

SPREP

South Pacific Regional
Environment Programme



PROE

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océanien de l'environnement

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Niue POPs Project Country Plan **(Prepared by SPREP, January 2003)**

1. Introduction

The Australian Agency for International Development (AusAID) several years ago identified the mismanagement of hazardous chemicals in the Pacific Island Countries as a serious environmental concern, and hence the Persistent Organic Pollutants in Pacific Island Countries (POPs in PICs) project was developed as an AusAID funded initiative, to be carried out by SPREP. POPs are a group of twelve particularly hazardous chemicals that have been singled out by the recent Stockholm Convention for urgent action to eliminate them from the world. They include polychlorinated biphenyls (PCBs), which are mainly found in transformers, and several pesticides that are very persistent and toxic to the environment.

Phase I of the project involved predominantly an assessment of stockpiles of waste and obsolete chemicals and identification of contaminated sites, for 13 Pacific Island Countries. Other Phase I activities included education and awareness programmes in each country and a review of relevant legislation.

Niue was a participant in Phase I of this work. A comprehensive report of this Phase I work was prepared and circulated, and significant quantities of hazardous wastes were identified in the countries visited, including estimated figures of 130 tonnes of PCB liquids and 60 tonnes of pesticides (although only about 3 tonnes of POPs pesticides). Many other hazardous wastes were also identified as well. In addition, quite a large number of contaminated sites were discovered, including six locations of buried pesticides. On the basis of this report, it was decided to proceed to the Phase II of the project, which involved the preparation of a more detailed inventory, and then collecting, transporting and disposing of the wastes, to a suitable Australian facility.

The first part (Component 1) of the Phase II work is now nearly complete, and has involved visits to each of the countries involved in the project, including Niue, for detailed inventories to be carried out, including testing of all stockpiled transformers.

Other work was also carried out during these visits, including improving the temporary storage arrangements where necessary, and obtaining written agreement from each country for the project to proceed. A copy of Niue visit report is contained in Appendix 1 below.

The most significant conclusion found from this next stage of the work is that the estimated amount of PCB contaminated oils was far too high. Instead of the expected 130 tonnes, only 12.5 tonnes were found. This presented an opportunity to include additional wastes in the project, and it was decided to collect and dispose of all the pesticides, rather than only the POPs pesticides (as well as all the PCB transformer oils that were confirmed positive). A total of 50,265 kg of pesticides will now be dealt with, including 1825 kg of POPs pesticides and 6542 kg of unknowns, some of which may be POPs pesticides.

A full inventory of all pesticides and PCB contaminated oils was prepared in November 2002 as the basis for bid invitations to appoint an Australian Management Contractor (AMC) to carry out the rest of the Phase II work. As a result, the Australian company GHD Pty Ltd was appointed as AMC. GHD is expected to start work shortly and it is important that all countries agree to a confirmed plan for implementing the rest of the Phase II work. The wastes will all go to the BCDT / SRL Plasma plant in Narangba, north of Brisbane.

AusAID have engaged the Australian legal firm of Blake Dawson Waldron ("**BDW**") and instructed them to provide advice in relation to aspects of the POPs Project. As part of this process BDW has asked SPREP to obtain from participating countries some information as presented in Section 4 below.

2. Country Inventory

(It is possible that more wastes may be found in the categories below, prior to the time of pickup. If so, these could be added to the inventory, subject to negotiation with AusAID and the AMC.)

Niue has no **PCB Contaminated Oils** in stockpiled transformers. Twenty six stockpiled transformers, five isolating switches and seven drums of used transformer oil were tested at the Power Station with Dexsil Chlor-N-Oil 50 test kits and four items tested positive with these test kits (three transformers and one drum of used oil). All were later confirmed as negative by Hill Laboratories in New Zealand. The Dexsil kits test for all chlorine and not just chlorine in PCBs, so they are susceptible to "false positive" results. All the stockpiled transformers tested were in the Power Station yard.

Niue has the following **Pesticides** to be collected:

Niue Pesticides Inventory (All located at the Works Depot Store)			

Pesticide	Active Agent	Quantity	Comments
		kg	
Gramoxone	Paraquat	7	Liquid
Sting Herbicide		0.2	Liquid
Yates Heals and Seals	Captafol	0.2	
Shell Pruning Paste	Captafol	0.3	
Asuntol	Coumaphos	0.2	Liquid
Manzeb	Mancozeb	3	80% WP
Cosan		20	
Dithane	Mancozeb	100	5x20kg bags
Fetrilon		210	Plant Nutrient (Contam) 7x30kg bags
Gesatop		2	
Dursban concentrate		0.5	Liquid
Gesaprim 80		4	
Actellic	pirimphos methyl	10	
Actellic Oil	pirimphos methyl	5	
Kelthane	Dicofal	170	Powder (some mixed with gravel/soil)
Manzate	Mancozeb	220	Powder
Methyl bromide	methyl bromide	30	Full cylinder in reasonable condition
Bravo 500F	Chlorothalonil	35	Liquid
Asulox Weedkiller	Asulam	115	Liquid, contains 20 litres Asulox
Water contaminated with Asulox	Asulam	50	
Karmex Ouron Weedkiller	Diuron	35	
Dithane Z-78 Fungicide	Zineb	265	Powder
Captan	Captan	70	Powder
Copper oxychloride	copper oxychloride	30	
Carbaryl 80W	Carbaryl	20	
Bromacil	Bromacil	17.5	
Diazinon	Diazinon	1	
Rovral	Iprodione	1	
Dacthal W75		2	
Dithane	Mancozeb	53	
Karmex	Diuron	14	
Carbaryl 80W	Carbaryl	5	
Karmex + Unknown Powder	Diuron	60	
Mixed Herbicides/Fungicides		50	
Lime sulphur (polysulphide)		16	Contaminated with unknown pesticide
Contaminated Soil		50	Unknown Green Pesticide
Contaminated Clothing		20	2 Sacks
Unknown Powder		0.3	Fine White Powder
Unknown Crystals		0.2	Black Colour

Unknown solid		0.05	1 jar if Black solid lumps
Unknown Powder		1	White Powder gone solid
Unknown solid		0.2	Lumps of white solid
Unknown solid		0.5	White Flakey Solid
Unknown solid		2	White Lumpy Solid
Unknown solid		1	Crystalline Solid
Unknown Brown sludgy material		0.6	
Unknown white crystals		0.1	
Unknown white lumpy powder		0.1	
Unknown solid		0.2	White lumpy crystalline solid
Unknown solid		0.2	Blueish white crystalline solid
Unknown Liquid		0.3	Clear colour
Unknown Liquid		0.5	Clear Liquid with white ppt at bottom
Unknown Liquid		0.4	Clear syrupy liquid
Unknown Liquid		10	Brownish Colour
Unknown Liquid		0.2	Strong Organic Smell
Unknown Oil		2	
Unknown Organic Liquid		0.5	Probably Kerosene
Unknown Liquid		0.5	Strong smelling organic liquid
Unknown Liquid		2	
Unknown Powder		0.5	Beige Colour
Unknown Yates Liquid		0.5	Control of Brown rot and Black rot
Unknown Clear Liquid		0.05	Unknown bottle marked poison
Unknown Liquid		10	Clear & Watery Liquid
Unknown Liquid		20	Marked Poison, clear and syrupy
Unknown Crystals		2	Blue colour
Unknown green powder		6	
Unknown poison		1	brown sticky liquid
Unknown white lumpy solid		2	
Unknown liquid		36	Black syrupy liquid
Unknown brown powder		30	
Unknown powder		30	
Unknown powder		10	
Unknown Grey Powder		14	
N.B. 1. All the above are being held in secure storage at the Dept of Public Works Depot, Alofi.			
2. All the above were repackaged in good packaging in February 2002.			

3. Other Project Work

Some cleanup work was carried out at the Dept of Agriculture Research Farm. There was a large stockpile of agricultural chemicals stored in an old shed and these were all

pulled out, inventoried, and repackaged into new plastic containers and plastic woven taro sacks. All this material was relocated to the Public Works Dept Chemical Store. In addition there are large amounts of fertilizers that were inspected, in a separate shed over the road. Much of this material is unlabeled and in broken bags. It is also all becoming mixed up.

Some more cleanup work was also carried out at the Public Works Department Store. All the agricultural and other chemicals were pulled out of storage and inventoried, and redrummed or rebagged. Some of the stockpiled chemicals were also disposed of, where possible (about 100 kg). For example, acids were mixed with alkalis. Some picric acid was found (about 1 litre) in a deteriorated condition with yellow crystals having formed. This posed a risk of explosion and so it was arranged to have it exploded at the quarry, with the help of the Public Works Dept explosives expert.

One matter that was raised that was unrelated to the project, but still of serious concern on Niue was the wearing of safety clothing when spraying pesticides. A TV presentation was made, stressing the need to wear safety clothing, despite the heat.

4. Domestic Laws on Collection, Packaging, Transportation and Export of Hazardous Waste

AusAID have engaged the Australian legal firm of Blake Dawson Waldron ("**BDW**") and instructed them to provide advice in relation to aspects of the POPs Project. As part of this process BDW has asked SPREP to obtain from Niue (as well as all other participating countries) the following information:

- a) What are the legal responsibilities in Niue for persons involved in collection, packaging, transportation and disposal of hazardous wastes and who are those responsibilities allocated to by the laws in Niue.
- b) Who is the owner of the hazardous wastes in Niue.
- c) Does Niue have domestic legislation which allocates responsibility for POPs waste during collection, packaging and export? If so, how is this responsibility allocated? Please consider that liability and responsibility may arise from:
 - requirements to comply with clean-up notices or Government directions relating to the waste;
 - requirements to meet safety, environmental and other standards in relation to the waste; and
 - requirements to compensate others for damage to property, human health or the environment.

- d) Does Niue have a domestic policy in relation to providing or withholding consent under the prior informed consent provisions of the Waigani Convention (Article 6) for:
- Niue
 - any other Pacific Island Countries planning to 'transit' wastes through Niue.
- e) Has Niue developed a national hazardous waste management strategy in accordance with Article 4(4)(e) of the Waigani Convention? If so, how is the strategy relevant to:
- the collection, packaging, transportation and exportation of POP waste; and
 - responsibility for and ownership of the POP waste at each of the steps in (i).

Should you have any enquiries, please contact the following relevant Blake Dawson Waldron staff, Tony Hill on (02) 9258 6185 or Joanna Perrens on (02) 9258 6401 in Sydney, Australia.

5. Discussion

There have not been any transformers identified in Niue with PCB contaminated oil.

The pesticides stored at the Public Works Department are all being kept securely in a soundly constructed and locked shed. They have all been repacked and are in secure containment, until they can be picked up. There is about 1877 kg of pesticides in total, including 271 kg of unknowns, 418 kg of Dithane, 220 kg of Manzate, 170 kg of Kelthane, 115 kg of Asulox, and 109 kg of Karmex. Approximately 25 drums will therefore be needed, allowing for packaging etc.

The total number of drums needed is therefore about 25 drums. A total of 80 drums will fit inside a 20 ft container, so one 20 ft container will easily be sufficient.

A staging location will be needed for the container, and probably a good location would be at the Public Works Dept, where all the wastes are located that will require placement in drums for shipment.

It is also important that consent procedures are in place to process the application from GHD to Niue to export the waste. Niue has not yet ratified the Waigani Convention (although it is planning to do so). Bilateral arrangements will therefore need to be made between the Governments of Niue and Australia. Niue needs to be ready to handle effectively, the export application, including any appropriate public consultation processes. SPREP plans to hold a workshop soon to assist countries with this consent process.

The impact on the public in Niue should be minimal, provided everything is organized and implemented according to a well-designed management plan. The local transport routes and movement times will be part of the plan, and the only risk of public exposure will be if some incident occurs during this local transport, which leads to a spill. The basis of the management plan should be communicated to the public effectively via radio, and printed media, but not in an alarmist fashion, as the risk to the public is very low.

6. Conclusions

1. Niue has no PCB contaminated transformers.
2. A total of 1877 kg of pesticides are to be picked up from the Public Works Department in Niue.
3. About 25 drums will be required for Niue, which will fit easily into one container.
4. Niue has a large stockpile of old fertilizers.
5. Niue has a stockpile of used chemicals at the Public Works Department that are not pesticides and so will not be removed with this current project.

7. Actions

1. The pesticides for collection have been isolated and secured, so no further action is needed in this respect except to await their collection.
2. A local management plan will need to be prepared for all local operations, including the determination of the location of the container while the collection operations are going on. This plan will need to address such issues as local transportation arrangements, local contact focal point, and the best way of carrying out consultation with Niue public on the local implementation of the project. This plan needs to be developed in conjunction with the AMC.
3. Local systems need to be put in place to ensure effective processing of the application from the AMC to export hazardous waste from Niue to Australia. This application will be lodged under the bilateral arrangements between the Governments of Niue and Australia, unless Niue has ratified the Waigani Convention, in which case the Waigani Convention will be used. A SPREP workshop is planned for April this year to assist countries with these procedures, and a Niue representative should attend this workshop. (Financial assistance will be provided.)
4. Continue to safely stockpile used chemicals that are not to be picked up by the current AusAID project.

5. Arrange for analysis of the various fertilizers stored at the Dept of Agriculture Research Farm. This should be done as soon as a suitable opportunity arises, which will probably be during the preparation of the National Implementation Plan (NIP) for the Stockholm Convention. Substantial funding is available from the GEF for the preparation of the NIP. No contaminated sites were identified during the recent visit, but there may still be some, in conjunction with storing and using pesticides, and this matter could also be investigated during the preparation of the NIP.
6. Provide SPREP with appropriate responses to the BDW questions regarding Domestic Laws on Collection, Packaging, Transportation and Export of Hazardous Waste

Appendix 1

REPORT OF THE VISIT OF JOHN O'GRADY (SPREP) TO NIUE FOR THE POPS PROJECT

Saturday 2 Feb

Flew to Niue. Arrived at 2 pm on Friday afternoon and was met by *Ernest Nemaia, Head of Crop Research, Dept of Agriculture, Forestry and Fisheries.*

Met *Sisilia Talagi, Secretary to Government.* Met staff of Dept of Agriculture, including the *Director Sauni Togatule.* Had meeting and outlined strategy for the following week.

Visited the Niue Power Station, and made an initial inspection of the stockpiled transformers, including numerous old abandoned transformers that had been rescued from the property at the rear of the Power Station.

Monday 4 Feb

Commenced work at the Power Station, assessing what needed to be done, and preparing the work crews.

Organised the signing of the LOA for the project.

Met *Deve Talagi, Director Public Works Department* to organize machinery to move around the transformers, and get cooperation for the week's work.

Met *NZ High Commissioner John Bryan* and discussed the project.

Tuesday 5 Feb

Started testing transformers at the Power Station.

Made presentation to about 25 people, regarding the project. People attending the presentation were from various Government Departments and the local community. There were many questions and quite a lot of interest shown.

Continued testing transformers at the Power Station

Wednesday 6 Feb

Finished testing transformers at the Power Station. We tested 26 transformers, 5 isolating switches and 7 drums filled with used transformer oil. Only 4 out of the 38 items tested were positive, namely three transformers and one drum of used transformer oil. Took

samples of the transformers that tested positive, and placed the suspect transformers together with potentially contaminated equipment in safe clearly marked storage.

Made a presentation for Niue television on the project.

Started work at the Agriculture Dept Research Farm, sorting out and safely containing a large stockpile of pesticides and agricultural chemicals.

Thursday 7 Feb

Finished work at the Ag Dept Research Farm, and moved everything we had collected, to the locked Chemical Waste store at the Public Works Dept. A large quantity of fertilizers were also stored over the road in another shed, which is in deteriorating packaging and is becoming mixed up. It would be appropriate to carry out analyses of the different kinds of fertilisers as there are large amounts of unknowns. It is likely that a large amount of these fertilisers can be reused

Started sorting out the stockpiled Works Dept wastes. These were locked in the Chemical Waste Store and took up two stories of this store. Much of this material is stockpiled agricultural chemicals (pesticides) but there is also quite a large amount of non-pesticide chemicals, such as acids and alkalis, salts etc. It appears as though all the chemicals from the schools, hospital etc have been brought here for storage.

Friday 8 Feb

Met the *Premier of Niue, Hon Sani Lakatani*, and discussed the POPs in PICs project. Also discussed the initiative by Niue to become an “Organic State”, an initiative strongly supported by the Premier.

Continued sorting out and safely containing the stockpiled Public Works Dept wastes. Also carried out disposal operations where feasible, such as reacting acids and alkalis, and oxidizers and reducers together. In this way probably about 100 kg of wastes were successfully disposed of.

Saturday 9 Feb

Continued sorting out and safely containing the stockpiled Public Works Dept wastes. Also carried out further disposal operations where feasible, such as reacting acids and alkalis together.

An old jar containing about 1 litre of picric acid was discovered, in a dangerous condition, with many yellow crystals formed. This represented a serious risk of explosion so it was packed in an ice box surrounded by a soft pillow. It was then taken to the nearby Quarry and blown up, with the cooperation of the Works Dept explosives expert.

Sunday 10 Feb

Continued sorting out and safely containing the stockpiled Works Dept wastes. Also carried out disposal operations where feasible, such as reacting acids and alkalis together.

Monday 11 Feb

Tidied up at the Works Dept, and was interviewed again on Niue TV, this time to stress the need for farmers to wear safety clothing when spraying pesticides.

Flew to Tonga in afternoon, arriving Tuesday 12 Feb.