

**REPORT ON**

**TRAINING WORKSHOPS IN EFFECTIVE  
MANAGEMENT OF HAZARDOUS MATERIALS,  
HAZARDOUS WASTES AND CONTAMINATED SITES**

**WORKSHOP REPORT**

**SOLOMON ISLANDS**

Submitted to :

South Pacific Regional Environment Programme  
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Apia, Samoa

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## ACRONYMS

<b>DDT</b>	Dichlorodiphenyltrichloroethane (insecticide)
<b>DLET</b>	Department of Labour, Employment and Training
<b>ECD</b>	Environment and Conservation Department
<b>EHD</b>	Environmental Health Department
<b>PPE</b>	Personal Protective Equipment
<b>JICA</b>	Japan International Cooperation Agency
<b>MFEC</b>	Ministry of Forestry, Environment and Conservation
<b>MHMS</b>	Ministry of Health and Medical Services
<b>OH&amp;S</b>	Occupational Health and Safety
<b>PCB</b>	Polychlorinated Biphenels
<b>PICs</b>	Pacific Island Countries
<b>SIBA</b>	Solomon Islands Broadcasting Authority
<b>SIEA</b>	Solomon Islands Electricity Authority
<b>SIPA</b>	Solomon Islands Port Authority
<b>SPREP</b>	South Pacific Regional Environment Programme

## 1.0 INTRODUCTION

Management of hazardous materials, hazardous wastes and contaminated sites has become an increasingly important issue for Pacific Island Countries (PIC's). In 1997, AusAID, in conjunction with SPREP, implemented the Persistent Organic Pollutants in Pacific Island Countries project (POPs in PICs) to address this issue. As part of the POPs in PICs project, training workshops will be held in thirteen PICs to create awareness and understanding on the **effective management of hazardous materials, hazardous wastes and contaminated sites**.

A five day training workshop was planned to be delivered in the Solomon Islands during the period 19 February, 2001 to 23 February, 2001, including interactive activities and exercises, site inspections and practical field demonstrations. Due to confusion arising from cancellation of the SPREP solid waste workshop, which had been programmed for the following week, Monday 19 February was spent re-convening and re-organising the workshop and participants. At participants' request, the workshop was reduced to a four day course which resulted in removal of the practical field demonstrations from the program.

The workshop was designed and delivered by Golder Associates, under contract to SPREP, with the following objectives:

- To upgrade Solomon Islands' capacity for the effective management of hazardous materials and hazardous waste;
- To upgrade Solomon Islands' capacity for effective management of contaminated sites;
- To encourage the development of specific strategies for managing hazardous materials in Solomon Islands; and
- To raise awareness in Solomon Islands communities of issues associated with the generation and management of hazardous wastes.

Prior to the workshop commencing, a Pre-Workshop Questionnaire was prepared and distributed to workshop participants. The purpose of the questionnaire was to obtain preliminary information on participants understanding of hazardous materials management and any desired workshop outcomes. Only one response was received from workshop participants and therefore information on participant expectations was gathered during the introduction module of the workshop on the first day. A summary of these expectations is provided in Appendix A.

## 2.0 WORKSHOP PARTICIPANTS

### 2.1 Organisations Represented

A complete list of workshop participants is provided in Appendix B.

## **2.2 Organisations Not Represented**

Several applicable organisations were unable to send a representative to the training workshop, including:

- Solomon Island Electricity Authority;
- Solomon Island Broadcasting Authority;
- Customs Department;
- Member(s) of the automotive industry; and
- Member(s) of the oil industry.

## **3.0 MAJOR ISSUES IDENTIFIED**

The following major in-country issues were agreed by workshop participants:

The main landfill for Honiara is located at Ranadi currently extends 200m down the road from the landfill entrance, as a result of the breakdown in services during the unrest last year. The City Council does not have the resources or budget to address this problem.

The use of DDT for mosquito control under the Malaria Control Program needs to be reviewed. Current procedures for the management and handling of DDT should also be reviewed.

The medical waste incinerator at the Honiara hospital is too small for the quantity of medical wastes generated. Medical wastes are currently being inappropriately disposed of at the landfill.

The Chemical Registration Board needs to be reconvened and upgraded to allow consultation between various government departments with responsibilities for the importation, handling, storage and use of chemicals. The Chemical Register also needs to be updated for all chemicals in use in the Solomon Islands.

Whilst the use of some hazardous chemicals (eg. Cytotoxic chemicals at hospital, DDT for malaria control) is seen as a necessity, the need to use appropriate PPE is sometimes viewed as an unacceptable expense.

Current legislation and regulations with respect to handling hazardous materials is very general making enforcement difficult. More specific guidelines need to be prepared for some industries or chemicals.

There is a need to raise public and worker awareness of what materials are hazardous and how to safely handle them.

There is a need to train a person in Environmental Auditing so that they can visit workplaces, identify hazardous materials, inappropriate work practices, and environmental/health risks.

#### **4.0 COUNTRY REPORT UPDATE**

The following current information was obtained from participants and/or during site inspections:

- The Port Authority has a shipment in storage of government ordered pharmaceutical chemicals and poisons which arrived in Honiara in 1997. It is understood that the departments involved do not have the funds to release the shipment and they have remained in storage since;
- Although mentioned in the Country Report, Mustard Gas is still believed to be stored on Russell Island;
- DDT stores are present in Auki and Munda for use in the malaria control program;
- The Department of Forestry Shed in Munda is used to store pesticides and herbicides;
- The Honiara Hospital laboratory has a stock of hazardous chemicals and used pharmaceuticals which need to be disposed of to a suitable site;
- The SIEA power station at Ranadi has had a JICA sponsored waste oil separator and incinerator installed. The power station is accepting waste oils from other parties for incineration;
- The drums of DDT at Sol02 have been removed although a rusted drum with some residue is still present behind the shed. Inside the shed at Sol02 were 51 cardboard containers of 75% DDT. Thirty-five of these boxes are stored directly on the floor near open louvres, the remainder are stored on pallets. There was evidence of repackaging of DDT into smaller bags. Repacked DDT was being packed into boxes labelled "syringes";
- A cyanide spill is reported to have occurred at the Gold Ridge Mine during its initial operations. There were also anecdotal reports of vandalism causing release of stored liquid cyanide during the unrest last year. It is reported that it is still too dangerous for government officials to travel to this area to access these reports; and
- The Honiara landfill is being used to dispose of untreated medical wastes and has accepted some chemicals in the past. In its current state it also represents a large potential risk to human health through exposed wastes and fly/vermin breeding.

## **5.0 EVALUATION ISSUES**

Twelve to thirteen participants filled out the Workshop Evaluation Forms each day. All respondents felt that the objectives of the program were clear and easy to understand. All respondents indicated that the program was relevant to them. The following issues were noted on evaluation forms on the last day of the workshop:

- The workshop should be extended to 2 weeks and include more practical demonstrations;
- More information was requested on the disposal of raw human waste into Honiara harbour;
- Further discussion was requested on storage of chemicals at the Geology laboratory, the storage shed at Metapona Plains and the refuse dump at Ranadi;
- Further practical training including sessions and demonstrations at another or future workshop;
- There are enough materials now available to work out an action plan in the event of an incident occurring;
- Better Internet access is required to obtain environmental news;
- More demonstrations using safety gear (PPE) was requested; and
- The need for a workshop on Solid Waste and more provision of more information on landfill design and management was raised.

## **6.0 ACTION PLANS**

### **6.1 General Action Plan**

To address the identified major issues, during the workshop participants developed and agreed to implement the Action Plan shown in Table 1. Whilst all agreed that the issues identified were important and action needed to be taken, many of the participants felt that they did not have the authority to undertake some of the tasks. Other participants could not see how actions could be conducted with the current lack of funds and the political uncertainties arising from the last year's unrest.

**Table 1 – General Action Plan for Solomon Islands**

<b>ACTION</b>	<b>WHO</b>	<b>TIMELINE</b>	<b>STATUS</b>
SPREP to be approached to assist in identifying aid sources for assistance with interim hazardous material storage and educational materials to raise broader public awareness.	Ministry of Forestry, Environment and Conservation	Apr 2001	
Honiara City Council to co-ordinate improvements to waste disposal problems at the Ranadi site. Emergency funding from external agencies to be sought.	Honiara City Council	-	
Draft Environmental Legislation to be enacted and implemented.	Ministry of Health and Ministry of Forestry, Environment and Conservation	-	
Review current DDT storage and handling procedures.	DLET OH&S division	July 2001	
Prepare report on medical wastes to enable an appropriate medical waste incinerator to be constructed.	Ministry of Health	Dec 2001	
Prepare industry guidelines for the use of PPE	Industry/ DLET OH&S division	2002	
Form H&S committees in workplaces	All/industry	Ongoing	
Commence radio programs to raise public awareness on hazardous materials issues	Ministry of Health	Mar 2001	
Develop regulations and procedures for Environmental Auditing.	Ministry of Health/ Ministry of Forestry, Environment and Conservation / DLET OH&S division	2002	



## 6.2 Action Plan for Existing Stockpiles

A proposed action plan to manage existing stockpiles of hazardous materials was developed by participants, following site inspection, as shown in Table 2.

**Table 2 – Action Plan for Existing Stockpiles**

SITE NO.	SITE ACTIVITY	PROBLEMS	ACTION	RESPONSIBILITY
Sol01 (not inspected)	Storage of Pesticides	Chemicals have been repacked once and current reports indicate the roof is leaking and security is poor resulting in public accessing the site and becoming exposed to pesticides.	Repackage existing stockpile and move to more secure site in Honiara.	Ownership of the site and responsibility for the stockpile is in dispute. Suggest Ministry of Health is made lead agency.
Sol04	Storage of Laboratory Chemicals	Chemicals currently not segregated. Labelling absent or deteriorating on many bottles. Some containers in rusting or poor condition. Strong fumes present and chemical staining on walls. Large storage of paper and combustibles in adjacent room.	Conduct audit of known and labelled chemicals and segregate appropriately. Obtain MSDS on known chemicals to evaluate which chemicals can be disposed of using techniques suitable for Honiara. Develop Site Management Plan including Incident and Emergency Response.	Ministry of Mines and Energy – Geology Laboratory.

## 7.0 RECOMMENDATIONS

Based on the training workshop outcomes, Golder Associates' recommendations to achieve the defined project objectives in Solomon Islands are outlined in Table 3 below.

**Table 3 – Recommendations Arising From Workshop**

RECOMMENDATION	RESPONSIBILITY
1. Seek emergency funding from donors to recommence regular waste collection services in Honiara and to remove rubbish from landfill approach road.	Honiara City Council/ Ministry of Health
2. Improve management at existing landfill to reduce environmental risks.	Honiara City Council
3. Reconvene the Chemicals Registration Board to include all departments with responsibilities for the importation, storage, handling, use and/or disposal of chemicals and hazardous materials.	Ministry of Health/ Ministry of Forestry, Environment and Conservation / DLET OH&S division / Customs and Port Authority
4. Develop Codes of Practice for the management of hazardous substances.	DLT OH&S division
5. Develop Site Management Plans for current stockpile sites including repackaging and removal to more secure site where appropriate.	Ministry of Health/ Ministry of Forestry, Environment and Conservation
6. Commission a medical waste incinerator capable of handling the volume of waste generated at the Honiara hospital.	Ministry of Health

### GOLDER ASSOCIATES PTY LTD

Paul Scells  
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## **APPENDIX A**

### **Workshop Participant Expectations**

## **WORKSHOP EXPECTATIONS**

1. What Dangerous Chemicals are in Solomon Islands, where are they located, how do we dispose of them and how do we safely use them?
2. Increase knowledge of hazardous materials and dangerous goods.
3. Emergency response to spills.
4. Management of chemicals.
5. Raise awareness of hazardous wastes and chemicals.
6. Use and handling of chemicals and their disposal.
7. Development of an Action Plan to deal with Hazardous Wastes.
8. Learn about effects of chemicals on humans.
9. Classification of hazardous chemicals and wastes and how to dispose of them safely.

## **APPENDIX B**

### **Workshop Participants**

**WORKSHOP PARTICIPANTS**  
**SOLOMON ISLANDS**

**Name**

**Organisations**

**Workshop participants**

Rex Siama	Solomon Islands Port Authority
John Christian Sade	Solomon Islands Port Authority
David Mudu	Solomon Islands Port Authority
Jeffrey Fefera	Solomon Islands Port Authority
Stanley D Pirione	DLET – OHS Officer
Felix Rosu	Island Enterprises
Clinton J Roba	Ministry of Mines and Energy
Anna Chao	MHMS – Pharmacy
Tom Lolemae	Solomon Island Visitors Bureau
Chris Ruku	EHD / MHMS
Moses Biliki	ECD / MFEC
Emmanuel Rarumae	EHD / MHMS
Robinson Fugui	EHD / MHMS
Philip Theodi	EHD / MHMS
Joe Horokou	ECD / MFEC
Abednigo Maeohu	Honiara City Council, Environmental Health Division
Francis Belande Sade	Guadalcanal Province, Environmental Health Division, MHMS
George Titulu	Guadalcanal Province, Environmental Health Division, MHMS
Alfred Dofai	Medical Laboratory, MHMS

**Facilitator:**

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