ENVIRONMENTAL MANAGEMENT PLAN (EMP)

DRILLING ACTIVITY

PSC TL-OT-17-09

APPENDIX H - INCIDENT REPORTING AND INVESTIGATION STANDARD

TR-GEN-STD-00-000-010_3

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CORPORATE MANAGEMENT SYSTEM	
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1 INTRODUCTION

1.1 PURPOSE

The purpose of this Standard is to:

- Ensure speedy and effective action is taken to respond to and manage a situation and prevent recurrence.
- Detail responsibilities in regard to reporting incidents (Section 2)
- Provide for the immediate reporting of all incidents using the **INCIDENT FLASH ALERT** form (Section 3.1 and Appendix 1).
- Standardise internal reporting of all incidents and timeframes for reporting. (Section 3 and Appendix 2).
- Standardise the classification/category of all incidents on the basis of consequence (Section 3.2).
- Define and implement reporting categories - “High Potential - HIPO” Incident and “Near Miss” Incident (Section 3.3.1 and 3.3.2).
- Provide guidance on incident investigations on the basis of classification and timelines for completing investigations (Section 4).
- Provide guidance on what incident statistics shall be prepared and analysed and how the information is presented (Section 5).
- Provide a glossary of terms specific to incident terminology such as: Lost Time Injury, Lost Work Day Case, Medical Treatment, First Aid Case, etc. (Section 6).

1.2 OPERATING MANAGEMENT SYSTEM EXPECTATION

Element 10 of the OMS describes the requirements in regard to assurance.

OBJECTIVE: Implement a routine Assurance programme: inspection and audit, and a system for managing non-conformance. Establish and maintain appropriate systems for monitoring and reporting performance. Report, investigate and analyse all incidents, and act effectively on results.

EXPECTATIONS:

10.6. Incidents, events and non-conformances (with actual and/or potential consequences) are reported, recorded and classified to defined criteria, and investigated to determine direct and underlying causes.

THIS STANDARD IS FOR NON EMERGENCY EVENTS
IN THE CASE OF AN EMERGENCY REPORT THE EVENT TO THE DUTY MANAGER

2 REQUIREMENTS

This Standard covers all locations where Timor Resources (TR) personnel work both Company and Contractor personnel. This guideline does not supersede or replace statutory reporting and contractor reporting procedures.

It is the responsibility of the General Manager Exploration to satisfy statutory reporting requirements, as per Decree-Law 18/2020 Onshore Oil and Gas Operations, for detail see Appendix 3.

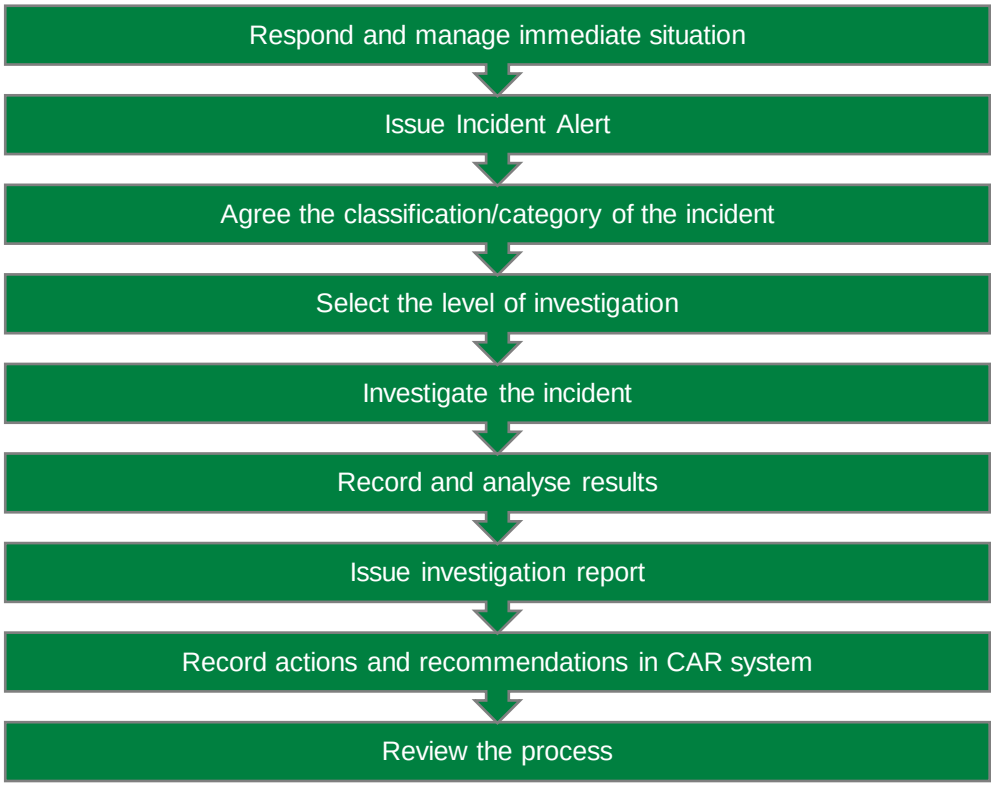

Figure 2-1 - Incident Reporting and Investigation Sequence

2.1 RESPONSIBILITIES

2.1.1 Individual Involved in an Incident

After prompt practical response to an incident by immediate site personnel (e.g. emergency shut down, evacuation, site is made safe, ensuring that prompt medical attention is provided, and that relevant emergency responses are implemented), anyone involved in an incident shall:

- Notify their immediate supervisor and/or Person in Charge (PIC).
- Co-operate fully with the local legal and regulatory authorities, as necessary.
- Complete an **INCIDENT FLASH ALERT** form (See Appendix 1).

2.1.2 Person In Charge

The Person In Charge (PIC) e.g. Rig Superintendent, TR Company Man, Operations Manager, Supervisors, Camp Boss, Logistics Coordinator, etc. shall:

- Take or initiate remedial action.
- Preserve evidence where necessary.
- Notify General Manager Exploration/Operations Manager, as appropriate, and HSE Officer.
- Submit the **INCIDENT FLASH ALERT** form (See Appendix 1), within 2 hours of the incident occurring, to General Manager Exploration/CEO, as appropriate, and HSE Officer.

The General Manager Exploration decides the number of copies of the **INCIDENT FLASH ALERT** form, to whom they should be sent, and in what format (photocopies etc.).

2.1.3 Operations Manager/TR Company Man (rig operations)

The Operations Manager or TR Company Man for rig operations shall:

- Confirm that the situation is under control.
- Take charge of the situation if appropriate.
- Inform local authorities, if appropriate.
- Add relevant comments to the **INCIDENT FLASH ALERT** form.
- Report to the General Manager Exploration within one hour of receiving the **INCIDENT FLASH ALERT** form.
- Where appropriate, for example, if a Category 3 incident or fatality has occurred, the Operations Manager/TR Company Man shall immediately inform the General Manager Exploration.

2.1.4 Operations Manager

- Inform the General Manager Exploration immediately if a Category 3 incident or fatality has occurred.
- Agree the Incident Classification and in classification of Near Miss and HIPO events.
- Determine the level of investigation required.

2.1.5 General Manager Exploration

The General Manager Exploration, in concert with the Country Manager, shall:

- Confirm that follow-up actions are being taken.
- Provide the Incident Flash Alert form to ANPM within 24 hours and make recommendations as to who else should be informed.
- Provide an initial Incident Report Form to ANPM within 48 hours.
- If appropriate, activate the Incident Management Team. Review site, personnel and travel procedures as necessary.
- Inform the CEO immediately in writing if a fatality has occurred.
- Inform the CEO within 24 hours in writing if a Category 3 incident has occurred.
- Ensure that next of kin have been informed, where appropriate, in concert with ANPM. Note that all contractors will deal with their own company next of kin.
- Where necessary, set up an investigation team.

- In certain serious circumstances it may be relevant for management to further inform legal, insurance or public affairs representatives.

2.1.6 Country Manager

The External Relations Manager, supervised by the General Manager Exploration, is responsible for ensuring that appropriate verbal and written notifications, as required by Law, are made to Government bodies, and are made within the specified time frames determine by Law.

2.1.7 HSE Officer

The HSE Officer shall:

- Provide advice and support to line management to drive compliance with this standard.
- As appropriate, give advice with regard to Authorities involvement and make recommendations as to who else should be informed.
- Ensure all incidents are reported and investigated.
- Provide required incident report in compliance with Government rules and regulations.
- Maintain appropriate records.

3 INCIDENT REPORTS

This section includes the basic requirements for the reporting of incidents. Environmental incidents shall be reported in the same manner and using the same format as any other incident. All incidents involving Company owned, hired or leased vehicles and/or equipment shall be reported, even when **not** on Company business.

3.1 INCIDENT FLASH ALERT

An **INCIDENT FLASH ALERT** is used to alert line management and HSE Officer of all incidents regardless of category, and shall be **issued within 2 hours** of the incident by the location PIC as a precursor to the subsequent Incident Investigation. The format of the Incident Flash Alert is provided in Appendix 1. The **INCIDENT FLASH ALERT** shall be provided to ANPM within 24 hours.

3.2 INCIDENT CATEGORIES

The following Hazard / Incident Classification Matrix shall be used to determine the category of an incident, based on the actual or potential consequence(s) of the incident, see also the Glossary (Section 6) for definitions of terms:

Consequence Category	People	Financial Loss	Environmental	Reputation
1 Light	First Aid Case No lost time	Minor or Negligible Damage or Disruption easily recovered <$10,000	Negligible Damage <1bbl Minimal Effects <1 day	Minimal media response, interest limited and short term
2 Serious	Medical Treatment only / Restricted Work Case	Shutdown >6hrs - <24hrs $10,000 - $100,000	Minor Damage <10bbl Low level effects <1 week	Remedial PR campaign considered
3 Major	Lost Time Injury	Shutdown >24hrs - <48hrs $100,000 - $1 Million	Major Damage <100bbls Moderate effects <1 month long	Temporary drop in company value, legal issues highlighted 1 Month -1 Year impact
4 Catastrophic	Single fatality Permanent Debilitating Injury Serious Disease	Shutdown >48hrs - <96hrs $1-$5 Million	Significant Damage <1000bbl long term effects <1 yr	Substantial drop in company value, legal action threatened Year or so to Recover
5 Multi-Catastrophic	Multiple fatalities	Shutdown >96hrs >$5 Million	Massive Damage >1000bbl long term effects >10 yrs	Company suspended operations, legal action in progress 1-10 years to recover

Figure 3-1 - Hazard/Incident Classification Matrix

3.3 OTHER CRITICAL EVENTS

3.3.1 High Potential Event (HIPO)

High Potential events are those that could have realistically resulted in one or more fatalities, or other catastrophic consequences i.e. Category 4 or 5 Incidents, or which did result in the following:

1) Failure, collapse or malfunction of any of the following:

- Lifting machinery / equipment
- Pressure vessels or associated pipework
- Collapse of scaffolding
- Collapse of building or structure
- Pipelines
- Conveyance of dangerous substances by road
- Breathing apparatus
- Overhead electric lines
- Explosives
- Wells
- Complete vessel power failure

2) Any of the following events:

- Electric short circuit or overload
- Explosion or fire
- Escape of flammable substances
- Escape of biological agent, dangerous substance or pathogen
- Transportation collision

3.3.2 Near Miss Event

A near miss is an event not resulting in loss but which, under slightly different circumstances, could have resulted in harm to people, damage to property, harm to the environment or loss of production, or the interests of the Company. The potential consequence of a near miss incorporates Category 1, 2 and 3.

3.3.3 Unsafe Act

An unsafe act is any act that deviates from a generally recognised safe way or a specified method of doing a job and increases the potential for an incident

3.3.4 Unsafe Condition

An unsafe condition is any source of danger which if not adequately controlled or if suitable precautions are not taken could increase the potential for an incident

3.4 MANAGEMENT MEETINGS

All Category 3 or above and HIPO incidents shall be discussed and minuted at the weekly management meeting, until all recommendations have been actioned. In some cases, special meetings may be convened.

4 INCIDENT INVESTIGATION

The responsibility and timeframe for investigating incidents and HIPO and Near Miss Events are described here.

4.1 RESPONSIBILITY AND TIMEFRAME FOR INVESTIGATIONS

All incidents regardless of seriousness must be investigated, those events identified to be Near Miss and HIPO will also be investigated as detailed below. The level of investigation will obviously vary, and descriptions of different levels are summarised in the following sub-sections.

4.2 INVESTIGATIONS

4.2.1 Fatal Incidents

In the event of a fatal incident, the CEO shall appoint a Board of Inquiry, which will be chaired by the General Manager Exploration.

Terms of reference shall be provided and the team will report within seven days. Should the inquiry not be completed within 7 days an interim report is to be prepared, identifying progress to date, if the inquiry is protracted subsequent status reports shall be required at least every 7 days.

The format for reporting shall be as follows:

Management Summary

1. Introduction - Terms of Reference
2. Sequence of Events
3. Description of Incident and Findings
4. Immediate and basic/underlying causes
5. Recommendations
6. Loss/Cost Estimates

Appendices - Drawings, statements, photographs, etc.

4.2.2 Category 3 Incidents

Category 3 incidents shall be investigated by a team comprising, as a minimum, the responsible TR Supervisor, the HSE Officer and the Operations Manager, and report to the General Manager Exploration. If a major contractor is involved, representatives from the contractor shall be included in the investigation team. Note that with major contracts such as drilling, seismic, construction, transportation an HSE Bridging Document must be in place that includes for joint client/contractor incident investigation.

Category 3 investigations shall use the Timor Resources **Incident Investigation form** provided in Appendix 2, an electronic version, with pull down tabs, is available from the HSE Officer. The initial report shall be provided within 48 hours of the incident, as required under Law 18/2020 and provided to ANPM. A final report shall be completed within 7 days. If the inquiry is protracted a status reports shall be required after a further 7 days. Extension beyond 14 days shall require approval from the General Manager Exploration.

4.2.3 Category 1/2 Incidents

Category 1 and 2 incidents shall be investigated by a team comprising, as a minimum, the site/location PIC, the responsible TR Supervisor and the HSE Officer, and shall report to Operations Manager. If a major contractor is involved, representatives from the contractor shall be included in the investigation team. Note that with major contracts such as drilling, seismic, construction, transportation an HSE Bridging Document must be in place that includes for joint client/contractor incident investigation.

All category 1 and 2 incidents shall be investigated and reported using the standard Timor Resources **Incident Investigation Report** as provided in Appendix 2, an electronic version, with pull down tabs, is available from the HSE Officer. The report shall be provided with 7 days of the incident.

4.3 OTHER EVENTS

4.3.1 High Potential (HIPO) Event Investigation

High Potential Incidents are those that could have realistically resulted in a Category 4 or 5 consequence, thus will be investigated under a Terms of Reference issued by the General Manager Exploration, and lead by an independent team leader, following the procedure detailed in 4.2.1.

A report shall be provided within 7 days of the incident, but if for some reason the inquiry cannot be completed within 7 days, an interim report is to be prepared, identifying progress to date. If the inquiry is protracted subsequent status reports shall be required at least every 7 days. Extension beyond 14 days shall require approval from the CEO.

4.3.2 Near Miss Event Investigation

Near Miss is a close call or dangerous occurrence that had the potential to cause injury, damage to asset, loss of production if occurred and includes Category 1, 2 and 3 potential

Near Miss events shall be reported as per 4.2.2 or 4.2.3 above depending on the potential consequence.

4.4 RESOURCES

For fatal incidents, investigation team members shall be appointed by the General Manager Exploration.

For Category 3 incidents, investigation team members shall be appointed by the Operations Manager.

Members of Category 1/2 incidents, investigation teams shall be drawn from the Operations Manager, on-site supervisors and the HSE Officer.

4.5 THE INVESTIGATION

There are four steps required in mounting an incident investigation:

Figure 4-1 - Investigation Process

4.5.1 Step One Gathering the Information

Where, when and who?

1. Where and when did the event happen?
2. Who was injured/suffered ill health or was otherwise involved with the event?

Gathering detailed information: How and what?

3. How did the event happen? Note any equipment involved.
4. What activities were being carried out at the time?
5. Was there anything unusual or different about the working conditions?
6. Were there adequate safe working procedures and were they followed?
7. What injuries or ill health effects, if any, were caused?
8. If there was an injury, how did it occur and what caused it?
9. Was the risk known? If so, why wasn't it controlled? If not, why not?
10. Did the organisation and arrangement of the work influence the event?
11. Was maintenance and cleaning sufficient? If not, explain why not.
12. Were the people involved competent and suitable?
13. Did the workplace layout influence the event?
14. Did the nature or shape of the materials influence the event?
15. Did difficulties using the plant and equipment influence the event?
16. Was the safety equipment sufficient?
17. Did other conditions influence the event?

4.5.2 Step Two: Analysing the Information

What were the immediate, underlying and root causes?

18. Analysis - What happened and why?
19. Analysis of causes SCAT Chart (See 4.6 below).

4.5.3 Step Three: Identifying Suitable Risk Control Measures

20. What risk control measures are needed/recommended?
21. Do similar risks exist elsewhere? If so, what and where?

22. Have similar events happened before? Give details.

4.5.4 Step Four: The Action Plan And Its Implementation

The risk control action plan

23. Which risk control measures should be implemented in the short and long term?
24. Which risk assessments and safe working procedures need to be reviewed and updated?
25. Have the details of the event and the investigation findings been recorded and analysed? Are there any trends or common causes that suggest the need for further investigation? What did the event cost?

4.6 Analysing Incident Causes – Using the SCAT Chart

One of the most important functions of an investigation is to determine the causes of the incident, TR uses the Systematic Cause Analysis Technique - SCAT Chart (after DNV) see Appendix 4 (A3 copies are available from the HSE Officer). Note that the electronic version of the **Incident Investigation form** includes summary drop down menus to identify the causations as described in the below. Look for the red triangles in the corner of each cell.

Analyses should include assessment of:

- Immediate causes, to establish the circumstances that immediately preceded the incident.
- Basic/underlying causes, to establish the reasons why the immediate causes arose.
- Consideration of any deficiencies in the management of facility/ installation and/or any inadequate compliance with statutory or company regulations.

Immediate Causes:

Examples

SUBSTANDARD ACTS

1. Operating equipment without authority
2. Failure to warn
3. Failure to secure
4. Operating at improper speed
5. Making safety devices inoperative
6. Using defective equipment
7. Failure to use PPE correctly
8. Improper loading
9. Improper placement
10. Improper lifting
11. Improper position for task
12. Servicing equipment in operation
13. Horse play
14. Under influence of alcohol or drugs
15. Using equipment improperly

SUBSTANDARD CONDITIONS

16. Inadequate guards or barriers
17. Inadequate or improper protective equipment
18. Defective tools, equipment or materials
19. Congested or restricted action
20. Inadequate warning system
21. Fire and explosion hazards
22. Poor housekeeping/disorder
23. Noise exposure
24. Radiation exposure
25. Temperature extremes
26. Inadequate or excess illumination
27. Inadequate ventilation
28. Hazardous environmental conditions

Underlying causes:

Examples

PERSONAL FACTORS

1. Inadequate physical/physiological capability
2. Inadequate mental/psychological capability
3. Physical or physiological stress
4. Mental or psychological stress
5. Lack of knowledge
6. Lack of skill
7. Improper motivation

JOB FACTORS

8. Inadequate leadership and/or supervision
9. Inadequate engineering
10. Inadequate purchasing
11. Inadequate maintenance
12. Inadequate tools and equipment
13. Inadequate work standards
14. Excessive wear and tear
15. Abuse or misuse

4.7 INFORMATION COLLECTION

Data for the investigation will come from a range of sources including:

- Initial information from the Incident Report form.
- More detailed information from interviewing personnel at the scene of the incident, those who have direct knowledge of the work situation and those who were involved in follow-up actions.
- Examination of equipment and procedures.
- Personnel incident logs, for example radio room logs; these may also be required for submission to the Authorities if an external investigation has been initiated.

4.8 RECOMMENDATIONS

When determining the recommendations to be included in the Incident Investigation report, it is important to address the four key areas that influence the occurrence and outcome of any incident. These are:

- The immediate causes.
- The underlying causes of the incident.
- The effectiveness of the response to the incident.
- Inadequate control or failure to comply with Company or statutory regulations.

A Corrective Action Report (CAR) (See TR-GEN-STD-00-000-010_2) shall be prepared by the responsible manager, and the status reported to the HSE Officer at least monthly until all actions are complete.

The General Manager Exploration/Operations Manager shall assign actions recommended in the investigation reports to individual managers for immediate attention and follow-up.

4.9 POST INVESTIGATION REVIEW

Once the investigation report has been drawn up, this shall be reviewed by the General Manager Exploration/Operations Manager and HSE Officer.

4.10 FOLLOW UP ACTIONS

There shall be a follow up programme subsequent to the incident investigation, to ensure that any recommendations made in the report for corrective or remedial action have been carried out. Time frames will be put in place for remedial action following the investigation and these should be periodically reviewed, and progress checked. Reports should be made to management following these reviews.

An action plan should be prepared which will ensure, as far as possible, that the incident will not recur. The remedial action plan should address the identified immediate and basic causes.

4.11 LOSSES FROM INCIDENTS

All investigating authorities shall identify and cost losses resulting from the incident being investigated, a proforma is included in Appendix 5.

5 INCIDENT DATA GATHERING, REPORTING AND ANALYSIS

The following subsections give more information on what data shall be recorded and how it might be analysed.

Depending on the operations taking place, the following information shall be recorded:

- Number of man hours worked.
- Numbers of incidents per site by the various different categories of incident.
- Immediate cause of incident.
- Underlying cause of incident.
- Cost associated with incident.
- If injuries are sustained as a result of the incident, record the part of body injured.

This basic information shall include the following:

5.1 REPORTING

5.1.1 Injury Frequency Rates

This figure represents the number of injury's of a certain category (Lost Time Injury, Lost Work Day Case, Restricted Work Day Case, and MTC) recorded in any 1 million manhours worked and can be calculated for any given period of time by the following formula:

$$\textbf{Injury Frequency Rate (IFR)} = \frac{\text{No of injuries} \times 10^6}{\text{No of man-hours worked}}$$

The formula can be used for any or all categories of incidents.

5.1.2 Lost Time Injury Frequency (LTIF)

As an example: The Lost Time Injury Frequency resulting from 6 lost time injuries (LTI's, e.g. fatality or LWDC) reported in six month reporting period, during which there were 860000 man-hours worked, is expressed as follows:

$$\textbf{LTIF} = \frac{6 \times 1{,}000{,}000}{860000} = 6.97 \ (7.0)$$

NOTE When calculating Fatal Incident and Fatal Accident Rates the statistics are based on the number of fatal incidents and the number of fatalities per 100 million man hours respectively.

5.1.3 Total Recordable Injury Rate (TRIR)

Total Recordable Injury Rate (TRIR) is the number of recordable injuries (fatalities + lost workday cases + restricted workday cases + medical treatment cases) per 1,000,000 hours worked

$$\textbf{TRIR} = \frac{\text{Total Recordable Injuries} \times 10^6}{\text{Total man-hours worked}}$$

5.2 STATISTICS

5.2.1 Incident and Injury Statistics

Injury and incident statistics are presented using the pro-forma in Appendix 6. One table will normally be sufficient for each operation. However, where a variety of different activities are on going it may be of value to report each activity separately.

5.2.2 Injury and Cause Analysis

Injuries and causes can be analysed to identify any patterns or trends. For example, over a period of time, it might be determined that there has been a very large number of cuts to the hand or fingers. Analysis of the causes of incidents may show that inadequate Personal Protective Equipment (PPE) and/or improper use of tools is the main cause of incidents over the same time period. This allows potential remedies to be proposed which will help to reduce the recurrence of such injuries in the future. In this example, it may be that raising the issues at safety and tool box meetings reinforces the need to take care and use the correct gloves, use tools properly and to remind supervisors to be vigilant when personnel are using tools.

Formal reporting of HSE information, data and statistics are discussed in the OMS Documentation and Reporting Standard TR-GEN-STD-00-000-006.

6 GLOSSARY OF TERMS

Anomalies	Anomalies are unsafe acts or conditions, unsafe procedures or unsafe equipment giving rise to the potential to contribute to an incident.
Corrective Action Record (CAR)	A management system that ensures all formally raised and accepted recommendations are properly allocated, actioned, implemented and closed-out.
Fatal Incident	Immediate fatality or injuries and occupational illnesses causing subsequent death.
First Aid Case (FAC)	Cases that are not sufficiently serious to be reported as medical treatment or more serious cases but nevertheless require minor first aid treatment, e.g. dressing on a minor cut, removal of a splinter from a finger. First aid cases are not recordable incidents. An incident is classified as a First Aid if the treatment of the resultant injury or illness is limited to one or more of the 14 specific treatments. These are: 1. Using a non-prescription medication at non-prescription strength 2. Administering tetanus immunizations 3. Cleaning, flushing or soaking wounds on the surface of the skin 4. Using wound coverings such as bandages, Band-Aids™, gauze pads, *etc* or using butterfly bandages or Steri-Strips™ 5. Using hot or cold therapy 6. Using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, *etc* 7. Using temporary immobilization devices while transporting an accident victim (*e.g.* splints, slings, neck collars, back boards, *etc*) 8. Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister 9. Using eye patches 10. Removing foreign bodies from the eye using only irrigation or a cotton swab 11. Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means 12. Using finger guards 13. Using massages 14. Drinking fluids for relief of heat stress
High Potential Events (HIPO)	High Potential Events are those that could have resulted in one or more fatalities, or other catastrophic consequences, or which did result in the following (list not meant to be exhaustive): 1) Failure, collapse or malfunction of any of the following: • Lifting machinery / equipment • Pressure vessels or associated pipework • Collapse of scaffolding • Collapse of building or structure • Pipelines • Conveyance of dangerous substances by road • Breathing apparatus • Overhead electric lines • Explosives • Wells • Complete vessel power failure 2) Any of the following events: • Electric short circuit or overload • Explosion or fire • Escape of flammable substances • Escape of biological agent, dangerous substance or pathogen • Transportation collision

Hours Worked	For "office based" workers the "hours worked" are calculated on an 8 hour work day and a 5 day work week. For "Operational/on-site" workers, the "hours worked" are calculated on a 12 hours workday and a 7 day week. Consequently average hours worked per year will vary from 1920 to 2016 hours/ person. Vacations and leaves are excluded.
Immediate Cause	The most obvious reason why an incident happens, e.g. the guard is missing; the employee slips etc. There may be several immediate causes identified in any one incident.
Incident	An incident is any undesired event that has or could have resulted in harm to people, damage to property, harm to the environment or loss of production.
Incident Rates	**Fatal Accident Rate (FAR)** The number of company/contractor fatalities per 100,000,000 (100 million) hours worked. **Fatal Incident Rate (FIR)** The number of fatal incidents per 100,000,000 (100 million) hours worked. Incidents involving a third party fatality are included, provided they directly result from company or contractor operations. **Lost Time Injury Frequency (LTIF)** The number of lost time injuries (fatalities + lost workday cases) incidents per 1,000,000 (1 million) hours worked. **Total Recordable Injury Rate (TRIR)** The number of recordable incidents (fatalities + lost workday cases + restricted workday cases + medical treatment cases) per 1,000,000 (1 million) hours worked.
Loss	Any human, environmental or material damage caused as a result of an incident.
Lost Time Injury (LTI)	A fatality or lost work day case. The number of LTI's is the sum of fatalities and lost work day cases.
Lost Work Day Case (LWDC)	Any work related injury other than a fatal injury which results in a person being unfit for work on any day after the day of occurrence of the occupational injury. "Any day" includes rest days, weekend days, leave days, public holidays or days after ceasing employment.
Medical Treatment Case (MTC)	Cases that are not severe enough to be reported as fatalities or lost work day cases or restricted work day cases but are more severe than requiring simple first aid treatment. An incident is classified as Medical Treatment (MT) when the management and care of the patient to address the injury or illness is above and beyond First Aid (see the 14 First Aid treatments listed above) Medical Treatment does not include: • The conduct of diagnostic procedures, such as x-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes (e.g. eye drops to dilate pupils) • Visits to a physician or other licensed health care professional solely for observation or counselling The following may not involve any treatment but for purposes of severity classification, will be reported as Medical Treatment • Any loss of consciousness • Significant injury or illness diagnosed by a physician or other licensed health care professional for which no treatment is given or recommended at the time of diagnosis. Examples include: punctured ear drums, fractured ribs or toes, byssinosis and some types of occupational cancer • Needle stick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material • Occupational hearing loss • Medical removal under a government standard Note: First Aid carries a very specific meaning for this purpose – please refer to the definition of First Aid. MTC are recordable
Near Miss Event	A near miss is an event not resulting in loss which, under slightly different circumstances, could have resulted in harm to people, damage to property, harm to the environment or loss of production, or the interests of the Company.

Occupational Injuries	Any injury such as a cut, fracture, sprain, amputation, *etc*, which results from a work accident or from a single instantaneous exposure in the work environment. Conditions resulting from animal bites, such as insect or snake bites, and from one-time exposure to chemicals are considered to be injuries.
Occupational Illness	Any injury such as a cut, fracture, sprain, amputation, *etc*, which results from a work related activity or from an exposure involving a single incident in the work environment, such as deafness from explosion, one-time chemical exposure, back disorder from a slip / trip, insect or snake bite.
Restricted Work Day Case (RWDC)	Any work related injury other than a fatality or lost work day case which results in a person being unfit for full performance of the regular job on any day after the occupational injury. Work performed might be: • An assignment to a temporary job; • Part-time work at the regular job; • Working full-time in the regular job but not performing all the usual duties of the job. Where no meaningful restricted work is being performed, the incident should be recorded as a Lost Work Day Case (LWDC).
Underlying Cause	The less obvious "system" or "organisational" reason for an incident happening. The underlying cause provides the details behind the immediate causes of the incident, for example, the person was using the tools improperly (immediate cause), because of a lack of training (Underlying cause).
Unsafe Act	Any act that deviates from a generally recognised safe way or a specified method of doing a job and increases the potential for an incident.
Unsafe Condition	A source of danger which if not adequately controlled or if suitable precautions are not taken could increase the potential for an incident.
Work Related Activity	A work-related activity is an activity in a work environment, which is or ought to be subject to management controls. Injuries incurred on or off company or contractor premises, whilst "off duty" should not be reported unless they are work related or subject to (or ought to be subject to) management controls. The exception is when the injury owes directly to the activities of other personnel who are at work. The following are considered work-related since they should be subject to management control. Company work-related activities All work by Company personnel, including attendance at courses, conferences and Company organised events, business travel, field visits or any other activity or presence expected by the employer. Contractor work-related activities All work by Contractor personnel: • On Company premises, and • On non-Company premises that are or ought to be subject to Company management controls applied through contractual terms, and including the same activities as listed above if they are executed on behalf of the Company. The second category would include, for example, fabrication by a Contractor of an assembly or construction under a specific contract where fabrication/ construction takes place in a designated area set aside for that work. Exceptions to the second category will typically be where Contractor services are not dedicated to the sole benefit of the Company, e.g.: • Factory manufacture of components together with components for others; • Construction at Contractor's fabrication/construction site shared by others; • Delivery of purchased goods from a supplier to Company locations by a Contractor other than purpose-built assemblies and plants. All incidents that occur in work-related activities are reportable and are to be included in returns if the incident results in an occupational injury or illness that is more serious than requiring simple first aid. For reporting purposes, Sub-Contractor personnel are to be treated as if they were Contractor personnel and work-related injuries reported as Contractor incidents.

APPENDIX 1 - INCIDENT FLASH ALERT FORM

NOTE: This report form is available in electronic format from the HSE Officer.

Timor Resources

INCIDENT FLASH ALERT

DATE:
TIME:
LOCATION:
REPORTED BY:

This Incident Flash Alert is a statement of fact intended for information only.
The Incident Investigation Report will follow, including an assessment of immediate and underlying causes and a formal Incident Investigation.

Please send this alert within 2 hours to General Manager Exploration and HSE Officer.
Please share with all personnel during Toolox and Pre-Job Safety Meetings

BRIEF ACCOUNT OF THE INCIDENT AND ACTUAL OUTCOMES

ACTUAL CONSEQUENCES

1
2
3
4
5

POTENTIAL CONSEQUENCES

1
2
3
4
5

LIKELY CAUSES (FACTUAL NOT CONJECTURE)

1
2
3
4
5

IMMEDIATE ACTIONS TAKEN

1
2
3
4
5

FUTURE ACTIONS

1
2
3
4
5

PERSON IN CHARGE OF INVESTIGATION (INCLUDE CONTACT DETAILS)

PERSONS ASSISTING INVESTIGATION (INCLUDE CONTACT DETAILS)

1
2
3

APPENDIX 2 - INCIDENT INVESTIGATION FORM

NOTE: This report form is available in electronic format from the HSE Officer.

TIMOR RESOURCES
INCIDENT REPORT PROFORMA

Timor Resources

OPS-REPT-[number]-[mth]-[year]

Installation/Site :	**Date of Incident :**	
Area :	**Time of Incident :**	**Person Reporting :**
Department :	**Date of Report :**	**Witness :**

INCIDENT INFORMATION

☐	Fatality	☐	Process loss	Name of casualty:
☐	Lost work day case	☐	High Potential Incident	Occupation:
☐	Llost time Injury	☐	Near Miss	Experience: (year)
☐	Restricted work day case	☐	Unsafe act	Nature of injury/illness/damage:
☐	Medical treatment	☐	Unsafe condition	Appr. Time lost: (days)
☐	First aid	☐	Environmental spillage	Estimated costs :
☐	Damage only	☐	Security breach	

FREQUENCY	SEVERITY	POTENTIAL
5 - Probable	5 - Multi-Catastrophic	5 - Multi-Catastrophic
4 - Likely	4 - Catastrophic	4 - Catastrophic
3 - Possible	3 - Major	3 - Major
2 - Unlikely	2 - Serious	2 - Serious
1 - Improbable	1 - Light	1 - Light

SHORT DESCRIPTION OF INCIDENT:

IMMEDIATE CAUSES	BASIC/UNDERLYING CAUSES:

RECOMMENDED ACTION(S) TO PREVENT RECURRENCE:	Action for:

REPORT AUTHORISATION

Reporting Function	Name:	Position	Date:	Signature:
Reported by :		Site Ops Rep. (PIC)		
HSE Review by:		HSE Officer		
Approved by:		Ops Manager		

APPENDIX 3 - TIMOR LESTE DECREE LAW 18/2020 ARTICLE 125 INCIDENT REPORTING

Law 18/2020 Onshore Petroleum Operations

Article 125 Incident Reporting

1. An Authorised Person shall promptly notify the Ministry, other relevant authorities and potentially affected Local Communities and persons of an emergency, Major Accident Event and Other Health and Safety Incident.

2. An Authorised Person shall keep the Ministry and other relevant authorities continuously updated on the development and of the measures that it plans to implement as follows:

(a) An Authorised Person shall communicate and inform the Ministry and other relevant authorities through established communication channel, of such occurrences as soon as possible, no later than twenty four hours after the incident occurred.

(b) An Authorised Person shall file a preliminary report as soon as practicable after a Major Accident Event and other Health and Safety Incident but no later than forty eight hours following its occurrence:

i. The date, time, location, nearest Local Communities, coordinates and name of Field, if applicable;
ii. A description of the Major Accident Event and other Health and Safety Incident;
iii. Details on the equipment or Facility involved including type and name;
iv. A description of the Petroleum Operations and other activities being carried out at the time of the Major Accident Event or Other Health and Safety Incident;
v. Details of actual or likely environmental impacts resulting therefrom;
vi. The number of fatalities or injuries, if any, sustained as a result therefrom;
vii. The personal details of injured persons;
viii. The relation of injured person or persons to the Petroleum Operations including the name of the employer; and
ix. Such other information as the Ministry may require.

3. In the event of a Major Accident Event or Other Health and Safety Incidents a full investigation report shall be submitted to the Ministry as soon as practicable.

4. Unless a full investigation report has already been submitted, within thirty days following its occurrence, an interim report and an investigation plan with an estimated completion date shall be submitted to the Ministry. Such reports shall be in writing and contain, at a minimum, the following information related to the Major Accident Event or Other Health and Safety Incident:

i. The date, time, location, nearest Local Communities, coordinates and name of Field, if applicable;
ii. A description of the Major Accident Event or Other Health and Safety Incident;
iii. Details on the equipment or Facility involved including type and name;
iv. A description of the Petroleum Operations and other activities being carried out at the time of the Major Accident Event or Other Health and Safety Incident;

v. The extent of damage sustained, categorised as total loss, severe damage, significant damage, minor damage, including primary losses and secondary impacts on operations;
vi. Details of actual or likely environmental impacts resulting therefrom;
vii. The number of fatalities or injuries, if any, sustained as a result therefrom;
viii. The personal details of injured persons;
ix. The relation of injured person or persons to the Petroleum Operations including the name of the employer;
x. The name, address and telephone, including all business and mobile, numbers of the person responsible for investigating the Major Accident Event or Other Health and Safety Incident;
xi. The name, address and telephone number of each potential witness known to the Authorised Person;
xii. Root causes of the incident;
xiii. The status of the corrective-action response at the time of the Major Accident Event or Other Health and Safety Incident to mitigate the impacts of the incident, and proposed immediate actions to be taken in the future to minimize the likelihood of the incident reoccurring; and
xiv. Such other information as the Ministry may require.

5. An incident investigation shall be initiated as promptly as possible for a major accident event, considering the necessity of securing the scene, protecting personnel, Local Communities, the general public and the environment.

6. The purpose of an incident investigation is to learn from the Major Accident Event and to contribute to prevent similar future Major Accident Events.

7. The investigation shall be conducted by a Third Party Consultant designated by the Authorised Person.

8. The Third Party Consultant shall possess the legal, technical and other expertise required and have knowledge of appropriate investigation techniques. Relevant Ministries and local authorities shall be notified, kept continuously informed and be involved in the investigation where required.

9. Representatives from the Ministry shall have the right to participate as observers in the investigation.

10. The investigation should be carried out and its findings and recommendations produced in a timely manner, in order to address:

a. The nature of the Major Accident Event;
b. The factors that contributed to initiation of the Major Accident Event, its escalation and control; and
c. Recommended changes identified as a result of the investigation.

11. The Ministry may appoint an independent special commission of inquiry for Major Accident Events in the Petroleum Operations.

12. The members of the commission shall possess the legal, technical and other expertise required and have knowledge of appropriate investigation techniques.

13. The commission of inquiry may require the Authorised Person and other parties involved in the Major Accident Events to provide the commission with information which may be relevant to the investigation, and that they shall make available documents, Facilities and other objects at a place where it is suitable for the investigation to take place.

14. The Authorised Person shall be required to cover the costs in connection with the work of the commission of inquiry.

15. The Authorised Person shall establish a corrective action programme shall be based on the findings and recommendations of the investigation, in order to address the root causes of a Major Accident Event.

16. The Authorised Person shall submit the corrective action programme referred in Article 125 (12) to the Ministry for its approval.

17. Findings of the investigation shall be reported to the Ministry and retained by the Authorised Person.

18. The Authorised Person shall establish a system to determine and document the response to each finding, to ensure agreed-upon actions are completed.

19. The Authorised Person shall submit documentation detailing completion of the corrective action programme to the Ministry for its review and approval.

Definitions Article 7:

(2a) *"Major Accident Event"* means an event, undesired event or uncontrolled event connected with a Facility including natural events having the potential to cause harm in terms of human injury or death, damage to a Facility, property or equipment or environment at or near the Facility.

(qqq) *"Other Health and Safety Incident*" means an incident due to Petroleum Operations that results in, or that under slightly altered circumstances could have resulted in, injury, pollution, or failure of health and safety functions or barriers so as to threaten the integrity of a Facility used in Petroleum Operations other than a Major Accident Event.

APPENDIX 4 - SYSTEMATIC CAUSE ANALYSIS TECHNIQUE (SCAT) CHART (After DNV)

SCAT Chart - Systematic Cause Analysis Technique - SCAT Chart

DESCRIPTION OF ACCIDENT OR INCIDENT

EVALUATION OF LOSS POTENTIAL IF NOT CONTROLLED

Loss Severity Potential
O Major (a) O Serious (B) O Minor (C)

Probability of Occurrence
O High (A) O Moderate (B) O Rare (C)

Frequency of Exposure
O Extensive (A) O Moderate (B) O Low (C)

Type of Contact or Near Contact with Energy or Substance

1 Struck against (Running or Bumping into) (See I.C's: 1,2,4,5,12,14,16,17,18,19,26)
2 Struck by (Hit by Moving Object) (See I.C's: 1,2,4,5, 6,9,10,12,13,14,15,16,20,26)
3 Fall To Lower Level (See I.C's:3,5,6,7,11,12,13,14, 15,16,17,22)
4 Fall On Same Level (Slip and Fall, Trip Over) See I.C's: 4,9,13,14,15,16,19,22,26)
5 Caught In (Pinch and Nip Points) (see I.C's: 5,6,11,13,14,15,16,18)
6 Caught On (Snagged, Hung) (See I.C's: 5,6,11,12,13,14,15,16,18)
7 Caught Between Or Under (Crushed Or amputated) (See I.C's: 1,2,5,6,9,11,12,13,14,15,16,22,28)
8 Contact with (Electricity,Heat,Cold,Radiation,Caustics, Toxics, Noise)(See I.C's:5,6,7,11,12,13,14,15,16,17,18, 20,21,23,24,25,27,28)
9 Overstress,Overexertion,Overhead (See I.C's:8,9,10,11,13,14,15)

(IC's) Immediate/Direct Causes (IC's)

SUBSTANDARD/UNSAFE ACTS

1 Operating Equipment Without Authority (See B.C's 2,4,5,7,8,12,13,15)
2 Failure to Warm (See B.C's: 1,2,3,4,5,6,7,8,9,12, 13,15)
3 Failure to Secure (See B.C's:2,3,4,5,6,7,8,9,12 13,15)
4 Operating at Improper Speed (See B.C's:2,3,4 5,6,7,8,)
5 Making Safety Devices Inoperative (See B.C's 2,3,4,5,6,7,8,9,12,13,15)
6 Using Defective Equipment (See B'C's: 2,3,4,5,6 7,8,9,10,11,12,13,14,15)
7 Failing to Use PPE Properly(See B.C's: 2,3,4,5,7,8 10,12,13,15)
8 Improper Loading (See B.C's:1,2,3,4,5,6,7,8,9,12 13,15)
9 Improper Placement (See B.C's: 1,2,3,4,5,6,7,8,9, 12,13,15)
10 Improper Lifting (See B.C's:1,2,3,4,5,6,7,8,9,12,13 15)
11 Improper Position for Task (See B.C's: 1,2,3,4,5,6 7,8,9,12,13,15)
12 Servicing Equipment in Operation (See B.C's:2,3,4,5 6,7,8,9,12,13,15)
13 Horseplay (See B.C's:2,3,4,5,7,8,13,15)
14 Under Influence of Alcohol and/or Other Drugs(See B.C's:2,3,4,5,7,8,13,15)
15 Using Equipment Improperly (See B.C's: 1,2,3,4,5,6,7,8,9,10,12,13,15)
16 Inadequate Guards or Bariers(See B.C's 5,7,8,9,10,11,12,13,15)
17 Inadequate or Improper Protective Equipment (See B.C's: 5,7,8,9,10,12,13)
18 Defective Tools,Equipment or Materials(See B.C's: 8,9,10,11,12,13,14,15)
19 Congestion or Restricted Action (See B.C's: 8,9,13)
20 Inadequate warning System (See B.C's:8,9,10,11,12,13)
21 Fire & explosion Hazards (See B.C's:5,6,7,8,9,10,11,12, 13,15)
22 Poor Housekeeping/Disorder (See B.C's: 5,6,7,8,9,10,11 12,13,15)
23 Noise Exposure (See B.C's: 5,6,7,8,9,10,11,12,13,14)
24 Radiation Exposure (See B.C's: 5,6,7,8,9,10,11,12,13,14)
25 Temperature Extremes (See B.C's: 1,2,3,8,9,11,12
26 Inadequate or Excess Illumination (See B.C's:8,9,10,11,12,13)
27 Inadequate Ventilation (see B.C's:) 8,9,10,11,12)
28 Hazardous Environmetal Conditions (See B.C's:8,9,10,11,12,13)

(BC's) Basic / Underlying Causes (BC's)

PERSONAL FACTORS

1 Inadequate Physical/Physiological Capability
(See CAN: 6,9,12,15,18)
- 1.1 Inappropriate height,weight,size,strength reach, etc.
- 1.2 Restricted range of body movement
- 1.3 Limited ability to sustain body positions
- 1.4 Substance sensitivities or allergies
- 1.5 Sensitivities to sensory extremes (temperature, sound, etc)
- 1.6 Vision deficiency
- 1.7 Hearing deficiency
- 1.8 Other sensory deficiency (touch, taste, smell, balance)
- 1.9 Respiratory incapability
- 1.10. Other permanent physical capabilities
- 1.11. Temporary disabilities

2 Inadequate mental/Psychological Capability
(See CAN: 6,9,10,15,18)
- 2.1 Fears and probias
- 2.2 Emotional disturbance
- 2.3 Mental illness
- 2.4 Intelligence level
- 2.5 Inability to comprehend
- 2.6 Poor judgment
- 2.7 Poor coordination
- 2.8 Slow reaction time
- 2.9 Low mwchanical aptitude
- 2.10. Low learning aptitude
- 2.11. Memory failure

3 Physical or Physiological Stress
(See CAN: 4,6,9,11,12,13,15,18,20)
- 3.1 Injury illness
- 3.2 Fatique due to task load or duration
- 3.3 Fatique due to lack of rest
- 3.4 Fatique due to sensory overload
- 3.5 Exposure to health hazards
- 3.6 Exposure to temperature extremes
- 3.7 Oxygen deficiency
- 3.8 Atmospheric pressure variation
- 3.9 Blood sugar insufficiency
- 3.10. Drugs

4 Mental or Psychological Stress
(See CAN: 1,4,5,6,10,11,12,15,16,18,20)
- 4.1 Emotional overload
- 4.2 Fatique due to mental task laod or speed
- 4.3 Extreme judgment/decision demands
- 4.4 Routine, monotony, demand for uneventful vigilance
- 4.5 Extreme concentration/perception demands
- 4.6 Meaningless or degrading activities
- 4.7 Confusing directions/demands
- 4.8 Conflicting demands/directions
- 4.9 Preoccupation with problems
- 4.10. Frustasion
- 4.11. mental illness

5 Lack of Knowledge
(See CAN:2,4,5,6,7,8,9,10,11,12,13,15,16,18,20)
- 5.1 Lack of experience
- 5.2 Inadequate orientation
- 5.3 Inadequate initial training
- 5.4 Inadequate update training
- 5.5 Misunderstood directions

6 Lack of Skill
(See CAN: 2,4,5,6,7,9,10,13,15,18)
- 6.1 Inadequate initial instruction
- 6.2 Inadequate practice
- 6.3 Infrequent performance
- 6.4 Lack of Coaching
- 6.5 Inadequate review instruction

7 Improper Motivation
(See CAN: 1,2,4,5,6,8,10,11,13,15,17,18)
- 7.1 Improper performance is rewarding
- 7.2 Improper performance is punishing
- 7.3 Lack of incentives
- 7.4 excessive frustation
- 7.5 Inappropriate agression
- 7.6 Improper attempt to save time or effort
- 7.7 Improper attempt to avoid discomfort
- 7.8 Improper attempt to gain attention
- 7.9 Inadequate dicipline
- 7.10. Inappropriate peer pressure
- 7.11. Improper supervisory example
- 7.12. Inadequate performance feedback
- 7.13. Inadequate reinforcement of proper behavior
- 7.14. Improper production incentives

JOB FACTORS

8 Inadequate Leadership and/or Supervison
- 8.1 Unclear or conflicting reporting relationships
- 8.2 Unclear or conflicting assigment of responsibility
- 8.3 Improper or insufficient delegation
- 8.4 Giving inadequate policy,procedure, practices or guidelines
- 8.5 Giving objectives, goals, or standard that conflict
- 8.6 Inadequate work planning or programming
- 8.7 Inadequate instructions, orientation and or train
- 8.8 Providing inadequate reference documents directives and guidance publications
- 8.9 Inadequate identification and evaluation of loss exposure
- 8.10. Lack of supervisory / management job knowledge
- 8.11 Inadequate matching of individual qualifications and job / task requirement
- 8.12 Inadequate performance measurement and evaluation
- 8.13 Inadequate or incorrect performance feedback

9 Inadequate Engineering
(See CAN: 1,2,3,4,9,12,13,14)
- 9.1 Inadequate assessment of loss exposures
- 9.2 Inadequate considerationof human factors or ergonomic
- 9.3 Inadequate standards, specifications and or design criteria
- 9.4 Inadequate monitoring of construction
- 9.5 Inadequate assessment of operational readiness
- 9.6 Inadequate or improper controls
- 9.7 Inadequate monitoring of initial operation
- 9.8 Inadequate evaluation of changes

10 Inadequate Purchasing
(See CAN: 1,3,4,6,9,12,13,14,15,19)
- 10.1 Inadequate specifications on requisitions
- 10.2 Inadequate research on materials/equipment
- 10.3 Inadequate specifications to vendors
- 10.4 Inadequate mode or route of shipment
- 10.5 Inadequate receiving inspection and acceptance
- 10.6 Inadequate communication of safety and health data
- 10.7 Improper handling of materials
- 10.8 Improper storage of materials
- 10.9 Improper transporting of materials
- 10.10. Inadequate identification of hazardous items
- 10.11 Improper salvage and/or waste disposal
- 10.12 Inadequate contractor selection

11 Inadequate Maintenance
(See CAN: 1,3,4,5,9,10,13,15,19)
- 11.1 Inadequate preventive
  - 11.1.1. Assessment of needs
  - 11.1.2. Lubrication and servicing
  - 11.1.3. Adjustment/assembly
  - 11.1.4. Cleaning or resurfacing
- 11.2 Inadequate repairative
  - 11.2.1. Communication of needs
  - 11.2.2. Scheduling of work
  - 11.2.3. Examination of units
  - 11.2.3. Part of substitution

12 Inadequate Tools and equipment
(See CAN: 1,3,4,6,7,9,11,12,13,14,15,19)
- 12.1 Inadequate assessment of needs and risks
- 12.2 Inadequate human factors/ergonomics considerations
- 12.3 Inadequate standards or specifications
- 12.4 Inadequate availability
- 12.5 Inadequate adjustment/maintenance
- 12.6 Inadequate salvage and reclamation
- 12.7 Inadequate removal and replacement of suitable items

13 Inadequate Work Standards
(See CAN: 1,2,3,4,5,6,7,8,9,10,11, 12,13,14,15,16,19)
- 13.1 Inadequate development of standards for;
  - 13.1.1. Inventory and evaluation of exposures and needs
  - 13.1.2. Coordination pocess design
  - 13.1.3. Employee involment
  - 13.1.4. Procedures/practices/rules
- 13.2 Inadequate communication of standards for:
  - 13.2.1. Pubilcation
  - 13.2.2. Distribution
  - 13.2.3. Translation to appropriate languages
  - 13.2.4. Training
  - 13.2.5. Reinforcing with signs, color codes and jobs aids
- 13.3 Inadequate maintenance of standards for:
  - 13.3.1. Tracking of work flow
  - 13.3.2. Updating
  - 13.3.3. Monitoring use of procedure or practices/rules
- 13.4 Inadequate monitoring of compliance

14 Exercise Wear and Tear
(See CAN: 3,4,6,9,10,13,14,15)
- 14.1 Inadequate planning of use
- 14.2 Improper extension of service life
- 14.3 Inadequate inspection and/or monitor
- 14.4 Improper loading or rate of use
- 14.5 Inadequate maintenance
- 14.6 Use by unqualified or untrained people
- 14.7 Use for wrong purpose

15 Abuse or Misuse
- 15.1 Improper conduct that is condoned
  - 15.1.1. Intentional
  - 15.1.2. Unintentional
- 15.2 Improper conduct that is not condoned
  - 15.2.1. Intentional
  - 15.2.2. Unintentional

APPENDIX 5 - COST ANALYSIS METHODOLOGY

Procedure for Completing Cost Assessment

The following steps shall be taken in completing the cost assessment proforma:

- For every incident that is reported, the attached proforma should be completed as far as possible.
- Where a category is not considered appropriate, that section should be marked N/A.
- All figures should be backed up with whatever assumptions have been made in arriving at them (particularly in the case of estimates).
- All estimates should be backed up by a statement of their likely accuracy (e.g. + or - 10% or 100%).
- Where figures are not available at the time of filling out the proforma, the appropriate category should be annotated accordingly.
- For intangible costs (e.g. loss of "market") an attempt should be made to estimate them by assessing an appropriate tangible loss (e.g. reduction in oil sales of x barrels resulting in lost revenue of $y).
- All costs should be stated in $US.
- Where estimates are for major incidents, appropriate back up sheets should be appended showing a breakdown of the costs.

Losses from Environmental Incident

All investigating authorities should identify and cost losses resulting from the environmental incident being investigated. Such losses should include:

- Total manhours (including supervisors and the investigating team etc);
- Property/equipment losses;
- Damage to the environment (rehabilitation, compensation);
- General losses (evacuation, helicopters, support services etc);
- Consequential losses (production losses, irretrievable knock-on effect losses etc);
- Other losses (penalties, fines etc).

Losses identified are recorded and costed in the investigation report and where possible verified for accuracy.

Guidance for Completing the Cost Assessment Proforma

The following notes are intended to provide guidance on the items to be included under the various headings given on the assessment proforma.

Note: The numbering of the following headings corresponds with that of the sections on the attached proforma.

1. DIRECT COSTS

1.1 Damage Repairs

These will be the obvious direct costs involved with repairing any damage to its original state. These should be analysed under the headings shown (viz. labour, materials and equipment, vessels/rigs, management and engineering).

1.2 Temporary Arrangements

These will cover any temporary arrangements that have to be made (e.g. hiring special response equipment during emergency response, well control, firefighting, oil spill response, etc).

1.3 Interim Repairs

This will cover any temporary arrangements that have to be made (e.g. hiring special equipment pending repair).

1.4 Evacuation/Flights/Transport

This covers any costs incurred evacuating personnel from the site to safety. It also includes any additional flights or transport (road/sea) incurred because of the incident. This may include special transport, for example, to ship temporary repair equipment to the site or in support of interim or permanent repair operations.

1.5 Medical Expenses

This will include all direct medical expenses including ambulance, hospital treatment, post incident trauma counselling, etc.

2. ASSOCIATED COSTS

2.1 Investigation

This includes all the costs of carrying out the investigation including personnel time, any use of external bodies (e.g. Consultants to carry out failed equipment examinations, environmental assessments, etc), any equipment mobilised to assist the investigation (e.g. specialist inspection equipment) etc.

2.2 Corrective action

All costs incurred carrying out corrective actions from the investigation (e.g. development of new procedures, personnel retraining or specialist training, etc).

3. CONSEQUENTIAL COSTS

3.1 Production loss/downtime

All costs of lost (or deferred) production due to downtime from the incident.

3.2 Loss of inventory

All costs of totally lost inventory (e.g. from tank farm or tanker spills).

3.3 Compensation

This includes all costs paid in compensation to Company personnel, the public or Authorities.

3.4 Fines

All costs incurred due to fines by Authorities.

3.5 Legal expenses

The costs of any legal expenses incurred.

3.6 Insurance premiums

The costs of increased insurance premiums or loss of cover due to the incident.

3.7 Salaries of injured personnel

Costs incurred in salaries whilst staff are unproductive due to incident injuries.

3.8 Hire of replacement (temporary) personnel

Costs of hiring replacement personnel whilst staff personnel are recovering.

3.9 Overtime incurred due to incident

All costs associated with additional working that can be attributed to the occurrence of the incident.

3.10 Additional supervisory time

Costs associated with additional supervisory time monitoring temporary personnel or whilst re-training staff personnel.

3.11 Clerical time

Any clerical time which is incurred and can be attributed to the incident (e.g. preparation of reports, investigation results preparation, etc).

3.12 Loss of market

An estimate of any other losses that may be considered relating to the Company's market share, which can be attributed to the incident.

Suggested Cost Analysis Proforma

Cost Assessment for Incidents	
Operating Location:	
Incident Report Number:	
Incident Description:	
Assessment Completed by:	
Signed by:	Department Manager/General Manager Exploration
Additional Comments (if any)	

Cost Assessment for Incidents		
Category	**Cost ($'000)**	**Comments**
1.0 Direct Costs		
1.1 Damage Repairs Labour Materials/equipment Vessels/rigs Management/engineering		
1.2 Temporary Arrangements		
1.3 Interim Repairs Labour Materials/equipment Vessels/rigs Management/engineering		
1.4 Evacuation/Flights/Transport		
1.5 Medical Expenses		
Total Direct Costs		
2.0 Associated Costs		
2.1 Investigation		
2.2 Corrective Action		
Total Associated Costs		
3.0 Consequential Costs		
3.1 Production loss/downtime		
3.2 Loss of inventory		
3.3 Compensation		
3.4 Fines		
3.5 Legal expenses		
3.6 Insurance premiums		
3.7 Salaries of injured personnel		
3.8 Hire of replacement (temporary) personnel		
3.9 Overtime incurred due to incident		
3.10 Additional supervisory time		
3.11 Clerical time		
3.12 Loss of market		
Total Consequential Costs		
Overall Total Costs		

APPENDIX 6 - INCIDENT STATISTICS REPORTING FORM

Operation_____ INCIDENT STATISTICS: Period _ Quarter 20__ All Activities (or Activity) _____

MONTH	AVERAGE NO. EMPLOYED		MANHOURS WORKED (1)		LOST TIME INJURIES (LTI) (2)		LTI FREQUENCY RATE (3)		MANDAYS LOST		LOST WORK DAY CASES (4)		TOTAL RECORDABLE INJURY RATE (5)	
	Company	Contractor	Company	Contractor	Company	Contractor	Company	Contractor	Company	Contractor	Company	Contractor	Company	Contractor
JANUARY														
FEBRUARY														
MARCH														
FIRST QTR.														
APRIL														
MAY														
JUNE														
SECOND QTR.														
JULY														
AUGUST														
SEPTEMBER														
THIRD QTR.														
OCTOBER														
NOVEMBER														
DECEMBER														
FOURTH QTR.														
YEAR TOTAL														

Notes: 1) Manhours worked per year in the office is normally a notional figure based on number of people at work x average hours worked/per day/week (e.g. 48 weeks x 5 days x 8 hours = 1920 hrs).
For field workers it is normal to quote manhours worked per 12 hour shift i.e. No of persons on board (POB) x 12 x No of days.

2) Lost Time Injuries (LTI) are fatalities and lost work day cases.

3) Lost Time Injury Frequency (LTIF) = $\frac{\text{No. of LTI's x } 10^6}{\text{No of Manhours Worked}}$

4) Lost work day cases are defined as being unable to work the following day or shift.

5) Total Recordable Injury Rate (TRIR) = The number of recordable injuries (fatalities + lost workday cases + restricted workday cases + medical treatment cases) per 1,000,000 hours worked. Total Recordable Injury Rate (TRIR) = $\frac{\text{No. of Recordable Incidents x } 10^6}{\text{No. of Manhours Worked}}$

6) Fatal Incident Rate (FIR) - the number of fatal incidents per 100,000,000 (100 million) manhours. Fatal Accident Rate (FAR) - the number of fatalities per 100,000,000 (100 million) manhours