta Inn – 2100 N.E. Evangeline Thrwy. ..... (337) 233-5610
Quality Inn – 1605 N. University Ave. ..... (337) 232-6131
Ramada Inn – 120 E. Kaliste Saloom Rd. ..... (337) 235-0858

Metairie
La Quinta – 3100 I-10 Service Road at Causeway Blvd. ..... (504) 834-[illegible]

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Morgan City
Acadian Inn – 1924 U.S. 90 East ..... (504) 384-5750
Holiday Inn – 520 Roderick ..... (504) 385-2200
Morgan City Motel – 507 Roderick Street ..... (504) 384-6640
Plantation Inn – U.S. 90 West ..... (504) 395-4511
Rainbow Inn Hotel – 1659 U.S. 90 East ..... (504) 384-7593

New Orleans
Hilton Hotel – 2 Poydras ..... (504) 561-0500
Marriott Hotel – 555 Canal Street ..... (504) 581-1000
Ramada Plaza – 2203 St. Charles Ave. ..... (504) 566-1200
Royal Sonesta – 300 Bourbon Street ..... (504) 586-0300
Sheraton Hotel – 500 Canal Street ..... (504) 525-2500

Thibodeaux
Holiday Inn – 400 East 1st Street ..... (504) 446-0561
Howard Johnson Lodge – 201 N. Canal Blvd. ..... (504) 447-9071

Venice
Cypress Cove Lodge – 235 Cypress Cove ..... (504) 534-7777
Empire Inn – 32022 Highway 23 in Buras ..... (504) 657-9853
Lighthouse Lodge – 42256 Highway 23 ..... (504) 534-2522
Venice Inn – 42660 Highway 23 ..... (504) 534-7424

Mississippi

Pascagoula

Budget Inn, 3500 14th Street ..... (601) 769-1800
Coast Motel, 1407 Telephone Road ..... (601) 769-1818
Economy Inn, 4919 Hwy 90 ..... (601) 762-9414
Kings Inn Motel, Hwy 90 ..... (601) 762-8110
PAS Point Motel, 1603 Telephone Road ..... (601) 762-9845
Travel Motor Inn, Hwy 90 E ..... (601) 762-8210

Theodore

Garden Motel, Hwy 90 W ..... (334) 653-7451

Alabama

Mobile

Admiral Semmes Radisson, 251 Government Street ..... (334) 432-8000
Bama Motel, 4021 Government Blvd. ..... (334) 661-5734
Best Western Battleship Inn, 2701 Battleship Pkwy ..... (334) 432-2703
Budget Inn, 555 Government Street ..... (334) 433-0590
Courtyard by Marriott, 1000 S. Beltline Hwy ..... (334) 344-5200
Days Inn, 5550 I-10 Service Road ..... (334) 661-8181
Hampton Inn Hotel, 930 S. Beltline Hwy ..... (334) 344-4942
Holiday Inn I-10, I-10 & Hwy 90 ..... (334) 666-5600
Howard Johnson, 3132 Government Blvd. ..... (334) 471-2402
Ramada Conference Center, 600 S. Beltline Hwy ..... (334) 344-8030

H. MARINE CONTRACTORS (CONSTRUCTION)

Crain Bros. Inc. - Grand Chenier, LA ..... (337) 538-2411 *
Garrett Construction - Ingleside, TX ..... (361) 643-7575
Global Industries
- Houma, LA ..... (504) 876-7592
- Toll Free ..... (800) 256-7587
Halliburton - Houston, TX ..... (713) 676-3011
Kingfisher Marine - Port Lavaca, TX ..... (361) 552-6751 *
McDermott Engineering
- Houston, TX ..... (281) 870-5000 *
- Morgan City, LA ..... (504) 631-2561 *
Paragon Engineering - Houston, TX ..... (713) 462-8828
Raymond Dugat Co.
- Portland, TX ..... (361) 643-7505 *
- After Hours ..... (361) 776-2596 *

I. OIL SPILL EQUIPMENT/CONSULTANTS/CONTRACTORS

Abasco - Houston, TX ..... (800) 242-7745 *
American Pollution Control, Inc. (AMPOL) - Lafayette, LA ..... (337) 988-7460 *
BGM Supply (Sorbents & Supplies) - Aransas Pass, TX ..... (361) 758-7700 *
BioEnviroTech (Bioremediation) - Tomball, TX ..... (281) 351-5594
Clean Gulf Associates - Lake Charles, LA ..... (888) CGA-2007*
Coastline Lease Service - Aransas Pass, TX ..... (361) 758-7606 *
Corpus Christi Area Oil Spill Control - Corpus Christi, TX ..... (361) 882-2656 *
Du-Tex, Inc. - Corpus Christi, TX ..... (361) 887-9807 *

Environmental Equipment - Houma, LA ..... (504) 868-3100
ES&H Cenac Environmental Consulting Services - Houma, LA ..... (504) 851-5350
- 800 # ..... (877) 427-2634
Garner Environmental Services
- Houston, TX ..... (713) 920-1300 *
- New Orleans, LA ..... (504) 254-2444 *
- Toll Free ..... (800) 424-1716 *
Grand Isle Shipyards - Grand Isle, LA ..... (504) 787-2801 *
Industrial Cleanup Incorporated - New Orleans, LA ..... (504) 436-0883 *
L&L Environmental Services, Inc. - Lake Charles, LA ..... (800) 207-7745 *
Miller Environmental - Corpus Christi, TX ..... (361) 289-9800 *
MSRC - Lake Charles, LA ..... (337) 475-6400 *
National Response Corporation - New York, NY ..... (800) 899-4672
Oil Mop - Toll Free ..... (800) OILMOP1
ERST/O'Brien (Jim O'Brien, Consultant) - Slidell, LA ..... (504) 781-0804 *
Phillips Services (PSC) - Morgan City, LA ..... (504) 631-3325 *
Spill Control Services - Corpus Christi, TX ..... (361) 884-6700 *
United States Environmental Services, L.L.C.
- Meraux, LA ..... (888) 279-9930 *
- Port Allen, LA ..... (888) 267-4901 *
- Venice, LA ..... (888) 279-9930 *

J. PHOTOGRAPHY

Jim Hebert Photography - Raceland, LA ..... (504) 537-5305 *
Petris Technology - Houston, TX ..... (713) 956-2165
Tom Hathcock Photography
- Houston, TX ..... (281) 479-2603

K. PORTABLE TANKS

B & G Vacuum Service - Alvin, TX ..... (281) 331-6174 *
Neff Services (formerly Buckner)
- Baton Rouge, LA ..... (225) 751-4337 *
- Harvey, LA ..... (504) 340-0061 *
- Houma, LA ..... (504) 868-9138 *
- Lafayette, LA ..... (337) 237-6318 *
- Lake Charles, LA ..... (337) 494-0673 *
- Mobile, AL ..... (334) 653-1002 *
- Morgan City, LA ..... (504) 384-7571 *
- Moss Point, MS ..... (601) 475-2406 *
- New Iberia, LA ..... (337) 364-3631 *
Crow Equipment - Houma, LA ..... (504) 868-6060 *
Diamond Tank Rentals (Cutting Boxes)
- Bayou Vista, LA ..... (504) 395-9317 *
- Toll Free ..... (800) 960-0065 *
Dragon Rentals
- Beaumont, TX ..... (409) 833-2665
- La Porte, TX – Toll Free ..... (800) 231-8198
Magnum Mud Equipment
- Houma, LA ..... (504) 872-1755 *
- Jennings, LA ..... (800) 200-8265 *
Peak Ploss Services - Texas City, TX ..... (409) 948-3591 *
Key Energy Services - Corpus Christi, TX ..... (361) 857-7272 *

L. PUBLIC RELATIONS CONSULTANTS

Brown, Nelson & Associates, Incorporated - Houston, TX.....(713) 784-6200
Media Consultants, Inc. - Houston, TX.....(281) 980-1400
Shelton & Caudle, Inc. - Houston, TX .....(713) 546-2320

M. SPILL TRACKING/TRAJECTORIES

NOAA
- HAZMAT/Atlanta, GA.....(206) 526-6317
- Fax Number.....(206) 526-6329
- New Orleans, LA (Marine Safety Division).....(504) 589-6271

Real Time Thermal Imaging - New Orleans, LA .....(504) 467-3434
SpillNet, Inc. (Computer Models) - Anahuac, TX .....(409) 267-3872 *

N. TRANSPORTATION - AIR

(1) Airplanes/Airports

Galveston Municipal Airport - Galveston, TX .....(409) 744-4609
Hammond Municipal Airport - Hammond, LA.....(504) 542-3430 *
Hammonds Air Service - Houma, LA .....(504) 876-0584 *
Houma/Terrebonne Airport - Houma, LA .....(504) 872-4646
Lakefront Airport - New Orleans, LA .....(504) 243-4010 *
New Orleans Downtown Heliport - New Orleans, LA.....(504) 586-0055 *
New Orleans International Airport - New Orleans, LA.....(504) 464-0831 *
Paul Fournet Air Service - Lafayette, LA.....(337) 237-0520 *
So. Sea Plane - New Orleans, LA.....(504) 394-5633

(2) Dispersant Application

Airborne Support, Inc. (Rep.: Howard Barker) - Houma, LA.....(504) 851-6391 *
Conair Aviation, Ltd. (Rep.: Walt Weslowsky) - Canada.....(604) 855-1171 *

(3) Helicopters

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Air Logistics
- Amelia, LA.....(504) 631-0976
- Cameron, LA.....(337) 775-2948
- Fourchon, LA.....(504) 396-2722
- Galveston, TX.....(409) 740-3546
- Grand Chenier, LA .....(337) 538-2313
- Houma, LA .....(504) 851-6232 *
- Intracoastal, LA .....(337) 893-8221 *
- New Iberia, LA – Toll Free .....(800) 365-6771 *
- Patterson, LA.....(504) 395-6191 *
- Port O'Connor, TX.....(361) 983-4682
- Sabine, TX.....(409) 971-2141
- Venice, LA.....(504) 534-7481

ERA
- Cameron, LA .....(337) 775-5574 *
- Fourchon, LA.....(504) 396-2620 *
- Houma, LA .....(504) 868-0817
- Lake Charles, LA.....(337) 478-6131 *

- New Iberia, LA.....(337) 367-8415 *
- Sabine Pass, TX.....(409) 971-2682
- Venice, LA.....(504) 534-2290 *

Evergreen Helicopters
- Galveston, TX.....(409) 740-0231 *
- Houston, TX.....(281) 488-0110
- Port O'Connor, TX.....(361) 983-4672 *
- Sabine Pass, TX.....(409) 971-2939 *
- Venice, LA.....(504) 534-2230 *

Houston Helicopters, Inc. - Pearland, TX.....(281) 485-1777 *

Industrial Helicopters
- Corpus Christi, TX.....(361) 265-9533 *
- Lafayette, LA.....(337) 233-3356 *

Panther Helicopters - New Orleans.....(504) 394-5803

Petroleum Helicopters, Inc.
- Cameron, LA.....(337) 775-7157 *
- Fourchon, LA.....(504) 396-2350 *
- Galveston, TX.....(409) 744-5286 *
- Houma, LA.....(504) 868-1705 *
- Intracoastal City, LA.....(337) 893-1882 *
- Lafayette, LA.....(337) 235-2452 *
- Morgan City, LA.....(504) 631-2132 *
- New Orleans, LA.....(504) 733-7673
- Port O'Connor, TX.....(361) 983-2942
- Rockport, TX.....(361) 729-1559 *
- Sabine Pass, TX.....(409) 971-2455 *
- Venice, LA.....(504) 534-2631 *

O. TRANSPORTATION - LAND

(1) Trucking

Ace Transportation, Inc.
- Harvey, LA – Toll Free.....(800) 654-4236 *
- Houma, LA – Toll Free.....(800) 654-4235 *
- Houston, TX.....(800) 392-0087 *
- Lafayette, LA – Toll Free.....(800) 451-9844 *
- Pearland, TX – Toll Free.....(800) 327-3643 *
- Venice, LA – Toll Free.....(800) 256-9772 *

Acme Trucking.....(800) 344-2399
- Beaumont, TX.....(800) 456-2263 *
- Belle Chasse, LA.....(800) 825-4789 *
- Cameron, LA.....(800) 775-2263 *
- Groves, TX.....(409) 962-8591 *
- Harvey, LA.....(504) 340-1400 *
- Houma, LA.....(800) 274-2263 *
- Houston, TX.....(713) 674-7070 *
- Houston, TX – Toll Free.....(800) 777-4786 *
- Lafayette, LA – Toll Free.....(800) 678-2263
- Lake Charles, LA.....(337) 439-9830 *
- Lake Charles, LA – Toll Free.....(800) 727-2263 *
- Morgan City, LA.....(800) 365-2263 *
- Venice, LA.....(504) 534-2048 *

Future Freightways
- Dallas, TX – Toll Free.....(800) 275-1845 *
- Houston, TX .....(713) 466-1120
- Houston, TX – Toll Free .....(800) 683-4682 *
- Kilgore, TX – Toll Free .....(800) 683-4681 *

Goetz Services, Inc.
- Bay City, TX .....(409) 244-5166 *
- Beeville, TX .....(361) 358-2923 *
- Giddings, TX.....(409) 542-3663 *
- Goliad, TX .....(361) 645-3129
- Hallettsville, TX.....(361) 798-3694 *
- Victoria, TX.....(361) 575-0741 *

Packard Truck Lines - New Orleans, LA .....(504) 392-9994

Walker Truck Line
- Channelview, TX .....(281) 452-5443 *
- Morgan City, LA.....(504) 384-3166 *
- Morgan City, LA – Toll Free .....(800) 535-5992 *

Peak Services - Texas City, TX.....(409) 948-3591 *
Ray Bellew and Sons - Houston, TX.....(713) 991-0390 *

Service Offshore Inc.
- Intracoastal City, LA .....(337) 893-6843 *
- Lafayette, LA .....(337) 235-6496 *

Specialized Waste Systems, Inc. - Houston, TX.....(713) 455-7799 *
Tetra Services - Alice, TX – Toll Free .....(800) 541-9219 *

Venture Transport
- Houma, LA .....(504) 851-3316 *
- Houma, LA – Toll Free .....(800) 738-3316
- Houston, TX – Toll Free .....(800) 960-8777

Western American Transportation
- Corpus Christi, TX.....(361) 289-7446 *
- Lafayette, LA – Toll Free.....(800) 448-3525

Whitey Patten
- Corpus Christi, TX.....(361) 241-0633 *
- Toll Free .....(800) 242-1085

P. TRANSPORTATION - MARINE

Legend

Barge ..... (B)
Barge (Storage)..... (BS)
Crew Boats ..... (C)
Lift Boats..... (L)
Offshore Barge ..... (O)
Supply Boats ..... (S)
Tugs..... (T)
Utility Boats..... (U)

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(1) Vessels

AMC Marine Service Inc. - Golden Meadow, LA..... (L) .....(504) 475-5077
Aries Marine Service, Inc. - Lafayette, LA..... (L)(S)(U) .....(337) 232-0335
Atlas Boats, Inc. - Belle Chase, LA ..... (S)(U).....(504) 391-0192
B&C Boat Rentals - Golden Meadow, LA ..... (S)(U).....(504) 475-5543

B&J Martin, Inc. - Cutoff, LA	(S)(U)	(504) 632-2727
Barnett Marine, Inc. - Belle Chase, LA	(B)	(504) 394-6055
Broussard Bros. - Intracoastal City, LA	(B)(C)(S)(T)(U)	(337) 893-5303
Brownwater Marine - Rockport, TX	(B)(C)(T)	(361) 729-3721
Bud's Boat Rentals - Venice, LA	(C)	(504) 534-2394
C&E Boat Rental - Cutoff, LA	(S)(U)	(504) 632-6166
Callais Boat - Cutoff, LA	(C)(U)	(504) 632-3411
Canal Barge - New Orleans, LA	(BS)	(504) 581-2424
Cameron Offshore Boats - Cameron, LA	(C)(S)(U)	(337) 775-5505
Candy Fleet – Morgan City, LA	(C)(S)(U)	(504) 384-5835 *
Cenac Towing		
- Houma, LA	(T)(B)(BS)(O)	(504) 872-2413 *
- Toll Free	(T)(B)(BS)(O)	(800) 942-5476 *
Central Boat Rental – Morgan City, LA	(T)(B)(O)	(504) 384-8200
Crew Boats, Inc. - Chalmette, LA	(C)	(504) 277-8201
Derrick Construction – Aransas Pass, TX	(B)	(361) 729-2423 *
Dinko's Marine – Aransas Pass, TX	(U)	(361) 758-3673 *
Dolphin Workboats, Inc. – Morgan City, LA		(504) 384-4780 *
Double Eagle Marine – Houma, LA	(T)	(504) 851-0566
Dugat Docks – Ingleside, TX	(B)(T)	(361) 643-7505
Edison Chouest Offshore – Galliano, LA	(C)	(504) 632-7144 *
Ensco Marine Co. – Broussard, LA	(S)(U)	(337) 837-9583 *
Guch Marine – Gloden Meadow, LA	(C)(S)(U)	(504) 632-8000
Gulf Crew – Cameron, LA	(U)	(337) 775-5384 *
Gulf Trans - Morgan City, LA		(504) 384-3888
Harvey Gulf International – Harvey, LA	(B)(T)	(504) 348-2466 *
Kilgore Offshore		
- Houston, TX	(C)(S)(U)	(281) 364-6942 *
- Lafayette, LA	(C)(S)(U)	(337) 233-6515 *
Kim Susan, Inc. – Larose, LA	(C)(S)(U)	(504) 693-7601 *
Leevac Marine, Inc. – Morgan City, LA	(B)(O)	(504) 727-3707
Louisiana International Marine – Gretna, LA	(T)	(504) 392-8670
Marine Transportation – Panama City, FL	(C)	(850) 769-1459 *
Masco Operators, Inc. – Freeport, TX	(S)(U)	(409) 233-4827
McCall's Boat Rental – Cameron, LA	(C)(S)(U)	(337) 775-5485 *
McDonough Marine – New Orleans, LA	(B)(T)	(504) 780-8100 *
Mid Coast Barge Corp.		
- Port Aransas, TX	(B)(T)	(361) 749-5419 *
- Alternate Number	(B)(T)	(361) 749-6908 *
Montco, Inc. – Golden Meadow, LA	(L)	(504) 475-7157 *
Moran Towing of Texas – Nederland, TX	(O)(T)	(409) 727-7020 *
Offshore Marine Services – Sabine Pass, TX	(S)(U)	(409) 971-2705 *
Offshore Shipyard – Venice, LA	(C)	(504) 534-2277
Otto Candies, Inc. – Des Allemands, LA	(B)(C)(S)(T)(U)	(504) 469-7700 *
(Maintains Database Offshore Vessels)		
Ryan Marine Service – Galveston, TX	(C)(S)(U)	(409) 763-1269 *
Seacor – Patterson, LA	(C)(S)(U)	(504) 395-9557 *
Seacor Marine, Inc.		
- Houston, TX	(C)(S)(T)(U)	(713) 782-5990 *
- Morgan City, LA	(C)(S)(T)(U)	(504) 385-3475 *
- Morgan City, LA	(C)(S)(T)(U)	(800) 989-7062 *
Sea Mar, Inc. – Lafayette, LA	(S)(U)	(337) 365-6000
Suard Barge Service, Inc. – Lockport, LA	(B)(T)	(504) 532-5300 *

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Texas Crew Boats – Freeport, TX ..... (C) ..... (409) 233-8222 *
Tidewater Marine
- Amelia, LA ..... (B)(C)(S)(T)(U) ..... (504) 631-5820 *
- Harvey, LA ..... (B)(C)(S)(T)(U) ..... (504) 340-5051
- Houston, TX ..... (B)(C)(S)(T)(U) ..... (713) 954-4875 *
- Lafayette, LA ..... (B)(C)(S)(T)(U) ..... (337) 232-8255
- New Orleans, LA ..... (B)(C)(S)(T)(U) ..... (504) 568-1010

Trico Marine Operators
- Houma, LA ..... (C)(S)(U) ..... (504) 851-3833
- Houston, TX ..... (C)(S)(U) ..... (713) 780-9926

Y & S Boat Rental – Venice, LA ..... (C) ..... (504) 657-7546

(2) Vessel Brokers

Otto Candies, Inc. ..... (B)(C)(S)(T)(U) ..... (504) 469-7700
(Maintains database offshore vessels)
Ritchie Jentiss – Houston, TX - Pager ..... (B)(C)(S)(T)(U) ..... (800) 425-6768
Ralph McIngvale (So. States OS) – Houston, TX ..... (B)(C)(S)(T)(U)... ...(281) 448-3693
David Wolford
- New Orleans, LA ..... (B)(C)(S)(T)(U) ..... (504) 581-1314
- Pager ..... (504) 840-9010

Q. TRAILERS

Clegg Industries, Inc.
- Victoria, TX ..... (361) 578-0291
- John Clegg ..... (361) 575-8177 *

H & B Rentals
- Alvin, TX – Toll Free ..... (800) 237-6062 *
- Lafayette, LA ..... (337) 839-1641 *

Proco Inc. - Corpus Christi, TX ..... (361) 516-1112
Scope International - Beaumont, TX ..... (409) 834-2289
Williams Scotsman - Houston, TX ..... (713) 466-4353

R. VACUUM SERVICES

APT - Corpus Christi, TX ..... (361) 852-2266 *
B & G Vacuum Service - Alvin, TX ..... (281) 331-6174 *
Brine Service Co. - Corpus Christi, TX ..... (361) 289-0063 *
H & K Vacuum Trucking Company - Sinton, TX ..... (361) 364-4311 *
Kovak Sales, Inc. - Lafayette, LA ..... (337) 234-7400 *
Max-Vac - Corpus Christi, TX ..... (361) 887-2182 *
Mo-Vac - Alice, TX ..... (361) 883-0296 *
Phillips Services - Corpus Christi, TX ..... (361) 265-9339 *
Southwest Services - Corpus Christi, TX ..... (361) 855-4552 *
Waste Management - Corpus Christi, TX ..... (361) 242-3370 *

S. WELL CONTROL SUPPLIES

Baker Oil Tools - New Iberia, LA ..... (337) 235-7521 *
Frank's Casing Crew
- Corpus Christi, TX – Toll Free ..... (800) 827-6391 *
- Houston, TX ..... (800) 827-6020 *
- Lafayette, LA – Toll Free ..... (800) 833-7265 *

Gulf Coast Rental Tools

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- Houston, TX .....(713) 622-1686 *
- Lafayette, LA .....(337) 234-4571 *

Hub City Iron Works - Lafayette, LA .....(337) 233-9100 *
Kim Susan Incorporated - Larose, LA .....(504) 693-7601 *
Patterson Rental Tools
- Alice, TX .....(361) 668-8234 *
- Houma, LA .....(504) 879-1593 *
- Houston, TX .....(713) 751-0066 *
- Lafayette, LA .....(337) 232-8501 *
- Venice, LA .....(504) 534-2627 *

Weatherford
- Corpus Christi, TX .....(361) 289-1551
- Lafayette, LA .....(337) 837-1877 *

Weatherford EVR
- Corpus Christi, TX .....(361) 289-1551
- Houston, TX .....(281) 485-1899 *

T. WILDLIFE AND MARINE LIFE

(1) Specialists - Nation

International Bird Rescue Center
- Mr. Jay Holcomb - Berkley, CA .....(510) 841-9086 *

Tri-State Bird Rescue & Research, Inc. – Eilleen Mueller - Newark, DE .... (302) 737-9543
University of Miami (Sea Turtles), Rosenstiel School of Marine Sciences
- Dr. Peter Lutz - Miami, FL .....(305) 361-4080

W R & E - Wildlife Rehab & Education
- Sharon Schmalz - League City, TX
  Home Pager .....(281) 332-8319
  Pager .....(713) 279-1417
  Pager .....(713) 604-0303

(2) Specialists - Texas

Aransas Wildlife Refuge (Locate Facilities for Wildlife) - Austwell, TX.....(361) 286-3533
- Mr. Tom Stehn, Biologist .....(361) 286-3559

Houston Audubon Society - Houston, TX .....(713) 932-1639
- Mr. Gary Woods, President .....(713) 932-1392 *

Institute of Marine Life Sciences (Fish Expertise) - Texas A & M Univ.
- Dr. Andrew M. Landrie. .....(409) 740-4413

Marine Mammal Research Program (Marine Mammal Expertise)
- Dr. Bernd Wursig
  Texas A & M Univ. .....(409) 740-4413
  Galveston, TX .....(409) 740-4423

National Marine Fisheries Service (Sea Turtles) - Galveston, TX.....(409) 766-3525
- Dr. Charles Caillouet, Jr. .....(409) 766-3500

Permitted Individual
- Sibyl Bodamer - Houston, TX.....(281) 379-7961 *

Texas Parks & Wildlife
- Austin, TX .....(512) 389-4848

W R & E - Wildlife Rehab & Education - League City, TX
- Sharon Schmalz:
  Home Pager .....(281) 332-8319
  Pager .....(713) 279-1417

Pager .....(713) 604-0303

(3) Specialists - Louisiana

Eagle Surveying
- Wayne Dubuc - Morgan City, LA.....(504) 385-3232 *

Louisiana Department of Wildlife and Fisheries
- Jim Hanifen, Baton Rouge, LA.....(225) 765-2379
  After Hours .....(225) 765-2441

U. S. Department of Agriculture (Animal Damage Control)
- Dwight LeBlanc, State Director
  Port Allen, LA.....(225) 389-0229
  Crowley, LA .....(337) 783-0182 *
- David Ruid, Bastrop, LA.....(318) 283-2819
- Allen Wilson and Greg Harper, Crowley, LA.....(337) 783-0182

(4) U.S. Fish and Wildlife

Offshore Texas

(Call Region II Office first. Paul Fore will contact Field Office.)

Region II Office - Ecological Services

Albuquerque, New Mexico .....(505) 248-6786
- Paul Fore, Regional Oil Spill Response Coordinator.....(505) 822-1107 *

Field Offices - Ecological Services

Houston, TX (East Matagorda Bay North).....(281) 286-8282
- Environmental Contaminant, Brian Cain, Specialist .....(281) 480-7418 *

Corpus Christi State University (East Matagorda Bay South).....(361) 994-9005
- Environmental Contaminant, Tom Shultz, Specialist.....(361) 985-1251 *
- Asst. Environmental Contaminant, Steve Robertson.....(361) 991-4659 *

Offshore Louisiana, Alabama, Mississippi and Florida

(Call Field Office first. If unavailable, contact Region IV Office.)

Field Offices - Ecological Services

Lafayette, Louisiana .....(337) 291-3100
- Field Response Coordinator, Jane Ledwin .....(337) 261-5495 *
- Alternate, Paul Conzelmann .....(337) 984-3207 *
- Alternate, Russell Watson.....(337) 988-6311 *

Daphne, Alabama (Coastal Mississippi and Coastal Alabama).....(334) 441-5181
- Resource Contaminate Assessment, Sharon Delchamps.....(334) 479-4799 *

Panama City, Florida (Panhandle of Florida to Swanee River Drainage)...(850) 769-0552
- Resource Contaminate Assessment, Mike Brim, Specialist .....(850) 769-1670 *

Region IV Office - Ecological Services

Atlanta, Georgia

- Allen Robinson, Pollution Response Coordinator .....(404) 679-7127
  After Hours .....(404) 469-7233
  Pager Number .....(800) 759-8888
  Pin Number.....507-2274
- Sr. Contaminate Specialist, Jennifer Harris .....(404) 679-7135
- Contaminate Coordinator, Allen Robinson.....(404) 679-7127

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APPENDIX G - NOTIFICATION AND REPORTING FORMS

A. Internal Spill Reporting Form G-2

B. External Spill Reporting Forms G-4

OIL SPILL AND HAZARDOUS SUBSTANCE RELEASE REPORT FORM

☐ Marathon Oil Company Region/Division/District _____

☐ Marathon Petroleum Company Division/District _____

☐ Marathon Pipe Line Company Division/District _____

☐ Other: _____

SPILL DATE MO DA YR	EST. SPILL TIME	AM PM	ESTIMATED SPILL VOLUME	TYPE OF MATERIAL SPILLED	SIGHTED BY	VOLUME RECOVERED

LOCATION OF SPILL: (Include State, County, Lease, Field, Rig/Platform)

_____

_____

_____

_____

_____

Onshore Section _____ Township _____ Range _____

Offshore OCS-G-No. _____ Latitude _____ Longitude _____

DESCRIPTION OF SPILL AREA, LOCATION & DIRECTION OF MOVEMENT: _____

_____

_____

WATER/GROUNDWATER AFFECTED ___ Yes ___ No If Yes, Name of water body affected: _____

Sheen/Slick Appearance (Color: silvery, barely visible, rainbow, dark black, etc.)

_____

_____

WEATHER: Clear _____ Cloudy _____ Fog _____ Rain _____ Snow _____ Ice _____

Wind: Velocity _____ mph, Direction _____ (N,SE,etc., From) Temperature _____

Waves: Height _____ ft., Direction _____ (N,SE,etc., To)

Current: Velocity _____ mph, Direction _____ (N,SE,etc., To)

Tides: _____ (ebb, flood, high, low, direction, velocity, etc.)

CAUSE OF SPILL: (Facts only, No Opinion or Speculation) _____

_____

_____

_____

_____

_____

RESPONSE PROCEDURES: (Containment, recovery & cleanup procedures): _____

_____

_____

_____

_____

STEPS TAKEN TO PREVENT RECURRENCE: _____

_____

_____

_____

_____

_____

APPARENT HAZARD TO LIFE and/or PROPERTY: _____

_____

_____

FACILITY DAMAGE OR INJURIES: _____

_____

_____

EMPLOYEE RESPONSIBLE FOR CLEANUP: _____

)TIFICATION OF REGULATORY AGENCIES:

Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

B. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

C. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

D. Agency _____ Telephone No. _____ Time _____

Date _____ Person Contacted _____

Comments _____

PERSON MAKING CONTACT WITH AGENCIES: _____

IF CORPORATE OFFICE NOTIFIED:

)rson Contacted _____ Time _____ Date _____

)rson Filing Report: _____ _____ _____

Print Name Signature Date

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REPORT FOR SPILLS
OF OIL OR HAZARDOUS MATERIALS

LOUISIANA

DATE REPORTED _____ TIME _____

COMPANY REPORTING SPILL _____

PERSON REPORTING SPILL _____ TELEPHONE _____

LOCATION OF SPILL _____

TYPE OF MATERIAL _____ AMOUNT _____ BBLS

SOURCE OF SPILL _____

_____

ACTION TAKEN TO CONTROL SPILL _____

_____

_____

ESTIMATE OF SPILLED MATERIAL RECOVERED _____ BBLS

NAME OF INDIVIDUAL WITH STATE AGENCY OR
ANSWERING SERVICE TAKING SPILL REPORT _____

DATE _____

FILE REPORT TO

Department of Natural Resources
Office of Conservation
P.O. Box 44275
Baton Rouge, Louisiana 70804

Louisiana Department of
Environmental Quality
P.O. Box 82215
Baton Rouge, Louisiana 70884

SPILL REPORTING FORM

MISSISSIPPI

Date _____ Time _____

PERSON REPORTING: _____

ADDRESS: _____
City Street or P. O. Box Phone

SPILL LOCATION: _____

_____

_____

COMPANY NAME & ADDRESS: _____

_____

MATERIAL SPILLED: _____

ESTIMATED QUANTITY: _____

SOURCE OF SPILL: _____

CAUSE OF SPILL: _____

NAME OF BODY OF WATER INVOLVED OR CLOSEST BODY OF WATER IN SPILL AREA:

_____

ACTION TAKEN: CONTAINMENT, CLEANUP: _____

_____

_____

AGENCIES REPORTED TO: _____

REPORT TAKEN BY: _____
Name Title

LOCATION: NRO CRO SRO ADMINISTRATIVE OFFICE

ACTION TAKEN: _____

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MMS SERIOUS INJURY REPORT
(30 CFR 250.19)

MMS OFFICE TO BE FORWARDED: _____ DATE OF REPORT: _____

NAME OF INJURED: _____ DATE OF INJURY: _____

INJURED PERSON'S ADDRESS: _____ TIME OF INJURY: _____

_____ WAS INJURY FATAL: _____

SOCIAL SECURITY NO.: _____ PLACE OF INJURY: _____

LOCATION (AREA & BLOCK): _____ OCS NO.: _____

EMPLOYER OF INJURED: _____

DESCRIPTION OF INJURY: _____

_____

_____

_____

NATURE OF INJURY: _____ TYPE OF OPERATIONS: _____

SPECIFIC TASK: _____ WEATHER: _____

WITNESSES: _____ _____

_____ _____

_____ _____

WHAT WOULD PREVENT SIMILAR INJURY: _____

HOSPITAL/DOCTOR WHERE TREATMENT RECEIVED: _____

_____

LENGTH OF DISABILITY: _____ COMMENTS: _____

_____

FOR FURTHER INFORMATION CONTACT:

_____

Signature of Preparer

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MINERALS MANAGEMENT SERVICE

INITIAL ORAL REPORT OF PIPELINE BREAK OR LEAK

REPORT RECEIVED BY
NAME:_____
DATE:_____

REPORT GIVEN BY
NAME:_____
COMPANY:_____
PHONE NO.:_____

TIME AND DATE OF BREAK OR LEAK DISCOVERY:_____
BREAK OR LEAK LOCATION:_____

PIPELINE: SIZE_____ PRODUCT_____

FROM:_____
TO:_____
WIND VELOCITY:_____ SEA CONDITIONS:_____
HOW FAR FROM SHORE:_____
EXTENT OF SLICK:_____
VOLUME OF SPILL:_____
NORMAL DAILY PRODUCTION:_____ BOPD_____ MCFPD_____
PRODUCTION TO PIPELINE SHUT IN?_____ IF SO HOW? (AUTO/MANUAL)
OPERATING PRESSURE RANGE?_____
LOW PRESSURE SENSOR SETTING?_____
APPROXIMATE DATE OF CONSTRUCTION:_____
REMIND OPERATOR OF NTL 80-9 (PIPELINE DAMAGE REPORTING)_____
CAUSE:_____
REMARKS:_____
_____

****

WAS WASHINGTON NOTIFIED BY PHONE?_____
WHEN?_____ BY WHOM?_____
TO WHOM?_____

****

NOTIFY DATE OF PIPELINE REPAIR

REPORT RECEIVED BY
NAME:_____
DATE:_____

REPORT GIVEN BY
NAME:_____
DATE:_____

INSPECTION OF INSTALLATION
DATE:_____
NAME OF INSPECTOR:_____

REMARKS:_____
_____

SEGMENT NO._____ DOI OR DOT_____

MINERALS MANAGEMENT SERVICE

OIL SPILL REPORT

1. Name of Company_____

2. Telephone Number_____

3. Person Reporting Spill_____Telephone No. _____

4. Name of Person-In-Charge_____Telephone No. _____

5. Exact Location of Spill_____Time_____

6. Estimated Quantity and Type_____

7. Movement and Size of Slick_____

8. Direction and Speed of Wind and Wave Height_____

9. List of Agencies Notified_____

_____

_____

10. List of: River Banks _____

Shores_____

Beaches_____

Other Areas_____

11. Action Taken to Control and Clean Up_____

_____

_____

12. Injuries, If Any_____

_____

_____

13. Possible Hazards to Human Health or Environment_____

_____

_____

INSTRUCTIONS

FOR COMPLETION OF FORM CG-2692

REPORT OF MARINE ACCIDENT, INJURY OR DEATH

AND FORM CG-2692A, BARGE ADDENDUM

WHEN TO USE THIS FORM

1. This form satisfies the requirements for written reports of accidents found in the Code of Federal Regulations for vessels, Outer Continental Shelf (OCS) facilities, mobile offshore drilling units (MODUs) and diving. The kinds of accidents that must be reported are described in the following instructions.

VESSELS

2. A vessel accident must be reported if it occurs upon the navigable waters of the U.S. its territories or possessions; or whenever an accident involves a U.S. vessel; wherever the accident may occur. (Public vessels and recreational vessels are excepted from these reporting requirements.) The accident must also involve one of the following (ref. 46 CFR 4.05-1):

A. All accidental groundings and any intentional grounding which also meets any of the other reporting criteria or creates a hazard to navigation, the environment, or the safety of the vessel;

B. Loss of main propulsion or primary steering, or an associated component or control system, the loss of which causes a reduction of the maneuvering capabilities of the vessel. Loss means that systems, component parts, subsystems, or control systems do not perform the specified or required function;

C. An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route including but not limited to fire, flooding, failure or damage to fixed fire extinguishing systems, lifesaving equipment or bilge pumping systems;

D. Loss of life:

E. An Injury that requires professional medical treatment (beyond first aid) and, if a crewmember on a commerical vessel, that renders the individual unfit to perform routine duties.

F. An occurrence not meeting any of the above criteria but resulting in damage to property in excess of $25,000. Damage cost includes the cost of labor and material to restore the property to the condition which existed prior to the casualty, but it does not include the cost of salvage, cleaning, gas freeing, drydocking or demurrage.

MOBILE OFFSHORE DRILLING UNITS

3. MODUs are vessels and are required to report an accident that results in any of the events listed by Instruction 2-A through 2-F for vessels. (Ref. 46 CFR 4.05-1, 46 CRF 109.411)

OCS FACILITIES

4. All OCS facilities (except mobile offshore drilling units) engaged in mineral exploration, development or production activities on the Outer Continental Shelf of the U. S. are required by 33 CFR 146.30 to report accidents resulting in:

A. Death;

B. Injury to 5 or more persons in a single incident;

C. Injury causing any person to be incapacitated for more than 72 hours.

D. Damage affecting the usefulness of primary lifesaving or firefighting equipment;

E. Damage to the facility in excess of $25,000 resulting from a collision by a vessel;

F. Damage to a floating OCS facility in excess of $25,000.

5. Foreign vessels engaged in mineral exploration, development or production on the U. S. Outer Continental Shelf, other than vessels already required to report by Instructions 2 and 3 above, are required by 33 CFR 146.303 to report casualties that result in any of the following:

A. Death;

B. Injury to 5 or more persons in a single incident;

C. Injury causing any person to be incapacitated for more than 72 hours.

DIVING

6. Diving casualties include injury or death that occurs while using underwater breathing apparatus while diving from a vessel or OCS facility.

A. COMMERCIAL DIVING. A dive is considered commercial if it is for commercial purposes from a vessel required to have a Coast Guard certificate of inspection, from an OCS facility or in its related safety zone or in a related activity, at a deepwater port or in its safety zone. Casualties that occur during commercial dives are covered by 46 CFR 197.486 if they result in:

1. Loss of life;
2. Injury causing incapacitation over 72 hours;
3. Injury requiring hospitalization over 24 hours.

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In addition to the information requested on this form, also provide the name of the diving supervisor and, if applicable, a detailed report on gas embolism or decompression sickness as required by 46 CFR 197.410(a)(9).

Exempt from the commercial category are dives for:

1. Marine science research by educational institutions;
2. Research in diving equipment and technology;
3. Search and Rescue controlled by a government agency.

B. ALL OTHER DIVING. Diving accidents not covered by Instruction (6-A) but involving vessels subject to Instruction (2), VESSELS, must be reported if they result in death or injury causing incapacitation over 72 hours. (Ref. 46 CFR 4.03-1(c)).

HAZARDOUS MATERIALS

7. When an accident involves hazardous materials, public and environmental health and safety require immediate action. As soon as any person in charge of a vessel or facility has knowledge of a release or discharge of oil or a hazardous substance, that person is required to immediately notify the U. S. Department of Transportation's National Response Center (telephone toll-free 800-424-8802 - in the Washington, D.C., area call 202-426-2675). Anyone else knowing of a pollution incident is encouraged to use the toll-free telephone number to report it. If etiologic (disease causing) agents are involved, call the U.S. Public Health Service's Center for Disease Control in Atlanta, Ga. (telephone 404-633-5313). (Ref. 42 USC 9603; 33 CFR 153; 49 CFR 171.15)

COMPLETION OF THIS FORM

8. This form should be filled out as completely and accurately as possible. Please type or print clearly. Fill in all blanks that apply to the kind of accident that has occurred. If a question is not applicable, the abbreviation "NA" should be entered in that space. If an answer is unknown and cannot be obtained, the abbreviation "UNK" should be entered in that space. If "NONE" is the correct response, then enter it in that space.

9. When this form has been completed, deliver or mail it as soon as possible to the Coast Guard Marine Safety or Marine Inspection Office nearest to the location of the casualty or, if at sea, nearest to the port of first arrival.

10. Amplifying information for completing the form:

A. Block 16 - " LOCATION" - Latitude and longitude to the nearest tenth of a minute should always be entered except in those rivers and waterways where a mile marker system is commonly used. In these cases, the mile number to the nearest tenth of a mile should be entered. If the latitude and longitude, or mile number, are unknown, reference to a known landmark or object (buoy, light, etc.) with distance and bearing to the object is permissible. Always identify the body of water or waterway referred to.

B. Tug or towboat with tow - Tugs or towboats with tows under their control should complete all applicable portions of the CG-2692. SECTION II should be completed if a barge causes or sustains damage or meets any other reporting criteria. If additional barges require reporting, the "Barge Addendum," CG-2692A, may be used to provide the information for the additional barges.

C. Moored/Anchored Barge - If a barge suffers a casualty while moored or anchored, or breaks away from its moorage, and causes or sustains reportable damages or meets any other reporting criteria, enter the location of its moorage in Block (1) of the CG-2692 and complete the form except for Blocks (2) through (13). The details will be entered in SECTION II for one barge and on the "Barge Addendum" CG-2962A, for additional barges.

D. SECTION III - Personnel Accident Information - SECTION III must be completed for a death or injury. In addition, applicable portions of SECTIONS I, II and IV must be completed. If more than one death or injury occurs in a single incident, complete one CG-2692 for one of the persons injured or killed and attach additional CG-2692's, pilling out Blocks (1) and (2) and SECTION III for each additional person.

E. BLOCK 44 - Describe the sequence of events which led up to this casualty. Include your opinion of the primary cause and any contributing causes of the casualty. Briefly describe damage to your vessel, its cargo. and other vessels/property. Include any recommendations you may have for preventing similar casualties. *ALCOHOL AND DRUG INFORMATION.* Provide the following information with regard to each person determined to be directly involved in the casualty: name, position aboard the vessel, whether or not the person was under the influence of alcohol or drugs at the time of the casualty, and the method used to make this determination. If toxicological testing is conducted the results should be included; if results are not available in a timely manner, provide the results of the toxicological test as soon as practical and indicate that this is the case in block 44 of the casualty form.

NOTICE: The information collected on this form is routinely available for public inspection. It is needed by the Coast Guard to carry out its responsibility to investigate marine casualties, to identify hazardous conditions or situations and to conduct statistical analysis. The information is used to determine whether new or revised safety initiatives are necessary for the protection of life or property in the marine environment.

DEPARTMENT OF TRANSPORTATION
U. S. COAST GUARD
CG-2692 (Rev. 6-87)

REPORT OF MARINE ACCIDENT, INJURY OR DEATH

TEST ELECTRONIC VERSION

UNIT CASE NUMBER

SECTION I. GENERAL INFORMATION

1. Name of Vessel or Facility	2. Official No.	3. Nationality	4. Call Sign	5. USCG Certificate of Inspection issued at:

6. Type (*Towing, Freight, Fish, Drill, etc.*)	7. Length	8. Gross Tons	9. Year Built	10. Propulsion (*Steam, diesel, gas, turbine ...*)

11. Hull Material (*Steel, Wood...*)	12. Draft (*ft. - in.*) FWD.	AFT.	13. If Vessel Classed, By Whom: (*ABS, LLOYDS, DNV, BV, etc.*)	14. Date (*Of occurrence*)	15. Time (*Local*)

16. Location (*See instruction No. 10A*)	17. Estimated Loss or Damage TO:
18. Name, Address & Telephone No. of Operating Co.	VESSEL $ _____ CARGO $ _____ OTHER $ _____

19. Name of Master or Person in Charge	USCG License ☐ YES ☐ NO	20. Name of Pilot	USCG License ☐ YES ☐ NO	State License ☐ YES ☐ NO

19a. Street Address (*City, State, Zip Code*)	19b. Telephone Number ( )	20a. Street Address (*City, State, Zip Code*)	20b. Telephone Number ( )

21. Casualty Elements (*Check as many as needed and explain in Block 44.*)

NO. OF PERSONS ON BOARD _____
- ☐ DEATH- HOW MANY? _____
- ☐ MISSING- HOW MANY? _____
- ☐ INJURED- HOW MANY? _____
- ☐ HAZARDOUS MATERIAL RELEASED OR INVOLVED (*Identify Substance and amount in Block 44.*)
- ☐ OIL SPILL-ESTIMATE AMOUNT: _____
- ☐ CARGO CONTAINER LOST/DAMAGED
- ☐ COLLISON (*Identify other vessel or object in Block 44.*)
- ☐ GROUNDING ☐ WAKE DAMAGE

- ☐ FLOODING; SWAMPING WITHOUT SINKING
- ☐ CAPSIZING (*with or without sinking*)
- ☐ FOUNDERING OR SINKING
- ☐ HEAVY WEATHER DAMAGE
- ☐ FIRE
- ☐ EXPLOSION
- ☐ COMMERCIAL DIVING CASUALTY
- ☐ ICE DAMAGE
- ☐ DAMAGE TO AIDS TO NAVIGATION
- ☐ STEERING FAILURE
- ☐ MACHINERY OR EQUIPMENT FAILURE
- ☐ ELECTRICAL FAILURE
- ☐ STRUCTURAL FAILURE

- ☐ FIREFIGHTING OR EMERGENCY EQUIPMENT FAILED OR INADEQUATE (*Describe in Block 44.*)
- ☐ LIFESAVING EQUIPMENT FAILED OR INADEQUATE (*Describe in Block 44.*)
- ☐ BLOW OUT (*Petroleum exploration/production*)
- ☐ ALCOHOL INVOLVEMENT (*Describe in Block 44.*)
- ☐ DRUG INVOLVEMENT (*Describe in Block 44.*)
- ☐ OTHER (*Specify*) _____

22. Conditions

A. Sea or River Conditions (*wave height, river stage, etc.*)	B. WEATHER	C. TIME	D. VISIBILITY
	☐ CLEAR	☐ DAYLIGHT	☐ GOOD
	☐ RAIN	☐ TWILIGHT	☐ FAIR
	☐ SNOW	☐ NIGHT	☐ POOR
	☐ FOG		
	☐ OTHER (*Specify*) _____		

E. DISTANCE (*miles*) (*of visibility*) _____
F. AIR TEMPERATURE (F) _____
G. WIND SPEED & DIRECTION _____ _____
H. CURRENT SPEED & DIRECTION _____ _____

23. Navigation Information		24. Last Port Where Bound	24a. Time and Date of Departure
☐ MOORED, DOCKED OR FIXED ☐ ANCHORED ☐ UNDERWAY OR DRIFTING	SPEED _____ AND COURSE _____	_____	

25. FOR TOWING ONLY	25a. NUMBER OF VESSELS TOWED	Empty	Loaded	Total	25b. TOTAL H.P. OF TOWING UNITS	25c. MAXIMUM SIZE OF TOW WITH TOW-BOAT(S)	Length	Width	25d. (*Describe in Block 44.*)
									☐ PUSHING AHEAD ☐ TOWING ASTERN ☐ TOWING ALONGSIDE ☐ MORE THAN ONE TOW-BOAT ON TOW

SECTION II. BARGE INFORMATION

26. Name	26a. Official Number	26b. Type	26c. Length	26d. Gross Tons	26e. USCG Certificate of Inspection Issued at:

26f. Year Built	26g. ☐ SINGLE SKIN ☐ DOUBLE SKIN	26h. Draft FWD	AFT	26i. Operating Company

26j. Damage Amount	26k. Describe Damage to Barge
BARGE $ _____ CARGO $ _____ OTHER $ _____	

REVERSE OF CG-2692 (REV. 6-87)

SECTION III. PERSONNEL ACCIDENT INFORMATION

27. Person Involved ☐ MALE or ☐ FEMALE ☐ DEAD ☐ MISSING ☐ INJURED	27a. Name (*Last, First, Middle Name*)	27c. Status ☐ CREW ☐ PASSENGER ☐ OTHER (*Specify*)
	27b. Address (*City, State, Zip Code*)	

28. Birth Date	29. Telephone No. ( )	30. Job Position	31. (*Check here if off duty*) ☐

32. Employer -(*If different from Block 18., fill in Name, Address, Telephone No.*)

33. Person's Time	YEAR(S)	MONTH(S)	34. Industry of Employer (*Towing, Fishing, Shipping, Crew Supply, Drilling, etc.*)
A. IN THIS INDUSTRY -			
B. WITH THIS COMPANY-			
C. IN PRESENT JOB OR POSITION-			35. Was the Injured Person Incapacitated 72 Hours or More? ☐ YES ☐ NO
D. ON PRESENT VESSEL/FACILITY -			
E. HOURS ON DUTY WHEN ACCIDENT OCCURRED -			36. Date of Death

37. Activity of Person at Time of Accident

38. Specific Location of Accident on Vessel/Facility

39. Type of Accident (*Fall, Caught between, etc.*)	40. Resulting Injury (*Cut, Bruise, Fracture, Burn, etc.*)
41. Part of Body Injured	42. Equipment Involved in Accident

43. Specific Object, Part of the Equipment in Block 42., or Substance (*Chemical, Solvent, etc.*) that directly produced the Injury.

SECTION IV. DESCRIPTION OF CASUALTY

44. Describe how accident occured, damage, information on alcohol/drug involvement and recommendations for corrective safety measures. (*See instructions and attach additional sheets if necessary*).

45. Witness (*Name, Address, Telephone No.*)

46. Witness (*Name Address, Telephone No.*)

SECTION V. PERSON MAKING THIS REPORT

47. Name (PRINT) (*Last, First, Middle*)	47b. Address (*City, State, Zip Code*)	47c. Title
		47d. Telephone No. ( )
47a. Signature		47e. Date

FOR COAST GUARD USE ONLY

REPORTING OFFICE:

APPARENT CAUSE

CASUALTY CODE A B C	INVESTIGATOR (*Name*)	DATE	APPROVED BY (*Name*)	DATE

DEPARTMENT OF TRANSPORTATION
U.S. COAST GUARD
CG-2692B(1-91)

REPORT OF REQUIRED CHEMICAL DRUG AND ALCOHOL TESTING FOLLOWING A SERIOUS MARINE INCIDENT

(See Instructions on reverse)

APPROVED OMB NO. 2115-0003 (Expiration 6-93).5 Burden Hrs. ELECTRONIC TEST VERSION

USCG CASE NUMBER

SECTION I—VESSEL INFORMATION

1. Name of vessel	2. Official Number	3. Call Sign	4. Nationality
5. Vessel Type *(Freight, Towing, Fishing, MODU, etc.)*	**6. Length**	**7. Gross Tons**	**8. Year Built**

9. Operating Company
Name:
Address:
Telephone Number:

10. Master or Person in Charge
Name:
Address:
Telephone Number:

SECTION II—INCIDENT INFORMATION

11. Type of Serious Marine Incident *(Check Appropriate Box(es). (See Instructions on Reverse)*

- ☐ a. Death *(Append to Form CG-2692)*
- ☐ b. Injury requiring medical treatment *(Append to Form CG-2692)*
- ☐ c. Property damage in excess of $100,000 *(Append to Form CG-2692)*
- ☐ d. Loss of inspected vessel *(Append to Form CG-2692)*
- ☐ e. Loss of uninspected, self-propelled vessel of over 100 gross tons *(Append to Form CG-2692)*
- ☐ f. Discharge of oil of 10,000 gallons or more int U.S. waters
- ☐ g. Discharge of a reportable quantity of hazardous substance into U.S. waters
- ☐ h. Release of a reportable quantity of hazardous substance into U.S. environment

12. Date of Incident	13. Time *(local)* of Incident	14. Location of Incident *(Latitude and Longitude or River and Milepost)*

SECTION III—PERSONNEL / TESTING INFORMATION

15. Personnel Directly Involved in Serious Marine Incident				16. Drug and Alcohol Testing *(See Instructions on reverse)*						
15a. Name *(Last, First, Middle Initial)*	15b. Licensing/Certification *(Check Appropriate Box(es))*			16a. Drug Test Urine Specimen Provided?		16b. Alcohol Test Blood Specimen Provided?		16c. Alcohol Test Breath Specimen Provided?		
	USCG License	USCG MMD	NEITHER	YES	NO	YES	NO	YES	NO	Breath Test Results
	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	☐	☐	☐	☐	☐	☐	☐	☐	☐	

17. Laboratory Conducting Chemical Drug Tests
Name:
Address:
Telephone Number:

18. Laboratory Conducting Blood Alcohol Test(s) or Individual Conducting Breath Test(s)
Name:
Address:
Telephone Number:

19. Person Making This Report *(Please Print)*	20. Signature	21. Date
Name: Address: Telephone Number:	Title:	

22. Remarks *(See Instructions on Reverse)*

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INSTRUCTIONS FOR COMPLETION OF FORM CG-2692B

REPORT OF REQUIRED CHEMICAL DRUG AND ALCOHOL TESTING FOLLOWING A SERIOUS MARINE INCIDENT

NOTE: When this form is being submitted along with a REPORT OF MARINE ACCIDENT, INJURY OR DEATH (Form CG-2692), Blocks 3-10 and Blocks 12-14 on Form CG-2692B need not be completed.

WHEN TO USE THIS FORM

1. This form satisfies the requirements in the Code of Federal Regulations for written reports of chemical drug and alcohol testing of individuals directly involved in serious marine incidents. Public vessels and recreational vessels are excepted from these reporting requirements.

SERIOUS MARINE INCIDENTS

2. The term "serious marine incident" includes the following events involving a vessel in commercial service:

A. Any marine casualty or accident that occurs upon the navigable waters of the U.S., its territories or possessions, or that involves a U.S. vessel anywhere, and that results in any of the following:

1. One or more deaths;

2. Any injury to a crewmember, passenger, or other person which requires professional medical treatment beyond first aid;

3. Damage to property, as defined in 46 CFR 4.05-1(f), in excess of $100,000;

4. Actual or constructive total loss of any vessel subject to inspection under 46 U.S.C. 3301; or

5. Actual or constructive total loss of any self-propelled vessel, not subject to inspection under 46 U.S.C. 3301, of 100 gross tons or more.

B. A discharge of oil of 10,000 gallons or more into the navigable waters of the United States, as defined in 33 U.S.C. 1321, whether or not resulting from a marine casualty.

C. A discharge of a reportable quantity of a hazardous substance into the navigable waters of the United States, whether or not resulting from a marine casualty.

D. A release of a reportable quantity of a hazardous substance into the environment of the United States, whether or not resulting from a marine casualty.

INDIVIDUAL DIRECTLY INVOLVED IN A SERIOUS MARINE INCIDENT

3. Term "individual directly involved in a serious marine incident" is an individual whose order, action or failure to act is determined to be, or cannot be ruled out as, a causative factor in the events leading to or causing a serious marine incident.

COMPLETION OF THIS FORM

4. This form should be filled out as completely and accurately as possible. Please type or print clearly. Fill in all blanks that apply to the kind of incident that has occurred. If a question is not applicable, the abbreviation "NA" should be entered in that space. If an answer is unknown and cannot be obtained, the abbreviation "UNK" should be entered in that space. If "NONE" is the correct response, then enter it in that space.

5. When this form has been completed, deliver or mail it as soon as practicable to the Coast Guard Marine Safety or Marine Inspection Office nearest to the location of the incident or, if at sea, nearest to the port of first arrival.

6. Upon receipt of a report of chemical test results, the marine employer shall submit a copy of the test results for each person listed in block 15(a) of this form to the Coast Guard Officer in Charge, Marine Inspection whom the CG-2692B was submitted. (Ref. 46 CFR 4.06-60(d)).

7. Amplifying information for completing the form:

A. Block 11—"TYPE OF SERIOUS MARINE INCIDENT" Check each appropriate box. If box a, b, c, d, or e is checked, append this form to the required form CG-2692, "REPORT OF MARINE ACCIDENT, INJURY OR DEATH", and submit both forms as indicated in 5. above.

B. Block 16c—"ALCOHOL TEST BREATH SPECIMEN PROVIDED?" When breath test results are available alcohol concentration shall be expressed numerically in percent by weight (i.e., .04, .10 etc...).

C. Block 22—"REMARKS" Describe the duties of each individual listed in 15a, at the time of incident (i.e., master, pilot, chief engineer...). If an individual refuses to provide the required specimens, or if specimens are not obtained for any reason, describe the circumstances completely.

NOTICE: The information collected on this form is routinely available for public inspection. It is needed by the Coast Guard to carry out its responsibility to investigate marine casualties, to identify hazardous conditions or situations and to conduct statistical analysis. The information is used to determine whether new or revised safety initiatives are necessary for the protection of life or property in the marine environment.

22. REMARKS *(Continued)*

*U.S. GPO: 1991-282-640/26588

APPENDIX H - WORST CASE DISCHARGE SCENARIOS

A. Facility Information

WCD involves an Exploratory Well from Drillship

Type of Operation	Facility Name/ID No. or Pipeline Segment/ID No.	Area/ Block No. Where the Spill Originates	Distance in Miles from the Shore
Drilling	DP System Drillship "Cajun Express", Well #1	Desoto Canyon 927	104

B. Volume

Two worst case discharge scenarios were considered for drilling operations at Desoto Canyon 927. The volume of the worst case discharge scenario for drilling operations (exploratory well blowout = 10,000 bbls) was determined using criteria in Section 254.47. A second worst case discharge was developed pursuant to discussions with MMS Regional Staff members (rupture of the single largest fuel storage tank on the drilling rig = 2,457 bbls). Calculations are shown in **FIGURE H.1**.

C. Land Segment and Resource Identification

Trajectories of a spill and the probability of it impacting a land segment have been projected utilizing information in the MMS Oil Spill Risk Analysis Model (OSRAM) for the Eastern Gulf of Mexico as described in "Oil-Spill Risk Analysis: Gulf of Mexico Outer Continental Shelf (OCS), in Support of the Environmental Impact Statement (EIS) for Proposed Lease Sale 181" (OCS Report MMS 2001-007), using the maximum conditional probability for a 30- day impact. The results are shown in **FIGURE H.2**.

D. Resource Identification

The MMS OSRAM identifies a number of resources potentially affected by a spill occurring in Desoto Canyon 927. For purposes of discussion, these resources are divided into three groups: offshore biological resources, coastal environments, and endangered and threatened species.

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Offshor Biological Resources

Flower Garden Banks

Located approximately 105 miles directly south of the Texas/Louisiana border, the Flower Garden Banks are the northernmost coral reefs in the United States. Perched atop salt dome structures rising above the sea floor, the Banks provide a hard surface for coral attachment where clear sunlit water, warm water temperatures, and a steady food supply have formed a shallow-water Caribbean reef complex, an ecosystem of unique biological diversity. The Flower Garden Banks were designated a National Marine Sanctuary in 1992. In 1996, Congress expanded the Sanctuary by adding a third smaller bank, Stetson Bank, located approximately 70 miles south of Galveston, Texas. Due to its unique location, the Flower Garden Banks National Marine Sanctuary provides a rich assemblage of plants and animals enjoyed by researchers and recreational divers alike. To protect the reef structures, the National Marine Fisheries Service (NMFS) has prohibited fishing with bottom longline, bottom trawl, dredge, pots or traps yea round.

Florida Keys National Marine Sanctuary

The Florida Keys National Marine Sanctuary (FKNMS) is the most extensive living coral reef in the United States. Located adjacent to the 126-mile island chain of the Florida Keys, the reefs are part of a marine ecosystem that supports one of the most unique and diverse assemblages of plants and animals in North America. Established as a national marine sanctuary in 1990, the FKNMS consists of 2,800 square nautical miles of coastal and oceanic waters, and the submerged lands thereunder, surrounding the Florida Keys. These coral reefs comprise the only living coral barrier reef in North America, and the third longest barrier reef in the world (following Australia and Belize). The FKNMS is part of a fragile interdependent ecosystem that includes mangroves and seagrasses on both the ocean and bay side of the Florida Keys, supporting tourism, commercial fishing, and the economic foundation of the Florida Keys communities

Florida Middle Ground

The Florida Middle Ground is a unique reef structure located on the western Florida shelf. Approximately 100 miles northwest of Tampa Bay, it consists of a number of large reef structures, the tops of which are in 70 to 90 feet of water. These reef structures are covered with dense algae, large sponges, and several species of coral. Over 170 species of fish have been observed in this area; the Florida Middle Ground has been observed to support as much biodiversity as many of the tropical reefs in the Florida Keys. To protect the reef structures, the

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NMFS has prohibited fishing with bottom longline, bottom trawl, dredge, pots or traps year round.

Madison & Swanson and Steamboat Lumps Special Management Areas

The Madison & Swanson and Steamboat Lumps Special Management Area are federally protected critical fish habitats for a variety of shelf-edge finfish, including economically important species of grouper such as gag, scamp and black grouper. All fishing is prohibited except for highly migratory species. The Madison and Swanson site is located 115 miles south of Panama City, Florida; the Steamboat Lumps site is located 104 miles west of Tarpon Springs, Florida.

Big Bend Seagrasses Aquatic Preserve

The Big Bend Seagrasses Aquatic Preserve consist mainly of a large, remote and undeveloped mass of submerged seagrasses and nearshore marshlands located along 150 miles of the northeast coast of the Gulf of Mexico, where the Florida peninsula joins the panhandle. Extending 9 miles into the Gulf, it contains numerous estuaries which nurture a diverse variety of flora and fauna. The whole of the preserve, with its seagrass beds and saltmarshes, provide a nursery area for finfish and shellfish, and a forage area for these same species as well as manatee, osprey, bald eagles, sea turtles, sturgeon, and dolphin. Managed by the Florida Department of Environmental Protection, the Preserve is also designated as an EPA Gulf of Mexico Ecological Management Site.

Central Winter Menhaden Spawning Ground

The menhaden, or pogy, is a member of the same group that contains herring. Menhaden are found in very large schools in the warmer inshore and near shore waters, following an annual coastal migration each year. Their vast number support a very large fishery, providing both fish oil and meal for industrial/agricultural uses and bait vital to a large number of commercial and recreational fisheries.

Menhaden are an ecologically critical fish species. They consume and redistribute a significant amount of energy within and between estuaries and the coastal ocean. This is due, in part, to their tremendous numbers, their individual growth rates, filter feeding capacity, and seasonal movements. Menhaden are also an extremely important prey species for many predatory fish such as striped bass, bluefish, Spanish mackerel, tuna, and sharks. Because of their schooling behavior, they are also a favorite target for herons, egrets, ospreys, and eagles.

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Coastal Resources

According to the most recent OSRAM data, the land segments potentially impacted by a spill from DC927 range from Cameron Parish, Louisiana east to Levy County, Florida. The shoreline types along these coastal areas include sand beaches, tidal mud flats and salt and brackish marshes. Important features found along these coastal environments include major estuaries, federal and state special management areas, and recreational beaches.

The tidal, sheltered waters of estuaries support a wide variety of wildlife, shore birds, fish, crabs, shrimp and other shellfish. Estuaries and coastal wetlands are critical habitats for tens of thousands of birds, mammals, fish and other wildlife, depending upon these habitats are places to live, feed, and reproduce. For example, Louisiana's coastal wetlands, which represent 40% of all the salt marshes in the contiguous United States, contribute 28% to the total volume of U.S. fisheries, provide winter habitat for one-half to two-thirds of the Mississippi Flyway waterfowl population and for many threatened and endangered species, and serve as the nursery ground for fish and shellfish for much of the nation's seafood consumption, as well as 40% of the nation's fur harvest. They provide for 400 million tons each year of waterborne commerce, and support and protect the multi-billion dollar a year oil and gas industry.

These wetland areas support various functions and values, including commercial and recreational fishing, hunting, ecotourism, critical migratory butterfly, songbird and waterfowl habitat, endangered and threatened species habitat, and waterborne commerce. Several special management areas are located throughout the Gulf Coast. These areas are briefly described in the following table.

COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
LOUISIANA	
Sabine National Wildlife Refuge	This refuge includes 125,000 acres of fresh and brackish marsh. Protected species include the bald eagle, brown pelican and Kemp's ridley sea turtle.
Cameron Prairie National Wildlife Refuge	Migratory waterfowl visit from October through March. The refuge is a nesting habitat for wading birds and alligators from April through September.

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COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
Lacassine National Wildlife Refuge	This area is used by migratory waterfowl as a wintering ground from October through March and as a nesting ground for both wading birds from April through August and alligators from May through September. Protected species include the bald eagle and the Louisiana black bear.
Rockefeller State Wildlife Refuge	Oyster beds in various lakes and bayous are found along the Gulf Coast. The refuge is an estuarine fish nursery and home to various types of birds, including waterfowl and raptors. Protected species include the American alligator.
Louisiana State Wildlife Refuge	This SWR encompasses 15,000 acres of marshland. Fur trapping and waterfowl are prevalent. Protected species include the least tern.
Shell Keys National Wildlife Refuge	This island habitat is a loafing area for seabirds and shorebirds. Protected species include the brown pelican and the least tern.
Marsh Island State Wildlife Refuge	This region is of great importance to waterfowl, raptors, estuarine fish and alligators. Protected species include the American alligator and several species of sea turtles.
Shell Keys National Wildlife Refuge	Shell reefs are present and serve as loafing areas for seabirds. Protected species include the brown pelican.
Atchafalaya Wildlife Management Area	Sensitive species include wading birds, raptors, shorebirds, waterfowl, brackish-water clams and various finfish. Protected species which can be found within the area boundaries include the bald eagle, pallid sturgeon, piping plover, brown pelican, American alligator, Kemp's ridley sea turtle, West Indian manatee and the Louisiana black bear.
Pointe Au Chien Wildlife Management Area	This 28,244-acre area serves as a refuge for migratory birds and various other wildlife. Protected species include the bald eagle and the American alligator.
Wisner Wildlife Management Area	Prevalent fish species include speckled trout, red fish, flounder, black drum, sheepshead and croaker; crab and shrimp are found in the waterways. Nutria, muskrat, mink, raccoon and otter are present. Protected species which frequent this WMA include the brown pelican.
Salvador Wildlife Management Area	Sensitive species include waterfowl, wading birds, shorebirds and finfish.

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COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
Pass-a-Loutre Wildlife Management Area	Freshwater fish, including bass, bream, catfish, crappie, watermouth, drum and garfish, flourish in the interior marsh ponds. Saltwater species include redfish, speckled trout and flounder. Alligators are fairly common in the marsh. Furbearers present include nutria, muskrat, mink, raccoon and otter. The protected brown pelican occasionally visits this area.
Delta National Wildlife Refuge	This region primarily serves as a winter sanctuary for migratory waterfowl such as snow geese and more than eighteen species of ducks. This area also serves as a habitat for numerous wading and shorebirds, finfish, crab, alligator and white-tailed deer.
Breton National Wildlife Refuge	The Chandeleur Islands make up the largest portion of this NWR. Shoals along the Chandeleur Sound side provide wintering habitat for nearly 20,000 redhead ducks. Seagrass is also abundant along the Sound side of the islands. Nesting colonies of thousands of birds are found on the islands in the summer, including sandwich terns, laughing gulls and black skimmers.
Biloxi Wildlife Management Area	This area includes 39,583 acres of marshland habitat. Sensitive species include waterfowl, shorebirds, wading birds and finfish.
MISSISSIPPI	
Gulf Island National Seashore	This recognized area includes coastal shores stretching from Alabama to Florida. Protected species include the brown pelican, least tern, American alligator, Peridido Key beach mouse and the gopher tortoise.
Mississippi Sandhill Crane National Wildlife Refuge	Protected species include the Mississippi sandhill crane and the red-cockaded woodpecker.
ALABAMA	
Bon Secour National Wildlife Refuge	This refuge, located on Dauphin Island in Pelican Bay, serves as a habitat for various shorebirds, herons, egrets and raptors. Protected species include the bald eagle, brown pelican and the American alligator.
Gulf State Park	Sensitive avians include shorebirds, gulls, terns, herons, various waterfowl, cormorants and gannets. The brown pelican, a protected species, can be found in the vicinity of the park.

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COASTAL ENVIRONMENTS
STATE & NATIONAL WILDLIFE REFUGES

FLORIDA

Fort Pickens State Park Aquatic Preserve	Sensitive finfish include red snapper, cobia, king and Spanish mackerel, Atlantic bonito and gag.
Point Washington Wildlife Management Area	Wildlife present includes waterfowl, bobcat, white-tailed deer and various small mammals. Protected species include the Choctawhatchee beach mouse.
Saint Andrews State Recreation Area	This area serves as a habitat for wading birds, shorebirds, waterfowl, songbirds, small amphibians and terrestrial mammals. Protected species include the Choctawhatchee beach mouse.
Saint Joseph Bay Aquatic Preserve	Sensitive species include the sunray venus clam, bay scallop and both gorgonian and fire corals.
T. H. Stone Memorial - Saint Joseph Peninsula State Park	Shorebirds, wading birds, raptors, bobcat, deer, reptiles, amphibians and small mammals can be found in this area. Protected species include the least tern, brown pelican and bald eagle.
Saint Vincent National Wildlife Refuge, Apalachicola Bay Aquatic Preserve, Apalachicola River & Bay Estuarine Sanctuary	These three overlapping, protected areas serve as habitats for wading birds, shorebirds, waterfowl, raptors and small mammals. Protected species include the bald eagle, brown pelican, piping plover, roseate tern, wood stork, red wolf, eastern indigo snake, American alligator, gopher tortoise, and both the loggerhead and leatherback sea turtles.
Alligator Harbor Aquatic Preserve	Sensitive species include the peregrine falcon, eastern oyster and various finfish. Seagrass is prevalent along the coastline.
Saint Marks National Wildlife Refuge	This 68,000-acre refuge is visited by waterfowl, various shorebirds, small mammals and the Florida black bear. Aquatic resources such as spotted seatrout, red drum and widemouth bass can be found in the surrounding waters. Protected species include the bald eagle and the red-cockaded woodpecker.
Big Bend Seagrasses Aquatic Preserve	This preserve consists mainly of a large, remote and undeveloped expanse of submerged seagrasses, spanning nearly 150 miles of the Florida coastline. Protected species which frequent the area include the bald eagle, piping plover, wood stork, red-cockaded woodpecker, eastern indigo snake, gulf sturgeon, West Indian manatee and the Kemp's ridley, leatherback, loggerhead and green sea turtles.

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COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
Aucilla Wildlife Management Area	Sensitive species include turkey, blue crab, finfish, bobwhite, bobcat, white-tailed deer, feral hog and various small mammals. Seagrass is prevalent along the coastline. Sponge colonies are abundant off the coast of this WMA.
Tide Swamp Wildlife Management Area	Sensitive species include herons, egrets, waterfowl, osprey, turkey, bobwhite, bobcat, white-tailed deer and various small mammals. Seagrass is prevalent along the coastline. An eastern oyster bed is located off the coast of this WMA. Protected species include the bald eagle.
Steinhatchee Wildlife Management Area	Sensitive species include wading birds, shorebirds, turkey, bobcat, white-tailed deer, feral hog and small mammals. Seagrass is prevalent along the coastline. Protected species include the bald eagle and the West Indian manatee (along the Suwannee River).
Lower Suwannee National Wildlife Refuge	Numerous bird species, including wading and shore birds, as well as white-tailed deer, feral hog and various small mammals are abundant in the boundaries of this 52,000-acre refuge. Seagrass is prevalent along the coastline. Protected species include the bald eagle, Gulf sturgeon, eastern indigo snake, gopher tortoise, West Indian manatee and both green and loggerhead sea turtles.
Cedar Keys National Wildlife Refuge	This refuge is composed of thirteen offshore islands which serve as a colonial bird nesting site, nurseries for finfish and shellfish and habitat for small mammals. Seagrass is prevalent along the coastline. Protected species include the brown pelican, sea turtles and the West Indian manatee.
Gulf Hammock Wildlife Management Area	Sensitive species include the great egret, waterfowl, turkey, bobwhite, bobcat, white-tailed deer, feral hog and various small mammals. Seagrass is prevalent along the coastline. Unique vegetation is located in this area.
Crystal River National Wildlife Refuge	Comprised of twenty islands and several parcels of land, this refuge and its surrounding waters provide habitat for twenty-five percent of the nation's endangered manatee population. Seagrass is prevalent along the coastline. Protected species include the West Indian manatee.
Saint Martins Marsh Aquatic Preserve	Sensitive species include the eastern oyster and various finfish. Seagrass is prevalent along the coastline. Protected species include the West Indian manatee.

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COASTAL ENVIRONMENTS STATE & NATIONAL WILDLIFE REFUGES	
Chassahowitzka National Wildlife Refuge	This 30,500-acre refuge provides habitat for waterfowl, shorebirds, wading birds, songbirds, eastern oyster, game animals and small mammals. Seagrass is prevalent along the coastline. Protected species include the bald eagle, brown pelican, least tern, red-cockaded woodpecker, wood stork, American alligator, eastern indigo snake, gopher tortoise, West Indian manatee and green, Kemp's ridley and loggerhead sea turtles.

Contact information for these State and National Wildlife Refuges can be found in **SECTION 9.**

Endangered & Threatened Species in the Potential Area of Impact

In the event of an oil spill, identification of endangered and threatened species is critical for development of priority protection strategies. If an endangered or threatened species is known to be in the potential area of impact, the Unified Command, with the input of the appropriate resource manager(s), will implement priority protection strategies. The following endangered and threatened species are known to be in the potential area of impact identified by the MMS Oil Spill Risk Analysis Model (OSRAM):

GULF COAST ENDANGERED & THREATENED SPECIES		
Species Name	**E / T**	**Location(s)**
Northern right whale	E	Few reported sightings; not expected to frequent the potential area of impact
Blue whale	E	Few reported sightings; not expected to frequent the potential area of impact
Fin whale	E	Few reported sightings; not expected to frequent the potential area of impact
Sei whale	E	Few reported sightings; not expected to frequent the potential area of impact
Humpback whale	E	Few reported sightings; a small number of animals might potentially stray into the Gulf during the breeding season
West Indian manatee	E	West coast of Florida; infrequent sightings off Louisiana and Texas
Kemp's ridley sea turtle	E	Nearshore areas of the Gulf, from Texas to west Florida

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GULF COAST ENDANGERED & THREATENED SPECIES		
Species Name	**E / T**	**Location(s)**
Loggerhead sea turtle	T	Throughout the Gulf of Mexico
Leatherback sea turtle	E	Northern Gulf of Mexico
Hawksbill sea turtle	E	Southern Florida and Texas waters
Green sea turtle	T	Throughout the Gulf of Mexico
Gopher tortoise	T	Eastern Gulf Coast
American alligator	T	Throughout the Gulf Coast region
Eastern indigo snake	T	Eastern Gulf Coast
Gulf sturgeon	T	Throughout the Gulf of Mexico
Paliid sturgeon	E	Throughout the Gulf Coast region
Piping plover	E, T	Along the Gulf of Mexico coastline
Southeastern snowy plover	T	Along the coast of Florida
Red-cockaded woodpecker	E	Along the eastern Gulf Coast
Least tern	E	Along the Louisiana and Mississippi Gulf Coasts
Roseate tern	E, T	Throughout the Gulf Coast region
Bald eagle	T	Throughout the Gulf Coast region
Brown pelican	E	Throughout the Gulf Coast region
Mississippi sandhill crane	E	Along the Mississippi Gulf Coast
Wood stork	E	Throughout the Gulf Coast region
Louisiana black bear	T	Along the coast from Texas to Mississippi
Red wolf	E	Throughout the Gulf Coast region
Alabama beach mouse	E	Coastal areas of Baldwin County, Alabama
Choctawhatchee beach mouse	E	Coastal areas of Walton and Bay Counties, Florida
St. Andrew beach mouse	E	Dune habitats along the Florida Gulf of Mexico beachfront
Perdido Key beach mouse	E	Peridido Key in Alabama and Florida
Florida salt marsh vole	E	Waccasassa Bay, Levy County, Florida

E. Response

Marathon Oil Company will make every effort to respond to the Worst Case Discharge as effectively as possible. A description of the response equipment available to contain and recover the Worst Case Discharge in adverse weather conditions is shown in **FIGURE H.3.**

In selecting the worst case discharge scenarios, Marathon Oil Company considered potential spill volumes, types of product and proximity to the shoreline. Area Contingency Plans were also reviewed for shoreline sensitivities.

Exploratory Drilling (WCD Scenario based on a Blowout): Marathon Oil Company's DP System Drillship "Cajun Express" in Desoto Canyon 927 was selected due to the WCD volume (based on criteria in 30 CFR 254.47) of 10,000 barrels of crude oil with an API gravity of 34.5°.

The estimated chemical and physical characteristics of the oil anticipated for this reservoir is included in Figure H.1. An Adios model was run on a similar product. The results indicate 32% of the product would be evaporated/dispersed within 12 hours, leaving approximately 6,800 barrels on the water.

FIGURE H.3 outlines equipment, personnel, materials and support vessels as well as temporary storage equipment to be considered in order to cope with an initial spill of 10,000 bbls. The list estimates individual times needed for procurement, load out, travel time to the site and deployment. **FIGURE H.3** also indicates how operations will be supported. If appropriate, 5 sorties (10,000 gallons) from the DC-4 and 5 sorties (10,000 gallons) from each of the DC-3s should disperse approximately 8,571 barrels of oil.

Offshore response strategies may also include attempting to skim utilizing multiple National Response Corporation (NRC) Identified (ID) Response Vessels and the NRC Offshore Response Barge *Defender*, deployed with a belt mode and Vikoma Cascade skimmer. Total derated skimming capacity of these assets is 26,003 barrels per day; the storage associated with the ID vessels and the *Defender* equals 17,005 barrels. Additional available storage equals 22,850 barrels. **SAFETY IS FIRST PRIORITY. AIR MONITORING WILL BE ACCOMPLISHED AND OPERATIONS DEEMED SAFE PRIOR TO ANY CONTAINMENT/SKIMMING ATTEMPTS.**

If the spill went unabated, shoreline impact in coastal environments would depend upon existing environmental conditions. Onshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom in vegetated areas. Strategies would be based upon surveillance and real time trajectories provided by SpillNet that depict areas of potential impact given actual sea and weather conditions. Strategies from the Morgan City and New Orleans, Louisiana; Mobile, Alabama, and Tampa, Florida Area Contingency Plans, SpillNet and Unified Command would be consulted to ensure that environmental and special economic resources would be correctly identified and prioritized to ensure optimal protection. SpillNet database depicts the protection response modes applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances.

Exploratory Drilling (WCD Scenario based on a single diesel fuel storage tank rupture): A second WCD Scenario for Marathon Oil Company's DP System Drillship "Cajun Express" in Desoto Canyon 927 was selected to depict the response to a WCD volume of 2,457 barrels of diesel fuel oil with an API gravity of 32.4°. An Adios model was run on a similar product. The results indicate 35% of the product would be evaporated/dispersed within 12 hours, leaving approximately 1,597 barrels on the water.

FIGURE H.3 outlines equipment, personnel, materials and support vessels as well as temporary storage equipment to be considered in order to cope with an initial spill of 2,457 bbls. The list estimates individual times needed for procurement, load out, travel time to the site and deployment. **FIGURE H.3** also indicates how operations will be supported. If appropriate, 2 sorties (4,000 gallons) from the DC-4 and 2 sorties (2,000 gallons) from the DC-3 should disperse approximately 2,571 barrels of product.

Offshore response strategies may also include attempting to skim utilizing multiple NRC ID Response Vessels and the NRC Offshore Response Barge *Defender*, deployed with a Marco weir and Vikoma Cascade skimmer. Total derated skimming capacity of these assets is 39,235 barrels per day; the storage associated with the ID vessels and the *Defender* equals 17,005 barrels. **SAFETY IS FIRST PRIORITY. AIR MONITORING WILL BE ACCOMPLISHED AND OPERATIONS DEEMED SAFE PRIOR TO ANY CONTAINMENT/SKIMMING ATTEMPTS.**

If the spill went unabated, shoreline impact in coastal environments would depend upon existing environmental conditions. Onshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom on vegetated areas. Strategies would be based upon surveillance and real time trajectories provided by SpillNet that depict areas of potential impact given actual sea and weather conditions. Strategies from the Morgan City and New Orleans, Louisiana; Mobile, Alabama, and Tampa, Florida Area Contingency Plans, SpillNet and Unified Command would be consulted to ensure that environmental and special economic resources would be correctly identified and prioritized to ensure optimal protection. SpillNet database depicts the protection response modes applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances.

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FIGURE H.1

WORST CASE DISCHARGE SCENARIO
Calculations for Well Blowout for Exploratory Drilling Operations

Highest daily volume from uncontrolled blowout from highest capacity proposed well (for 1 day) considering: • Known reservoir characteristics and casing/tubing sizes • Characteristics of any analog reservoirs from the area (if reservoir characteristics are unknown)	**Volume** **10,000**
Explanation for selection of the reservoir(s) used: Economic and development estimation	
Methodology used and assumptions made in volume determination:	
Comparison to other fields in the Gulf of Mexico	

DC927 Estimated Chemical and Physical Characteristics of Oils Anticipated

Estimated API Gravity: 34.5°
Estimated Bubble Point: 8250 psi
Estimated Viscosity: 0.39 cp
Anticipated Wax & Asphaltene Content: None

Anticipated Flash Stock Tank Liquid Analysis:

	Mole %	Liquid Vol %
Hydrogen Sulfide	0.00	0.00
Carbon Dioxide	0.00	0.00
Nitrogen	0.00	0.00
Methane	0.05	0.01
Ethane	0.05	0.01
Propane	0.20	0.06
Iso-butane	0.11	0.04
n-butane	0.52	0.19
Iso-pentane	0.52	0.22
n-pentane	0.98	0.41
Hexanes	3.63	1.64
Heptanes Plus	93.94	97.42
	100	100

Anticipated Properties of Flash Gas:

Gas Calculated Specitic Gravity (Air = 1)	0.7461
Gas Heat of Combustion (Btu/cuft @ 60o F) Dry	1330.6
Gas Heat of Combustion (Btu/cuft @ 60o F) Wet	1307.3
Gas Compressibility (@ 1 atm & 60o F) Z	0.996

Estimated Data based on Ursa (MC809) Fluid Analysis : OCS - G - 5868 Well #1 : sample @ 18,057'

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FIGURE H.1

WORST CASE DISCHARGE SCENARIO *(Based on Fuel Storage Tank Rupture)*

Calculations for On-Board Fuel Storage > 10 miles from shore:		**BLOCK DC 927**
i.	Type of Storage Tanks	Diesel Fuel
ii.	Number of Tanks:	8
iii.	Total Capacity, All Tanks	11,353 BBL
iv.	Largest Single Tank	2,457 BBL
v.	**WCD Total for Drilling Operations (> 10 miles from shore) =**	**2,457 BBL**

Estimated Physical and Chemical Properties of Fuel Oil (No. 2 Diesel)

API Gravity: 32.4°
Viscosity: 2.7cSt @ 38° C
Flash Point: 66° C
Distillation Cuts:

Volume %	Temperature (°C)
1	66
5	205
10	218
50	263
90	317
95	331
99	352

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FIGURE H.2

TRAJECTORY BY LAND SEGMENT

Trajectory of a spill and the probability of it impacting a land segment have been projected utilizing Marathon Oil Company's WCD and information in the MMS Oil Spill Risk Analysis Model (OSRAM) in support of the Environmental Impact Statement (EIS) for Proposed Lease Sale 181 (OCS Report MMS 2001-007) using the maximum conditional probability for a 30 day impact. The results are tabulated below.

Area/Block	OCS-G	Launch Area	Land Segment and/or Resource	%
Desoto Canyon 927 exploratory drilling (104 miles from shore)	10480	LA08 Eastern Planning Area	U.S. Shorelines	39
			LOUISIANA/MISSISSIPPI/ALABAMA	
			Alabama State Offshore Waters	5
			Central Winter Menhaden Spawning Grounds	3
			Chandeleur Islands	6
			Flower Garden Banks	1
			Western Louisiana State Offshore Waters	13
			Eastern Louisiana State Offshore Waters	13
			Mississippi State Offshore Waters	3
			Mobile Bay	2
			Land Segment 11	1
			Land Segment 12	1
			Land Segment 13	1
			Land Segment 16	3
			Land Segment 17	4
			Land Segment 18	1
			Land Segment 19	5
			Land Segment 20	1
			Land Segment 21	5
			Land Segment 22	5
			Land Segment 23	3
			Land Segment 24	3
			FLORIDA	
			Big Bend Seagrass	3
			Florida Gulf Island National Seashore	4
			Florida Keys National Marine Sanctuary	2
			Florida Middle Ground	2
			Florida Panhandle State Offshore Waters	11
			Florida Peninsula State Offshore Waters	5
			Madison and Swanson Special Management Area	2
			Steamboat Lumps Special Management Area	1
			Land Segment 25	3
			Land Segment 26	3
			Land Segment 27	2
			Land Segment 28	2
			Land Segment 29	1
			Land Segment 31	1
			Land Segment 32	1
			Land Segment 33	1

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WCD Scenario Exploratory Drilling – BASED ON A BLOWOUT (104 miles from shore)
DP System Drillship "Cajun Express", Desoto Canyon 927
10,000 bbls of Crude Oil, API Gravity 34.5°

FIGURE H.3 - Equipment Response Time to: Desoto Canyon 927

	EQUIPMENT TYPE	Derated Capacity (BBLS)	Storage (BBLS)	No. of Units	Owner/ Location	Staging	PROCUREMENT TIME (Hours) Assemble Equipment	Personnel *	Vessel	TOTAL Time to Procure (1)	Time to Load Out (2)	TOTAL Travel Time (3)	Time to Deploy (4)	TOTAL Estimated Response Time
A	DC3 Spray Aircraft	--	--	1	ASI/Houma, LA	Houma	1	1	0					
	DC4 Spray Aircraft	--	--	1	ASI/Houma, LA	Houma	1	1	0					
	Spotter Plane	--	--	1	ASI/Houma, LA	Houma	1	1	0					
	Spotter Personnel	--	--	--	ASI/Houma, LA	Houma	1	1	0					
	Dispersant	--	--	--	ASI/Houma, LA	Houma	1	0	0	1	1	2.5	0	4.5
B	Boom			--										
	Ocean Boom – 43"	--	--	2,500 ft	NRC/Mobile, AL	Mobile	1	0	0					
	Sweep Boom – 43"	--	--	200 ft	NRC/Mobile, AL	Mobile	1	0	0					
	Kvichak BHSS 103 (28 ft boom boat)	--	--	1	NRC/Mobile, AL	Mobile	1	1	0	1	1	13	1	16
C	ID Response Vessels													
	Mertie G	1,954	101	1	NRC/SP60	Mobile	All NRC ID Response Vessels will respond to a call-out from their field locations;"Total Travel Time" includes 2 hours for equipment & personnel load-out.					9.53	1	10.53
	Mark G	1,954	101	1	NRC/Houma	Mobile						16.91	1	17.91
	Austin G	1,954	101	1	NRC/EI	Mobile						20.93	1	21.93
	David G	1,954	101	1	NRC/VR	Mobile						24.50	1	25.50
	Jill G	1,954	101	1	NRC/WC102	Mobile						28.53	1	29.53
D	Offshore Response Barge													
	NRC Defender	--	16,500	1	NRC/Mobile, AL	Mobile	1	1	0	1	1	24	1	27
	Skimmers													
	Belt Mode	10,768	--	1	NRC/Mobile, AL	Mobile	1	1	0	1	1		1	
	Vikoma Cascade	5,465	--	1	NRC/Mobile, AL	Mobile	1	1	0	1	1		1	
E	Initial Support:													
	Spotter Helo	--	--	1	PHI/Fourchon	Spill Site	1	1	0	1	0	1	0	2
	Surveillance Helo	--	--	1	PHI/Fourchon	Spill Site	1	1	0	1	0	1	0	2
	Ocean-going Barge	--	20,000	1	Cenac Towing,/ Houma, LA	Spill Site	2	2	4	4	0	26	1	31
	Portable Storage Tanks	--	2,850 (total)	58	Venice, LA	Spill Site	0	0	2	2	2	6.4-9.1	0	10.4-13.1
	TOTAL	26,003	39,855											

* ICN – NRC will call out the Independent Contractor Network Responders.

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PROPRIETARY

WCD Scenario Exploratory Drilling – BASED ON SINGLE STORAGE TANK RUPTURE (104 miles from shore)
DP System Drillship "Cajun Express", Desoto Canyon 927
2,457 bbls of diesel fuel oil, API Gravity 32.4°

FIGURE H.3 - Equipment Response Time to: Desoto Canyon 927

	EQUIPMENT TYPE	Derated Capacity (BBLS)	Storage (BBLS)	No. of Units	Owner/ Location	Staging	PROCUREMENT TIME (Hours) Assemble Equipment	Personnel*	Vessel	TOTAL Time to Procure (1)	Time to Load Out (2)	TOTAL Travel Time (3)	Time to Deploy (4)	TOTAL Estimated Response Time
A	DC3 Spray Aircraft	--	--	1	ASI/Houma, LA	Houma	1	1	0					
	DC4 Spray Aircraft	--	--	1	ASI/Houma, LA	Houma	1	1	0					
	Spotter Plane	--	--	1	ASI/Houma, LA	Houma	1	1	0					
	Spotter Personnel	--	--	--	ASI/Houma, LA	Houma	1	1	0					
	Dispersant	--	--	--	ASI/Houma, LA	Houma	1	0	0	1	1	2.5	0	4.5
B	Boom			--										
	Ocean Boom – 43"	--	--	2,500 ft	NRC/Mobile, AL	Mobile	1	0	0					
	Sweep Boom – 43"	--	--	200 ft	NRC/Mobile, AL	Mobile	1	0	0					
	Kvichak BHSS 103 (28 ft boom boat)	--	--	1	NRC/Mobile, AL	Mobile	1	1	0	1	1	13	1	16
C	ID Response Vessels													
	Mertie G	1,954	101	1	NRC/SP60	Mobile	All NRC ID Response Vessels will respond to a call-out from their field locations;"Total Travel Time" includes 2 hours for equipment & personnel load-out.					9.53	1	10.53
	Mark G	1,954	101	1	NRC/Houma	Mobile						16.91	1	17.91
	Austin G	1,954	101	1	NRC/EI	Mobile						20.93	1	21.93
	David G	1,954	101	1	NRC/VR	Mobile						24.50	1	25.50
	Jill G	1,954	101	1	NRC/WC102	Mobile						28.53	1	29.53
D	Offshore Response Barge													
	NRC Defender	--	16,500	1	NRC/Mobile, AL	Mobile	1	1	0	1	1	24	1	27
	Skimmers													
	Marco XI C – Weir	24,000	--	1	NRC/Mobile, AL	Mobile	1	1	0	1	1		1	
	Vikoma Cascade	5,465	--	1	NRC/Mobile, AL	Mobile	1	1	0	1	1		1	
E	Initial Support:													
	Spotter Helo	--	--	1	PHI/Fourchon	Spill Site	1	1	0	1	0	1	0	2
	Surveillance Helo	--	--	1	PHI/Fourchon	Spill Site	1	1	0	1	0	1	0	2
	TOTAL	39,235	17,005											

* ICN – NRC will call out Independent Contractor Network Responders.

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FIGURE H.3 (Continued)

OPERATIONAL LIMITATIONS OF RESPONSE EQUIPMENT	
OSRB Defender	7 foot seas
Skimmers	7 foot seas
Expandi Boom	6 foot seas, 20 knot winds
Dispersants	Winds more than 25 knots, Visibility less than 3 nautical miles, or Ceiling less than 1,000 feet.

Additional Support for a Blowout lasting 30 days:

1) Ocean Barge to transport recovered oil from offshore skimming systems and temporary storage barges to onshore disposal sites (identified in Area Contingency Plans and approved by the State)

2) Additional OSRO personnel to relieve equipment operators

3) Vessels for supporting offshore operations

4) Field safety personnel

5) Continued surveillance and monitoring of oil movement

6) Helicopter, video cameras

7) Infra red (night time spill tracking) capabilities

8) Logistics needed to support equipment:

- Parts trailers and mechanics to maintain skimmers and boom
- Staging areas
- Fueling facilities
- Decontamination stations
- Dispersant stockpile transported from Houston to Houma
- Communications equipment and technicians

9) Logistics needed to support responder personnel:

- Food
- Berthing
- Additional clothing/safety supplies
- Decontamination stations
- Medical aid stations
- Safety personnel

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PROPRIETARY

APPENDIX I - BIBLIOGRAPHY

1. Buist, I. A., S. I. Ross, B. K. Trudel, E. Taylor, T. G. Campbell, P. A. Westphal, M. R. Myers, C. S. Ronzio, A. A. Allen and A. B. Nordvik, 1994. *The Science, Technology, and Effects of Controlled Burning of Oil Spills at Sea*. Marine Spill Response Corporation, Washington, D.C., MSRC Technical Report Series 94-013, 386pp

2. Moller, T.H., 1992. *Recent Experience of Oil Sinking*. Environment Canada, Ontario, Proceedings of the 15th Arctic and Marine Oil Spill Program Technology Seminar, June 10-12, pp11-14

APPENDIX J - MEDIA

Joint Information Center

The Joint Information Center (JIC) is set up by the Information Officer as a forum for dissemination of response related data to the media and the public. The JIC should be prepared to provide the following:

1. Multiple phone lines for incoming calls, attended by knowledgeable individuals
2. Ensured availability of Company, State, and Federal Public Affairs representatives to the media
3. Press releases issued to media with copies to response officials
4. Scheduling and coordination of news conferences and media briefings

Primary & Alternate Sites

The JIC should be kept separate from the Command Center. Primary and alternate sites should be pre-designated to expedite the set up and dissemination of incident information. Sites should be identified and evaluated in the earliest stages of the response, to afford media a more proximate location to the spill site. The site should have sufficient facilities for the collection and distribution of information. Equipment needs for the JIC vary depending upon the size of the incident. Some site and equipment considerations include:

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1. Adequate parking
2. Clearly marked, outside media assembly areas (i.e. roped or taped areas)
3. Adequate escorts for media representatives
4. News, conference and media work areas

Joint Information Center

5. Adequate furnishings such as:

   a. Tables
   b. Chairs
   c. Telephones
   d. Cellular phones
   e. Fax machines
   f. Computers
   g. Typewriters
   h. Copiers
   i. Restrooms
   j. Wall clock (displaying next briefing time)
   k. Projectors
   l. Black boards
   m. Wall maps
   n. Flip charts
   o. Aerial photos
   p. Product samples & examples of their end uses
   q. General information media packets
   r. Podium

MEDIA RESPONSE STATEMENT BASICS

(OBJECTIVE):

1. What happened? _____

2. Where? _____

3. When? _____

4. Who was involved? _____

5. What is being done to RESPOND to the emergency? _____

6. How did it happen? _____

7. How much damage? _____

8. What is the effect on the community? _____

9. Attribute statement to: Name: _____

   Title: _____

   Organization: _____

Public Statements

A. Initial press statements should:

1. Give the name of the installation or vessel(s) involved, the time of the accident, the destination of the vessels, and any other facts that are not in dispute (such as the steps the company has taken to contain, control, or handle the spill).

2. State explicitly that is the company's policy to prevent pollution of the sea, coastline, or inland waters -- whatever is appropriate --and minimize damage to property or the ecology.

3. Sample statement enclosed.

B. As the following information becomes available, press statements should:

1. Note that containment and cleanup experts are on / being called to the scene to supervise the operation.

2. Give the type of production spilled -- light or heavy oil? Other?

3. Report whether the spill has been controlled.

4. Give the size of the spill -- quantity and area affected.

5. Tell how spill is moving, and what factors can affect its movement, such as wind, current and tides.

6. State opinions concerning the appropriateness of government response to the oil spill.

7. Describe special efforts taken to protect property and wildlife.

Public Statements

C. No statement shall be made containing any of the following:

1. Speculations concerning liability for the spill or its legal consequences.
2. Speculations regarding the cause of the spill. An extended inquiry may be needed to determine the actual cause, and legal liability could be affected by what is said.
3. Estimates of damage and/or value expressed in dollars, production statistics sales volume, or insurance coverage.
4. Estimates of how long cleanup will take or cleanup costs.
5. Promises that property, ecology, or anything else will be restored to normal.
6. Opinions concerning the appropriateness of government response to the oil spill.
7. ***Do not release the name of injured or dead until next of kin have been notified.***

D. If incorrect statements or unfounded speculations are published, the following steps are suggested:

1. Provide the source with correct information. Arrange for representatives to fly over the spill, or otherwise visit it, to confirm company estimates as to size and damage.
2. Avoid direct rebuttal or erroneous statements. Ask for amendments to incorrect details.
3. Do not rebut statements by scientists unless you use a comparable scientific source to back up any statement you make.

MEDIA CONTACTS

LOUISIANA

LOCAL NEWSPAPERS

The Cameron Pilot
P.O. Box 995
Dequincy, LA 70633
(337) 786-8131

The Courier
P.O. Box 2717
Houma, LA 70361
(504) 879-1557

Lake Charles American Press
4900 Hwy 90 E
Lake Charles, LA 70611
(337) 433-3000

The Times Picayune
3800 Howard Ave.
New Orleans, LA 70140
(504) 826-3279

LOCAL RADIO STATIONS

KHOM
2306 W. Main
Houma, LA 70364
(504) 679-7300

KKI/KDLP
10 Pluto Road
Bayou Vista, LA 70342
(504) 395-2853

WSMB
629 S. Claiborne
New Orleans, LA 70113
(504) 260-9762

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LOCAL TV STATIONS

ALLENS CABLE – Channel 39
P.O. Box 2643
608 Michigan St.
Morgan City, LA 70381
(504) 384-6960

KATC-Channel 3 (ABC)
P.O. Box 93133
Lafayette, LA 70509
(337) 235-3333

KLFY-Channel 10 (CBS)
P.O. Box 90665
Lafayette, LA 70381
(337) 981-4823

WAFB-Channel 9 (CBS)
844 Government
Baton Rouge, LA 70821
(504) 383-9999

WBRZ –Channel 2 (ABC)
1650 Highland Road
Baton Rouge, LA 70802
(504) 387-2222

WCNO-Channel 26 (ABC)
World Trade Center
No. 2 Canal St.
New Orleans, LA 70138
(504) 581-2600

WDSU-Channel 6 (NBC)
520 Royal Street
New Orleans, LA 70130
(504) 679-0600

WVUE-Channel 8 (ABC)
1025 S. Jefferson Davis Pkwy
New Orleans, LA 70125
(504) 486-6161

MEDIA CONTACTS

ALABAMA / FLORIDA

LOCAL NEWSPAPERS

Pensacola News Journal
Pensacola, FL
Phone: (850) 435-8500

LOCAL RADIO STATIONS

WBSR
1450 Pensacola, FL
Phone: (850) 438-4982

WTKX
101.5 Pensacola, FL
Phone: (850) 473-0400

WYCL
107.3 Pensacola, FL
Phone: (850) 473-0400

LOCAL TV STATIONS

WEAR-TV
Channel 3
ABC, Pensacola/Mobile
Phone: (850) 456-3333

WFGX-TX
Channel 35
WB, Pensacola/Mobile
Phone: (850) 863-3535

APPENDIX K - FORMS

FIGURE K.1

REQUISITION ORDER SECTION: _____ NO: _____

1. INCIDENT NAME: _____

2. REQUESTING PARTY: Name: _____

   Position: _____ Section: _____

3. TIME/DATE OF REQUEST: Time: _____ Date: _____

4. RESOURCE(S) REQUESTED

ITEM NO.	QTY.	UNIT	DESCRIPTION	DESTINATION

5. APPROVED BY: _____ TIME/DATE: _____

FIGURE K.2

PURCHASE ORDER

1. INCIDENT NAME: _____

2. PURCHASE ORDER NO.: _____ 3. TIME/DATE: _____

4. PURCHASING AGENT:
   Name: _____ Position: _____

5. VENDOR:
   Name: _____
   Address: _____
   _____
   Phone No.: _____ Fax No.: _____
   Name of Contact Person: _____

6. RESOURCE(S) PURCHASED:

Item No.	Qty.	Unit	Description	Unit Cost	Total Cost

Estimated Time and Date of Delivery: _____

7. DESTINATION:
   Delivery Point: _____

8. TRANSPORTATION:
   Name of Transportation Company: _____
   Name of Contact Person: _____
   Phone No.: _____ Fax No.: _____
   Person to Contact Upon Delivery: _____

9. APPROVED BY: _____ Time/Date: _____

ICS Forms - Hierarchy & Schedule

Emergency Phase

Initial Notification ----------> ICS 201

Incident Briefing

Operational Planning Meeting

- ICS 215 — Operational Planning Worksheet
- ICS 216 — Radio Requirements Worksheet
- ICS 217 — Radio Frequency Worksheet

Incident Action Plan

- IAP Cover
- ICS 202 — Response Objectives
- ICS 203 — Organization List
- ICS 204 — Division List
- ICS 205 — Radio Coms. Plan
- ICS 206 — Medical Plan
- ICS 232 — Resources at Risk

Executive Summary

- Executive Summary
- ICS 207 — Organization Chart
- ICS 209 — Incident Status
- ICS 220 — Air Ops. Summary
- ICS 230 — Meeting Schedule
- ICS 231 — Meeting Description
- General Plan

Resource Tracking

- ICS 210 — Status Change Card
- ICS 211 — Check-in List
- ICS 218 — Support Vehicle Inventory
- ICS 221 — Demob. Checkout

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Miscellaneous

- ICS 213 — General Message
- ICS 214 — Unit Log
- ICS 214a — Unit Log Continuation
- Sensitive Sites Index

INCIDENT BRIEFING (ICS FORM 201)

Purpose. The Incident Briefing form provides the Incident Commander (and the Command and General Staffs assuming command of the incident) with basic information regarding the incident situation and the resources allocated to the incident. It also serves as a permanent record of the initial response to the incident.

Preparation. The briefing form is prepared by the initial Incident Commander for presentation to the relieving Incident Commander along with a more detailed oral briefing.

Distribution. After the initial briefing of the Incident Commander and General Staff members, the Incident Briefing is duplicated and distributed to the Command Staff, Section Chiefs, Branch Directors, Division/Group Supervisors, and appropriate Planning and Logistics Section Unit Leaders. The sketch map and summary of current action portions of the briefing form are given to the Situation Unit while the Current Organization and Resources Summary portion are given to the Resources Unit.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Map Sketch	Show the total Area of Operations, the incident site, overflight results, trajectories, impacted shorelines, or other graphics depicting situation and response status on a sketch or attached map.
	Prepared By	Enter the name and position of the person completing the form.
6.	Summary of Current Actions	Enter the strategy and tactics used on the incident and note any specific problem areas.
7.	Current Organization	Enter on the organization chart the names of the individuals assigned to each position. Modify the chart as necessary.
8.	Resources Summary	Enter the following information about the resources allocated to the incident.
	Resource(s) / Identifier	Enter the agency, type and kind of resource with its Identifier (e.g. radio call-sign, vessel name, license plate, etc.).
	Quantity	Enter the number or size of the ordered resource(s).
	ETA/On Scene	Enter the estimated arrival time and/or put a checkmark in the "on scene" column upon arrival.
	Location/ Assignment/ Status	Enter the location of the resource, the actual assignment and the status of the resource if other than working.

*NOTE: Additional pages may be added to ICS-201 if needed.

INCIDENT BRIEFING	1. Incident Name	2. Date Prepared	3. Time Prepared

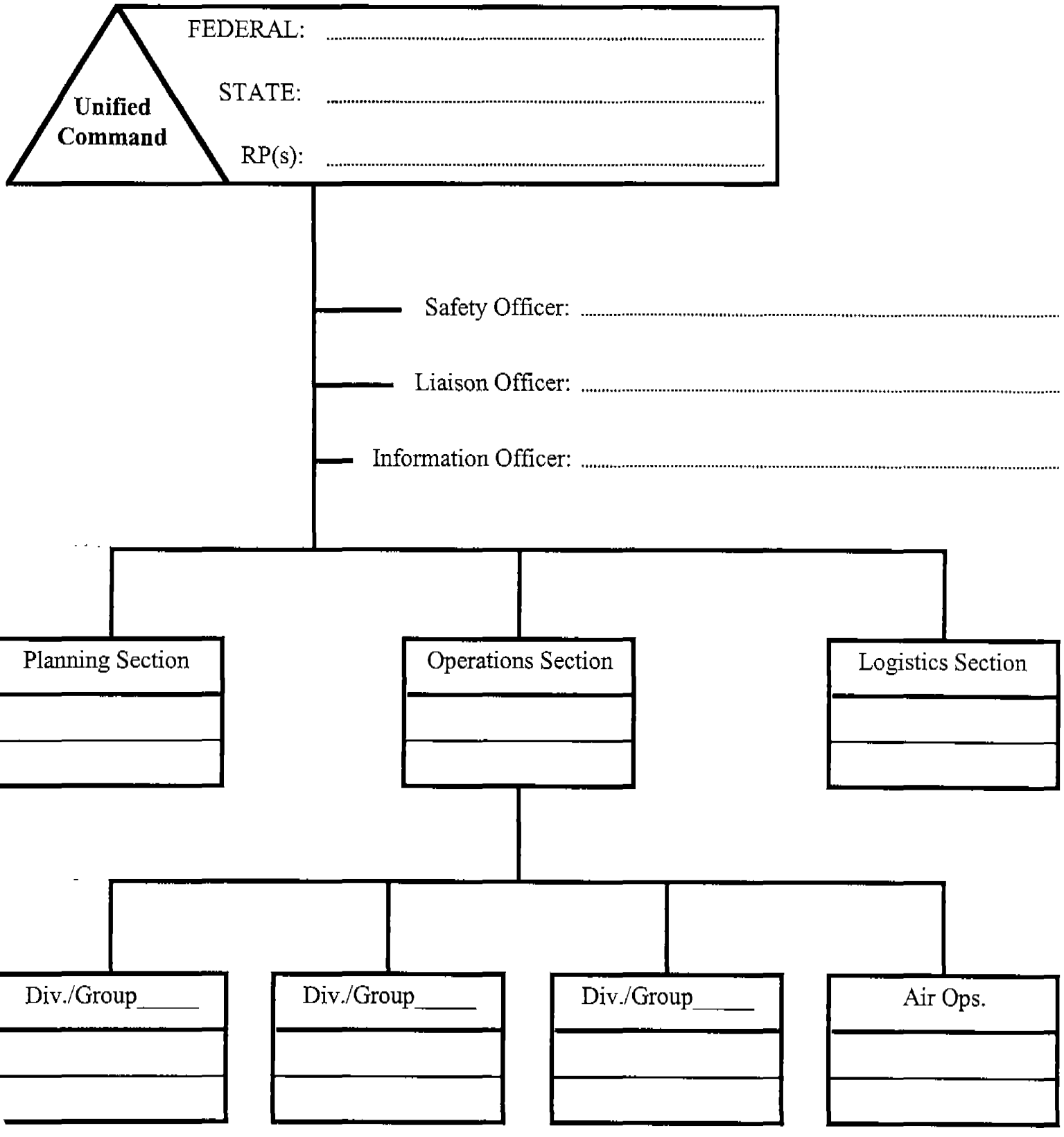
4. MAP/SKETCH

(Could include maps showing the total Area of Operations, the Incident site, overflight results, trajectories, impacted shorelines, or other graphics depicting situation and response status.)

ICS 201 8/96	Page 1 of 4	5. Prepared By: (Name and Position)

	6. Summary of Current Actions

7. CURRENT ORGANIZATION



8. Resources Summary

Resource(s)/Identifier	Quantity	ETA	On Scene	Location/Assignment/Status

OPERATIONAL PLANNING WORKSHEET
(ICS FORM 215)

Purpose. The purpose of this form is to communicate the decisions made during the Planning Meeting concerning resource assignments to the Resources Unit. The Worksheet is used by the Resources Unit to complete Assignment Lists and by the Logistics Section Chief for ordering resources for the incident.

Initiation of Form. This form is initiated by the Incident Commander and General Staff at each Planning Meeting. It is recommended that the format be drawn on the chalkboard, and when decisions are reached, the information is recorded on the form.

Distribution. When the division work assignments and accompanying resource allocations are agreed to, the form is distributed to the Resources Unit to assist in the preparation of the Assignment Lists. The Planning Section will use a copy of this worksheet for preparing requests for resources required for the next operational period.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date /-Time Prepared	Enter date (e.g. 09/17/1996) and time (e.g. 1530) prepared.
3.	Operational Period	Enter the time interval for which the information applies (e.g. 1800 09/17/1996 to 0600 09/18/1996).
4.	Division or Other Location	Enter the Division letter or location of the work assignment for the resources.
5.	Work Assignments	Enter the specific work assignments given to each of the Divisions.
6.	Resource	Complete resource headings, both for kind and type appropriate for the incident. Enter, for the appropriate resources, the number of resources by type (engines, crew, etc.) required "REQ", and the number of resources available "HAVE" to perform the work assignment. The number of resources needed "NEED" is automatically calculated.
7.	Reporting Location	Enter the specific location the "needed" resources are to report for the work assignments (staging
area,		etc.)
8.	Requested Arrival Time	Enter time resources are requested to arrive at the reporting location (e.g. 1530).
9.	Total Resources Required, On Hand, Needed	Enter the total number of resources by type (crews, dozers, etc.) required, on hand). The number of resources needed is automatically calculated.
10.	Prepared By	Record the name and position of the person completing the form.

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OPERATIONAL PLANNING WORKSHEET

1 INCIDENT NAME	2 DATE PREPARED / TIME PREPARED	3. OPERATIONAL PERIOD (DATE/TIME)

4 DIVISION OR OTHER LOCATION	5. WORK ASSIGNMENTS	6 RESOURCES BY TYPE (SHOW STRIKE TEAM AS ST) RESOURCE / TYPE	7. REPORTING LOCATION	8. REQUESTED ARRIVAL TIME
		REQ		
		HAVE		
		NEED		
		REQ		
		HAVE		
		NEED		
		REQ		
		HAVE		
		NEED		
		REQ		
		HAVE		
		NEED		
		REQ		
		HAVE		
		NEED		
		REQ		
		HAVE		
		NEED		
		REQ		
		HAVE		
		NEED		
		REQ		
		HAVE		
		NEED		

	9.	SINGLE RESOURCES / STRIKE TEAMS	10 PREPARED BY (NAME AND POSITION)
	TOTAL RESOURCES REQUIRED		
	TOTAL RESOURCES ON HAND		
215 ICS 9-86	TOTAL RESOURCES NEEDED		

RADIO REQUIREMENTS WORKSHEET
`S FORM 216)

Purpose. The Radio Requirements Worksheet is used to develop the total number of personal portable radios required for each Division/Group and Branch. It provides a listing of all units assigned to each Division, and thus depicts the total incident radio needs.

Initiation of Form. The worksheet is prepared by the Communications Unit for each operational period and can only be completed after specific resource assignments are made and designated on Assignment Lists. This worksheet need not be used if the Communications Unit Leader can easily obtain the information directly from Assignment Lists.

Distribution. The worksheet is for internal use by the Communications Unit and therefore there is no distribution of the form.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Branch	Enter the Branch number (I, II, etc.) for which radio requirements are being prepared.
5.	Agency	Enter the three-letter designator of the agency staffing the Branch Director position (e.g., VNC, CDF, ANF, LFD, etc.)
	Operational Period	Enter the time interval for which the assignment applies (e.g. 1800 09/17/1996 to 0600 09/18/1996).
7.	Tactical Frequency	Enter the radio frequency to be used by the Branch Director to communicate with each Division/Group Supervisor in the Branch.
8.	Division/Group	Enter for each Division/Group in the Branch the Division/Group identifier (A, B, etc.) and the agency assigned (e.g., LAC, VNC, etc.)
9.	Agency/ID No./ Radio Requirements	List all units assigned to each Division/Group. Record the agency designator, unit or resource identification, and total number of radios needed for each unit or resource.
10.	Prepared By	Enter the name and position of the person completing the worksheet.

*NOTE: Detailed instructions for the completion of the Worksheet are found in ICS 223-5 Communications Unit Position Manual, Chapter 3.

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RADIO REQUIREMENTS WORKSHEET	1. INCIDENT NAME	2. DATE	3. TIME
4. BRANCH	5. AGENCY	6. OPERATIONAL PERIOD	7. TACTICAL FREQUENCY

8. DIVISION/GROUP AGENCY			DIVISION/ GROUP AGENCY			DIVISION/ GROUP AGENCY			DIVISION/ GROUP AGENCY		
9. AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS	AGENCY	ID NO.	RADIO RQMTS

216 ICS 3-82	PAGE	10. PREPARED BY (COMMUNICATIONS UNIT)

NFES 1339

RADIO FREQUENCY ASSIGNMENT WORKSHEET
'S FORM 217)

Purpose. The Radio Frequency Assignment Worksheet is used by the Communications Unit Leader to assist in determining frequency allocations.

Preparation. Cache radio frequencies available to the incident are listed on the form. Major agency frequencies assigned to the incident should be added to the bottom of the worksheet.

Distribution. The worksheet, prepared by the Communications Unit, is for internal use.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date	Enter the date prepared (e.g. 09/17/1996).
3.	Operational Period	Enter the time interval for which the assignment applies (e.g. 1800 09/17/1996 to 0600 09/18/1996).
4.	Incident Organization	List frequencies allocated for each channel for each organizational element activated, record the number of radios required to perform the designated function on the specified frequency.
5.	Radio Data	For each radio cache and frequency assigned, record the associated function. Functional assignments are: a. Command b. Support c. Division tactical d. Ground-to-air
6.	Agency	List the frequencies for each major agency assigned to the incident. Also list the function and channel number assigned.
7.	Total Radios Required	Totals for each row and column are calculated automatically. This provides the number of radios required by each organizational unit and the number of radios using each available frequency.
8.	Prepared By	Enter the name and position of the person completing the worksheet.

RADIO FREQUENCY ASSIGNMENT WORKSHEET

1. INCIDENT NAME	2. DATE	3. OPERATIONAL PERIOD (DATE/TIME)

5. RADIO DATA: SOURCE	FUNCTION	CH#	FREQUENCY	4. INCIDENT ORGANIZATION: BRANCH	DIVISION	DIVISION	DIVISION	BRANCH	DIVISION	DIVISION	DIVISION	BRANCH	DIVISION	DIVISION	DIVISION	INCIDENT COMMANDER	SAFETY OFFICER	OPERATIONS SECTION CHIEF	AIR OPERATIONS	AIR TACTICAL SUPERVISOR	PLANNING SECTION CHIEF	GROUND SUPPORT UNIT	BASE UNIT						COMM CENTER	TOTAL BY REQ
6 AGENCY	ID		CH#	FREQUENCY																										
7 TOTAL RADIOS REQUIRED																														

217 ICS		8 PREPARED BY (NAME/POSITION)

INCIDENT ACTION PLAN (IAP) COVER

pose. An Incident Action Plan documents the actions developed by the Incident Commander and Command and General Staffs during the Planning Meeting. When all attachments are included, the plan specifies the control objectives, tactics to meet the objectives, resources, organization, communications plan, medical plan, and other appropriate information for use in tactical operations.

INCIDENT ACTION PLAN

1. Incident Action Plan Cover Sheet
2. Response Objectives, ICS Form 202
3. Organization Assignment List, ICS Form 203
4. Division Assignment List, ICS Form 204
5. Radio Communications Plan, ICS Form 205
6. Medical Plan, ICS Form 206
7. Incident Map(s) (present situation and future trajectories and plans)
8. Traffic Plan
9. Resources at Risk Summary, ICS-OS-232
10. Other forms/sheets as needed for tactical response.

Preparation. An Incident Action Plan is completed following each formal planning meeting conducted by the Incident Commander and the Command and General Staff. The plan must be approved by the Incident Command prior to distribution.

ibution. Sufficient copies of the Incident Action Plan will be reproduced and given to all supervisory personnel at the Section, Branch, Division/Group and Unit leader levels.

INCIDENT ACTION PLAN

Incident Name: _____

Incident Number(s): _____

Date Plan Prepared: _____

Operational Period Covered by This Plan:

_____

Approved By:

Federal: _____

State: _____

RP(s): _____

ICS Forms Instructions

RESPONSE OBJECTIVES FORM (ICS FORM 202)

ose. The Response Objectives Form describes the basic incident strategy, control objectives, and provides weather, tide, and current information and safety considerations for use during the next operational period. The Attachments list at the bottom of the form also serves as a table of contents for the Incident Action Plan.

Preparation. The Response Objectives Form is completed by the Planning Section following each formal Planning Meeting conducted in preparation for the Incident Action Plan.

Distribution. The Response Objectives Form will be reproduced with the IAP and given to all supervisory personnel at the Section, Branch, Division/Group and Unit leader levels.

NOTE: ICS 202, Response Objectives, serves as part of the IAP which is not considered complete until attachments are included.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Operational Period	Enter the date and time interval for which the form applies (e.g. 1800 09/17/1996 to 0600 09/18/1996).
5.	Overall Incident Objective(s)	Enter short, clear and concise statements of the objectives for managing the response. The overall incident objectives usually apply for the duration of the incident.
6.	Objectives for specified Operational Period	Enter short, clear and concise statements of the objectives for the incident response for this operational period. Include alternatives.
7.	Safety Message for the specified Operational Period	Enter information such as known safety hazards and specific precautions to be observed during this operational period. If available, a safety message should be referenced and attached.
8.	Weather	Attach a sheet with the observed and predicted weather.
9.	Tides	Attach a sheet with the tidal prediction information for the specified operational period.
10.	Sunrise/Sunset	Enter predicted times for sunrise and/or sunset during the specified operational period.
11.	Attachments	Enter "Yes" or "No" in the field before the attachment name for any form to be attached to the IAP.
12.	Prepared By	Enter the name of the Planning Section Chief completing the form.

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RESPONSE OBJECTIVES	1. Incident Name	2. Date Prepared	3. Time Prepared

4. Operational Period (Date/Time):

5. Overall Incident Objective(s):

6. Objectives for specified Operational Period:

7. Safety Message for specified Operational Period:

8. Weather: See Attached Weather Sheet

9. Tides / Currents: See Attached Tide / Current Data

10. Sunrise: Sunset:

11. Attachments (Yes if attached, No if not attached)

____ Organization List (ICS 203)	____ Medical Plan (ICS 206)	____ Resources at Risk Summary (ICS-OS-232)
____ Assignment List (ICS 204)	____ Incident Map(s)	____ _____
____ Communication Plan (ICS 205)	____ Traffic Plan	____ _____

ICS 202 8/96	12. Prepared By: (Planning Section Chief)

ORGANIZATION ASSIGNMENT LIST (ICS FORM 203)

Purpose. The Organization Assignment List provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit. It is used to complete the Incident Organization Chart (ICS Form 207) which is posted on the Incident Command Post display.

Preparation. The list is prepared and maintained by the Resources Unit under the direction of the Planning Section chief.

Distribution. The Organization Assignment List is duplicated and included in the Incident Action Plan.

NOTE: An Organization Assignment List may be completed any time the number of personnel assigned to the incident increase or decrease or a change in assignments occurs.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Operational Period	Enter the time interval for which the assignment list applies (e.g. 1800 09/17/1996 to 0600 09/18/1996).
5. thru 10.		Enter the names of personnel staffing each of the listed positions. Use at least first initial and last name. For Units, indicate Unit Leader and for Divisions/Groups indicate Division/Group Supervisor. Use an additional page if more than three branches are activated. If there is a shift change during the specified operational period, list both names separated by a slash.
11.	Prepared By	Enter the name of the Resources Unit member preparing the form. Attach form to the Incident Action Plan.

ORGANIZATION ASSIGNMENT LIST	1. Incident Name	2. Date Prepared	3. Time Prepared

4. Operational Period (Date/Time):

5. Incident Commander and Staff

	PRIMARY	DEPUTY
Federal		
State		
RP(s)		
Safety Officer		
Information Officer		
Liaison Officer		

6. Agency Representatives

Agency	Name

7. PLANNING SECTION

Chief	
Deputy	
Resources Unit	
Situation Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	

8. LOGISTICS SECTION

Chief	
Deputy	

A. SUPPORT BRANCH

Director	
Supply Unit	
Facilities Unit	
Transportation Unit	

B. SERVICE BRANCH

Director	
Communications Unit	
Medical Unit	
Food Unit	

9. OPERATIONS SECTION

Chief	
Deputy	

A. BRANCH I - DIVISION / GROUPS

Branch Director	
Deputy	
Division / Group	
Division / Group	
Division / Group	
Division / Group	
Division / Group	

B. BRANCH II - DIVISION / GROUPS

Branch Director	
Deputy	
Division / Group	
Division / Group	
Division / Group	
Division / Group	
Division / Group	

C. BRANCH III - DIVISION / GROUPS

Branch Director	
Deputy	
Division / Group	
Division / Group	
Division / Group	
Division / Group	
Division / Group	

D. AIR OPERATIONS BRANCH

Air Ops. Br. Director	
Air Tactical Supervisor	
Air Support Supervisor	
Helibase Manager	
Helispot Manager	
Fixed-Wing Base Coord.	
Helicopter Coordinator	
Fixed-wing Coordinator	

10. FINANCE SECTION

Chief	
Deputy	
Time Unit	
Procurement Unit	
Compensation Unit	
Cost Unit	

ICS 203 8/96	11. Prepared By: (Resources Unit)

ASSIGNMENT LIST (ICS FORM 204)

ρose. The Assignment List(s) is used to inform Operations Section personnel of incident assignments. Once the assignments are agreed to by the Incident Command and General Staff, the assignment information is given to the appropriate Units/Divisions/Groups.

Preparation. The Assignment List is normally prepared by the Resource Unit using guidance from the Response Objectives (ICS Form 202), the Operational Planning Worksheet (ICS Form 215) and Operations Section Chief. The Assignments List must be approved by the Planning Section Chief. When approved, it is included in the Incident Action Plan.

Distribution. The Assignment List is duplicated and included in the Incident Action Plan. In some cases, assignments may be communicated via radio.

NOTE: A separate sheet is used for each Division or Group.

Item	Item Title	Instructions
1.	Branch	Enter the Branch name.
2.	Division/Group	Enter the Division/Group name.
3.	Incident Name	Enter the name assigned to the incident.
4.	Operational Period	Enter the time interval for which the form applies (e.g. 1800 09/17/1996 to 0600 09/18/1996).
5.	Operations Personnel	Enter the name of the Operations Chief, applicable Branch Director and Division Supervisor.
6	Resources Assigned This Period	For each Strike Team, Task Force or single resource assigned to the Division, list the resource identifier, leader name, phone number and total number of personnel . Enter "Yes" if transportation is needed, and give drop off and pick up points and times as needed.
7.	Assignments	Provide a statement of the tactical objectives to be achieved within the operational period. Include any special instructions for individual resources working within the Division.
8.	Special Instructions	Enter statement calling attention to any safety problems or specific precautions to be exercised or other important information.
9.	Division Communication Summary	The Communication Unit provides this information on the form for Command, Divisions, Tactical, Support, and Ground-to-Air frequencies.
10.	Prepared By	Enter the name of the Resources Unit Member completing the form.
11.	Approved By	Enter the name of the person approving the form (usually the Planning Section Chief).

1. Branch		2. Division/Group	**ASSIGNMENT LIST**
3. Incident Name		4. Operational Period (Date/Time)	

5. Operations Personnel

Operations Chief: _____

Branch Director _____

Division/Group Supervisor _____

6. Resources Assigned This Period

Strike Team/Task Force/Resource Identifier		Leader	Phone	# of Pers.	Trans Needed	Drop Off Point/Time	Pick Up Point/Time

7. Assignments

8. Special Instructions/Safety Message

9. Division/Group Communications Summary

Function		Freq.	System	Chan.	Function		Freq.	System	Chan.
Command	Local				Support	Local			
	Repeat					Repeat			
Div./Group/Unit Tactical					Ground-To-Air				

10. Prepared By: (Resource Unit Leader)	11. Approved By: (Planning Section Chief)	Date/Time Approved

ICS 204 8/96

RADIO COMMUNICATIONS PLAN (ICS FORM 205)

pose. The Incident Radio Communications Plan provides, in one location, information on all radio frequency assignments for each operational period. The plan is a summary of information obtained from the Radio Requirement Worksheet (ICS Form 216) and the Radio Frequency Assignment Worksheet (ICS Form 217). Information from the Radio Communications Plan on frequency assignments is normally placed on the appropriate Assignment List (ICS Form 204).

Preparation. The Incident Radio Communications Plan is prepared by the Communications Unit Leader and given to the Planning Section Chief. Detailed instructions on preparing this form may be found in ICS 223-5, the Communications Unit Position Manual.

Distribution. The Radio Communications Plan is duplicated and given to all recipients of the Incident Action Plan including the Incident Communications Center. Information from the plan is normally placed on the appropriate Assignment List(s) (ICS Form 204).

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date/Time Prepared	Enter date (e.g. 09/17/1996) and time (e.g. 1530) prepared.
3.	Operational Period Date / Time	Enter the date and time interval for which the Radio Communications Plan applies (e.g. 1800 09/17/1996 to 0600 09/18/1996).
	Basic Radio Channel Utilization System	Enter the radio system(s) assigned and used on the incident (e.g. CLEMARS, Region 9 Emergency System).
	Channel Number	Enter the radio channel numbers assigned.
	Function	Enter the function each channel number is assigned (i.e. command, support, division tactical, and ground-to-air).
	Frequency	Enter the radio frequency tone number assigned to each specified function (e.g. 153.400).
	Assignment	Enter the ICS organization assigned to each of the designated frequencies (e.g. Branch I, Division A).
	Remarks	This section should include narrative information regarding special situations.
5.	Prepared By	Enter the name of the Communications Unit Leader preparing the form.

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INCIDENT RADIO COMMUNICATIONS PLAN	1. Incident Name	2. Date/Time Prepa

4. BASIC RADIO CHANNEL UTILIZATION

System / Cache	Channel	Function	Frequency	Assignment

ICS 205 8/96

5. Prepared By: (Communications Unit)

MEDICAL PLAN (ICS FORM 206)

Purpose. The Medical Plan provides information on incident medical aid stations, transportation services, hospitals and medical emergency procedures.

Preparation. The Medical Plan is prepared by the Medical Unit Leader and reviewed by the Safety Officer.

Distribution. The Medical Plan may be an attachment to the Response Objectives Form (ICS 202), or information from the plan pertaining to incident medical aid stations and medical emergency procedures may be taken from the plan and placed on the Assignment List(s) (ICS Form 204)

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Operational Period Date / Time	Record the date and time of the Operational Period for which this plan is in effect (e.g. 1800 09/17/1996 to 0600 09/18/1996).
5.	Incident Medical Aid Stations	Enter name and location of incident medical aid stations (e.g. Cajon Staging Area, Cajon Camp Ground) and indicate if paramedics are located at the site by entering "Yes" or "No" in the Paramedics field.
6.	Transportation	
	A. Ambulance Services	List name and address of ambulance services (e.g. Shaeffer, 4358 Brown Parkway, Corona). Provide phone number and indicate if ambulance company has paramedics by entering "Yes" or "No" in the Paramedics field.
	B. Incident Ambulances	Name of organization providing ambulances and the incident location. Also indicate if paramedics are aboard by entering "Yes" or "No" in the Paramedics field.
7.	Hospitals	List hospitals which could serve this incident. Hospital name, address, the travel time by air and ground from the incident to the hospital, phone number, and enter "Yes" or "No" to indicate whether the hospital has a burn center and/or helipad.
8.	Medical Emergency Procedures	Note any special emergency instructions for use by by incident personnel.
9.	Prepared By	Enter the name of the Medical Unit Leader preparing the form.
10.	Reviewed By	Obtain the name of the Safety Officer who must review the plan.

MEDICAL PLAN	1. Incident Name	2. Date Prepared	3. Time Prepared	4. Operational Period

5. INCIDENT MEDICAL AID STATIONS

MEDICAL AID STATIONS		LOCATION	Paramedics

6. TRANSPORTATION

A. AMBULANCE SERVICES

NAME		ADDRESS	PHONE	Paramedics

A. INCIDENT AMBULANCES

NAME		LOCATION	Paramedics

7. HOSPITALS

NAME		ADDRESS	Travel Time Air	Travel Time Grnd	PHONE	Helipad	Burn Center

8. MEDICAL EMERGENCY PROCEDURES

ICS 206 8/96	9. Prepared By: (Medical Unit Leader	10. Reviewed By: (Safety Officer)

RESOURCES AT RISK SUMMARY
(OS FORM OS-232)

Purpose. The Resources At Risk Summary is used to record and identify details of the Situation Unit including Technical Specialist activity. It also serves as the Environmental Operations Plan.

Preparation. The Situation Unit Leader in coordination with the Scientific Support Coordinator (SSC) Specialist, with input from the Resources at Risk (RAR) Technical Specialists, and other resource trustees, will complete this form for each Operational Period.

Distribution. Each Operational Period a copy must be forwarded to the Planning Section Chief for the Incident Command to serve as an Environmental Operations Plan (part of the Incident Action Plan.) A copy must also be maintained by the SSC Specialist.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Environmentally Sensitive Sites and Wildlife Issues	Enter number assigned to site, priority as it relates to degree of sensitivity, site name, location and description.
(4.)	Narrative	Write a narrative clarifying the sites and wildlife issues described in the first part of section 4.
	Archaeo-cultural and Socio-economic Sites	Enter number assigned to site, priority as it relates to degree of sensitivity, site name, location and description.
(5.)	Narrative	Write a narrative clarifying the sites and wildlife issues described in the first part of section 5.
6.	Prepared By	Enter name and title of the person preparing the form.

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Resources At Risk Summary	1. Incident Name	2. Date Prepared	3. Time Prepared

4. Environmentally Sensitive Areas and Wildlife Issues

#	Priority		Site	Location and Description

Narrative:

5. Archaeo-cultural and Socio-economic Issues

#	Priority		Site	Location and Description

Narrative:

ICS-OS-232 8/96	6	Prepared By: (Situation Unit Leader)

EXECUTIVE SUMMARY

Purpose. The Executive Summary Form is used to communicate significant response issues in a brief format to Senior Managers, Administrators, Senior Agency Staff, and Civic Leaders requiring daily updates from field venues.

Preparation. The Executive Summary Form is prepared by the Planning Section Chief using guidance from Incident Briefing Form (ICS 201), the Incident Status Summary (ICS-OS-209), and the Resources At Risk Summary (ICS-OS-232). Final authorization is provided by the Incident Command prior to dissemination outside the ICS organization.

Distribution. After authorization with the Incident Command. The Planning Section Chief will duplicate the Executive Summary and post a copy at the Situation Display in the Command Post. Single copies may then be distributed to the Command Staff, Section Chiefs, and Joint Information Bureau.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Operational Period	Enter the Operational Period date and time (e.g. 1800 09/17/1996 to 0600 09/18/1996).
5.	Planning	Summarize critical actions of the next operational period.
6.	Operations	Summarize the tactical accomplishments for the previous operational period.
7.	Environmental	Summarize any significant impacts identified or mitigated for the previous operational period.
8.	Other	Indicate any anomalies to previous executive summaries, special meetings, community impacts, or items of special interest.
9.	Prepared By	Enter name of the Planning Section Chief preparing the summary.

EXECUTIVE SUMMARY	1. Incident Name	2. Date Prepared	3. Time Prepared
4. Operational Period (Date/Time):			
5. Planning:			
6. Operations:			
7. Environmental:			
8. Other:			
ICS Exec. Sum. 8/96	9. Prepared By: (Planning Section Chief)		

INCIDENT ORGANIZATION CHART (ICS FORM 207)

Purpose. The Incident Organization Chart is used to indicate what ICS organizational elements are currently activated and the names of personnel staffing each element. The attached chart is an example of the kind of Organizational Chart used in the ICS. Personnel responsible for managing organizational positions would be listed in each box as appropriate.

Preparation. The organization chart is prepared by the Resources Unit and posted along with other displays at the Incident Command Post. A chart is completed for each operational period and updated when organizational changes occur.

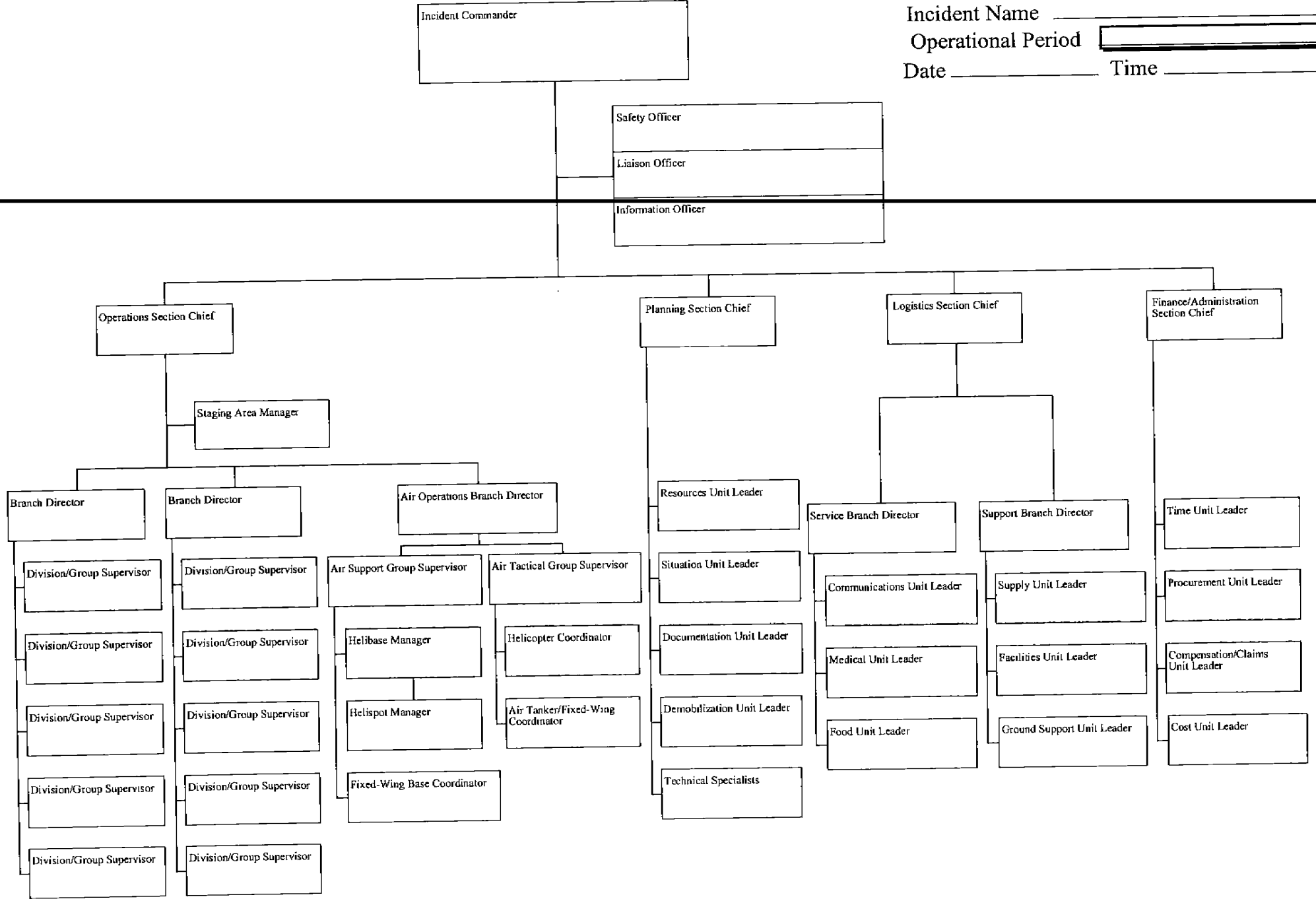
Distribution. When completed, the chart is posted on the display board located at the Incident Command Post.

Wall Size Chart. The ICS Form 207 WS is a large chart that is primarily used to post on the command post display board for better visibility.

Incident Name _____

Operational Period

Date _____ Time _____



ICS 207 (Usually displayed as a wall-sized chart)

INCIDENT STATUS SUMMARY
(ICS FORM OS-209)

Purpose. The Incident Status Summary serves the following purposes:

1. It is used by Situation Unit personnel for posting information on Status Boards.
2. When duplicated and provided to Command Staff members, it provides them with basic information for use in planning for the next operational period.
3. It provides information to the Information Officer for preparation of media releases.
4. It summarizes incident information for local and off-site coordination centers.

Preparation. The Incident Status Summary is prepared by the Situation Unit. Resources information should be obtained from the Resources Unit. It is scheduled for presentation to the Planning Section Chief and other General Staff members prior to each Planning Meeting and may be required at more frequent intervals by the Incident Command or Planning Section Chief.

Distribution. When completed, the form is duplicated and copies are distributed to the Incident Command and staff, and all Section Chiefs, Planing Section Unit Leaders, and the Joint Information Center. It is also posted on a status board located at the ICP.

Item	Item Title	Instructions
1.	Incident Name	Print the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Operational Period	Enter the start time and end time and include date(s) (e.g. 1800 09/17/1996 to 0600 09/18/1996).
5	Spill Status.	Enter the estimated amounts in barrels for each category.
6.	Waste Management	Enter the estimated amounts in barrels or tons for each category.
7.	Shoreline Impacts	Enter the total miles in each category for each degree of oiling.
8.	Wildlife Impacts	Indicate the number of oiled wildlife.
9.	Safety Status	Indicate the number of serious injuries.
10.	Onshore Equipment Resources	Indicate which types are deployed, are expected on scene, and their availability.
11.	Offshore Equipment Resources	Indicate which types are deployed, are expected on scene, and their availability.
12.	Personnel Resources	Indicate the numbers of personnel assigned by agency.
13.	Comments	Use this area for other information.
14.	Prepared By	Enter name and title of the person preparing the form.

Incident Status Summary

1. Incident Name	2. Date Prepared	3. Time Prepared

5. Spill Status (Estimated, BBLs)

Source Status: _____

Remaining Potential: _____

Rate of spillage: _____

	LAST 24 HOURS	TOTAL
Volume Spilled		

Mass Balance/Oil Budget

Recovered Liquids		
Evaporation		
Dispersion		
Burned		
Floating, Contained		
Floating, Uncontained		
Onshore		
Total spilled product accounted for		

6. Waste Management (Estimated)

TYPE	RECOVERED	STORED	DISPOSED OF
Oil (bbl)			
Oily Liquids (bbl)			
Liquids (bbl)			
Oily Solids (tons)			
Solids (tons)			

7. Shoreline Impacts

Degree of Oiling	Miles Affected	Miles Cleaned	Miles Remaining To Be Cleaned
Light			
Medium			
Heavy			
Total			

8. Wildlife Impacts

TYPE	Captured	Cleaned	Released	DOA	Died in Facility: Euthanized	Died in Facility: Other Cause
Birds						
Mammals						
Reptiles						
Fish						
Other						
Total						

9. Safety Status

TYPE	LAST 24 HOURS	TOTAL
Responder Injury		
Public Injury		
Other		

4. Operational Period (Date/Time)

10. Onshore Equipment Resources

TYPE	Number Assigned at Incident	Number Available	Number Out-of-Service
Heavy Equipment			
Pressure Washers			
Vacuum Trucks			
Bioremediation Units			
Containment Boom (ft.)			
Sorbent/Snare Boom (ft.)			
Stationary Skimmers			
Vessels			

11. Offshore Equipment Resources

TYPE	Number Assigned at Incident	Number Available	Number Out-of-Service
Oil Spill Resp. Vessels			
Fishing Vessels			
Other Vessels			
Landing Craft			
Barges			
Tugs			
Helicopters			
Fixed Wing			
Stationary Skimmers			
Containment Boom (ft.)			
Sorbents (ft.)			
Others			

12. Personnel Resources

Organization	Number of People	Organization	Number of People
Federal			
State			
RP			
Others			

Total Response Personnel from All Organizations

13. Comments

ICS-OS-209 8/96	14. Prepared By: (Situation Unit)

AIR OPERATIONS SUMMARY (ICS FORM 220)

Purpose. This form provides air ops. units with the number, type, location and specific assignments of helicopters and fixed-wing aircraft.

Initiation of Form. The summary is completed by the Ops. Section chief or the Air Ops. Director during each Planning Meeting. Specific designators of the air resources assigned to the incident are provided by the Air and Fixed-Wing Support Groups.

Distribution. After the summary is completed by Air Ops. personnel (except item 11), the form is given to the Air Support Group Leader and Fixed Wing Support personnel. These personnel complete the form by indicating the designators of the helicopters and fixed-wing aircraft assigned missions during the specified operational period. This information is provided to Air Ops. personnel who, in turn, give the information to the Resources Unit.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Operational Period	Enter the start time and end time and include date(s) (e.g. 1800 09/17/1996 to 0600 09/18/1996).
3.	Distribution	Check the block and enter the time and date when ICS Form 220 and attachments were sent to all fixed-wing bases and helibases supporting the incident.
4.	Personnel and Communi-cations	List the names of those assigned to each position, what air-air radio freq. and air-ground freq. they are using.
5	Remarks	Enter the special instructions or information, including safety notes, hazards, and priorities to Air Ops. personnel.
6.	Location / Function	Enter the location and function of the aircraft.
7.	Assignment	Enter the scope of work the aircraft is assigned to complete.
8.	Fixed Wing	Indicate the number and type of fixed-wing aircraft available.
9.	Helicopters	Indicate the number and type of helicopters available.
10.	Time	Indicate when air craft will be available for use and when operations commence (e.g. 1530).
11.	Aircraft Assigned	Enter the designators of the aircraft assigned. Gather info. from Resources Unit, helibases and fixed-wing bases.
12.	Operating Base	Enter the base (helibase, helispot, fixed-wing base) from which each air resource is expected to initiate operations.
13.	Air Operations Support Equipment	List other equipment available that is used to support air operations.
14.	Prepared By	Enter name and title of the person preparing the form.

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AIR OPERATIONS SUMMARY

1. Incident Name	2. Operational Period (Date/Time)	3. Distribution
		Helibases Fixed-Wing Bases

4. PERSONNEL AND COMMUNICATIONS

	NAME	AIR/AIR FREQUENCY	AIR/GROUND FREQUENCY
Air Operations Director			
Air Tactical Supervisor			
Air Support Supervisor			
Helicopter Coordinator			
Fixed-Wing Coordinator			

5. REMARKS (Spec. Instructions, Safety Notes, Hazards, Priorities)

6. Location / Function	Assignment	8. Fixed Wing		9. Helicopter		10. Time		11. Aircraft Assigned	12. Operating Base
		Number	Type	Number	Type	Available	Commence		

ICS 220 8/96	13. Air Operation Support Equipment	14.Prepared By:(Include Date & Time)

DAILY MEETING SCHEDULE (ICS FORM OS-230)

Purpose. The Daily Meeting Schedule is used to record daily scheduled meeting activities, for information purposes.

Preparation. The Daily Meeting Schedule is prepared by the Situation Unit Leader and coordinated through the Incident Command for each Operational Period or as needed.

Distribution. After coordination with the Incident Command, the Situation Unit Leader will duplicate the schedule and post a copy at the command post and distribute to the Command Staff, Section Chiefs, Branch Directors, Division/Group Supervisors, and appropriate Unit Leaders.

For each scheduled meeting, enter the time, meeting name, purpose and location. Use more than one line per meeting if necessary.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Operational Period	Enter the Operational Period date and time (e.g. 09/17/1996 to 0600 09/18/1996).
5.	Prepared By	Enter the name of the Situation Unit Leader preparing the schedule.

DAILY MEETING SCHEDULE	1. Incident Name	2. Date Prepared	3. Time Prepared

4. Operational Period (Date/Time)

Time	Meeting Name	Purpose / Attendees	Meeting Location

ICS-OS-230 8/96	5. Prepared By: (Situation Unit Leader)

MEETING DESCRIPTION (ICS FORM OS-231)

Purpose. The Meeting Description form is used to provide more detailed information concerning the attendees and agenda for a particular meeting.

Preparation. The Meeting Description is prepared by the person facilitating the meeting and coordinated through the Incident Command for each Operational Period or as needed.

Distribution. After coordination with the Incident Command, the Situation Unit Leader will add the meeting to the Daily Meeting Schedule and post a copy of the Meeting Description at the command post and distribute it to appropriate staff upon request.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Meeting Name	Enter the meeting name from the Daily Meeting Schedule (ICS Form 230).
3.	Meeting Date	Enter date that the meeting takes place (e.g. 09/17/1996).
4.	Meeting Time	Enter the time that the meeting takes place (e.g. 1530).
5.	Meeting Place	Enter the location of the meeting.
6.	Facilitator	Enter the name of the person facilitating the meeting.
7.	Who Should Attend	Enter the names of those who should attend the meeting.
	Agenda Outline	List the issues/concerns that are to be addressed at the meeting.
9.	Prepared By	Enter name and title of the person preparing the form.

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MEETING DESCRIPTION	1. INCIDENT NAME
2. Meeting Name:	
3. Meeting Date:	4. Meeting Time:
5. Meeting Place:	
6. Facilitator:	
7. Who Should Attend:	
8. Agenda Outline:	
ICS-OS-231 8/96	9. Prepared By:

GENERAL PLAN

Purpose. The General Plan is used to generate a proposed timeline for the overall response.

Preparation. The General Plan is prepared by the Planning Section Chief.

Distribution. The General Plan should be approved by the IC/UC and then distributed to all appropriate Divisions/Groups/Sections/Units personnel.

NOTE: In the header row, the box at the top of each column should indicate that portion of the timeline the column represents (e.g., 1800 or 09/17/1996 or Week 1).

Item	Item Title	Instructions
	Incident Name	Enter the name assigned to the incident.
	Prepared By	Enter the name and title of the person preparing the form.
	Date Prepared	Enter date prepared (e.g. 09/17/1996).
	Time Prepared	Enter time prepared (e.g. 1530).
	Operational Period	Enter the Operational Period date and time (e.g. 1800 09/17/1996 to 0600 09/18/1996).
1-23.		Place an "X" in the appropriate box(es) indicating when the item will be active.

GENERAL PLAN

Incident Name			
Prepared By	Date Prepared	Time Prepared	Operational Period (Date/Time) From

1. NOTIFICATION														
2. RESPONSE INITIATION														
3. SITE CHARACTERIZATION, FORECASTS, AND ANALYSIS														
4. SITE SAFETY														
5. SITE SECURITY														
6. SOURCE STABILIZATION, SALVAGE, AND LIGHTERING														
7. SURVEILLANCE														
8. ON WATER CONTAINMENT AND RECOVERY														
9. SENSITIVE AREAS/ RESOURCES AT RISK														
10. ALTERNATIVE RESPONSE TECHNOLOGY														
11. SHORELINE PROTECTION AND RECOVERY														
12. WILDLIFE PROTECTION AND REHABILITATION														
13. LOGISTICS SUPPORT														
14. RESPONSE ORGANIZATION														
15. COMMUNICATIONS														
16. PUBLIC INFORMATION														
17. FINANCIAL MANAGEMENT AND COST DOCUMENTATION														
18. NRDA AND CLAIMS														
19. TRAINING														
20. INFORMATION MANAGEMENT														
21. RESTORATION/MITIGATION														
22. WASTE MANAGEMENT														
23. DEMOBILIZATION														

STATUS CHANGE CARD (ICS FORM 210)

Purpose. The Status Change Card is used by the incident Communications Center Manager to record status change information received on resources assigned to the incident.

Preparation. The form is completed by radio/telephone operators who receive status change information from individual resources, Task Forces, Strike Teams, and Division/Group Supervisors. Status information could also be reported by Staging Area and Helibase Managers and fixed-wing facilities.

Distribution. The Status Change Card is a two-part form. The original copy is given to the Resources Unit, and the second (pink) copy is retained by the Communications Unit.

Item Title	Instructions
Designator Name /No.	Enter appropriate designator for ID the kind of resource. The resource type codes are in ICS 020-1, Resource Listings.
Status	Select the current status of the resource from the pop-up menu. If out-of-service status is selected, enter the time when the resource will return to service (ETR).
From / Location / To	Place an "X" in the FROM column indicating the current location of the resource (where it came from). Also place an "X" in the TO column indicating the assigned location of the resource. When more than one Division, Staging Area, or Camp is used, identify the specific location (e.g. Division A, Redfern Staging Area, Camp Hood).
Message	Enter any special information provided by the resource or dispatch center such as individual designators of strike teams and task forces.
Time	Enter the time of the status change (e.g. 1530).
Resources Process a	An "X" is entered in this box by Resources Unit personnel after the Unit has transferred the info. to Resource Status Card (ICS Form 219).

DESIGNATOR
NAME/ID. NO. _____

STATUS

_____ ETR (O/S=Out-of-Service)

FROM	LOCATION	TO
	DIVISION/GROUP	
	STAGING AREA	
	BASE/ICP	
	CAMP	
	EN ROUTE	ETA
	HOME AGENCY	

MESSAGE

TIME _____ RESOURCES PROCESS _____

ICS FORM 210 STATUS CHANGE CARD

ICS Forms Instructions

CHECK-IN LIST (ICS FORM 211)

Purpose. Personnel and equipment arriving at the incident can check in at various incident locations. Check-in consists of reporting specific information which is recorded on the form.

Preparation. The Check-In List is initiated at a number of incident locations including staging areas, base, camps, helibases, and ICP. Managers at these locations record the information and give it to the Resources Unit as soon as possible.

Distribution. Check-In Lists are provided to both the Resources Unit and the Finance Section. The Resources Unit maintains a master list of all equipment and personnel that have reported to the incident.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Check-in Location	Enter an "X" in the box indicating where the resource or person checked in.
3.	Date/Time Prepared	Enter the date (e.g. 09/17/1996) and time (e.g. 1530) prepared.
4.	List Personnel (Overhead) by Agency & Name	Use this section to list agency three-letter designator and individual names for all overhead personnel. When listing equipment, use three-letter designator, indicate if resource is a single resource, task force or strike team; enter kind of resource (letter for single resource, 1-3 for Strike Team); enter type of resource (1-4), and designated id. no.
	Order/Request Number	Order number will be assigned by Agency dispatching the resources or personnel to the incident.
6.	Date/Time Check-In	Self explanatory.
7.	Leader's Name	Self explanatory.
8.	Total Number Personnel	Enter total number of personnel in strike teams, task forces or manning single resources. Include leaders.
9.	Manifest	Indicate if a manifest was prepared by entering "Yes" or "No" in the field.
10.	Crew Weight or Individual's Weight	Self Explanatory.
11.	Home Base	Location at which the resource/individual is normally assigned.
12.	Departure Point	Location from which resource/individual departed for this incident.
13.	Method of Travel	Means of travel to incident (bus, truck, engine, personal vehicle, etc.)
14.	Incident Assignment	Assignment at time of dispatch.
15.	Other Qualifications	List any other ICS position the individual has been trained to fill.
16.	Sent to	Enter initials and time that the info. pertaining to that entry was sent to the Resource Unit.
	Page	Indicate page no. and no. of pages being used for

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CHECK-IN LIST	1. INCIDENT NAME	2 CHECK-IN LOCATION __ BASE __ CAMP _____ __ STAGING AREA __ ICP RESOURCES __ HELIBASE	3 DATE/TIME

CHECK-IN INFORMATION

4. LIST PERSONNEL (OVERHEAD) BY AGENCY & NAME - OR- LIST EQUIPMENT BY THE FOLLOWING FORMAT: AGENCY	SINGLE T/F S/T	KIND	TYPE	ID NO./NAME	5 ORDER/ REQUEST NUMBER	6. DATE/TIME CHECK-IN	7. LEADER'S NAME	8 TOTAL NO PERSONNEL	9. MANIFEST YES	9. MANIFEST NO	10. CREW WEIGHT OR INDIVIDUALS WEIGHT	11. HOME BASE	12 DEPARTURE POINT	13. METHOD OF TRAVEL	14 INCIDENT ASSIGNMENT	15. OTHER QUALIFICATION	16. SENT TO RESOURCES TIME/INT
17 ICS 211 PAGE ____ of ____				18. PREPARED BY (NAME AND POSITION) USE BACK FOR REMARKS OR COMMENTS													

SUPPORT VEHICLE INVENTORY (ICS FORM 218)

Purpose. The Support Vehicle Inventory form provides an inventory of all transportation and support vehicles assigned to the incident. The information is used by the Ground Support Unit to maintain a record of the types and locations of vehicles on the incident. The Resources Unit uses the information to initiate and maintain status/resources information on these resources.

Preparation. The form is prepared by Ground Support Unit personnel at intervals specified by the Ground Support Unit Leader.

Distribution. Initial inventory information recorded on the form should be give to the Resources Unit. Subsequent changes to the status or location of transportation and support vehicles should be provided to the Resources Unit immediately.

NOTE:

a. The Ground Support Unit Leader may prefer to use separate sheets for each type of support vehicle (e.g., buses, pickups, and food tenders).
b. More than one line may be used to record information on each vehicle. If this is done, separate individual vehicle entries with a heavy line.
c. Several pages may be used. When this occurs, number the pages consecutively (in the page number box at bottom of form).

Item	Item Title	Instructions
	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Vehicle Information	Record the following vehicle information:
	Type	a. Specific vehicle type (e.g. bus, stakeside, etc.)
	Make	b. Vehicle manufacturer name (e.g. GMC, International).
	Capacity / Size	c. Vehicle capacity / size (e.g. 30-person bus, 3/4 ton truck).
	Owner	d. Owner of vehicle (agency or private owner).
	ID Number	e. Serial or other identification number.
	Location	f. Location of vehicle.
	Release Time	g. Time vehicle is released from incident.
5.	Prepared By	Enter the name of the person completing the form.

SUPPORT VEHICLE INVENTORY (USE SEPARATE SHEET FOR EACH VEHICLE CATEGORY)	1. INCIDENT NAME	2. DATE PREPARED	3. TIME PREPARED

VEHICLE INFORMATION

a. TYPE	b. MAKE	c. CAPACITY/SIZE	d. AGENCY/OWNER	e. I.D. NO.	f. LOCATION	g. RELEASE TIME

218 ICS 8-78	PAGE	5. PREPARED BY (GROUND SUPPORT UNIT)

NFES 1341

DEMOBILIZATION CHECKOUT (ICS FORM 221)

Purpose. This form provides the Planning Section information on resource releases from the incident.

Initiation of the Form. The form is initiated by the Demobilization Unit Leader or the Planning Section. The top portion of the form is completed by Demobilization Unit Leader after the resource supervisor has given written notification that the resource is no longer needed.

Distribution. The individual resource will have the unit mark the appropriate box(es) with "X"s in item 11 prior to release from the incident. After completion, the form is returned to the Demobilization Unit Leader or the Planning Section.

Item	Item Title	Instructions
1.	Incident Name/ No.	Enter Name and/or Number of incident.
2.	Date/Time	Enter date (e.g. 09/17/1996) and time (e.g. 1530) prepared.
3.	Demob No.	Enter Agency Request No., Order No., or Agency Demob. No. if applicable.
4.	Unit/Personnel Released	Enter appropriate vehicle or StrikeTeam/Task Force ID No.(s) and Leader's name or individual overhead or staff personnel being released.
5.	Transportation Type / No.	Method and vehicle ID no. for transportation back home unit. Enter N/A if own transportation is provided. *Include additional details in Remarks.
6.	Actual Release Date/Time	To be completed at end of demobilization at time of actual release from incident. Would normally be last item of form to be completed.
7.	Manifest	Enter "Yes" or "No" as appropriate. If yes, enter manifest number. Some agencies require a manifest for air travel.
8.	Destination	Location to which Unit or personnel have been released, (e.g. Area, Region, Home Base, Airport, Mobilization Center, etc.)
9.	Area/Agency/ Region Notified	Identify Area, Agency, or Region notified and enter date and time of notification.
10.	Unit Leader Responsible for Collecting Performance Ratings	Self-explanatory. Note: Not all agencies require these ratings.
11.	Unit/Personnel	Demobilization Unit Leader will enter an "X" in the box to the left of those units requiring check-out. Identified Unit Leaders are to initial to the right to indicate release. NOTE: Blank boxes are provided for any additional unit requirements as needed), (e.g. Safety Officer, Agency Rep., etc.)
12.	Remarks	Any additional information pertaining to demobilization or release.

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DEMOBILIZATION CHECKOUT

ICS-221

1 INCIDENT NAME/NUMBER	2 DATE/TIME	3 DEMOB NO.

4 UNIT/PERSONNEL RELEASED

5 TRANSPORTATION TYPE/NO

6 ACTUAL RELEASE DATE/TIME

7 MANIFEST NUMBER _____

8 DESTINATION

9 AREA/AGENCY/REGION NOTIFIED

NAME _____

DATE _____

10 UNIT LEADER RESPONSIBLE FOR COLLECTING PERFORMANCE RATING

11 UNIT PERSONNEL

YOU AND YOUR RESOURCES HAVE BEEN RELEASED SUBJECT TO SIGNOFF FROM THE FOLLOWING (DEMOB UNIT LEADER MARK APPROPRIATE BOX)

LOGISTICS SECTION

- ☐ SUPPLY UNIT _____
- ☐ COMMUNICATIONS UNIT _____
- ☐ FACILITIES UNIT _____
- ☐ GROUND SUPPORT UNIT LEADER _____

PLANNING SECTION

- ☐ DOCUMENTATION UNIT _____

FINANCE/ADMINISTRATION SECTION

- ☐ TIME UNIT _____

OTHER

- ☐ _____ _____
- ☐ _____ _____

12 REMARKS

_____

_____

221 ICS 1/83

NFES 1353

INSTRUCTIONS ON BACK

GENERAL MESSAGE (ICS FORM 213)

Purpose. The General Message form is used by:

1. Incident dispatchers to record incoming messages which cannot be orally transmitted to the intended recipients.
2. Command Post and other incident personnel to transmit messages to the Incident Communications Center for transmission via radio or telephone to the addressee.
3. Incident personnel to send any message or notification to incident personnel which requires hard-copy delivery.

Initiation of Form. The General Message form may be initiated by incident dispatchers and any other personnel on an incident.

Distribution. Upon completion, the General Message may be:

1. Hand carried to the addressee.
2. Hand carried to the incident Communication Center for transmission.

Item Title	Instructions
To	Indicate Unit / Person the General Message is intended for. Be specific.
Office	Indicate the location where the Unit / Person is located (e.g. Ground Support Unit Leader, Simpson Camp, Communications, etc.)
From	Indicate appropriate designation and location of sender.
Subject	Fill in if applicable.
Date	List the date (e.g., 09/17/1996) and time (e.g. 1530)
age	Briefly complete. Think through your message before writing it down. Try to be as concise as possible.
Reply	This section is intended to be used by the Unit / Person who receives the message to reply to your message.
Date	Record the date and time of reply.
Signature	Record signature and title of person replying

One copy should be sent and one copy retained by the person who initiates the message.

*U S GPO 1009-793-975

GENERAL MESSAGE

TO:		POSITION	
FROM		POSITION	
SUBJECT		DATE	
MESSAGE			

DATE	TIME	SIGNATURE/POSITION

213 ICS 1/79
NFES 1336

UNIT LOG (ICS FORM 214)

Purpose. The Unit Log is used to record details of unit activity including specialized team activity (e.g., Strike Team). The file of these logs provides a basic reference from which to extract information for inclusion in any after-action report.

Initiation of Log. A Unit Log is initiated and maintained by Command Staff members, Division/Group Supervisors, Air Operations Groups, Strike Team/Task Force Leaders, and Unit Leaders. Completed logs are forwarded to supervisors who provide copies to the Documentation Unit.

Distribution. The Documentation Unit maintains a file of all Unit Logs. It is necessary that one copy of each log be submitted to the Documentation Unit.

Item	Item Title	Instructions
1.	Incident Name	Enter the name assigned to the incident.
2.	Date Prepared	Enter date prepared (e.g. 09/17/1996).
3.	Time Prepared	Enter time prepared (e.g. 1530).
4.	Unit Name / Designators	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
5.	Unit Leader	Enter the name of the individual in charge of the Unit.
6.	Operational Period	Enter the time span covered by the log (e.g. 1800 09/17/1996 to 0600 09/18/1996).
7.	Personnel Roster Assigned	List the name, position, and home base of each member assigned to the unit during the operational period.
8.	Activity Log	Enter the time and briefly describe each significant occurrence or event (e.g., task assignments, task completions, injuries, difficulties encountered, etc.)
9.	Prepared By	Enter name and title of the person approving the log. Provide log to immediate supervisor, at the end of each operational period.

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UNIT LOG

1. Incident Name	2. Date Prepared	3. Time Prepared

4. Unit Name/Designators	5. Unit Leader (Name and Position)	6. Operational Period (Date/Time)

7. Personnel Roster Assigned

NAME	ICS POSITION	HOME BASE

8. ACTIVITY LOG (CONTINUE ON REVERSE)

TIME		MAJOR EVENTS

ICS 214 8/96

9. Prepared By:

UNIT LOG
(CONTINUED)

1. Incident Name	2. Date Prepared	3. Time Prepared

TIME	MAJOR EVENTS

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ICS 214 (cont.) 8/96	Page ___	9. Prepared By:

SENSITIVE SITES INDEX
ACP SITE INDEX / RESPONSE ACTIONS

Purpose. The ACP Site Index / Response Action form acts as an index providing additional information for sites from the Area Contingency Plan (ACP) which have been referenced on the situation map and identified as requiring response activity.

Preparation. The Situation Unit Leader in coordination with the Scientific Support Coordinator (SSC) Specialist, with input from the Resources at Risk (RAR) Technical Specialists, and other resource trustees, will complete this form.

Distribution. On an as needed basis, the form will be updated and posted next to the situation map on a status board at the ICP.

Item Title	Instructions
Priority	Enter the priority as it relates to the degree of sensitivity.
Site ID	Enter the identification number assigned to the site.
Site Description	Enter description of the site.
Assignment	Enter information regarding to whom this site has been assigned.
Action	Provide a statement of the tactical objectives to be achieved.
Status	Enter the status of the action.

Sensitive Sites / Response Actions

Priority	Site ID	Site Description	Assignment	Action	Status