	<b>Standard Work Practice / Job Procedure</b>	<b>Hydrogen Sulphide Gas</b>	
Date Created	February 28 <sup>th</sup> , 2007	Latest Revision Date	January 22, 2011
Revision Number	4	Next Review Date	January 2013
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### **PURPOSE:**

To ensure that employees are aware and knowledgeable of the nature and dangers of Hydrogen Sulphide (H<sub>2</sub>S) gas.

### **DESCRIPTION:**


Hydrogen Sulphide is a colorless and poisonous flammable gas with a strong smell of rotten eggs. H<sub>2</sub>S frequently appears in oil refineries, gas plants, oil and gas wells, in fact, throughout the entire petrochemical industry. H<sub>2</sub>S can also be found in coal mines, heavy water plants, pulp mills, underground mines, sewers, swamps, or any area where there is decaying organic matter. An oil or gas that contains H<sub>2</sub>S is known as “sour”.

### **SAFETY EQUIPMENT REQUIRED:**

- A PERSONAL ALARM for H<sub>2</sub>S which is capable of detection in the range of 20 - 50 PPM (if going in an area where hydrogen sulphide known to be present).
- ELSA Escape Pac (five minutes)

### **PROCEDURE:**

1. Employees must have knowledge of all aspects of hydrogen sulphide gas. Employee(s) have been trained either on H<sub>2</sub>S Alive or H<sub>2</sub>S Hazard Awareness.
2. Employee must be trained on Workplace Hazardous Material Information System (WHMIS) and all components of WHMIS.
3. Before entering an area known to have hydrogen sulphide gas present which is not owned by Parkland County, employee is to contact Company responsible for the worksite and when possible, arrange for Company representative to accompany employee while work being conducted at the location. Employee is to request from Company representative assurance that hydrogen sulphide gas is being monitored.
4. Employees must review this standard work practice prior to going to worksite where hydrogen sulphide gas present.
5. A safety meeting is to be held prior to work commencing.
6. Employees must be, at a minimum, emergency first aid trained.
7. Use detection equipment when working in an area where there is a possibility of H<sub>2</sub>S gas
8. Maintain and calibrate detection equipment per manufacturer's specifications.
9. When required, employee must carry in the vehicle and be familiar with an ELSA Escape Pac (five minutes). The ELSA Escape Pac is to be fit tested.
10. When required, employee must carry in the vehicle and be familiar with a personal alarm for hydrogen sulphide which is capable of detection in the range of 20-50 ppm.
11. Do not enter H<sub>2</sub>S area without proper training and authorization. Employees who need to access an area or field are to provide the company/operator the dates, time and reason for entrance. The company or operator will usually respond if there have been any recent safety problems, particularly H<sub>2</sub>S, and if such is the case they will either accompany the assessor or postpone the reason for the access request until the problem has been rectified.

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12. When entering buildings and enclosed structures that may contain H<sub>2</sub>S gas, open all doors from the outside and allow the area to ventilate for at least 10 minutes before entering.
13. All County employees working in H<sub>2</sub>S areas are advised to maintain close contact with any petrochemical companies operating in the vicinity so that in the case of emergency they can be evacuated immediately.
14. Take IMMEDIATE and appropriate action when hydrogen sulphide is suspected or detected.

### **EMERGENCY RESPONSE PLAN:**

#### Initial Response Procedure:

1. Evacuate
  - a. Get to a safe area immediately
  - b. Move upwind if release is downwind of you
  - c. Move crosswind if release is upwind of you
  - d. Move to higher ground if possible
2. Alarm
  - a. Call for help by radio
3. Assess
  - a. Do a head count
  - b. Consider other hazards
4. Protect
  - a. Put on breathing apparatus before attempting rescue
5. Rescue
  - a. NEVER ATTEMPT TO RESCUE AN H<sub>2</sub>S VICTIM WITHOUT PROPER PROTECTION
  - b. Remove victim to a safe area

#### First Aid Measures

- Immediately remove the victim from further exposure.
- Administer first aid if trained to do so.
- Remove contaminated clothing, but keep the individual warm.
- Keep conscious individuals at rest.
- Be aware of possible accompanying injuries (i.e. the injured employee may have fallen when they were overcome) and treat them accordingly.
- If the victim's eyes are red and painful, flush with large amounts of clean water for at least 15 minutes.
- Call 9-1-1. Ensure the injured worker receives medical care as soon as possible.
- All H<sub>2</sub>S exposure employees are to be treated by a physician before returning to work.

#### **Revision History**

Date	Changes Made	By Whom
31 Dec 2008	added Revision History	Safety Coord
31Dec 2008	under Emergency Response Plan, changed "If the worker is not breathing,	Safety Coord



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	apply cardio-pulmonary resuscitation in the nearest safe area” to “Administer first aid if trained to do so”	
16 Nov 2009	<p>*changed SWP name from ‘working in areas where hydrogen sulphide gas may be present’ to ‘hydrogen sulphide gas’.</p> <p>*changed purpose from ‘To ensure that assessment personal and other County employees are aware and knowledgeable of the nature and dangers of Hydrogen Sulphide (H<sub>2</sub>S) gas’ to ‘.To ensure that employees are aware and knowledgeable of the nature and dangers of Hydrogen Sulphide (H<sub>2</sub>S) gas’.</p> <p>*added to safety equipment required personal alarm ‘(if going in an area where hydrogen sulphide known to be present).</p> <p>*added to step 1 ‘Employee(s) have been trained either on H<sub>2</sub>S Alive or H<sub>2</sub>S Hazard Awareness.</p> <p>*added step 3 ‘Employees must review this standard work practice prior to going to worksite where hydrogen sulphide gas present.</p> <p>*added step 4 ‘A safety meeting is to be held prior to work commencing.</p> <p>*added step 5 ‘Employees must be, at a minimum, emergency first aid trained.</p> <p>*added step 6 ‘Use detection equipment when working in an area where there is a possibility of H<sub>2</sub>S gas</p> <p>*added step 7 ‘Maintain and calibrate detection equipment per manufacturer’s specifications.</p> <p>*changed step 8 from ‘employee must carry in the vehicle and be familiar with an ELSA Escape Pac (five minutes)’ to ‘When required, employee must carry in the vehicle and be familiar with an ELSA Escape Pac (five minutes)’.</p> <p>*changed step 9 from ‘Employee must carry in the vehicle and be familiar with a personal alarm for hydrogen sulphide which is capable of detection in the range of 20-50 ppm’ to ‘when required, employee must carry in the vehicle and be familiar with a personal alarm for hydrogen sulphide which is capable of detection in the range of 20-50 ppm’.</p> <p>*changed step 10 from ‘the assessor must advise the Company/Operator, if possible, of the need for access to the Area/Field and the dates and times of inspection. The Company/Operator will usually respond if there have been any recent safety problems, particularly H<sub>2</sub>S, and if such is the case they will either accompany the assessor or postpone the inspection until the problem has been rectified’ to Do not enter H<sub>2</sub>S area without proper training and authorization. Employees who need to access an area or field are to provide the company/operator the dates, time and reason for entrance. The company or operator will usually respond if there have been any recent safety problems, particularly H<sub>2</sub>S, and if such is the case they will either accompany the assessor or postpone the reason for the access request until the problem has been rectified’.</p> <p>*deleted step 9 ‘the petrochemical industry is extremely aware of the danger of H<sub>2</sub>S and always posts signs on any site known to be ‘sour’. It is</p>	Safety Coord



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	<p>far too easy to become complacent and disregard such signs as another example of scare tactics and to much hype. Remember, the field operator is very familiar with H<sub>2</sub>S, and equipped to deal with it, you are not. Contact the operator at the phone number on the gate if you must gain access’.</p> <p>*added step 13 ‘Take IMMEDIATE and appropriate action when hydrogen sulphide is suspected or detected.</p> <p>*added to emergency response plan ‘</p> <p><u>Initial Response Procedure:</u></p> <ol style="list-style-type: none"> <li>6. Evacuate             <ol style="list-style-type: none"> <li>a. Get to a safe area immediately</li> <li>b. Move upwind if release is downwind of you</li> <li>c. Move crosswind if release is upwind of you</li> <li>d. Move to higher ground if possible</li> </ol> </li> <li>7. Alarm             <ol style="list-style-type: none"> <li>a. Call for help by radio</li> </ol> </li> <li>8. Assess             <ol style="list-style-type: none"> <li>a. Do a head count</li> <li>b. Consider other hazards</li> </ol> </li> <li>9. Protect             <ol style="list-style-type: none"> <li>a. Put on breathing apparatus before attempting rescue</li> </ol> </li> <li>10. Rescue             <ol style="list-style-type: none"> <li>a. NEVER ATTEMPT TO RESCUE AN H<sub>2</sub>S VICTIM WITHOUT PROPER PROTECTION</li> <li>b. Remove victim to a safe area</li> </ol> </li> </ol> <p>*added under first aid measures ‘All H<sub>2</sub>S exposure employees are to be treated by a physician before returning to work’.</p>	
22 Mar 2010	*added step	Safety Coord
22 Jan 2011	*No changes made	Safety Coord

### Annual Review

Year	Date	Signature	Printed Name
2009	16 Nov	Original on file	Jewel Day-Hampton
2010	22 Mar	Original on file	Jewel Day-Hampton
2011	22 Jan	Original on file	Jewel Day-Hampton
2012			
2013			
2014			
2015			
2016			



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