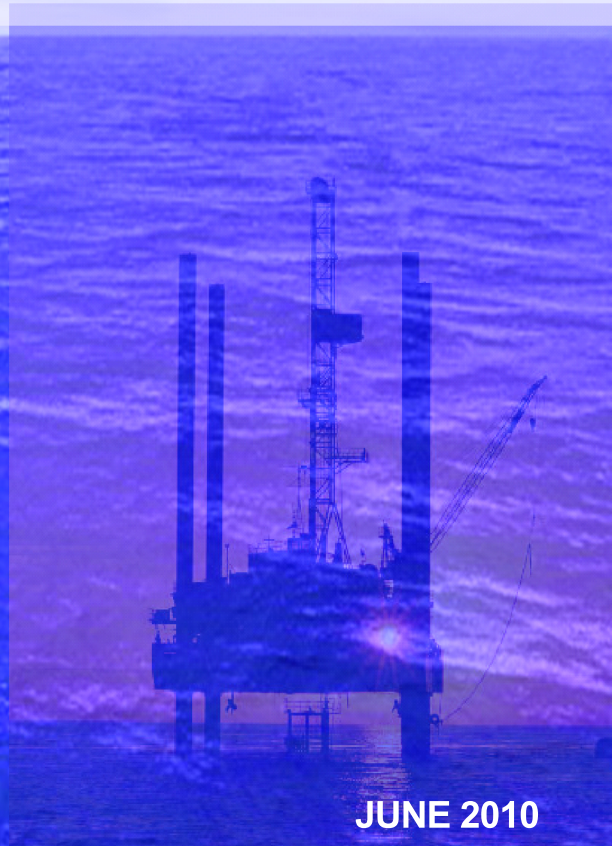




Shell Offshore Inc.




Gulf of Mexico Regional Oil Spill Response Plan



JUNE 2010

Graphics by:

The Response Group
Emergency Response / Pre-Planning & Support

	Shell Offshore, Inc.	Number: HSE0054
		Custodian: SOI RA
	GOM Regional Oil Spill Response Plan	Revision: 6.1 Effective: 03/05/2010

SECTION 1 - OSRP QUICK GUIDE

A. *General*

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 Shell Offshore, Inc. experiences an oil spill.

B. *Person In Charge of Facility - Response Actions*

The following internal notifications should be made for each emergency incident to the extent the incident demands (telephone reference is provided in **Figures 1.9, 1.14 and 1.15.**) In no event shall notification be delayed because the immediate supervisor is inaccessible. **Authorization is given to bypass management levels if necessary to provide immediate notification to upper management.** The Regional Spill Response Team will consist of Shell and contract personnel as the situation demands.

Shell/ Shell Pipeline Person in Charge/ Foreman/ OIM

- Notify National Response Center and complete applicable Spill Report Form.
- Immediately notify the Operations Manager/Drilling Supt. (Operations Officers) or Shell Pipeline Emergency Response Coordinator
- Immediately notify the Oil Spill Hotline, or call Qualified Individual/Planning Section Chief directly. Shell Pipeline PIC may delegate this Spill Management Team notification to Shell Pipeline Emergency Response Coordinator/ Env. Rep as per their Department of Transportation Response Plan(s).

Operations Officers

- Ensure that the Spill Response Team has been activated.
- Notify the Senior Executive, as the situation demands.
- Notify the HS&E Manager, as the situation demands.

Qualified Individual

- Ensure activation of all regulatory/ governmental agencies and other external organizations as detailed in **Section 4.** Coordinate with the Incident Commander, as the situation demands.
- Call out Spill Response Team


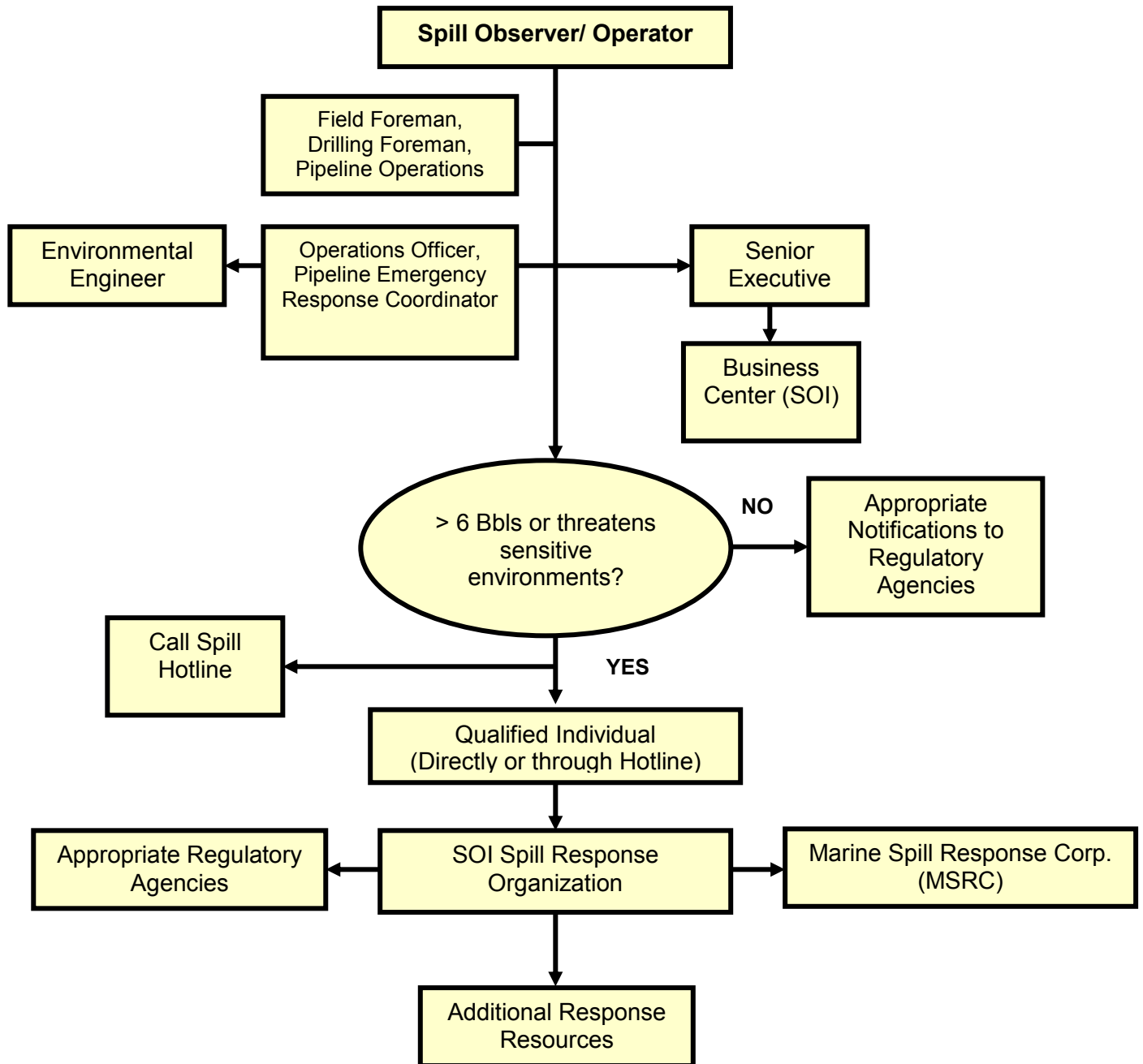
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FIGURE 1.1 - INTERNAL NOTIFICATION SEQUENCE





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FIGURE 1.2 - First Notice Incident Detail Report

(Internal SEPCo HSE use only) Event Number

Report of Offshore Environmental Incident Form (OF-REI)			
DIRECTIONS: This form is to be used to capture information that will be later entered into the IMPACT Safety database. When completing this form, please be as complete and specific as possible. When completing this form using MS Word you will only be able to enter information into the shaded portions of the form or by clicking on the check boxes. You can use the TAB key to move to the right or the DOWN ARROW key to move down on the form. You may also use your mouse to click on the cell that you want to complete.			
Date of Incident	Time of Incident	On SEPCo Premises <input type="checkbox"/> Y <input type="checkbox"/> N	
Incident Headline (Brief description of incident – 50 characters or less on the line below)			
Incident Type and Location Information			
<input type="checkbox"/> Spill <input type="checkbox"/> Exceedance of discharge limits (Noncompliance) <input type="checkbox"/> Produced water sheen <input type="checkbox"/> Material lost overboard <input type="checkbox"/> Complaint <input type="checkbox"/> Fire <input type="checkbox"/> Release <input type="checkbox"/> Other(Describe)			
Field Name	Well No./Rig	Block	Platform
Latitude	Longitude		OCS-G#
Activity at Location			
<input type="checkbox"/> Drilling/W.O./Completion <input type="checkbox"/> Exploration <input type="checkbox"/> Production <input type="checkbox"/> Construction <input type="checkbox"/> Other			
Specific Operation			
<input type="checkbox"/> Workover <input type="checkbox"/> Drilling <input type="checkbox"/> Construction <input type="checkbox"/> Operations <input type="checkbox"/> Other <input type="checkbox"/> Completion <input type="checkbox"/> Crane operations <input type="checkbox"/> Well servicing <input type="checkbox"/> Coil tubing <input type="checkbox"/> Equipment handling <input type="checkbox"/> Air transport <input type="checkbox"/> Maintenance <input type="checkbox"/> Boat/Ship			
Source (Check all that apply)			
<input type="checkbox"/> Drip pan <input type="checkbox"/> Flowline <input type="checkbox"/> Other surface <input type="checkbox"/> Sump <input type="checkbox"/> Tank/Vessel <input type="checkbox"/> Wellhead <input type="checkbox"/> Flare <input type="checkbox"/> Hoses <input type="checkbox"/> Pipeline <input type="checkbox"/> Rotating equipment <input type="checkbox"/> Transfer equipment <input type="checkbox"/> Other			
Environment Affected			
<input type="checkbox"/> Water <input type="checkbox"/> Air			
What was spilled or released?			
Report spilled or released volume expressing liquid in gallons, dry chemicals in pounds and air emissions in Standard Cubic Feet.			
Gallons (gal)	Pounds (lbs)	Standard Cubic Feet (SCF)	
OIL SPILL INFORMATION			
Sheen colors <input type="checkbox"/> Barely Visible (spill factor = 0.000008)		<input type="checkbox"/> Silvery (spill factor = 0.000016)	
<input type="checkbox"/> Slight Color (spill factor = 0.000032)		<input type="checkbox"/> Bright Color (spill factor = 0.000065)	
<input type="checkbox"/> Dull (spill factor = 0.00022)		<input type="checkbox"/> Dark (spill factor = 0.00043)	
Size of the sheen	yards by	yards	Estimated volume of the spill (yards x yards x spill factor) = gallons
Was the sheen <input type="checkbox"/> captured/cleaned up <input type="checkbox"/> allowed to disperse naturally			
How long did the sheen last before natural dispersion or cleaned up? _____ hours			
Weather Information			
Est. current speed	Direction (to)	Estimated wave height	Est. wind speed Direction (from)
Liquid Spill Properties an 6 barrels)			
API Gravity	Pour Point		
Visibility(nautical miles)	Ceiling (feet)	Ambient temp. (°F.)	
Source Control			

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Describe how and when the source of the spill or discharge was stopped

Describe what was/will be done specifically to prevent reoccurrence? (Procedures changed, equipment repaired, etc)

What was the cost of repairs/cleanup (Include equipment, repair time, transportation, etc.)
EXCEEDANCE OF DISCHARGE LIMITS (NONCOMPLIANCE)

Did a sample fail a Permit test? Y N Static sheen Produced H₂O sheen

Oil and Grease mg/l Sanitary chlorine mg/l Toxicity ppm

Full Description (How did the incident occur?)
(Attach additional sheets, if necessary, to complete event description)

INCIDENT IMPACT (Actual)


Actual Impact on Environment	<input type="checkbox"/> Slight Effect – Less than 1 barrel spill	<input type="checkbox"/> Minor Effect – Greater than 1 barrel spill, INC or non-compliance	<input type="checkbox"/> Localized Effect – Greater than 5 barrels spilled or chemical reportable quantity (RQ)	<input type="checkbox"/> Major Effect – Spill response initialization required	<input type="checkbox"/> Massive Effect
Actual Impact on Assets <input type="checkbox"/> None	<input type="checkbox"/> No disruption to operation	<input type="checkbox"/> Brief disruption	<input type="checkbox"/> Partial shutdown, can be restarted	<input type="checkbox"/> Partial operational loss up to 2 weeks	<input type="checkbox"/> Substantial or total loss of operation
Actual Impact on Reputation <input type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Limited	<input type="checkbox"/> Considerable	<input type="checkbox"/> Major National	<input type="checkbox"/> Major International

Type of Complaint (Check if none)

Blast/Vibration Lights Odor/Fumes Debris Noise Oil Spray Smoke Flaring
 Other (describe)

NOTIFICATIONS

	Notified	Person's Name	Date / Time	Report number
External Notifications				
National Response Center 1-800-424-8802 (If delegated to by Incident Commander)	<input type="checkbox"/>		/	
	<input type="checkbox"/>		/	
Internal Notifications (all incidents)				

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Incident Commander	<input type="checkbox"/>		/
Area Leader/Drilling Superintendent	<input type="checkbox"/>		/
	<input type="checkbox"/>		/

Witness(es) to the Incident		
Name (Typed or Printed)	Employer	Phone

I certify that all the above information is true, accurate and complete. Under Federal law, penalties can be assessed for recording false information including fines and imprisonment.

Report submitted by			
Name (Typed or Printed)	Title	Phone	Date

Approvals and/or reviewers			
Name (Typed or Printed)	Title	Phone	Date


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FIGURE 1.3 - 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.


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

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

1. 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 1.3 (continued)
VOLUME ESTIMATE**

2. Spill Factors


- The factors given in the table below shall be used to estimate the volume of oil contained in the spill unless a more accurate amount is known by other means.
- These should be compared whenever possible to volumes estimated from the source of the spill, for example, piping volume, sump volume, or tank capacity.
- Exact calculations 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 should be rounded off to avoid the appearance of a very accurate determination.

Appearance of Oil on Water (This gives the thickness of oil)	Spill Factor ¹	
	Gallons/ Yd ²	Film Thickness
Barely Visible	0.000008	0.0000015
Silvery	0.000016	0.000003
Slight Color	0.000032	0.000006
Bright Color	0.000065	0.000012
Dull	0.00022	0.00004
Dark	0.00043	0.00008

¹ The factors represent volumes of oil and are based on "Field Operations Guide" United States Coast Guard, 2000 Edition. $Volume\ Oil = Area\ of\ Slick\ (yd^2) \times Spill\ Factor\ (gallons/ yd^2)$

3. Estimating Procedures

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

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**FIGURE 1.3 (continued)
VOLUME ESTIMATE**

Use the following steps when estimating the size of a spill:

Step	Action										
1	<ul style="list-style-type: none"> Estimate the coverage dimensions of each part of the spill in yd² for each of the six appearances that may be observed in the spill. Use helicopter coordinates to determine dimensions and sketch the oil spill with heavy areas outlined. 										
2	<ul style="list-style-type: none"> Multiply the dimensions in yd² by the appropriate factor from the table. Add the individual parts together. 										
3	<ul style="list-style-type: none"> The answer is the estimated volume of the spill in gallons or in barrels of oil. <table border="1"> <thead> <tr> <th>If. . . .</th> <th>Then. . . .</th> </tr> </thead> <tbody> <tr> <td>Less than one (1) gallon</td> <td>Report as "Less than 1 gallon"</td> </tr> <tr> <td>Less than one (1) barrel</td> <td>Report in gallons</td> </tr> <tr> <td>Between one (1) and seven (7) barrels</td> <td>Round off to the nearest 0.1 barrels</td> </tr> <tr> <td>Seven (7) or more barrels</td> <td>Report in barrels as a whole number</td> </tr> </tbody> </table>	If. . . .	Then. . . .	Less than one (1) gallon	Report as "Less than 1 gallon"	Less than one (1) barrel	Report in gallons	Between one (1) and seven (7) barrels	Round off to the nearest 0.1 barrels	Seven (7) or more barrels	Report in barrels as a whole number
If. . . .	Then. . . .										
Less than one (1) gallon	Report as "Less than 1 gallon"										
Less than one (1) barrel	Report in gallons										
Between one (1) and seven (7) barrels	Round off to the nearest 0.1 barrels										
Seven (7) or more barrels	Report in barrels as a whole number										


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FIGURE 1.4 - SEPCO INCIDENT COMMAND SYSTEM CONTACT INFO, REGIONAL SPILL RESPONSE ORGANIZATION

SEPCO OIL SPILL HOTLINE (FOR ALL EMERGENCIES)	(504) 889-4445
OSS COMMAND CENTER SATELLITE PHONE	(877) 525-3190 Fax (504) 728-0519
OSS COMMAND CENTER INFORMATION	(504) 728-4732/ 3154

COMMAND STAFF

INCIDENT COMMANDER/QUALIFIED INDIVIDUAL @ (Ext. 4500)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Smith, Phil B. Phil.b.smith@shell.com	██████████	██████████	██████████	██████████	██████████
Hutto, W.T. (Alt) Tommy.hutto@shell.com	██████████	██████████	██████████	██████████	██████████
Langford, Tim B. (Alt) Tim.b.langford@shell.com	██████████		██████████	██████████	██████████

LIAISON OFFICER @ (Ext. 4983)


NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Riche, Rian S. Rian.riche@shell.com	██████████		██████████	██████████	██████████
Dollar, Jason J (SPLC) Jason.dollar@shell.com	██████████	██████████	██████████	██████████	

LEGAL OFFICER @ (Ext. 1630)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Morris, Patrick Patrick.morris@shell.com	██████████		██████████	██████████	██████████
Crais, Arthur A. Arthur.crais@shell.com	██████████		██████████	██████████	██████████

PUBLIC AFFAIRS OFFICER @ (Ext. 4843)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Stewart, Hasting Hasting.stewart@shell.com	██████████			██████████	██████████
Palmer, Fred Fred.palmer@shell.com	██████████	██████████	██████████	██████████	██████████

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SAFETY OFFICER @ (Ext. 3157)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Brown, Gary Gary.brown@shell.com	██████████		██████████	██████████	
Wagner, Tom F. Thomas.wagner@shell.com	██████████		██████████	██████████	


GENERAL STAFF

PLANNING SECTION @ (Ext. 3156)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Hutto, W.T. (S.C.) Tommy.hutto@shell.com	██████████	██████████	██████████	██████████	██████████
Staley, Sue (Dep S.C.) Sue.staley@shell.com	██████████		██████████	██████████	██████████
Kuehn, Robert B. (ENV) Robert.kuehn@shell.com	██████████		██████████	██████████	
Meyer, Rick B. (Resources) Rick.b.meyer@shell.com	██████████		██████████	██████████	
Bellone, Sylvia A. (SUL) Sylvia.bellone@shell.com	██████████		██████████	██████████	
Chady, Jane M. (SUL) jane.chady@shell.com	██████████		██████████	██████████	
Moity, Warren J. (Decon/Waste) Warren.Moity@shell.com	██████████			██████████	
Lowe, Stacie A. (Doc) Stacie.Lowe@shell.com	██████████		██████████		
Stovall, Gary D. (THSP/SPLC) Gary.stovall@shell.com	██████████			██████████	██████████

LOGISTICS SECTION @ (Ext. 0361)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Perrott, Byron (S.C.) B.perrott@shell.com	██████████			██████████	
Summers, Steve (Alt. S.C.) Steve.summers@shell.com	██████████			██████████	
Burgett, Christopher S. (I/T) Christopher.burgett@shell.com	██████████			██████████	██████████
Guillott, Patrick P. (Air) Patrick.guillot@shell.com	██████████			██████████	
Prather, Greer G. (Marine) Greer.prather@shell.com	██████████			██████████	
Pecot, Joe (Comms) j.pecot@shell.com	██████████			██████████	

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FINANCE SECTION @ (Ext. 6619)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Tixier, Kathy (S.C.) kathy.tixier@shell.com	[REDACTED]		[REDACTED]	[REDACTED]	
Coulter, Michael (Alt S.C.) Michael.coulter@shell.com	[REDACTED]			[REDACTED]	

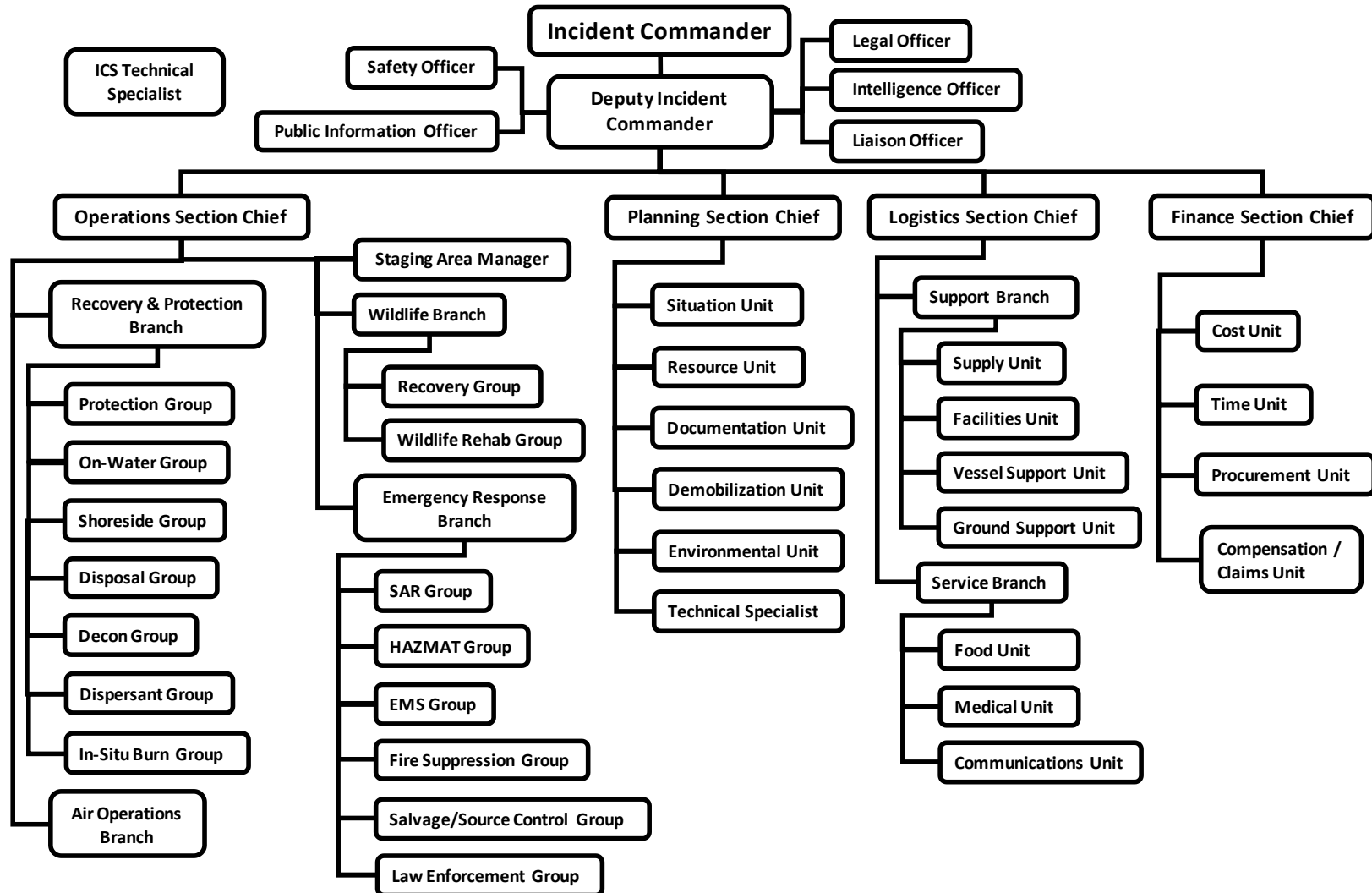
OPERATIONS SECTION @ (Ext. 4750)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Benson, Ben (S.C.) ben.benson@obriensrm.com	[REDACTED]			[REDACTED]	
Langford, Tim B. (Alt S.C.) tim.b.langford@shell.com	[REDACTED]		[REDACTED]	[REDACTED]	
Turner, Ed (Alt S.C.) Ed.turner@obriensrm.com	[REDACTED]			[REDACTED]	
Feliciano, Daniel C. (AOBD) Daniel.Feliciano@shell.com	[REDACTED]		[REDACTED]	[REDACTED]	
Theriot, Cory C. (STAM Disp.) cory.theriot@shell.com	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

@ Extensions at OSS Command Center, if applicable



FIGURE 1.5 - SOI REGIONAL SPILL RESPONSE ORGANIZATION




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FIGURE 1.6 - SRT CHECKLIST		
POSITION	RESPONSIBILITIES	COMMENTS
INCIDENT COMMANDER	<input type="checkbox"/> Fill in Spill Report Form <input type="checkbox"/> Assist field personnel (Med-Evac) <input type="checkbox"/> Assemble Spill Response Team <ul style="list-style-type: none"> <input type="checkbox"/> Brief team <input type="checkbox"/> Assign duties (org. chart) <input type="checkbox"/> Remind team to keep logs <input type="checkbox"/> Establish objectives (chart) <input type="checkbox"/> Name Incident <input type="checkbox"/> Determine response strategies <input type="checkbox"/> Conduct air surveillance <input type="checkbox"/> Establish meeting times (chart) <input type="checkbox"/> Notify agencies (chart)	
QUALIFIED INDIVIDUAL	<input type="checkbox"/> Status of incident, facility and personnel <input type="checkbox"/> Evaluate level of response required and activate SMT support as required <input type="checkbox"/> Conduct internal/ external notifications as required <input type="checkbox"/> Authorize the use of response resources <input type="checkbox"/> Participate in Incident Command briefings	
LIAISON OFFICER	<input type="checkbox"/> National Response Center <input type="checkbox"/> Notify appropriate State agencies <input type="checkbox"/> MMS District/ Pipeline Section <input type="checkbox"/> Request safety zones air/ water (USCG) <input type="checkbox"/> Request Notice to Mariners (USCG) <input type="checkbox"/> Submit dispersant request to USCG <input type="checkbox"/> Obtain approval to decant (USCG) <input type="checkbox"/> Prepare written reports to agencies	
HUMAN RESOURCES	<input type="checkbox"/> Notify family of injured (if company employee) <input type="checkbox"/> Follow up on injured <input type="checkbox"/> Coordinate volunteer activities	



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FIGURE 1.6 - SRT CHECKLIST

POSITION	RESPONSIBILITIES	COMMENTS
PUBLIC AFFAIRS OFFICER	<input type="checkbox"/> Notify corporate executives <input type="checkbox"/> Notify partners <input type="checkbox"/> Notify company personnel <input type="checkbox"/> Prepare for media interest <input type="checkbox"/> Keep the public informed <input type="checkbox"/> Coordinate media efforts through the Joint Information Center <input type="checkbox"/> Coordinate efforts with USCG <input type="checkbox"/> Identify community concerns	
SAFETY OFFICER	<input type="checkbox"/> Evaluate/ monitor hazards <input type="checkbox"/> Notify offset operators <input type="checkbox"/> Obtain MSDS/ Prepare Site Safety Plan <input type="checkbox"/> Establish first aid posts <input type="checkbox"/> Coordinate search and rescue operations <input type="checkbox"/> Coordinate post incident debriefing <input type="checkbox"/> Conduct air monitoring as may be needed <input type="checkbox"/> Establish initial site safety plan <input type="checkbox"/> Ensure HAZWOPER compliance <input type="checkbox"/> Investigate safety related accidents and report to Incident Commander <input type="checkbox"/> Conduct safety inspections	
SOURCE CONTROL	<input type="checkbox"/> Commence source control operations <input type="checkbox"/> Verify amount spilled <input type="checkbox"/> Calculate total potential <input type="checkbox"/> Mobilize source control specialist <input type="checkbox"/> Develop/ obtain approval for repair plan	
OPERATIONS	<input type="checkbox"/> Direct surveillance operations <input type="checkbox"/> Mobilize Marine Spill Response Corporation and/ or other available equipment that is deemed necessary to response efforts by the Unified Command. (See Appendix F for potential equipment and services not under contract.) <ul style="list-style-type: none"> <input type="checkbox"/> Equipment/ operators/ supervisors <input type="checkbox"/> Take air monitoring equipment <input type="checkbox"/> Obtain samples of spilled material 	


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FIGURE 1.6 - SRT CHECKLIST		
POSITION	RESPONSIBILITIES	COMMENTS
	<ul style="list-style-type: none"> <input type="checkbox"/> Prepare shoreline for impact (pre-clean) <input type="checkbox"/> Contact Marine Spill Response Corp (MSRC) <ul style="list-style-type: none"> <input type="checkbox"/> Spray/ spotter aircraft and personnel <input type="checkbox"/> Vessel for USCG SMART Team <input type="checkbox"/> For assistance contact O'Brien's Response Mgt. See appendix F for equipment (potential services not under contract). <input type="checkbox"/> Send company representative to site/ staging <input type="checkbox"/> Consider night time spill tracking <input type="checkbox"/> Consider pre-cleaning the shoreline prior to impact <input type="checkbox"/> Assist in SCAT process to determine shoreline response <input type="checkbox"/> Contact wildlife specialist/ refuge mgrs. for info. <ul style="list-style-type: none"> <input type="checkbox"/> Consider scare cannons (MSRC) <input type="checkbox"/> Consider wildlife trailer (MSRC) <input type="checkbox"/> Call Wildlife Rehab <input type="checkbox"/> Prepare Air Operations Plan <input type="checkbox"/> Develop waste disposal plans <input type="checkbox"/> Set up decontamination stations 	
LOGISTICS	<ul style="list-style-type: none"> <input type="checkbox"/> Locate utility/ crew boats, helos <input type="checkbox"/> Identify/ set up staging areas <input type="checkbox"/> Ensure temporary storage-recovered oil capacity <input type="checkbox"/> Request mechanics/ parts trailers <input type="checkbox"/> Prepare medical plan, source EMTs (ICS 206) <input type="checkbox"/> Prepare communications plan (ICS 205) <input type="checkbox"/> Obtain security @ ICP/ staging areas <input type="checkbox"/> Establish services <input type="checkbox"/> Housing <input type="checkbox"/> Catering <input type="checkbox"/> Parts trailers/ mechanics <input type="checkbox"/> Fueling facilities 	


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FIGURE 1.6 - SRT CHECKLIST		
POSITION	RESPONSIBILITIES	COMMENTS
PLANNING	<input type="checkbox"/> Call and activate The Response Group (TRG) <input type="checkbox"/> Request trajectories <input type="checkbox"/> Show dispersant timeline <input type="checkbox"/> Shoreline impact? Request sensitive areas <input type="checkbox"/> Update w/ weather forecasts/ surveillance <input type="checkbox"/> Prepare dispersants/ insitu burning request form <input type="checkbox"/> Post/ update charts in Incident Command Post <input type="checkbox"/> Commence NRDA operations (sampling) <input type="checkbox"/> Determine Sensitive Areas as Identified in the ACP <input type="checkbox"/> Call out technical specialists as needed <input type="checkbox"/> Prepare ICS 201 and IAP <input type="checkbox"/> Set up secured filing system	
FINANCE	<input type="checkbox"/> Issue WBS Element <input type="checkbox"/> Prepare for claims <input type="checkbox"/> Review contracts with Logistics/ vendors	


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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 *The Response Group* & ACP to identify sensitive areas
- Develop and implement protection strategies
- Prioritize areas, as necessary

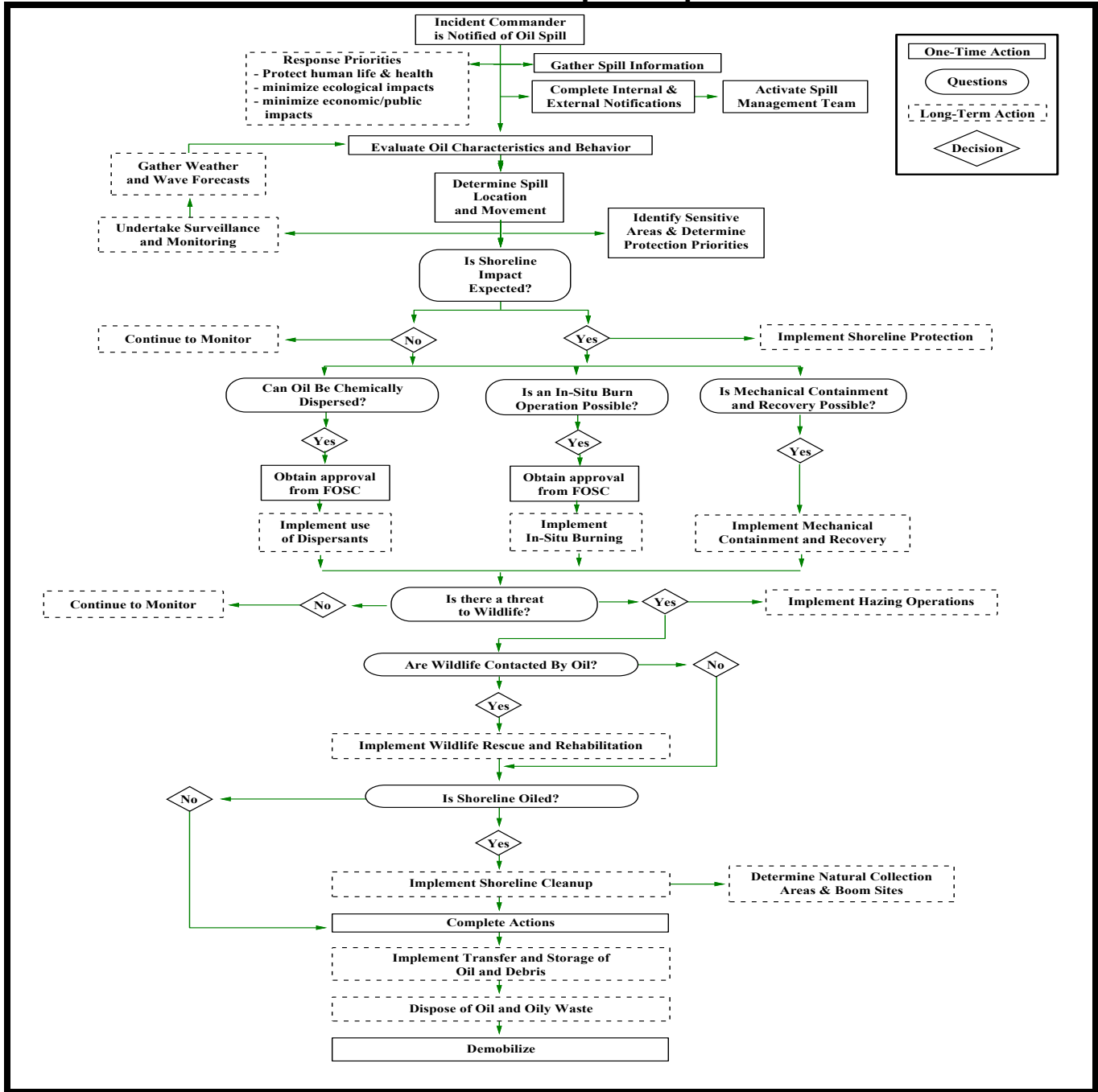
DEVELOP A COMPREHENSIVE, INTEGRATED PLAN

- 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 SRT
- Keep public informed
- Be prepared to respond to claims



FIGURE 1.8 – FLOWCHART FOR OIL SPILL RESPONSE

Flowchart for Oil Spill Response




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		Custodian: SOI RA
	GOM Regional Oil Spill Response Plan	Revision: 6.1 Effective: 3/05/2010

FIGURE 1.9 - SITE SAFETY ASSESSMENT

ICS 208 – Site Safety Plan	
Incident:	Prepared by: _____ at: _____
Period:	Version Name: _____
Revision: _____	
Applies To Site: _____	
Products: _____ (Attach MSDS)	
SITE CHARACTERIZATION	
Water: _____ Wave Height: _____ Wave Direction: _____ Current Speed: _____ Current Direction: _____ Land: _____ Use: _____ Weather: _____ Temp: _____ Wind Speed: _____ Wind Direction: _____	
Pathways for Dispersion:	
Site Hazards	
<input type="checkbox"/> Boat Safety <input type="checkbox"/> Chemical hazards <input type="checkbox"/> Cold Stress <input type="checkbox"/> Confined Spaces <input type="checkbox"/> Drum handling <input type="checkbox"/> Equipment operations <input type="checkbox"/> Electrical operations <input type="checkbox"/> Fatigue <input type="checkbox"/> Other	<input type="checkbox"/> Fire, explosion, in-situ burning <input type="checkbox"/> Heat stress <input type="checkbox"/> Helicopter operations <input type="checkbox"/> Lifting <input type="checkbox"/> Motor vehicles <input type="checkbox"/> Noise <input type="checkbox"/> Overhead/buried utilities <input type="checkbox"/> Plants/wildlife <input type="checkbox"/> Other
	<input type="checkbox"/> Pump hose <input type="checkbox"/> Slips, trips, and falls <input type="checkbox"/> Steam and hot water <input type="checkbox"/> Trenching/Excavation <input type="checkbox"/> UV Radiation <input type="checkbox"/> Visibility <input type="checkbox"/> Weather <input type="checkbox"/> Work near water <input type="checkbox"/> Other
Air Monitoring	
%O ₂ : _____	%LEL: _____ ppm Benzene: _____
ppm H ₂ S: _____	<input type="checkbox"/> Other (Specify): _____
CONTROL MEASURES	
Engineering Controls	
<input type="checkbox"/> Source of release secured <input type="checkbox"/> Site secured	<input type="checkbox"/> Valve(s) closed <input type="checkbox"/> Facility shut down
	<input type="checkbox"/> Energy source locked/tagged out <input type="checkbox"/> Other _____
Personal Protective Equipment	
<input type="checkbox"/> Impervious suit <input type="checkbox"/> Inner gloves <input type="checkbox"/> Outer gloves <input type="checkbox"/> Flame resistance clothing <input type="checkbox"/> Hard hats	<input type="checkbox"/> Respirators <input type="checkbox"/> Eye protection <input type="checkbox"/> Personal floatation <input type="checkbox"/> Boots <input type="checkbox"/> Other _____
Additional Control Measures	
<input type="checkbox"/> Decontamination <input type="checkbox"/> Sanitation <input type="checkbox"/> Illumination <input type="checkbox"/> Medical Surveillance	<input type="checkbox"/> Stations established <input type="checkbox"/> Facilities provided – OSHA 29 CFR 1910.120n <input type="checkbox"/> Facilities provided – OSHA 29 CFR 1910.120m <input type="checkbox"/> Provided – OSHA 29 CFR 1910.120fq
ICS 208 Site Safety Plan	© 1997-2011 TRG/dbSoft, Inc.


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FIGURE 1.9 - SITE SAFETY ASSESSMENT (continued)

ICS 208 – Site Safety Plan		
Incident:	Prepared By: _____ at: _____	
Period:	Version Name: _____	
WORK PLAN		
<input type="checkbox"/> Booming	<input type="checkbox"/> Skimming	<input type="checkbox"/> Vac trucks
<input type="checkbox"/> Heavy equipment	<input type="checkbox"/> Sorbent pads	<input type="checkbox"/> Pumping
<input type="checkbox"/> Other	<input type="checkbox"/> Patching	<input type="checkbox"/> Hot work
		<input type="checkbox"/> Excavation
		<input type="checkbox"/> Appropriate permits used
TRAINING		
<input type="checkbox"/> Verified site workers trained per OSHA 29 CFR 1920.120		
ORGANIZATION		
	<u>Title</u>	<u>Name</u>
		<u>Telephone/Radio</u>
Incident Commander:	_____	_____
Deputy Incident Commander:	_____	_____
Safety Officer:	_____	_____
Public Affaire Officer:	_____	_____
Other:	_____	_____
EMERGENCY PLAN		
<input type="checkbox"/> Alarm system:	_____	
<input type="checkbox"/> Evacuation plan:	_____	
<input type="checkbox"/> First aid location	_____	
Notified		
<input type="checkbox"/> Hospital	_____	Phone: _____
<input type="checkbox"/> Ambulance	_____	Phone: _____
<input type="checkbox"/> Air ambulance	_____	Phone: _____
<input type="checkbox"/> Fire	_____	Phone: _____
<input type="checkbox"/> Law enforcement	_____	Phone: _____
<input type="checkbox"/> Emergency response/rescue	_____	Phone: _____
PRE-ENTRY BRIEFING		
<input type="checkbox"/> Initial briefing prepared for each site		
INCLUDING ATTACHMENTS/APPENDICES		
<u>Attachments</u>		<u>Appendices</u>
<input type="checkbox"/> Site Map		<input type="checkbox"/> Site Safety Program Evaluation Checklist
<input type="checkbox"/> Hazardous Substance Information Sheets		<input type="checkbox"/> Confined Space Entry Checklist
<input type="checkbox"/> Site Hazards		<input type="checkbox"/> Heat Stress Consideration
<input type="checkbox"/> Monitoring Program		<input type="checkbox"/> Cold Stress and Hypothermia Consideration
<input type="checkbox"/> Training Program		<input type="checkbox"/> First Aid for Bites, Stings, and Poisonous Plant Contact
<input type="checkbox"/> Confined Space Entry Procedure		<input type="checkbox"/> Safe Work Practice for Oily Bird Rehabilitation
<input type="checkbox"/> Safe Work Practices for Boats		<input type="checkbox"/> SIPI Site Pre-Entry Briefing
<input type="checkbox"/> PPE Description		<input type="checkbox"/> Personnel Tracking System
<input type="checkbox"/> Decontamination		
<input type="checkbox"/> Communication and Organization		
<input type="checkbox"/> Site Emergency Response Plan		
ICS 208 – Site Safety Plan		© 1997-2011 TRG/dbSoft, Inc.


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FIGURE 1.10 – MSRC 24-HOUR EMERGENCY NUMBERS

<p>TELEPHONE: (800) OIL-SPIL (800) 259-6772 (732) 417-0175 (COMMERCIAL)</p> <p>FACSIMILE: (800) 635-6772 (732) 417-0097 (COMMERCIAL)</p>	 
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FIGURE 1.11 - MSRC MAJOR RESPONSE EQUIPMENT (SOUTHERN REGION)

MARCH 2010

Location	Skimmers	EDRC Bbl/Day	Boom	Barges/Storage
Ingleside, TX	Southern Responder MSRC Quick Strike MSRC 403 1 – LORI Brush 1 – Foilex 250 1 – WP 1 1 – Vikoma 3 Weir 1 – GT-185 1* – Transrec 350 1 – Stress I Skimmer	5,000 3,977 3,017 5,657 1,371 10,567 15,840 Total – 45,429	6,600 ft Sea Sentry II 900 ft Slickbar 500 ft Texas Boom 1216 ft Vikoma 3 Weir 1350 ft 44" Amer B&B 430 ft Oil Stop 2050 ft Flexy-Pimac 50 ft OK Corral	1 – 4,000 barrel OSRV Storage 1 – 40,300 bbl Offshore Barge * Transrec permanently mounted on OSRB 403. 1 – 400 bbl Shallow Water Barge (self-propelled) 1 – 50 barrel FRV Storage
Galveston, Tx	<u>Texas Responder</u> <u>MSRC 570</u> 1 – Foilex 250 1 – Walosep 4 2 – GT-185 1 – Transrec 350 1 – Stress I Skimmer 1 – Queensboro	3,977 3,017 2,742 10,567 15,840 905 Total – 37,048	7,590 ft Sea Sentry II 1,000 ft Slickbar 500 ft Texas Boom 500 ft Fire (+400 ft Guide) 100 ft Quali-tech 50 ft OK Corral	1 – 56,900 bbl Offshore Barge 1 – 4,000 bbl OSRV Storage 3 – 400 bbl Shallow Water Barges (non-propelled) 3 – Shallow Water Pushboats
Port Arthur, TX	1 – GT-185	1,371	50 ft OK Corral	1 – 400 bbl Shallow Water Barge (non-propelled) 1 – Shallow Water Pushboat
Lake Charles, LA	<u>Gulf Coast Responder</u> 1 – Foilex 250 1 – Desmi Ocean 1 – Transrec 350 1 – Stress I Skimmer 4 - Queensboro	3,977 3,017 10,567 15,840 3,620 Total – 37,021	9,460 ft Sea Sentry II 1,000 ft Slickbar 400 ft Texas Boom 9,400 ft 18" Amer B&B 100 ft Quali-tech 100 ft OK Corral	16 – 500 bbl Storage Bladders (towable) 1 – 3,000 bbl Storage Bladder (towable) 3 – 400 bbl Shallow Water Barge (non-propelled) 1 – 400 bbl Shallow Water Barge (self-propelled) 6 – Shallow Water Pushboat 1 – 4,000 bbl OSRV Storage



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FIGURE 1.11 - MSRC MAJOR RESPONSE EQUIPMENT (SOUTHERN REGION)

MARCH 2010

Location	Skimmers	EDRC Bbl/Day	Boom	Barges/Storage
Houma, LA	1 – Queensboro	905	50 ft OK Corral	1 – 400 bbl Shallow Water Barge (non-propelled) 2 – Shallow Water Pushboat
Baton Rouge, LA	1 – GT-185	1,371	50 ft OK Corral	1 – 400 bbl Shallow Water Barge (non-propelled) 1 – Shallow Water Pushboat
Fort Jackson, LA	<u>Louisiana Responder</u> <u>MSRC 452</u> 1 – Walosep 4 1 – Desmi Ocean 1 – Foilex 200 1 – GT-185 1 – Stress I Skimmer 1 – Transrec 350 1 – Foilex 250	3,017 3,017 1,989 1,371 15,840 10,567 3,977 <u>Total – 39,778</u>	5,280 ft Sea Sentry II 1,000 ft Slickbar 50 ft OK Corral	1 – 4,000 bbl OSRV Storage 1 – 45,000 bbl Offshore Barge 1 – 3,000 bbl Storage Bladder (towable) 1 – 400 bbl Shallow Water Barge (non-propelled) 2 – Shallow Water Pushboat
Pascagoula, MS	<u>Mississippi Responder</u> <u>MSRC 402</u> 1 – AardVac 1 – WP 1 1 – GT-185 1 – Stress I Skimmer 1 – Stress II Skimmer 1 – Transrec 350 1 – Queensboro	3,840 3,017 1,371 15,840 3,017 10,567 905 <u>Total – 38,557</u>	6,490 ft Sea Sentry II 4,000 ft Quali-Tech 500 ft Fire (+400 ft Guide) 1,450 ft Texa Boom 50 ft OK Corral 2,000 ft Flexy-Pimac 900 ft Amer B&B 5,700 ft Amer Marine	1 – 4,000 bbl OSRV Storage 1 – 40,300 bbl Offshore Barge 1 – 400 bbl Shallow Water Barge (non-propelled) 1 – 400 bbl Shallow Water Barge (self-propelled) 1 – Shallow Water Pushboat



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FIGURE 1.11 - MSRC MAJOR RESPONSE EQUIPMENT (SOUTHERN REGION)

MARCH 2010

Location	Skimmers	EDRC Bbl/Day	Boom	Barges/Storage
Miami, FL	<u>Florida Responder</u> 1 – GT-185 1 – Walosep W4 1 – WP 1 1 – Desmi Ocean 1 – Transrec 350 1 – Stress I Skimmer 2 – Aardvac 800	1,371 3,017 3,017 3,017 10,567 15,840 7,680 <u>Total – 44,509</u>	9,680 ft Sea Sentry II 2,900 ft Slickbar 500 ft Fire (+400 ft Guide) 2,000 ft Quali-Tech 50 ft OK Corral	8 – 500 bbl Storage Bladders (towable) 1 – 400 bbl Shallow Water Barge (self-propelled) 1 – 4,000 bbl OSRV Storage
Tampa, FL	1 – WP 1 1 – GT-185 1 – Stress I Skimmer <u>FRV MSRC Lightning</u> 1 – LORI Brush	3,017 1,371 15,840 5,000 <u>Total – 25,228</u>	1,540 ft Sea Sentry II 2,200 ft Slickbar Boom 2,000 ft Texa Boom 50 ft OK Corral	1 – 36,000 bbl Offshore Barge 2 – 500 bbl Storage Bladders (towable) 1 – 400 bbl Shallow Water Barge (non-propelled) 1 – Shallow Water Pushboat 1 – 50 bbl. FRV storage
Jacksonville, FL	1 – GT-185	1,371	50 ft OK Corral	1 – 400 bbl Shallow Water Barge (non-propelled) 1 – Shallow Water Pushboat
San Juan, Puerto Rico	<u>MSRC Brisa Rapida</u> 1 – Stress II Skimmer 1 – Lori Brush Pack 1 – Queensboro	3,017 5,000 905	4,100 ft Slickbar Boom 50 ft Quali-tech	1 – 50 bbl. FRV 1 – 400 bbl Shallow Water Barges (non-propelled) 1 – Shallow Water Pushboats



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FIGURE 1.11 - MSRC MAJOR RESPONSE EQUIPMENT (SOUTHERN REGION)

MARCH 2010

Location	Skimmers	EDRC Bbl/Day	Boom	Barges/Storage
Ponce, Puerto Rico	1 – Desmi Ocean 2 - Queensboro	3,017 1,810	2,100 ft Slickbar Boom 100 ft Quali-tech	1 – 400 bbl Shallow Water Barge (non-propelled) 1 – 400 bbl Shallow Water Barge (self-propelled) 1 – Shallow Water Pushboat
Yabacoa, Puerto Rico	1 – Foilex 200 1 - Queensboro	1,989 905	7,365 ft Slickbar Boom 50 ft Quali-tech	1 – 400 bbl Shallow Water Barges (non-propelled) 1 – Shallow Water Pushboats
St. Croix, VI (1)	1 – GT-185 1 – AardVac 1 – Stress I Skimmer 1 – Stress II Skimmer 1 - Queensboro	1,371 3,840 15,840 3,017 905 Total – 24,973	12,320 ft Sea Sentry II 5,940 ft Slickbar 500 ft Fire (+400 ft Guide) 100 ft Quali-tech	1 – 38,000 bbl Offshore Barge 2 – 400 bbl Shallow Water Barges (self-propelled) 4 – 500 bbl Storage Bladders (towable)



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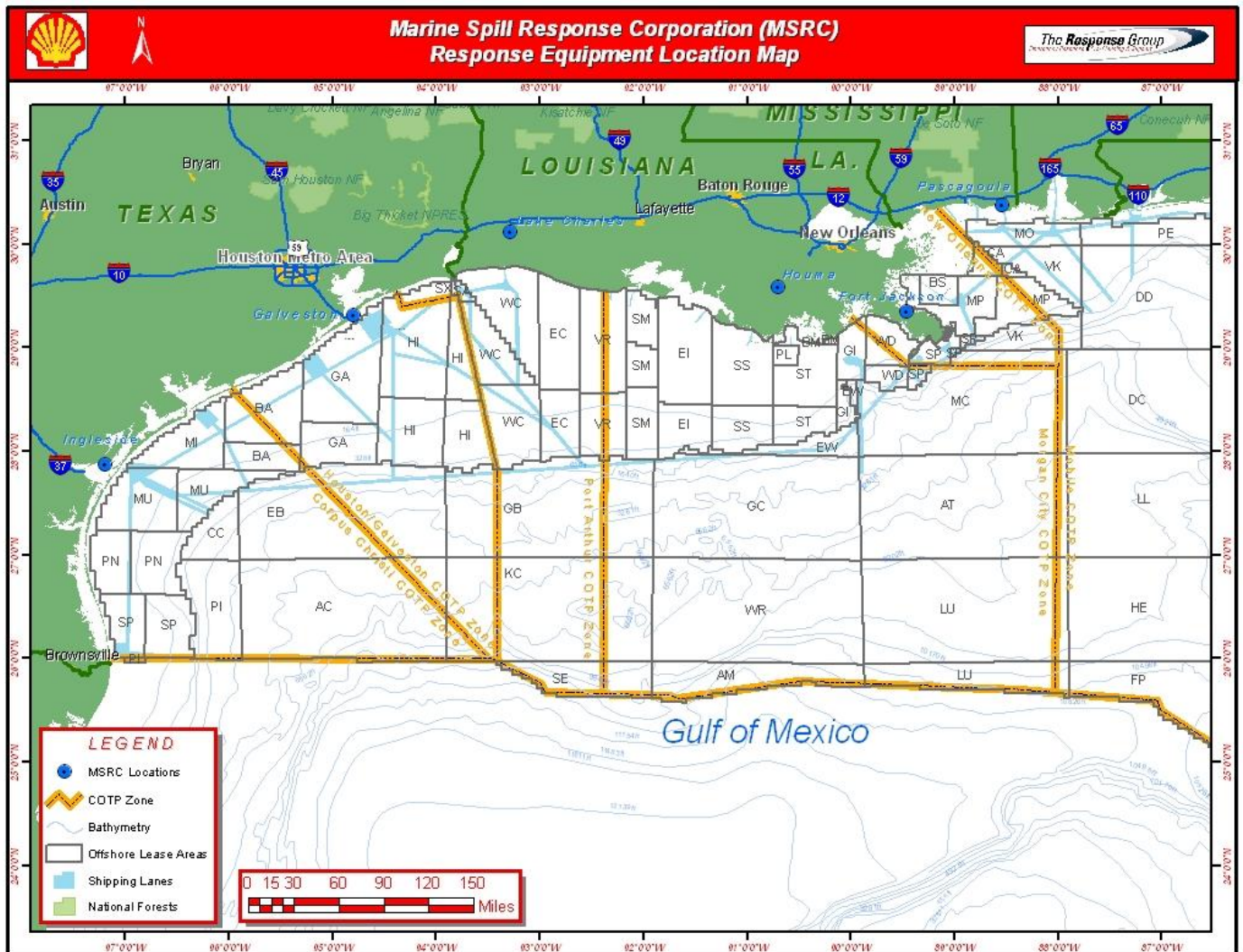
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FIGURE 1.12 - MSRC GOM EQUIPMENT LOCATIONS




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FIGURE 1.13 - NOTIFICATION STATUS REPORT

Notification Status Report									
Incident:					Prepared By:				at:
Period: / / : to / / :					Version Name:				
Organization Notified	Phone	Date /Time Notified	Person Contacted	Person Contacted Email	Case No.	Follow Up	ETA On Site	Notified By	
Notes:									
Notes:									
Notes:									
Notes:									
Notes:									
Notes:									
Notes:									
Notification Status Report			© 1997-2011 TRG/dbSoft, Inc.						


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FIGURE 1.14 - CONVERSATION/ ACTION RECORD

Date: _____
 Position: _____
 Name: _____

Page _____ of _____

No.	Time:	Phone: <input type="checkbox"/>	<input type="checkbox"/>	Person/ Telephone #:	Title:	Representing:
		Fax: <input type="checkbox"/>	Incoming: <input type="checkbox"/>			
		Other: <input type="checkbox"/>	Outgoing: <input type="checkbox"/>			
No.	Time:	Phone: <input type="checkbox"/>	<input type="checkbox"/>	Person/ Telephone #:	Title:	Representing:
		Fax: <input type="checkbox"/>	Incoming: <input type="checkbox"/>			
		Other: <input type="checkbox"/>	Outgoing: <input type="checkbox"/>			
No.	Time:	Phone: <input type="checkbox"/>	<input type="checkbox"/>	Person/ Telephone #:	Title:	Representing:
		Fax: <input type="checkbox"/>	Incoming: <input type="checkbox"/>			
		Other: <input type="checkbox"/>	Outgoing: <input type="checkbox"/>			


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RECORD OF REVISIONS

REVISION NUMBER	DATE	SECTION - page (p)	TYPE OF CHANGE	DESCRIPTION
2	06/01/2003	ALL	BI	Biennial Update for Submission to MMS Regional Supervisor
2.1	06/03/2003	Sec 3, p. 2	AM	Change Shell Pipeline to Equilon Pipeline.
2.2	09/01/2003	Sec 1, p 18	AM	Add requirement for Safety Officer to manage MSDS information
		App. A, Maps & Tables	AM	Delete offshore platforms involved in sale to another operator
		Sec. 1 & 7 Phone Directory	AM	Update Source Control Managers
2.3	12/01/2003	App. H	AM	Add Exploration WCD
2.4	4/15/2005	Sections 1 and 7 Phone Directory	AM	Update of IC and other personnel
		Section 1, p 11	AM	Update checklist – add flexibility to service provider callout
		Section 4, p 3	AM	Add flexibility to service provider callout
		Section 10, p 7	AM	Delete “Spillnet” from information form
		App B, p 3	AM	Update training records
		App. C, p 2	AM	Update training/ drill information
		App. D, p 2	AM	Update Contractual Agreements table
		App. F, p 8	AM	Update Support Service List
2.5	5/04/2005	Section 1 & 7 Phone Directory	AM	Update of IC & Planning Section chief Alternates
		Sect. 4, p 2	AM	Added flexibility to Team Callout procedures
		App. B, p 3	AM	Updated IC & PSC Alt. training records
		App. D, p 2	AM	Corrected OOPs contractual information
3.0	6/30/2005	General	BI	Biennial Update for Submission to MMS Regional Supervisor – general review, update tables, reformatting
		Sec 1, 2	BI	Move Overall TOC from Sect 1 to Sect 2
		Sec 1, 4, 10	BI	Remove contractual references to NRC
		Sec. 1, 4, 7	BI	Update Spill Response Organization Chart
		Sec 1, App. E.	BI	Update MSRC equipment tables
		Sec 1, 7	BI	Update ICS Phone Directories
Sec 3	BI	Update HS&E Management Commitment		

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REVISION NUMBER	DATE	SECTION - page (p)	TYPE OF CHANGE	DESCRIPTION
3.0	6/30/2005	Sec 4	BI	Part B: Added statement about immediate response to pollution event; Fig 4.1 – Updated Spill response Organization Chart Fig 4.2 - Remove detailed part of duty tables and refer to USCG standards
		Sec 10	BI	Fig 10.1 - Replaced Morris Environmental form with The Response Group form
		Sec 18	BI	Added discussion on Dispersant Effectiveness.
		App A	BI	Update Facility and Pipeline Maps and Data Tables
		App B	BI	Update Training records; Fig B.2 – Removed Contractor detail from STARS Personnel Training info
		App D	BI	Update Proof of Contractual Agreements
		App E	BI	Update Spill response Equipment Inventory Tables
		App F	BI	Update Support Services Tables
		App H	BI	Update Worst Case Scenarios and Equipment Response Tables
3.1	12/31/2005	App H	MD	Update Worst Case Scenarios
4.0	04/10/2006	App H	MD	Update Worst Case Scenarios
4.0	04/10/2006	App K	MD	Update Initial IAP Forms
4.0	12/15/2006	1	AU/AM	Pg 12, changed ASI to MSRC for dispersant callout
		1	AU/AM	Pages 16 & 17, updated Fig 1.8 - Site Safety Plan
		1	AU/AM	Pages 20-24, updated MSRC's major equipment list
		1	AU/AM	Pages 25, replaced map
		2	AU/AM	Pages 1,5, 6 of 12, updated Table of Contents
		2	AU/AM	Page 12 of 12, updated Acroynyms
		3	AU/AM	Page 4 of 9, updated Contract certification statement
		5	AU/AM	Page 4 of 4, updated Command Post Map
		7	AU/AM	Page 3-6, updated operations section and external telephone directory contacts
		8	AU/AM	Page 4 & 5 of 8, replaced maps
		10	AU/AM	Page 4, 6 of 6, updated spill assessment contacts/information & trajectory form
		12	AU/AM	Page 4 of 6, updated status board response objectives
		13	AU/AM	Page 1 of 5, updated Resource protection methods

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REVISION NUMBER	DATE	SECTION - page (p)	TYPE OF CHANGE	DESCRIPTION
4.0	12/15/2006	22	AU/AM	Added Section 22 based on New NTL
		App B	AU/AM	Page 3 of 3, updated training records
		App D	AU/AM	Page 1 of 1, updated proof of contractual agreements
		App E	AU/AM	Pages 3-9 of 11, updated response equipment information
		18	AU/AM	Updated dispersant stockpiles and added the nearshore dispersant checklist
		APP F	AU/AM	Pages 3-18 of 18, updated all phone numbers and dispersant application
		App H	AU/AM	Updated offshore mechanical recovery activation list and dispersant list. Replaced ASI with MSRC for dispersant support.
5.1	2/19/2007	Section 18	MD	Page 2 - Revised dispersant stockpile list based on contractual agreements in place and 30 day timeframe for Nalco to manufacture dispersants
		APP A	MD	Page 7 - Updated list of platforms to include VK 956
		APP D	MD	Page 1 – Revised Page 2 Table to include OSRL/Earl and CCA.
		APP H	MD	Page 6, 8, & 9 – Minor revision to clarify dispersant capabilities for each WCD.
5.2	March 15, 2007	Section 18	MD	Page 2 – Update dispersant stockpile list; Page 6 – added safety information for dispersant contractors
5.3	4/5/2007	Appendix H	MD	Page 1 – Update Exploration Well bopd to 165,000. Page 5, 7, & 8 – Revision to each WCD to reflect Adios 2 calculations. Page 8 & 9 – Dispersant aircraft updates. Page 15 – Added near shore response equipment.
		Section 13	MD	Page 1 – Replaced TRG database with TRG shoreline response guides.
		Section 7	MD	Page 3, 5, & 7 – Added QI email addresses.
		Section 1	MD	Page 9, 11, & 13 – Added QI email addresses.
		4/10/2007	Section 7	MD
5.4	August 15, 2008	Section 2	MD	Page 14 - Added Tim Langford as one of the OSRP contacts.

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RECORD OF REVISIONS (Continued)

REVISION NUMBER	DATE	SECTION - page (p)	TYPE OF CHANGE	DESCRIPTION
5.4	8/15/2008	Section 4	MD	Page 4 – Replaced Organization Chart with new NIMS Chart
		Section 4	MD	Page 1 – Revised Command Post to state alternate rooms at Shell Plaza could be used as the ICP.
		Section 5	MD	Page 1 – Revised Command Post to state alternate rooms at Shell Plaza could be used as the ICP.
		Section 5	MD	Page 1 – Added Shell Robert Training & Conference Center as alternate incident command post.
		Section 5	MD	Page 6 – Added Shell Robert Training & Conference Center map as alternate incident command post.
		Section 7	MD	Updated/validated Shell and contractor phone list
		Section 9	MD	Whole Section – Reformatted & updated section
		Section 10	MD	Pages 1 thru 5 – Updated Spill Volume Estimating to match NOAA “Open Water Oil Identification Job Aid”
		Section 10	MD	Page 7 - Updated TRG Trajectory Request Form (now page 9)
		Section 12	MD	Page 3, 5, 6 – Added reference to Shell IMH and updated Planning Cycle “P” and best response figure
		Section 18	MD	Page 2 – Updated Dispersant Stockpile Listing
		Appendix B	MD	Page 2 - Added training record co-owner contact and updated records. Revised MSRC address to reflect Houston Office
		Appendix C	MD	Page 2 – Removed references to MEXUS and MP 60 exercise/incident
		Appendix D	MD	Page 2 – Added beginning date for AMPOL contract and updated dates for OSRL/EARL and CCA.
Appendix E	MD	Pages 3-7 –Updated the whole equipment list with the list that MSRC gave us.		
Appendix F	MD	Updated/validated phone list		
5.5	10/10/2008	Section 1	MD	Updated SEPCo phone list. Renumbered Figures 1.4 – 1.14. Removed Incident email and fax number from page 5.
		Section 2	MD	Updated Table of Contents and Record of Revisions
		Section 3	MD	Updated new HSE Policy
		Section 7	MD	Updated SEPCo phone list.
		Appendix A	MD	Removed platforms PN 969 & PN 975 from page 7.
Appendix B	MD	Updated training dates.		

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RECORD OF REVISIONS (Cont'd)

REVISION NUMBER	DATE	SECTION - page (p)	TYPE OF CHANGE	DESCRIPTION
5.5	10/14/2008	Appendix H	MD	Worst Case Discharge for Exploration was changed to MC 762.
	12/4/2008	Section 1 & Section 7	MD	Added email address to Command Staff
6.0	5/28/2009	Section 1	BI	Pages 9-12 SEPCO Incident Command System Contact List
		Section 5	BI	Pages 3-6 SEPCO Incident Command System Contact List
		Section 7	BI	Pages 8-11 Updated External Notifications phone numbers.
	7/9/2009	App B	BI	Page 3 Updated Training Records
6.1	3/05/2010	Section 3	BI	Page 2 Corporate Names
		Appendix A	MD	Updated ROW Pipelines
		Section 2	MD	Updated Table of Contents
		Section 17	MD	Page 6 Verbiage update/change
		Section 1 & 7	MD	Updated the Planning Section Contact Information Table
		Section 1	MD	Updated Organization Chart & Contacts. Updated the ICS 208 and ICS Notification forms
		Section 7	MD	Updated Contact Information
		Section 8	MD	Updated Maps
		Section 10	MD	Updated Spill Trajectory Request
		Section 18	MD	Updated the Dispersant Stockpiles Inventory, Application Equipment, & Contact Info.
		Section 19	MD	Updated the In-Situ Burning Checklists
		Appendix B	MD	Updated Training Information
		Appendix H	MD	Updated Equipment List
6.1	4/13/2010	Appendix K	MD	Updated ICS Forms
		Section 1 & 7	AM	Updated Spill Response Organization details.
		Appendix B	AM	Added Ed Turner as Operations Section Alternate
6.1	6/04/2010	Appendix H	AM	Updated Nearshore On-Water Recovery Activation Status Board. Added Nearshore Shoreline & Wildlife Status Board.
		Appendix A	AM	Added ‚Perdido‘ Facility details.
		Appendix B	AM	Added Obriens RM SMT Training Records
		Appendix H	AM	Updated Nearshore Shoreline & Wildlife Status Board

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Updating Procedures

The Emergency Response Coordinator in the New Orleans, LA, office maintains this OSRP.


1. Every 2 years, the OSRP will be updated to reflect personnel and telephone number changes, oil spill containment and cleanup equipment availability, and other new and relevant information.

Step	Action
1	Review Plan at least once every two (2) years.
2	Revise Plan if for changes in operations or organizational structure
3	Coordinate word processing publication, electronic control of document, and distribution of changes.

Plan review opportunities also occur during response team tabletop exercises and actual emergency responses.

2. Agency Revision Requirements - The MMS Regional Supervisor will periodically review the equipment inventories of OSRO's to ensure that sufficient spill removal equipment is available to meet the cumulative needs of the owners and operators who cite these organizations in their plans. Plan revisions are performed as follows.

IF	THEN
A change occurs which significantly reduces your response capabilities.	The Facility must submit revised portions of the Plan to the MMS within 15 days.
A significant change occurs in the worst-case discharge scenario or in the type of oil being handled, stored, or transported at the Facility.	
There is a change in the name(s) or capabilities of the oil spill removal organizations cited in the plan.	
Plan has become outdated.	The Regional Supervisor may require you to re-submit your Plan.
Numerous revisions have made use of the plan difficult.	
If significant inadequacies are indicated by: <ul style="list-style-type: none"> • Periodic reviews. • Information obtained during drills or actual spill responses. • Other relevant information the Regional Supervisor obtained. 	The Regional Supervisor may require you to revise your Plan.

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Submission of Revisions – Shell Offshore, Inc. must:

Step	Action
1	Review Plan at least once every two (2) years.
2	Submit all modifications to the Regional Supervisor.
3	Notify the MMS Regional Supervisor in writing if there are no modifications.

3. Suggestions for corrections and modifications are solicited from all users of the plan and should be submitted directly to Mr. Tommy Hutto or Tim Langford, Shell Offshore, Inc., P.O. Box 61933, New Orleans, LA. 70161, (504) 728-4369/6874.
4. Modifications to the OSRP 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 OSRP via cover letter that will instruct the holder to remove "obsolete pages" from the plan and replace them with the appropriate revised pages.

The **Plan holder**, immediately upon receipt of revisions, shall:

Step	Action
1	Review and insert revised pages into the Plan.
2	Discard the obsolete pages.
OR	Print reference copy of electronically controlled Document in Livelink.

These revisions will be recorded on the Record of Changes Form included in this Section.

6. The Emergency Response Coordinator shall have the responsibility for distribution of the Plan. Distribution will be handled in the following manner:
 - A control number is on the cover page.
 - Company personnel who respond to a discharge event will have access to a copy of the Plan.
 - Any person holding a copy of the Plan will transfer that copy to their replacement.
 - Document will be electronically controlled in Livelink.
 - Various regulatory agencies will also be distributed a copy of the plan.



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FIGURE 2.1 - ACRONYMS

ACP.....	Area Contingency Plan
ASI.....	Airborne Support, Inc.
CGA.....	Clean Gulf Associates
COTP.....	Captain of the Port (US Coast Guard)
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)
NRDA.....	Natural Resource Damage Assessment
OCS.....	Outer Continental Shelf
OPA 90.....	Oil Pollution Act of 1990
ORM.....	O'Brien's Response Management
OSHA.....	Occupational Safety and Health Administration
OSRO.....	Oil Spill Removal Organization
OSRP.....	Oil Spill Response Plan
OSS.....	One Shell Square
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
SRT.....	Spill Response Team
SOSC.....	State On-Scene Coordinator
SROT.....	Spill Response Operating Team
SWS.....	Shallow Water Skimmer
TRG.....	The Response Group
TX GLO.....	Texas General Land Office
USCG.....	United States Coast Guard
WCD.....	Worst Case Discharge

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A. HSE Policy

We care...

Royal Dutch/Shell Group Commitment to Health, Safety and the Environment
In the Group we are all committed to:

- **pursue the goal of no harm to people;**
- **protect the environment;**
- **use material and energy efficiently to provide our products and services;**
- **develop energy resources, products and services consistent with these aims;**
- **publicly report on our performance;**
- **play a leading role in promoting best practice in our industries;**
- **manage HSE matters as any other critical business activity.**
- **promote a culture in which all Shell employees share this commitment.**

In this way we aim to have an HSE performance we can be proud of, to earn the confidence of customers, shareholders and society at large, to be a good neighbour and to contribute to sustainable development.

Royal Dutch/Shell Group Health, Safety and Environment Policy
Every Shell company:

- **has a systematic approach to HSE management designed to ensure compliance with the law and to achieve continuous performance improvement;**
- **sets targets for improvement and measures, appraises and reports performance;**
- **requires contractors to manage HSE in line with this policy;**
- **requires joint ventures under its operational control to apply this policy and uses its influence to promote it in other ventures;**
- **includes HSE performance in the appraisal of all staff and rewards accordingly.**

Endorsed by the Committee of Managing Directors, March 1997 *Reviewed 2000*


...all of us have a role to play

"Each of us has a right and duty to intervene with unsafe acts and conditions or when activities are not in compliance with this HSE Policy and Commitment".

June 2004

 Malcolm Brinded
 CEO of Shell Exploration & Production



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B. Types of Facilities Covered

The Plan covers multiple production platform and pipeline facilities grouped together and covered within a single MMS Region in order to:

- Calculate response times.
- Determine quantities of response equipment.
- Conduct oil-spill trajectory analysis.
- Determine worst case discharge scenarios.
- Identify potential impact areas of special economic and environmental importance and strategies for protection.

This Oil Spill Response Plan (OSRP) covers the following types of facilities in the Western and/or Central Gulf of Mexico, under the jurisdiction of the Minerals Management Service (MMS):

TYPE FACILITY	CORPORATE NAME	MMS ID CODE
OCS leases	Shell Offshore, Inc. Shell Frontier Oil & Gas Inc. Shell International Exploration & Production, Inc. Shell Pipeline Company LP Shell Gulf of Mexico Inc.	0689 01728 Construction only 02289 02117
OCS ROW pipelines	Shell Offshore, Inc. Shell Frontier Oil & Gas Inc. Shell International Exploration & Production, Inc. Shell Pipeline Company LP Shell GOM Pipeline Company LLC	0689 01728 Construction only 02289 02621
State leases	Shell Offshore, Inc.	0689
State ROW pipelines	Shell Pipeline Company LP	02289
Corporate relationship of affiliates: Shell Offshore Inc.		

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C. Purpose and Use

The purpose of this Oil Spill Response Plan (OSRP) is to:


- Assist Spill Response Team (SRT) in achieving an efficient, coordinated, and effective response to a discharge incident.
- Meet all regulatory requirements as per Code of Federal Regulations, Minerals Management Service Title 30; Part 254.
- Assist Shell Offshore Companies and Shell Oil Company affiliates Gulf of Mexico platforms, rigs, and pipelines personnel in preparing for and responding quickly and safely to a discharge originating from a Facility.

Although this plan contains procedures applicable to most foreseeable spill scenarios, actual conditions will dictate whether deviations from the plan are appropriate. SRT members are instructed to act accordingly.

This OSRP is consistent with the associated Area Contingency Plans (ACP).

D. Objectives

- Describe Shell Exploration & Production's SRT
- Assign individuals to fill positions on the SRT.
- Define the roles and responsibilities of team members
- Define notification, activation, and mobilization procedures to be followed when a discharge occurs.
- Document equipment, manpower, and other resources available to assist with the response.
- Ensure compliance with Shell Exploration and Production Company's Corporate Environmental Policy, which is hereby adopted by reference.
- Ensure compliance with the federal, state, and local oil pollution regulations. (in addition to CFR 30, Part 254)
- Ensure consistency with the National Contingency Plan and Area Contingency Plan(s) for the area of operation.

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E. Facility Information Statement

APPENDIX A, “Facility Information” includes a listing of facilities covered by this OSRP at the time of plan submittal to the Minerals Management Service.

F. Contract Certification Statement

Shell Offshore, Inc. hereby certifies contracts/agreements are in effect which will provide immediate access to appropriate spill response equipment and personnel.

Marine Spill Response Corporation (MSRC) an association of companies formed for the purpose of providing and securing pollution response equipment and materials, is Shell Offshore, Inc.’s primary spill response equipment provider. MSRC will provide personnel through their Spill Team Area Responders (STARS) program.


G. Risk Assessment Matrix

Purpose The purpose of this section is to provide a methodology to:

- Determine the Risk Classification of an incident, and
- Select the appropriate Analysis Tool(s).

Discussion of Risk The Risk Assessment Matrix is a tool to help assess the potential outcome of an incident in a standardized qualitative manner. The vertical axis displays the Potential Consequence of an incident and the horizontal axis displays the Likelihood (the Chance) of this Consequence happening. The combination of Consequence and Likelihood defines the Risk Classification.

Potential Consequence is divided in levels running from “0” to “5” indicating increasing severity. A consequence should be credible, something that could have developed upon the release of the hazard. In the matrix the potential consequences are used, rather than the actual ones. (These are defined as the consequences that could have resulted from the released hazard, if circumstances had been less favorable). If the actual consequence of a car crash is slight injury, the potential

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consequence could have been much more severe under less favorable circumstances, maybe major injury or even fatality.


The consequence of an incident is established for four different scenarios. These are **People, Assets, Environment and Reputation**. A combination of these is possible, but for investigation and reporting purposes only the highest potential consequence is used. A car incident can result in minor damage to the car (Assets Level 2) and a single fatality (People Level 4). Only the latter is then used in the incident classification.

Likelihood is also divided into five levels, which run from “Never heard of in the EP industry” to “Happens several times per year on the Location”. The Likelihood is estimated on the basis of historical evidence or experience. This depends on the (collective) knowledge of the company on how likely it is for an incident to happen. Did a similar incident happen within the EP industry, the company or at the location?

Figure 3.1 - Risk Assessment Matrix

Potential Consequence				Increase Likelihood →				
				A	B	C	D	E
People	Assets	Environment	Reputation	Never heard of in industry	Heard of in EP Industry	Has occurred in SEPCo	Happens several times/year in SEPCo	Happens several times/year at location
0	No health effect/injury	No Damage	No effect	No impact				
1	Slight health effect/injury	Slight Damage	Slight Effect	Slight Impact				
2	Minor health effect/injury	Minor Damage	Minor Effect	Limited Impact				
3	Major health effect/injury	Local Damage	Localized Effect	Considerable Impact	Low Risk			
4	PTD* or 1-3 fatalities	Major Damage	Major Effect	National Impact		Medium Risk		
5	Multiple Fatalities	Extensive Damage	Massive Effect	International Impact			High Risk	

**PTD = Permanent Total Disability*


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Recommended steps Use these steps to determine the potential risk of an incident or near miss for people, environment, assets and reputation.

Step	Action
1	Select the Consequence severity that could potentially occur to People in rows "0" through "5." Use the table below for further definition of the consequences to People given in the matrix.
2	Next select the likelihood of the incident occurring in column A through E of the Risk Assessment Matrix. Notice that the likelihood must be based on knowledge of an actual event having the potential severity. Write the letter "P" for people where the consequence selected in Step 1 intersects with the likelihood of occurrence.
3	Repeat Steps 1 and 2 for: <ul style="list-style-type: none"> • Asset using an "A" • Environment using an "E" • Reputation using a "R"
4	The most severe risk classification must be used to determine the potential severity (High, Medium or Low) that will in turn influence the actions taken to investigate the incident.

People Consequences The following table further defines the consequences to people:

#	Effect	Description
0	None	No injury or damage to health.
1	Slight	Slight injury or health effects (including first aid case and medical treatment case) – Not affecting work performance or causing disability.
2	Minor	Minor injury or health effects (Loss Time Injury) – Affecting work performance, such as restriction to activities (Restricted Work Case) or a need to take time off to recover (Lost Workdays Case). Limited health effects which are reversible, e.g. skin irritation, food poisoning.
3	Localized	Major injury or health effects (including Permanent Partial Disability and Occupational Illnesses) – Affecting work performance in the longer term, such as a prolonged absence from work. Irreversible health damage without loss of life, e.g., noise-induced hearing loss, chronic back injuries.
4	Major	Permanent Total Disability or one to three fatalities – From an accident or occupational illness. Irreversible health damage with serious disability or death, e.g. corrosive burns, heat stroke, cancer (small population exposed).
5	Massive	Multiple fatalities – From an accident or occupational illness e.g. chemical asphyxiation or cancer (large population exposed).


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Asset Consequences The following table further defines the consequences to Assets:

#	Effect	Description
0	None	Zero damage
1	Slight	Slight damage – No disruption to operation (cost less than \$10M)
2	Minor	Minor damage – Brief disruption (cost less than \$100M)
3	Localized	Local damage – Partial shutdown (can be restarted but costs up to \$500M).
4	Major	Major damage – Partial operation loss (2 weeks shutdown costs up to \$10MM)
5	Massive	Extensive damage – Substantial or total loss of operation (costs in excess of \$10MM)

Environmental Effects The following table further defines the consequences to the Environment:

#	Effect	Description	
		Offshore	Onshore
0	None	Zero	Zero
1	Slight	Less than 1 Bbl Spill.	Less than 5 Bbl Crude or brine; Greater than 1 Bbl but not more than 5 Bbl Chemical; Letter of Violation.
2	Minor	Between 1 Bbl and 5 Bbl of Spill, INC or Non-Compliance One of the following: <ul style="list-style-type: none"> • 1-5 bbl spill • MMS Inc or • Non-Compliance 	5 Bbl or more of Crude, Brine or Chemical; or Letter of non-compliance; or Permit exceedance (air, water, waste); or Complaints; Less than 5 Bbl spill to surface waters.
3	Localized	More than 5 Bbl, but not more than 100 Bbl Spill or Chemical RQ Spill Response Initialization required.	Greater than 50 Bbl of crude or brine, Chemical RQ; Environmental fine; Spill response or Hazwoper Response required; 5 Bbl or more spill to surface waters.
4	Major	Greater than 100Bbl Spill, Significant enough to deploy Equipment or Dispersant Application.	Significant deployment of equipment or Hazwoper Response required.
5	Massive	Severe environmental damage or severe nuisance over large area. In terms of commercial or recreational use, a major economic loss for SEPCo.	Severe Environmental Damage or Severe Nuisance over large area; In terms of Commercial or Recreational use, a Major economic loss to SEPCo.

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Impact on Reputation


The following table further defines the consequences to Reputation:

#	Effect	Description
0	None	No impact - No public awareness
1	Slight	Slight impact – Public awareness may exist, but there is no public concern.
2	Minor	Limited impact – Some local public concern. Some local media and/or local political attention with potentially adverse aspects for company operations.
3	Localized	Considerable impact – regional public concern. Extensive adverse attention in local media. Slight national media and/or local/regional political attention. Adverse stance of local government and/or action groups.
4	Major	National impact – National public concern. Extensive adverse attention in the national media. Regional/national policies with potentially restrictive measures and/or grant of licenses. Mobilization of action groups.
5	Massive	International impact – International public attention. Extensive adverse attention in international media. National/international policies with potentially severe impact on access to new areas, grants of licenses and/or tax legislation.

Select the analysis tool(s)

For incidents having an actual consequence in the Level 3, 4 or 5 regions, the **Tripod Beta** technique should be used to organize, analyze and report the incident data. In addition, **Tripod Beta** should be used to analyze those near misses that have a “high risk” outcome.

For incidents not requiring a **Tripod Beta** analysis, the **Taproot** (or equivalent) tool should be used.

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SECTION 4 - ORGANIZATION

A. Introduction

Shell Offshore, Inc. utilizes the Incident Command System (ICS) to manage emergency response activities:

- The ICS is a management tool that is readily adaptable to very small incidents as well as those of considerable significance.
- The ICS shall be implemented for all spill mobilization incidents with staffing levels adjusted as required to meet the specific needs (size and severity) of the incident.
- SOI's Deputy Incident Commander (IC) is also identified as the primary "Qualified Individual" (QI) as defined in OPA 90, and has the responsibility and authority to initiate spill cleanup operations, obligate funds to carry out response activities, implement response actions, and immediately notify appropriate Federal Officials and Response Organizations and act as liaison with the pre-designated Federal On-Scene Coordinator (FOSC). **APPENDIX B "Training Information"** contains a description of the training that the IC has received. Alternates to the DIC as QI include SOI's Incident Commanders.
- SOI's Spill Response Team will provide response to a discharge originating from the Facility.

B. Organizational Response to Oil Spills

Immediate corrective action shall be taken in all cases where pollution has occurred. Response activities will be coordinated with the appropriate Federal and State On Scene Coordinator(s).


An Oil Spill response is staffed as appropriate:

1. Initially by local facility Person-in-Charge
2. Subsequently by Incident Commander/ Qualified Individual.
3. Ultimately by Incident Commander and Spill Response Team

Escalation of a spill to a Mobilization Oil Spill is determined as follows:

IF...	THEN...
A spill is a threat to land or sensitive resources.	It is a Mobilization Oil Spill.
A spill is larger than six (6) barrels.	
A spill is six (6) or less barrels, but its location is critical.	

See Section 7 for Reporting Procedures.

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C. Escalation of a Spill Response

If an incident escalates to require significant ICS staffing, the Incident Commander may activate additional support resources.

- Shell Offshore, Inc.'s Business Center management may, in incidents of national or global implications, activate a Crisis Strategy Development Team to assist in developing and selecting appropriate strategies.
- Other Shell Oil Company, Shell Pipeline or affiliate groups may provide additional technical, logistical and operational support, if required (as per service agreement).

A detailed explanation of the ICS and the roles and responsibilities for primary members of the Spill Response Team is provided in **Figure 4.2 and the U.S. Coast Guard's Incident Management Handbook**.

D. Procedures - "Protocol" System

Any Shell employee can call in an Oil Spill and request Protocol to notify the Oil Spill Response Team Qualified Individual on call. They should leave:

- Name,
- Location,
- Phone numbers where they can be reached, and
- Estimated size of the spill.

Protocol will page and call the QI's or the PSC in the following order:


- Beeper
- Office Phone
- Home Phone

If Protocol does not hear from a QI in 15 minutes, they will notify the initiating caller that the Protocol calls have not yet been successful. Protocol will notify the initiating caller every 15 minutes until the QI or PSC responds.

The QI or PSC will call the field for details concerning the incident. He will decide who needs to respond to the spill according to the size and location of the event. He will then call Protocol or O'Brien's and authorize an Oil Spill Response Team call out, or initiate an internal team call out.

E. Response Team Call-Out

Notifications and instructions to appropriate members of the Oil Spill Response Team will be initiated by the QI with individual phone calls or activation of the Facilities pre-programmed Meridian Mail system, or by the Duty Staff of Obrien's Oil Pollution Services. Response Team Members will be notified to receive information and reporting instructions from their personal Voice mailboxes.

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F. Oil Spill Removal Organizations (making up Spill Response Operating Team)

Shell Offshore, Inc.'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 MSRC 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. Listed OSRO's are available through contract with MSRC. Refer to **FIGURE 7.2** for contact information.

G. Primary Equipment Provider

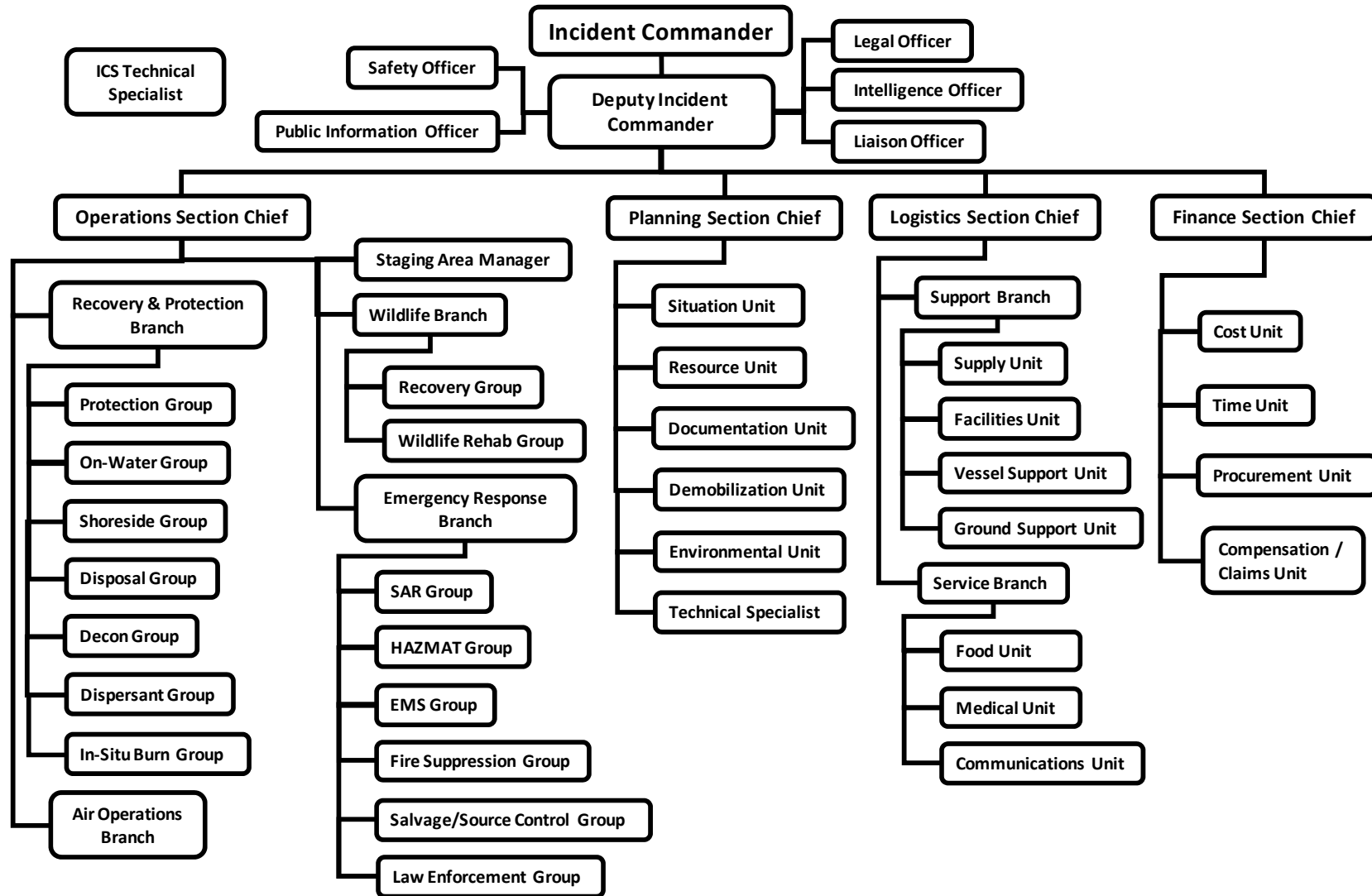
1. Marine Spill Response Corporation (MSRC) is a response company formed for the purpose of securing and maintaining pollution response equipment and materials. Shell Offshore, Inc. is a member of MSRC and has access to oil spill equipment along the Gulf Coast. Refer to **APPENDIX D, "Contractual Agreements."**
2. The OSRO 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.
3. The Incident Commander and or Operations Section Chief may contact other service companies if the Unified Command deems any of the following additional support services are necessary 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 additional "Support Services and Supplies" NOT UNDER CONTRACT TO SOI is included in **APPENDIX F.**



FIGURE 4.1 - SOI REGIONAL SPILL RESPONSE ORGANIZATION




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FIGURE 4.2 - GENERAL PROCEDURES

The Spill Response 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 Response 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.

- 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.



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FIGURE 4.2 - GENERAL PROCEDURES

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.

. Duties for personnel with ICS functions will correspond to job functions described in the US Coast Guard’s “Incident Management Handbook,” latest edition, or as superseded by other published documents and standards

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SECTION 5 - SPILL RESPONSE OPERATIONS CENTER (INCIDENT COMMAND POST) AND COMMUNICATIONS

A. Incident Command Post

Shell Offshore, Inc. will maintain an Incident Command Post (ICP) during a spill event at the following location (Map is included as **FIGURE 5.1**):

COMPANY NAME	Shell Offshore, Inc.
STREET ADDRESS	One Shell Square (OSS), Room 1019 701 Poydras New Orleans, LA 70130

The ICP is equipped with appropriate work space, status boards, clock, maps, etc. for efficient operations. If room 1019 is unavailable, an alternate location in the building will be identified and used. 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.


The Shell Robert Training & Conference Center is designated as the alternate ICP that could be used in an emergency.

STREET ADDRESS	Shell Roberts Training & Conference Center 23260 Shell Lane Robert, LA 70455
----------------	--

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

The Incident Command Post has ample phones and fax machines.

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PHONE NUMBER	504) 728-4102
FAX NUMBER	504) 728-6619
Primary Radio Frequency	VHF/ 48.7 MHz LA/ 48.64 MHz TX/48.92 MHz AL
Secondary Radio Frequency	Oil Spill Frequency: 454/ 459 MHz

Notify Communications per Oil Spill Manual organizational chart for shipment and installation.

1. In Place – Shell Offshore, Inc. (SOI) low band VHF (48.7 MHz in LA./ 48.64 MHz in TX/48.92 MHz AL.) Installed at all Shell platform and terminal locations – Base stations that are already remote to One Shell Square Room 1019 include OSS, Morgan City and Galveston - This radio is also on all vessels and most helicopters working for SOI.
2. SOI Immediate Response Equipment stored at Venice and available in 1 to 6 hours from Morgan City, LA to North Padre Island, TX.

Oil Spill Frequency (454/ 459 MHz)


- 2 repeaters
- 2 control base stations
- 6 boat radios
- 2 automobile mobiles
- 15 portable radios (8 VOX headsets)

SOI low band VHF (48.7/ 48.64 MHz)

- 1 base station
- 9 portable packsets

Other

- 1 high band (173.25 MHz) base station.
- 6 high band (173.25 MHz) portable packsets
- 5 transportable cellular phones
- 12 Satellite Phones(Hand Held)

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3. Shell Oil Company (6-24 hours from Houston)

- 2 454/ 459 MHz control base stations
- 3 454/ 459 MHz repeaters
- 48 454/ 459 MHz portable radios
- 1 INMARSAT terminal
- 1 VSAT TERMINAL
- 2 portable cellular phones
- 1 VHF Marine base station
- 12 VHF Marine portable radios
- 1 VHF (150.980/154.585) repeater
- 4 VHF (150.980/154.585) portable radios

4. MSRC (6-48 hours) from Tomba in New Orleans

- 2 VHF (150.980/ 154.585) control base stations
- 1 VHF (150.980/ 154.585) repeater
- 12 portable radios (equipped with 150.980/ 154.585 and Marine BHF 16 + 13)
- 1 headquarters trailer (includes 7.5 KW generator, phones, radio remotes, and marine radio and telegraph equipment)

5. Other

- Notify Communications of additional phone lines, fax machines, radios, network links, and any other system requirements.

In the event of a large spill, MSRC Radio Communications system may be used.


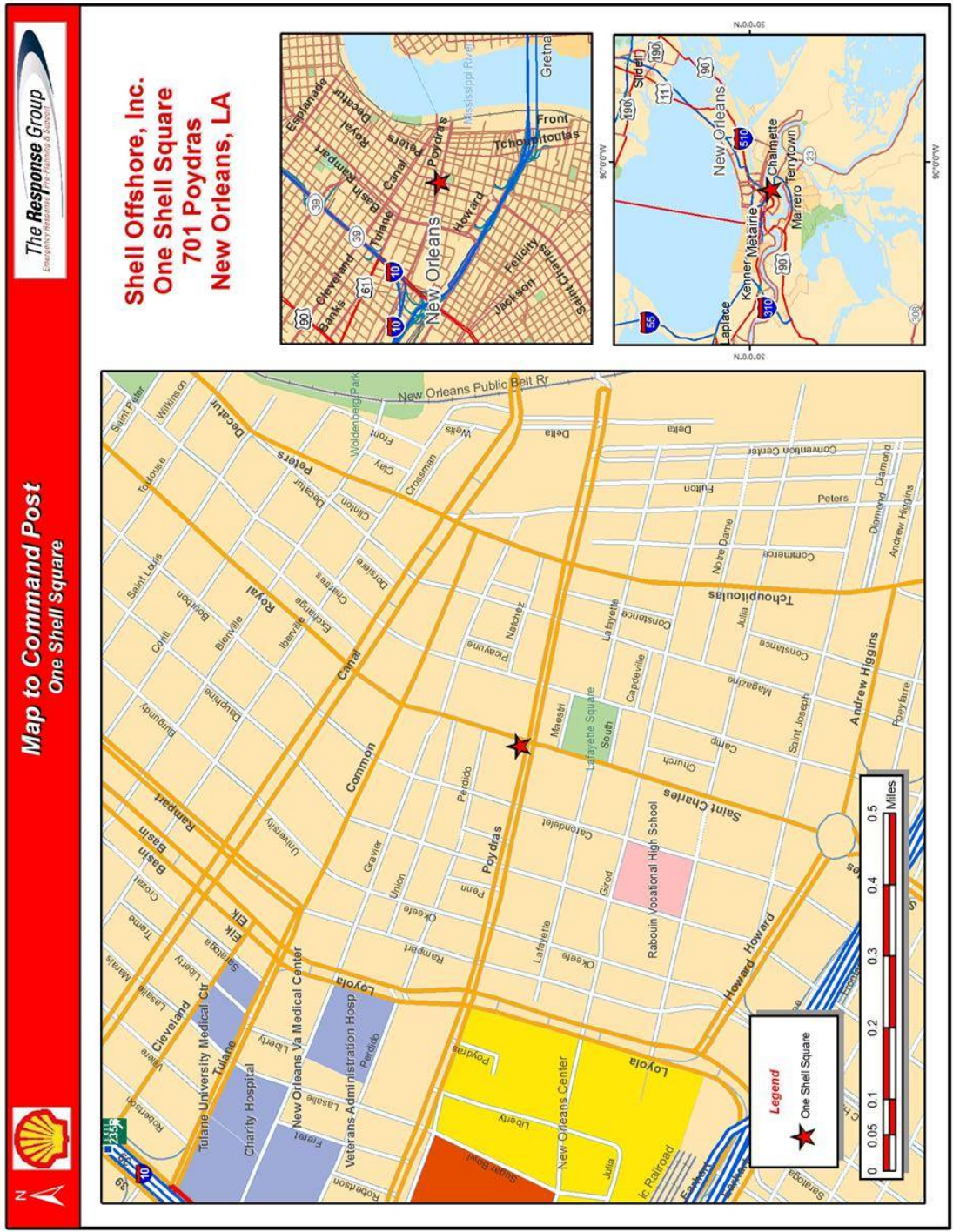

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FIGURE 5.1 - MAP TO COMMAND POST



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SECTION 6 - SPILL DETECTION, SOURCE IDENTIFICATION AND CONTROL

A. *Spill Detection*


Monitoring and surveillance is performed by local operating personnel at manned facilities, remotely from the Operations Control Center for unattended Shell Pipeline facilities, and by both manual (personnel) and automated detection systems as follows:

Visual inspections (including wellheads, tank levels, visible piping, etc.) during operating personnel duties.
All SOI personnel are required to be diligent in observing for leaks or indications of leaks in the facility and pipeline system during the course of routine operations.
Annual secondary Containment Inspection as part of a SPCC Plan (at applicable State locations).
Annual tank inspections as part of the SPCC Plan (at applicable State locations).
Manned platforms are adequately illuminated to provide security and safe operations at night.
Overflights of the response zone are performed by SOI contracted helicopter pilots.
Inspection of unmanned facilities.
Third part (other operators, boat crews, air crews) discovery and notification.

B. *Pipeline Spill Detection and Location*

The following procedures will be used to verify that pipeline integrity has been breached and to determine the exact location of the leak.

Pressure Safety Lows (PSL) are located on all pipelines and are designed to shut-in flow from a departing pipeline when a present pressure drop in line pressure is reached.
SCADA is located on certain pipelines and is designed to monitor and alert SCADA operators both in the Control Center and offshore locations of a drop in line pressure.
Pressure Safety Highs (PSH) are located on platforms.

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C. Source Control

The following methods are used to ensure that the source of a discharge is controlled as soon as possible after a spill occurs.

	Blowout preventors are utilized as required for drilling and workover operations.
	Surface and subsurface safety valves are utilized in producing wells.
	Shut-in devices (automatic and manual) are utilized on production facilities and pipelines.
	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. Their duties are to assess the situation, contact well control specialists or divers, as necessary.

Prevention of oil spills and other pollution requires timely inspections of drilling and production facilities. The MMS consolidated regulations require daily inspections unless the District Supervisor has approved a lesser frequency for a facility with limited production equipment.

The MMS requires records of the inspections to be maintained for two years at the facility or at a nearby manned facility. Documentation may be accomplished by a log entry at the facility or an entry specifically for the facility on the morning report.

- Appropriate pollution inspection with documentation is required for locations in State waters by the facility SPCC Plan.
- For facilities with NPDES discharges, the daily visual observation report also serves as documentation.



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Figure 6.1 – Spill Detection Daily Checklist

Process Equipment is visually inspected daily. All State Water locations utilize their SPCC Plan checklist. The following items are included in a daily check:

Check...	For...
Tanks/ Vessels	<ul style="list-style-type: none"> • Leaks • Drip marks • Discoloration of tanks • Puddles containing spilled or leaked material • Corrosion • Cracks
Foundation	<ul style="list-style-type: none"> • Cracks • Discoloration • Puddles containing spilled or leaked material • Settling • Gaps between tank and foundations
Piping	<ul style="list-style-type: none"> • Droplets of stored materials • Discoloration • Corrosion • Bowing of pipe between supports • Evidence of stored material seepage from valves or seals
Secondary Containment/ Drip Pans	<ul style="list-style-type: none"> • Cracks • Discoloration • Presence of spilled or leaked material (standing liquid) • Corrosion • Valve conditions
Sumps	<ul style="list-style-type: none"> • Available capacity • Presence of spilled or leaked material • Debris • Condition of sump pumps and blow case
Water	<ul style="list-style-type: none"> • Evidence of sheening
Other Miscellaneous Appurtenances	<ul style="list-style-type: none"> • Intact gauge glasses • Proper functioning of gas scrubbers • Proper functioning of liquid level controls • Proper functioning of skim tank, CPI, flotation cells, emergency pile, and other water treating equipment.

Records of the inspections are maintained on site for a period of two (2) years.

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SECTION 7 - QI, SRT, 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). Spill of synthetic based mud should also be considered as oil spills and reported as such. Spills should be reported to the National Response Center, Shell Operations Manager, Drilling Superintendent, or Pipeline Emergency Response Coordinator, as appropriate. In order to save time, fill-in the Spill Report Form (**OSRP Quick Guide**) 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.

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- 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 or other Qualified Individuals (QI) 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 verify all regulatory notifications have been completed. The National Response Center will be notified of all spills (known or unknown).

B. Company Contact Information

QI/ IC/ SRT Members are listed in **Figure 7.1**. (duplicated in **Section 1**)

C. Primary Organizations - Response Services

Refer to the list in **Figure 7.2** for external phone numbers which include: agency notifications, emergency notifications, major spill response equipment, source control services, spill consultants, contractors and equipment, environmental services and transportation. 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".


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FIGURE 7.1 - SEPCo INCIDENT COMMAND SYSTEM CONTACT INFO, REGIONAL SPILL RESPONSE ORGANIZATION

SEPCO OIL SPILL HOTLINE (FOR ALL EMERGENCIES)	(504) 889-4445
OSS COMMAND CENTER SATELLITE PHONE	(877) 525-3190 (504) 728-0519 Fax
OSS COMMAND CENTER INFORMATION	(504) 728-4732/ 3154

COMMAND STAFF

INCIDENT COMMANDER/QUALIFIED INDIVIDUAL @ (Ext. 4500)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Smith, Phil B. Phil.b.smith@shell.com	██████████	██████████	██████████	██████████	██████████
Hutto, W.T. (Alt) Tommy.hutto@shell.com	██████████	██████████	██████████	██████████	██████████
Langford, Tim B. (Alt) Tim.b.langford@shell.com	██████████		██████████	██████████	██████████

LIAISON OFFICER @ (Ext. 4983)


NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Riche, Rian S. Rian.riche@shell.com	██████████		██████████	██████████	██████████
Dollar, Jason J (SPLC) Jason.dollar@shell.com	██████████	██████████	██████████	██████████	

LEGAL OFFICER @ (Ext. 1630)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Morris, Patrick Patrick.morris@shell.com	██████████		██████████	██████████	██████████
Crais, Arthur A. Arthur.crais@shell.com	██████████		██████████	██████████	██████████4844

PUBLIC AFFAIRS OFFICER @ (Ext. 4843)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Stewart, Hasting Hasting.stewart@shell.com	██████████			██████████	██████████
Palmer, Fred Fred.palmer@shell.com	██████████	██████████	██████████	██████████	██████████

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SAFETY OFFICER @ (Ext. 3157)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Brown, Gary Gary.brown@shell.com	██████████		██████████	██████████	
Wagner, Tom F. Thomas.wagner@shell.com	██████████		██████████	██████████	


GENERAL STAFF

PLANNING SECTION @ (Ext. 3156)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Hutto, W.T. (S.C.) Tommy.hutto@shell.com	██████████	██████████	██████████	██████████	██████████
Staley, Sue (Dep S.C.) Sue.staley@shell.com	██████████		██████████	██████████	██████████
Kuehn, Robert B. (ENV) Robert.kuehn@shell.com	██████████		██████████	██████████	
Meyer, Rick B. (Resources) Rick.b.meyer@shell.com	██████████		██████████	██████████	
Bellone, Sylvia A. (SUL) Sylvia.bellone@shell.com	██████████		██████████	██████████	
Chady, Jane M. (SUL) jane.chady@shell.com	██████████		██████████	██████████	
Moity, Warren J. (Decon/Waste) Warren.Moity@shell.com	██████████			██████████	
Lowe, Stacie A. (Doc) Stacie.Lowe@shell.com	██████████		██████████		
Stovall, Gary D. (THSP/SPLC) Gary.stovall@shell.com	██████████			██████████	██████████

LOGISTICS SECTION @ (Ext. 0361)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Perrott, Byron (S.C.) B.perrott@shell.com	██████████			██████████	
Summers, Steve (Alt. S.C.) Steve.summers@shell.com	██████████			██████████	
Burgett, Christopher S. (I/T) Christopher.burgett@shell.com	██████████			██████████	██████████
Guillott, Patrick P. (Air) Patrick.guillott@shell.com	██████████			██████████	
Prather, Greer G. (Marine) Greer.prather@shell.com	██████████			██████████	
Pecot, Joe (Comms) j.pecot@shell.com	██████████			██████████	

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FINANCE SECTION @ (Ext. 6619)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Tixier, Kathy (S.C.) kathy.tixier@shell.com	[REDACTED]		[REDACTED]	[REDACTED]	
Coulter, Michael (Alt S.C.) Michael.coulter@shell.com	[REDACTED]			[REDACTED]	

OPERATIONS SECTION @ (Ext. 4750)

NAME & EMAIL	OFFICE	PAGER	HOME	CELL	Blackberry PIN #
Benson, Ben (S.C.) ben.benson@obriensrm.com	[REDACTED]			[REDACTED]	
Langford, Tim B. (Alt S.C.) tim.b.langford@shell.com	[REDACTED]		[REDACTED]		
Turner, Ed (Alt S.C.) Ed.turner@obriensrm.com	[REDACTED]			[REDACTED]	
Feliciano, Daniel C. (AOBD) Daniel.Feliciano@shell.com	[REDACTED]		[REDACTED]		
Theriot, Cory C. (STAM Disp.) cory.theriot@shell.com	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

@ Extensions at OSS Command Center, if applicable


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FIGURE 7.2 – EXTERNAL PHONE DIRECTORY FOR SOI EMERGENCIES

ALABAMA DEPT. OF ENVIRONMENTAL MANAGEMENT(334)271-7710
 24 hr # (Spill Reporting-Capital Police)(334)242-0700
 Dept. Of Public Safety(334)242-4378
 STATE OIL & GAS BOARD of ALABAMA (Spill Reporting, Tuscaloosa)(205)349-2852
 (Mobile)(251)438-4848
 (After Hours) Home Phone(251)-943-4326
 Cell Phone(251)331-1920

CLEANUP CONTRACTORS

MARINE SPILL RESPONSE CORP. (MSRC) Southern Region, Lake Charles, La.(337) 475-6400
 Fax(337) 475-6401
 National Answering Service(800) 259-6772
 Or(800) OIL SPIL
 Or(732) 417-0175
 Or, if those phone systems are down, a voice mailbox.....(703) 362-5609
 Or, cell phones of
 Mike Walker(832)330-3913
 Barry McFarland(281)352-4190
 Theo Camlin(713)309-5758
 T. Palmisano(504)452-2485

MSRC Satellite Phones: L.C. 337-475-6460;F.J 504-657-9135; Gal.(409)740-9188


CLEAN CARIBBEAN & AMERICAS (Ft. Lauderdale, Fla.).....(954)983-9880

CLEANUP CONSULTANTS

- O'Brien's Response Management Inc(609)275-9600
- B. Benson.....(985)960-2561
- S. Smith.....(504)382-8351
- The Response Group (TRG)(281)880-5000
- R. Barrett.....(713)906-9866
- C. Leonard(832)493-3150

DEPARTMENT OF TRANSPORTATION (U.S.)

Office of Pipeline Safety(202)366-4595

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DISPERSANTS

Marine Spill Response Corp. (MSRC)(800)OIL SPILL
 Fax(337)475-6401
 Airborne Support Inc (24 hr)(985)851-6391
 Fax(985)851-6393

FEDERAL BUREAU OF INVESTIGATION

Denver Office (for Wyoming Operations)(303)629-7171
 Houston Office (Harris Co. & parts of S. TX Ops –Brooks & Duval Cos.)....(713)693-5000
 Mobile Office (Yellowhammer Operations)(251)438-3674
 New Orleans Office (S. La support Ops.).....(504)816-3000
 San Antonio Office (S. TX Counties of Hidalgo, Starr, & Zapata).....(210)225-6741

FLORIDA STATE WARNING POINT(850)413-9911
 Within the State of Florida(800)320-0519


INSURANCE CLAIMS- Risk Enterprise Management(877)825-2467

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY (Hotline).....(225)342-1234
 LOUISIANA DEPARTMENT OF PUBLIC SAFETY (State. Police Spill Reporting) .(225)925-6595
 LOUISIANA OIL SPILL COORDINATOR.....(225)219-5800
 Pager..... (800)538-5388 pin # 129340
 LOUISIANA OFFICE OF EMERGENCY PREPAREDNESS(225)925-7500

MISSISSIPPI POLLUTION EMERGENCY ALERT SYSTEM.....(888)786-0661

MINERALS MANAGEMENT SERVICE (U.S.)

New Orleans District.....(504)734-6740 and 6742
 Cell Phone
 Houma District.....(985)853-5884
 Cell Phone
 Lafayette District.....(337)289-5100
 Cell Phone
 Lake Jackson District.....(979)238-8121
 Cell Phone
 Lake Charles District(337)480-4600
 Cell Phone
 PIPELINE Section(504)736-2814
 Cell Phone
 MISSISSIPPI DEPT. ENV. QUALITY(601)961-5171
 24hr #(601)933-6362

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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

24 hr. #(281)337-5192
Office (8 am – 4 pm).....(281)337-5074
8th District Marine Safety Division (24 hr).....(504)589-6225
 C. Henry(206)849-9928
 LT. Mary Barber(206) 849-9953

NATIONAL RESPONSE CENTER.....(800)424-8802

TEXAS GENERAL LAND OFFICE.....(800)832-8224
TEXAS COMMISSION of ENVIRONMENTAL QUALITY(800) 832-8224
TCEQ – Harlingen.....(956)425-6010
TEXAS RAILROAD COMMISSION (Dist. 4 – Corpus Christi(361)242-3113
HIDALGO COUNTY (TEXAS) LEPC.....(956)383-8114

TRAJECTORY ANALYSIS

The Response Group(281)880-5000
(800)651-3942

U.S. AIR FORCE / Southeast Air Defense Sector (Comms) Tyndall AFB, Florida.(850)283-2398

U.S. COAST GUARD


NATIONAL RESPONSE CENTER(800)424-8802
8TH District (24 hr).....(504)589-6225
 24hr (SEARCH AND RESCUE TEAM – COMMAND CENTER)(504)589-6225
Mobile, Ala. Sector(251)441-5121
 Emergency Phone(251)441-6211
 Gulf Strike Team(251)441-6601
Morgan City, La. MSU(985)380-5322
 Emergency Phone(985)380-5320
New Orleans, La. Sector(504)589-6225
 24hr(504)589-6261
Houston-Galveston Tx. Sector.....(713)671-5100
 Emergency Phone(713)671-5113
Corpus Christi, Tx. Sector.....(361)888-3162
 Emergency Phone(361)939-6349
Port Authur, Tx. MSU(409)723-6500
 Emergency Phone(361)719-5000

U.S. DEPARTMENT OF HOMELAND SECURITY

Operations Center(202)282-8101
National Infrastructure Coordination Center.....(202)282-9201

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION IV..... (404)562-8700
REGION VI..... (214)665-6444


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WEATHER FORECASTS Impact Weather(281)652-1000

WELL CONTROL Boots & Coats(800)256-9688

Wild Well Control(281)784-4700

Wildlife Rehab & Education.....(281)332-8319

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SECTION 8 – EXTERNAL NOTIFICATIONS


A. Reporting Procedures

It is Shell Offshore, Inc.'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

External notifications should be made in accordance with federal, state, and local regulations for all reportable discharges. An "OCS Pollution Incident Report" (**FIGURE G.1**) should be used to facilitate documentation and data retrieval for these notifications. The DIC shall ensure that the following "Required Notifications" and "Other Notifications" are made as the situation demands. Telephone reference is provided in the **Section 1** and the typical reporting flowchart is demonstrated in **FIGURE 4.1**.

Organization	Comments
Oil Spill Response Team	Immediately for all spills
National Response Center (NRC)	Verbal: Immediately for all spills that impact or threaten navigable water.
MMS	Verbal: Immediately for all spills of 1 bbl or more. Written: In 15 days if 1 bbl or more
State Emergency Response	See State Reporting Requirements in this Section, if threatens state waters.
State Environmental Agency	See State Reporting Requirements in this Section, if threatens state waters.
Local Emergency Planning Committee (LEPC)	Verbal: Calls to 911 concerning petroleum spills will usually alert LEPC; however, it is advisable to notify them directly for any spill that requires a 911 notification. Only if spill threatens onshore area.

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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)

FIGURE 8.1 contains a Notification Status Report.

Refer to **FIGURES 8.2, 8.3 and 8.4** for maps and a table showing MMS and USCG geographic areas of responsibility.

Telephone numbers for these agencies are found in the phone directories in **Sections 1 and 7** of this OSRP.

C. External Spill Reporting Forms

See **APPENDIX G, “Notification and Reporting Forms,”** for copies of Spill Report Form.



Shell Offshore, Inc.

GOM Regional Oil Spill Response Plan

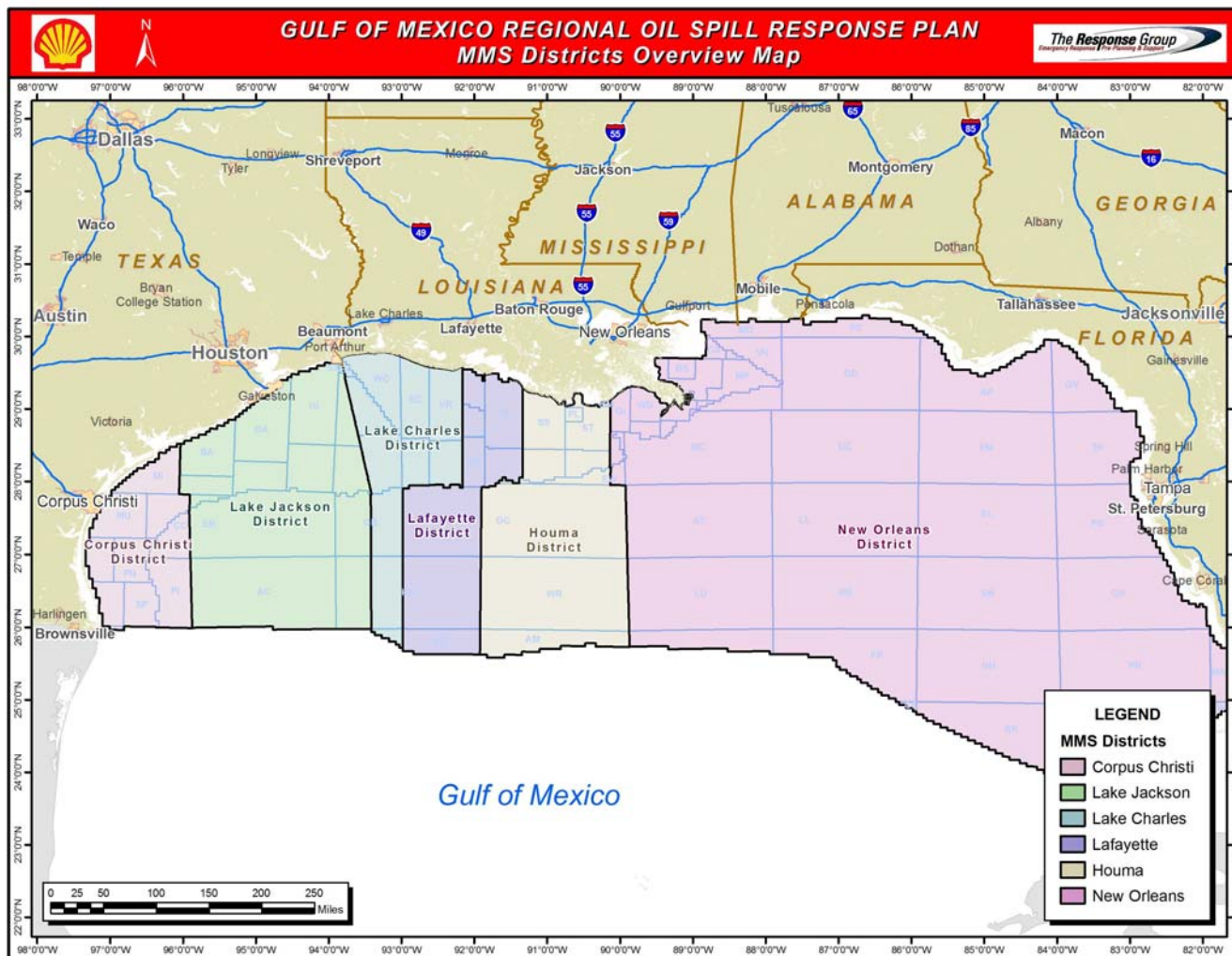
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FIGURE 8.2 - MMS DISTRICT OFFICES





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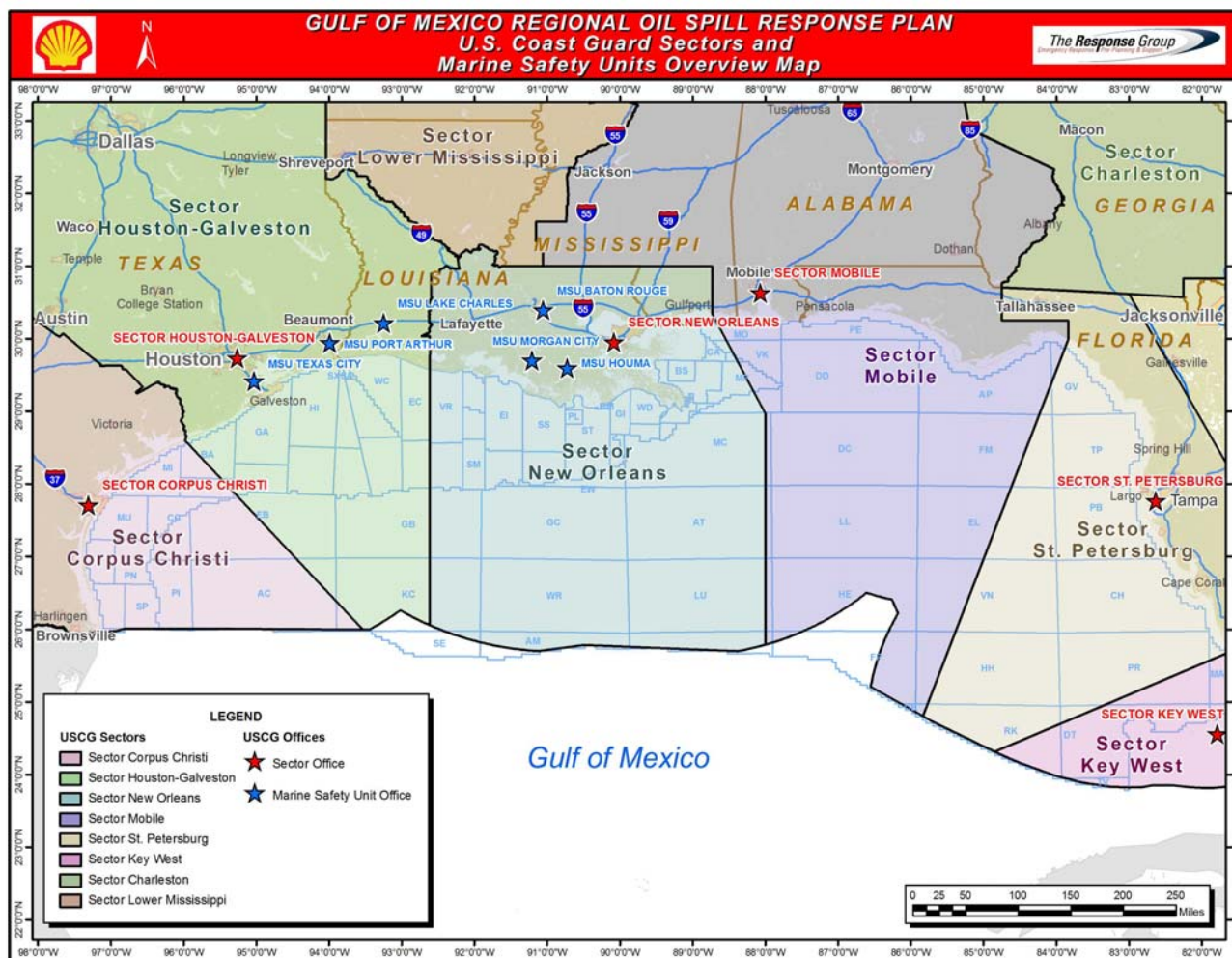
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FIGURE 8.3 - USCG MARINE SAFETY OFFICES





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FIGURE 8.4 - MMS AND USCG AREAS OF RESPONSIBILITY

CODE	OFFSHORE BLOCK	DESCRIPTION OF AREA (IF SPLIT BETWEEN 2 OR MORE MSO'S AND/OR DISTRICTS)	MMS OFFICE	USCG OFFICE
AT	Atwater Valley	N/A	New Orleans, LA	Morgan City, LA
BM	Bay Marchand	N/A	Houma, LA	Morgan City, LA
BA	Brazos	N/A	Lake Jackson, TX	Corpus Christi, TX Galveston, TX
BS	Breton Sound	N/A	New Orleans, LA	New Orleans, LA
CA	Chandeleur Area	N/A	New Orleans, LA	New Orleans, LA
CS	Chandeleur Sound	N/A	New Orleans, LA	New Orleans, LA
CC	Corpus Christi	N/A	Corpus Christi, TX	Corpus Christi, TX
DC	De Soto Canyon	N/A	New Orleans, LA	Mobile, AL
DD	Destin Dome	N/A	New Orleans, LA	Mobile, AL
EB	East Breaks	N/A	Lake Jackson, TX	Corpus Christi, TX Galveston, TX
EC	East Cameron	N/A	Lake Charles, LA	Port Arthur, TX
EI	Eugene Island	N/A	Lafayette, LA	Morgan City, LA
EW	Ewing Bank	Blocks West of line extending South from East side of Block 787	Houma, LA	Morgan City, LA
EW	Ewing Bank	Blocks East of line extending South from West side of Block 787	New Orleans, LA	Morgan City, LA
GA	Galveston	N/A	Lake Jackson, TX	Galveston, TX



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FIGURE 8.4 - MMS AND USCG AREAS OF RESPONSIBILITY

CODE	OFFSHORE BLOCK	DESCRIPTION OF AREA (IF SPLIT BETWEEN 2 OR MORE MSO'S AND/OR DISTRICTS)	MMS OFFICE	USCG OFFICE
GB	Garden Banks	N/A	-----	Galveston, TX Port Arthur, TX Morgan City, LA
GB	Garden Banks	Blocks West of line extending South from East side of Block 142	Lake Jackson, TX	“ “
GB	Garden Banks	Blocks West of line extending South from East side of Block 63 and East of line extending South from West side of Block 143	Lake Charles, LA	“ “
GB	Garden Banks	Blocks East of line extending South from West side of Block 64	Lafayette, LA	“ “
GI	Grand Isle	N/A	New Orleans, LA	Morgan City, LA
GC	Green Canyon	N/A	Houma, LA	Morgan City, LA
HI	High Island	N/A	Lake Jackson, TX	Galveston, TX
MP	Main Pass	N/A	New Orleans, LA	New Orleans, LA
MI	Matagorda Island	N/A	Corpus Christi, TX	Corpus Christi, TX
MC	Mississippi Canyon	N/A	New Orleans, LA	Morgan City, LA
MU	Mustang Island	Except A-39 through A-49, A-69 through A-79, A-103 and A-104	Corpus Christi, TX	Corpus Christi, TX
MU	Mustang Island	Blocks A-39 through A-49, A-69 through A-79, A-103 and A-104	Lake Jackson, TX	Corpus Christi, TX
PN	North Padre Island	N/A	Corpus Christi, TX	Corpus Christi, TX
PE	Pensacola	N/A	New Orleans, LA	Mobile, AL



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FIGURE 8.4 - MMS AND USCG AREAS OF RESPONSIBILITY

CODE	OFFSHORE BLOCK	DESCRIPTION OF AREA (IF SPLIT BETWEEN 2 OR MORE MSO'S AND/OR DISTRICTS)	MMS OFFICE	USCG OFFICE
PI	Port Isabel	N/A	Corpus Christi, TX	Corpus Christi, TX
SX	Sabine Pass	Texas only	Lake Jackson, TX	Galveston, TX
SA	Sabine Pass	Louisiana only	Lake Charles, LA	Port Arthur, TX
SS	Ship Shoal	N/A	Houma, LA	Morgan City, LA
SM	South Marsh Island	N/A	Lafayette, LA	Morgan City, LA
PS	South Padre Island	N/A	Corpus Christi, TX	Corpus Christi, TX
SP	South Pass	N/A	New Orleans, LA	Morgan City, LA New Orleans, LA
PL	South Pelto	N/A	Morgan City, LA	Morgan City, LA
ST	South Timbalier	N/A	Houma, LA	Morgan City, LA
VR	Vermilion	N/A	Lake Charles, LA	Port Arthur, TX Morgan City, LA
VK	Viosca Knoll	N/A	New Orleans, LA	New Orleans, LA Mobile, AL
WC	West Cameron	N/A	Lake Charles, LA	Port Arthur, TX
WD	West Delta	N/A	New Orleans, LA	Morgan City, LA New Orleans, LA

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SECTION 9 - AVAILABLE TECHNICAL EXPERTISE FOR SENSITIVE ENVIRONMENTAL INFORMATION

STATE	CONTACT INFORMATION	FIGURE	PAGE
GOM REGIONAL RESOURCES 	<i>Technical Expertise</i>	9.1	9-2
TEXAS 	<i>Technical Expertise</i> <i>Wildlife Refuges & Management Areas</i>	9.2	9-3 9-4
LOUISIANA 	<i>Technical Expertise</i> <i>Wildlife Refuges & Management Areas</i>	9.3	9-5 9-6
MISSISSIPPI 	<i>Technical Expertise</i> <i>Wildlife Refuges & Management Areas</i>	9.4	9-6
ALABAMA 	<i>Technical Expertise</i> <i>Wildlife Refuges & Management Areas</i>	9.5	9-7
FLORIDA 	<i>Technical Expertise</i> <i>Wildlife Refuges & Management Areas</i>	9.6	9-8 9-10


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AVAILABLE TECHNICAL EXPERTISE – GOM REGIONAL RESOURCES Figure 9-1

The following listing provides the names, telephone numbers, and addresses of key Federal, State, and local agencies as well as independent contractors that may be consulted for site-specific environmental information in the event of a spill incident.

NAME	ADDRESS	TELEPHONE
<i>US Dept of The Interior</i>		
Office of Env. Policy & Compliance Gregory Hogue – Regional Environmental Officer	75 Spring St., Suite 345 Atlanta, GA	(404) 331-4524 [REDACTED]
Office of Environmental Policy & Compliance Steve Spencer - Regional Environmental Officer	PO Box 26567 (MC-9) Albuquerque, NM	(505) 563-3572 (505) 249-2462*
<i>Wildlife Services</i>		
International Bird Rescue & Research Center Jay Holcomb – Executive Dir Mobile James Lewis – Admin Mgr.	4369 Cordelia Road Fairfield, CA	[REDACTED] (707) 249-4870*
National Park Service	Atlanta, GA	(404) 562-3123
NOAA Marine Mammal Stranding Network – SE Region Hotline		(877) 433-8299
Tri – State Bird Rescue Oil Spill Alert - Dr. Heidi Stout Oil Spill Alert – Sarah Tegtmeier	110 Possum Hollow Road Newark, DE	(302) 737-7241 [REDACTED]

* Indicates 24 hour number


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Available Technical Expertise – Texas

Figure 9-2

Name	Address	Telephone
Trajectories/Sensitivities		
The Response Group	13231 Champion Forest, Houston, TX 77069	(281) 880-5000 (Off) [REDACTED] (281) 880-5005 (F)
Wildlife Services		
US Fish & Wildlife Service Wildlife Rescue & Rehab Ron Brinkley – Containment Specialist	17629 El Camino Real, Suite 211 Houston, TX 77058	(281) 286-8282 (Off) [REDACTED] (281) 282-9344 (Fax)
Wildlife Rehab and Education Sharon Schmalz	Houston, TX	(281) 332-8319 (H) [REDACTED] (713) 279-1417 (Pg)
Wildlife Response Services LLC Rhonda Murgatroyd	Seabrook, TX 77586	(713) 705-5897 [REDACTED]
US Fish & Wildlife Service Eco System Texas A&M University – Corpus Christi	Corpus Christi, TX	(361) 994-9005
MMS Corpus Christi Subdistrict Office East Matagorda Bay South Clara Lee – Env. Contaminant Specialist	Corpus Christi, TX	(361) 994-9005 ext 247
Houston Audubon Society	Houston, TX	(713) 932-1392*
Institute of Marine Life Sciences Texas A&M University at Galveston Dr. Andrew Landry	Galveston, TX	(409) 740-4989 (409) 740-4421
Marine Mammal Research Program Texas A&M University at Galveston	Galveston, TX	(409) 740-4413
NOAA National Maritime Fishery Service-Sea Turtles Dr. Roger Zimmerman	Galveston, TX	(409) 766-3500 (Off) [REDACTED]
Texas Marine Mammal Stranding Network	5001 Ave. U, Suite 105C Galveston, TX 78741	(800) 9MAMMAL*
Texas Parks & Wildlife Wildlife Rescue & Rehab Jack Ralph - Kills & Spills Team	4200 Smith School Road Building D Austin, TX 78741	(512) 389-8153 [REDACTED]
Weather Service		
Wilkens Weather Technologies	Houston, TX 77042	(713) 430-7100

* Indicates 24 hour number


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Available Technical Expertise – Texas (continued)

Figure 9-2

Name	Address	Telephone
<i>Environmental Assessments</i>		
ENTRIX	Houston, TX	(713) 666-6223 (Off)
C-K Associates, LLC	Baton Rouge, LA Lake Charles, LA Houston, TX	(225) 755-1000
<i>Oil Analysis</i>		
SPL	8880 Interchange Dr Houston, TX 77054	(713) 660-0901
Core Laboratories	6316 Windfern Rd Houston, TX 77040	(713) 328-2673
<i>Wildlife Management Areas & Refuges**</i>		
(1) Lower Rio Grande Valley NWR	Alamo, TX	(956) 784-7500
(2) Bentsen SP	Mission, TX	(956) 585-1107
(3) Laguna Atascosa NWR	Rio Hondo, TX	(956) 748-3607
(4) Padre Island National Seashore	Corpus Christi, TX	(361) 949-8173
(5) Mustang Island State Park	Port Aransas, TX	(361) 749-5246
(6) Goose Island State Park	Rockport, TX	(361) 729-2858
(7) Aransas Wildlife Refuge Tom Stehn – Biologist	Austwell, TX	(361) 286-3533 (361) 286-3559 ext. 221
(9) Welder Flats WMA	Bay City, TX	(979) 244-7697
(10) Big Boggy NWR	Angleton, TX	(979) 964-3639
(11) San Bernard NWR	Angleton, TX	(979) 964-3639
(12) Peach Point WMA	Freeport, TX	(979) 244-7697
(13) Brazoria NWR	Angleton, TX	(979) 239-3915
(14) Galveston Island SP	Galveston, TX	(409) 737-1222
(15) Moody NWR	Anahuac, TX	(409) 267-3337
(16) Anahuac NWR	Anahuac, TX	(409) 267-3337
(17) McFaddin NWR	Sabine Pass, TX	(409) 971-2909
(18) Sea Rim State Park	Sabine Pass, TX	(409) 971-2559
(19) Texas Point NWR	Sabine Pass, TX	(409) 971-2909
(20) Flower Garden Banks National Marine Sanctuary	Galveston, TX	(409) 621-5151 O (409) 621 1316 F

* Indicates 24 hour number


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Available Technical Expertise – Louisiana

Figure 9-3

Name	Address	Telephone
Wildlife Services		
Dept of Wildlife and Fisheries Laura Carver – Oil Spill Coordinator	2000 Quail Drive Baton Rouge, LA	(225) 765-2801 (225) 765-2383
LA. Dept of Environmental Quality (Water Resources)	7290 Bluebonnet Baton Rouge, LA	(225) 342-1234*
LOSCO – Roland Guidry	Baton Rouge, LA	(225) 925-6606(Off) [REDACTED]
US Fish & Wildlife Service Ecological Services Buddy Goatcher – Field Response Coordinator James Boggs – Field Response Coordinator	825 Kaliste Saloom, Bldg II Lafayette, LA	(337) 291-3100 (337) 291-3125 (337) 280-1157 (after hrs) (337) 291-3115
Weather Service		
Alert Weather Service	Lafayette, LA	(337) 233-5565
A.H. Glenn & Assoc.	New Orleans, LA	(504) 241-2222
Impact Weather	Lafayette, LA	(337) 233-3816
Environmental Assessments		
Coastal Environments, Inc.	Baton, Rouge, LA	(225) 383-7451
LA Marine Mammal Stranding Network	Baton, Rouge, LA	(504) 235-3005
Marine Mammal Stranding Network	Baton Rouge, LA	(225) 765-2821
Oil Analysis		
SPL	500 Ambassador Caffery Pkwy Scott, LA 70583	(337) 237-4775

* Indicates 24 hour number

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Available Technical Expertise – Louisiana

Figure 9-3


<i>Wildlife Management Areas & Refuges**</i>		
(1) Cameron Prairie NWR	Bell City, LA	(337) 598-2216
(2) Lacassine NWR	Lake Arthur, LA	(337) 774-5923
(3) Rockefeller SWR	Grand Chenier, LA	(337) 538-2165
(4) Marsh Island WMA	New Iberia, LA	(337) 373-0032
(5) Atchafalaya Delta WMA	New Iberia, LA	(337) 373-0174
(6) Isle Dernieres – USGS Wetlands Research Center	Terrebonne, LA	(337) 266-8550
(7) Point e AuChien WMA	Montigut, LA	(985) 594-5494
(8) Wisner WMA	Baton Rouge, LA	(225) 765-2811
(9) Biloxi WMA	New Iberia, LA	(337) 373-0032
(10) Pearl River WMA	Baton Rouge, LA	(504) 765-2360
Louisiana SWM	New Iberia, LA	(337) 373-0032

* Indicates 24 hour number

Available Technical Expertise – Mississippi

Figure 9-4


Name	Address	Telephone
<i>Wildlife Management Areas & Refuges**</i>		
(1) Buccaneer	Waveland, MS	228-467-3822
(2) Gulf Island National Seashore	Ocean Springs, MS	(228) 875-9057
(3) Mississippi Sandhill Crane NWR	Gautier, MS	(228) 497-6322
(4) Shepard State Park	Gautier, MS	(228) 497-2244
(5) Grand Bay NWR	Moss Point, MS	(228) 475-0765
Management Agency		(800) 222-6362*
<i>Wildlife Services</i>		
US Fish & Wildlife Service Ecological Services Bill Starkel, Spill Response Coordinator	1875 Century Blvd., Suite 200 Atlanta, GA 30345	(404) 895-7127 (Off)
Wildlife Rehabilitation & Nature Preservation Society (WRANPS)	P.O. Box 209 Long Beach, MS 39560	228-452-wild (9453)
<i>Weather Service</i>		
Wikens Weather Technologies	2925 Briarpark Dr. Suite 710 Houston, TX 77042	(713) 430-7100

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Available Technical Expertise – Alabama **Figure 9-4**

Name	Address	Telephone
<i>Agency Expertise</i>		
Alabama Dept. of Conservation Marine Resources Division	21055 Mildred Casey Dr Gulf Shores, AL	(251) 968-7575
Alabama Petroleum Corporation Board Headquarters Office Lee Blake – Environmental Engineer	4173 Commanders Drive Mobile, AL	(251) 625-1708 (H)
Mobile Office Ralph Hellmich – Chief Geologist	4173 Commanders Drive Mobile, AL	(251) 438-4848
US Fish & Wildlife Service Ecological Services	1208 B Main St. Daphne, AL	(251) 441-5181
Bon Secour NWR	Gulf Shores, AL	(251) 540-7720
Gulf State Park	Gulf Shores, AL	(251) 948-7275
<i>Weather Service</i>		
Wikens Weather Technologies	2925 Briarpark Dr. Suite 710 Houston, TX 77042	(713) 430-7100


* Indicates 24 hour number

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Available Technical Expertise – Florida Figure 9-6

Name	Address	Telephone
<i>Florida Fish & Wildlife Conservation Commission (FWCC)</i>		
Southwest Florida	Lakeland, FL	(863) 648-3200*
North Central Florida	Lake City, FL	(386) 758-0529*
<i>Wildlife Services</i>		
Save Our Seabirds (SOS)	2709 Rt. 259 Wimauma, FL 33598	(813) 633-1210
Wildlife Rehab and Education Sharon Schmalz	Houston, TX	██████████ ██████████ ██████████
Wildlife Response Services LLC Rhonda Murgatroyd	P.O. Box 842 Seabrook, TX 77586	(713) 705-5897 ██████████
Wildlife Rehabilitation & Nature Preservation Society (WRANPS)	P.O. Box 209 Long Beach, MS 39560	(228) 452-wild (9453)
International Bird Rescue & Research Center Jay Holcomb – Executive Dir James Lewis – Admin Mgr.	4369 Cordelia Road Fairfield, CA	(707) 207-0380* ██████████
Tri – State Bird Rescue Oil Spill Alert - Dr. Heidi Stout Oil Spill Alert – Sarah Tegtmeier	110 Possum Hollow Road Newark, DE	(302) 737-7241 ██████████ ██████████ ██████████
<i>Weather Service</i>		
Wikens Weather Technologies	2925 Briarpark Dr. Suite 710	(713) 430-7100
<i>National Park Service</i>		
Gulf Island National Seashore Dispatch	Gulf Breeze, FL	(850) 916-3010*
<i>US Fish & Wildlife Service</i>		
Ecological Services John Hemming – Contaminate Assessment	Panama City, FL	(850) 769-0552 (850) 215-1435*
<i>Mammal Stranding Services</i>		
Marine Mammal Stranding Network NMFS SE Fisheries Science Center		(877) 433-8299
Florida State Warning Point		(800) 320-0519* (850) 413-9911*

* Indicates 24 hour number


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Available Technical Expertise – Florida (continued)

Figure 9-6

Name	Address	Telephone
<i>Wildlife Management Areas & Refuges**</i>		
Big Lagoon State Recreation Area	12301 Gulf Beach Hwy Pensacola, FL	(850) 492-1595
(1) Gulf Island National Seashore	Gulf Breeze, FL	(850) 934-2600
(2) Saint Vincent NWR, Apalachicola Bay Aquatic Preserve & Apalachicola River & Bay National Estuarine	Apalachicola, FL	(850) 653-8808
(3) Saint Marks NWR	St. Marks, FL	(850) 925-6121
(4) Lower Suwannee NWR	16450 NW 31 st Place Chiefland, FL	(352) 493-0238
(5) Cedar Keys NWR	16450 NW 31 st Place Chiefland, FL	(352) 493-0238
(6) Chassahowitski NWR	1502 SE Kings Bay Drive Crystal River, FL	(352) 563-2088
(7) Egmont Key NWR	Crystal River, FL	(727) 570-5417
(8) Pine Island NWR	Sanibel, FL	(239) 472-1100
(9) J.N. "Ding" Darling Wilderness	Sanibel, FL	(239) 472-1100
(10) Matlacha Pass NWR	Sanibel, FL	(239) 472-1100
(11) Ten Thousand Island NWR	Naples, FL	(239) 353-8442
(12) Majory Stoneman Douglas Wilderness	Homestead, FL	(305) 242-7700
(13) Great White Heron NWR	Big Pine Key, FL	(305) 872-2239
(14) National Key Deer Refuge	Big Pine Key, FL	(305) 872-2239
(15) Key West NWR	Big Pine Key, FL	(305) 872-2239
(16) Dry Tortugas National Park	Key West, FL	(305) 242-7700
(17) Crocodile Lake NWR	Key Largo, FL	(305) 451-4223
(18) Biscayne National Park	Homestead, FL	(305) 230-7275
Saint Andrew State Recreation Area & State Park Aquatic Preserve	7255 Hwy 90 East Milton, FL	(850) 983-5359
Crystal River NWR	1502 SE Kings Bay Drive Crystal River, FL	(352) 563-2088
Saint Martins Marsh Aquatic Preserve	3266 N. Sailboat Ave Crystal River, FL	(352) 563-0450
Steinhatchee WMA	Route 7, Box 440 Lake City, FL	(904) 758-0525

* Indicates 24 hour number


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Available Technical Expertise – Florida (continued)

Figure 9-6

Name	Address	Telephone
<i>Wildlife Management Areas & Refuges (cont.)</i>		
Fort Pickens State Aquatic Preserve	7255 Hwy 90 E Milton, FL	(850) 983-5359
Alligator Harbor Aquatic Preserve	350 Carroll St. Eastpoint, FL	(850) 670-4783
Saint Joseph Bay Aquatic Preserve	350 Carroll St. Eastpoint, FL	(850) 670-4783
Saint Joseph Peninsula State Park	8899 Cape San Blas Road Port St. Joe, FL	(850) 227-1327
Aucilla WMA	Route 7, Box 440 Lake City, FL	(904) 758-0525
Gulf Hammock WMA	Route 7, Box 440 Lake City, FL	(904) 758-0525
Tide Swamp WMA	Route 7, Box 440 Lake City, FL	(904) 758-0525
Big Bend Segrasses Aquatic Preserve	3266 N. Sailboat Ave. Crystal River, FL	(352) 563-0450
Point Washington WMA	3911 Hwy 2321 Panama City, FL	(850) 265-3676

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SECTION 10 - SPILL ASSESSMENT

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:** Sheen is a very thin layer of oil (less than 0.0002 inches or 0.005 mm) floating on the water surface and is the most common form of oil seen in the later stages of a spill. According to their thickness, sheens vary in color from **rainbows**, for the thicker layers, to **silver/gray** for thinner layers, to almost transparent for the thinnest layers.
- **Metallic:** The next distinct oil color, thicker than **rainbow**, that tends to reflect the color of the sky, but with some element of oil color, often between a light gray and a dull brown. **Metallic** is a “mirror to the sky.”

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- **Transitional Dark (or True) color:** The next distinct oil on water layer thickness after metallic that tends to reflect a transitional dark or true oil color. At the “Transitional” stage, most of the oil will be just thick enough to look like its natural color (typically a few thousandths of an inch, or few hundredths of a millimeter), and yet thin enough in places to appear somewhat patchy.
- **Dark (or True) Color:** Represents a continuous true oil color (i.e., its natural color), commonly occurring at thicknesses of at least a hundredth of an inch (or, a little over a tenth of a millimeter). Oil thickness at this “Dark” stage (especially in a calm and/or contained state) could range over several orders of magnitude. At sea, however, after reaching an equilibrium condition, most oils would not achieve an average thickness beyond a few millimeters. Heavy fuel oils and highly weathered or emulsified oils (especially on very cold water) could, of course, reach equilibrium states considerably greater than a few millimeters.

b) Spill Factors

- The factors given in the table below shall be used to estimate the volume of oil contained in the spill unless a more accurate amount is known by other means.
- These should be compared whenever possible to volumes estimated from the source of the spill, for example, piping volume, sump volume, or tank capacity.
- Exact calculations 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 should be rounded off to avoid the appearance of a very accurate determination.

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BBL/ACRE

Code	Appearance of Oil on Water (this gives the thickness of oil)	Spill Factor ¹			
		Layer-Thickness Interval Inches (in.)		Concentration bbl/acre	
		Minimum	Maximum	Minimum	Maximum
S	Sheen (silver/gray)	0.000016	0.000012	0.001	0.0078
R	Rainbow	0.000012	0.00020	0.0078	0.128
M	Metallic	0.00020	0.0020	0.128	1.28
T	Transition Dark Color	0.0020	0.008	1.28	5.1
D	Dark (or True) Color	>0.008	>0.008	>5.1	>5.1


¹ The factors represent volumes of oil and are based on "Open Water Oil Identification Job Aid" NOAA, 2007 Edition. Volume Oil = Area of Slick (in bbl/acre) x Spill Factor.

BBL/SQUARE MILE (1 SQUARE MILE = 640 ACRES)

Code	Appearance of Oil on Water	Spill Factor ¹			
		Layer-Thickness Interval Inches (in.)		Concentration bbl/square mi	
		Minimum	Maximum	Minimum	Maximum
S	Sheen (silver/gray)	0.000016	0.000012	0.64	4.992
R	Rainbow	0.000012	0.00020	4.992	81.87
M	Metallic	0.00020	0.0020	81.87	819.2
T	Transition Dark Color	0.0020	0.008	819.2	3264
D	Dark (or True) Color	>0.008	>0.008	>3264	>3264

GALLONS/SQUARE MILE

Code	Appearance of Oil on Water	Spill Factor ¹			
		Layer-Thickness Interval Inches (in.)		Concentration gal/square mi	
		Minimum	Maximum	Minimum	Maximum
S	Sheen (silver/gray)	0.000016	0.000012	26.88	209.7
R	Rainbow	0.000012	0.00020	209.7	3438.54
M	Metallic	0.00020	0.0020	3438.54	34406.4
T	Transition Dark Color	0.0020	0.008	34406.4	137088
D	Dark (or True) Color	>0.008	>0.008	>137088	>137088

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GALLONS/SQUARE YARD (1 SQUARE YARD = .00000323 SQUARE MILES)

Code	Appearance of Oil on Water	Spill Factor ¹			
		Layer-Thickness Interval Inches (in.)		Concentration gal/square yard	
		Minimum	Maximum	Minimum	Maximum
S	Sheen (silver/gray)	0.0000016	0.000012	0.0000087	0.0000677
R	Rainbow	0.000012	0.00020	0.0000677	0.0011106
M	Metallic	0.00020	0.0020	0.0011106	0.0111133
T	Transition Dark Color	0.0020	0.008	0.0111133	0.04428
D	Dark (or True) Color	>0.008	>0.008	0.04428	0.04428


c) Estimating Procedures - See the following Spill Volume Estimation Form to be used in determining an estimate of the amount of oil spilled.

VOLUME ESTIMATE

Estimating Procedures:

Use the following steps when estimating the size of a spill

Step	Action										
1	<ul style="list-style-type: none"> Estimate the coverage dimensions of each part of the spill in mi² for each of the five appearances that may be observed in the spill. Use helicopter coordinates to determine dimensions and sketch the oil spill with heavy areas outlined including estimated coverage 										
2	<ul style="list-style-type: none"> Multiply the dimensions in mi² by the coverage then the appropriate factor from the table. Add the individual parts together. See example spill volume estimate below. 										
3	<ul style="list-style-type: none"> The answer is the estimated volume of the spill in gallons or in barrels of oil. <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>If . . .</th> <th>Then . . .</th> </tr> </thead> <tbody> <tr> <td>Less than one (1) gallon</td> <td>Report as "less than 1 gallon"</td> </tr> <tr> <td>Less than one (1) barrel</td> <td>Report in gallons</td> </tr> <tr> <td>Between one (1) and seven (7) barrels</td> <td>Round off to the nearest 0.1 barrels</td> </tr> <tr> <td>Seven (7) or more barrels</td> <td>Report in barrels as a whole number</td> </tr> </tbody> </table>	If . . .	Then . . .	Less than one (1) gallon	Report as "less than 1 gallon"	Less than one (1) barrel	Report in gallons	Between one (1) and seven (7) barrels	Round off to the nearest 0.1 barrels	Seven (7) or more barrels	Report in barrels as a whole number
If . . .	Then . . .										
Less than one (1) gallon	Report as "less than 1 gallon"										
Less than one (1) barrel	Report in gallons										
Between one (1) and seven (7) barrels	Round off to the nearest 0.1 barrels										
Seven (7) or more barrels	Report in barrels as a whole number										

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Example Spill Volume Estimate:


Step 1 – Determine Square Miles based on Length x Width

Step 2 – Multiple Percent Coverage x Square Miles = Total Square Miles

Step 3 – Enter Spill Appearance Percent based on Overflight Report

Step 4 – Multiple Appearance Percent/100 x Estimated Gallons per Square Mile (Minimum or Maximum) x Estimated Area Covered in Square Miles = Estimated Spill Volume

LENGTH & WIDTH OF AREA COVERED IN MILES						
		0.5 miles				
0.5 miles						
					0.2500 miles ²	
(a)						
PERCENTAGE OF COVERAGE WITHIN AREA ABOVE						
100%						
80%						
60%						
40%						
20%						
						40 %
(b)						
ESTIMATED AREA COVERED IN SQUARE MILES						
0.25 miles ² time		40 % coverage =		0.1 total mi ²		
(a)		(b)		(c)		
APPEARANCE ON THE WATER						
		MIN	MAX		MIN	MAX
Appearance	%	gal/mi ²	gal/mi ²	(c)	Gal (Max)	Gal (Min)
Sheen	90	26.88	209.7	0.1	2	19
Rainbow	10	209.7	3439	0.1	2	34
Metallic	0	3439	34406	0.1	0	0
Transitional Dark Color	0	34406	137088	0.1	0	0
Dark Color	0	1E+05	137088	0.1	0	0
MINIMUM ESTIMATED TOTAL IN GALLONS						5
MAXIMUM ESTIMATED TOTAL IN GALLONS						53

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C. Predicting Spill Movement

Trajectories


Utilizing information submitted from the field, the Incident Commander or his designate (Planning) will contact The Response Group, Inc. to prepare a trajectory analysis. The following information will be submitted to The Response Group verbally or on the form shown in **FIGURE 10.1**.

- 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)




The Response Group, Inc. Houston, Texas Office	
Office Phone Number	(281) 880-5000
24 Hour Phone Number	(800) 651-3942
Fax Number	(281) 880-5005

Results will be relayed from The Response Group 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.).

The Response Group will assist with obtaining updated weather forecasts, buoy data and the National Weather Bureau satellite imagery from Internet services or by contacting the National Weather Bureau.

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National Weather Bureau Emergency Telephone Numbers:

NATIONAL WEATHER BUREAU		
STATE	AREA OF COVERAGE	LOCATION / PHONE NUMBER
ALL 	Gulf of Mexico (Pascagoula, MS to Atchafalaya River, LA)	Web site: http://weather.noaa.gov/ weather/marine/gulf_mex.html New Orleans, Louisiana (504) 589-2808*
TEXAS 	Galveston Bay Area	Houston, Texas (281) 337-5192*
	South Texas	San Antonio, Texas (830) 606-3617
FLORIDA 	Offshore Florida	Miami, Florida (305) 229-4528*


* Indicates 24 hour number

Model results will also produce mass balance calculations, providing information on evaporation, oil remaining on surface, oil on shore, natural dispersion, etc. Color hard copies or transparencies can be produced. Overflight information (GPS positioning) can be utilized to update 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.

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.

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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

Infra-Red (IR) sensing cameras are capable of detecting petroleum on water during the day or at night and in all weather conditions. This information can be downloaded onto a computer screen to be printed out on a chart, and/or recorded on video tape. The aircraft and pilot utilized for IR tracking should be IFR-rated (Instrument Flight Rules).

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.

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 SPILL TRAJECTORY REQUEST FORM		
THE RESPONSE GROUP	OFFICE: (281) 880-5000	EMERGENCY/24-HOUR: (800) 651-3942
FAX: (281) 880-5005	EFAX: (281) 596-6976	EMAIL: trajectory@responsegroupinc.com
ROY BARRETT		
JEREMY DEW		
COMPANY INFORMATION	Company Name: _____	
	Company Contact Name: _____	
	Phone #: _____	
	Alternate # (ie: Mobile, Pager): _____	
	Fax #: _____	
Email Address: _____		
SPILL SITE INFORMATION	Source Type (Circle): Platform/Well Pipeline Vessel Facility	
	Source Name & Location (Name/Area/Block): _____	
	Latitude: _____ ° _____ ' _____ "	Longitude: _____ ° _____ ' _____ "
	Date & Time of Incident (mm/dd/yy): ____ / ____ / ____ : ____ (Military)	
	Type of Product (ie: Medium Crude): _____	API Gravity _____
	Estimated Volume of Release: _____ Barrels or Gallons	
Continues Release Rate: _____ bbls/hr How Long: _____ hrs.		
WEATHER CONDITIONS	Wind Direction (From the): _____	Wind Speed: _____ MPH or Knots
	Current Direction (Toward): _____	Current Speed: _____ MPH or Knots
	Air Temperature: _____ ° C or F	Water Temperature: _____ ° C or F
	High Tide: _____	Low Tide: _____
	Weather Forecast: _____	
OVERFLIGHT INFORMATION	Date & Time of Overflight (mm/dd/yy): ____ / ____ / ____ : ____ (Military)	
	Leading Edge Location:	
	Latitude: _____ ° _____ ' _____ "	Longitude: _____ ° _____ ' _____ "
	Trailing Edge Location:	
	Latitude: _____ ° _____ ' _____ "	Longitude: _____ ° _____ ' _____ "
	Length: _____ Feet / Yards / Miles	Width: _____ Feet / Yards / Miles
	Slick Appearance (Percent & Estimated Length & Width)	
	Barely Visible: _____% L x W: _____	Silvery: _____% L x W: _____
	Slight Color: _____% L x W: _____	Bright Color: _____% L x W: _____
Dull: _____% L x W: _____	Dark: _____% L x W: _____	
THE RESPONSE GROUP		13939 Telge Rd. Cypress, TX 77429

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SECTION 11 - RESOURCE IDENTIFICATION

A. *List of Resources of Significance that could be Impacted*

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. Shell Exploration & Production has the following resources available:

1) Map Sources


MMS CORIS Database

This database contains the latest Environmental Sensitivity Index maps for Florida, Alabama, Mississippi, Louisiana and Texas.

Area Contingency Plan

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 Committee has also identified the environmentally sensitive areas as those areas with an Environmental Sensitivity Index (ESI) ranking as follows:


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**Figure 11.1 -
PRIORITY SCHEDULE
Environmental and Economic Areas**

General Rule:
<ul style="list-style-type: none"> • Vegetated shore is more sensitive than non-vegetated shore • Natural shorelines are more sensitive than modified shorelines • Public lands are more sensitive than private lands
↳ Specific Priorities
<ul style="list-style-type: none"> • Drinking/public utility water intakes • Endangered/threatened species • All designated wildlife refuges and game management areas • Wildlife concentrations (change seasonally) • Vegetated swamps, marshes, and shorelines • Public oyster seed grounds • Commercial and recreational fisheries management areas
↳ Second Priority
<ul style="list-style-type: none"> • Other public lands • Exposed tidal flats • Shell beaches and rip-rap • All other beaches
↳ Third Priority
<ul style="list-style-type: none"> • Sheltered rocky shores and sea walls • Private recreation areas and facilities • Marinas • Private and industrial water supplies

2) Data Bases

The Response Group, Inc. (Houston, TX) has prepared environmental sensitivity maps and shoreline response guides covering operations in this area. The Response Group, Inc. utilizes environmental sensitivity data compiled from various sources including appropriate Area Contingency Plans, U.S. Fish and Wildlife Service, RPI, NOAA, as well as the latest

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information from the states of Texas, Louisiana, Mississippi, Alabama and Florida (Departments of Environmental Protection). Information concerning Wildlife Management Areas, Wildlife Refuges, Parks and Sanctuaries including point of contact, access information, park location, etc. are included. This information is part of the SOI Shoreline Protection Callout Summary and Environmental Sensitivities by USCG COTP zone. Copies are kept in the SOI Incident Command Post and the MMS.

LOSCO, the LA Oil Spill Response Coordinator, should be contacted immediately for any spill that threatens Louisiana state waters (inland or offshore). Their role is to coordinate the process from oil spill discovery to cleanup in conjunction with the U.S. Coast Guard. They have access to environmental information.

- 3) TX GLO - Oil Spill Planning & Response Atlas for the upper and lower coasts of Texas.
 - a) The Upper Coast of Texas shows the most up-to-date habitat priority protection areas, Environmental Sensitivity Index (ESI) shore types, water intakes, boat ramps, roads, heliports, airports, washover areas, parks and many other oil spill-relevant features necessary for oil spill response and contingency planning activities.
 - b) The Lower Coast of Texas Index maps include habitat priority protection areas, Coastal Sensitivity Index (CSI) shore types, water intakes, boat ramps, roads, heliports, airports, washover areas, parks and many other oil spill-relevant features necessary for oil spill response and contingency planning activities.

4) Technical Specialists

Resource agencies and wildlife refuge managers can assist with the identification of wildlife, habitats. Technical Specialists are identified in **SECTION 9**.

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SECTION 12 - STRATEGIC RESPONSE PLANNING

Incident objectives and strategies are essential prerequisites to any written or oral Incident Action Plan (IAP), and should be established expeditiously. Safety is paramount during all responses regardless of size and complexity.

- **OBJECTIVES (Unified Command)** = What you plan to do in priority order
- **STRATEGIES (Planning & Ops.)** = How you plan to accomplish objectives
- **TACTICS (Ops.)** = How you use resources during each operational period to implement strategies

A. TYPICAL OBJECTIVES

Since there are common priorities in any oil spill response, the following examples of typical objectives (**in bold**) and strategies (*in italics*) will be used as a guide:

Typical Objective: Ensure the Safety of Citizens and Response Personnel


Example Strategies:

- Identify hazard(s) of spilled material*
- Establish site control (hot zone, warm zone, cold zone, and security)*
- Consider evacuations, as needed*
- Establish vessel and/or aircraft restrictions*
- Monitor air in impacted areas*
- Develop site safety and health plan for response personnel*
- Ensure safety briefings are conducted*

Typical Objective: Manage Coordinated Response Effort

Example Strategies:

- Complete or confirm notifications*
- Establish a unified command organization and facilities (Command Post, etc.)*
- Ensure local and tribal officials are included in response organization*
- Initiate spill response Incident Action Plans (IAP)*
- Ensure mobilization and tracking of response resources*
- Account for personnel and equipment*
- Complete documentation*
- Evaluate planned response objectives vs. actual response (debrief)*

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Typical Objective: Control the Source of the Spill

Example Strategies:

- Complete emergency shutdown
- Conduct firefighting
- Initiate temporary repairs
- Transfer and/or lighter product
- Conduct salvage operations as necessary

Typical Objective: Remove Oil from Impacted Areas

Example Strategies:

- Conduct appropriate shoreline cleanup efforts
- Clean oiled structures (piers, docks, etc.)
- Clean oiled vessels

Typical Objective: Maximize Protection of Environmentally- Sensitive Areas

Example Strategies:

- Implement predesignated response strategies
- Identify resources at risk in spill vicinity
- Track oil movement and develop spill trajectories
- Conduct visual assessments (e.g., overflights)
- Develop/implement appropriate protection tactics

Typical Objective: Contain and Recover Spilled Material

Example Strategies:

- Deploy oil containment boom at the spill source
- Deploy containment boom at appropriate collection areas
- Conduct open-water skimming with vessels
- Evaluate time-sensitive response technologies (e.g., dispersants, in-situ burning)
- Develop disposal plan

Typical Objective: Recover and Rehabilitate Injured Wildlife


Example Strategies:

- Establish oiled wildlife reporting hotline
- Conduct injured wildlife search and rescue operations
- Setup primary care unit for injured wildlife
- Operate wildlife rehabilitation center
- Initiate citizen volunteer effort for oiled bird rehabilitation

Typical Objective: Minimize Economic Impacts

Example Strategies:

- Protect public and private assets, as resources permit

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- Consider tourism, vessel movements, and local economic impacts throughout response
- Establish damage claims process

Typical Objective: Keep Stakeholders Informed of Response Activities

Example Strategies:

- Provide forum to obtain stake holder input and concerns
- Provide stakeholders with details of response actions
- Identify stakeholder concerns and issues, and address as practical
- Provide elected officials details of response actions

Typical Objective: Keep the Public Informed of Response Activities

Example Strategies:

- Provide timely safety announcements
- Establish a Joint Information Center (JIC)
- Conduct regular news briefings
- Manage news media access to spill response activities
- Conduct public meetings, as appropriate

B. OPERATIONAL SCHEDULES

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. Please refer to the Shell Incident Management Handbook (IMH) for Planning Cycle guidance as well as position specific roles and responsibilities. **FIGURE 12.1** outlines response objectives; a typical ICS Planning Cycle is shown in **FIGURE 12.2** and **FIGURE 12.3** summarizes the characteristics of a “Best Response”.


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FIGURE 12.1 - STATUS BOARDS - RESPONSE OBJECTIVES

Objectives for Specified Operational Period

INCIDENT NAME: _____

MAXIMIZE HEALTH & SAFETY OF RESPONSE PERSONNEL
<input type="checkbox"/> 1) Safety is the first priority. <input type="checkbox"/> 2) Perform site characterizations. <input type="checkbox"/> 3) Restrict access to "hot" and "warm" zones to properly trained & equipped personnel.
MINIMIZE HEALTH & SAFETY IMPACTS TO THE GENERAL PUBLIC
<input type="checkbox"/> 1) Establish secure safety zones. <input type="checkbox"/> 2) Issue notifications to mariners. <input type="checkbox"/> 3) Restrict air space over the incident scene. <input type="checkbox"/> 4) Conduct air and water quality monitoring, as necessary.
CONTROL & STABILIZE SOURCE
<input type="checkbox"/> 1) Be prepared for a fire. <input type="checkbox"/> 2) Conduct a damage assessment. <input type="checkbox"/> 3) Commence well control operations.
MAXIMIZE PROTECTION OF SENSITIVE AREAS
<input type="checkbox"/> 1) Use The Response Group (TRG) and ACP to identify sensitive areas. <input type="checkbox"/> 2) Develop and implement protection strategies. <input type="checkbox"/> 3) Prioritize areas, as necessary.
DEVELOP A COMPREHENSIVE, INTEGRATED PLAN
<input type="checkbox"/> 1) Obtain approval to use dispersants. <input type="checkbox"/> 2) Obtain approval to commence in-situ burning. <input type="checkbox"/> 3) Use high capacity recovery devices in thickest concentrations. <input type="checkbox"/> 4) Support on-water operations with surveillance and spotter aircraft (continuously). <input type="checkbox"/> 5) Prepare shorelines for the arrival of oil. <input type="checkbox"/> 6) Initiate wildlife protection operations. <input type="checkbox"/> 7) Initiate NRDA operations. <input type="checkbox"/> 8) Establish staging areas. <input type="checkbox"/> 9) Develop disposal plans. <input type="checkbox"/> 10) Integrate agency response personnel into SRT. <input type="checkbox"/> 11) Keep the public informed. <input type="checkbox"/> 12) Be prepared to respond to claim issues.
ICS 202


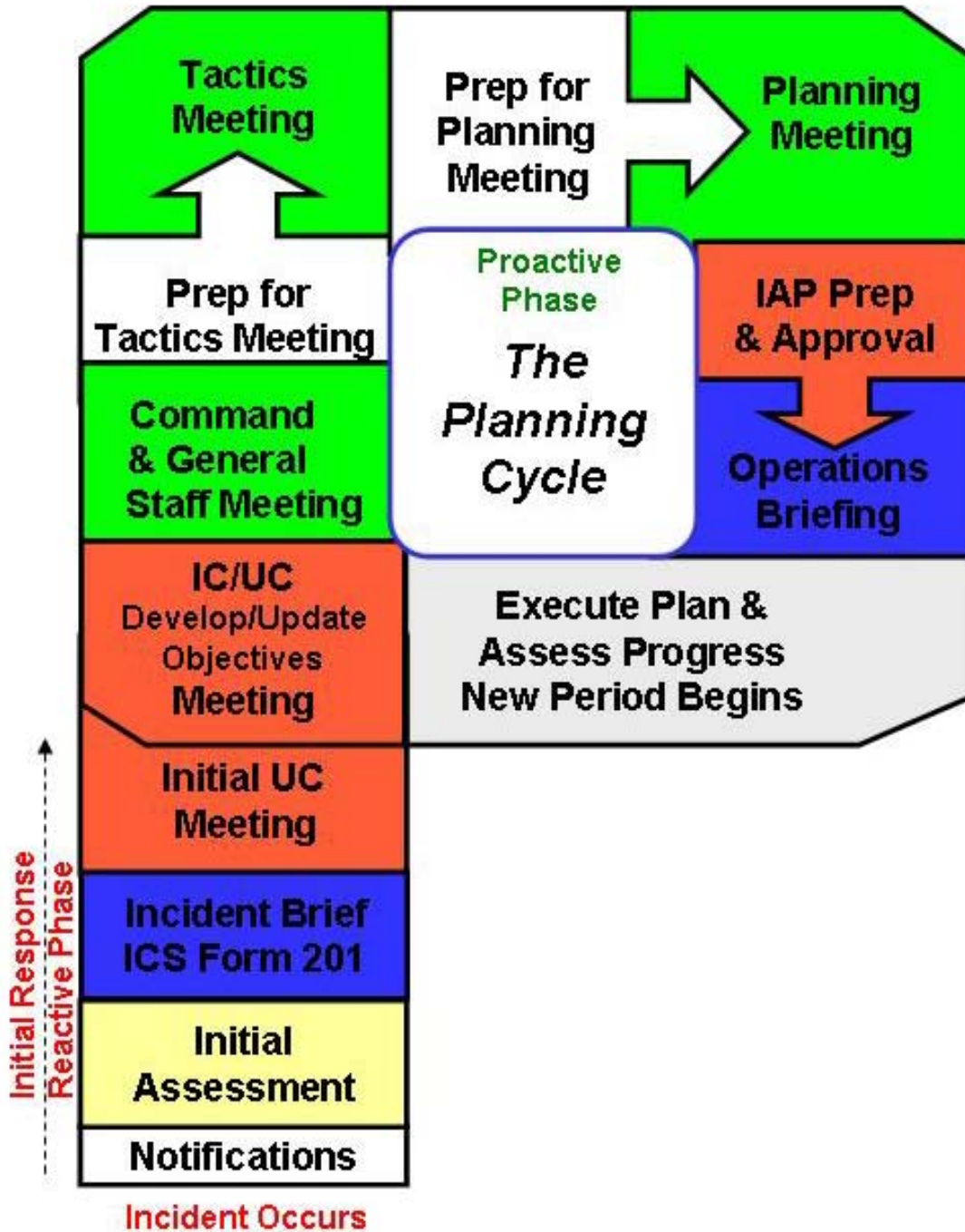
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FIGURE 12.2
PLANNING CYCLE PROCESS




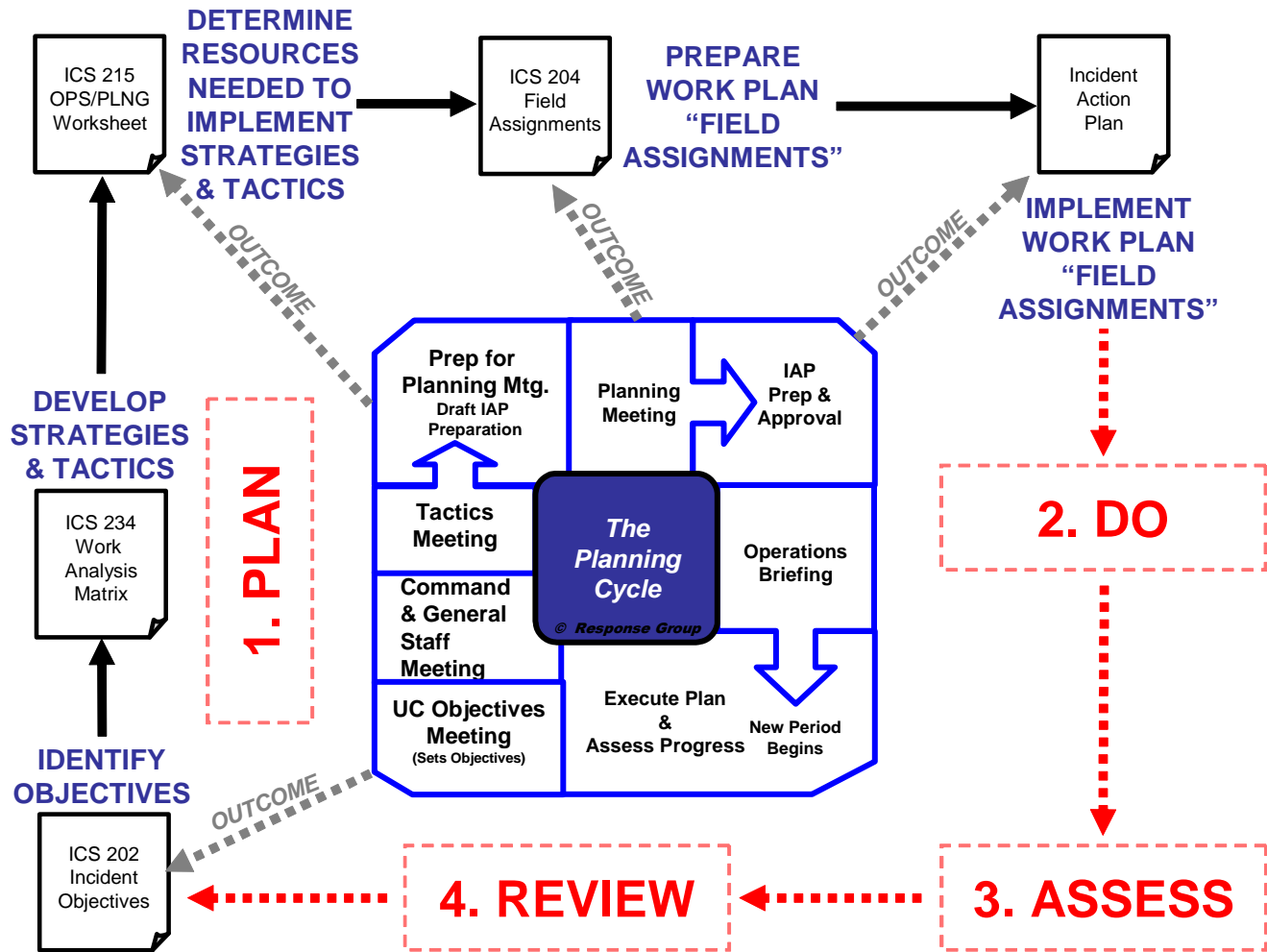

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FIGURE 12.3
BEST RESPONSE



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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 recreational 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 Response Group shoreline response guides depict 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.

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 natural 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.

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- Other natural collection points would depend on tide, current, and wind. River ports 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. 3-foot high metal or wooden stakes should support the fence. 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**.

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**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
CONTAINMENT 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


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**FIGURE 13.2 -
Shoreline Protection Methods – ONSHORE**

ONSHORE	METHOD	APPLICABILITY
SORBENTS	<p>Applied manually or mechanically to the beach before oil is stranded</p> <p>Oil/sorbent is then removed manually or mechanically</p>	<p>Prevents penetration of oil into substrate</p> <p>Sorbent pads preferable to loose-fiber materials for ease of collection</p> <p>Synthetic products have higher absorption capacity than natural materials</p> <p>Can be recycled and reused</p> <p>Usually a labor-intensive method</p>
SURFACE TREATMENT AGENTS	<p>Applied to shore zone before oil is stranded</p> <p>Prevents oil from adhering to the substrate</p>	<p>Applicability and effectiveness not yet fully assessed</p> <p>May be difficult to apply on long sections of shore</p> <p>Oil must be flushed from the shore and agent removed if it does not degrade naturally</p>
COLLECTION AGENTS	<p>Applied along water line before oil is stranded</p> <p>Reduces natural dispersion of oil</p>	<p>Reduces area of shoreline contamination</p> <p>Reduces penetration into beach</p>
DIKES AND/OR DITCHES	<p>Ditch up to 1 m deep dug parallel to shore at upper limit of wave action</p> <p>Sediment removed used to build dike on landward side of the ditch</p> <p>On pebble-cobble beaches can fill ditch with sorbents to collect oil and prevent oil penetration</p>	<p>Prevents oil being washed onto the backshore</p> <p>Can be constructed mechanically along long beach sections</p> <p>Ditch acts as a collector of oil which can be removed with buckets, hand pumps, or vacuum pumps</p>

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ONSHORE	METHOD	APPLICABILITY
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	Common name for adsorbent oil recovery material attached in ball-like masses onto a line or rope. Applied manually to the beach, rock jetties, etc.	Excellent with heavier oils Can be recycled and reused Reduces penetration into rocks


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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) Shell Offshore, Inc. will work with local authorities (State Police) in establishing land routes that will expedite the movement of personnel, equipment, materials and supplies to the staging area and waste products from the staging area. The SOI Logistics Section keeps current information on staging areas.
- 2) Various aviation and marine resources are under contract to SOI for routine business and spill response.

MSRC's equipment is stockpiled in warehouses along the Gulf Coast. The criteria in selecting which MSRC warehouse to mobilize equipment from include 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.

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**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	a. Deploy boom.	Size depends on boom dimensions and water depth.
3. Tug Boats	a. Position storage barges.	(1) 1800 HP tug (2) 1200 HP tugs
4. Tank Barges	a. Haul waste to disposal site.	
AIRCRAFT		
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 & communication equip. on board.
TRUCKING		
1. Flatbed Trucks	a. Haul equipment to staging area.	May be permit load.
2. Drop Deck Trailers	a. Haul equipment to staging area.	May be permit load.
3. Tractors	a. 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	a. Haul waste to disposal site.	Need permit.

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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


A. *Offshore Procedures (Large and small spills)*

The response descriptors in this section include a generic discussion of each potential offshore response strategy. Appendix H of this plan lists more specific response strategies for a potential large spill (worst case discharge) and tables of equipment with cascading response capabilities. In the event of smaller spills, our primary response would be the same initial mechanical recovery equipment as listed in Appendix H (Figure H.3). This would likely include an Oil Spill Response vessel (OSRP) from the Marine Spill Response Corporation. The quickest potential response time would be evaluated and selected in an actual oil spill event. As with any spill, additional "cascading" response equipment would be mobilized to the site from various MSRC bases. For spills larger than 100 bbls., dispersants may also be mobilized by plane from Houma, La, pending approval from the USCG.

1. Mechanical Cleanup Methods

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.

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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

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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 disperses in the mixing zone of the water column (approximately the upper 10 m). 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 and/or fecundity. 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.

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.

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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).

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B. Shallow Water/ Shoreline Procedures

1. Mechanical Cleanup Methods

- *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. 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 15.3** for a description of oil types.

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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.	<u>Intertidal</u> – the same as oil. <u>Subtidal</u> – 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).	<u>Intertidal</u> – minimal if surface disturbance by cleanup activities and work force movement is limited. <u>Subtidal</u> – 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.	<u>Intertidal</u> – 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).	<u>Intertidal</u> – none. <u>Subtidal</u> – none.



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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
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.	<u>Intertidal</u> – on gravel beaches, there may be a period of beach instability as the sediments are redistributed after the trenches are filled in. <u>Subtidal</u> – none.
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.	<u>Intertidal</u> – May be detrimental if excessive sediments are removed without replacement. All organisms resident in the beach will be affected <u>Subtidal</u> – 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.	<u>Intertidal</u> – habitat may be physically distributed and smothered. Organisms may be flushed into lower intertidal zones. <u>Subtidal</u> – oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms.



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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
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.	<u>Intertidal</u> – Contaminants may be flushed into lower intertidal zone <u>Subtidal</u> – 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.	<u>Intertidal</u> – removes many organisms on surface. May drive oil deeper into the substrate. Contaminants may be flushed into lower intertidal zone <u>Subtidal</u> – oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms.
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.	<u>Intertidal</u> – can kill or remove host organisms. Contamination may be flushed into lower intertidal zones that would otherwise not be oiled <u>Subtidal</u> – oiled sediment may be transported to shallow subtidal areas, contaminating them and burying benthic organisms.



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**FIGURE 15.1 -
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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
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.	<u>Intertidal</u> – 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.	<u>Intertidal</u> – destruction of all organisms. <u>Subtidal</u> – 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.	<u>Intertidal</u> – minimal impacts if used properly and minimal substrate is removed <u>Subtidal</u> – none.



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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
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.	<p><u>Intertidal</u> – 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</p> <p><u>Subtidal</u> – there is a potential for release of contaminated sediments to the near shore subtidal habitats.</p>
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.	<p><u>Intertidal</u> – All resident organisms will be affected. Equipment may disrupt wildlife. Beach instability may occur as the replaced sediments are redistributed</p> <p><u>Subtidal</u> – May release oil and fine grained oily sediments into the water. Concern to tidal flushing of beach sediments and exposed excavations.</p>



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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
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 than 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.	<u>Intertidal</u> – 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. <u>Subtidal</u> – Increased sediment load (long term) as a result of increased erosion in the intertidal area.



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**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.



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**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
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.
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.		


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FIGURE 15.3 - OIL TYPES

Oil can be divided into five general types with the following properties:

<p>GROUP 1 - Very Light Refined Products (e.g., gasoline, naphtha, solvents, Avgas 80/100)</p> <ol style="list-style-type: none"> 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. 	<p>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)</p> <ol style="list-style-type: none"> 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.
<p>GROUP 3 - Medium Oils and Intermediate Products (e.g., North Slope crude, South Louisiana crude, intermediate fuel oils, lube oil)</p> <ol style="list-style-type: none"> 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. 	<p>GROUP 4 - Heavy Crude Oils and Residual Products (e.g., Venezuela crude, San Joaquin Valley crude, Bunker C, no. 6 fuel oil)</p> <ol style="list-style-type: none"> 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.
<p>GROUP 5 - Very Heavy Residual Products</p> <ol style="list-style-type: none"> 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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Figure 15.4 - 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 all 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.


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FIGURE 15.4a - Shoreline Cleanup Matrix for Very Light Oil

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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FIGURE 15.4b - Shoreline Cleanup Matrix for Light Oil

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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FIGURE 15.4c - Shoreline Cleanup Matrix for Medium Oil

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.




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FIGURE 15.4d - Shoreline Cleanup Matrix for Heavy Oil

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


Oil spill cleanup by mechanical recovery will involve the further handling of recovered oil and oiled materials. These should be transported from offshore to the staging area for proper handling or from onshore directly to the appropriate reclamation/ disposal site. Normally, the waste generated from a mechanical recovery operation will be classified as a Non-hazardous Oilfield Waste (NOW). In rare instances where it is suspected that extraneous substances have been introduced into a spill, it is appropriate to test the recovered oil for hazardous waste characteristics (Ignitability, Reactivity, Corrosivity and Toxicity).

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 MSRC equipment are given in **SECTION F**. If storage capacities are not sufficient, equipment that could be utilized includes barges, rubber bladders, roll off boxes, mud tanks, etc. Potential sources for this equipment are 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. Approval must be obtained 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 leak proof, sealable containers on the recovery vessels and transported to appropriate facilities for processing, recycling, or disposal.

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- 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 that 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 ravines, gullies, streams, or the sides of the hills, but rather in areas with minimal of slope.


C. RECYCLING

- 1) Recovered Oil – Whenever possible, recovered oil should be returned to the production system for recycling. A secondary means of handling recovered oil may be through a commercial oil reclaimer. When utilizing this secondary option the oil will be classified as NOW and must be shipped to an approved reclaimer.

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D. DISPOSAL REGULATIONS

- 1) Oiled Materials – If these materials have not contacted extraneous substances, they will be classified as NOW and should only be disposed of at Shell Exploration & Production’s approved NOW disposal site. In some cases it will be appropriate to seek permission from the appropriate State agency to burn the oiled material.
- 2) Oil and oily wastes that are contaminated or excessively weathered will 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).
- 3) 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, Shell Exploration & Production is listed in the manifest as the generator. The manifest should be signed by the designated Shell Exploration & Production representative, and marked with the statement: “This material is being disposed of by Shell Exploration & Production 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. All wastes shipped off-site for disposal must be transported in compliance with applicable regulations. These include the RCRA regulations in 40 CFR 262-263, the DOT Hazardous Materials Regulations in 49 CFR 171-178, and any applicable state regulations. Ensure shipments of waste collected during spill cleanup activities are transported in inadequate containers to eliminate secondary releases during transport. If the nature of the waste precludes packaging in the required container, the Incident Commander should request

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emergency exemptions from the regulations following procedures outlined in 49 CFR 107.

- f. Waste haulers will use only state-certified disposal sites.
- g. Unit personnel must track the Hazardous Waste Manifest and retain appropriate records per 40 CFR 262.40. Unit personnel should receive a signed copy of the manifest from a designated disposal facility within the specified time limits. Shell Exploration & Production must retain copies of Hazardous Waste Manifests in unit files for at least 3 years.

E. DISPOSAL TRANSPORTATION AND DESIGNATED SITES

- 1) Transportation of oil and oily waste may be accomplished via tank truck, vacuum truck or barge. OSRO's 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 (List is maintained by SEPCo HSE).


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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
<u>Non-Hazardous</u>	
- 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.
<u>Hazardous</u>	
Vessels, vehicle, aircraft and equipment operations; dispersant use operations; wildlife rehabilitation operations.	

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**FIGURE 16.1 -
WASTE MANAGEMENT PLAN**

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.

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

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***FIGURE 16.1 -
WASTE MANAGEMENT PLAN***


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

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 #

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.

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**FIGURE 16.1 -
WASTE MANAGEMENT PLAN**

- 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

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.

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**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: <ul style="list-style-type: none"> • heat treatment • emulsion breaking chemicals • centrifuge • filter/belt press
(2) SOLIDS	
Oil mixed with sand	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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.

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SECTION 17 - WILDLIFE REHABILITATION PROCEDURES

A. *Bird Rescue and Rehabilitation*

If a spill results in damage to wildlife, Shell Exploration & Production 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:

- 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.


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- 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.

B. Handling of Oiled Sea Turtles

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 breathe. 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


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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 rescuers 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 seawater 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 seawater. A lid can cover the container but holes must be provided to allow airflow 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. Very large 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

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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.

C. Supplies, Sources


Use 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.


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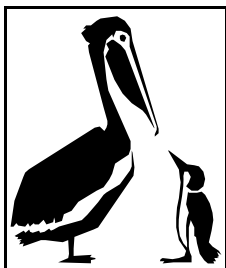
Feeds will be available from several sources. Fresh seafood items are available at local supermarkets. Long-term economy may be achieved by purchasing from bait stands or shrimper bycatch, but beware of compounding problems with improperly cared for (spoiled) seafood.

FIGURE 17.1 –
WILDLIFE REHAB & EDUCATION, INC.
Oiled Wildlife Response Team

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 Shell Exploration & Production if a rehabilitation facility needs to be set up or if the Clean Gulf Associates or Texas General Land Office Oiled Wildlife Response Trailers need to be utilized.
- 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 Shell Exploration & Production 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

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 will immediately contact the Director, Office Manager, Southern California Representative and Gulf States Representative by telephone and beeper.
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.



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FIGURE 17.3 – IBRRC CHECKLIST

- | | |
|---|--|
| <p>1. Notify Appropriate Parties</p> <ul style="list-style-type: none"> • Wildlife trustee agencies (federal/state) <ul style="list-style-type: none"> a) Request input to strategies • Trained oiled wildlife rehab specialists • Local residents with knowledge of area <ul style="list-style-type: none"> a) Fishermen b) Wildlife groups • Local volunteer organizations <p>2. Surveillance</p> <ul style="list-style-type: none"> • Maps • Air transportation <ul style="list-style-type: none"> a) Sea planes b) Helicopters • Ground transportation <ul style="list-style-type: none"> a) Boats <p>3. Strategies</p> <ul style="list-style-type: none"> • Suitable facility <ul style="list-style-type: none"> a) Adequate space b) Air circulation c) Office area d) Kitchen area • Location of facility <ul style="list-style-type: none"> a) Close to staging area b) Away from high traffic area c) Secure area • Number of personnel <ul style="list-style-type: none"> a) Initial assessment team b) Additional personnel c) Volunteers <p>4. Search and Rescue</p> <ul style="list-style-type: none"> • Safety briefing • Supplies <ul style="list-style-type: none"> a) Animal transport carriers b) Long handled nets c) PPE required • Aircraft for over flights • Vessels for capture • Ground transportation <ul style="list-style-type: none"> a) Personnel b) Animals | <ul style="list-style-type: none"> • Communications <ul style="list-style-type: none"> a) Radios b) Cellular telephones c) Pagers • Maps <p>5. Operations</p> <ul style="list-style-type: none"> • Facility • Mobile units <ul style="list-style-type: none"> a) Bird washing trailer b) Incident command trailer • Water supply <ul style="list-style-type: none"> a) Adequate pressure • Pens, pools and cages <ul style="list-style-type: none"> a) Carpenters b) Plumbers c) Electricians • Supplies <ul style="list-style-type: none"> a) Order b) Delivery • Security • Training of volunteers <ul style="list-style-type: none"> a) Classroom space • Nearby lodging & meals for personnel • Waste disposal <ul style="list-style-type: none"> a) Holding tank b) Vacuum truck <p>6. Demobilization</p> |
|---|--|

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SECTION 18 - DISPERSANTS USE PLAN

A. *Dispersants Inventory*


SOI has access to stockpiles containing two (2) types of dispersants, *COREXIT 9527* and *COREXIT 9500*. Both products are included in the US Environmental Protection Agency's 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

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 Dispersant Stockpiles by Location (Updated 03/2010)			
Supplier & Phone	Location of Dispersants	Type	Quantity in Gallons
LOOP, Inc. 504-363-9299	Houma, LA	Corexit 9527	30,800
MSRC (800) OIL-SPIL	Slaughter Beach, DE - DBRC Site	Corexit 9527	330
	Chesapeake City, MD - MSRC Site	Corexit 9527	9,130
	Portland, ME	Corexit 9527	330
	Edison, NJ	Corexit 9527	330
	Chesapeake City, MD	Corexit 9527	330
	Virginia Beach, VA	Corexit 9527	330
	San Juan, PR - MSRC Site	Corexit 9527	900
	Kiln, MS - Stennis Airport	Corexit 9527	22,638
	Kiln, MS - Stennis Airport	Corexit 9500	4,585
	Miami, FL	Corexit 9527	850
	Fort Jackson, LA	Corexit 9527	850
	Lake Charles, LA	Corexit 9500	18,480
	Lake Charles, LA	Corexit 9527	850
	Galveston, TX	Corexit 9527	850
	Corpus Christi	Corexit 9527	300
	Galveston, TX - MSRC Site	Corexit 9500	500
	Coolidge, AZ - Coolidge Airport	Corexit 9527	3,300
	Long Beach, CA - Tesoro Terminal	Corexit 9500	10,890
	Terminal Island, CA - OSRV	Corexit 9527	600
Richmond, CA - MSRC Warehouse	Corexit 9527	12,100	
Everett, WA - Everett Warehouse	Corexit 9527	7,695	
Ferndale, WA - CP Refinery	Corexit 9527	6,430	
Honolulu, HI - OSRV	Corexit 9527	600	
ONDEO Nalco (800)462-5378	Sugarland, TX	Corexit 9500	11,000
Clean Caribbean & Americas (954) 983-9880	Ft. Lauderdale, FL	Corexit 9500	30,360
TOTAL QUANTITY (GALLONS)			175,358

COREXIT 9500 and COREXIT 9527 can be manufactured at a rate of 800 drums per day within ~30 days after receipt of an order.

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B. Toxicity Data

Toxicity values presented for various aquatic 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. The following summarizes the toxicity data published for each dispersant.


Species	LC ₅₀ – Corexit 9527	LC ₅₀ – Corexit 9500
Menidia beryllina (inland silverside)	14.57 ppm @ 96-hr	25.2 ppm @ 96-hr
Fundulus heteroclitus (mummichog)	100 ppm @ 96-hr	140 ppm @ 96-hr
Artemia salina (brine shrimp)	50 ppm @ 48-hr	21 ppm @ 48-hr
Mysidopsis bahia (mysid shrimp)	24.14 ppm @ 48-hr	32.23 ppm @ 48-hr

Source: Nalco/Exxon Energy Chemical Product Bulletin & U.S. EPA's National Contingency Plan Product Schedule

C. Dispersant Effectiveness

Dispersants listed in the US Environmental Protection Agency's NCP Product Schedule are accepted as being effective on freshly spilled oil, if the water temperature is above the oil's pour point and the oil's API gravity is above about 17. Some dispersant formulations have the potential to expand these ranges. Weathering alters the physical and chemical properties of the spilled oil over time. As oil is subjected to weathering processes (i.e., evaporation and emulsification), the oil becomes more difficult to disperse and a higher dispersant to oil ratio (e.g., 1:10) may be needed. Generally the time-window for effective dispersant application ranges up to 24 to 72 hours following a release. Models, such as NOAA's ADIOS II, can be used to estimate the time-window for effective dispersion of specific oils under specified environmental conditions (temperature and wind).


Additional information on dispersants can be found in Section 15, Page 2, Dispersants.

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D. Application Equipment

#	Equipment	Quantity/ Type	Location	Contractor
1	Aircraft Spraying	BE 90 King Air	Stennis, MS	MSRC
		C-130A	Coolidge, AZ	MSRC
		ADDS Pack	Port Everglade	CCA
2	Vessel Spraying	Dispersant Spray System	Fire Monitors on each Responder Vessel	MSRC
3	Dispersant Spotter Aircraft	King Air	Stennis,, MS	MSRC

See **Appendix H** for Dispersant Application Activation List for additional equipment.

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E. 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.


All responding MSRC aircraft will have sufficient flight crews to support dispersant operations in accordance with Shell’s Aviation Guidelines. If necessary, MSRC will activate additional flight crews for responding aircraft, even if not required under FAA rules. The flight crews will be transported in as expeditious a manner as possible to the selected staging airport by third party charter aircraft, commercial airline or other appropriate means.

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.

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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.

F. Conditions for Use

The Eastern Planning Area is physically located within the area of responsibility of the Region IV Regional Response Team (RRT IV). However, spill trajectory analysis 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.

Region VI


The pre-approved area includes offshore waters “from the ten-meter isobath or three nautical miles”, whichever is farthest from the shore, to 200 nautical miles offshore (Exclusive Economic Zone boundary), beginning from the Texas-Mexico border and extending through the states of Texas and Louisiana to the boundary between federal Regions IV and VI.

Dispersant spraying operations are conducted during daylight hours only.

Dispersants are most effective when applied as soon as possible to the time of the discharge. Weathering of the oil decreases effectiveness. An assessment of these effects are discussed in the “Technology Assessment of the Use of Dispersants on Spills from Drilling and Production Facilities in the Gulf of Mexico Outer Continental Shelf”². This study was conducted for the Minerals Management Service by S.L. Ross Environmental Research Ltd.

Only those dispersants **listed on the most current US Environmental Protection Agency NCP Product Schedule** may be used under the Pre-Approval requirements. (*COREXIT* 9500 and 9527 are on the most current NCP Product Schedule.)

Aerial dispersant applications normally require a dispersant controller flying over the spray zone(s) in a separate aircraft from the dispersant spray aircraft. The controller must be qualified and 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 in the area.

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In case of aerial application of dispersants:

- 1) The FOSC must ensure that the RP's dispersant operation provides for a dispersant controller who is over the spray zone(s) in separate aircraft from the dispersant aircraft. The controller must be qualified and able to direct the dispersant aircraft in carrying out the offshore dispersant operation inclusive of avoiding the spraying of birds (by 1,000 ft. horizontal distance), marine mammals and turtles that may be in the area.
- 2) Aircraft spray systems must be capable of producing dispersant droplet sizes that provide for optimal dispersant effectiveness (generally 250-500 µm, but follow manufacturer and ASTM guidance).

In case of boat application of dispersants:

- 1) If the system involves spray arms or booms that extend out over the edge of the boat and have fan type nozzles that spray a fixed pattern of dispersant, the following ASTM standards apply:
 - a) **ASTM F 1413-92** Standard Guide for Oil Spill Dispersant Application Equipment: Boom and Nozzle Systems
 - b) **ASTM F 1460-93** Standard Practice for Calibrating Oil Spill Dispersant Application Equipment Boom and Nozzle Systems
 - c) **ASTM F 1737-96** Standard Guide for Use of Oil Spill Dispersant Application Equipment During Spill Response: Boom and Nozzle Systems.
- 2) If the system involves the use of a fire monitor and or fire nozzle to apply the dispersants, a straight and narrow "firestream" flow of dispersant directly into the oil is to be avoided. At this time there are no applicable ASTM standards for these types of systems.
- 3) Fire monitor systems must meet the general criteria for approval specified above.

The FOSC will activate the Special Monitoring of Applied Response Technologies (SMART) team. Every attempt should be made to implement the on-water monitoring component of the SMART monitoring protocols in every dispersant application. At a minimum, Tier 1 (visual) monitoring must occur

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during any dispersant operations. When possible, DOI/DOC will provide a specialist in aerial surveying to accompany the SMART observer.

Weather conditions must be in an acceptable range to allow dispersant application. For aerial application, winds must be less than or equal to 25 knots, visibility greater than or equal to 3 nautical miles, and ceiling greater than or equal to 1,000 feet. For application by vessel, wave heights must not exceed operational limitations of the application vessels.

Region IV

- 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 landmass, providing that the water is at least 10 meters in depth. 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:

Green Zone - Pre-Approved Zone (Decision lies with the FOSC)

Must meet all 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 that are in less than 10 meters of water.

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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.
 - 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 Dispersant Use Information 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.
 - 8) The FOSC will activate the Special Monitoring of Applied Response Technologies (SMART).

G. Approval Procedures and Forms

The use of chemical agents for the treatment of spilled oil requires case-by-case approval. Unauthorized use of chemical agents to control a spill of any size is strictly prohibited.

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If the spill is more than 3 nautical miles from the shoreline and the water depth is greater than 10 meters, the USCG Federal On Scene Coordinator (FOSC) may activate the RRT-VI Pre-approved Dispersant Use Decision Making Process. This process consists of the FOSC following a series of information checklists and decision trees in order to make an approval decision within approximately 30 minutes of initial dispersant use request. In this dispersant pre-approval process

There is no requirement for the Responsible Party to complete any forms, however, the Dispersant Pre-Approval Initial Call Checklist is supplied in **FIGURE 18.1** for familiarization with the questions. Filling out and faxing this form to the FOSC may facilitate quicker approval.

If the spill is inside the 10-meter contour line or the 3-mile line, the USCG must refer to the Regional Response Team for dispersant approval.

Dispersants Use Policy of the Flower Gardens National Marine Sanctuary

With the FOSC's recommendation, the Flower Garden Banks National Marine Sanctuary approves of dispersant use in the vicinity of the Flower Garden Banks. If the decision is made to apply dispersants in that area, all efforts should be made to apply them in the deepest water possible and as far from the Sanctuary as possible. The Sanctuary requests immediate notification of the decision to apply dispersants in order for them to begin assessment and monitoring procedures. In rare instances, such as mass coral spawning periods, it may be advisable to avoid the use of dispersants.

The Flower Garden Banks National Marine Sanctuary
4700 Avenue U, Building 216
Galveston, TX 77551
Office: (409) 621-5151
Fax: (979) 779-2334

H. Dispersant Spray Procedures

Figure 18.2 is Dispersant Use Information Form. 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**.


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Figure 18.1 - Dispersant Pre-Approval Initial Call Checklist

CALLER

Time of Initial Call: Date: ___/___/___ Time: _____ CST
Month Day Year (24 Hour Clock)

Name of Caller: _____
Telephone #: (___) ___-____

Name of Alternate Contact: _____
Telephone #: (___) ___-____

Company Name: _____
Address: Street: _____
City: _____
State: _____ Zip Code: _____

SPILL

Initial Time of Spill: Date: ___/___/___ Time: _____ CST
Month Day Year (24 Hour Clock)

Location of Spill: LAT: _____ N LON: _____ W

Block Name: _____ Block Number: _____

Type of Release: [Instantaneous or Continuous Flow

Oil: Name: _____
API: _____ Pour Point: _____ (°C of °F) *Circle One*

Amount Spilled: _____ [GAL or BBLs (42 GAL/BBL)] *Circle One*

Flow Rate if Continuous Flow (Estimate): _____

ON-SCENE WEATHER (Note: If not available, contact SSC for Weather)

Wind Direction from (Degrees): _____ Wind Speed: _____ Knots

Surface Current (Direction Toward, Degrees): _____
(Speed): _____ Knots

Visibility: _____ Nautical Miles

Ceiling: _____ Feet

Sea State (Wave Height): _____ Feet

DISPERSANT SPRAY OPERATION

Dispersant Spray Contractor

Name: _____
Address: Street: _____
City: _____
State: _____ Zip Code: _____
Telephone #: (___) ___-____

Dispersant: Name: _____
Quantity Available: _____

Platform: Aircraft Type: _____
Multi-Engine or Single-Engine

Boat Type: _____
Other: _____

Dispersant Load Capability (Gal): _____

Time to First Drop on the oil (Hours): _____


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FIGURE 18.2 - DISPERSANT USE INFORMATION FORM

NOTE The intent of this form is to provide information as quickly as possible to the OSC to aid in making dispersant-use decisions.

- INSTRUCTIONS**
- 1 Fill-in all available information. Some information shown on the form may not be available, but this should not delay transmittal of the form to the OSC. Send the completed form to the OSC.

 - 2 The form should be transmitted promptly, even if some of the blanks have not been filled-in.

GENERAL The information in this form is needed to guide a dispersant-use decision. Note that there are three categories of information:

- A The spill (what material was spilled, volume and location).

- B Factors that will affect the spill trajectory, how the oil will spread and how the oil will weather. These factors include currents, wind and weather.

- C Details of the dispersant use plan.

DISPERSANT USE REQUEST


Has use of dispersants been requested? _____

If so, show:

Name _____

Company or Organization _____

Telephone _____

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**FIGURE 18.2 -
DISPERSANT USE INFORMATION FORM (continued)**

A DETAILS OF SPILL

(Information to be provided at time of spill by spiller (if known) or his agent or by the OSC)

1 SPILL DATA

a) Circumstances (fire, grounding, collision, etc.)

b) Location of Spill (report all available details)

Distance and Direction from nearest Port _____

Latitude and Longitude _____

Block _____

Water Depth (in feet) _____

c) Time and Date of Spill _____

d) Potentially Responsible Party:

Name of Company _____

Address _____

Individual to Contact _____

Telephone _____

e) Product Spilled


Name of Crude or Product (if known) _____

Type of Product (Crude or Refined Product) _____

Volume Released (if known) _____

f) Type of Release (instantaneous, continuous, intermittent, etc.)

g) Total Potential Volume of Release (if still leaking)

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**FIGURE 18.2 -
DISPERSANT USE INFORMATION FORM (continued)**

2 PROPERTIES OF THE SPILLED OIL (if known)
(Note: General oil property information may be available from the files maintained as part of the Region 6 OSCP, Subpart H)


- a) Specific Gravity _____
Or
Gravity _____
- b) Viscosity, cst. _____
At Temperature, degrees F _____
- c) Pour Point, degrees F _____
- d) Sulfur Content, % w _____

3 IS OIL EXPECTED TO BE DISPERSABLE?

- Easily
- Moderately
- With Difficulty

How was this estimate made? (e.g. from known oil properties, from field trials, from laboratory tests, etc.)

From Oil Properties _____

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**FIGURE 18.2 -
DISPERSANT USE INFORMATION FORM (continued)**

B SPILL TRAJECTORY AND WEATHER

(Information to be provided at Time of Spill by National Weather Service or NOAA. Some of this information may be available from the Spiller, the OSC, or other Interested Parties)

1 WEATHER CONDITIONS AND FORECAST


- a) Air Temperature _____
- b) Wind Speed _____
- c) Wind Direction _____
- d) Visibility (in miles) _____

2 SEA CONDITIONS AND FORECAST

- a) Wave Height (in feet) _____
- b) Swell Height (in feet) _____
- c) Water Depth (in feet) _____
- d) Water Temperature, degrees F _____
- e) Salinity (in known) or possible presence of fresh water (e.g. from river run-off)

3 CURRENTS - TIDAL AND LONGSHORE

- a) Speed (in knots) _____
- b) Direction _____

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**FIGURE 18.2 -
DISPERSANT USE INFORMATION FORM (continued)**

4 OIL SPILL TRAJECTORY INFORMATION
(Forecasts should be made for at least 48 Hours and Preferably 96 or 120 Hours)

a) Surface Trajectory Forecast
Expected Position of Center of Spill on:

DAY 1 _____ DAY 4 _____
 DAY 2 _____ DAY 5 _____
 DAY 3 _____

Note: The Leading Edge of the Spill may be as much as one to five miles in advance (downwind) of the Center of the Spill, depending on Spill Size, Time and Wind Speed.

Expected Landfall (when, where and how much) _____


What will be the Effects on above if the Winds Change? _____

What will be the Effects on above if the Currents Change? _____

b) Dispersed Oil Trajectory Forecast

Expected Position of Center of Dispersed Oil Cloud at end of:

DAY 1 _____ DAY 4 _____
 DAY 2 _____ DAY 5 _____
 DAY 3 _____

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**FIGURE 18.2 -
DISPERSANT USE INFORMATION FORM (continued)**

5 SPREADING, WEATHERING, DISPERSION

a) Surface Area of Slick at End of:

DAY 1 _____ DAY 4 _____

DAY 2 _____ DAY 5 _____

DAY 3 _____

b) Amount lost by Weathering, % at End of:

DAY 1 _____ DAY 4 _____

DAY 2 _____ DAY 5 _____

DAY 3 _____

c) Is Emulsion (mousse) formation expected?

Immediately, or after Weathering? _____

C DETAILS OF DISPERSANT PLAN


(Information to be Provided at Time of Spill by Spiller (if known) or his Agent or by the OSC)

1 DISPERSANT TO BE USED

Name _____

Source of Supply _____

Amount Available (in gallons) _____

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**FIGURE 18.2 -
DISPERSANT USE INFORMATION FORM (continued)**

2 EQUIPMENT TO BE USED FOR APPLYING DISPERSANT

a) Type (boat spray, helicopter, airplane)

b) Available from:

Name _____

Address _____

Telephone _____

c) Name of Equipment (if known) _____

d) Time needed for Transport to the Oil Spill Site, after make-ready, hr,

**3 HAS EQUIPMENT BEEN CALIBRATED
For use with Dispersants? (if known)**

4 PLANNED RATE OF APPLICATION

**5 WHAT MEANS WILL BE USED TO MONITOR
And observe the Application?**

6 WHAT MEANS WILL BE USED TO GUIDE THE APPLICATION?

**7 HOW EFFECTIVELY WILL THE OIL BE REMOVED FROM THE WATER
SURFACE? (Estimate only, taking into account the Type of Oil that was
Spilled, Oil Weathering, Sea Conditions, Type of Dispersant, Logistics, etc.)**


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FIGURE 18.3 - NEARSHORE EAP Initial Call & Minimum Criteria Checklist

NSE EAP Initial Call Checklist

CALLER INFORMATION

Time of Initial Call: Date: _____ / _____ / _____ Time: _____ CT
Month Day Year (24 hour clock)

Name of Caller: _____
Telephone #: (____) _____ - _____

Name of Alternate Contact: _____
Telephone #: (____) _____ - _____

Company Name: _____
Address: _____
Street: _____
City: _____
State: _____ Zip Code: _____

SPILL INFORMATION

Initial Time of Spill: Date: _____ / _____ / _____ Time: _____ CT
Month Day Year (24 hour clock)

Location of Spill: LAT: _____ N LON: _____ W
Block Name: _____ Block Number: _____

Type of Release: [Instantaneous () or Continuous Flow ()]

Oil: Name: _____
API: _____ Pour Point: _____ (°C or °F)

Amount Spilled: _____ [GAL or BBLs (42 GAL/BBL)]
Circle One

Flow Rate if Continuous Flow (Estimate): _____
Circle One

Additional volume at risk of being spilled: _____

Source of Spill: (e.g. pipeline, platform, vessel) _____

ON-SCENE WEATHER (Note: If not available contact SSC for Weather)

Wind Direction From (Degrees): _____ Wind Speed: _____ Knots

Surface Current (Direction toward, Degrees): _____
(Speed): _____ Knots

Visibility: _____ Nautical Miles

Ceiling: _____ Feet

Sea State (Wave height): _____ Feet

DISPERSANT SPRAY OPERATION

Dispersion Spray Contractor

Name: _____
Address: _____
Street: _____
City: _____
State: _____ Zip Code: _____
Telephone: (____) _____ - _____

Dispersion: Name: _____
Quantity Available: _____

Platform: Aircraft Type: _____
Multi-Engine () or Single-Engine ()

Boat Type: _____
Other: _____
Dispersion Load Capability (Gal): _____

Time to First Drop on the oil (Hours): _____
Initially proposed staging area: _____


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FIGURE 18.3 – NEARSHORE EAP Initial Call & Minimum Criteria Checklist
(continued)

NSE EAP Minimum Criteria Checklist

	Y	N	N/A	NSE EAP Minimum Criteria
1.				Dispersability: Available technical information or experience suggests that the spilled product is dispersible and will still be dispersible in the time frame of anticipated application of dispersants
2.				NCP Listed Dispersant: The dispersant to be used is listed on the current NCP Product Schedule and is considered appropriate for the existing environmental and physical conditions.
3.				Inadequacy of other options: Mechanical response equipment alone is not deemed adequate (either availability or timeliness) to protect potential resources at risk.
4a. 4b.				Dispersant Availability and timeliness: Enough dispersant and application equipment has been confirmed to be available a) to make a significant impact on the spilled product, and b) to be deployable within the proposed time frame.
5.				Weather Conditions: Weather and sea conditions are conducive to dispersant application by the chosen system or platform. (Generally, for aerial application : wind ≤ 25kts, visibility ≥ 3nm, and ceiling ≥ 1000'. Generally for boat application , a sea state that will allow the vessel to be used to conduct an effective and safe spray operation.)
6.				PPE: Personal protective equipment for personnel on-site will conform to the appropriate dispersant's MSDS and safe industry practice.
7a. 7b. 7c.				General Adequacy of Dispersant Spray System and Personnel Competency: In addition to any other requirements of the RRT6 NSE EAP, the general criteria for evaluating the suitability for use of any dispersant system should be the ability of the party or parties that are requesting approval to demonstrate to the satisfaction of the FOSC, the following: a) That the application system has been i. Specifically designed for its intended purpose, or ii. If not specifically designed for dispersant use, has been used previously and was deemed to be effective and appropriate, and will be used again in a similar manner, or iii. By some other specific means documentation or experience reasonably deemed to be effective and appropriate under the circumstances. b) That the design and operation of the application system can reasonably be expected to apply the chemical dispersant in a manner consistent with the dispersant manufacturers' recommendation, especially with regard to dosage rates, and concentrations. c) That the operation will be supervised or coordinated by personnel that have experience, knowledge, specific training, and/or recognized competence with chemical dispersants and the type of system to be used.
8a. 8b.				Aerial Application Operational and Technical Issues: In the case of Aerial Application of dispersants: a) The FOSC must ensure that the RP's dispersant operation provides for a dispersant controller who is over the spray zone(s) in separate aircraft from the dispersant aircraft. The controller must be qualified and be able to direct the dispersant aircraft in carrying out the near shore dispersant operation inclusive of avoiding the spraying of birds), marine mammals and turtles that may be in the area. b) Aircraft spray systems must be capable of producing dispersant droplet sizes that provide for optimal dispersant effectiveness (generally 250-500 µm, but follow manufacturer and ASTM guidance).



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FIGURE 18.3 – NEARSHORE EAP Initial Call & Minimum Criteria Checklist
(continued)


NSE EAP Minimum Criteria Checklist

	Y	N	N/A	NSE EAP Minimum Criteria, continued
9.				<p>Boat Application Operational Technical Issues: If the system involves spray arms or booms that extend out over the edge of a boat and have fan type nozzles that spray a fixed pattern of dispersant, the dispersant operator has confirmed that application will comply with the following ASTM standards as appropriate:</p> <ul style="list-style-type: none"> a) ASTM F 1413-92 "Standard Guide for Oil Spill Dispersant Application Equipment: Boom and Nozzle Systems b) ASTM F 1460-93 Standard Practice for Calibrating Oil Spill Dispersant Application Equipment Boom and Nozzle Systems c) ASTM F 1737-96 Standard Guide for Use of Oil Spill Dispersant Application Equipment during Spill Response: Boom and Nozzle Systems.
10.				<p>Fire Monitor Operational and Technical Issues: If the system involves the use of a fire monitor and or fire nozzle to apply the dispersants from a boat, the dispersant operator has confirmed that application will comply with the following:</p> <ul style="list-style-type: none"> a) A straight and narrow "firestream" flow of dispersant directly into the oil is to be avoided. At such a time as applicable ASTM standards are finalized, they should be complied with appropriately relative to the process and potential dispersant application described herein. b) The specific fire monitor system(s) intended for use must have been specifically designed for dispersant application and/or must have been specifically calibrated via field trial for dispersant use.
11.				<p>SMART Deployment: The FOSC must activate the Special Monitoring of Applied Response Technologies (SMART) Program monitoring team. Every attempt should be made to implement the on-water monitoring component of the SMART monitoring protocols in every dispersant application. At a minimum, Tier 1 (visual) monitoring must occur during any dispersant operations approved. Tier 2 or Tier 3 sampling may be required for reapplications.</p>
12.				<p>SMART Controller/Observer: The SMART controller/observer must be flying over the response zone to visually assess effectiveness of the dispersant applications, and to look out for marine animals.</p>
13.				<p>DOI / DOC Representative: When possible DOI/DOC will provide a specialist in aerial surveying of marine mammals/turtles and pelagic/migratory birds who will accompany the SMART controller/observer.</p>
15.				<p>ESA and EFH Consultations: RRT representatives of DOI and DOC were notified and, if listed species and/or critical habitat are present in the area, or could be present, emergency consultation has been initiated. FWS and NMFS representatives have provided recommendations to avoid and/or minimize impacts to listed species and/or critical habitat, advised the FOSC whether incidental take related to response actions is anticipated, and, if so, advised the FOSC to document incidental take for use in formal consultation post-response. Both the FOSC and FWS/NMFS representatives maintain records of oral and written communications</p>

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***FIGURE 18.4 -
DISPERSANT SPRAYING PROCEDURES***

<p>A DECISION / APPROVAL</p> <ol style="list-style-type: none"> 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 <p>B LOGISTICS</p> <ol style="list-style-type: none"> 1 Procure: (see list of Equipment, Materials, Services) <ul style="list-style-type: none"> • 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 <p>C APPLICATION</p> <ol style="list-style-type: none"> 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?)

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**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.

A. LOADING SAFETY

Dispersants are not particularly hazardous to humans, but are chemicals that 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 (continued)**

- 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.

B. 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.

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***FIGURE 18.6 -
DISPERSANTS SAFETY PLAN (continued)***

- An investigation as to why the vessel was sprayed will ensue.
- 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

A. *In-Situ Burning Equipment*


EQUIPMENT	QUANTITY	LOCATION PHONE NO.	OWNER / (AVAILABILITY)
24" Boom	1000'	Corpus Christi, TX	TGLO
30" Boom	500'	New Orleans, LA	Crucial
	500'	Miami, FL	MSRC
	1,650'	Ft. Lauderdale, FL	CCC
43" Fireproof Boom	500'	Pascagoula, MS	MSRC (Available for purchase)
	500'	Galveston, TX	MSRC (Available for purchase)
	900'	Harvey, LA	Oil Stop (Available for purchase)

In-Situ Burn Equipment Overview Map is included as **FIGURE 19.1**.

B. *Procedures*

As is the case when any non-traditional cleanup method is considered, extensive evaluation and planning is required before any implementing action takes place. This determination can be made by:

- 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 burning operations, and estimating long term costs (determine if in-situ burning is feasible),

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- 4) Reviewing general guidelines for in-situ burning to gain additional information and possible factors to be considered, and
- 5) Weighing the advantages and disadvantages of in-situ burning against the advantages and disadvantages of other remediation/response methods.


Before any deliberate ignition, the wind and/or direction of tow will be considered to ensure that no one is within or near any potentially large 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.

Globules of burning gelled fuel from a Heli-torch can be released from heights of several hundred feet if necessary, hand-held igniters can be released from vessels many hundreds of feet upstream/upwind of the target oil, and flare guns can be used as well from hundreds of feet away if the oil to be ignited is fairly fresh. In most situations, the problem with containment and burning of oil spilled at sea is not normally unwanted ignition; it is usually the difficulty of achieving wanted ignition. Within minutes to a few hours, most crude oils in a choppy sea will be sufficiently weathered that substantial heat will be needed to produce enough vapors for sustained combustion.

C. Environmental Effects

When determining the net environmental effect of a cleanup method, the marine and shoreline habitats are always considered. For in-situ burning, the effect the remediation process has on the air also becomes a major concern. Considering the effects of in-situ burning on all three habitats (marine, shore, and air) will determine the net effect.

There is little published evidence of health or environmental effects from burning in either actual spills or in laboratory tests. However, a number of studies have examined the composition and environmental fate of burn emissions. These studies showed that at least some burn emissions (e.g., particulate carbon, sulfur dioxide) may pose a threat to wildlife or human health in the area immediately downwind of a burn, but exposure conditions would fade below threshold levels at most within a few kilometers downwind of the burn.

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Burn residues may pose some threat to aquatic resources and human use of water resources, but the volume of residue left after a burn would be much reduced over the parent spill and the toxicity of the residue appears to be similar to that of the normally weathered, unburned oil.

Case studies of burns in major spills have revealed no significant impacts to human or ecological resources. Spills in which tankers have caught fire have resulted in little if any impact of the smoke plume or burn residue on the environment and even the most significant burn event ever experienced, the Kuwait oil fires of 1991, does not appear to have caused lasting environmental or human health impacts.

The primary products of in-situ burning of oil are carbon dioxide and water vapor. About 90% to 95% of the carbon product is released to the atmosphere as carbon dioxide, while particulates commonly account for only about 5% to 10% of the original volume burned. In addition, about half of the particulates are soot, which is responsible for the black appearance of the smoke plume. Minor amounts of gaseous pollutants are emitted, such as carbon monoxide, sulfur dioxide, and nitrogen oxides. In addition, some polynuclear aromatic hydrocarbons (PAHs) are emitted, but the amount released is less than the amount in the original oil.

Field experiments have shown that most air pollutants of concern produced by an in-situ burn are concentrated around the area of the fire. Only one pollutant, the fine particles in the smoke, is of concern beyond the immediate area of the fire. These particulates can cause respiratory distress in the elderly or those with impaired lung function if they are inhaled at high levels. Although these small particles from an in-situ burn will typically remain suspended and dilute high above the human breathing zone, monitoring plans have been established so responders can monitor particulate levels to ensure the protection of public health.

Burn residue that remains on the water could affect ecological resources at the water surface or on the seabed should the residue sink. The heavier, more viscous residue that remains after a burn represents only a small volume of the original oil and therefore poses much less of a hazard than the original oil. Burn residue that sinks can reach resources that are not threatened by floating oil. Moller (1992) reported that much of the residue remaining after the accidental burn aboard the Haven settled to the seafloor. This precipitated residue could impact organisms that inhabit or feed off of the bottom. Moller provided an

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example of such an impact in the case of the Honam Jade burn off South Korea in which sinking burn residue affected crab cultivation pens.

D. Safety Provisions


1) Training

Each individual involved with the controlled burning of oil at sea will complete classroom and hands-on training. That training will be appropriate for the type and level of responsibility assigned to the individual.

2) Boom Handling


a) The key to a successful and safe deployment of fire containment boom (as with nearly any piece of equipment) is the planning and practicing of those 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:

- The 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 it can be dangerous attempting to untwist the boom by hand once the boom is in the water.
- If the boom must be held in place (i.e., partially deployed) in order to add sections of boom or make adjustments, anticipation of the drag forces from vessel-induced or natural currents. One

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should avoid standing on or holding the boom during such adjustments - use proper tie-downs and anchor points to eliminate tension in the portion of boom being worked on. Select of tie-downs, tow lines, tow posts, etc. with due consideration of the average and peak drag forces that may be experienced during deployment and use of any fire containment boom.


- The 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. From a safety standpoint, however, the following factors will be emphasized for 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 in the same general area, other vessels in the 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 deliberate or accidental 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.

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- Prior to ignition, all personnel on site will be positioned upwind or crosswind from the target slick so that they are well outside the anticipated path of the smoke plume. Personnel on vessels near the burn site will be prepared to move indoors and/or don 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 very 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, slicks, etc., 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 therefore the 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.

The key to a successful and safe in-situ burn program is good communications. 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 noncontrol

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participants (e.g., aerial spotters, monitoring and sampling personnel, etc.).

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 oil that had 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 would, of course, be necessary. Up until the time of deliberate ignition, the concern for unwanted ignition would be no different than that for conventional oil containment efforts.

Because of the difficulty of igniting weather floating oil layers, the concerns for unwanted ignition and secondary fires are normally minimal. If, on the other hand, a deliberate burn were planned nearshore, along a shoreline or river bank, in a marsh, or onshore, the potential for secondary fires would have to 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, etc.). 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 due to wind shifts, vessel power failures, oil and emission sampling procedures, etc., personnel will be trained in how to avoid such exposures and what to do or wear should exposure be unavoidable.


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With respect to heat exposure, safe operating distances for the separation of operating personnel and 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 aforementioned “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 predesignated restriction zones. In addition, routine status reports to airplanes, boats, radio and television stations, etc. will help reduce the kinds of over-reaction and misinterpretation that often occur during such highly visible and controversial activity.

E. Conditions for Use

- 1) It is sometimes desirable to deliberately ignite a floating gas or oil spill in order to prevent the spread of the slick and reduce the risk of more widespread damage or accidental ignition. For gasoline spills, a burning aid may not be necessary but for heavier oils the cooling effect of the water reduces the oil’s ability to continue burning.
- 2) Burning agents are generally wicks or sorbents which insulate the oil from the water and allow the oil to burn continuously. Two types of burning aids are burn-off torches and highly flammable oil soluble liquids. A torch producing a high-temperature flame can be used to clean shorelines and tidal pools. They are effective but slow, about 150 square feet per hour.
- 3) 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 because the cooling effect of the water extinguishes the flame over a short period of time.
- 4) The use of burning agents transfers the pollution from the water to the air. Slick burning tends to transfer large amounts of pollution from the water to the air, and generates large amounts of smoke.

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F. Decision Processes

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.

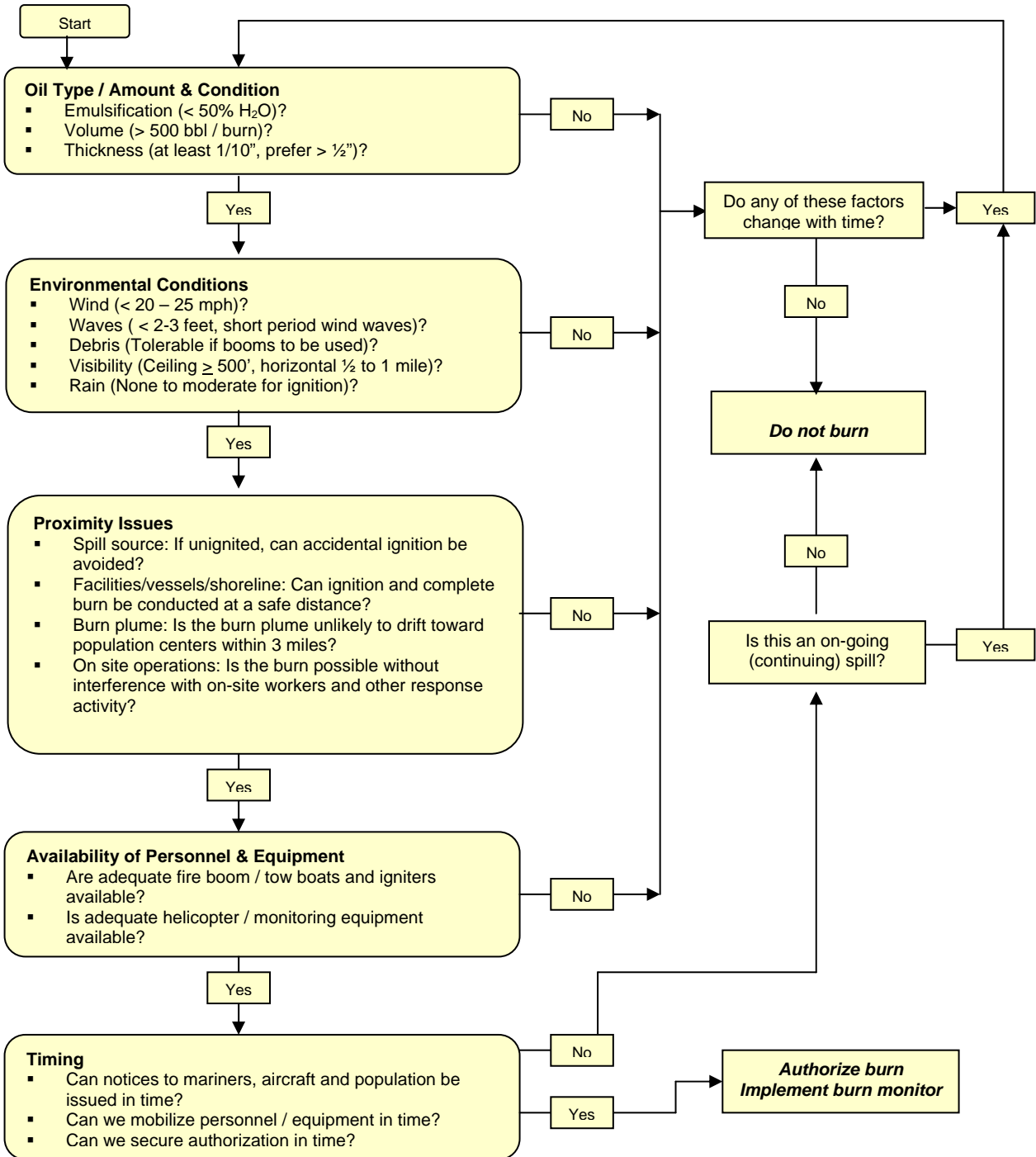
A minimum oil thickness of 2-3 mm is required. Once the oil thickness approaches the 1-2 mm range, too much heat is lost to the water to facilitate combustion. Oil in the open sea rapidly achieves its maximum pool radius or equilibrium thickness. Light crude oils will spread to approximately 0.01 to .1 mm and heavy oils 0.05 to 0.5 mm in a matter of a couple of hours. In order to achieve the necessary thickness, oil has to be burned almost immediately after a spill or have the thickness increased utilizing fire retardant booms.

G. Approval Procedures and Forms

Use of Burning Agents requires Regional Response Team (RRT) and approval. An In-Situ Burning Authorization Form must be completed and submitted to and approved by the Regional Response Team before any controlled burning can take place. Refer to the accompanying document titled, "Oil Spill Response Checklist: In-Situ Burning" for a checklist of information required by the RRT and FOSC.

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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

Yes	No	<i>In-Situ</i> Burn Pre-Ignition Checklist
<input type="checkbox"/>	<input type="checkbox"/>	Is Fire Ecologist/Practitioner onboard?
<input type="checkbox"/>	<input type="checkbox"/>	Have all burn personnel completed required training?
<input type="checkbox"/>	<input type="checkbox"/>	Are communication systems adequate and working properly:
<input type="checkbox"/>	<input type="checkbox"/>	Between vessels?
<input type="checkbox"/>	<input type="checkbox"/>	Between vessels & aircraft?
<input type="checkbox"/>	<input type="checkbox"/>	Are all involved personnel upwind or crosswind of target?
<input type="checkbox"/>	<input type="checkbox"/>	Is there safe distance between fire boom and personnel on board towing boat(s)?
<input type="checkbox"/>	<input type="checkbox"/>	Are towing lines sufficient to safely separate from boat crews from burn?
<input type="checkbox"/>	<input type="checkbox"/>	Are ignition systems released from a safe distance?
		Ignition system type:
<input type="checkbox"/>	<input type="checkbox"/>	Floating flare type igniter – Boat
<input type="checkbox"/>	<input type="checkbox"/>	Helitorch – Aircraft
<input type="checkbox"/>	<input type="checkbox"/>	Flare guns
<input type="checkbox"/>	<input type="checkbox"/>	Are burning agents required?
<input type="checkbox"/>	<input type="checkbox"/>	Have all approvals been received from the federal, state and local entities?
<input type="checkbox"/>	<input type="checkbox"/>	Has “Notice to Mariners” been issued by the FAA?
<input type="checkbox"/>	<input type="checkbox"/>	Are all personnel briefed and familiar with the plan?
<input type="checkbox"/>	<input type="checkbox"/>	Are all vessels and aircraft aware of burn trajectory and ignition time?
<input type="checkbox"/>	<input type="checkbox"/>	Are monitoring personnel on scene or enroute?
<input type="checkbox"/>	<input type="checkbox"/>	Is the weather (sea state) acceptable?
<input type="checkbox"/>	<input type="checkbox"/>	Is the fire control vessel in place?
<input type="checkbox"/>	<input type="checkbox"/>	Are support vessels available?
<input type="checkbox"/>	<input type="checkbox"/>	Has the decision to ignite been coordinated through the FOSC?

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This checklist is provided as a summary of important information to be considered by the Unified Command in reviewing any request to conduct *in-situ* burning in response to an oil spill in the waters of the Gulf of Mexico. This Burning Plan is divided into several sections of information about the spill, weather, oil behavior and proposed Burning Plan. It is intended that this Burning Plan be filled in to help the Unified Command determine the feasibility of *in-situ* burning for the immediate situation. This Burning Plan, in conjunction with the Monitoring Plan, will serve as the Post Burn Operations Report.

SPILL DATA (Responsible Party to complete and submit to Unified Command)	DATE & TIME OF PLAN
--	--------------------------------

DATE AND TIME OF THE INCIDENT:

LOCATION OF THE INCIDENT:

LATITUDE: _____ LONGITUDE: _____

DISTANCE IN MILES AND DIRECTION TO NEAREST LAND:

DISTANCE IN MILES AND DIRECTION TO THE NEAREST POPULATION CENTER(S):

TYPE AND QUANTITY/VOLUME:

RELEASE STATUS: Continuous, at estimated rate of: _____
 Intermittent, at estimated rate of: _____
 One time only, flow now stopped. Est quantity – bbls: _____

EMULSIFICATION STATUS: Is product easily emulsified? Yes No Uncertain
Is product emulsified upon release? Yes No Uncertain
IF EMULSIFIED: Lightly (0-20%) Moderate (21-50%)
 Heavily (>50%) Unknown

SURFACE AREA OF SPILL (SQUARE MILES) AS OF DATE/TIME:


IS SOURCE BURNING NOW? Yes No

NATURE OF INCIDENT:
 Grounding Transfer Operation Collision Pipeline Explosion
 Other (Describe): _____


VESSEL/FACILITY/PIPELINE INVOLVED:

RESPONSIBLE PARTY:

FEASIBILITY FACTORS:
 Yes No Is the oil being considered for *In-Situ* burning emulsified by less than 60%?
 Yes No Is the oil thickness >1/10 inch?

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<i>IN-SITU BURNING PLAN</i>	
A.	Location of proposed burn relative to the spill source:
B.	Location of proposed burn relative to nearest uncontrolled ignitable slick(s):
C.	Location of proposed burn relative to nearest sizeable downwind human population:
D.	Location of proposed burn relative to nearest downwind concentrated wildlife population:
E.	Potential for reducing visibility at nearby airport(s) or freeway(s):
F.	Will radio notification of human populations be required? <input type="checkbox"/> Yes <input type="checkbox"/> No
1. Proposed ignition method:	
<div style="display: flex; justify-content: space-between;"> <div>Will burn promoters be used? <input type="checkbox"/> Yes <input type="checkbox"/> No</div> <div>Will de-emulsifiers be used? <input type="checkbox"/> Yes <input type="checkbox"/> No</div> </div>	
2. Methods proposed for controlling the burn:	
<div style="display: flex; justify-content: space-between;"> <div>Will fire boom be used? <input type="checkbox"/> Yes <input type="checkbox"/> No</div> </div>	

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IN-SITU BURNING PLAN

1. PROPOSED BURNING STRATEGY

- Controlled burning in fire boom under tow.
- Controlled burning of static oil contained within fire boom.
- Complete burning of a derelict or hazardous vessel.
- Controlled burning of static oil contained in a natural collection site at or near shore.
- Disposal of oiled debris by controlled burning in remote areas.

Other: _____

G. Estimated amount of oil to be burned:


H. Estimated duration of Burn Operations (hours):

I. Method of collecting burned residue:

J. Proposed storage and disposal of burned oil residue:

FEASIBILITY FACTORS

- | | | |
|------------------------------|-----------------------------|--|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Can ignition and a complete burn occur at a safe distance from other response operations and public, recreational and commercial activities? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Is the smoke plume unlikely to impact areas of concentrated human or wildlife populations? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Are adequate fire boom, tow boats and igniter resources available? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Are adequate notice to be given to mariners, aircraft pilots and the general public? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | Can necessary personnel and equipment be mobilized during the in-situ burning window of opportunity? |

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<i>IN-SITU BURNING PLAN</i>
Plan Number: _____
Date: _____
Operational Period: _____
To: _____
FEDERAL OSC
<input type="checkbox"/> APPROVED <input type="checkbox"/> NOT APPROVED
_____ Signature
Typed Name & Title:

COMMENTS:


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FIGURE 19.3 - 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.
- 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


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FIGURE 19.3 - OPERATIONAL CHECKLIST: IN-SITU BURNING

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.
- 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.

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 heli-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).


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FIGURE 19.3 - 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.

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SECTION 20 - ALTERNATIVE CHEMICAL & BIOLOGICAL RESPONSE STRATEGIES

Bioremediation is a technique that involves accelerating natural degradation rates through the application of nutrients to enhance the biodegradation of oil by indigenous micro-organisms, or through the inoculation of oiled shorelines with hydrocarbon degrading micro-organisms.

Shell Offshore, Inc. does not anticipate using Bioremediation as a response option.

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SECTION 21 - DOCUMENTATION

In order to document the operational and support aspects of oil spill response actions, each member of the Spill Response Team will keep a Conversation/ Action Record (**FIGURE 21.4**) 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 Response 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.

A. *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 that are not accurate cannot be relied upon.
- ✓ **Complete** - Records that 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.

B. *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.

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C. 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

D. 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).

E. Interpretation

The Legal Officer will be consulted for any questions concerning guidelines.

Figure 21.1 - 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.


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F. 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).

Figure 21.2 - SUGGESTED COMPOSITE FILES

- | | |
|--|--|
| <p>1) <u>Daily Files</u>
 Pollution/Situation Reports
 Weather, Tides
 Overflight Results
 Daily Incident Action Plans
 Public Affairs
 Safety</p> <p>2) Message Files</p> | <p>3) Correspondence Files</p> <p>4) Division/Task Force Files
 Zone Descriptions
 Shoreline Surveys
 Oiling Maps
 Daily Shoreline Cleanup Reports
 Final Sign off Report
 Photographs & Miscellaneous</p> |
|--|--|

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G. 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.).

Figure 21.3 – SUGGESTED SUBJECT FILES

(Add others as deemed necessary)







- | | |
|--|---|
| <ul style="list-style-type: none"> 1) <u>Contract Administration Files</u>
<u>(one file per contract)</u>
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 | <ul style="list-style-type: none"> 8) Daily Incident Action Plans 9) <u>Health and Safety</u>
Site Safety Plans
OSHA Correspondence/ Issues
Accident/ Injury Reports 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 |
|--|---|







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**FIGURE 21.4 -
CONVERSATION / ACTION RECORD**


Date: _____
 Position: _____
 Name: _____

Page _____ of _____

No.	Time:	Phone: 		Incoming: 	Person/Telephone #:	Title:	Representing:
		Fax: 		Outgoing: 			
		Other: 					

No.	Time:	Phone: 		Incoming: 	Person/Telephone #:	Title:	Representing:
		Fax: 		Outgoing: 			
		Other: 					

No.	Time:	Phone: 		Incoming: 	Person/Telephone #:	Title:	Representing:
		Fax: 		Outgoing: 			
		Other: 					

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SECTION 22 - PREVENTION MEASURES FOR FACILITIES LOCATED IN STATE WATERS

For facilities covered in this Plan that are located in State Waters (Mobile Bay 113 & associated jackets):

- a. This facility is primarily gas production (and has been unmanned until recently), but to prevent spill or mitigate substantial threats of discharges, a Spill Prevention and Control Plan is in place. Procedures (for prevention) include daily inspections and annual training of personnel.
- b. Under the NPDES permit for the location (issued by the State of Alabama) this facility meets zero discharge requirements. This includes no permitted discharge of produced water or sanitary wastes. Also, this permit requires the Spill Prevention & Control Plan (mentioned above).
- c. This location meets the CERCLA Hazardous Substance and SARA Extremely Hazardous Substance Release Guidelines.



Appendix A: Facility Information

Maps

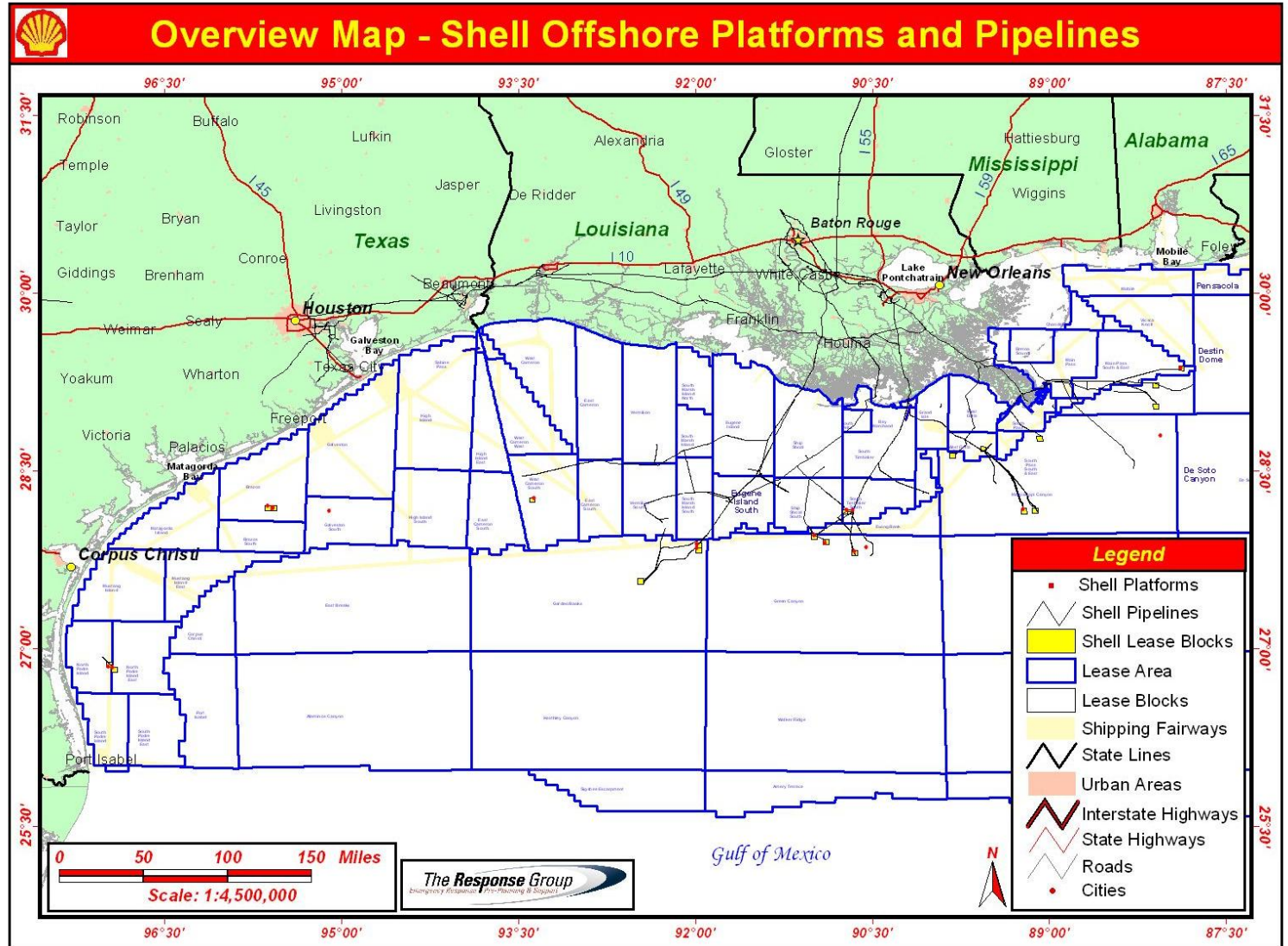
Shell Offshore Platforms and Pipelines:

- Overview Map
- Western Gulf Map 1
- Western Gulf Map 2
- Central Gulf Map
- Eastern Gulf Map

Tables

1. Production Platforms and Satellite Structures in OCS Waters
2. Row Pipelines in OCS Waters
3. Production Platforms and Satellite Structures in State Waters Seaward of the Coastline
4. Row Pipelines in State Waters Seaward of the Coastline

Table Legends





Appendix A: Facility Information

Maps

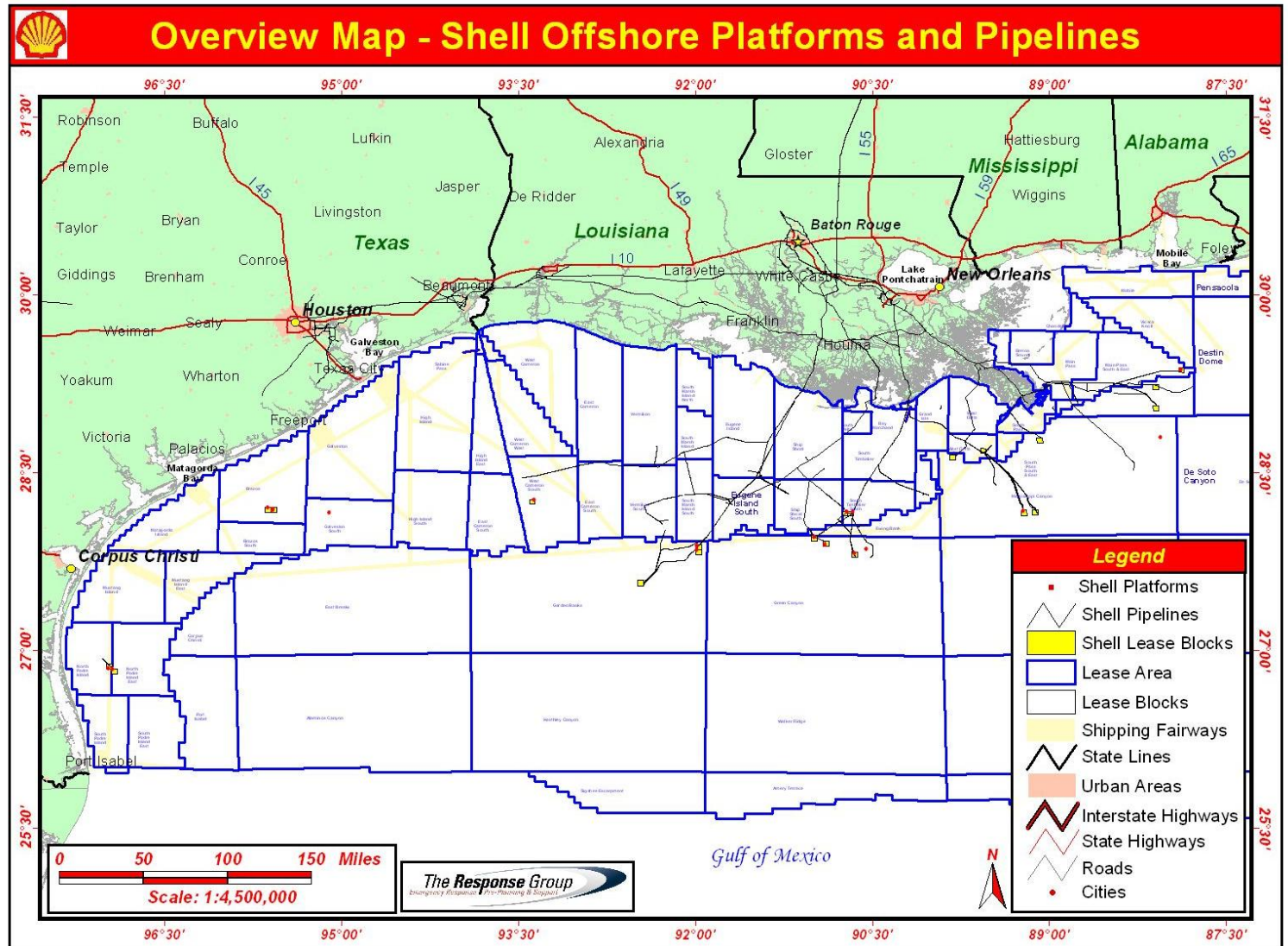
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Table Legends





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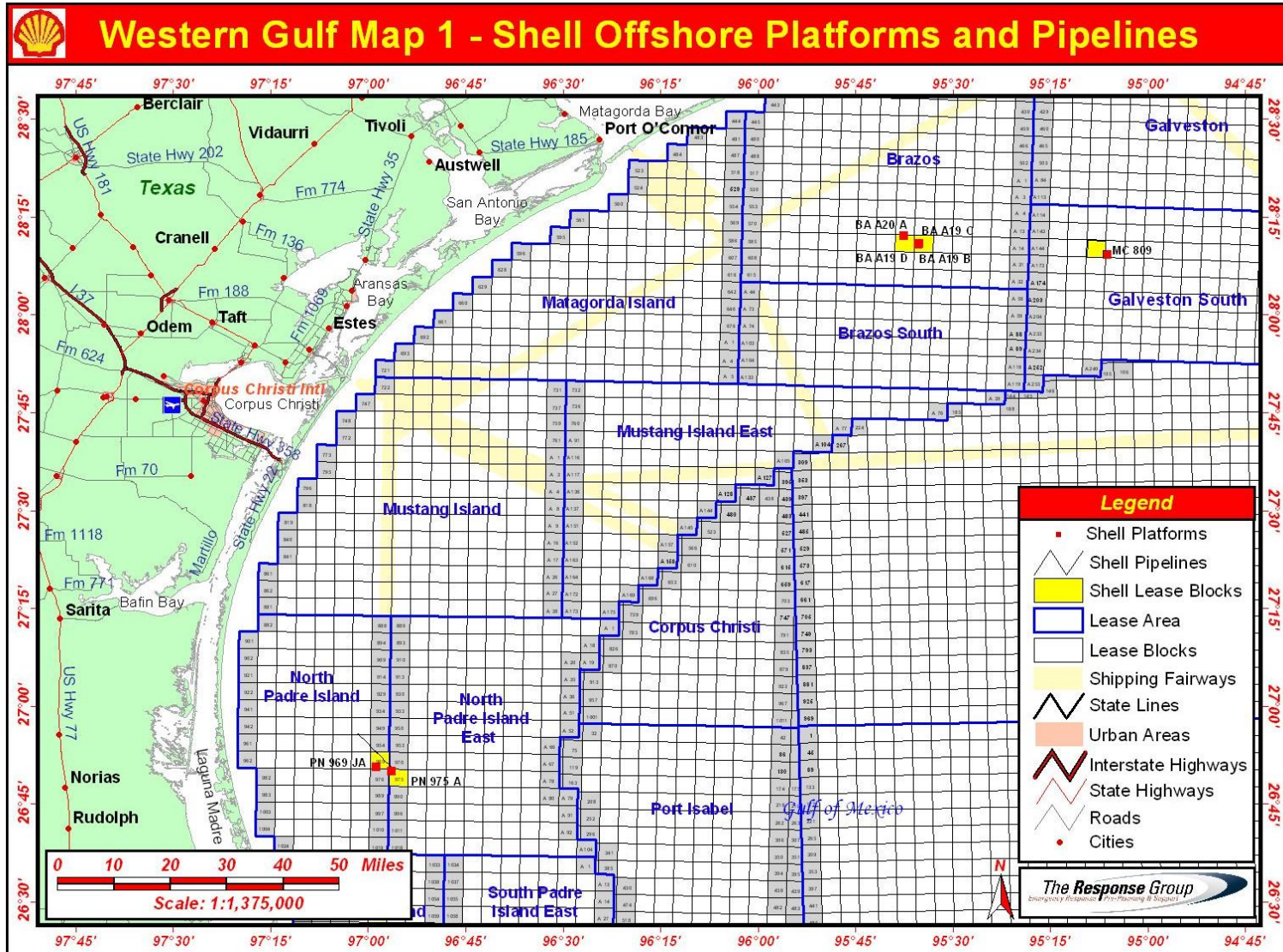
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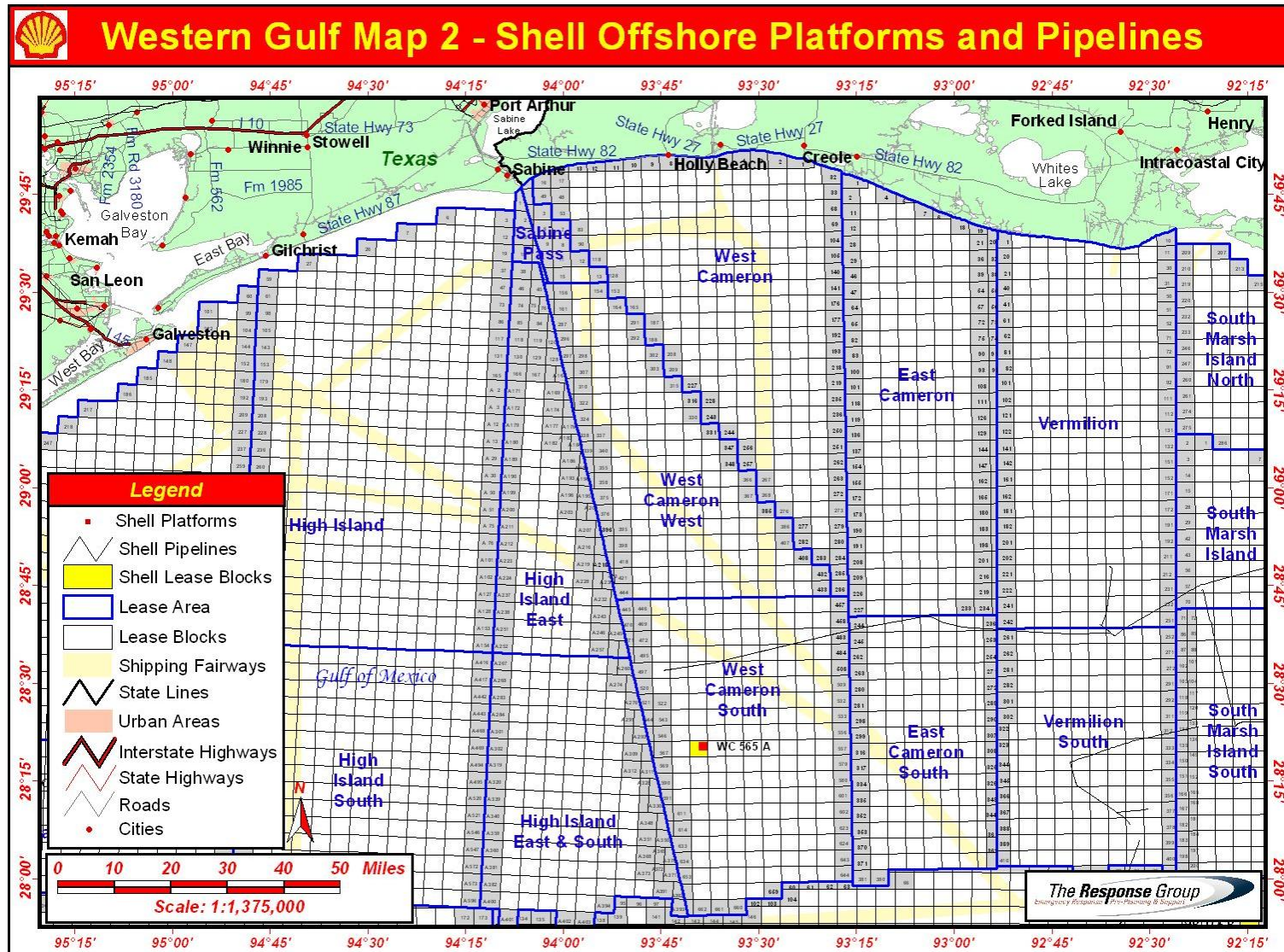
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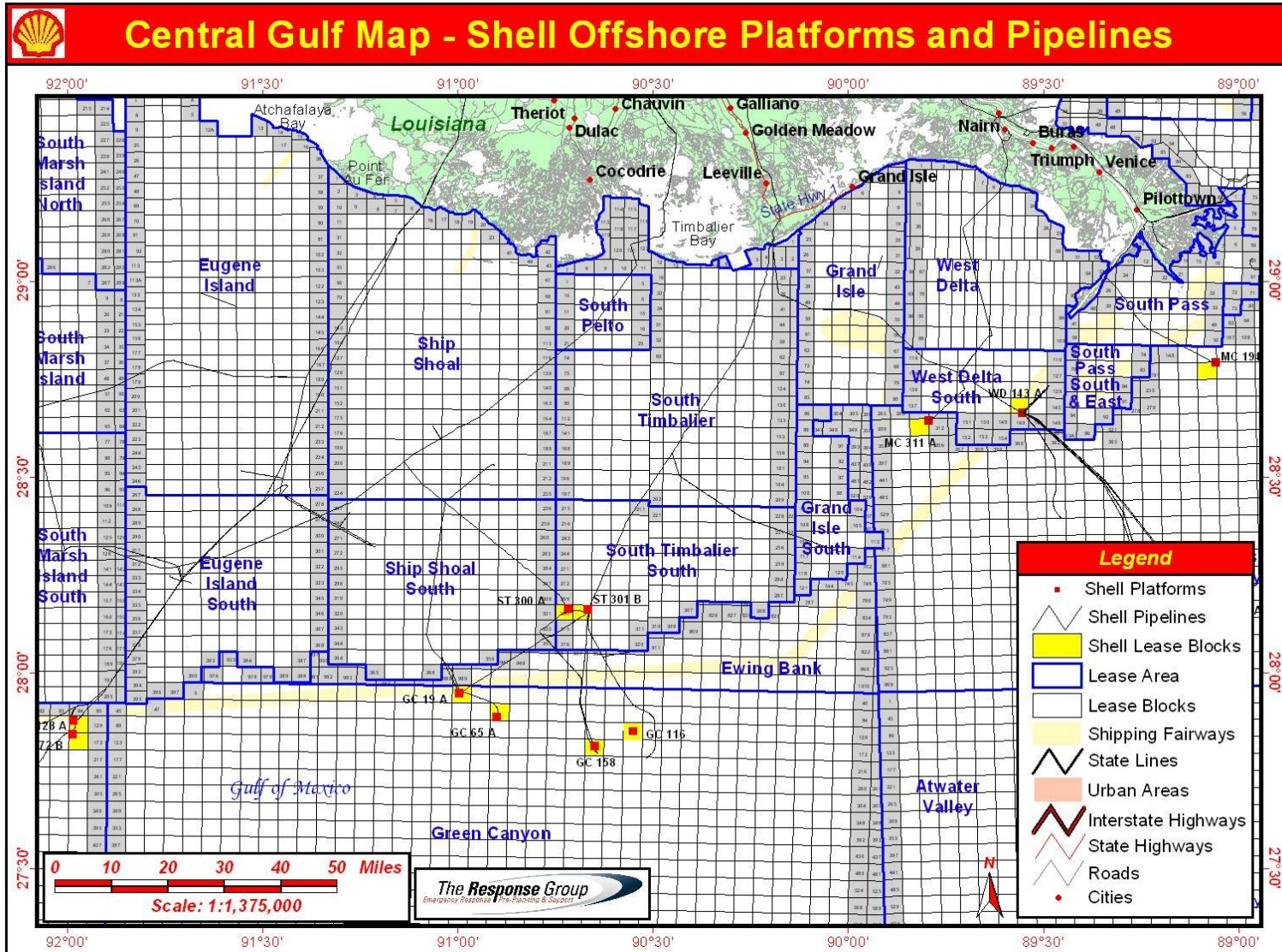
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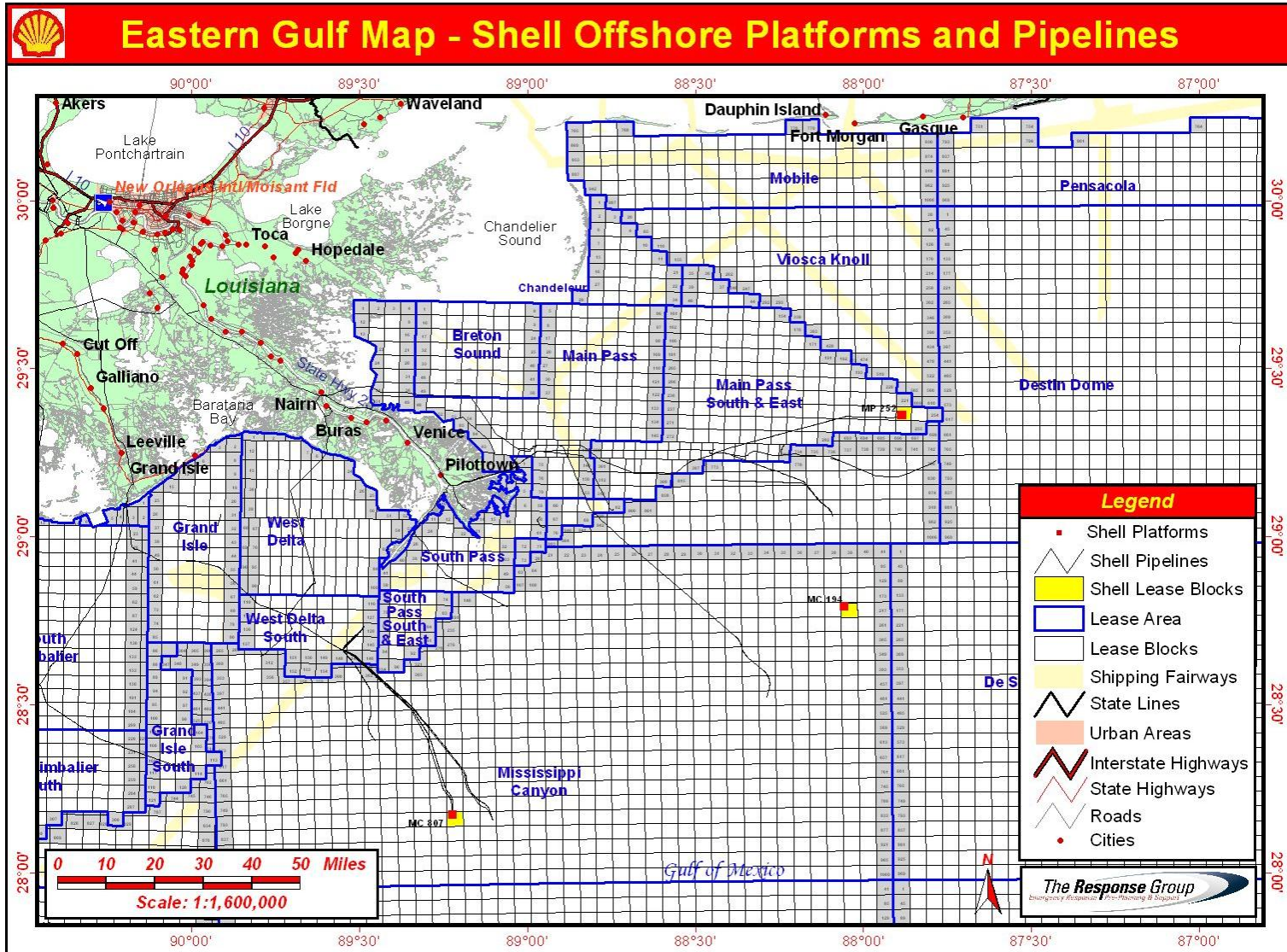
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TABLE 1 - PRODUCTION PLATFORMS AND SATELLITE STRUCTURES IN OCS WATERS

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)
SHELL OFFSHORE INC.													
AC	857	G17565	A	2008	7,800	████████	████████	141	16	E	20,000	16,500	100,000
BA	A019	G3936	B	10146	132	████████	████████	36	N/A	A	N/A		
BA	A019	G3936	C	10146	132	████████	████████	36	N/A	A	N/A		
BA	A019	G3936	D	10146	132	████████	████████	36	46.5	A	2		
BA	A020	G3472	A	10157	125	████████	████████	35	N/A	A	N/A		
GC	116		A			████████	████████		N/A				
GB	128	G11455	A	27056	629	████████	████████	119	42	B	1,000		
GB	172	G14221	B	90014	693	████████	████████	180	42	B	1,093		
GB	426	G8241	A	24080	2,860	████████	████████	168	38.8	E	19,000	1500	84,000
GC	19	G4131	A	23277	150	████████	████████	90	28.5	B	439		
GC	65	G5889	A	23552	1,353	████████	████████	90	35.7	C	2,872		13,000
GC	158	N/A	A	420	1500	████████	████████	85	N/A	E	25,000	5,675	150,000
MC	194	G2638	A	22178	1,025	████████	████████	15	35.3	B	0		
MC	807	G7963	A	24199	2,940	████████	████████	67	27.6	E	18,913	1675	137,350
MC	809	G5868	A	70004	3,798	████████	████████	67	28	E	30,000	1,800	145,000
MO	113												
MP	252	G7824	A	23839	276	████████	████████	57	48.4	A	0		



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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)
MP	252	G7824	B	23839	280	██████████	██████████	57	48	A	0		
ST	300	G4240	A	22606	337	██████████	██████████	60	42.3	C	409		
ST	301	G3594	B	22629	333	██████████	██████████	60	36	C	290		
WC	565	G2015	A	21714	190	██████████	██████████	103	48	A	0		
WD	143	G14711	A	23846	250	██████████	██████████"	18	0	C	0		
VK	956	G6896	A	24229	3,500	██████████	██████████	55	38.6	E	20,311	1,500	33,095



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1	2		3	4		5	6	7	8	9	10	11	12	13	14
From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbbls)	Distance to Shore (mi)	Appurt. Plat-form? (Y/N)
Shell Pipeline Company LP															
EI 331 CAPPED END	██████████	██████████"	EI 259 C	██████████	██████████	N	2899	G1457B	23.49	12	41.9	Y			
SS 274 A	██████████	██████████	EI 259 A	██████████	██████████	N	3729	G 1457A	17.99	6	38.9	Y	2,000	ABN & REL	
SS 246 A	██████████	██████████	SS 248 6" SST	██████████	██████████	N	3106	G 1457C	3.21	6	40.4	Y	2,000	ABN & REL	
EI 259 A	██████████	██████████	EI 188 A	██████████	██████████	N	2969	G 1457	19.51	12	36.3	Y	2,000		
EI 176 A	██████████	██████████	EI 176 FLG	██████████	██████████0"	N	2896	G 1457	0.05	12	36.2	Y	5,000	ABN & REL	
EI 176 "A"	██████████	██████████	EI 176 FLG	██████████	██████████	N	3149	G 1681	0.03	12	39.8	Y	3,000	ABN & REL	
SM 130 A	██████████	██████████"	SM 58 A	██████████	██████████	N	3034	G 1681C	25.61	12	30.9	Y	8,000		
VR 255 CAPPED END	██████████	██████████"	VR 255 CAPPED END	██████████	██████████	N	3105	G 1681B	0.21	8	37.2	Y	15,000	ABN & REL	
VR 247 A	██████████	██████████"	VR 247 CAPPED END	██████████	██████████	N	4274	G 1681B	0.33	8	37.2	Y	1,000	ABN & REL	
SP 62 CAPPED END	██████████	██████████	SP 62 "A" P;AT	██████████	██████████	Y	3459	G 1686	0.35	12	33.1	Y	80,000	ABN & REL	
MP 289 B	██████████	██████████"	MP 290	██████████	██████████	Y	2841	G 1701	1.04	12	36.0	Y	80,000	ABN	



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From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbbls)	Distance to Shore (mi)	Appurt. Plat-form? (Y/N)
			CAPPED END											& REL	
VR 340 A			SM 132 B			N	4650	G 3431	21.44	6	37.3	Y	15,000		
SM 132 B			SM 130 A			N	4648	G 3434	5.28	8	31.6	Y	1,000		
SP 70 C			SP 60 A			Y	4715	G 3435	3.34	8	36.4	Y	30,000	ABN & REL	
MP 310 A			MP 297 12" SSTI			N	7143	G 7100	4.76	6	29.5	Y	4,000		
EI 331 B SOLD TO MERIT ENERGY 02-24-09			EI 331 A			N	9445	G 13407	2.25	6	41.9	Y			
Shell Pipeline Company LP															
SS 274 A			EI 259 A			N	10406	G 14731	17.48	8	31.6	Y	2,200		
SM 130 A			EI 331 END CONNECT		70"	N	10407	G 14732	20.84	12	29.1	Y	6,000		
MP 289 C		61"	MP 290 FLG		40"	N	11256	G 17681	1.77	12	24.4	Y	5,000		
MP 289 C			MP 70 F/S			Y	11379	G 17730	36.39	20	36.0	Y	100,000		
GC 19 A			SS 359 20" SSTI			N	11472	G 18797	7.35	12	37.9	Y			
VR 255 CAPPED END			VR 255 CAPPED END			N	11493	G 18808	0.21	12	37.3	Y	15,000	ABN & REL	
EI 259 C			EI 259 A			N	2968	G 19694	2.18	12	36.3	Y	2,000		
Shell Pipeline Company LP															



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From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbbls)	Distance to Shore (mi)	Appurt. Plat-form? (Y/N)
MP 69 P	██████████	██████████	MP 69 P 20" SSTI	██████████	██████████	Y	22222		0.02	20	33.4	Y	250,000		
MP 69 20" SSTI	██████████	██████████	MP 69 P	██████████	██████████	Y	11111		0.02	20	33.4	Y	250,000		
WD 104 capped end	██████████	██████████"	WD 104 capped end	██████████	██████████	N	2854	1379	0.04	8	35.1	Y	12,000	ABN & REL	
WD 134 A	██████████	██████████"	WD 122 8" SSTI	██████████	██████████	N	4572	1379	2.46	8	36.0	Y	4,500	ABN & REL	
WD 32 CAPPED END	██████████	██████████"	WD 32 CAPPED END			Y	3602	1379	0.03	12	34.7	Y	18,000	ABN & REL	
WD 32 CAPPED END	██████████	██████████"	WD 32 CAPPED END	██████████	██████████	N	2853	1379	0.03	12	33.9	Y	15,500	ABN & REL	
ST 26 A – EPL Pipeline, L.L.C. ROW HOLDER & OPERATOR	██████████	██████████	Fourchon Terminal			Y	3579	1463	9.76	6	35.3	Y			
SS 28 A	██████████	██████████"	SS 15 F/S - GIBSON STATION			Y	3556	1504B	3.40 39.07	22	30.0	Y			
SS 28 A	██████████	██████████"	SS 15 F/S - GIBSON STATION			Y	3351	1504	3.41 38.91	16	30.0	Y			
EI 188 A	██████████	██████████"	SS 28 A	██████████	██████████	N	3350	1504	28.41	16	36.5	Y	125,000		
SM 128 "A" – AUX2	██████████	██████████"	ST 11 R/S - CALILOU ISLAND			Y	4006	3303	102.93 112.15	20	35.2	Y			
VR 350 FLG	██████████	██████████"	VR 350 FLG	██████████	██████████	N	8338	5124	0.10	6	39.9	Y	27	ABN & REL	



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1	2		3	4		5	6	7	8	9	10	11	12	13	14
From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbbls)	Distance to Shore (mi)	Appurt. Plat-form? (Y/N)
SS 241 "A"						N	646 3	5134	10.37	12	39.9	Y	10,000		
GI 33 A						N	7530	7582	2.50	6	35.4	Y	500		
SS 181 B						N	6612	8283	2.48	6	30.2	Y	1,527		
SM 217 A Chevron Pipe Line Company						Y	6941	8285	4.69	12	36.8	Y	3,279		
SM 218 Flange Chevron Pipe Line Company						N	7354	828 6	1.12	6	41.5	Y	725		
SM 219 Flange Chevron Pipe Line Company						N	6537	8287	4.96	6	41.5	Y	725		
VR 31 A Chevron Pipe Line Company						N	6536	8288	2.24	6	41.5	Y	725		
SM 236 A Chevron Pipe Line Company						N	6573	8289	8.10	6	33.7	Y	2,051		
SM 207 A						Y			23.30	12	38.3	Y	7,325		
SS 241 A						N	7894	8515	9.68	16	37.1	Y	100,000		
GC 19 A						N	7867	8515	35.40	16	35.40	Y	100,000		
WD 143 A Marathon Offshore Pipeline LLC						N	9082	12302	6.39	6		Y			
GB 128 A						N	11228	12726	30.91	12	38.7	Y	50,000		



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From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbbls)	Distance to Shore (mi)	Appurt. Plat-form? (Y/N)
			END												
EI 331 CAPPED END						N	9667	13719	1.7 2	12	38.7	Y	50,000		
EI 331 CAPPED END					0"	N	10221	14282	2. 33	12	38.7	Y	50,000		
WD 143 A						Y	10553	14711	50.14 56.54	24	29.1	Y			
SM 239 D Chevron Pipe Line Company						Y	9050	15003	10.16	6	38.4	Y	3,542		
SM 215 A					60"	Y			1.97	6	47.5	Y	167		
SM 215 B						Y			6.70	8	38.8	Y	3,709		
WEST COTE Gathering			10" Flange			N			6.66	8	33.3	Y			
GC 19 A						N	10610	15036	25.07	20	37.1	Y	150,000		
ST 301 B						Y	10631	15042	71.10	24	37.1	Y			
SM 205 20" SSTI						N	10671	15043	22. 57	20	38.7	Y	150,000		
GB 128 A						N	10895	15043	7.53	20	38.7	Y	150,000		
VK 956 A						N	10680	15639	26.57	12	38.8	Y	60,000		
GB 426 A						N	10915	16008	39.75	14-16	38.7	Y	150,000		
EI 331 FLG						N	10935	16013	70. 24	20	38.7	Y	150,000		
GI 115 A						N	11433	17749	32.82	12	29.6	Y	100,000		
GC 205 FLG						N	11471	18796	30. 19	14	27.9	Y	55,000		
EI 252 "I"						N	11501	18811	6.62	8	38.7	Y	20,000		
VK 786 SS						N	11677	19666	42.31	16	30.0	Y	60,000		



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VALVE															
EW 910 A						N	11764	19680	5.04	8	27.9	Y	55,000		
LAKE BARRE			TERREBONNE BAY J.			N			5.14	8	40.9	Y			
CALILOU ISLAND			COCODRIE			N			18.60	10	39.7	Y			
CALILOU ISLAND			LAKE BARRE			N			7.40	16	35.2	Y			
LAKE BARRE			HOUMA STATION			N			35.25	16	35.2	Y	200,000		
MP 69						N			45.98	20	35.6	Y	250,000		
SW 24						N			8.00	12	34.4	Y			
MP 69						N			12.00	16	34.6	Y			
LOUTRE JUNCTION			NAIRN			N			31.51	16	34.7	Y			
MP 283 A							12245	G21047	2.01			Y			
VR 380 FLG							12282	G5124	15.03	6		Y			
GC 158 A							12457	G21500	25.16	18/20		Y			
GI 116 A							12509	G21512	1.01	8		Y			
VR 376 A Rooster Petroleum, LLC							12571	G21874		6		Y			
ST 301 B							13554	G23077	8.91	20		Y			
Shell Pipeline Company LP															
ST 277 A Enbridge Offshore (Gas Gathering)						N	10388	G 14729	40.28	12		Y			



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L.L.C.															
ST 292 A Enbridge Offshore (Gas Gathering) L.L.C.						N	10389	G 14730	3.88	12		Y			
PN 979 JA Sold to Peregrine Oil & Gas II, LLC						N	8133	G 8943		12		Y			
Shell Offshore, Inc.															
BA A 19 D						N	10862			4		Y			
BA A 19 JB						N	7948		0.56	6		Y			
BA A 19 JB						N	7949		0.54	6		Y			
BA A 23 JA						N	7655			6		Y			
EI 88 #03						N	10834			6		Y			
EI 89 #23						N	11520			6		Y			
EI 95 A						N	10959			6		Y			
EI 95 #18						N	10833			4		Y			
EI 95 #19						N	10832			4		Y			
EI 95 #02						N	11294			4		Y			
EI 95 #20						N	11186			4		Y			
EI 95 #15						N	10958			6		Y			
EI 100 3" SSTI						N	4355			3		Y			
EI 100 #03 SSTI					90"	N	4356			3		Y			
EI 136 #01						N	11735			4		Y			



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EI 152 JA						N	11513	G18836		4		Y			
EI 158 B						N	2885		1.57	6		Y			
EI 158 #14						N	2881		0.55	6		Y			
EI 158 C						N	2883		1.57	10		Y			
EI 158 B						N	2884		1.52	6		Y			
EI 158 C						N	2898	G13702	2.08	6		Y			
EI 158 C						N	2890		0.55	2		Y			
EI 158 #14						N	2889		0.55	6		Y			
EI 158 #10						N	2888		0.72	6		Y			
EI 158 #14						N	2882		1.12	4		Y			
EI 158 JB						N	2886		0.61	3		Y			
EI 158 C						N	2887		0.72	4		Y			
EI 158 B						N	3909		2.08	6		Y			
EI 158 #10						N	2895	G13704	0.83	3		Y			
EI 158 C						N	4902			6		Y			
EI 158 JB						N	10345			6		Y			
EI 158 B						N	3911		1.33	6		Y			
EI 158 #14						N	3910		1.04	6		Y			
EI 167 #01						N	10572		2.72	6		Y			
EI 176 JC						N	3908	G13703	0.89	6		Y			
EI 176 JA						N	10527	G14999	2.66	6		Y			
EI 176 JA						N	10528	G15000	2.65	4		Y			
EI 176 JC						N	2894	G13705	0.83	6		Y			
EI 189 #03						N	5704		0.28	4		Y			
EI 331 B						N	2970		2.06	8		Y			



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EI 331 A						N	2971		20.80	10		Y			
GA 191 JA						N	10000	G614059	3.72	6		Y			
GC 65 A						N	10854		2.17	4		Y			
GC 110 SSW #01						N	10592		4.26	3		Y			
GC 110 SSW #01						N	10591		4.26	3		Y			
HI 135 #05						N	2824		2.18	4		Y			
HI 135 #02						N	2821		0.76	3		Y			
HI 135 #02						N	2822		0.76	4		Y			
HI 135 #01						N	2820		0.28	3		Y			
HI 136 #03						N	2830		1.04	3		Y			
HI 136 #05						N	2827		1.14	4		Y			
HI 136 #02						N	2826		0.28	3		Y			
HI 136 #03						N	2829		1.04	3		Y			
HI 154 JA						N	11626		2.06	8-10		Y			
HI 160 #05						N	2831		2.08	4		Y			
HI 160 #01						N	2832		0.95	3		Y			
HI 160 JA						N	10679		0.32	8		Y			
HI 160 JA						N	10678		0.40	8		Y			
HI 161 #04						N	2838		0.38	3		Y			
HI 161 B						N	8140		0.51	8		Y			
HI 161 B						N	2840		2.46	8		Y			
HI 161 #07						N	3247		0.24	3		Y			
HI 161 #07						N	3246		0.24	3		Y			
HI 194 JA						N	8691	G11151	5.67	6		Y			



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TABLE 2 - ROW PIPELINES IN OCS WATERS

1	2		3	4		5	6	7	8	9	10	11	12	13	14
From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbbls)	Distance to Shore (mi)	Appurt. Plat-form? (Y/N)
HI A 6 JA						N	7578		2.34	8		Y			
HI A 6 JA						N	7579		2.34	6		Y			
HI A 6 A						N	7580		2.34	2		Y			
PN 969 JA						N	8893	G11707	3.66	6		Y			
SM 58 B						N	5718		0.05	6		Y			
SM 58 ?B						N				8-6		Y			
SS 259 JA						N	8324	G10065	7.96	4		Y			
SS 293 B						N	3098		2.22	6		Y			
SS 293 B						N	3099		2.13	8		Y			
ST 301 B						N	6544		3.26	8		Y			
ST 301 B						N	6543		3.26	6		Y			
SX 40 JC						N	8363		0.48	2		Y			
SX 40 JC						N	8362		0.48	4		Y			
SX 40 JC						N	8364		0.48	1		Y			
VK 780 A						N	11707		0.05	8		Y			
VR 156 JA						N	11174		1.74	6		Y			
VR 182 JB						N	10510		2.15	4		Y			
VR 182 JB						N	10511		2.15	8		Y			
VR 199 JA						N	10816			8		Y			
VR 200 A						N	10884			2		Y			
WC 269 JA						N	11024			8		Y			
WC 270 #01						N	11594			6		Y			



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1	2		3	4		5	6	7	8	9	10	11	12	13	14
From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbbls)	Distance to Shore (mi)	Appurt. Plat-form? (Y/N)
Shell Deepwater Production, Inc.															
MC 685 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	10855	G15988	62.29	12		Y			
WD 143 A	██████████	██████████	██████████	██████████	██████████	N	10856	G15989	62.25	3		Y			
WD 143 A	██████████	██████████	██████████	██████████	██████████	N	10857		62.29	3		Y			
WD 143 A	██████████	██████████	██████████	██████████	██████████	N	10858		62.29	3		Y			
MC 685 SSW #A3	██████████	██████████	██████████	██████████	██████████	N	10984	G16033	5.50	6		Y			
MC 685 SS Manifold	██████████	██████████	██████████	██████████	██████████ 77"	N	10985		5.83	3		Y			
MC 685 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	10986		15.25	3		Y			
MC 685 SSW #A1	██████████	██████████	██████████	██████████	██████████	N	10987	G16034	5.51	6		Y			
MC 685 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	10988		5.27	3		Y			
MC 685 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	10989		5.50	3		Y			
MC 685 SSW #A2	██████████	██████████	██████████	██████████	██████████	N	10990	G16035	5.21	6		Y			
MC 685 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	10991		5.37	3		Y			
MC 685 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	10992		5.43	3		Y			
GB 602 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	11831	G20507	11.44	6		Y			



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TABLE 2 - ROW PIPELINES IN OCS WATERS

1	2		3	4		5	6	7	8	9	10	11	12	13	14
From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbbls)	Distance to Shore (mi)	Appurt. Plat-form? (Y/N)
GB 602 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	11832	G20508	11.44	6		Y			
GB 426 A	██████████	██████████	██████████	██████████	██████████	N	11833		11.44	6		Y			
GB 602 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	11882	G20507	11.44	10		Y			
GB 602 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	11883	G20508	11.44	10		Y			
GC 113 A	██████████	██████████	██████████	██████████	██████████	N	11933	G20545	11.77	8		Y			
GC 113 A	██████████	██████████	██████████	██████████	██████████	N	11934	G20546	11.79	8		Y			
GC 65 A	██████████	██████████	██████████	██████████	██████████	N	12093		18.94	6		Y			
GB 602 A-2	██████████	██████████	██████████	██████████	██████████	N	12118		0.01			Y			
GB 602 A-4	██████████	██████████	██████████	██████████	██████████	N	12119		0.01			Y			
GB 602 A-5	██████████	██████████	██████████	██████████	██████████	N	12120		0.01			Y			
MC 934 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	12125	G21012	17.26	8		Y			
MC 934 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	12126	G21012	16.99	12		Y			
MC 934 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	12127		19.52	3		Y			
MC 934 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	12128		20.11	6		Y			
MC 934 SS Manifold	██████████	██████████	██████████	██████████	██████████	N	12129	G21013	17.34	8		Y			
MC 934 SS	██████████	██████████	██████████	██████████	██████████	N	12130	G21013	17.04	12		Y			



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TABLE 2 - ROW PIPELINES IN OCS WATERS

1	2		3	4		5	6	7	8	9	10	11	12	13	14
From	Latitude	Longitude	To	Latitude	Longitude	Fed/ State Bndry? (Y/N)	MMS Seg. Number	ROW No.	Length (mi)	Size (in)	API Gravity	Leak Detect.?	Through Volume (bbls)	Distance to Shore (mi)	Appurt. Plat- form? (Y/N)
Manifold															



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**TABLE 3 - PRODUCTION PLATFORMS AND SATELLITE STRUCTURES
IN STATE WATERS SEAWARD OF THE COASTLINE**

1	2	3	4	5	6	7		8	9	10	11	12	13
Area	Block	State Lease No.	Facility Name	Facility ID	Water Depth (feet)	Latitude	Longitude	Distance to Nearest Shore (miles)	API Gravity	* Rating	High Well (bbbls)	All Storage (bbbls)	Thru. Volume (bbbls)
GA	100L	S.L. M-96872	CA		35	██████████	██████████"		0		0		0
MB	113	S.L. 531	JA		23	██████████	██████████		0		0		0
MB	113	S.L. 531	JC		32	██████████	██████████		0		0		0
MB	113	S.L. 531	JD		22	██████████	██████████		0		0		0
MB	113	S.L. 531	JE		27	██████████	██████████		0		0		0
MB	113	S.L. 531	JB		39	██████████	██████████		0		0		0
ST	9	S.L. 14907	1		22	██████████	██████████		0		0		0



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TABLE 4 - ROW PIPELINES IN STATE WATERS SEAWARD OF THE COASTLINE

1	2	3	4	5	6	7	8	9	10	11	12	13	14		
From	Latitude	Longitude	To	Latitude	Longitude	Fed./ State Boundary (Yes/No)	ID No.	ROW No.	Length (feet)	Size (inches)	API Gravity	Leak Detection? (Y/N)	Through Volume (bbbls)	Distance to Shore (mi)	Appurtenance Platform? (Y/N)
		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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TABLE 3 - LEGEND

- 1) Provide the 2-letter MMS area designation of the State facility (e.g., MP, PS, WC).
- 2) Provide the State Block No. of the State facility.
- 3) Provide the State Lease No. of the State facility.
- 4) Provide the State facility designation.
- 5) Provide the State assigned identification number for the facility.
- 6) Provide the water depth at the site of the State facility in feet.
- 7) Provide the latitude and longitude of the State 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 State 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 State 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 State 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 4 - LEGEND

- 1) Provide the 2-letter MMS area designation and the Block No. of the originating point of the State ROW pipeline (e.g., SP 2, EI 21).
- 2) Provide the latitude and longitude of the originating point of the State 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 Block No. of the terminus of the State ROW pipeline or the point at which the ROW pipeline crosses the coastline (e.g., HI 96, SS 10).
- 4) Provide the latitude and longitude of the terminus of the State ROW pipeline (if in State waters) or the point at which the ROW crosses the coastline in degrees and decimal minutes (e.g., 28° 25.35' N, 90° 0-9.08' W).
- 5) Indicate whether the ROW pipeline either terminates or originates at the Federal/State boundary (i.e., yes, no).
- 6) Provide the State-assigned identification number of the State ROW pipeline, if assigned.
- 7) Provide the State-assigned ROW No. of the State ROW pipeline.
- 8) Provide the length of the State ROW pipeline in feet.
- 9) Provide the internal diameter of the State ROW pipeline in inches.
- 10) Provide the API Gravity of the oil being transported by the State ROW pipeline.
- 11) Indicate whether the State 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 State 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 Response 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 Response Team Members*

Spill Response 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 Response Team member within the organizational structure, in accordance with designated job responsibilities
7. Record keeping

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C. Training Record Storage

Training records of the Spill Response Team members employed by Shell Offshore, Inc. will be stored with the following contact at described location:

LOCATION OF REQUIRED TRAINING RECORDS	
CONTACT NAME	Tommy Hutto & Tim Langford
COMPANY NAME	Shell Offshore, Inc.
STREET ADDRESS	P.O. Box 61933
CITY, STATE & ZIP	New Orleans, LA 70161
PHONE NUMBER	(504) 728-6874

OR

LOCATION OF REQUIRED TRAINING RECORDS	
COMPANY NAME	Marine Spill Response Corporation
STREET ADDRESS	3838 North Sam Houston Parkway
CITY, STATE & ZIP	Houston, TX 77032
PHONE NUMBER	(281) 776-4300

For Operations Section Chief

LOCATION OF REQUIRED TRAINING RECORDS	
COMPANY NAME	O'Briens Response Management
STREET ADDRESS	645 Codifer St.
CITY, STATE & ZIP	Slidell, LA 70458
PHONE NUMBER	(985) 781-0580


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FIGURE B.1 – Training Records

TRAINING RECORDS – IC, SMT (training due annually)				
Title	Name	Location	Date	Type of Training
Incident Commander:	Phil Smith	RTC, LA	12/09/2009	QI Training
	"	"	12/16/2009	IC/SMT Training
Alternate:	W.T. Hutto	RTC, LA	12/09/2009	QI Training
	"	"	12/16/2009	IC/SMT Training
Alternate:	Tim Langford	RTC, LA	12/09/2009	QI Training
	"	"	12/16/2009	IC/SMT Training
Operations Section Chief:	Ben Benson-ORM	Slidell, LA	1/19/2010	IC/SMT Training
Alternate	Tim Langford	RTC, LA.	12/16/2009	IC/SMT Training
Alternate	Ed Turner	Slidell, LA	1/19/2010	IC/SMT Training
Planning Section Chief:	W.T. Hutto	RTC, LA.	12/16/2009	IC/SMT Training
Alternate:	Sue Staley	N.O., LA.	12/16/2009	IC/SMT Training


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FIGURE B.1 – Training Records (Cont'd)

**O'BRIEN'S RESPONSE MANAGEMENT INC.
OIL SPILL MANAGEMENT TEAM TRAINING
SIGN-IN SHEET**

Date 1/12/2010

PRINT NAME LEGIBLY FOR MMS RECORDS	SIGNATURE
PAUL E. FREDERICK	<i>Paul E. Frederick</i>
AARON HOLTON	<i>Aaron Holton</i>
Stephen Batuk	<i>Stephen Batuk</i>
AL WRUBLEWSKI	<i>al wrublewski</i>
Kenneth J Smith SR	<i>Kenneth J Smith SR</i>
David S. Thomas	<i>David S. Thomas</i>
BILL DARBY	<i>Bill Darby</i>
KC Leidolph	<i>KC Leidolph</i>
Josh Dubach	<i>Josh Dubach</i>
MARY JURCZAK	<i>Mary Jurczak</i>
MARK A. JENKINS	<i>Mark A. Jenkins</i>
Matthew Dupre	<i>Matthew Dupre</i>
NIEL FRUIN	<i>Niel Fruin</i>

Location: 2000 Old Spanish Trail, Suite 210, Slidell, LA 70458


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FIGURE B.1 – Training Records (Cont'd)

**O'BRIEN'S RESPONSE MANAGEMENT INC.
OIL SPILL MANAGEMENT TEAM TRAINING
SIGN-IN SHEET**

Date 1/19/2010

PRINT NAME LEGIBLY FOR MMS RECORDS	SIGNATURE
STEVE TURNER	<i>Steve Turner</i>
DAVID JENKINS JR	<i>David Jenkins Jr</i>
Robert Graham	<i>Robert Graham</i>
Stephen Batuk	<i>Stephen Batuk</i>
Keith Tander	<i>Keith Tander</i>
BUD KLINE	<i>Bud Kline</i>
Mark Cogwevich	<i>Mark Cogwevich</i>
MATTHEW DEMPSEY	<i>Matthew Dempsey</i>
SCOTT A. HESS	<i>Scott A. Hess</i>
Danny Herod	<i>Danny Herod</i>
GIL BENKINS	<i>Gil Benkins</i>
Trent Secklinger	<i>Trent Secklinger</i>
ED TURNER	<i>Ed Turner</i>
Ben Brewson	<i>Ben Brewson</i>

Location: 2000 Old Spanish Trail, Suite 210, Slidell, LA 70458


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FIGURE B.1 – Training Records (Cont'd)

**O'BRIEN'S RESPONSE MANAGEMENT INC.
OIL SPILL MANAGEMENT TEAM TRAINING
SIGN-IN SHEET**

Date 1/26/2010

PRINT NAME LEGIBLY FOR MMS RECORDS	SIGNATURE
Randy Anzalone	<i>Randy Anzalone</i>
Stephen Smith	<i>Stephen Smith</i>
Marvin R. Crawford Jr	<i>Marvin R. Crawford Jr</i>
DAVID SPRENS	<i>David Sprens</i>
Mike Niles	<i>Mike Niles</i>
Kelly Wilson	<i>Kelly Wilson</i>
Ric Walters	<i>Ric Walters</i>
Ian Hernandez	<i>Ian Hernandez</i>
James D Kirk	<i>James D Kirk</i>
DUSTIN WHITE	<i>Dustin White</i>

Location: 6620 Cypresswood Drive, Suite 200, Spring, TX 77379



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FIGURE B.2 – Training of STARS Personnel

MSRC relies upon the STARS network of OSROs to supply experienced personnel to assist in manning MSRC oil spill recovery equipment. For this reason, MSRC has established an on-going STARS training program to participants to deploy and operate all of MSRC's response equipment.

The training program consists of a safety discussion on oil spill response and the safe deployment, application, and operation of each piece of MSRC equipment. Equipment storage and maintenance along with operational specifications such as pump capacity, performance capacity, and hydraulic power requirements are also discussed. The participants will actually offload, assemble, deploy, operate and disassemble each piece of MSRC owned equipment. MSRC training records of STARS training on MSRC equipment is maintained in Lake Charles.


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APPENDIX C - DRILL INFORMATION

A. Preparedness for Response Exercise Program (PREP)

- 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 one of three forms:

SPILL RESPONSE EXERCISES	
<p><u>Notification Exercise:</u> Shell Offshore, Inc. 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.)</p>	Annually
<p><u>Spill Management Team Tabletop Exercise:</u> 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.</p>	Annually
<p><u>Equipment Deployment Exercise:</u> Shell Offshore, Inc. 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.</p>	Annually

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B. Record of Exercises

Shell Offshore, Inc. will maintain records of all exercises for a three-year period. Records will be stored in Shell's New Orleans, Louisiana office.


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FIGURE C.1 -
PREP: Internal Exercise Documentation Form
Notification Exercise

(SOI personnel may use Spill Report Form for QI 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 (Planning Section Chief)? _____
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	Maximum Most	Worst Case
Probable Discharge: _____	Probable Discharge: _____	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:

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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 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

Proof of any contracts or membership agreements with OSRO's, cooperatives, spill-response service providers or Spill Response Team members who are not employees that are cited in the Plan are outlined in **FIGURE D.1**.


FIGURE D.1 - **PROOF OF CONTRACTUAL AGREEMENTS**

* * * * *

I hereby certify that Shell Offshore, Inc. currently has a contract or membership agreement with the following service providers:			
Service	Company	Beginning Date	Ending Date
Equipment Provider	MSRC	January, 1991	Ongoing
Response Personnel	MSRC	January, 1991	Ongoing
Equipment Provider (Dispersant Aircraft)	MSRC	January, 2007	Ongoing
Equipment Provider (Dispersant System & Stockpile)	Clean Caribbean America	January, 1990	Ongoing
Equipment Provider (Dispersant System & Stockpile)	OSRL/EARL	June, 1985	Ongoing
Equipment Provider (including Vessels of Opportunity)	AMPOL	December, 2000	Ongoing
Response Personnel	AMPOL	December, 2000	Ongoing
Spill Response Team Member	O'Brien's Response Mgt., Inc	January, 1999	Ongoing
<p>The subject contract or membership agreement provides immediate access to available personnel and/or equipment on a 24-hour per day basis.</p> <p style="text-align: right;">Signed: <u>W. T. (Tommy) Hutto</u> Title: <u>Emergency Response Coordinator</u> Date: <u>February 19, 2007</u></p>			

Original Signed Copy on file in SEPCo RA Library

	Appendix D	Page 1 of 1
Printed copies of this document may be obsolete. SEPCo "Controlling Documents" are online in Livelink®.		

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APPENDIX E - RESPONSE EQUIPMENT

A. *Equipment Inventory*

Shell Offshore, Inc.'s offshore response strategy is built around the oil spill containment and recovery equipment provided by Marine Spill Response Corporation (MSRC) supported by the MSRC STARS contractors.

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 MSRC 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.

B. *Inspection and Maintenance Programs*

MSRC 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 MSRC 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 MSRC base and available to MMS personnel.



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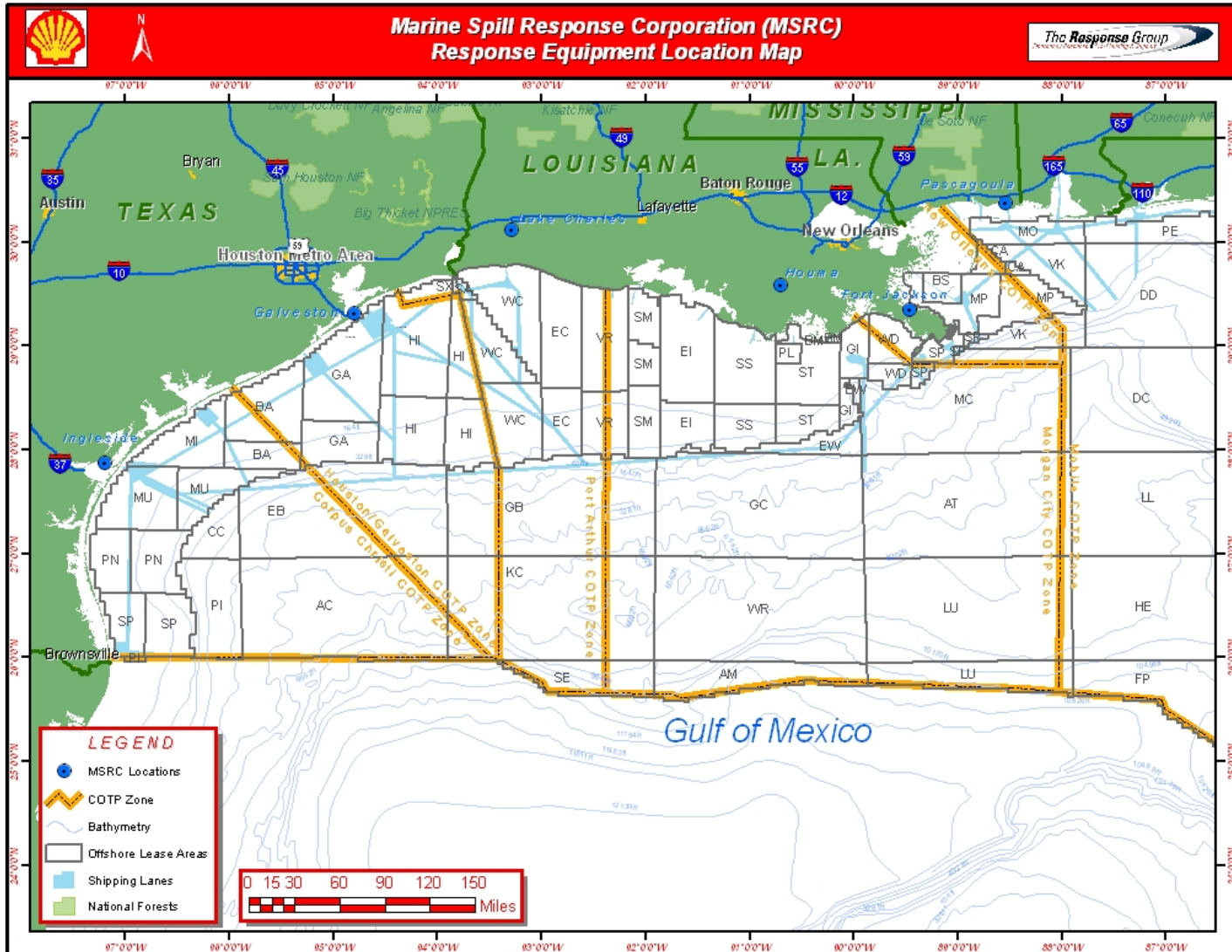



FIGURE E.1 – MSRC Response Equipment Location Map

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MSRC STARS CONTRACTORS

Updated every two years for this Plan. MSRC maintains current available equipment inventories.

FIGURE E.2 - RESPONSE EQUIPMENT LIST

March 2010

Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
Corpus Christi COTP						
A&E Leasing & Construction Aransas Pass, TX (361) 758-6588				(1) Small Boats > 18'		
Miller Environmental Services Corpus Christi, TX (337) 882-9800	(1) Foilex 250 – Weir (3,977 bpd) (1) Macro Sidewinder Belt (480 bpd) (1) Elastec Drum TDS 136 (480 bpd)	(33) Vacuum Trucks	17,500 ft Inland Boom 2,500 ft R&C Boom	(4) Small Boats < 18' (7) Small Boats > 18'		
MSRC Ingleside, TX (361) 643-3141	(1) Foilex 250 – Weir (3,977 bpd) (1) WP-1 – Oleo./rotating Drum (3,017 bpd) (1) Vikoma 3-Weir-Weir (5,657 bpd) (1) GT-185-Weir/Brush (1,371 bpd)		7,186 ft Ocean Boom 3,930 ft Inland Boom			
MSRC OSRB Ingleside, TX (361) 643-3141	(1) Stress I-Weir (15,840 bpd)			(1) Large Boat 300 ft		
MSRC Southern Responder - OSRV Ingleside, TX (361) 643-3141	(1) Transrec 350-Weir (10,567 bpd)		1,980 ft Ocean Boom	(1) Small Boat > 18' (1) Large Boat 210 ft		
MSRC MSRC Quick Strike - OSRV Ingleside, TX (361) 643-3141	(1) Lori Brush Pack – Chain Brush (5,000 bpd)		150 ft Inland Boom	(1) Large Boat 47 ft		
Houston/ Galveston COTP						
Clean Harbors Environmental Houston, TX (281) 478-7700		(1) Vacuum Trucks	2,500 ft Inland Boom	(2) Small Boats > 18'		



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FIGURE E.2 - RESPONSE EQUIPMENT LIST

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Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
Houston/ Galveston COTP (cont'd)						
Clean Harbors Environmental Sulphur, LA (337) 882-1025			2,900 ft Inland Boom	(1) Small Boats > 18'		
Eagle Construction & Environmental Services La Porte, TX (800) 336-0909	(1) Elastec Drum (240 bpd)	(3) Vacuum Trucks	6,000 ft Inland Boom 150 ft R&C Boom	(6) Small Boats < 18'	(1) Frac Tank	
Environmental Restoration Houston, TX (281) 464-7477			1,200 ft Inland Boom			
ES&H Consulting Services Lake Charles, LA (337) 625-9226	(1) TDS-118 (240 bpd) (1) TDS-136 (480 bpd)		8,000 ft Ocean Boom 9,000 ft Inland Boom	(4) Small Boats < 18' (2) Small Boat > 18'	(1) Frac Tank	
Garner Environmental Services Deer Park, TX (800) 424-1716 (281) 930-4402	(3) ACME Products Weir (5,655 bpd) (2) Crucial 1D18P-23 Drum (342 bpd) (5) Crucial 1D18P-36 Drum (12,330 bpd) (1) Crucial 1DDB18-36 Brush (617 bpd) (1) Marco Sidewinder 14 Belt (480 bpd) (1) Crucial RF Weir (1,370 bpd)		20,000 ft Inland Boom	(6) Small Boats < 18' (1) Small Boat > 18' (1) Large Boat 31 ft		
Garner Environmental Services La Marque, TX (800) 424-1716	(1) ACME Products Weir (1,885 bpd) (3) Crucial Drum 1D18P-36 (7,398 bpd) (1) Crucial Brush 1DDB18-36 (617 bpd)		10,000 ft Inland Boom	(5) Small Boats < 18' (2) Small Boats > 18'		
Oil Mop Houston, TX (713) 534-7300			4,000 ft Inland Boom	(5) Small Boats > 18'		
Miller Environmental Services Sulphur, LA (337) 882-9800	(1) Elastec Drum TDS 136 (480 bpd)	(4) Vacuum Trucks	4,800 ft Inland Boom 500 ft R&C boom	(4) Small Boats < 18' (1) Small Boat > 18'		



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FIGURE E.2 - RESPONSE EQUIPMENT LIST

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Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
Houston/ Galveston COTP (cont'd)						
MSRC Galveston, TX (409) 740-9188	(1) Foilex 250 – Weir (3,977 bpd) (1) GT-185-Weir/Brush (2,742 bpd) (1) Walosep W-4-Weir (3,017 bpd) (1) Queensboro-Oleophilic (905 bpd)		5,610 ft Ocean Boom 2,150 ft Inland Boom	(3) Small Boats > 18'		
MSRC OSRB Galveston, TX (409) 740-9188	(1) Stress 1-Weir (15,840 bpd)			(1) Large Boat 335 ft		
MSRC Texas Responder – OSRV Galveston, TX (409) 740-9188	(1) Transrec-350-Weir (10,567 bpd)		1,980 ft Ocean Boom	(1) Small Boats > 18' (1) Large Boat 210 ft		
MSRC Lake Charles, LA (337) 477-5716	(1) Foilex 250 – Weir (3,977 bpd) (1) Desmi 250-Weir (3,017 bpd) (1) Stress I-Weir (15,840 bpd) (4) Queensboro-Olephilic (3,620 bpd)		7,480 ft Ocean Boom 11,600 ft Inland Boom	(6) Small Boats > 18'		
T&T Marine Salvage, Inc. (409) 744-1222	(1) GT-185-Weir (1,371 bpd) (10) Elastec Drum TDS 136 (4,800 bpd) (2) Elastec Drum TDS 118 (480 bpd) (1) Elastec Drum (686 bpd)	(1) Vacuum Truck	30,000 ft Inland Boom 1,500 ft R&C Boom	(10) Small Boats < 18' (8) Small Boats > 18' (1) Large Boat - Erin T 110 ft (1) Large Boat - Ashton T 110 ft (1) Large Boat - Hannah T 30 ft (1) Large Boat - Julie T 30 ft (1) Large Boat - Miss Charlotte 110 ft (1) Large Boat - Bill Spence (TUG) 65 ft (1) Large Boat - Boomer T 35 ft (1) Large Boat - Brian T (TUG) 50 ft (1) Large Boat - Donna T (TUG) 55 ft (1) Large Boat - Eddie T 33 ft (1) Large Boat - Henry T (TUG) 55 ft (1) Large Boat - Kelly T (TUG) 50 ft (1) Large Boat - Rudy T (TUG) 60 ft		
U.S. Environmental Services Houston, TX (281) 867-4100	(1) Goo Gobbler (616 bpd)	(1) Vacuum Truck	5,000 ft Inland Boom 1,000 ft R&C Boom	(4) Small Boats < 18' (1) Small Boats > 18'		



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FIGURE E.2 - RESPONSE EQUIPMENT LIST

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Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
Port Arthur COTP						
Clean Harbors Environmental Port Arthur, TX (800) 645-8265 (409) 796-1388	(3) Drum Skimmers	(12) Vacuum Trucks	3,800 ft Inland Boom	(7) Small Boats < 18' (2) Small Boats > 18'		
Garner Environmental Services Port Arthur, TX (800) 424-1716	(3) ACME Products FS400ASK-39T Weir (5,655 bpd) (2) Crucial 1D18P-36 (4,932 bpd)		14,000 ft Inland Boom	(6) Small Boats < 18' (2) Small Boats > 18'		
Oil Mop Port Arthur, TX (409) 962-7226	(1) Marco Skimmer (2,400 bpd)		4,000 ft Inland Boom	(7) Small Boats > 18'		
MSRC Port Arthur, TX (800) 645-7745	(1) GT-185-Weir/Brush (1,371 bpd)		50 ft Inland Boom	(1) Small Boats > 18'		
Pneumatic Industrial Services Orange, TX (409) 745-9100		(31) Vacuum Trucks	2,500 ft Inland Boom 200 ft R&C Boom	(5) Small Boats < 18'		
Morgan City COTP						
AMPOL New Iberia, LA (337) 365-7847	(1) GT-185-Weir (1,371 bpd) (1) GT-260-Weir (3,019 bpd) (2) Rope Mop Skimmers (144 bpd) (2) Walosep W-2 Weir (2,716 bpd) (3) Walosep W-4 Weir (9,051 bpd) (2) Crucial Drum Skimmers (4,932 bpd) (1) Vicoma Disc Skimmer (1,464 bpd) (1) Marco Class I-Sorbent Lifting Belt (10,700 bpd)		2,600 ft Ocean Boom 29,460 ft Inland Boom 750 ft R&C Boom	(8) Small Boats < 18' (8) Small Boats > 18'		
ES&H Houma, LA (985) 851-5055	(2) MARCO Skimmer (4,800 bpd) (14) Large Drum Skimmer (6,720 bpd) (13) Medium Drum Skimmer (3,120 bpd) (3) Rope Mop II-A (432 bpd)	(11) Vacuum Trucks	4,000 ft Ocean Boom 104,500 ft Inland Boom 16,000 ft R&C Boom	(60) Small Boats < 18' (19) Small Boats > 18' (2) Large Boats 30 ft		



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FIGURE E.2 - RESPONSE EQUIPMENT LIST

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Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
Morgan City COTP (cont'd)						
ES&H Morgan City, LA (985) 385-6730	(1) Medium Drum Skimmer (240 bpd) (1) Macro Class I - Sorbent Lifting Belt		2,800 ft R&C Boom	(3) Small Boats < 18' (1) Small Boat > 18'		
MSRC Houma, LA (985) 580-0924	(1) Queensboro-Oleophilic (905 bpd)		50 ft Inland Boom	(1) Small Boat > 18'		
Oil Mop Larose, LA (985) 798-1005 (800) 645-6671			2,500 ft Inland Boom 500 ft R&C Boom	(3) Small Boat > 18'		
Oil Mop Morgan City, LA (985) 631-9664 (800) 645-6671			1,000 ft Inland Boom	(1) Small Boat > 18'		
New Orleans COTP						
AMPOL Fourchon, LA (800) 482-6765	(1) GT-185-Weir		720 ft Inland Boom	(1) Large Boat AMPOL Recovery 105 ft		
AMPOL Harvey, LA (800) 482-6765	(2) Rope Mope		8,400 ft Ocean Boom 17,500 ft Inland Boom			
Clean Harbors Environmental Baton Rouge, LA (225) 778-3616	(2) 2' Drum Skimmers (1) 3' Drum Skimmer (1) 4' Drum Skimmer (2) Rope Mop Skimmers	(5) Vacuum Trucks	7,500 ft Inland Boom	(12) Small Boats < 18' (7) Small Boats > 18'		
Eagle Construction & Environmental Services Gonzales, LA (800) 336-0909			2,000 ft Inland Boom			


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FIGURE E.2 - RESPONSE EQUIPMENT LIST

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Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
New Orleans COTP (cont'd)						
ES&H Fourchon, LA (985) 396-2798	(1) Medium Drum Skimmer (240 bpd)		2,000 ft Inland Boom 1,200 ft R&C Boom	(3) Small Boats < 18' (2) Small Boats > 18'		
ES&H Geismar, LA (877) 437-2634			500 ft Inland Boom 1,500 ft R&C Boom	(1) Small Boats < 18'		
ES&H New Iberia, LA (337) 365-9890	(3) TDS-118 (720 bpd)		8,500 ft Inland Boom 13,000 ft R&C Boom	(3) Small Boats < 18' (1) Small Boat > 18'		
ES&H New Orleans, LA (504) 340-0336	(1) Marco Skimmer (2,400 bpd) (2) Large Drum Skimmer (960 bpd) (2) Medium Drum Skimmer (480 bpd) (1) Rope Mop II-A (144 bpd)		4,500 ft Inland Boom 3,500 ft R&C Boom	(5) Small Boats < 18' (5) Small Boats > 18'		
ES&H Norco, LA (877) 437-2634			1,000 ft Inland Boom			
Garner Environmental Services New Orleans, LA (800) 424-1716	(3) ACME Products Weir (5,655 bpd) (1) Macro Sidewinder 14 Belt (480 bpd) (1) Macro Class Harbor 28 (480 bpd) (2) Crucial 1D18P-36 Drum (4,932 bpd)		10,000 ft Inland Boom	(8) Small Boats < 18' (2) Small Boats > 18' (1) Large Boat 31 ft		
Industrial Cleanup, Inc. Garyville, LA (985) 535-3174		(2) Vacuum Trucks	6,000 ft Inland Boom 5,000 ft R&C Boom	(5) Small Boats < 18' (6) Small Boats > 18'		
MSRC Baton Rouge, LA (800) 645-7745	(1) GT-185-Weir/Brush (1,371 bpd)		50 ft Inland Boom	(1) Small Boats > 18'		



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FIGURE E.2 - RESPONSE EQUIPMENT LIST

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Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
New Orleans COTP (cont'd)						
MSRC Fort Jackson, LA (800) 645-7745	(1) Walosep W-4-Weir (3,017 bpd) (1) GT-185-Weir/Brush (1,371 bpd) (1) Desmi Ocean-Weir (3,017 bpd) (1) Foilex 250-Weir (3,977 bpd) (1) Foilex 200-Weir (1,989 bpd)		3,300 ft Ocean Boom 1,050 ft Inland Boom	(1) Small Boats > 18'		
MSRC OSRB Fort Jackson, LA (800) 645-7745	(1) Stress 1-Weir (15,840 bpd)			(1) Large Boat 310 ft		
MSRC LA Responder-OSRV Fort Jackson, LA (800) 645-7745	(1) Transrec 350-Weir (10,567 bpd)		1,980 ft Ocean Boom	(1) Small Boats > 18' (1) Large Boat 210 ft		
MSRC Pascagoula, MS (800) 645-7745	(1) Aardvac-Vacuum (3,840 bpd) (1) GT-185-Weir/Brush (1,371 bpd) (1) WP-1 Oleo./rotating Drum (3,017 bpd) (1) Queensboro-Oleophilic (905 bpd)		4,510 ft Ocean Boom 14,600 ft Inland Boom	(1) Small Boats > 18'		
MSRC OSRB Pascagoula, MS (800) 645-7745	(1) Stress 1-Weir (15,840 bpd)			(1) Large Boat 300 ft		
MSRC Mississippi River OSRV Pascagoula, MS (800) 645-7745	(1) Transrec 350-Weir (10,567 bpd)		1,980 ft Ocean Boom	(1) Small Boats > 18' (1) Large Boat 210 ft		
Oil Mop Belle Chase, LA (504) 394-6110 (800) 645-6771	(1) Macro Skimmer (2,400 bpd) (1) Rope Mop 26 (72 bpd) (3) Rope Mop 29 (2,592 bpd)		22,000 ft Inland Boom 500 ft R&C Boom	(10) Small Boats > 18'		
Oil Mop Port Allen, LA (225) 388-9992 (800) 645-6771			2,500 ft Inland Boom 500 ft R&C Boom			



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FIGURE E.2 - RESPONSE EQUIPMENT LIST

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Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
New Orleans COTP (cont'd)						
Oil Mop New Iberia, LA (337) 364-5373 (800) 645-6771			3,500 ft Inland Boom 500 ft R&C Boom	(4) Small Boats < 18' (3) Small Boats > 18'		
U.S. Environmental Services Biloxi, MS (228) 396-3866			1,100 ft Inland Boom	(1) Small Boats < 18'		
U.S. Environmental Services Harvey, LA (504) 362-9154				(1) Small Boats > 18'		
U.S. Environmental Services Lafitte, LA (888) 279-9930			1,000 ft Inland Boom	(2) Small Boats < 18'		
U.S. Environmental Services Meraux, LA (504) 279-9934 (888) 279-9930	(1) Goo Gobbler Drum 30" (770 bpd) (1) Goo Gobbler Drum 24" (616 bpd)	(5) Vacuum Trucks	6,000 ft Inland Boom 1,000 ft R&C Boom	(12) Small Boats < 18' (5) Small Boats > 18'		
U.S. Environmental Services Marrero, LA (888) 279-9930			600 ft Inland Boom	(2) Small Boats > 18'		
U.S. Environmental Services New Orleans, LA (504) 279-9934			6,000 ft Inland Boom	(1) Small Boats < 18'		
U.S. Environmental Services Prairieville, LA (225) 673-4200		(1) Vacuum Trucks	1,000 ft Inland Boom	(3) Small Boats < 18'		



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FIGURE E.2 - RESPONSE EQUIPMENT LIST

March 2010

Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
New Orleans COTP (cont'd)						
U.S. Environmental Services Venice, LA (985) 534-2744 (888) 279-9930	(1) Goo Gobbler (616 bpd)		6,000 ft Inland Boom	(2) Small Boats < 18' (6) Small Boats > 18' (1) Large Boat 30 ft		
Mobile COTP						
Oil Recovery Company Mobile, LA (800) 350-0443	(2) Crucial Drum 18P-36 (2,400 bpd)	(7) Vacuum Trucks	1,000 ft Ocean Boom 6,000 ft Inland Boom	(4) Small Boats < 18' (3) Small Boats > 18'		
Southern Waste Services, Inc. Birmingham, AL (205) 833-3407 (800) 852-8878	(1) TDS 118 Drum	(1) Vacuum Truck	2,000 ft Inland Boom	(1) Small Boats < 18'		
Southern Waste Services, Inc. Panama City, FL (850) 563-0822 (800) 852-8878	(1) Gt -185 - Weir/Brush (1,371 bpd) (1) Action 36" Drum (274 bpd)	(4) Vacuum Trucks	7,200 ft Inland Boom	(2) Small Boats < 18' (2) Small Boats > 18'		
Southern Waste Services, Inc. Pensacola, FL (850) 696-0092 (800) 852-8878	(1) Elastec TDS 118 (171 bpd)	(1) Vacuum Truck	5,800 ft Inland Boom	(2) Small Boats < 18' (1) Small Boat > 18'		
U.S. Environmental Services Mobile, AL (251) 662-3500	(1) Goo Gobbler (308 bpd)	(4) Vacuum Trucks	5,000 ft Inland Boom	(5) Small Boats < 18' (3) Small Boats > 18'		
Tampa COTP						
Cliff Berry, Inc. Tampa, FL (813) 626-6533		(5) Vacuum Trucks	1,850 ft Inland Boom	(1) Small Boat < 18' (1) Small Boat > 18'	(1) Frac Tank	



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FIGURE E.2 - RESPONSE EQUIPMENT LIST

March 2010

Contractor / Vendor	Skimmers	Vacuum Trucks / Units	Boom	Response Boats	Portable Liquid Storage	Response Equipment Support
Tampa COTP (cont'd)						
Diversified Environmental Services Tampa, FL (813) 248-3256		(6) Vacuum Trucks		(6) Small Boat < 18' (3) Small Boat > 18' (1) Large Boat Kathrine Anne (TUG) 82 ft (1) Large Boat Mary L (TUG) 66 ft	(6) Frac Tank	
MSRC Tampa, FL (813) 241-2521	(1) WP-1- Oleo./rotating Drum (3,017 bpd) (1) GT-185-Weir/Brush (1,371 bpd)		4,250 ft Inland Boom	(1) Small Boat > 18'		
MSRC OSRB Tampa, FL (813) 241-2521	(1) Stress 1-Weir (15,840 bpd)		1,540 Ocean Boom	(1) Large Boat 269 ft		
MSRC MSRC Lightning - OSRV Tampa, FL (813) 241-2521	(1) Lori Brush Pack-Chain Brush (5,000 bpd)		150 ft Inland Boom	(1) Large Boat 47 ft		
Southern Waste Services, Inc. Tampa, FL (Port of Tampa) (813) 241-0282 (800) 852-8878	(1) Foilex (891 bpd)	(1) Vacuum Truck (55 bbls)	5,000 ft Inland Boom	(2) Small Boats > 18'		
Southern Waste Services, Inc. Tampa, FL (St. Pete) (727) 546-6193 (800) 852-8878	(1) TDS 136 Drum	(1) Vacuum Truck	1,000 ft Inland Boom	(2) Small Boats < 18' (1) Small Boat > 18'		
Southern Waste Services, Inc. Ft. Meyers, FL (239) 574-4403 (800) 852-8878		(1) Vacuum Truck	900 ft Inland Boom	(1) Small Boats < 18'		
Southern Waste Services, Inc. Lake Wales, FL (863) 692-1006 (800) 852-8878		(1) Vacuum Truck	600 ft Inland Boom	(1) Small Boats < 18'		

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A. BLOWOUT AND FIREFIGHTING SPECIALISTS

(1) Firefighting Boats

Edison Chouest Offshore, Inc. - Galliano, LA (985) 632-7144 *
(985) 601-4444

(2) Jackup Boats

Cudd Energy Service
- Houston, TX (832) 295-5555 *
- Houston, TX – Toll Free (800) 899-1118 *
- Robstown, TX (361) 387-8521
- Robstown, TX – Toll Free (800) 762-6557 *
Danos & Curole - Larose, LA (985) 693-3313
Global Industries
- Carlyss, LA (337) 367-3483
- Toll Free (800) 256-7587
Power Marine - Belle Chasse, LA (504) 394-2900 *
Tetra Applied Technologies – Belle Chasse, LA (504) 394-3506 *

(3) Firefighting Experts


Boots & Coots - Houston, TX – Toll Free (800) 256-9688*
(281) 931-8884
Cudd Energy Service
- Houston, TX (713) 877-1118 *
(832) 295-5555
- Toll Free (800) 899-1118 *
Wild Well Control - Houston, TX (281) 353-5481 *
Williams Fire & Hazard Control
- Vidor, TX (281) 999-0276 *
- Alternate Number (409) 727-2347 *

B. CATERING

Energy Catering Service LLC - Houma, LA (985) 876-6255
Eurest Support Services
- Lafayette, LA (337) 233-9153 *
- Toll Free (800) 443-5630 *
Universal Sodexho
- Harahan, LA (504) 733-5761 *
- Toll Free (800) 535-1946

C. COMMUNICATIONS

Able Communications - Pearland, TX (281) 485-8800
ATN Signals, Inc.
- Alvin, TX (281) 331-4444 *
- Toll Free (800) 284-1558 *
Auto Com
- Lafayette, LA (337) 232-9610 *

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- Toll Free..... (800) 284-1840 *
- Caprock Services - St. Rose, LA (504) 464-2804
- Coastel Communications - Lafayette, LA..... (337) 989-0444 *
- Microcommunications - Lafayette, LA – Toll Free (800) 822-6484 *
- Broad Point
 - Lafayette, LA – Toll Free (800) 233-8372 *
 - New Orleans, LA..... (504) 736-9400
- Stratos Data Com
 - Lafayette, LA – Toll Free (800) 375-1562 *
 - Lafayette, LA..... (337) 234-3438 *
 - Morgan City, LA – Toll Free..... (800) 914-3737 *
- Tomba Communications
 - CGA Equipment/Marrero, LA..... (504) 340-2448 *
 - Metairie, LA..... (504) 349-4040 *
- Victoria Communications Services, Inc. - Victoria, TX..... (361) 575-7417

D. DIVING COMPANIES

- Cal Dive International
 - Houston, TX (713) 361-2600
 - New Iberia, LA (337) 374-0001
- Epic Companies - Harvey, LA..... (504) 340-5252 *
- Global Industries
 - Houma, LA – Toll Free..... (800) 256-7587 *
 - Houston, TX (713) 952-3483 *
 - Carlyss, LA..... (337) 367-3483
- Sub-Sea 7 - Belle Chasse, LA (504) 656-2400 *
- Oceaneering International, Inc. – Morgan City, LA..... (985) 395-5247 *
- Russell-Veteto Engineering - Corpus Christi, TX..... (361) 887-8851 *
- Acergy
 - Houston, TX (713) 430-1100 *
- Underwater Services - Aransas Pass, TX..... (361) 758-7487 *


E. DRILLING CONTRACTORS

- Global Industries - Carlyss, LA (337) 367-3483 *
- Noble Drilling Services Inc. - Sugarland, TX..... (281) 276-6100
- Transocean – Houston, TX..... (713) 232-7500
- Rowan Companies Inc. - Houston, TX..... (713) 960-7575

F. FULL SERVICE – COMPLETE CAMP CAPABILITIES

Portable Buildings, Full-Service Catering and Auxillary Equipment

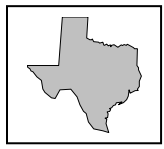
- General Marine Leasing
 - Belle Chase, LA (504) 394-1155 *
 - Broussard, LA (337) 837-2472 *

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G. HOTELS

(1) 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



(2) Texas

Corpus Christi

Holiday Inn - 1102 S. Shoreline, Emerald Beach.....	(361) 883-5731
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Galveston

Galveston Island Hilton Resort– 54 ¹⁰⁰ Seawall Blvd.....	(409) 744-5000
Holiday Inn on the Beach– 5002 Seawall Blvd.....	(409) 740-3581
Hotel Galvez – 2024 Seawall.....	(409) 765-7721
The San Luis Resort & Conference Center– 5222 Seawall Blvd.....	(409) 744-1500

Houston


Ramada Inn – 16510 North Freeway.....	(281) 821-2570
Crowne Plaza – 425 N. Sam Houston Parkway East.....	(281) 445-9000
Houston Hobby Airport Marriott - 9100 Gulf Freeway.....	(713) 943-7979

Port Aransas

Bay Tree Condominiums – 900 N. Station Street.....	(361) 749-5859
Casa Del Cortes Beachfront Condos – 4903 State Hwy 361.....	(361) 749-6942
Cline's Landing – 1000 N. Station Street.....	(361) 749-5274
Mustang Towers Condos – 6109 State Highway 361.....	(361) 749-6212
Seaside Motel – 841 Sandcastle Dr.....	(361) 749-4105

Rockport

Calm Harbor Real Estate – 3805 Highway 35 South.....	(361) 729-1367
Hunt's Court Motel – 725 S Water St.....	(361) 729-2273
Key Allegro Real Estate Company – 1798 Bayshore.....	(361) 729-2333
- 1800 Bayshore.....	(361) 729-6588
- Toll Free.....	(800) 348-1627
Kontiki Beach Resort & Hotel.....	(361) 729-4975
- 2290 N. Fulton Beach Road – Toll Free.....	(800) 388-0649

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(3) Louisiana

Abbeville
Sunbelt Lodge, 1903 Veterans Memorial Dr..... (337) 898-1453

Cameron
Cameron Hotel – 531 Marshall Street..... (337) 775-5442

Chauvin
CoCo Marina & Motel – 106 Pier 56 (985) 594-6626

Grand Isle
Grand Isle Suites – 1959 Highway..... (985) 787-3515
Sand Dollar Motel – 167 Caminada Drive..... (985) 787-2893
Sun and Sand Cabins – 115 Shelton Lane..... (985) 787-2456

Houma
Quality Hotel - Housa – 210 S. Hollywood Road (985) 868-5851
Red Carpet Inn – 2115 Bayou Black Dr..... (985) 876-4160
Plantation Inn – 1381 West Tunnel Blvd..... (985) 868-0500
Ramada Inn – 1400 West Tunnel Blvd. (985) 879-4871


Lafayette
Best Western Hotel Acadiana (337) 233-8120
- 1801 W. Pinhook Rd. (800) 826-8386
Holiday Inn Holidome (337) 233-6815
- 2032 N.E. Evangeline Thrw. (800) 465-4329
Lafayette Hilton & Towers – 1521 W. Pinhook Road..... (337) 235-6111
LaQuinta Inn – 2100 N.E. Evangeline Thrw..... (337) 233-5610
Days Inn – 1605 N. University Ave. (337) 237-8880
Ramada Executive Plaza – 120 E. Kaliste Saloom Rd..... (337) 235-0858

Metairie
La Quinta Inn New Orleans Causeway – 3100 I-10 Service Road..... (504) 835-8511

Morgan City
Holiday Inn – 520 Roderick..... (985) 385-2200
Morgan City Motel – 507 Brashier Ave (985) 384-6640
Plantation Inn – 815 Highway 90 East..... (985) 395-4511
The Days Inn – 7408 Highway 182 East..... (985) 384-5750

New Orleans
Garden District Hotel – 2203 St. Charles Ave. (504) 566-1200
Hilton New Orleans Riverside – 2 Poydras..... (504) 561-0500
New Orleans Marriott – 555 Canal Street..... (504) 581-1000
Royal Sonesta – 300 Bourbon Street (504) 586-0300
Sheraton New Orleans Hotel – 500 Canal Street..... (504) 525-2500

Thibodeaux
Ramada Inn – 400 East 1st Street..... (985) 446-0561
Howard Johnson Lodge – 203 N. Canal Blvd..... (985) 447-9071


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H. LABORATORIES: BIOLOGICAL AND CHEMICAL ANALYSIS

- Acculab, Inc. – Marrerro, LA (504) 371-8557 *
- Analysis Laboratories, Inc. - Metairie, LA (504) 889-0710
- Central Analytical Laboratory (CAL) – Metairie, LA (504) 297-3400
- Coastal Environment Inc.- Baton Rouge, LA (225) 383-7451
- EDI Environmental Services - Lafayette, LA..... (337) 264-9810
- Enviro-Lab, Inc. – Houma, LA (985) 876-5668 *
- Fugro Consulting - 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
- TestAmerica - Corpus Christi, TX (361) 289-2673
- Southern Flow Companies Inc. – Belle Chasse, LA (504) 394-9440
- Southern Petroleum Laboratory (SPL) - Lafayette, LA (337) 237-4775
- Texas A & M Dept. of Biology - College Station, TX..... (979) 845-7747

I. MARINE CONTRACTORS (CONSTRUCTION)

- Brown & Root – Houston, TX..... (713) 676-4440
- Crain Bros. Inc. - Grand Chenier, LA (337) 538-2411 *
- Diamond Services – Amelia, LA (985) 631-2187 *
- Garrett Construction - Ingleside, TX (361) 643-7575
- Global Industries
 - Carlyss, LA..... (337) 367-3483 *
 - Toll Free..... (800) 256-7587
- J. Ray McDermott Engineering
 - Houston, TX (281) 870-5000 *
 - Morgan City, LA (985) 631-2561 *
- Kingfisher Marine - Port Lavaca, TX (361) 552-6751 *
- Raymond Dugat Co.
 - Aransas Pass, TX (361) 776-7300 *

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J. OIL SPILL EQUIPMENT, CONSULTANTS & CONTRACTORS

- American Pollution Control, Inc. (AMPOL) – New Iberia, LA..... (337) 988-7460 *
- Clean Harbors Environmental - Sulphur, LA..... (337) 882-1025
- Boots & Coots - Houston, TX..... (800) 256-9688 *
- Clean Gulf Associates - Lake Charles, LA..... (888) CGA-2007*
- Du-Tex, Inc. - Corpus Christi, TX..... (361) 887-9807 *
- Environmental Equipment - Houma, LA..... (985) 868-3100
- ES&H Cenac Environmental Consulting Services - Houma, LA (985) 851-5350 *
- Alternate Number..... (877) 437-2634 *
- Garner Environmental Services
 - Corporate office Deer park, TX..... (504) 254-2444 *
- Grand Isle Shipyards (GIS) - Grand Isle, LA (985) 787-2801 *
- Miller Environmental - Corpus Christi, TX..... (361) 289-9800 *
- National Response Corporation – Great River, NY (800) 899-4672
- Oil Mop – Several Locations
 - Toll Free..... (800) OILMOP1
- Oil Spill Control - Corpus Christi, TX..... (361) 882-2656 *
- The Obrien’s Group - Slidell, LA (985) 781-0804 *
- The Response Group – Houston, TX..... (281) 880-5000 *
- Phillips Services (PSC) – Baton Rouge, LA..... (255) 755-4700 *
- United States Environmental Services, L.L.C.
 - Jackson, MS (888) 279-9930 *
 - New Orleans, LA..... (504) 527-5441 *

K. OTHER CONTRACTORS: ROUSTABOUT SERVICES


- Berry Brothers General Contractors – Berwick, Louisiana (985) 384-8770 *
- Crown Oilfield Services, Inc. – Patterson, Louisiana (985) 395-9335 *
- Danos & Curole Marine Contractors
 - Lafayette, LA..... (337) 235-2767 *
 - Larose, LA..... (985) 693-3313 *
 - Houston, TX (713) 895-7300

L. PHOTOGRAPHY

- Jim Hebert Photography - Raceland, LA (985) 537-5305 *
- Petris Technology - Houston, TX (713) 956-2165

M. PUBLIC RELATIONS CONSULTANTS

- Brown, Nelson & Associates, Incorporated - Houston, TX (713) 784-6200

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N. RENTAL GENERATORS


- Aggreko Inc. – New Iberia, LA (337) 365-5479 *
- Neff Rental Inc. (formerly Buckner)
 - Geismar, LA (225) 647-6333 *
 - Fourchon, LA (985) 396-2229 *
 - Houma, LA (985) 868-9138 *
 - Lafayette, LA (337) 237-6318 *
 - Lake Charles, LA (337) 494-0673 *
 - Morgan City, LA (985) 384-7571 *
 - New Iberia, LA (337) 364-3631 *
 - St Rose, LA (504) 466-1200 *
 - Toll Free (888) 709-NEFF

O. RENTAL OTHER (PUMPS, COMPRESSORS & MISC.)

- Airdyne Lafayette, Inc. – Lafayette, LA (337) 837-3251 *
- Morgan City Rentals – Morgan City, LA (985) 384-2004 *

P. RENTAL TANKS (WASTE LIQUIDS OR SOLIDS)

- Baker Tanks – Geismar, LA (225) 673-4955 *
- Diamond Tank Rentals (USCG approved 15 – 25 bbls)
 - Bayou Vista, LA (985) 395-9317 *
 - Toll Free (800) 960-0065 *
- Dragon Rentals
 - Beaumont, TX (409) 833-2665
 - La Port TX – Toll Free (800) 231-8198
- Gulfstream (USCG approved 15 bbls, 100 bbls)
 - Houma, LA (985) 868-0303 *
 - Toll Free (800) 821-8454 *
- Magnum Mud Equipment
 - Houma, LA (985) 872-1755 *
 - Jennings, LA (800) 200-8265 *
- Neff Rental Inc. (formerly Buckner)
 - Baton Rouge, LA (225) 647-6333 *
 - Fourchon, LA (985) 396-2229 *
 - Houma, LA (985) 868-9138 *
 - Lafayette, LA (337) 237-6318 *
 - Lake Charles, LA (337) 494-0673 *
 - Morgan City, LA (985) 384-7571 *
 - New Iberia, LA (337) 364-3631 *
 - St Rose, LA (504) 466-1200 *
 - Toll Free (888) 709-NEFF

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Q. RENTAL TRAILERS (OFFICE & LIVING QUARTERS)

- H & B Rentals
 - Alvin, TX – Toll Free (800) 237-6062 *
 - Broussara, LA (337) 839-1641 *
- Osers Inc. – Morgan City, LA (985) 384-6980 *
- Proco Inc. - Kingsville, TX (361) 516-1112
- Waste Management of Acadiana
 - Houston, TX (713) 512-6200 *
 - Lafayette, LA – Toll Free (800) 423-0645 *
 - Lake Charles, LA (337) 436-7229 *
- Williams Scotsman - Houston, TX (713) 466-4353

R. SPILL TRACKING/TRAJECTORIES

- The Response Group
 - Houston, TX (281) 880-5000 *
- NOAA
 - HAZMAT – Seattle, WA (206) 526-6317
 - Fax Number (206) 526-6329


S. TRANSPORTATION - AIR

(1) Airplanes/Airports

- Aircraft Rescue - New Orleans, LA (504) 243-4010 *
- Hammond Municipal Airport - Hammond, LA (985) 542-3430 *
- Hammonds Air Service - Houma, LA (985) 876-0584 *
- Houma/Terrebonne Airport Commission - Houma, LA (985) 872-4646
- 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 *
- South Sea Plane - New Orleans, LA (504) 394-5633

(2) Dispersant Application

- MSRC – Lake Charles, LA 1-800-OIL SPILL *
- Airborne Support, Inc. (contracted to CGA) - Houma, LA (985) 851-6391 *
- Air Response (C-54 aircraft) – Mesa, AZ (480) 844-0800
- Conair Aviation, Ltd. (Rep.: Walt Weslowsky) - Canada (604) 855-1171 *

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(3) Fixed-Wing Aircraft

Hammonds Air Service – Houma LA (985) 876-0584 *
 Petroleum Helicopters, Inc. (PHI) – Morgan City, LA (985) 631-2131 *

(4) Helicopters

Air Logistics a Bristow Company
 - Galveston, TX (409) 740-3546
 - Houma, LA (985) 851-6232 *
 - Intracoastal, LA (337) 893-8221 *
 - New Iberia, LA – Toll Free (800) 365-6771 *
 - Patterson, LA (985) 395-6191 *
 - Sabine, TX (409) 971-2805

ERA Helicopters
 - Cameron, LA (337) 775-5574 *
 - Fourchon, LA (985) 396-2285 *
 - Houma, LA (985) 868-0817
 - Lake Charles, LA (800) 256-2372 *


Evergreen Helicopters
 - Galveston, TX (409) 740-0231 *

Houston Helicopters, Inc. - Pearland, TX (281) 485-1777 *

Industrial Helicopters
 - Lafayette, LA (337) 233-3356 *

Panther Helicopters – Belle Chasse, LA (504) 394-5803

PHI Inc.
 - Fourchon, LA (985) 396-2350 *
 - Galveston, TX (409) 744-5286 *
 - Houma, LA (985) 868-1705 *
 - Intracoastal City, LA (337) 893-1428 *
 - Lafayette, LA (337) 272-4210 *
 - Morgan City, LA (985) 631-2131 *
 - New Orleans, LA (504) 733-7673
 - Port O'Connor, TX (361) 983-2942
 - Sabine Pass, TX (409) 971-2455 *
 - Boothville, LA (504) 534-2631 *

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T. TRANSPORTATION - LAND

(1) Bus Lines

Hotard Coaches – New Orleans, LA..... (504) 944-0253 *

(2) Oilfield Equipment Haulers

- Ace Transportation, Inc.
 - Lafayette, LA..... (337) 837-4567
 - Berwick, LA (985) 385-4285 *
 - Harvey, LA – Toll Free..... (800) 654-4236 *
 - Houma, LA (985) 879-2482 *
 - Channelview, TX – Toll Free (800) 392-0087 *
 - Pearland, TX – Toll Free..... (800) 327-3643 *
- Acme Truckline
 - Abbeville, LA..... (337) 892-6749
 - Beaumont, TX – Toll Free..... (800) 456-2263 *
 - Baton Rough, LA – Toll Free (800) 356-1658 *
 - Cameron, LA – Toll Free (800) 775-2263 *
 - Groves, TX..... (409) 962-8591 *
 - New Iberia, LA (337) 364-1128 *
 - Houma, LA – Toll Free..... (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 *
- King Trucking, Inc. – Amelia, LA..... (985) 631-0526 *
- Lone Star (Whitey Patten)
 - Corpus Christi, TX..... (361) 241-0633 *
 - Toll Free..... (800) 242-1085
- Packard Truck Lines – Belle Chasse, LA..... (504) 392-9994
- Ray Bellew and Sons - Houston, TX..... (713) 991-0390 *
- Service Offshore Inc.
 - Intracoastal City, LA..... (337) 893-6843 *
- Specialized Waste Systems, Inc. (SWS) - Houston, TX..... (281) 452-1735 *
- Tetra Services - Alice, TX – Toll Free..... (800) 541-9219 *
- Texas Hot Shot
 - Houston, TX..... (713) 466-1120
 - Houston, TX – Toll Free..... (800) 683-4682 *
 - Kilgore, TX – Toll Free..... (800) 683-4681 *
- Venture Transport
 - Houma, LA..... (985) 851-3316 *
 - Houma, LA – Toll Free..... (800) 670-7908
 - Houston, TX – Toll Free..... (800) 960-8777
- Walker Truck Line
 - Morgan City, LA – Toll Free..... (800) 535-5992 *
- Louisiana Transportation
 - Lafayette, LA – Toll Free (800) 448-3525

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U. TRANSPORTATION - MARINE

Marine Legend

Barge.....	B
Barge (Offshore)	B/O
Barge (Storage)	B/S
Crew Boats.....	C
Fireboats	F
Lift Boats	L
Other	O
Supply Boats.....	S
Tugs	T
Tugs (Inland).....	T/I
Tugs (Offshore).....	T/O
Utility Boats	U

(1) Vessels

Adams Towing – Morgan City, LA	T/I	(985) 384-1752 *
AMC Marine Service Inc. - Golden Meadow, LA	L	(985) 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	(985) 475-5543
B&J Martin, Inc. - Cutoff, LA	S U	(985) 632-2727
Barnett Marine, Inc. - Belle Chase, LA.....	B	(504) 394-6055
Broussard Bros. - Intracoastal City, LA.....	B C S T/I U	(337) 893-5303
Brownwater Marine - Rockport, TX.....	B C T	(361) 729-3721
Bud's Boat Rentals - Venice, LA	C	(504) 534-2225
C&E Boat Rental - Cutoff, LA.....	S U	(985) 632-6166 *
Canal Barge - New Orleans, LA.....	B/S	(504) 581-2424
Candy Fleet – Morgan City, LA.....	C S U.....	(985) 384-5835 *
Cenac Towing		
- Houma, LA	T B B/S B/O.....	(985) 872-2413 *
- Toll Free.....	T B B/S B/O.....	(800) 942-5476 *
Central Boat Rental – Berwick, LA.....	T B B/O	(985) 384-8200
Crew Boats, Inc. - Chalmette, LA.....	C	(504) 277-8201
Derrick Construction – Rockport, TX	B	(361) 729-2423 *
Edison Chouest Offshore		
- Galliano, LA	C F S U	(985) 601-4444 *
Harvey Gulf International – Harvey, LA	B T/O	(504) 348-2466 *
Kilgore Offshore		
- Lafayette, LA	C S U.....	(337) 233-6515 *
Kim Susan, Inc. – LaRose, LA	C S U.....	(985) 693-7601 *
Horn Beck Offshore – Morgan City, LA.....	B B/O.....	(985) 727-3707
L&M Bo-Truc Rentals – Galliano, LA.....	O	(985) 475-5733 *
Louisiana International Marine – Gretna, LA	T/O	(504) 392-8670
Odyssey Marine		

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- Lockport, LA U (985) 532-5561 *
- LaRose Toll Free U (800) 693-5707
- Marine Transportation – Panama City, FL C (850) 769-1459 *
- Masco Operators, Inc. – Freeport, TX S U (979) 233-4827
- McDonough Marine – Metairie, LA B T (504) 780-8100 *
- First Coast Towing
 - Alternate Number B T (361) 920-0607 *
- Montco, Inc. – Golden Meadow, LA L (985) 325-7157 *
- Moran Towing of Texas – Port Arthur, TX B/O T (409) 727-7020 *
- Otto Candies, Inc. – Des Allemands, LA B C S T U (504) 469-7700 *
- (Maintains Database Offshore Vessels)
- Raymond Dugart Company – Ingleside, TX B T (361) 776-7137
- Delta Towing
 - Houma, LA T (985) 851-0566
- Ryan Marine Service – Galveston, TX C S U (409) 763-1269 *
- Seacor Marine, Inc.
 - Houma, LA C S T U (985) 876-5400 *
- Hornbeck Offshore – New Iberia, LA S U (337) 365-6000
- Shell Morgan Landing, Inc. – Intracoastal City, LA T/I (337) 893-1211
- Suard Company – Lockport, LA B T (985) 532-5300 *
- Texas Crew Boats – Freeport, TX C (979) 233-8222 *
- Tidewater Marine
 - Amelia, LA B C O S T U (985) 631-5820 *
 - Houston, TX B C S T U (713) 470-5300 *
 - New Orleans, LA B C S T U (504) 568-1010
- Trico Marine Operators
 - Saint Rose, LA C S U (504) 465-3800
 - Houston, TX C S U (713) 780-9926
- Y & S Marine Boat Rental – Belle Chasse, LA C (504) 433-5005

(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
- Rault Resources
 - Metairie, LA B C S T U (504) 581-1314

V. VACUUM SERVICES

- APT - Corpus Christi, TX (361) 852-2266 *
- Brine Service Co. - Corpus Christi, TX (361) 884-4448 *
- H & K Vacuum Trucking Company - Sinton, TX (361) 364-4311 *
- Max-Vac - Corpus Christi, TX (361) 887-2182 *
- Mo-Vac - Alice, TX (361) 883-0296 *
- Phillips Services - Corpus Christi, TX (361) 265-9339 *
- Southwest Corporate Marine - Corpus Christi, TX (361) 855-4552 *
- Vanguard Vacuum Trucks, Inc. – Houma, Louisiana
 - Houma, LA (985) 851-0998 *
 - Toll Free (800) 874-9269 *

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W. WASTE DISPOSAL

(1) Hazardous & Non-Hazardous

Omega Waste (Consultants) – Patterson, Louisiana..... (985) 399-5100 *

(2) Non-Hazardous Oilfield Wastes

Newpark Environmental Services

- Ingleside, TX (361) 776-3526 *
- Lafayette, LA..... (337) 775-5605 *
- Morgan City, LA (985) 384-4460 *
- Port Arthur, TX..... (409) 963-3503

U.S. Liquids

- Bourg, LA (985) 798-7541 *
- Jennings, LA (337) 824-3194 *

X. WELL CONTROL SUPPLIES

Frank's Casing Crew

- Corpus Christi, TX – Toll Free (800) 827-6391 *
- Houston, TX – Toll Free..... (800) 827-6020 *
- Lafayette, LA – Toll Free (800) 833-7265 *

Hub City Iron Works - Lafayette, LA (337) 233-9100 *


Kim Susan Incorporated - Larose, LA..... (985) 693-7601 *

Patterson Rental Tools

- Alice, TX..... (361) 668-8234 *
- Houston, TX (713) 466-1800 *
- New Orleans, LA..... (337) 359-9900

Weatherford

- Corpus Christi, TX..... (361) 904-0300
- Lafayette, LA..... (337) 837-1877 *

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Y. WILDLIFE AND MARINE LIFE SPECIALISTS

(1) Specialists - National

Tri-State Bird Rescue & Research, Inc.
 - Dr. Heidi Stout - Newark, DE
 Office..... (302) 737-9543
 Cell..... (302) 218-7371

WR & E - Wildlife Rehab & Education
 - Sharon Schmalz - League City, TX
 Home [REDACTED]
 Pager..... [REDACTED]
 Cell..... [REDACTED]

(2) Specialists - Texas

Aransas Wildlife Refuge (Locate Facilities for Wildlife) - Austwell, TX..... (361) 286-3533 (x225)
 - Don Alonso
 Cell..... [REDACTED]

Houston Audobon Society - Houston, TX..... (713) 932-1639

Institute of Marine Life Sciences (Fish Expertise) - Texas A & M Univ.
 - Dr. Andrew Landry
 Office..... (409) 740-4989
 (409) 740-4421

Marine Mammal Research Program (Marine Mammal Expertise)
 Galveston, TX..... (409) 740-4413

NOAA National Maritime Fishery Service (Sea Turtles) - Galveston, TX... (409) 766-3500

Permitted Individual (Dr. Roger Zimmerman) (409) 682-4033

Texas Parks & Wildlife Law Enforcement - Austin, TX..... (512) 389-4848


WR & E - Wildlife Rehab & Education - League City, TX
 - Sharon Schmalz:
 Home [REDACTED]
 Pager..... [REDACTED]
 Cell..... [REDACTED]

(3) Specialists - Louisiana

Eagle Surveying, Inc.
 Morgan City, LA (304) 744-6190

Louisiana Department of Wildlife and Fisheries
 After Hours (225) 765-2441 *

U. S. Department of Agriculture (Animal Damage Control)
 - Dwight LeBlanc, State Director
 Wildlife Services - Port Allen, LA (225) 389-0229
 Crowley, LA..... (337) 783-0182 *

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(4) U.S. Fish and Wildlife Service

Offshore Texas

(Call Region II Office first. Steve Robertson will contact Field Office.)

• Region II Office - Ecological Services

Albuquerque, New Mexico (505) 248-6786
 - Steve Robertson, Regional Oil Spill Response Coordinator
 Office (505) 248-7465

• Field Offices - Ecological Services

Houston, TX (East Matagorda Bay North) (281) 286-8282

Corpus Christi State University (East Matagorda Bay South). (361) 994-9005
 - Claire Lee, Environmental Contaminant Specialist (361) 994-9005 (x 247)
 - Craig Giggelman, Alternate (361) 994-9005 (x 228)

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
 - James Boggs, Field Response Coordinator (337) 291-3115
 - Buddy Goatcher, Field Response Coordinator (337) 291-3125
 - Brad Rieck, Alternate (337) 291-3116

Coastal Mississippi and Coastal Alabama – Daphne, AL (251) 441-5181
 - Peter Tuttle, Resource Contaminant Assessment Specialist
 Office (251) 441-6633

Panhandle of Florida to Swanee River Drainage – Panama City, FL (850) 769-0552
 - John Hemming, Resource Contaminant Assessment Specialist
 Office (850) 769-0552 (x 238)

• Region IV Office - Ecological Services

Atlanta, Georgia
 - Bill Starkel, Contaminant Coordinator
 Office (404) 679-7127
 Cell [REDACTED]

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APPENDIX G - NOTIFICATION AND REPORTING FORMS

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Figure G.1 - Internal Spill Reporting Forms

(Internal SEPCo HSE use only) Event Number _____

Report of Offshore Environmental Incident Form (OF-REI)			
DIRECTIONS: This form is to be used to capture information that will be later entered into the IMPACT Safety database. When completing this form, please be as complete and specific as possible. When completing this form using MS Word you will only be able to enter information into the shaded portions of the form or by clicking on the check boxes. You can use the TAB key to move to the right or the DOWN ARROW key to move down on the form. You may also use your mouse to click on the cell that you want to complete.			
Date of Incident	Time of Incident	On SEPCo Premises <input type="checkbox"/> Y <input type="checkbox"/> N	
Incident Headline (Brief description of incident – 50 characters or less on the line below)			
Incident Type and Location Information			
<input type="checkbox"/> Spill <input type="checkbox"/> Exceedance of discharge limits (Noncompliance) <input type="checkbox"/> Produced water sheen <input type="checkbox"/> Material lost overboard <input type="checkbox"/> Complaint <input type="checkbox"/> Fire <input type="checkbox"/> Release <input type="checkbox"/> Other(Describe)			
Field Name	Well No./Rig	Block	Platform
Latitude	Longitude		OCS-G#
Activity at Location			
<input type="checkbox"/> Drilling/W.O./Completion <input type="checkbox"/> Exploration <input type="checkbox"/> Production <input type="checkbox"/> Construction <input type="checkbox"/> Other			
Specific Operation			
<input type="checkbox"/> Drilling <input type="checkbox"/> Construction <input type="checkbox"/> Operations <input type="checkbox"/> Other <input type="checkbox"/> Workover <input type="checkbox"/> Crane operations <input type="checkbox"/> Well servicing <input type="checkbox"/> Completion <input type="checkbox"/> Equipment handling <input type="checkbox"/> Air transport <input type="checkbox"/> Coil tubing <input type="checkbox"/> Maintenance <input type="checkbox"/> Boat/Ship			
Source (Check all that apply)			
<input type="checkbox"/> Drip pan <input type="checkbox"/> Flowline <input type="checkbox"/> Other surface <input type="checkbox"/> Sump <input type="checkbox"/> Tank/Vessel <input type="checkbox"/> Wellhead <input type="checkbox"/> Flare <input type="checkbox"/> Hoses <input type="checkbox"/> Pipeline <input type="checkbox"/> Rotating equipment <input type="checkbox"/> Transfer equipment <input type="checkbox"/> Other			
Environment Affected			
<input type="checkbox"/> Water <input type="checkbox"/> Air			
What was spilled or released?			
Report spilled or released volume expressing liquid in gallons, dry chemicals in pounds and air emissions in Standard Cubic Feet.			
Gallons (gal)	Pounds (lbs)	Standard Cubic Feet (SCF)	
OIL SPILL INFORMATION			
Sheen colors and Spill Factors (Minimum to Maximum Gallons/Square Yard)			
<input type="checkbox"/> Sheen (spill factor = 0.0000087 to 0.0000677) <input type="checkbox"/> Transitional Dark Color (spill factor = 0.0111133 to 0.04428)			
<input type="checkbox"/> Rainbow (spill factor = 0.0000677 to 0.0011106) <input type="checkbox"/> Dark Color (spill factor = >0.04428)			
<input type="checkbox"/> Metallic (spill factor = 0.0011106 to 0.0111133)			
Size of the sheen ___ yards X ___ yards = ____ square yards			
Estimated volume of the spill (square yards x coverage x spill factor) = ____ gallons			
Was the sheen <input type="checkbox"/> captured/cleaned up <input type="checkbox"/> allowed to disperse naturally			
How long did the sheen last before natural dispersion or cleaned up? _____ hours			
Weather Information			
Est. current speed	Direction (to)	Estimated wave height	Est. wind speed Direction (from)
Liquid Spill Properties an 6 barrels)			
API Gravity	Pour Point		
Visibility(nautical miles)	Ceiling (feet)	Ambient temp. (°F.)	

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Source Control					
Describe how and when the source of the spill or discharge was stopped					
Describe what was/will be done specifically to prevent reoccurrence? (Procedures changed, equipment repaired, etc)					
What was the cost of repairs/cleanup (Include equipment, repair time, transportation, etc.)					
EXCEEDANCE OF DISCHARGE LIMITS (NONCOMPLIANCE)					
Did a sample fail a Permit test? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Static sheen <input type="checkbox"/> Produced H ₂ O sheen					
Oil and Grease	mg/l	Sanitary chlorine	mg/l	Toxicity	ppm
Full Description (How did the incident occur?) (Attach additional sheets, if necessary, to complete event description)					
INCIDENT IMPACT (Actual)					
Actual Impact on Environment	<input type="checkbox"/> Slight Effect – Less than 1 barrel spill	<input type="checkbox"/> Minor Effect – Greater than 1 barrel spill, INC or non-compliance	<input type="checkbox"/> Localized Effect – Greater than 5 barrels spilled or chemical reportable quantity (RQ)	<input type="checkbox"/> Major Effect – Spill response initialization required	<input type="checkbox"/> Massive Effect
Actual Impact on Assets <input type="checkbox"/> None	<input type="checkbox"/> No disruption to operation	<input type="checkbox"/> Brief disruption	<input type="checkbox"/> Partial shutdown, can be restarted	<input type="checkbox"/> Partial operational loss up to 2 weeks	<input type="checkbox"/> Substantial or total loss of operation
Actual Impact on Reputation <input type="checkbox"/> None	<input type="checkbox"/> Slight	<input type="checkbox"/> Limited	<input type="checkbox"/> Considerable	<input type="checkbox"/> Major National	<input type="checkbox"/> Major International
Type of Complaint (<input type="checkbox"/> Check if none)					
<input type="checkbox"/> Blast/Vibration	<input type="checkbox"/> Lights	<input type="checkbox"/> Odor/Fumes	<input type="checkbox"/> Debris	<input type="checkbox"/> Noise	<input type="checkbox"/> Oil Spray <input type="checkbox"/> Smoke
<input type="checkbox"/> Flaring <input type="checkbox"/> Other (describe)					

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NOTIFICATIONS

	Notified	Person's Name	Date / Time	Report number
External Notifications				
National Response Center 1-800-424-8802 (If delegated to by Incident Commander)	<input type="checkbox"/>		/	
	<input type="checkbox"/>		/	
Internal Notifications (all incidents)				
Incident Commander	<input type="checkbox"/>		/	
Area Leader/Drilling Superintendent	<input type="checkbox"/>		/	
	<input type="checkbox"/>		/	
Witness(es) to the Incident				
Name (Typed or Printed)		Employer		Phone
<i>I certify that all the above information is true, accurate and complete. Under Federal law, penalties can be assessed for recording false information including fines and imprisonment.</i>				
Report submitted by				
Name (Typed or Printed)	Title	Phone	Date	
Approvals and/or reviewers				
Name (Typed or Printed)	Title	Phone	Date	

Contact the HSE Incident Management Process Gatekeeper for you organization for submission instructions. You can also submit via e-mail address (incidents@shellus.com) or Fax to (907) 700-3636


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Figure G.2 - External Spill Reporting Forms


**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 _____

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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: _____
PHONENO.: _____

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: _____
REMINI 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 _____

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APPENDIX H - WORST CASE DISCHARGE SCENARIOS

A. Facility Information

1. WCD < 10 Miles Seaward of the Coastline (if applicable)

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
Pipeline	West Delta 143 to Fourchon Terminal at shoreline, Segment 10553	Onshore/Shoreline (State Waters)	-10 to 1 Mile
Factors Considered: Volume and proximity to shore			

2. WCD > 10 Miles Seaward of the Coastline (if applicable)

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
Production	Mississippi Canyon 809	MC 809	52
Factors Considered: Volume, gravity and proximity to shore.			

3. WCD involving an Exploratory Well from a Mobile Offshore Drilling Unit (if applicable)


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
Exploratory	Mississippi Canyon 762	MC 762	51.3

B. Volume

The volumes of the worst-case discharge scenarios for Production Operations (<10 miles = 10,104 bbls, >10 miles = 163,223 bbls) and Exploration (205,000 bopd) were determined using criteria in CFR 30, Section 254.47. Calculations are shown in **FIGURE H.1**.

C. Land Segment 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 Central and Western Gulf of Mexico available on the MMS website using 30 day impact. The results are shown in **FIGURE H.2**.


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D. Resource Identification

**Environmental Sensitivities
TERREBONNE PARISH, LOUISIANA**

This includes the eastern portion of Atchafalaya Bay Wildlife Management Area across to Timbalier Bay; along the Gulf Coast including Caillou Bay, Isles Dernieres and Terrebonne Bay. The entire parish is classified as an EPA National Estuary. This area is primarily marshland, broken up by numerous small bays and freshwater lakes. The list of contacts in this section will be updated every 2 years.

Sensitive Areas/ Descriptions	Access	Wildlife	Contact
1) BARATARIA TERREBONNE NATIONAL ESTUARY PROGRAM			
Protects the approximately 735 species of birds, finfish, shellfish, reptiles, amphibians and mammals that frequent the Terrebonne Bay area. Includes the Terrebonne Barrier Island Refuge.	N/A	RTE: Brown pelican, pallid sturgeon, Kemp's Ridley sea turtle, West Indian manatee Others: Waterfowl (winter), shore birds, wading birds, finfish, shellfish, small mammals, reptiles, amphibians	Director 300 Audubon Dr. North Babington Hall, Rm 105 Nicholls State University Thibodaux, LA 70301 (800) 259-0869
2) TERREBONNE BAY AREA			
Covers the western side of Terrebonne Bay to the east side of Timbalier Bay, extending south to the Barrier Islands (including Lake Barre, Tambour, Felicity, Raccourci, and Lake Pelto). Tidal range is 1-3 feet and max currents are 0.5 knots. Winter winds are from the NE at 11.4 knots, spring winds are from the SE at 9.5 knots and summer winds are from the S at 6.8 knots. Black mangroves can be found in the coastal regions.	By boat only.	RTE: Bald eagle, piping plover, brown pelican, pallid sturgeon, Kemp's Ridley sea turtle, West Indian manatee, Louisiana black bear Others: Waterfowl (winter), shorebirds, seabirds diving birds, eastern oyster, redfish, speckled trout, spotted sea trout, tarpon, red drum, marine mammals	N/A

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Sensitive Areas/ Descriptions	Access	Wildlife	Contact
3) CAILLOU BAY AREA			
Includes Lake Pelto, Caillou Bay, Caillou Lake, Lake Mercahant, Lost Lake and Four League Bay. Tidal range is 1-3 feet and the max currents are 0.5 knots. Winter winds are from the NE at 11.4 knots, spring winds are from the SE at 9.5 knots and summer winds are from the S at 6.8 knots. Black mangroves can be found in the coastal regions.	By boat only.	RTE: Bald eagle, least tern (spring), brown pelican, piping plover, pallid sturgeon, Kemp's Ridley sea turtle, West Indian manatee, Louisiana black bear Others: Shorebirds and seabirds, shrimp and blue crab (fall-spring), redfish, speckled trout, Gulf menhaden and southern flounder (fall-spring), drum (spring, fall), marine mammals	Louisiana SWR New Iberia, LA (337) 369-3807
4) ATCHAFALAYA DELTA WILDLIFE MANAGEMENT AREA			
137,000 acres of marshland. Bound by Atchafalaya Bay to the north, the GOM on the South, Wax Lake Outlet on the east and East Cote Blanche Bay on the west.	By boat only.	RTE: Brown pelican, pallid sturgeon, bald eagle, American alligator, Kemp's Ridley sea turtle, West Indian manatee Others: Peregrine falcon, roseate spoonbill, hooded mergansers, wood ducks and other waterfowl (winter), songbirds (spring), wading and shorebirds, finfish and shellfish (nursery), furbearers, white-tailed deer	Atchafalaya Delta WMA P.O. Box 127 Krotz Springs, LA 70091 Manager: Michael Carlos (337) 373-0174 (337) 373-0181 (fax)

Areas of Socio-Economic Concern in Terrebonne Parish:

- Southwest Pass is a high use waterway
- Vermillion Bay has a high number of oil facilities
- Private oyster beds throughout the shoreline marsh areas
- Private oyster beds in Terrebonne Bay

Protection Priorities for Terrebonne Parish:


- Caillou Bay area
- Atchafalaya Delta Wildlife Management Area
- Terrebonne Bay area
- Other shoreline marshes

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Environmental Sensitivities LAFOURCHE PARISH, LOUISIANA

Lafourche Parish includes Timbalier Bay and Bayou Lafourche east to Bay Tambour and Caminada Bay. The Timbalier Bay area contains rookeries, mangroves, oyster beds and finfish and shellfish nursery grounds. Seven rookeries are located northwest of Grand Isle in Bay Tambour and Caminada Bay. Open beaches are located along the Gulf Coast. This area is a part of the Barataria Basin, a unique fishery habitat that has shallow estuarine waters, sandbars, small barrier and coastal islands and coastal wetlands. This area is also a nesting ground for the brown pelican, an endangered species.

Sensitive Areas/ Descriptions	Access	Wildlife	Contact
1) WISNER STATE WILDLIFE MANAGEMENT AREA			
21,621 acres of marshland. Consists mostly of a low sub-delta saline marsh with a number of lake and oil canals present. Major marsh vegetation is oyster grass and salt grass. Numerous finfish and crustaceans are present in the waterways.	By boat only. Public launches available along LA Hwy 1 and commercial ramps are located at Leeville, Caminada Bay and Grand Isle.	RTE: Brown pelican Others: Waterfowl (winter), peregrine falcon, speckled trout, red fish, flounder, black drum, sheepshead, croaker, blue crab, shrimp, nutria, muskrat, mink, raccoon, other small mammals	Wisner WMA LA Dept of Wildlife and Fisheries P.O. Box 98000 Baton Rouge, LA 70898-9000 (225) 765-2360
2) TIMBALIER BAY AREA			
Bay Courant south to the Barrier Islands, including Timbalier Bay, Devils Bay, Pierle Bay and Little Lake. Tidal range is 1-3 feet and max currents are 0.5 knots. Winter wind direction and velocity is from NE at 11.4 knots, spring is from the SE at 9.5 knots and summer is from the S at 6.8 knots.	By boat only.	RTE: Reddish egret, least tern Others: Great egret, royal tern, black-crowned night heron, eastern oyster, red drum, spotted sea trout, tarpon	N/A
3) POINTE AU CHIEN WILDLIFE MANAGEMENT AREA			
28,244 acres of protected marshland. Provides a refuge for migratory birds and other wildlife.	By boat only.	RTE: American alligator, bald eagle Others: Waterfowl (winter), wading birds, snipe, finfish small mammals	Pointe Au Chien WMA 1197 Hwy 665 Montigut, LA 70377 Manager: Mark Castille (936) 594-5494

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Areas of Socio-Economic Concern in Lafourche Parish:

- Fourchon Beach
- Private oyster beds are throughout the shoreline marsh areas

Protection Priorities for Lafourche Parish:

- Wisner State Wildlife Management Area
- Timbalier Bay Area
- Pointe Au Chein Wildlife Management Area
- Other shoreline marshes and private oyster beds

E. Response

Shell Offshore, Inc. 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**. The Incident Commander or designee may contact other service companies if the Unified Command deems such services necessary to the response efforts.

In selecting the worst-case discharge scenarios, Shell Offshore, Inc. considered potential spill volumes, types of product and proximity to the shoreline. Area Contingency Plans were also reviewed for shoreline sensitivities.

Within ten miles of the coastline, Shell Offshore, Inc.'s (Shell Pipeline's) pipeline segment 10553 from West Delta 143 to their Fourchon Terminal at Lafourche Parish, Louisiana, was selected due to the WCD volume (based on criteria in 30 CFR 254.47) of 10,104 barrels of crude oil with an API gravity of 28.9°. Utilizing the MMS OSRAM, the trajectory indicates a 100% probability of impact to the shoreline in Lafourche Parish, Louisiana. The Timbalier Bay area contains rookeries, mangroves, oyster beds and finfish and shellfish nursery grounds. Seven rookeries are located northwest of Grand Isle in Bay Tambour and Caminada Bay. Open beaches are located along the Gulf Coast. This area is a part of the Barataria Basin, a unique fishery habitat that has shallow estuarine waters, sandbars, small barrier and coastal islands and coastal wetlands. This area is also a nesting ground for the brown pelican, an endangered species.

An Adios model was run on a similar product. The results indicate 17% of the product would be evaporated/ naturally dispersed within 12 hours, leaving approximately 8,386 barrels on the water. This first 12-hour rate would apply to any additional product released as a result of a continuous discharge.


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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 10,104 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

Offshore response strategies may also include attempting to skim utilizing the *Louisiana Responder* and *Mississippi Responder* oil spill response vessel's (OSRV's), two Ampol Response Vessels, and 5 shallow water skimming packages with a total derated skimming capacity of 37,177 barrels. Temporary storage associated with the identified skimming and temporary storage equipment equals 56,400 barrels and the ability to add an additional 15, 840 barrels (Stress1 skimmer) of derated recovery on the barge if necessary.

SAFETY IS FIRST PRIORITY. AIR MONITORING WILL BE ACCOMPLISHED AND OPERATIONS DEEMED SAFE PRIOR TO ANY CONTAINMENT/ SKIMMING ATTEMPTS.

Depending on proximity to shore and water depth, dispersants may be a viable response option. If appropriate, 4 to 5 sorties (325 gallons per sortie) from the BE90 King Air and 4 to 5 sorties (3,250 gallons per sortie) from the Hercules C-130A within the first 12 hour operating day of the response. Using a 1:20 application rate, 90% effectiveness, and assuming 4-5 sorties per day the systems could disperse approximately 6,128 to 7,660 barrels of oil per day based on the NOAA Dispersant Planner. For continuing dispersant operations the CCA's Aerial Dispersant Delivery System (ADDS) could be mobilized. The ADDS has a dispersant spray capability of 5,000 gallons per sortie.

If the spill went unabated, shoreline impact in Lafourche or Plaquemine Parish, Louisiana would depend upon existing environmental conditions. Nearshore 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 The Response Group that depict areas of potential impact given actual sea and weather conditions. Strategies from the Morgan City, Louisiana Area Contingency Plan, The Response Group and Unified Command would be consulted to ensure that environmental and special economic resources would be correctly identified and prioritized to ensure optimal protection. The Response Group shoreline response guides depict 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

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operation of equipment allowing a more effective response to site-specific circumstances.

Beyond ten miles of the coastline, Shell Offshore, Inc.'s Production platform at Mississippi Canyon Block 809 was selected due to the WCD volume (based on criteria in 30 CFR 254.47) of 163,223 barrels of crude oil with an API gravity of 27.5°. Utilizing the MMS OSRAM, the trajectory indicates a 3% probability of impact to the shoreline in Terrebonne Parish, Louisiana. The Terrebonne Barrier Island Refuge surrounds the Isle Dernieres chain. Brown Pelican breeding grounds are located all along these islands. Mangroves are found along the northern side of the interior islands. Private Oyster beds are throughout the shoreline marsh areas from Lake Pelto to Bay Chalant (adjacent to Cocodrie), at northern end of Lake Barre (Lake Tamour & Bay la Peur), Lake Chien and Grand Cut, Bay Coubant, and Little Lake south to Devils Bay. The area is a prime shrimping area.

An Adios model was run on a similar product. The results indicate 12% of the product would be evaporated/ naturally dispersed within 12 hours, leaving approximately 71,818 barrels on the water. This first 12-hour rate would apply to any additional product released as a result of a continuous discharge.

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 163,223 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.

Primary offshore response strategies would also include six (6) Oil Spill Response Vessels (*Responder* class), four (4) Oil Spill Response Barges, three (3) Vessel-of-Opportunity Skimming Systems, and two (2) Ampol Response Vessel. The total derated skimming capacity of these resources is 171,743 barrels per day; the associated temporary storage volume is 208,100 barrels. The attached **FIGURE H.3** shows the equipment that would be mobilized for a response, with derated recovery capacity and response times. These resources would be utilized wherever adequate slick thickness' are located, and weather permitting. Under adverse weather conditions, the primary MSRC equipment (major response vessels and Transrec skimmers) is still effective and safe in sea states of 6-8 ft. If sea conditions prohibit safe mechanical recovery efforts, then natural dispersion and airborne chemical dispersant application (visibility & wind conditions permitting) may be the only viable recovery option. Primary storage equipment for each day's recovered oil is listed in the attachment as MSRC's major Oil Spill Response Vessels and offshore storage barges situated in their respective recovery zones, totaling approximately 208,100 bbls. The strategy for


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transferring, storing and disposing of oil collected in these recovery zones would be to utilize two 150,000-160,000 ton (dead weight) tankers mobilized by Equiva Trading Company (or any other tanker immediately available). The recovered oil would be transferred to Motiva's Norco, La. Storage and refining facility, or would be stored at Delta Commodities, Inc. Harvey, LA facility. **SAFETY IS FIRST PRIORITY. AIR MONITORING WILL BE ACCOMPLISHED AND OPERATIONS DEEMED SAFE PRIOR TO ANY CONTAINMENT/SKIMMING ATTEMPTS.**

Depending on proximity to shore and water depth, dispersants may be a viable response option. If appropriate, 4 to 5 sorties (325 gallons per sortie) from the BE90 King Air and 4 to 5 sorties (3,250 gallons per sortie) from the Hercules C-130A within the first 12 hour operating day of the response. Using a 1:20 application rate, 90% effectiveness, and assuming 4-5 sorties per day the systems could disperse approximately 6,128 to 7,660 barrels of oil per day based on the NOAA Dispersant Planner. For continuing dispersant operations the CCA's Aerial Dispersant Delivery System (ADDS) would be mobilized. The ADDS has a dispersant spray capability of 5,000 gallons per sortie.

If the spill went unabated, shoreline impact in Terrebonne or Plaquemine Parish, LA would depend upon existing environmental conditions. Nearshore 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 The Response Group that depict areas of potential impact given actual sea and weather conditions. Strategies from the Morgan City, Louisiana Area Contingency Plan, The Response Group and Unified Command would be consulted to ensure that environmental and special economic resources would be correctly identified and prioritized to ensure optimal protection. The Response Group shoreline response guides depict 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, Shell Offshore, Inc.'s drilling operations at Mississippi Canyon Block 762 was selected due to the WCD volume of an estimated 205,000 BOPD of crude oil with an API gravity of 29°. Utilizing the MMS OSRAM 30 day probabilities, the trajectory indicates a 3% probability of impact to the shoreline in Terrebonne Parish, Louisiana and an 8% probability of impact to the shoreline in Plaquemine Parish, Louisiana. The Pass A Loutre WMA, Delta NWR, and Breton Island NWR are located along the coast of Plaquemine Parish. Brown Pelican breeding grounds are located all along these islands. Private Oyster

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beds are throughout the shoreline marsh areas from Grand Isle to the tip of Southwest Pass. The area is a prime sport fishing & shrimping area.

An Adios model was run on a similar product. The results indicate 13% of the product would be evaporated/ naturally dispersed within 12 hours, leaving approximately 89,495 barrels on the water. This first 12-hour rate would apply to any additional product released as a result of a continuous discharge.

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 205,000 bbls/day or 8,542 bbls/hr. 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.

Primary offshore response strategies would also include six (6) Oil Spill Response Vessels (*Responder* class), five (5) Oil Spill Response Barges, twelve (12) Vessel-of-Opportunity Skimming Systems, and two (2) Ampol Response Vessels. The total derated skimming capacity of these resources is 214,460 barrels per day; the associated temporary storage volume is 250,800 barrels. The attached **FIGURE H.3** shows the equipment that would be mobilized for a response, with derated recovery capacity and response times. These resources would be utilized wherever adequate slick thickness' are located, and weather permitting. Under adverse weather conditions, the primary MSRC equipment (major response vessels and Transrec skimmers) is still effective and safe in sea states of 6-8 ft. If sea conditions prohibit safe mechanical recovery efforts, then natural dispersion and airborne chemical dispersant application (visibility & wind conditions permitting) may be the only viable recovery option. Primary storage equipment for each day's recovered oil is listed in the attachment as MSRC's major Oil Spill Response Vessels and offshore storage barges situated in their respective recovery zones, totaling approximately 250,800 bbls. The strategy for transferring, storing and disposing of oil collected in these recovery zones would be to utilize two 150,000-160,000 ton (dead weight) tankers mobilized by Equiva Trading Company (or any other tanker immediately available). The recovered oil would be transferred to Motiva's Norco, La. Storage and refining facility, or would be stored at Delta Commodities, Inc. Harvey, LA facility. **SAFETY IS FIRST PRIORITY. AIR MONITORING WILL BE ACCOMPLISHED AND OPERATIONS DEEMED SAFE PRIOR TO ANY CONTAINMENT/ SKIMMING ATTEMPTS.**

Depending on proximity to shore and water depth, dispersants may be a viable response option. If appropriate, 4 to 5 sorties (325 gallons per sortie) from the BE90 King Air and 4 to 5 sorties (3,250 gallons per sortie) from the Hercules C-130A within the first 12 hour operating day of the response. Using a 1:20

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application rate, 90% effectiveness, and assuming 4-5 sorties per day the systems could disperse approximately 6,128 to 7,660 barrels of oil per day based on the NOAA Dispersant Planner. For continuing dispersant operations the CCA's Aerial Dispersant Delivery System (ADDS) would be mobilized. The ADDS has a dispersant spray capability of 5,000 gallons per sortie.

If the spill went unabated, shoreline impact in Terrebonne or Plaquemine Parish, LA would depend upon existing environmental conditions. Nearshore 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 The Response Group that depict areas of potential impact given actual sea and weather conditions. Strategies from the New Orleans, Louisiana Area Contingency Plan, The Response Group and Unified Command would be consulted to ensure that environmental and special economic resources would be correctly identified and prioritized to ensure optimal protection. The Response Group shoreline response guides depict 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

1B. Calculations for Production Facility (> 10 miles from shore) with Departing Lease Pipelines (or DOCD):		BLOCK MC 809
i.	<u>Storage Tanks</u> Enter the maximum estimated quantity (bbls) of all storage tanks on the facility.	16,569
ii.	<u>Facility Piping</u> Enter the total static capacity (bbls) of all flowlines (piping) on the facility.	100
iii.	<u>Break in Departing Lease Pipeline</u> Add the volume of oil calculated to leak from a break in lease pipelines departing the facility, considering: <ul style="list-style-type: none"> • Time to shutdown multiplied by highest measured oil flow rate over the preceding 12-month period. • Total volume of oil that would leak from the pipeline after it is shut-in (consider effects of hydrostatic pressure, gravity, frictional wall forces, length of pipeline segment, tie-ins with other pipelines, etc.) • Methodology used and assumptions made: _____ Calculations include volumes of oil discharged before all well shut-in plus volume of oil in flow line 	4,554
iv.	<u>Uncontrolled Blowout</u> Enter the highest daily volume possible from an uncontrolled blowout of the highest capacity well associated with the facility, considering reservoir characteristics, casing/production tubing sizes, historical production and reservoir pressure data. <ul style="list-style-type: none"> • Methodology used and assumptions made: _____ Calculations assume event occurs during completion with sand control in place 	142,000
v.	WCD Total for Production Operations (> 10 miles from shore) =	163,223 bbls


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FIGURE H.1 - WORST CASE DISCHARGE SCENARIO (cont'd)

2. Calculations for ROW pipelines:

2a. < 10 Miles from the Shoreline

Segment 10553, from WD 143 to Onshore		Calculations (BBLs)
i.	Add the pipeline system detection time to the shutdown response time assuming automatic shutdown (enter hours in decimals).	
ii.	Multiply by the highest measured oil flow rate over the preceding 12-month period (for new pipelines use predicted oil flow rate).	
iii.	Add the total volume of oil that would leak from the pipeline after it is shut in (consider effects of hydrostatic pressure, gravity, frictional wall forces, length of pipeline segment, tie-ins with other pipelines, etc.)	
TOTAL		10,104 bbls

3. Calculations for Exploratory Well:

3a. Exploratory Well

MC 762 Drilling Operations		Calculations (BBLs)
i.	Estimated blowout rate from the exploratory well calculated with the Prosper computer model.	~ 205,000 bbls/ day


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FIGURE H.2 - TRAJECTORY BY LAND SEGMENT

<p>Trajectory of a spill and the probability of it impacting a land segment have been projected utilizing Shell Offshore, Inc.'s WCD and information in the MMS Oil Spill Risk Analysis Model (OSRAM) for the Central and Western Gulf of Mexico available on the MMS website using 30 day impact. The results are tabulated below.</p>				
Area/Block	OCS-G	Launch Area	Land Segment Contact	%
< 10 Miles from Shoreline Shoreline (WD 143 to Fourchon Terminal)	10553	37	100% land impact in LAFOURCHE PARISH, LA	100
> 10 Miles from Shoreline MC 809 & Exploratory Well MC 762		58	GALVESTON, TX CHAMBERS, TX JEFFERSON CAMERON, LA VERMILION, LA IBERIA, LA ST MARY, LA TERREBONNE, LA LA FOURCHE JEFFERSON, LA PLAQUEMINES, LA ST. BERNARD, LA OKALOOSA, FL	1 1 1 3 2 1 1 3 3 1 8 1 1




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FIGURE H.3 – EQUIPMENT RESPONSE TIMES

 FIGURE H.3 - WCD Scenario < 10 Miles from the Shoreline WD 143 Pipeline To Fourchon - Sample Offshore On-Water Recovery Activation List													
Skimming System	Supplier & Phone	Warehouse	Skimming Package	Quantity	Recovery Rate (Barrels/Day)	Storage (Barrels)	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)				
									Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA
M/V Recovery	AMPOL 800-482-6765	Fourchon, LA	GT-185 Skimmer 36" Expandi Boom Personnel 110' Utility Boat Crew Boat - >65'	1 720' 8 1 1	1,371	200	Fourchon, LA	12	2	1	1	1	5
Louisiana Responder Transrec-350	MSRC 800-OIL-SPIL	Fort Jackson, LA	Transrec Skimmer *Stress Skimmer (Backup) 67" Boom 210' Vessel Personnel 32' Support Boat	1 1 2640' 1 12 1	10,567 15,840	4,000	Fort Jackson, LA	85	2	1	6	1	10
MSRC-452 Offshore Barge	MSRC 800-OIL-SPIL	Fort Jackson, LA	3000 BBL Bladders Offshore Barge Personnel Offshore Tug	1 1 4 1		3,000 45,000	Fort Jackson, LA	85	2	1	9.5		12.5
Mississippi Responder Transrec-350	MSRC 800-OIL-SPIL	Pascagoula, MS	Transrec Skimmer *Stress Skimmer (Backup) 67" Boom 210' Vessel Personnel 32' Support Boat	1 1 2640' 1 12 1	10,567 15,840	4,000	Pascagoula, MS	177	2	1	12.5	1	16.5
M/V Responder	AMPOL 800-482-6765	Cameron, LA	Vikoma SS-50 Skimmer 36" Expandi Boom Personnel 110' Utility Boat Crew Boat - >65'	1 720' 8 1 1	1,987	200	Cameron, LA	212	2	1	15	1	19
OFFSHORE DERATED RECOVERY RATE (BBLs/DAY)												24,492	
OFFSHORE STORAGE CAPACITY (BARRELS)												56,400	

Note: * Stress Skimmers are listed above with MSRC Responders as backup skimmer to the Transrec. Stress Skimmer could be offloaded only Offshore Barge (452) with 660' of Sea Sentry Boom and an additional Crew Boat for boom handling as requested to provide additional skimming operations.

 FIGURE H.3 - WCD Scenario < 10 Miles from the Shoreline WD 143 Pipeline To Fourchon - Sample Nearshore On-Water Recovery Activation List													
SBS w/ GT-185	MSRC 800-OIL-SPIL	Houma, LA	GT-185 Skimmer 18" Boom Personnel SW Barge Push Boat	1 100' 4 1 1	1,371	400	Cocodrie, LA	20	1	1	1.5	1	4.5
SBS w/ FOILEX 250	MSRC 800-OIL-SPIL	Belle Chasse, LA	Foilex Skimmer 18" Boom Personnel SW Barge Push Boat	1 100' 4 1 1	3,977	400	Cocodrie, LA	20	2.5	1	1.5	1	6
SBS w/ GT-185	MSRC 800-OIL-SPIL	Baton Rouge, LA	GT-185 Skimmer 18" Boom Personnel SW Barge Push Boat	1 100' 4 1 1	1,371	400	Cocodrie, LA	20	4	1	1.5	1	7.5
SBS w/ FOILEX 200	MSRC 800-OIL-SPIL	Pascagoula, MS & Belle Chasse, LA	Foilex Skimmer 18" Boom Personnel SW Barge	1 100' 4 1	1,989	400	Cocodrie, LA	20	5.5	1	1.5	1	9
SBS w/ FOILEX 250	MSRC 800-OIL-SPIL	Lake Charles, LA	Foilex Skimmer 18" Boom Personnel SW Barge	1 100' 4 1	3,977	400	Cocodrie, LA	20	6	1	1.5	1	9.5
NEARSHORE DERATED RECOVERY RATE (BBLs/DAY)												12,685	
NEARSHORE SKIMMING VESSEL STORAGE CAPACITY (BARRELS)												2,000	

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 WCD Scenario < 10 Miles from the Shoreline - WD 143 Pipeline To Fourchon Sample Offshore Aerial Dispersant Activation List												
Aerial Dispersant System	Supplier & Phone	Warehouse	Aerial Dispersant Package	Quantity	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)					Total ETA
							Staging ETA	Loadout Time	ETA to Site	Deployment Time		
BE-90 King Air Aircraft Air Speed - 213 MPH	MSRC 800-OIL-SPIL	Stennis, MS	BE-90 Dispersant Aircraft	1	Stennis INTL., MS 1st Flight	105	4.00	0.20	0.49	0.20	4.90	
			Dispersant - Gallons	230-425								
			Spotter Aircraft	1	Stennis INTL., MS 2nd Flight	105	0.49	0.20	0.49	0.20	1.40	
			Spotter Personnel	2								
			Crew - Pilots	2								
C130-A Aircraft Air Speed - 342 MPH	MSRC 800-OIL-SPIL	Coolidge, AZ	C130-A Dispersant Aircraft	1	Ellington Field, TX 1st Flight	305	8	0.3	0.89	0.5	9.75	
			Dispersant - Gallons	3250								
			Spotter Aircraft	1	Stennis INTL., MS 2nd Flight	105	0.31	0.3	0.31	0.5	1.45	
			Spotter Personnel	2								
			Crew - Pilots	2								
ADDS PACK Air Speed - 330 MPH	Clean Carribean 985-851-6391	Pt. Everglades, FL	C-130 Aircraft	1	Clearwater, FL	461	24-48	1	1.40	0.5	26.9 to 51.05	
			ADDS PACK	1								
			Dispersant - Gallons	5000								
			Spotter Aircraft	1								
			Spotter Personnel	2								
			Crew - Pilots	2								


	Shell Offshore, Inc.	Number: HSE0054
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	GOM Regional Oil Spill Response Plan	Revision: 6.1 Effective: 06/04/2010



FIGURE H.3 - WCD Scenario < 10 Miles from the Shoreline
WD 143 Pipeline To Fourchon - Sample Shoreline Protection & Wildlife Support Listing

Supplier & Phone (MSRC Star Contractor)	Warehouse	Equipment Listing	Quantity	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)				
						Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA
ES&H Environmental 877-437-2634	Fourchon	Containment Boom - 18" to 24"	1000'	Fourchon, LA (0 Miles)	15	2	1	1	1	5
		Containment Boom - 6" to 10"	200'							
		Response Boats - 14' to 20'	3							
		Portable Skimmers	3							
		Response Personnel	2							
ES&H Environmental 877-437-2634	Houma, LA	Containment Boom - 18" to 24"	27,000'	Fourchon, LA (60 Miles)	15	2	1	1	1	5
		Containment Boom - 6" to 10"	15,000'							
		Response Boats - 14' to 20'	38							
		Response Boats - 21' to 36'	12							
		Portable Skimmers	25							
		Shallow Water Skimmers	1							
		Bird Scare Cannons	200							
		Response Personnel	11							
AMPOL 800-482-6765	Harvey, LA	Containment Boom - 18" to 24"	14750'	Cocodrie, LA (80 Miles)	15	3	1	1	1	6
		Response Boats - 14' to 20'	1							
		Response Personnel	10							
Oilmap 800-645-6671	Belle Chasse, LA	Containment Boom - 18" to 24"	21,000'	Cocodrie, LA (96 Miles)	15	3	1	1	1	6
		Containment Boom - 6" to 10"	500'							
		Response Boats - 14' to 20'	15							
		Response Boats - 21' to 36'	9							
		Portable Skimmers	24							
		Shallow Water Skimmers	1							
Response Personnel	18									
AMPOL 800-482-6765	New Iberia, LA	Containment Boom - 18" to 24"	19000'	Cocodrie, LA (114 Miles)	15	4	1	1	1	7
		Response Boats - 14' to 20'	2							
		Response Boats - 21' to 36'	5							
		Portable Skimmers	6							
		Shallow Water Skimmers	1							
		Bird Scare Cannons	8							
Response Personnel	25									
USES Environmental 888-279-9930	Meraux, LA	Containment Boom - 18" to 24"	9000'	Fourchon, LA (110 Miles)	15	4	1	1	1	7
		Containment Boom - 6" to 10"	1000'							
		Response Boats - 14' to 20'	13							
		Response Boats - 21' to 36'	5							
		Portable Skimmers	8							
		Response Personnel	15 to 30							
Oilmap 800-645-6671	New Iberia, LA	Containment Boom - 18" to 24"	3,500'	Cocodrie, LA (114 Miles)	15	4	1	1	1	7
		Containment Boom - 6" to 10"	500'							
		Response Boats - 14' to 20'	6							
		Response Boats - 21' to 36'	1							
		Portable Skimmers	6							
		Shallow Water Skimmers	1							
		Bird Scare Cannons	20							
		Response Personnel	8							
USES Environmental 888-279-9930	Geismar, LA	Containment Boom - 18" to 24"	1000'	Fourchon, LA (131 Miles)	15	4.5	1	1	1	7.5
		Response Boats - 14' to 20'	3							
		Portable Skimmers	2							
		Response Personnel	9 to 18							
MSRC 800-OIL-SPIL	Lake Charles, LA	Wildlife Trailer	1	Houma, LA (177 Miles)	0	6.5	1	0	2	9.5
		Contract Truck (Third Party)	1							
		Personnel (Responder/Mechanic)	1							
WR&E 281-731-8826	Baton Rouge, LA	Wildlife Specialist - Personnel	6 to 20	Houma, LA	0	3	1	0	0	4
WR&E 281-731-8826	Houston, TX	Wildlife Specialist - Personnel	6 to 20	Houma, LA	0	6.5	1	0	0	7.5
TRI-STATE 302-737-9543	Newark, DE	Wildlife Specialist - Personnel	6 to 12	Houma, LA	0	12	1	0	0	13





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FIGURE H.3 - WCD Scenario > 10 Miles from the Shoreline - MC 809
Sample Offshore On-Water Recovery Activation List

Skimming System	Supplier & Phone	Warehouse	Skimming Package	Quantity	Recovery Rate (Barrels/Day)	Storage (Barrels)	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)				
									Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA
M/V Recovery	AMPOL 800-482-6765	Fourchon, LA	GT-185 Skimmer	1	1,371	200	Fourchon, LA	90	2	1	6.5	1	10.5
			36" Expandi Boom	720'									
			Personnel	8									
			110' Utility Boat	1									
			Crew Boat - >65'	1									
Louisiana Responder Transrec-350	MSRC 800-OIL-SPIL	Fort Jackson, LA	Transrec Skimmer	1	10,567	4,000	Fort Jackson, LA	97	2	1	7	1	11
			67" Boom	2640'									
			210' Vessel	1									
			Personnel	12									
			32' Support Boat	1									
FOILEX 250	MSRC 800-OIL-SPIL	Belle Chasse, LA	Offshore Skimmer	1	3,977	500	Fourchon, LA	90	3	1	6.5	1	11.5
			43" Offshore Boom	100'									
			Personnel	4									
			Utility Boat	1									
			Towable Bladder	1									
FOILEX 200	MSRC 800-OIL-SPIL	Belle Chasse, LA	Offshore Skimmer	1	1,989	500	Fourchon, LA	90	3	1	6.5	1	11.5
			43" Offshore Boom	100'									
			Personnel	4									
			Utility Boat	1									
			Towable Bladder	1									
MSRC-452 Offshore Barge	MSRC 800-OIL-SPIL	Fort Jackson, LA	3000 BBL Bladders	1	15,840	3,000	Fort Jackson, LA	97	2	1	11		14
			Offshore Barge	1									
			Stress 1 Skimmer	1									
			Personnel	4									
			Offshore Tug	1									
Mississippi Responder Transrec-350	MSRC 800-OIL-SPIL	Pascagoula, MS	Transrec Skimmer	1	10,567	4,000	Pascagoula, MS	156	2	1	11	1	15
			67" Boom	2640'									
			210' Vessel	1									
			Personnel	12									
			32' Support Boat	1									
FOILEX 250	MSRC 800-OIL-SPIL	Lake Charles, LA	Offshore Skimmer	1	3,977	500	Fourchon, LA	90	6.5	1	6.5	1	15
			43" Offshore Boom	100'									
			Personnel	4									
			Utility Boat	1									
			Towable Bladder	1									
MSRC-402 Offshore Barge	MSRC 800-OIL-SPIL	Pascagoula, MS	Offshore Barge	1	15,840	40,300	Pascagoula, MS	156	2	1	17.5		20.5
			Stress 1 Skimmer	1									
			Personnel	4									
			Offshore Tug	1									
M/V Responder	AMPOL 800-482-6765	Cameron, LA	Vikoma SS-50 Skimmer	1	1,987	200	Cameron, LA	274	2	1	19.5	1	23.5
			36" Expandi Boom	720'									
			Personnel	8									
			110' Utility Boat	1									
			Crew Boat - >65'	1									
Gulf Coast Responder Transrec-350	MSRC 800-OIL-SPIL	Lake Charles, LA	Transrec Skimmer	1	10,567	4,000	Lake Charles, LA	291	2	1	21	1	25
			67" Boom	2640'									
			210' Vessel	1									
			Personnel	12									
			32' Support Boat	1									
Texas Responder Transrec-350	MSRC 800-OIL-SPIL	Galveston, TX	Transrec Skimmer	1	10,567	4,000	Galveston, TX	345	2	1	24.5	1	28.5
			67" Boom	2640'									
			210' Vessel	1									
			Personnel	12									
			32' Support Boat	1									
Southern Responder Transrec-350	MSRC 800-OIL-SPIL	Ingleside, TX	Transrec Skimmer	1	10,567	4,000	Ingleside, TX	488	2	1	35	1	39
			67" Boom	1980'									
			210' Vessel	1									
			Personnel	12									
			Tow Bladder	1									
		15,840											

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 FIGURE H.3 - WCD Scenario > 10 Miles from the Shoreline - MC 809 Sample Offshore On-Water Recovery Activation List													
System	Supplier & Phone	Warehouse	Skimming Package	Quantity	Recovery Rate (Barrels/Day)	Storage (Barrels)	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)				
									Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA
MSRC-570 Offshore Barge	MSRC 800-OIL-SPIL	Galveston, TX	Offshore Barge	1	15,840	56,900	Galveston, TX	345	2	1	38.5		41.5
			Stress 1 Skimmer	1									
			Personnel	4									
			Offshore Tug	1									
MSRC Offshore Tank Barge	MSRC 800-OIL-SPIL	Tampa, FL	500 BBL Bladders	2	15,840	1,000	Tampa, FL	425	2	1	47		50
			Offshore Barge	1		36,000							
			Stress 1 Skimmer	1									
			Personnel	4									
			Tug - 3000 HP	1									
Florida Responder Transrec-350	MSRC 800-OIL-SPIL	Miami, FL	Transrec Skimmer	1	10,567	4,000	Miami, FL	640	2	1	45.5	1	49.5
			67" Boom	1320'	15,840								
			210' Vessel	1									
			Stress 1 Skimmer	1									
			Personnel	12									
32' Support Boat	1												
OFFSHORE DERATED RECOVERY RATE (BBLs/DAY)												171,743	
OFFSHORE SKIMMING VESSEL & BARGE STORAGE CAPACITY (BARRELS)												208,100	


 WCD Scenario > 10 Miles from the Shoreline - MC 809 Sample Offshore Aerial Dispersant Activation List																				
Aerial Dispersant System	Supplier & Phone	Warehouse	Aerial Dispersant Package	Quantity	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)													
							Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA									
BE-90 King Air Aircraft Air Speed - 213 MPH	MSRC 800-OIL-SPIL	Stennis, MS	BE-90 Dispersant Aircraft	1	Stennis INTL., MS	152	4.00	0.20	0.71	0.20		5.15								
			Dispersant - Gallons	230-425									1st Flight							
			Spotter Aircraft	1									Stennis INTL., MS	152	0.71	0.20	0.71	0.20	1.85	
			Spotter Personnel	2																2nd Flight
C130-A Aircraft Air Speed - 342 MPH	MSRC 800-OIL-SPIL	Coolidge, AZ	C130-A Dispersant Aircraft	1	Stennis INTL., MS	152	8	0.3	0.44	0.5		9.30								
			Dispersant - Gallons	3250									1st Flight							
			Spotter Aircraft	1									Stennis INTL., MS	152	0.44	0.3	0.44	0.5	1.75	
			Spotter Personnel	2																2nd Flight
			Crew - Pilots	2																
ADDS PACK Air Speed - 330 MPH	Clean Carribean 985-851-6391	Pt. Everglades, FL	C-130 Aircraft	1	Cleanwater, FL	420	24-48	1	1.27	0.5		26.8								
			ADDS PACK	1									51.05							
			Dispersant - Gallons	5000																
			Spotter Aircraft	1																
			Spotter Personnel	2																
			Crew - Pilots	2																

	Shell Offshore, Inc.	Number: HSE0054
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 **FIGURE H.3 - WCD Scenario (Exploratory) - MC 762**
Sample Offshore On-Water Recovery Activation List


Skimming System	Supplier & Phone	Warehouse	Skimming Package	Quantity	Recovery Rate (Barrels/Day)	Storage (Barrels)	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)				
									Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA
M/V Recovery	AMPOL 800-482-6765	Fourchon, LA	GT-185 Skimmer	1	1,371	200	Fourchon, LA	90	2	1	6.5	1	10.5
			36" Expandi Boom	720									
			Personnel	8									
			110' Utility Boat	1									
			Crew Boat - >65'	1									
Louisiana Responder Transrec-350	MSRC 800-OIL-SPIL	Fort Jackson, LA	Transrec Skimmer	1	10,567	4,000	Fort Jackson, LA	97	2	1	7	1	11
			67" Boom	2640									
			210' Vessel	1									
			Personnel	12									
			32' Support Boat	1									
WP-4	MSRC 800-OIL-SPIL	Belle Chase, LA	Offshore Skimmer	1	3,017	400	Fourchon, LA	90	3	1	6.5	1	11.5
			67" Offshore Boom	660									
			Personnel	4									
			Crew Boat	1									
			Towable Bladder	1									
			Utility Boat	1									
DESMI OCEAN	MSRC 800-OIL-SPIL	Belle Chase, LA	Offshore Skimmer	1	3,017	500	Fourchon, LA	90	3	1	6.5	1	11.5
			67" Offshore Boom	660									
			Personnel	4									
			Crew Boat	1									
			Towable Bladder	1									
			Utility Boat	1									
GT-185	MSRC 800-OIL-SPIL	Belle Chase, LA	Offshore Skimmer	1	1,371		Fourchon, LA	90	3	1	6.5	1	11.5
			67" Offshore Boom	660									
			Personnel	4									
			Crew Boat	1									
			Towable Bladder	1									
			Utility Boat	1									
FOILEX 200	MSRC 800-OIL-SPIL	Belle Chasse, LA	Offshore Skimmer	1	1,989	500	Fourchon, LA	90	3	1	6.5	1	11.5
			43" Offshore Boom	100'									
			Personnel	4									
			Utility Boat	1									
			Towable Bladder	1									
FOILEX 250	MSRC 800-OIL-SPIL	Belle Chasse, LA	Offshore Skimmer	1	3,977	500	Fourchon, LA	90	3	1	6.5	1	11.5
			43" Offshore Boom	100'									
			Personnel	4									
			Utility Boat	1									
			Towable Bladder	1									
MOSS Unit w/ GT-260	AMPOL 800-482-6765	New Iberia, LA	GT-260 Skimmer	1	2,743	50	Fourchon, LA	90	5	1	6.5	1	13.5
			36" Expandi Boom	720'									
			Personnel	4									
			110' Utility Boat	1									
			Crew Boat	1									
MOSS Unit w/ WP-4	AMPOL 800-482-6765	New Iberia, LA	Offshore Skimmer	1	3,565	50	Fourchon, LA	90	5	1	6.5	1	13.5
			36" Expandi Boom	720'									
			Personnel	4									
			110' Utility Boat	1									
			Crew Boat	1									
WP-4	AMPOL 800-482-6765	New Iberia, LA	Offshore Skimmer	1	3,565	200	Fourchon, LA	90	5	1	6.5	1	13.5
			36" Expandi Boom	720'									
			Personnel	4									
			110' Utility Boat	1									
			Crew Boat	1									
			Portable Tank	1									
WP-4	AMPOL 800-482-6765	New Iberia, LA	Offshore Skimmer	1	3,565	200	Fourchon, LA	90	5	1	6.5	1	13.5
			36" Expandi Boom	720'									
			Personnel	4									
			110' Utility Boat	1									
			Crew Boat	1									
			Portable Tank	1									


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 FIGURE H.3 - WCD Scenario (Exploratory) - MC 762 Sample Offshore On-Water Recovery Activation List													
Skimming System	Supplier & Phone	Warehouse	Skimming Package	Quantity	Recovery Rate (Barrels/Day)	Storage (Barrels)	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)				
									Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA
WP-1	MSRC 800-OIL-SPIL	Pascagoula, MS	Offshore Skimmer	1	3,017	500	Fourchon, LA	90	5.5	1	6.5	1	14
			67" Offshore Boom	660'									
			Utility Boat	1									
			Personnel	4									
			Towable Bladder	1									
Crew Boat	1												
MSRC-452 Offshore Barge	MSRC 800-OIL-SPIL	Fort Jackson, LA	3000 BBL Bladders	1	15,840	45,000	Fort Jackson, LA	97	2	1	11		14
			Offshore Barge	1									
			Stress 1 Skimmer	1									
			Personnel	4									
			Offshore Tug	1									
DESMI OCEAN	MSRC 800-OIL-SPIL	Lake Charles, LA	Offshore Skimmer	1	3,017	500	Fourchon, LA	90	6.5	1	6.5	1	15
			67" Offshore Boom	660'									
			Utility Boat	1									
			Personnel	4									
			Towable Bladder	1									
Crew Boat	1												
Mississippi Responder Transrec-350	MSRC 800-OIL-SPIL	Pascagoula, MS	Transrec Skimmer	1	10,567	4,000	Pascagoula, MS	156	2	1	11	1	15
			67" Boom	2640'									
			210' Vessel	1									
			Personnel	12									
			32' Support Boat	1									
FOILEX 250	MSRC 800-OIL-SPIL	Lake Charles, LA	Offshore Skimmer	1	3,977	500	Fourchon, LA	90	6.5	1	6.5	1	15
			43" Offshore Boom	100'									
			Personnel	4									
			Utility Boat	1									
			Towable Bladder	1									
MSRC-402 Offshore Barge	MSRC 800-OIL-SPIL	Pascagoula, MS	Offshore Barge	1	15,840	40,300	Pascagoula, MS	156	2	1	17.5		20.5
			Stress 1 Skimmer	1									
			Personnel	4									
			Offshore Tug	1									
M/V Responder	AMPOL 800-482-6765	Cameron, LA	Vikoma SS-50 Skimmer	1	1,987	200	Cameron, LA	274	2	1	19.5	1	23.5
			36" Expandi Boom	720'									
			Personnel	8									
			110' Utility Boat	1									
			Crew Boat - >65'	1									
Gulf Coast Responder Transrec-350	MSRC 800-OIL-SPIL	Lake Charles, LA	Transrec Skimmer	1	10,567	4,000	Lake Charles, LA	291	2	1	21	1	25
			Stress Skimmer	1									
			67" Boom	2640'									
			210' Vessel	1									
			Personnel	12									
32' Support Boat	1												
Texas Responder Transrec-350	MSRC 800-OIL-SPIL	Galveston, TX	Transrec Skimmer	1	10,567	4,000	Galveston, TX	345	2	1	24.5	1	28.5
			67" Boom	2640'									
			210' Vessel	1									
			Personnel	12									
			32' Support Boat	1									
Southern Responder Transrec-350	MSRC 800-OIL-SPIL	Ingleside, TX	Transrec Skimmer	1	10,567	4,000	Ingleside, TX	488	2	1	35	1	39
			67" Boom	1980'									
			210' Vessel	1									
			Personnel	12									
			Tow Bladder	1									
MSRC-570 Offshore Barge	MSRC 800-OIL-SPIL	Galveston, TX	Offshore Barge	1	15,840	56,900	Galveston, TX	345	2	1	38.5		41.5
			Stress 1 Skimmer	1									
			Personnel	4									
			Offshore Tug	1									
Florida Responder Transrec-350	MSRC 800-OIL-SPIL	Miami, FL	Transrec Skimmer	1	10,567	4,000	Miami, FL	620	2	1	44.5	1	48.5
			67" Boom	1320'									
			210' Vessel	1									
			Personnel	12									
			32' Support Boat	1									
			Stress 1 Skimmer	1	15,840								

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	Shell Offshore, Inc.	Number: HSE0054
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 FIGURE H.3 - WCD Scenario (Exploratory) - MC 762 Sample Offshore On-Water Recovery Activation List													
System	Supplier & Phone	Warehouse	Skimming Package	Quantity	Recovery Rate (Barrels/Day)	Storage (Barrels)	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)				
									Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA
MSRC Offshore Tank Barge	MSRC 800-OIL-SPIL	Tampa, FL	500 BBL Bladders	2	15,840	1,000	Tampa, FL	425	2	1	47		50
			Offshore Barge	1									
			Stress 1 Skimmer	1									
			Personnel	4									
			Tug - 3000 HP	1									
MSRC-403 Offshore Barge	MSRC 800-OIL-SPIL	Ingleside, TX	Offshore Barge	1	15,840	40,300	Ingleside, TX	488	2	1	54		57
			Stress 1 Skimmer	1									
			Personnel	4									
			Offshore Tug	1									
			OFFSHORE DERATED RECOVERY RATE (BBL/DAY)										
OFFSHORE SKIMMING VESSEL & BARGE STORAGE CAPACITY (BARRELS)												250,800	

 WCD Scenario (Exploratory) - MC 762 Sample Offshore Aerial Dispersant Activation List																				
Aerial Dispersant System	Supplier & Phone	Warehouse	Aerial Dispersant Package	Quantity	Staging Area	Distance to Site from Staging (Miles)	Response Times (Hours)													
							Staging ETA	Loadout Time	ETA to Site	Deployment Time	Total ETA									
BE-90 King Air Aircraft Air Speed - 213 MPH	MSRC 800-OIL-SPIL	Stennis, MS	BE-90 Dispersant Aircraft	1	Stennis INTL., MS	150	4.00	0.20	0.70	0.20		5.15								
			Dispersant - Gallons	230-425									1st Flight							
			Spotter Aircraft	1									Stennis INTL., MS	150	0.70	0.20	0.70	0.20	1.85	
			Spotter Personnel	2																2nd Flight
C130-A Aircraft Air Speed - 342 MPH	MSRC 800-OIL-SPIL	Coolidge, AZ	C130-A Dispersant Aircraft	1	Stennis INTL., MS	150	8	0.3	0.44	0.5		9.30								
			Dispersant - Gallons	3250									1st Flight							
			Spotter Aircraft	1									Stennis INTL., MS	150	0.44	0.3	0.44	0.5	1.75	
			Spotter Personnel	2																2nd Flight
			Crew - Pilots	2																
ADDS PACK Air Speed - 330 MPH	Clean Carribean 985-851-6391	Pt. Everglades, FL	C-130 Aircraft	1	Cleanwater, FL	416	24-48	1	1.26	0.5		26.8								
			ADDS PACK	1										416	24-48	1	1.26	0.5	51.05	
			Dispersant - Gallons	5000																
			Spotter Aircraft	1																
			Spotter Personnel	2																
			Crew - Pilots	2																



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FIGURE H.3 (Continued)

OPERATIONAL LIMITATIONS OF RESPONSE EQUIPMENT	
MSRC OSRV	8 foot seas
VOSS System	4 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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APPENDIX I - METEOROLOGICAL AND OCEANOGRAPHIC INFORMATION

A. *Meteorological Conditions*

The Gulf of Mexico is influenced by a maritime subtropical climate controlled primarily by the clockwise circulation around the semi permanent area of high barometric pressure commonly known as the Bermuda High. The Gulf of Mexico is located to the southwest of this center of circulation. This proximity to the high-pressure system results in predominantly east to southeasterly flow in the region. Two important classes of cyclonic storms are occasionally superimposed on this circulation pattern. During the winter months, December through March, cold fronts associated with cold continental air masses influence mainly the northern coastal areas of the Gulf of Mexico. Behind the fronts, strong north winds bring drier air into the region. Tropical cyclones may develop or migrate into the Gulf of Mexico during the warmer months. These storms may affect any area of the Gulf of Mexico and substantially alter the local wind circulation around them. In coastal areas, the sea breeze effect may become the primary circulation feature during the summer months of May and October. In general, however, the subtropical maritime climate is the dominant feature in driving all aspects of weather in this region; as a result the climate shows very little diurnal or seasonal variation.

Tropical cyclones (hurricanes and tropical storms) are severe but infrequent, with the season extending from June 1 through November 30. Extratropical cyclones (low-pressure systems) occur frequently during winter and spring and are likely to produce occasional rough conditions at the project area during this time. Extreme weather conditions during an actual spill may inhibit aerial surveillance of a slick, pending visibility, wind speeds, and sea conditions inhibiting rescue of downed aircraft. Actual response equipment limitations for response equipment are referenced in Appendix H.


More detailed information and discussion on temperature, surface winds, precipitation, atmospheric stability, and severe storms for the areas covered by this Plan is available in the Final Environmental Impact Statements for the Central (MMS 2004-068) and Western (MMS 2004-007) Planning Areas. Copies of these reports are available in the SOI Command Post in New Orleans, La.

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B. *Physical Oceanography*


The Gulf of Mexico is a semi-enclosed, subtropical sea with an area of approximately 1.5 million square km. The main physiographic regions of the Gulf Basin are the continental shelf (including the Campeche, Mexican, and U.S. shelves), continental slopes and associated canyons, abyssal plains, the Yucatan Channel, and Florida Straits.

More detailed information and discussion on physical oceanographic features and their potential effect on oil spills for the areas covered by this Plan is available in the Final Environmental Impact Statements for the Central (MMS 2004-068) and Western (MS 2004-007) Planning Areas. These features include water temperatures and salinities, the Loop Current with associated eddies, longshore currents (consisting of tidal, wind-driven, and density-gradient components), surface drifters, and wave activities. Copies of these reports are available in the SOI Command Post in New Orleans, La.

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APPENDIX J - BIBLIOGRAPHY

BIBLIOGRAPHY			DATE OF PUBLICATION
1)	TITLE:	The Science, Technology, and Effects of Controlled Burning of Oil Spills at Sea (shown in beginning of Section 19)	
	AUTHOR:	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. Marine Spill Response Corporation, Washington, D.C. MSRC Technical Report Series 94-013, 382 pg.	
	EDITOR:		
	PUBLISHER:		
2)	TITLE:	Technology Assessment of the Use of Dispersants on Spills from Drilling and Production Facilities in the Gulf of Mexico Outer Continental Shelf (referenced on page 5 of Appendix 18)	December 2000
	AUTHOR:	Report issued by S.L. Ross Environmental Research Ltd. 200-717 Belfast Rd. Ottawa, ON.	
	EDITOR:		
	PUBLISHER:		

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APPENDIX K - FORMS

CONTENTS

INCIDENT COMMAND SYSTEM (ICS) FORMS

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The ICS forms above constitute the initial Incident Action Plan. As the incident progresses into a project phase, additional ICS forms will be used as appropriate.

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WEATHER REPORT

Purpose: The Weather Report form provides the Incident Commander (the Command and General Staffs assuming command of the incident) with basic information regarding current incident specific weather conditions, forecast for the next twenty-four (24) and forty-eight (48) hour period. Personnel or responders at the incident location should provide real time current weather data. It also serves as a permanent record of the initial response to the incident.


Preparation: The Planning Section prepares the briefing from data gathered from NOAA's National Weather Service and other sources. The information will be provided to the Situation Unit Leader so he may maintain the information on his static display.

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.

ITEM	ITEM TITLE	INSTRUCTIONS
1.	Incident Name	Enter the name assigned to the incident.
2.	Date/Time Prepared	Enter date & time prepared (e.g. 09/17/1996 1500hrs.).
3.	Operational Period	Enter the date and time interval for which the form applies (e.g. 0600 09/17/2000 to 0600 09/18/2000).
4.	Prepared By	Enter the name of the person completing the form.
5.	Wind Speed	Enter wind speed. (Indicate either knots or mph)
6.	Wind Direction	Enter the direction from which the wind is blowing.
7.	Air Temperature	Enter on the air temperature in °F.
8.	Barometric Pressure	Enter current barometric pressure in inches.
9.	Humidity	Enter current humidity in percent.
10.	Visibility	Enter visibility in miles. (Use data from surveillance aircraft)
11.	Ceiling	Enter ceiling in feet. (Use data from surveillance aircraft)
12.	High Tide (time)	Enter time for next high tide for current operational period (24 hr).
13.	High Tide (height)	Enter height of next high tide for current operational period (feet).
14.	Sunrise	Enter time of sunrise for current operational period.
15.	Wave Height (feet)	Enter the wave height in feet (e.g., 1-3 feet).
16.	Wave Direction	Enter the direction, which the waves are moving.
17.	Swell Height	Enter the swell height. (feet)
18.	Swell Interval	Enter the swell interval (seconds)
19.	Current Speed	Enter the speed of water current (Indicate either kts or mph).
20.	Current Direction	Enter the direction which the water current is moving,
21.	Water Temperature	Enter the water temperature in °F.
22.	Low Tide (time)	Enter time for next low tide for current operational period (24 hr).
23.	Low Tide (height)	Enter height of next low tide for current operational period (feet).
24.	Sunset	Enter time of sunset for current operational period.
25.	Notes	Enter notes (e.g. thunderstorm activity, wind shift, front movement) about weather data current operational period.

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Weather Report			
Incident:		Prepared: _____ at: _____	
Period: ___/___/___ : ___ to ___/___/___ : ___		Version Name:	
Present Conditions			
Wind Speed:		Wave Height:	
Wind Direction From The:		Wave Direction:	
Air Temperature:		Swell Height:	
Barometric Pressure:		Swell Interval:	
Humidity:		Current Speed:	
Visibility:		Current Direction Toward:	
Ceiling:		Water Temperature:	
Next High Tide (Time):		Next Low Tide (Time):	
Next High Tide (Height):		Next Low Tide (Height):	
Sunrise:		Sunset:	
Notes:			
24 Hour Forecast			
Sunrise:		Sunset:	
High Tide (Time):		High Tide (Time):	
High Tide (Height):		High Tide (Height):	
Low Tide (Time):		Low Tide (Time):	
Low Tide (Height):		Low Tide (Height):	
Notes:			
48 Hour Forecast			
Sunrise:		Sunset:	
High Tide (Time):		High Tide (Time):	
High Tide (Height):		High Tide (Height):	
Low Tide (Time):		Low Tide (Time):	
Low Tide (Height):		Low Tide (Height):	
Notes:			
Weather Report			© 1997-2011 TRG/dbSoft, Inc.

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NOTIFICATION REPORT

Purpose: The Notification Report is used to document each Government and Non-Government Organizations (NGO) notified and briefed on the incident.

Preparation: The company representative or the Liaison Officer in the Command Staff prepares the Notification Report.

Distribution: The Notification Report is a critical part of the incident briefing and the Incident Action Plan. When updated, the Situation Unit Leader will post/update the Situation Display in the Command Post.

ITEM	ITEM TITLE	INSTRUCTIONS
1.	Incident	Enter the name assigned to the incident.
2.	Version Name	
3.	Period	Enter the Operational Period date and time.
4.	Prepared By	Enter name and title of the person preparing the form and date/time (Military Time).
5.	Organization Notified	Enter the name of the Organization notified.
	Phone Number	Enter the phone number of the Organization notified.
	Date/Time	Enter the date and time the notification is made.
	Person Contacted	Enter the name of the person notified.
	Person Contacted Email	Enter the email address of the person notified.
	Case Number	Enter the Case Number where applicable (e.g. NRC Case Number).
	Follow Up	Circle Yes or No if follow up is required.
	ETA On Site	Enter the estimated time of arrival of the organization if applicable.
	Notified By	Enter the name of the person making the notification.

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Notification Status Report

Incident: _____ **Prepared By:** _____ **at:** _____

Period: ___/___/___ : ___ to ___/___/___ : ___ **Version Name:** _____

Organization Notified	Phone	Date /Time Notified	Person Contacted	Person Contacted Email	Case No.	Follow Up	ETA On Site	Notified By

Notes: _____

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Notes: _____

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Notes: _____

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Notes: _____

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Notes: _____

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Notes: _____

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Notes: _____

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INCIDENT BRIEFING (ICS FORM 201)

Purpose: The Incident Briefing form provides the Incident Commander, the Command Staff and General Staff 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 Initial Incident Commander prepares the briefing form 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	Enter the name assigned to the incident.
2.	Prepared By	Enter name of person completing form and the date & time prepared (e.g. 09/17/1996 1500hrs.).
3.	Period	Enter the date and time interval of the operational period for which the form applies (e.g. 0600 09/17/2000 to 0600 09/18/2000).
4.	Version Name	
5.	ICS 201-1 Map Sketch	Show the Areas of Operations, the incident site, overflight results, trajectories, impacted shorelines, or other graphics depicting situation and response status on a sketch or attached map.
6.	ICS 201-2 Summary of Current Actions	Brief paragraph on: 1. What, when, and how the incident occurred 2. Surveillance & weather information 3. Overall initial response objectives 4. Timeline of major events or actions that have taken place.
7.	ICS 201-3 Current Organization	Enter on the organization chart the names of the individuals assigned to each position. Modify the chart as necessary.
8.	ICS 201-4 Resources Summary	Track the following information about the resources allocated to the incident. Name of supplier providing the resource 2. Resource Type (e.g. fire truck, boom, skimmer) 3. Description (e.g. size, name, capacity) 4. Quantity or amount of resource(s) 5. Area of Operation – destination of the resource (e.g. staging area, division, group, task force) 6. Status of each resource (e.g. Standby, En-route with Estimated time of arrival, At Staging, Assigned, & Out of Service).

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ICS 201-1 - Incident Briefing Map/Sketch		
Incident:	Prepared By:	at
Period: __/__/__:__ to __/__/__:__	Version Name:	
ICS 201-1 Incident Briefing Map/Sketch		© 1997-2011 TRG/dbSoft, Inc.

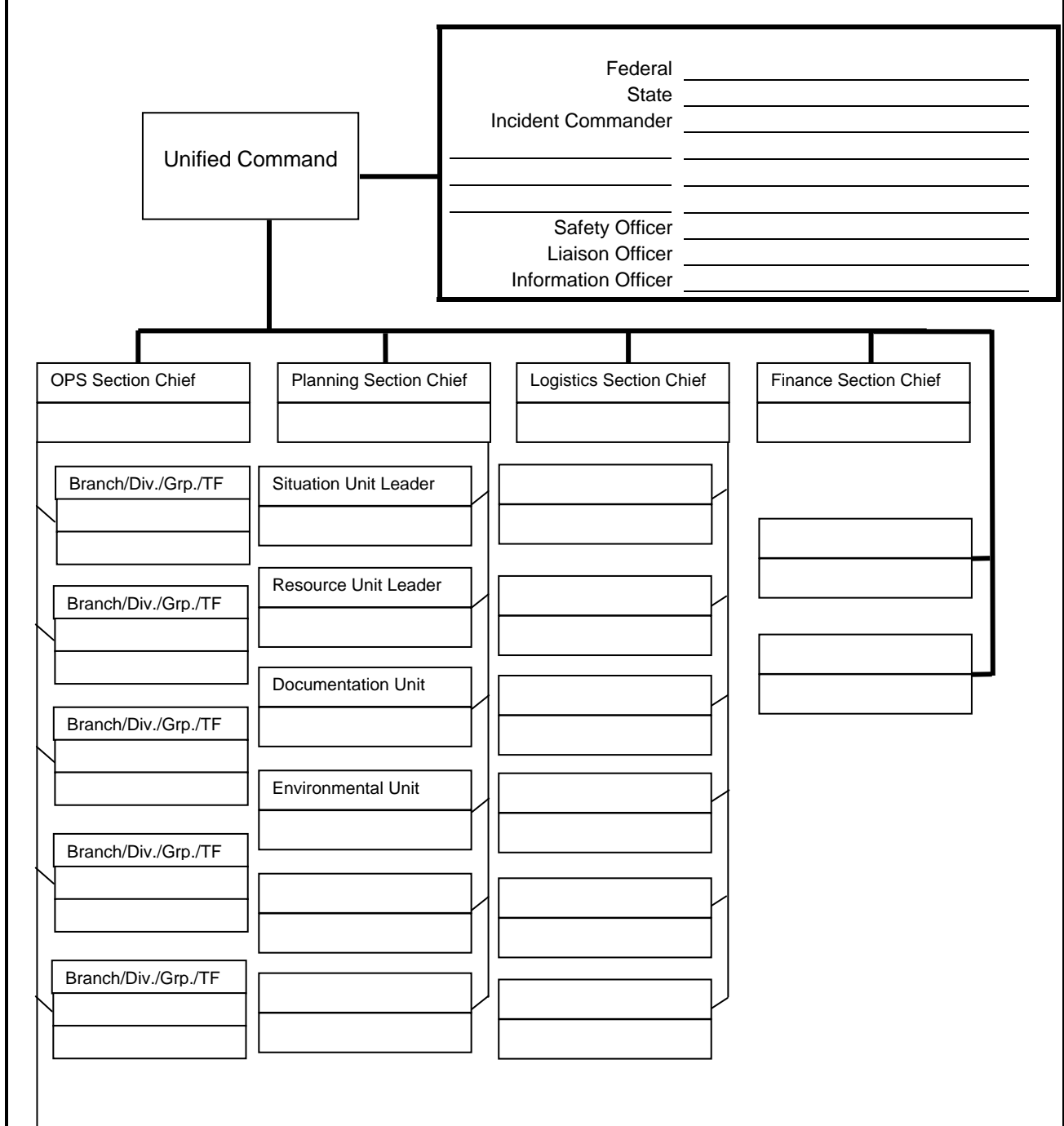
	Shell Offshore, Inc.	Number: HSE0054
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ICS 201-2 - Summary of Current Actions			
Incident:	Prepared By: _____ at: _____		
Period: ___ / ___ / ___ : ___ to ___ / ___ / ___ : ___	Version Name: _____		
Incident Information			
Initial Incident Objectives			
Summary of Current Actions			
Date/Time	Action/Note		
ICS 201-2 Summary of Current Actions			© 1997-2011 TRG/dbSoft, Inc.

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ICS 201-3 Current Organization

Incident:	Prepared By:	at:
Period:	Version Name:	



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RESPONSE OBJECTIVES FORM (ICS FORM 202)


Purpose: The Response Objectives Form describes the basic incident strategy, control objectives, and safety considerations for use during the next operational period.

Preparation: The Response Objectives Form is completed by the Planning Section Chief 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	Enter the name assigned to the incident.
2.	Version Name	
3.	Period	Enter the date and time interval of the operational period for which the form applies (e.g. 0600 09/17/2000 to 0600 09/18/2000).
4.	Prepared By	Enter the name of the Planning Section Chief or person completing the form and the date & time prepared (e.g. 09/17/1996 1500hrs).
5.	Overall Incident Objective(s)	What you plan to do in priority order. 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. (e.g. Contain and Recover Spilled Material)
6.	Tactical Objectives for specific Operational Period	How you plan to accomplish objectives. Enter short, clear and concise statements of the objectives for the incident response for this operational period. Include alternatives. (e.g. Deploy containment boom at appropriate collection areas)
7.	Safety Messages 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.

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ICS 202 - General Response Objectives		
Incident:	Prepared By:	at:
Period: ___ / ___ / ___ : ___ to ___ / ___ / ___ : ___	Version Name:	
Overall and Tactical Objectives		
	Assigned to:	Status
1. Ensure the Safety of Citizens and Response Personnel		
<input type="checkbox"/> 1a. Identify hazard(s) of spilled material		
<input type="checkbox"/> 1b. Establish site control (hot zone, warm zone, cold zone, & security)		
<input type="checkbox"/> 1c. Consider evacuations if needed		
<input type="checkbox"/> 1d. Establish vessel and/or aircraft restrictions		
<input type="checkbox"/> 1e. Monitor air in impacted areas		
<input type="checkbox"/> 1f. Develop site safety plan for personnel & ensure safety briefings are conducted		
2. Control the Source of the Spill		
<input type="checkbox"/> 2a. Complete emergency shutdown		
<input type="checkbox"/> 2b. Conduct firefighting		
<input type="checkbox"/> 2c. Initiate temporary repairs		
<input type="checkbox"/> 2d. Transfer and/or lighter product		
<input type="checkbox"/> 2e. Conduct salvage operations, as necessary		
3. Manage a Coordinated Response Effort		
<input type="checkbox"/> 3a. Complete or confirm notifications		
<input type="checkbox"/> 3b. Establish a unified command organization and facilities (command post, etc.)		
<input type="checkbox"/> 3c. Ensure local and tribal officials are included in response organizations		
<input type="checkbox"/> 3d. Initiate spill response Incident Action Plans (IAP)		
<input type="checkbox"/> 3e. Ensure mobilization & tracking of resources & account for personnel & equip		
<input type="checkbox"/> 3f. Complete documentation		
4. Maximize Protection of Environmentally-Sensitive Areas		
<input type="checkbox"/> 4a. Implement pre-designated response strategies		
<input type="checkbox"/> 4b. Identify resources at risk in spill vicinity		
<input type="checkbox"/> 4c. Track oil movement and develop spill trajectories		
<input type="checkbox"/> 4d. Conduct visual assessments (e.g., overflights)		
<input type="checkbox"/> 4e. Development/implement appropriate protection tactics		
ICS 202 General Response Objectives		© 1997-2011 TRG/dbSoft, Inc.


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SITE SAFETY AND HEALTH PLAN (ICS FORM 208)


Purpose: The Site Safety and Health Plan (SSHP) is a site-specific document required by state and federal OSHA regulations and specified in the Area Contingency Plan. The SSHP, at minimum addresses, includes, or contains the following elements: health and safety hazard analysis for each site task or operation, comprehensive operations work plan, personnel training requirements, PPE selection criteria, site-specific medical monitoring requirements, air monitoring plan, site control measures, confined space entry procedures (if needed), pre-entry briefings (tailgate meetings), pre-operations commencement health and safety briefings for all incident participants, and quality assurance of SSHP effectiveness,

Preparation: The Safety Officer prepares the SSHP with input from the Industrial Hygienist and Medical Unit Leader.


Distribution: The SSHP is distributed to the Operations Section Chief for implementation and promulgation to all operational groups and responding agencies. A copy is provided to the Incident Commander, the Command Staff, and the General Staff.

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ICS 208 – Site Safety Plan		
Incident:	Prepared by:	at:
Period:	Version Name:	
Revision:		
Applies To Site:		
Products:		(Attach MSDS)
SITE CHARACTERIZATION		
Water: _____	Wave Height: _____	Wave Direction: _____
Current Speed: _____	Current Direction: _____	Use: _____
Land: _____	Weather: _____	Temp: _____
Wind Speed: _____	Wind Direction: _____	
Pathways for Dispersion:		
Site Hazards		
<input type="checkbox"/> Boat Safety	<input type="checkbox"/> Fire, explosion, in-situ burning	<input type="checkbox"/> Pump hose
<input type="checkbox"/> Chemical hazards	<input type="checkbox"/> Heat stress	<input type="checkbox"/> Slips, trips, and falls
<input type="checkbox"/> Cold Stress	<input type="checkbox"/> Helicopter operations	<input type="checkbox"/> Steam and hot water
<input type="checkbox"/> Confined Spaces	<input type="checkbox"/> Lifting	<input type="checkbox"/> Trenching/Excavation
<input type="checkbox"/> Drum handling	<input type="checkbox"/> Motor vehicles	<input type="checkbox"/> UV Radiation
<input type="checkbox"/> Equipment operations	<input type="checkbox"/> Noise	<input type="checkbox"/> Visibility
<input type="checkbox"/> Electrical operations	<input type="checkbox"/> Overhead/buried utilities	<input type="checkbox"/> Weather
<input type="checkbox"/> Fatigue	<input type="checkbox"/> Plants/wildlife	<input type="checkbox"/> Work near water
<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
Air Monitoring		
%O₂: _____	%LEL: _____	ppm Benzene: _____
ppm H₂S: _____	<input type="checkbox"/> Other (Specify): _____	
CONTROL MEASURES		
Engineering Controls		
<input type="checkbox"/> Source of release secured	<input type="checkbox"/> Valve(s) closed	<input type="checkbox"/> Energy source locked/tagged out
<input type="checkbox"/> Site secured	<input type="checkbox"/> Facility shut down	<input type="checkbox"/> Other _____
Personal Protective Equipment		
<input type="checkbox"/> Impervious suit	<input type="checkbox"/> Boots	<input type="checkbox"/> Respirators
<input type="checkbox"/> Inner gloves	<input type="checkbox"/> Other _____	<input type="checkbox"/> Eye protection
<input type="checkbox"/> Outer gloves		<input type="checkbox"/> Personal floatation
<input type="checkbox"/> Flame resistance clothing		
<input type="checkbox"/> Hard hats		
Additional Control Measures		
<input type="checkbox"/> Decontamination	<input type="checkbox"/> Stations established	
<input type="checkbox"/> Sanitation	<input type="checkbox"/> Facilities provided – OSHA 29 CFR 1910.120n	
<input type="checkbox"/> Illumination	<input type="checkbox"/> Facilities provided – OSHA 29 CFR 1910.120m	
<input type="checkbox"/> Medical Surveillance	<input type="checkbox"/> Provided – OSHA 29 CFR 1910.120fq	
ICS 208 Site Safety Plan		© 1997-2011 TRG/dbSoft, Inc.

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ICS 208 – Site Safety Plan		
Incident:	Prepared By:	at:
Period:	Version Name:	
WORK PLAN		
<input type="checkbox"/> Booming	<input type="checkbox"/> Skimming	<input type="checkbox"/> Vac trucks
<input type="checkbox"/> Heavy equipment	<input type="checkbox"/> Sorbent pads	<input type="checkbox"/> Pumping
<input type="checkbox"/> Other	<input type="checkbox"/> Patching	<input type="checkbox"/> Hot work
		<input type="checkbox"/> Excavation
		<input type="checkbox"/> Appropriate permits used
TRAINING		
<input type="checkbox"/> Verified site workers trained per OSHA 29 CFR 1920.120		
ORGANIZATION		
<u>Title</u>	<u>Name</u>	<u>Telephone/Radio</u>
Incident Commander:	_____	_____
Deputy Incident Commander:	_____	_____
Safety Officer:	_____	_____
Public Affaire Officer:	_____	_____
Other:	_____	_____
EMERGENCY PLAN		
<input type="checkbox"/> Alarm system: _____		
<input type="checkbox"/> Evacuation plan: _____		
<input type="checkbox"/> First aid location: _____		
Notified		
<input type="checkbox"/> Hospital	_____	Phone: _____
<input type="checkbox"/> Ambulance	_____	Phone: _____
<input type="checkbox"/> Air ambulance	_____	Phone: _____
<input type="checkbox"/> Fire	_____	Phone: _____
<input type="checkbox"/> Law enforcement	_____	Phone: _____
<input type="checkbox"/> Emergency response/rescue	_____	Phone: _____
PRE-ENTRY BRIEFING		
<input type="checkbox"/> Initial briefing prepared for each site		
INCLUDING ATTACHMENTS/APPENDICES		
Attachments		Appendices
<input type="checkbox"/> Site Map		<input type="checkbox"/> Site Safety Program Evaluation Checklist
<input type="checkbox"/> Hazardous Substance Information Sheets		<input type="checkbox"/> Confined Space Entry Checklist
<input type="checkbox"/> Site Hazards		<input type="checkbox"/> Heat Stress Consideration
<input type="checkbox"/> Monitoring Program		<input type="checkbox"/> Cold Stress and Hypothermia Consideration
<input type="checkbox"/> Training Program		<input type="checkbox"/> First Aid for Bites, Stings, and Poisonous Plant Contact
<input type="checkbox"/> Confined Space Entry Procedure		<input type="checkbox"/> Safe Work Practice for Oily Bird Rehabilitation
<input type="checkbox"/> Safe Work Practices for Boats		<input type="checkbox"/> SIPI Site Pre-Entry Briefing
<input type="checkbox"/> PPE Description		<input type="checkbox"/> Personnel Tracking System
<input type="checkbox"/> Decontamination		
<input type="checkbox"/> Communication and Organization		
<input type="checkbox"/> Site Emergency Response Plan		
ICS 208 Site Safety Plan		© 1997-2011 TRG/dbSoft, Inc.

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APPENDIX L – MEDIA RELATIONS

A. Overview

Understand the Media Agenda

Mass communications researchers have found a strong relationship between the amount of coverage given to different issues in the media and the importance people think those issues have. The media seeks and processes information, then passes it on to readers, viewers and listeners. The media, therefore, sets the agenda for public discussion. Industry communicators should be concerned with getting the proper message on the media agenda.

Be a Resource

In crisis situations, it is difficult for businesses to win when they compete with the media, because the battle is always waged on the media's terms. It is easier for a company to win when they collaborate with the media to depict a crisis incident. That means being accessible, up-front, straightforward and responsive to the media's needs. And being more than just a source of information ... but rather a resource before, during and after a crisis.


Deadlines

The entire news business is structured by deadlines. The tempo of work, flow of information and level of activity are all geared toward deadlines. As a source (or resource) of news you should be sensitive to deadlines and make them targets for your own timing. Once you know the deadlines - which you can determine yourself and confirm by asking -- you are on your way to being able to deal with news operations.

Wire Services

Reporters for wire services file stories instantaneously and update them as more information becomes available. It is important to provide reporters accurate information up-front rather than try to correct an erroneous story later.

Continued on next page

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Overview, Continued

Newspapers After a reporter has covered a story for a newspaper, he or she needs time enough to write it in final form. The story will have to be reviewed by a copy editor and headlines written. Reporters do not write headlines or decide where in the newspaper their articles are placed. Those are the jobs of editors.

Radio and Television In radio, if there is a recorded interview, time is needed to assemble or edit the interview into broadcast shape and form. In television, videotape must be edited into final broadcast form. During a crisis, live coverage from the scene should be expected, followed by more in-depth reports during scheduled newscasts.

Basic Objectives When disaster strikes Shell, we must know how to deal with the media. It is crucial to our relationships with local communities, customers, employees and the general public. Consider the following two points:


1. The public typically gains a bad impression only if it perceives a company to be unresponsive, confused, inept, reluctant or unable to provide reliable information.
2. The primary objective for dealing with the crisis itself is to minimize the long-term impact.

B. Do's and Don'ts

Do's and Don'ts Interview Tips In an emergency, the media and the public need certain information, and you owe it to them to provide it. Your safest course is to prepare a brief statement of the facts and to follow these tips during a media interview:

1. Don't go into the interview until you are sure of your facts and know what you want to say.

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Do's and Don'ts Continued

Do's and Don'ts Interview Tips (continued)

2. Make sure your statement includes:
 - the WHO, WHAT, WHERE, WHEN AND WHY of the incident
 - what product(s) have been released
 - the number of injured and/or fatalities
 - any threat to the public or to the environment
 - that the exact cause is still under investigation

3. Don't release names of victims until next-of-kin have been notified.

4. Never forget that you are the one in charge. You set the rules.

5. Always be cordial and helpful to the media, within the limits of Shell policy.


6. Remember, it is the basic nature of reporters to look for the controversial, violent, emotional and sensational sides of any story. They may also try to magnify those characteristics by asking questions in certain ways. They don't mean to hurt you, but you must remember to avoid hurting yourself.

7. In most cases outside of major cities, the problem is not that reporters are aggressive or vicious; the problem is that they may be young, poorly informed, overworked and inexperienced. Try, wherever possible, to help reporters understand the situation at hand.

8. Never lose your temper or composure around the media.

9. Never guess or speculate about anything. If you don't know, say so. During an incident, stick to the simple facts of the situation as they exist right now. State that your primary concern is the safety and well being of everyone in the area, and the protection of the environment. Do not discuss background, company history, company policies, or what may happen in the future. Politely refer all such questions to Reputation & Public Affairs.


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Do's and Don'ts, Continued

Do's and Don'ts Interview Tips (continued)

10. Don't estimate the dollar amount of damage.
11. If you can't comment on something, give a reason why. It wouldn't be proper; the investigation isn't complete yet; that's not your field; all such questions have to go through Reputation & Public Affairs; you don't have accurate information yet.
12. Don't discuss questions of responsibility.
13. Don't make comments about third parties.
14. Don't hide, lie or give personal opinions.
15. Don't joke or be humorous. Be professional.
16. Don't try to push reporters away or to lock them out. Allow media on or near the scene as soon as it is safe. Provide escorts to ensure media safety.
17. Don't discuss hypotheticals: "What if?"
18. Always write down the names, affiliations and deadlines of reporters who come to see you. Then advise Reputation & Public Affairs of the media contact.
19. Don't talk to a reporter "off the record." There is no such thing. If it's newsworthy, the reporter may use it.
20. Speak plainly and simply. Don't talk technical.
21. Be prepared to explain exactly what you are doing to bring the situation under control.

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C. Guidelines Summary

Explanation The following key points summarize the “Media Considerations” material from the previous pages. These key points are especially important for Shell personnel who may have to interact with the media at the scene of an incident.

REMEMBER Be cooperative with the media; they are Shell’s liaison with the public.

- DO**
- Notify your Shell Reputation & Public Affairs contact immediately after notifying management and other required Shell contacts (HSE, Security, etc.) as well as local authorities, if appropriate.
 - Select one media spokesperson.
 - Prepare an interim press statement that includes the following facts:
 - General description of incident
 - Time, place and number of people injured or killed (no names)
 - Current status of incident.
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- DO NOT**
- Speculate on cause or estimate damage.
 - Give out names of injured or dead until next of kin has been notified.
 - Make any statements indicating negligence.
 - Allow media in unsafe areas.
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