

Appendix B

Emergency Response

Plan



PGS GEOPHYSICAL SERVICES ONSHORE

CREW 320

DELILAH 3D

EMERGENCY RESPONSE PLAN



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 2 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

TABLE OF CONTENTS

1	TELEPHONE CONTACT INFORMATION	3
2	INTRODUCTION.....	4
3	PROJECT MAP	6
4	EMERGENCY MAPS.....	7
5	MEDICAL EMERGENCY.....	10
6	MEDICAL EMERGENCY FLOWCHART	11
7	FIRE EMERGENCY	12
8	FIRE EMERGENCY FLOWCHART.....	13
9	SEVERE WEATHER – LIGHTNING EMERGENCY	14
10	SEVERE WEATHER – LIGHTNING EMERGENCY FLOWCHART	15
11	SPILL EMERGENCY	16
12	SPILL EMERGENCY FLOWCHART.....	17
13	VEHICLE INCIDENT EMERGENCY	18
14	VEHICLE INCIDENT EMERGENCY FLOWCHART	19
15	SEARCH & RESCUE EMERGENCY	20
16	SEARCH & RESCUE EMERGENCY FLOWCHART	21
17	HELICOPTER EMERGENCY	22
18	HELICOPTER EMERGENCY FLOW CHART.....	23
19	APPENDIX 1 – EMERGENCY RECORDS.....	24
20	APPENDIX 2 - INCIDENT REPORTING INSTRUCTIONS	26

DATE	QTY	FIELD DISTRIBUTION	DATE	QTY	OFFICE DISTRIBUTION
		Recording Crew Vehicles		1	Party Manager
		Survey Crew Vehicles		1	Crew HSE
		Project Coordinator Vehicles		1	Corporate HSE Manager
		Permit Crew Vehicles			
				1	Client Office
		Helicopter Vehicles			
		Project Coordinator Vehicle			

All vehicles, boats, Kubotas, and workshops will have a Quick reference ERP.

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 3 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

TELEPHONE CONTACT INFORMATION

1.1 PGS CORPORATE – 15150 Memorial Drive HOUSTON, TX 77079

NAME	OFFICE NO.	CELL NO.	HOME NO.
ERIC WERSICH – President	281-509-8384	281-948-7573	832-595-9429
WAYNE MILLICE, General Manager NA	281-509-8271	281-787-3814	281-835-1168
JERRY LAWSON Operations Manager	281-509-8238	713-898-5576	281-578-2129
MURRAY SAXTON – HSEQ Manager	281-509-8331	281-948-8869	281-277-6582
HOUSTON OFFICE, Receptionist	281-509-8000		

1.2 PGS CREW 320 –

NAME	OFFICE NO.	CELL NO.	FAX NO.
KEITH STEVENS, Field Supervisor	281-509-8000	713-725-4516	
NICKY BLAKENEY, Party Manager	281-509-8000	281-543-3844	
DALE KLUCK, Party Manager	281-509-8000	281-507-9087	
FRED HAMILTON, HSE Officer	281-509-8000	281-229-4839	
LANCE BRYAN, HSE Officer	281-509-8000	281-229-1624	
OBSERVERS, Recorder Truck		281-543-6898	

1.3 CLIENT – Cimarex


NAME	OFFICE NO.	CELL NO.	HOME NO.
Mark Wagaman	303-285-5814	303-810-8344	

1.4 PGS CREW 320 CONTRACTORS –

NAME	OFFICE NO.	CELL NO.	FAX NO.
OGM Land			
Omni Energy	337-896-6664		
Geo Explorer	713-206-0601		

1.5 EMERGENCY SERVICES -

NAME	OFFICE NO.	EMERGENCY NO.	
Highway Patrol	409-898-0771	911	
Sherriff	409-835-8411	911	
Beaumont Police Dept	409-832-1234	911	
Kuntz Police Dept	409-246-2119	911	
FIRE DEPT.		911	
AMBULANCE		911	
POISON CONTROL	800-256-9822		
OSHA – FEDERAL	800-321-OSHA		
Texas Parks and Wildlife Department	409-892-8666		

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 4 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

2 INTRODUCTION

This Emergency Response Plan (ERP) is site specific for PGS Crew 320 on the DELILAH 3D project near and around Sour Lake, TX. The ERP addresses each emergency situation with written instructions and a flow chart. The following situations have been addressed in this ERP:

- Medical Emergency
- Fire Emergency
- Severe Weather Emergency
- Spill Emergency
- Vehicle Incident Emergency
- Search & Rescue Emergency
- Helicopter Emergency

2.1 OSHA REGULATIONS

Emergency response plans are developed to provide guidelines on what actions to take if an emergency should occur. In 29 CFR 1910.38(a), OSHA lists the minimum elements that should be included in all PGS emergency response plans. These elements include:

- Emergency escape procedures and emergency escape route assignments.
- A procedure to account for you and your coworkers after emergency evacuation has been completed. It is important to make sure that all employees have been safely evacuated.
- Rescue and medical duties for those employees who are to perform them.
- The procedure for reporting fires, injured personnel and other emergencies.
- Names of persons who can be contacted for further information or explanation of duties.

2.2 REVIEW


This plan shall be reviewed each month and/or every time there is a drill or an incident. The Party Manager and the Crew HSE Officer will assess the effectiveness of the plan. All revisions will be communicated to the crew through meetings and revised documentation.

2.3 TRAINING REQUIREMENTS

The ERP must be reviewed with each employee when:

- The plan is introduced (orientation training).
- The employee's responsibilities or designated actions under the plan change.
- The plan is changed (each new job site)

Responsibilities of individual crew members should be determined and assigned. Drills should be conducted at job start and at regular intervals thereafter as stated in the Crew HSE Plan.

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 5 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

2.4 EMERGENCY RESPONSIBILITIES

CREW SUPERVISOR; maintains communication with PGS and Client Mgmt. in Houston.

PARTY MANAGER; manages overall emergency response.


- Evaluates incoming emergency-related information.
- Determines the response plan of action and activates it.
- Notifies and updates upper management of status of the crisis.
- Acts as the official representative who communicates with outside fire and rescue agencies.
- Directs and monitors the emergency activities. Assigns personnel as needed.
- Provides information to upper management and/or public relations.
- Assists in determining when the resumption of normal activities can begin.

HSE OFFICER; assists PM with emergency response.

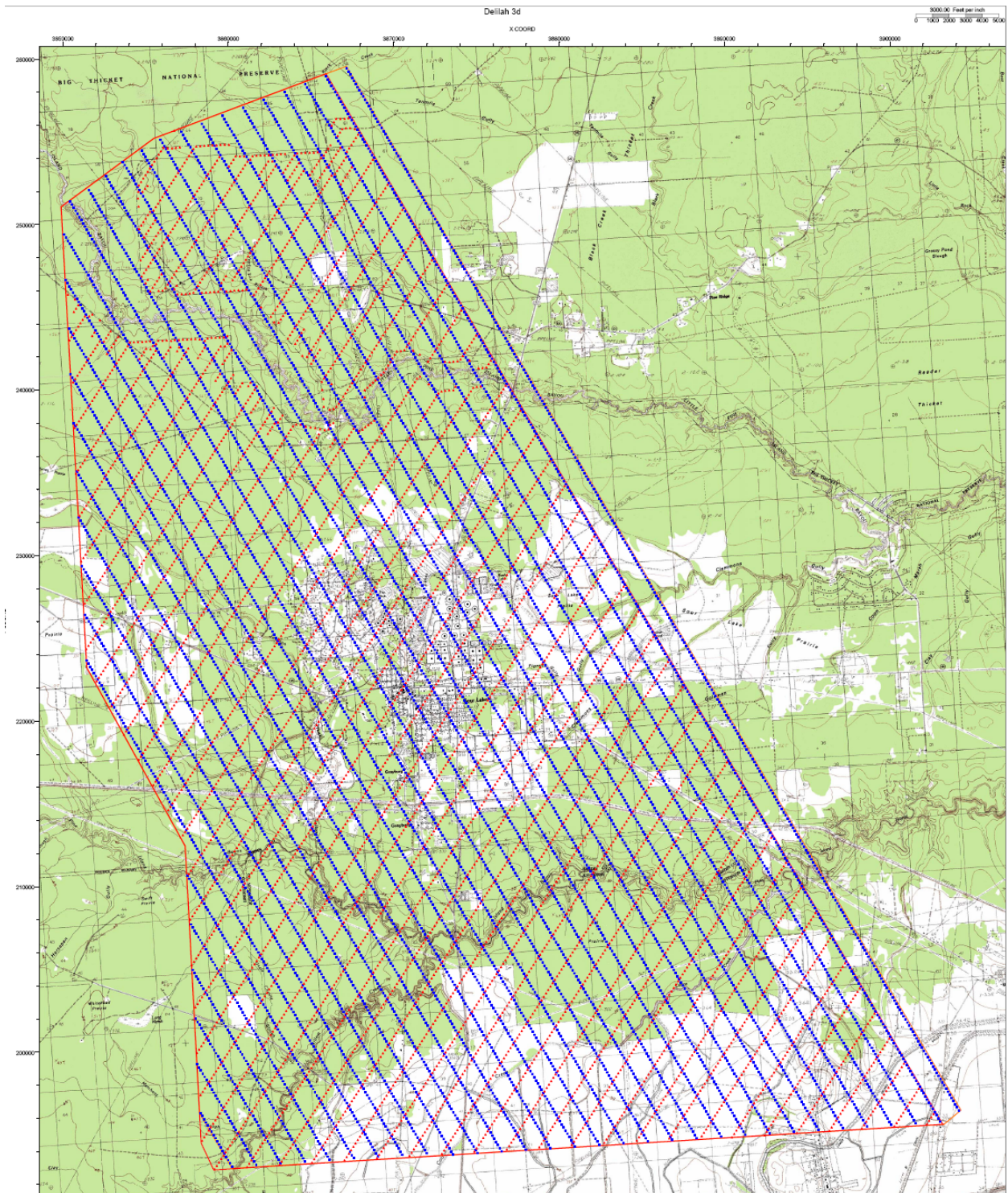
- In the absence of the PM or APM, the HSEO will assume their ERP duties.
- Maintains a current list of their location personnel for emergency roll call purposes.
- Manages the securing of any records of value and confidentiality.
- Based on hours of operation, location and crew size will appoint and train the appropriate number of ERP Team leaders and members. Maintain a current list of these personnel and appoint replacements as necessary.
- Conducts ERP induction training for new crew personnel and update briefings.
- In the event of an evacuation, the Emergency Coordinator will perform a roll call and determine if all persons and visitors were accounted for.


CREW 320 EMERGENCY TEAM LEADERS; are assigned to respond to the following:

MEDIVAC	FIRE	H2S
PM	PM	PM
HSEO	HSEO	HSEO
CLERK	CLERK	CLERK
FIRST AIDER	FIRST AIDER	FIRST AIDER

	PGS Onshore Inc.	<p align="center">CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN</p>	Doc # L-905-320-00
	Prepared by: KS		Page 6 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

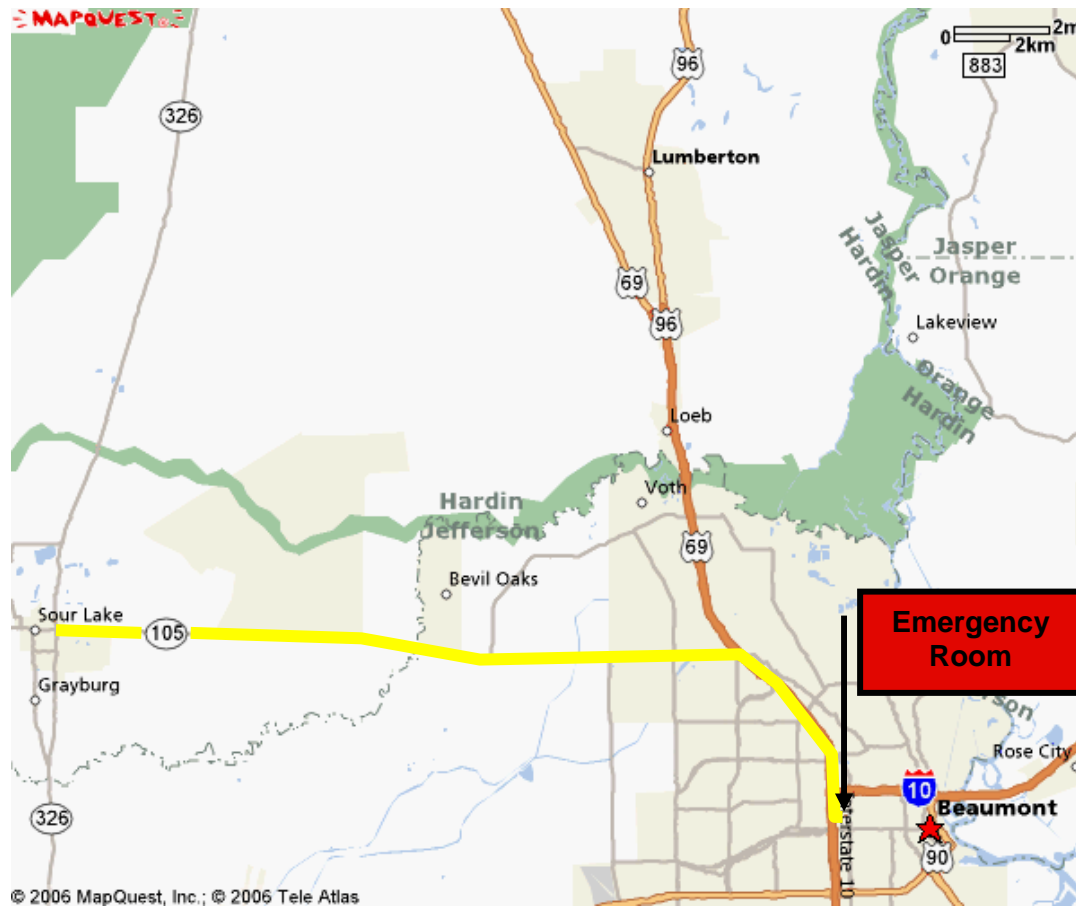
PROJECT MAP




	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 7 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		


3

Take Hwy 105 to Hwy 69 and turn south (right). Travel south until you reach the Delaware St. Calder Ave. EXIT. Exit and continue on service road until you reach North St., turn east (left) continue to Emergency Entrance.




	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 8 of 27
	Authorized by: KS		Date:7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 9 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 10 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

MEDICAL EMERGENCY

3.1 PERSONNEL REQUIREMENTS

- Party Manager; in charge of all activities. Assesses damage and directs medivac response.
- HSE Officer; assists PM in all activities.

3.2 EQUIPMENT REQUIREMENTS

- Radio/Cell Phone
- First Aid Equipment
- Fire Extinguishers

3.3 IMMEDIATE RESPONSE

After assessing the injured person notify the Party Manager, Observer or senior person. Be prepared to provide the following:

- Exact location of incident site (best route for access)
- Number of people injured and nature of injuries **(do not mention the names of injured on radio)**
- What resources you have at hand (personnel, vehicles, medical equipment etc.)
- What resources are needed
- How you can be contacted
- Observer will cross reference the location with closest muster point on map to give to EMS.
- Observer will dispatch someone to meet EMS at muster point and guide them to incident location

3.4 STAGE #2 RESPONSE


Provide 1st aid care for injured person.

- **Stay Calm** Assess what has happened
- **Ensure Your Safety** Ensure the area is safe for yourself and others to approach
- **Prevent Further Injuries** Be aware of hazards which may be present in the area such as Fire, Electricity, Road Traffic, Falling Debris, and Extreme Cold
- **Do Not Move Victim(s)** Do not attempt to move anyone who is unconscious, has a broken limb or injured back. Keep person from moving.

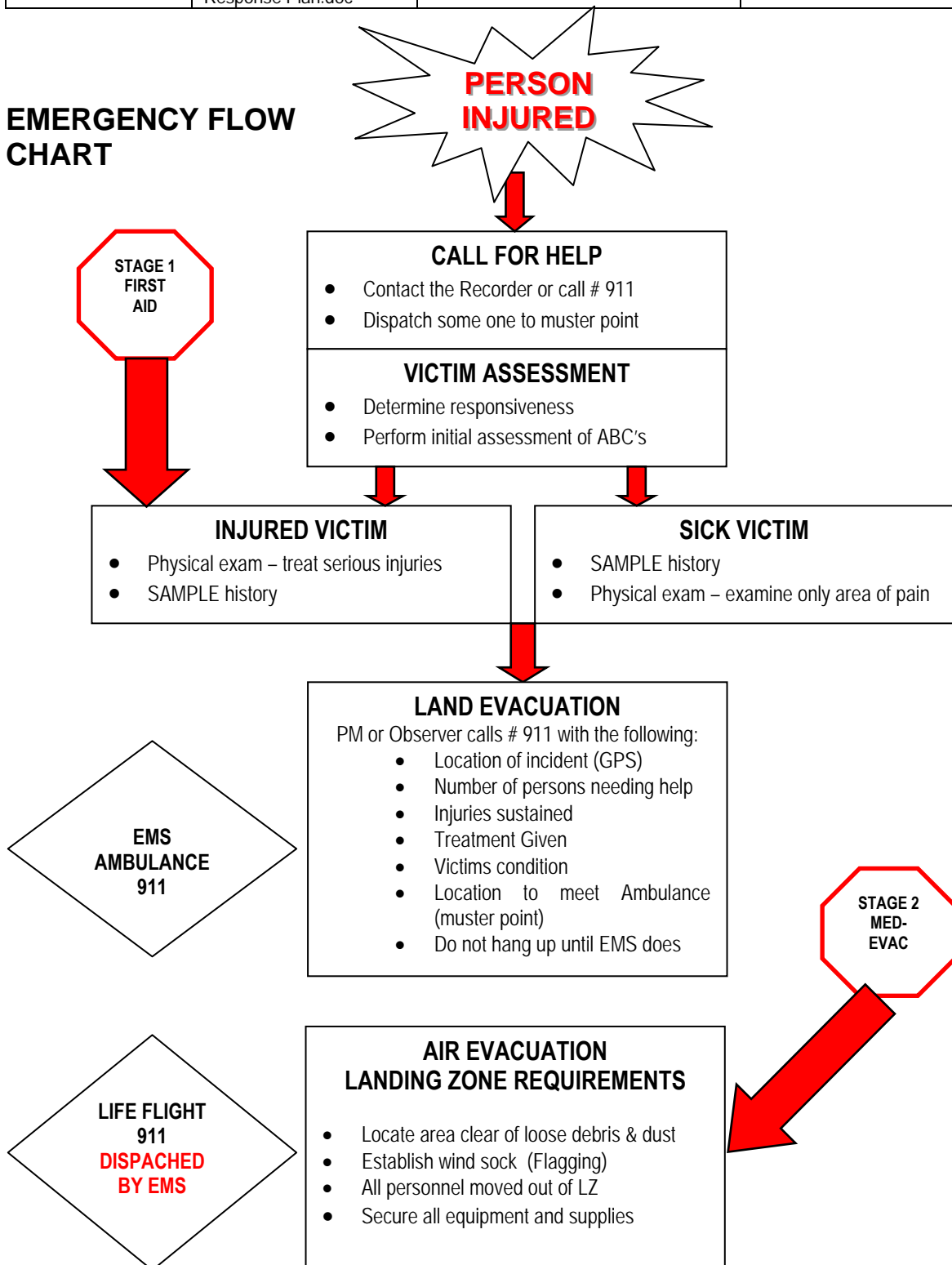
- **Apply BBP protection:** Put on gloves, glasses and mask as needed to protect yourself.


In certain situations there may be numerous injured personnel. Identify and treat first those who have an immediate life threatening condition. To preserve life, ensure the following:

- **Airway** Ensure airway is open and maintained
- **Breathing** Check for breathing – rescue breathing if necessary
- **Circulation** Check victim for pulse - CPR if necessary
- **Control Bleeding:** Direct pressure, elevation, pressure points
- **Treat for Shock:** Elevate feet (if no head injury) insulate patient from heat or cold
- **Treat injuries:** Treat injuries, make patient comfortable, do no further harm.
- **Collect information:** Record if conscious (signs, and symptoms, allergies, medication taken, pertinent past illnesses, last oral intake, events leading to pertinent past illnesses, events leading to the illness/injury.)

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 11 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

EMERGENCY FLOW CHART



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 12 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

4 FIRE EMERGENCY

4.1 PERSONNEL REQUIREMENTS

- Party Manager; in charge of all activities, assesses damage and directs fire response
- HSE Officer; assists PM in all activities
- Fire Team Leader; in charge at fire scene
- Fire Team Members; assist Team Leader at fire scene

4.2 EQUIPMENT REQUIREMENTS

- Radio for Team Leader
- First Aid Equipment
- Fire Extinguishers
- Field piss pumps
- Field shovels
- Field flappers

4.3 IMMEDIATE RESPONSE


It is the responsibility of all crew members to understand their duties and responsibilities in case of a fire emergency. When the alarm sounds, all crew members shall muster at their assigned stations. Upon detection of fire, no matter how small:

- Sound Alarm / Call Fire Dept.
- Fire team attempts to extinguish small fires with hand-held extinguisher or fire blankets
- Move to muster point immediately
- Shut off main electrical power

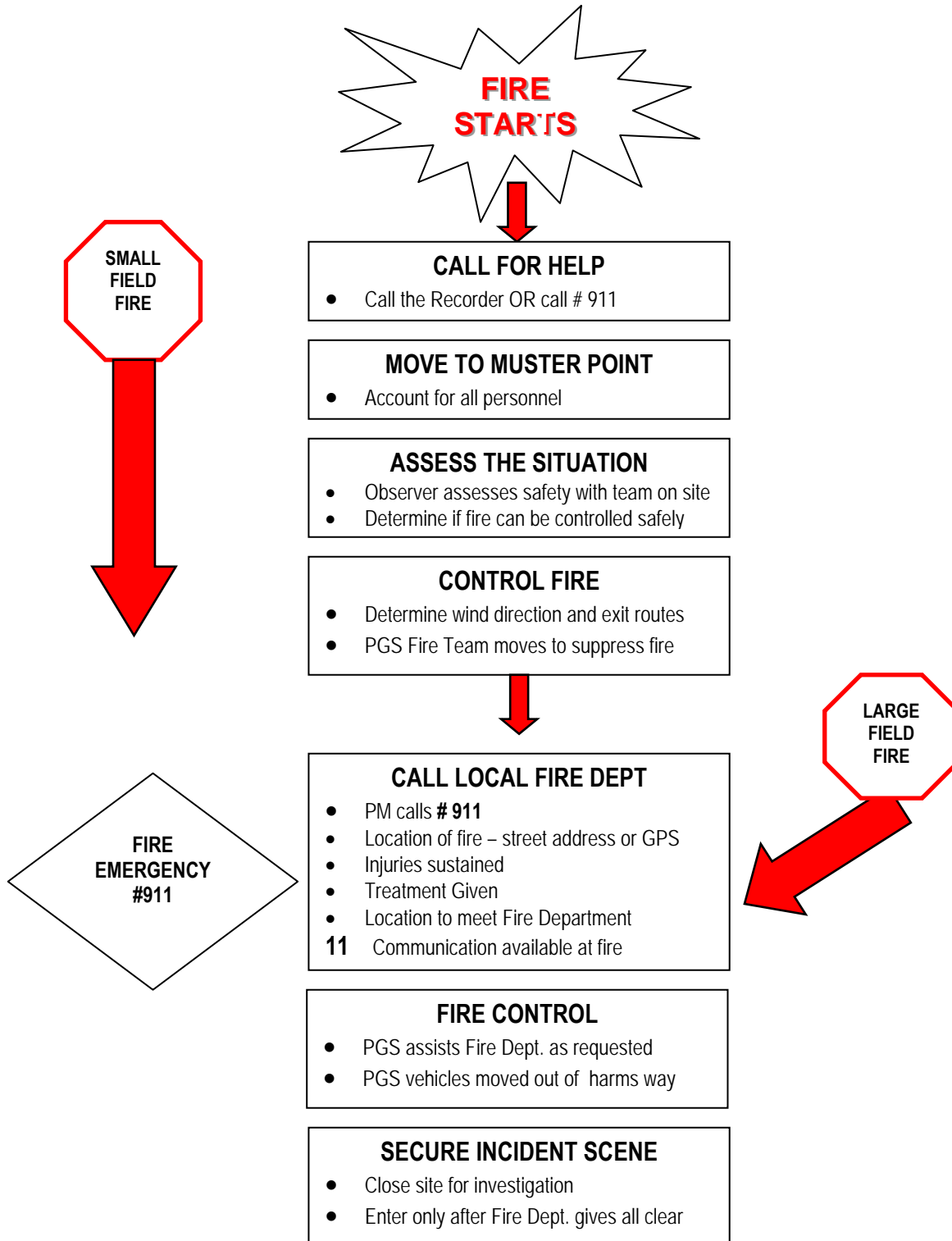
4.4 STAGE #2 RESPONSE


If the fire is too large to extinguish with available resources call the Fire Dept. if not done yet.

- Get help quickly.
- Everyone is to leave immediately by the nearest exit and proceed to the Muster Point.
- Account for all personnel. Conduct head count, keep all at point until all clear is given.
- Determine Exact location and the Extent of fire - Size, Equipment involved.
- Note wind direction. Assess the state of the fire.
- Dispatch vehicle to meet the fire department to lead them to the fire area.
- Secure the incident scene after fire is extinguished for investigation.
- PGS personnel should assist the fire department if requested. Otherwise, the crew should remain out of the way.
- Make sure that access to fire by fire apparatus is not blocked by company vehicle

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 13 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

5 FIRE EMERGENCY FLOWCHART



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 14 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

6 SEVERE WEATHER – LIGHTNING EMERGENCY

6.1 PERSONNEL REQUIREMENTS

- Party Manager; in charge of all activities, assesses situation and directs response
- HSE Officer; assists PM in all activities
- Observer, Severe Weather Team Leader; in charge in field
- Troubleshooters, assist Team Leader in field to disconnect cables and muster personnel

6.2 EQUIPMENT REQUIREMENTS

- Radio for Team Leader
- First Aid Equipment
- Fire Extinguishers

6.3 IMMEDIATE RESPONSE

In the event of an electric storm the seismic recording line offers a large expanse of conductive material which is attractive to lightning. Some warning time will generally be given in the form of lightning in the distance which is normally accompanied by thunder.

Lightning can strike as much as 10 miles away from the rain area in a thunderstorm. That's about the distance one can hear thunder. When a storm is 10 miles away, it may even be difficult to tell a storm is coming.

The speed of sound is roughly 750 mph or approximately **one mile every 5 seconds**. The speed actually varies greatly with the temperature but the thumb rule is 5 seconds = 1 mile.

6.4 STAGE #2 RESPONSE


Survey: Drop all metal tools and survey range poles.

Drilling: lower the mast of the drill, move the drills away from overhead power lines, move all personnel away from the drills. Drop all metal tools, loading poles, pipe or drill stems.

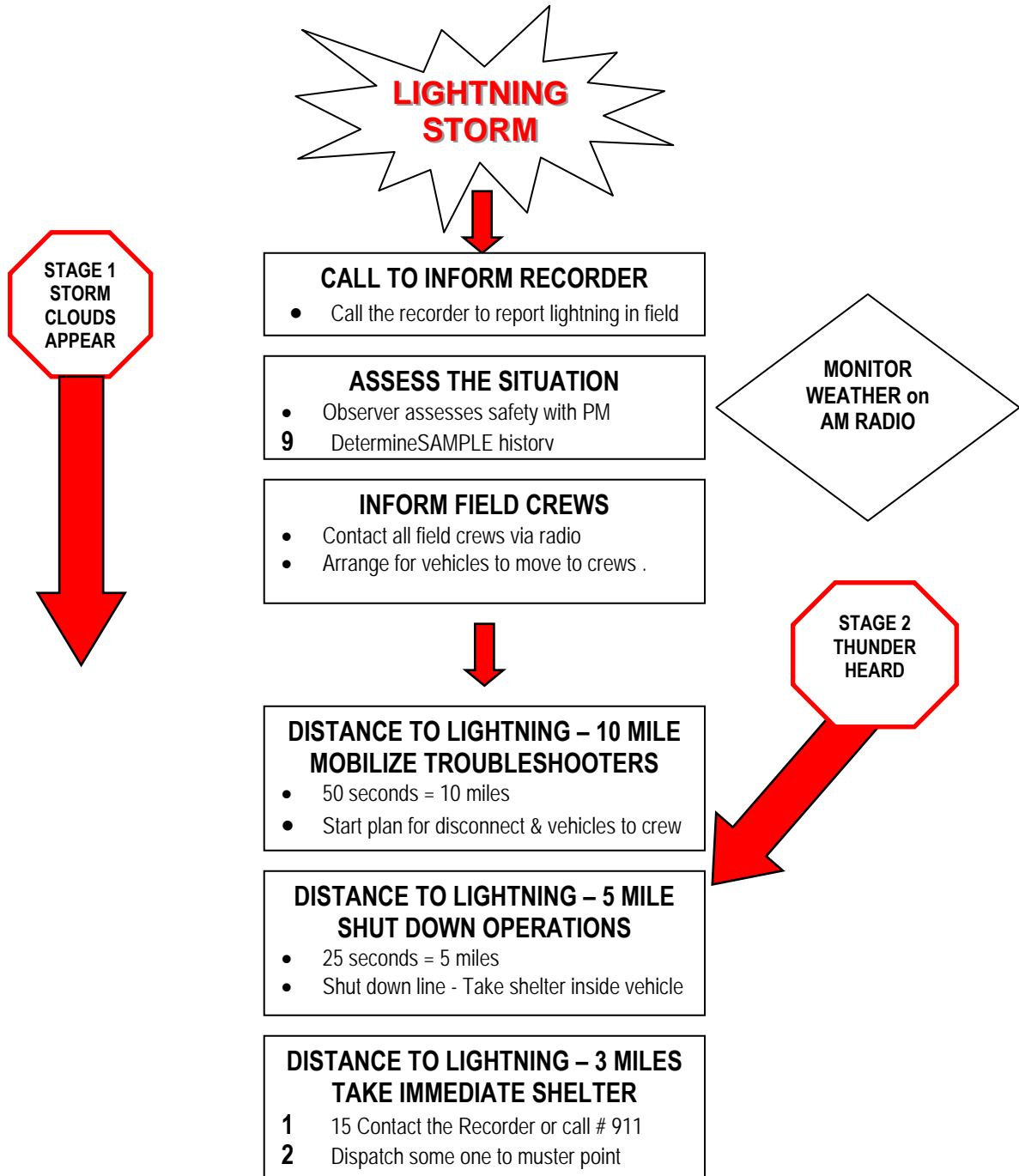
Recording: disconnect the recording truck from the line, disconnect the power supply unit from the line, lower all antennas. Get all personnel into the vehicles (NOT under), be prepared to sit and wait it out.


Explosives: Suspend all explosives operations: transportation, loading, shooting, etc. Explosive magazines made of metal should be grounded with a cable and metal stake or grounding rod.

Transport: Suspend grounded vehicle operations and move clear of the unit. You are safer inside a rubber-tired vehicle but park it in a low open area rather than under trees. Do not shelter underneath a vehicle. If a vehicle has taken a lightning strike, the occupants should avoid panicking and must remain inside the vehicle until the body has been earthed before dismounting. A length of chain thrown over any metal part and touching ground will prove sufficient to earth the residual static.

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 15 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

7 SEVERE WEATHER – LIGHTNING EMERGENCY FLOWCHART



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 16 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

SPILL EMERGENCY

7.1 PERSONNEL REQUIREMENTS

- Party Manager; in charge of all activities, Assesses damage and directs spill response
- HSE Officer; assists PM in all activities
- Spill Emergency Team Leader; in charge at spill site
- PGS Personnel assist Team Leader at spill site

7.2 EQUIPMENT REQUIREMENTS

- Fire extinguishers, fire prevention equip.
- Absorbent material
- Containment Berns
- Plastic tarps & liners
- Drip Trays
- First Aid Equipment
- Special PPE (neoprene gloves, aprons, goggles, breathing apparatus)
- Liquid pumps (properly rated to handle the hazmat being pumped)
- Tools (shovels, etc.)
- Plastic Bags / Containers for the cleaned up HAZMAT

7.3 IMMEDIATE RESPONSE


Assess the scene for hazards to yourself and the public. If safety hazards exist:

- Evacuate the area
- Notify the local authorities
- Notify the public in the area, if necessary
- Eliminate the hazard if you can do so safely
- Take steps to prevent fires or explosions
- Stop the source of the spill as soon as it is safe to do so.
- Contain the extent of the material / liquids already spilled
- Clean up the contaminated area if it is safe to do so

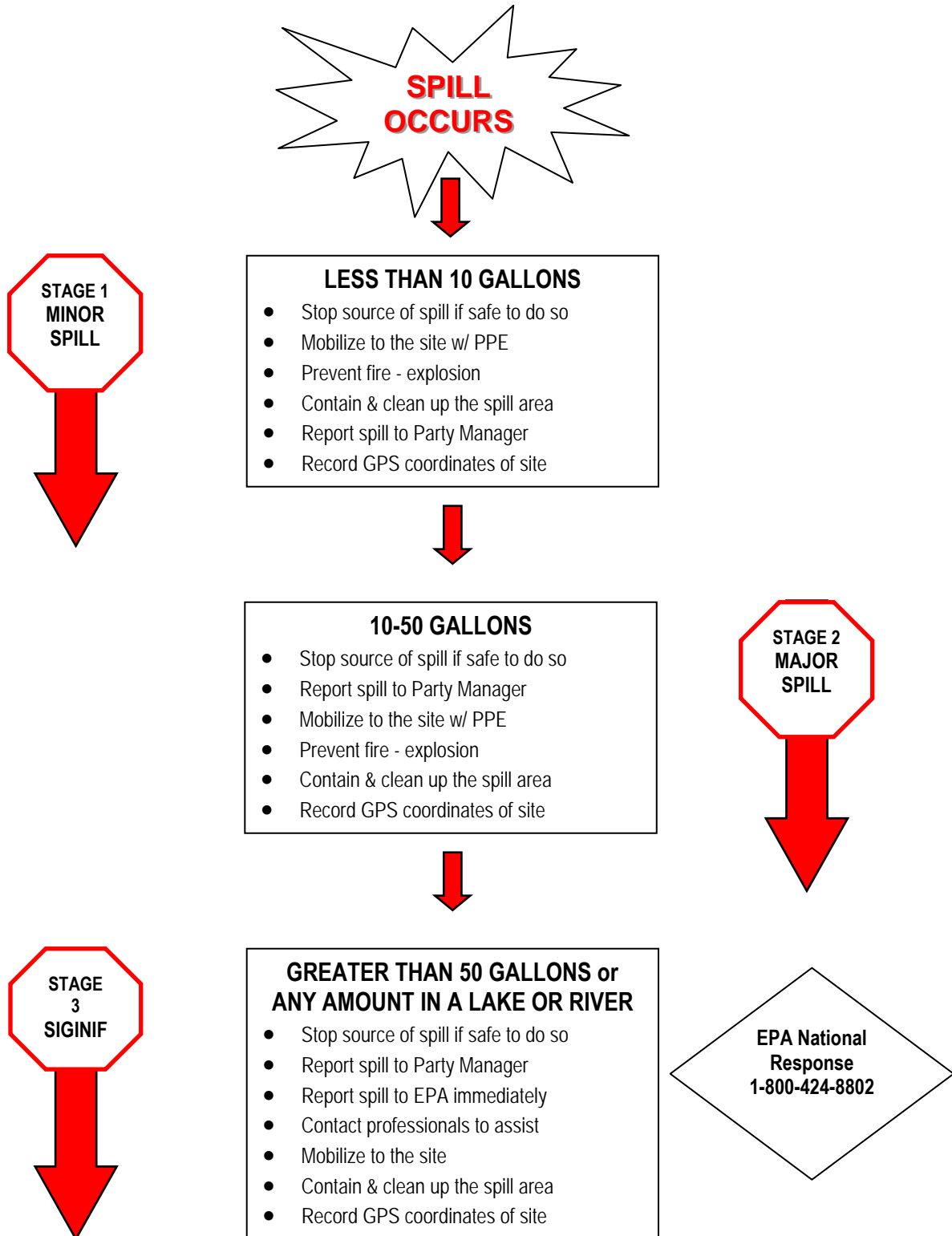
7.4 2nd STAGE RESPONSE


Major hydrocarbon spills will necessitate the pumping of surface fluid /collection of contaminated soils into tanks or fuel drums. Waste hydrocarbons will then be stored for later transportation to a suitable re-cycling facility.

- Contact the Proper authorities to eliminate hazard, if necessary fire department-hazmat response team
- All spills into water must be reported immediately. Often State/Fed regulations exist.
- Stop & contain the spill immediately (Speed of action on this is important) (Preplanning!)
- Contact professionals to assist if necessary & available
- Skim and pump hazmats from water to proper container

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 17 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

8 SPILL EMERGENCY FLOWCHART



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 18 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

9 VEHICLE INCIDENT EMERGENCY

9.1 PERSONNEL REQUIREMENTS

- Party Manager; in charge of all activities, assesses damage and directs incident response
- HSE Officer; assists PM in all activities

9.2 EQUIPMENT REQUIREMENTS

- Radio
- First Aid Equipment
- Fire Extinguishers
- Vehicle Crash Kit for remote locations
- 2 waterproof flashlights with spare batteries
- 2 shovels, 1 hacksaw with spare blades
- 2 knives, 2 tow straps w/
- shackles, 1 bolt cutter
- 1 crowbar, 1 come along, 1 sledge hammer

9.3 IMMEDIATE RESPONSE

If you arrive at the scene of the accident, the first priority is to make the accident site safe by warning approaching vehicles and getting those involved away from any potential danger. If there are any casualties provide 1st aid until EMS arrives. Contact your Supervisor, if not available, call the office with the following information:

- Location of accident
- Number of casualties
- Seriousness of injuries
- Vehicles involved

9.4 STAGE #2 RESPONSE

Once the incident scene is secured and injured personnel treated, begin to collect the following:

- **Incident Data**
 - Date
 - Time
 - Place
 - Roadway
 - Landmark
- **Injury**
 - Persons injured
 - Persons killed
 - Persons transported for medical treatment
 - Who transported them
- **Investigation**
 - Was the incident investigated by the Police?
 - Dept. Name
 - Citations issued?
- **Vehicle Information**
 - Make
 - Driver
 - Owner
 - Insurance Company

Badge #

List persons cited or arrested

Officer Name

Model


Address

Address

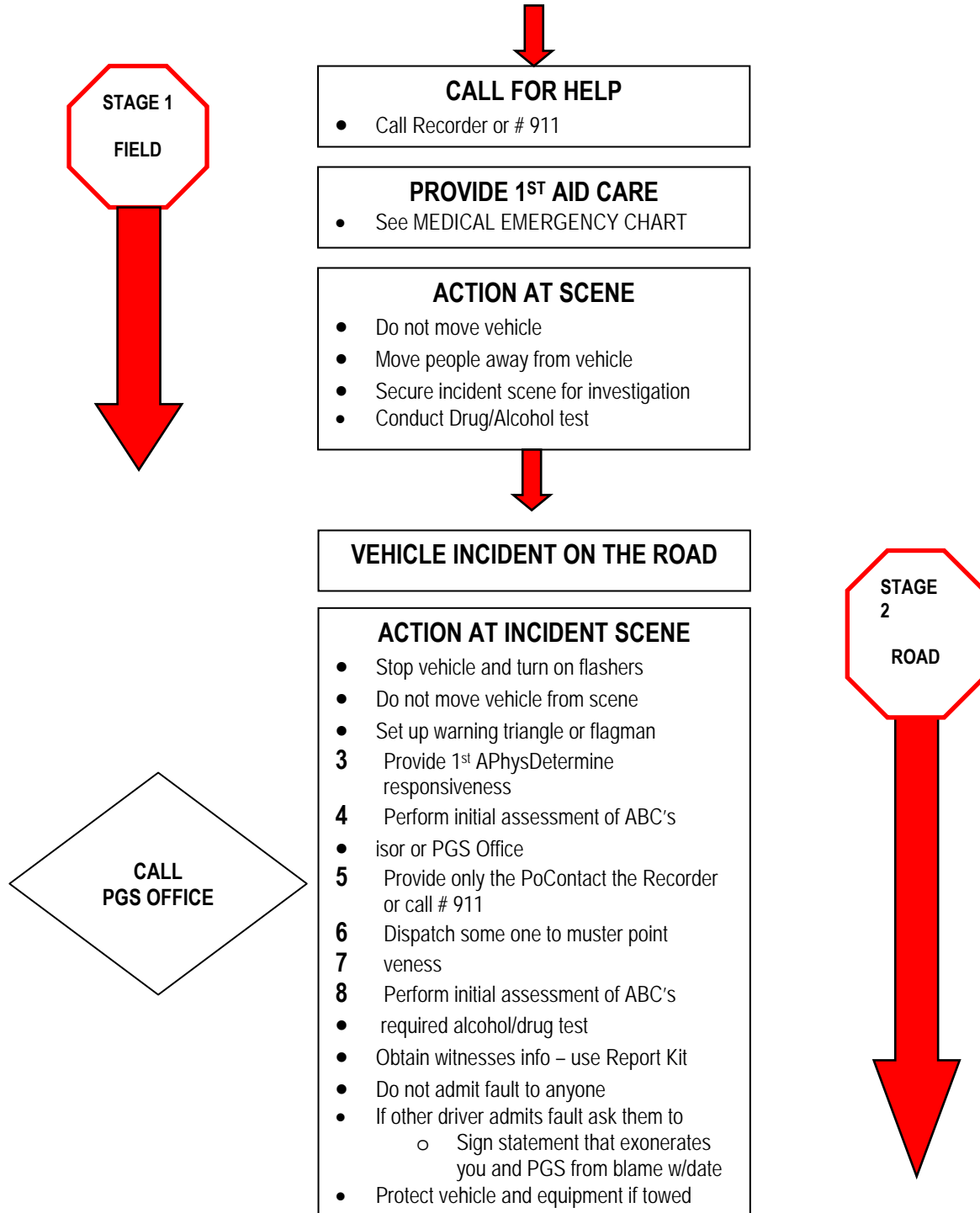
Year


License & Phone #

Phone #

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 19 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

10 VEHICLE INCIDENT FLOW



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 20 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

11 SEARCH & RESCUE EMERGENCY

10.1 PERSONNEL REQUIREMENTS

- Party Manager; in charge of all activities, assesses situation and directs lost man response
- HSE Officer; assists PM in all activities

10.2 EQUIPMENT REQUIREMENTS

- First Aid Equipment
- Project Maps, ERP, Cell Phones, Radios, compasses, GPS, Spot lights
- Binoculars, Spare Food & Water, Blankets, Flares, Flash lights
- Fire Extinguishers
- SAR Kits

10.3 IMMEDIATE RESPONSE


The golden rule in these situations is, calm and deliberate preparation, careful planning, and regular reporting by the SAR Team to the PM who is co-coordinating the operation. Consider the following first:

- **Incident** – If the missing person has had an accident, he may be injured. He is not lost, and probably will be found in the work area or between the camp and the work area.
- **Mechanical Trouble** – If his vehicle will not run or if he is stuck, he is not lost and probably will be found in the work area or between the camp and work area.
- **Lost** – If the missing person is lost on the way to work, he probably will try to return to camp after looking for the work area. He could easily bypass the camp and be somewhere on the opposite direction of the camp in relation to the work area. If he gets lost while returning to camp after work, he probably will start in the right direction and bypass the camp, ending up again in the opposite direction in relation to the work area.
- **Lost and accident** – A lost person who continues driving tends to drive faster and faster as time goes by. He feels the camp must be just over the next hill and when it is not, panic sets in. For some people, this is very dangerous, and accidents are likely to occur.
- **State of mind** – Every crew member must realize that sooner or later, they may be involved in an accident or breakdown, or get lost, and not be able to return to camp.

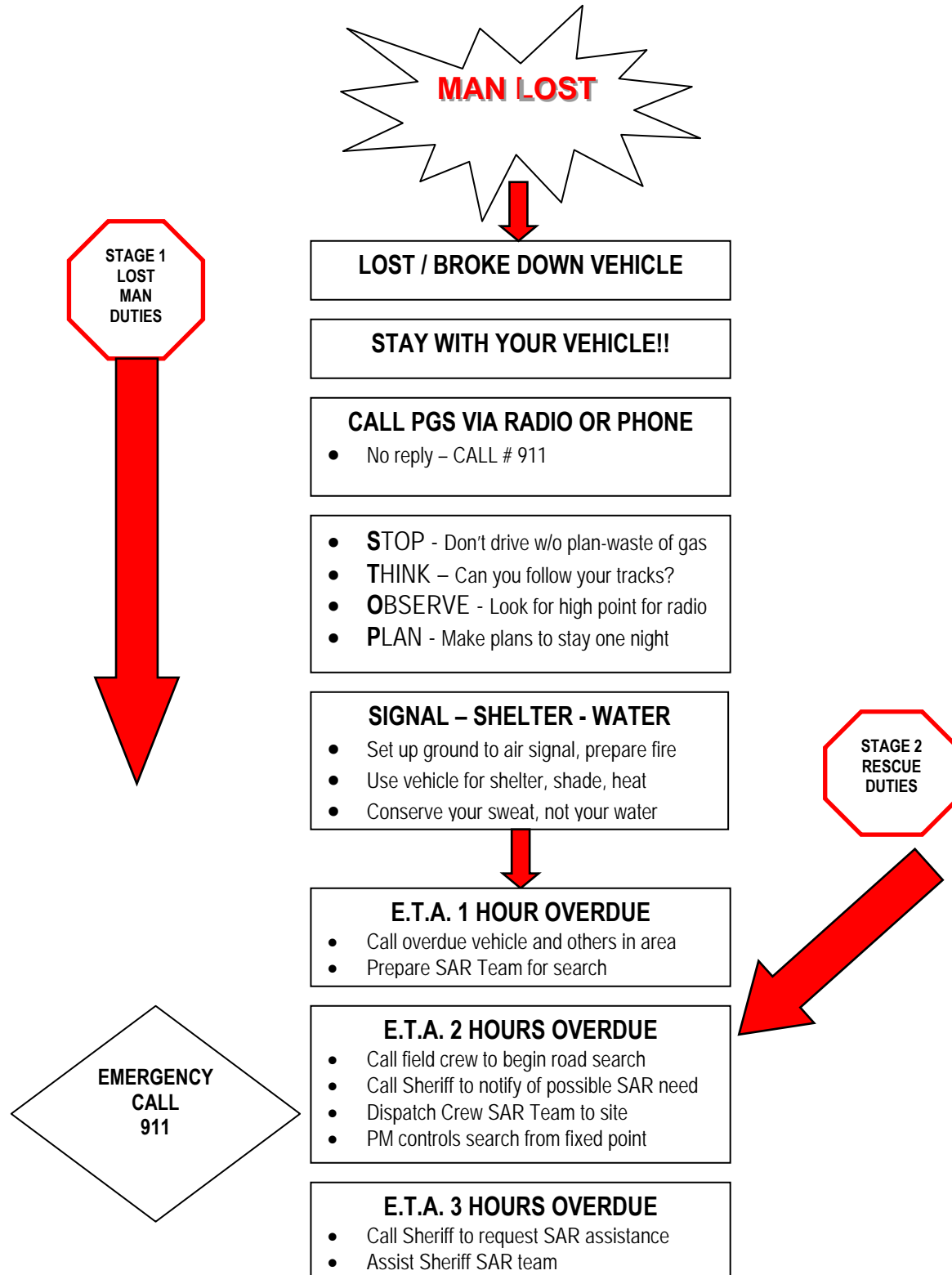
10.4 STAGE #2 RESPONSE


Search teams should include personnel with the most experience in work area. Search teams must not put additional personnel at risk. A search party should never leave its base location until they understand the following information:

- Names and the number of people lost
- The departure time, ETA and planned route of lost vehicle
- The color and model of vehicle
- What communications the lost vehicle has
- Size and type of search to be conducted – GPS & maps distributed to competent person
- Radio discipline and reporting protocol back to base
- Return to base ETA for search teams

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 21 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

11 SEARCH & RESCUE EMERGENCY FLOWCHART



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: KS		Page 22 of 27
	Authorized by: KS		Date: 7/24/08
	Issued by: KS		
	Appendix B - Emergency Response Plan.doc		

12 HELICOPTER EMERGENCY

12.1 PERSONNEL REQUIREMENTS

- Party Manager; in charge of all activities, assesses damage and directs incident response
- HSE Officer; assists PM in all activities
- LZ Foreman; Team Leader in charge at incident scene
- LZ Crew; assist Team Leader at incident scene

12.2 EQUIPMENT REQUIREMENTS

- | | | |
|-------------------------------------|--------------------------|------------------------------------|
| • Radio for Team Leader | • 2 Large cutting pliers | • 1 axe / chainsaw |
| • 1 Trauma kit | • 1 Bolt Cutter | • 2 Space blankets |
| • 1 basket stretcher | • 1 fire blanket | • 1 Trauma 1 st aid kit |
| • 20 lbs Powder/CO ₂ ext | • 2 pr heat pro gloves | • 1 Signal mirror |
| • 8 lbs Foam extinguisher | • 2 pr safety glasses | • 1 aluminum ladder |
| • 1 Hack Saw w/blades | • 1 hammer | • 1 come along puller |
| • 1 Crowbar | • 1 grab hook | • 1 duffel bag for kit |
| • 1 Sledge hammer | • 1 tow strap w/shackles | |

12.3 IMMEDIATE RESPONSE

Crew Observer, Staging Area Foreman, Helicopter Load Master and Crew HSE Officer are to ensure that the Crash kit and Fire extinguishers are correctly placed.


Helicopter main Helipads should have a combination of (20 lbs/45 kg) ABC dry chemical and CO₂ extinguishers as well as (8 lbs/18 kg) foam fire extinguishers available near the landing area. All personnel associated with the helicopter operations, including crew members, should receive training in the use of all firefighting equipment.

Helicopters fly on turbine engines and use kerosene fuels. The type of fuel most commonly used is Jet A-1, and it has a flash point of approximately 40° C. The kerosene grades of fuel will not form ignitable mixtures at normal temperatures and pressures, but it should be remembered that kerosene fuel in the form of spray or when heated is much more readily ignited than in bulk, and in a crash it may be sprayed on to hot engine parts or exhaust ducts.

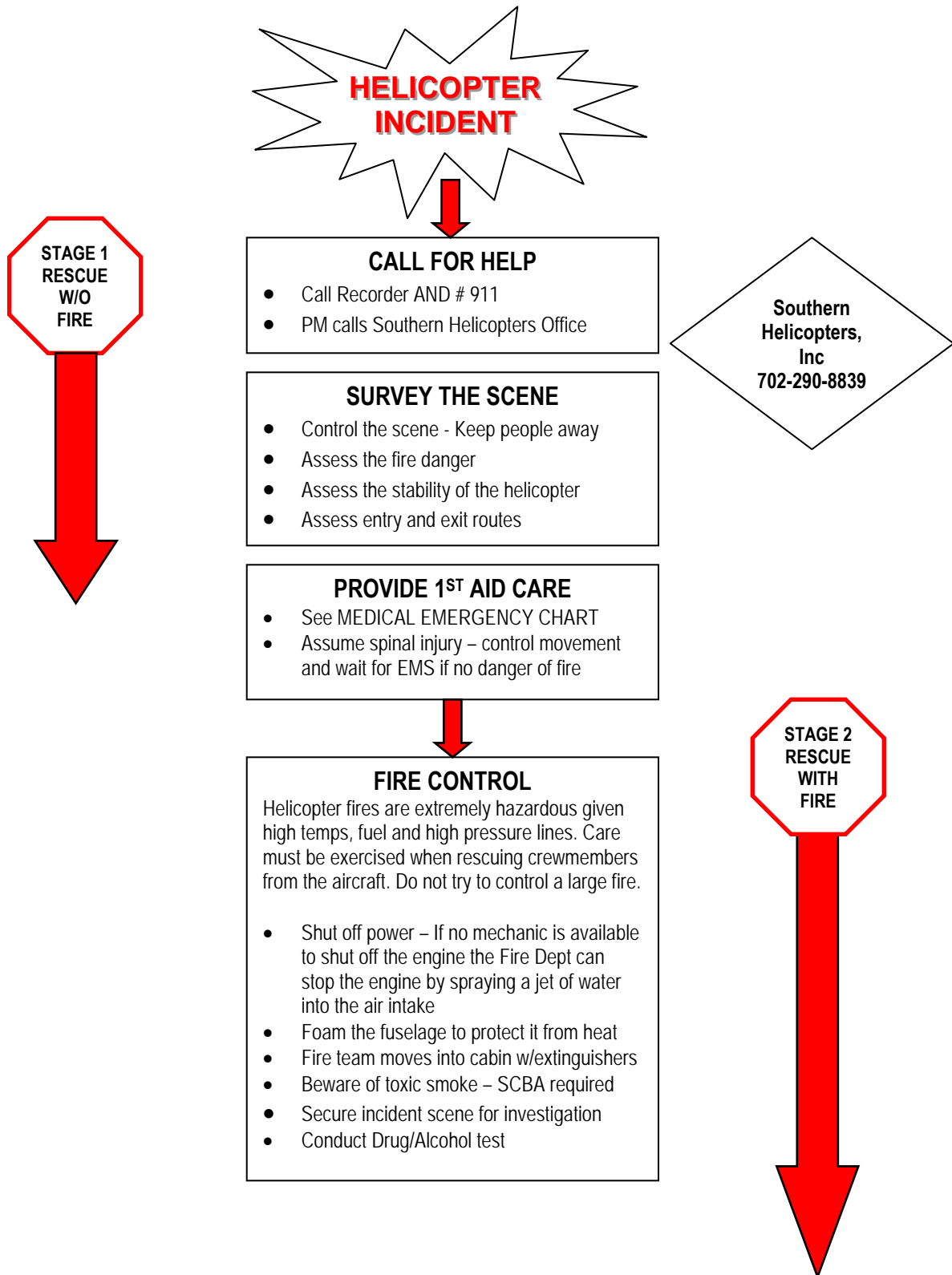
If firefighting is required at the site of a crash, the following guidelines should be followed:


Whatever agents (extinguishers) are available should be discharged at high output rates to suppress flame as quickly as possible.

- Where only secondary agents (Dry Powder CO₂) are available, it is important to try to conserve enough of the agent to be able to deal with a flashback.
- Fire crews with branches or applicators should approach the helicopter pressing in to very close quarter as quickly as the situation allows.
- Suppress flames surrounding the cabin area.
- Gain access to the fire in the vicinity of the fuel tanks (e.g. beneath cabin floor, behind bulkhead, or in wing sponsors).
- Dry Powder or B.C.F. may be more rapidly effective than foam against internal fires.

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: FD		Page 23 of 27
	Authorized by: NB		Date: 8 Nov 06
	Issued by: FD		
	Appendix B - Emergency Response Plan.doc		

13 HELICOPTER EMERGENCY FLOW CHART



	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: FD		Page 26 of 27
	Authorized by: NB		Date: 8 Nov 06
	Issued by: FD		
	Appendix B - Emergency Response Plan.doc		

15 APPENDIX 2 - INCIDENT REPORTING INSTRUCTIONS

15.1 INCIDENT CLASSIFICATIONS


LEVEL 1 MINOR	LEVEL 2 MAJOR	LEVEL 3 SIGNIFICANT
CRITERIA	CRITERIA	CRITERIA
<ul style="list-style-type: none"> No threat to public health/safety No off site environmental impact No media attention 	<ul style="list-style-type: none"> Threat to public health/safety Off site environmental impact Police/Fire, Media involved 	<ul style="list-style-type: none"> Threat to public beyond worksite Environmental beyond worksite Negative Media coverage
EXAMPLES	EXAMPLES	EXAMPLES
<ul style="list-style-type: none"> Restricted Work Case (RWC) Med Treatment Case (MTC) First Aid Case (FAC) Potential loss \$0K-\$1K Minor fire Near Miss with potential for serious injury Any vehicle citation Any vehicle incident without injuries 	<ul style="list-style-type: none"> Lost time Incident (LTI) Non-work-related fatality (natural causes, unrelated) Potential loss \$1K-\$25K Fire, explosion Near miss involving a helicopter with potential for serious injuries Any vehicle incident w injuries 	<ul style="list-style-type: none"> Work-related fatality Injury w/potential to cause death or permanently disable Potential loss \geq US\$ 25K Major fire Any helicopter crash or emergency landing Any vehicle incident with life threatening injuries

15.1.1 MONITORING – INCIDENT REPORTING SCHEDULE

LEVEL 1 MINOR Report – Within 48 hrs.	LEVEL 2 MAJOR Report – Within 24 hrs.	LEVEL 3 SIGNIFICANT Report – Immediately
CREW MGR TO:	CREW MGR TO:	CREW MGR TO:
<ul style="list-style-type: none"> Compliance Supervisor Operations Supervisor Operations / Area Manager Regional HSE Manager 	<ul style="list-style-type: none"> Compliance Supervisor Operations Supervisor Operations / Area Manager Regional HSE Manager Regional General Manager Worldwide HSE Manager Client Representative 	<ul style="list-style-type: none"> Operations Supervisor Operations / Area Manager Regional General Manager President Client Representative Compliance Supervisor Regional HSE Manager Worldwide HSE Manager

15.1.2 MONITORING - INCIDENT INVESTIGATION

LEVEL 1 MINOR	LEVEL 2 MAJOR	LEVEL 3 SIGNIFICANT
<ul style="list-style-type: none"> Party Manager/Project Manager Immediate Supervisor Crew HSE Officer 	<ul style="list-style-type: none"> Operations Supervisor Regional HSE Manager Party Manager/Project Manager Immediate Supervisor Crew HSE Officer Client Representative 	<ul style="list-style-type: none"> Worldwide HSE Manager Operations / Area Manager Operations Supervisor Party Manager Immediate Supervisor Crew HSE Officer Client Representative

	PGS Onshore Inc.	CREW 320 DELILAH 3D EMERGENCY RESPONSE PLAN	Doc # L-905-320-00
	Prepared by: FD		Page 27 of 27
	Authorized by: NB		Date: 8 Nov 06
	Issued by: FD		
	Appendix B - Emergency Response Plan.doc		

15.2 SPILL CLASSIFICATIONS

LEVEL 1 MINOR Report – On Monthly Spill Summary	LEVEL 2 MAJOR Report – Within 48 hrs.	LEVEL 3 SIGNIFICANT Report – Immediately
EXAMPLES	EXAMPLES	EXAMPLES
<ul style="list-style-type: none"> Minor Spill \leq 10 gallons in open areas. Recovered or cleaned up immediately 	<ul style="list-style-type: none"> Major Spill 10 – 50 gallons Any size Hydrocarbon Spill into waterways/sensitive areas 	<ul style="list-style-type: none"> Significant Spill \geq 50 gallons Pipeline damage resulting in uncontrolled spill
CREW MGR TO:	CREW MGR TO:	CREW MGR TO:
<ul style="list-style-type: none"> Crew Supervisor 	<ul style="list-style-type: none"> Regional VP 	<ul style="list-style-type: none"> President
<ul style="list-style-type: none"> Corporate HSE Manager 	<ul style="list-style-type: none"> Corporate HSE Manager 	<ul style="list-style-type: none"> Regional VP
	<ul style="list-style-type: none"> Crew Supervisor 	<ul style="list-style-type: none"> Corporate HSE Manager
	<ul style="list-style-type: none"> Client Representative 	<ul style="list-style-type: none"> Crew Supervisor
	<ul style="list-style-type: none"> Land Owner 	<ul style="list-style-type: none"> Client Representative
		<ul style="list-style-type: none"> EPA/National Response
		<ul style="list-style-type: none"> Land Owner