

**Report for Niue  
Used Lubricants and Oil**

**Prepared by the Secretariat of the Pacific Regional  
Environment Programme (SPREP)**

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## Executive Summary

This report covers the Niue component of a project involving used oil audits in selected Pacific Island countries. The objective of the audits is to establish volumes of lubricating, hydraulic and transmission oils imported annually into each country and the volumes of used oil produced, stored or otherwise disposed. The work has been carried out by the Secretariat of the Pacific Regional Environment Programme (SPREP), with funding provided by the Global Environment Facility. Most of the information required for the audit was obtained with in country visit's undertaken by Dr. David Haynes, Esther Richards and Scott Willson.

### National Instruments

Niue Bulk Fuel Department is the only importer of oil into Niue. The following legislations have been identified that deal with waste oil provisions:

- Niue Water Act (2012);
- Niue Waste Management Plan (Draft); and
- The National Integrated Waste Management Strategy 2010 – 2015.

### Recommendations

Based on this audit of used oil in Niue the following recommendations are offered:

- Purchase up to five galvanised Intermediate Bulk Containers (IBC's) to alleviate the current plastic IBC's degradation issue;
- Re-locate one of the 10,000lt steel shipping containers to Niue Power Station;
- Establish a formal procedure for collecting, managing and disposing of used oil at the centralised collection point;
- Update legislation to ensure that all ULO requirements are addressed;
- Complete a Cost Benefit Analysis providing options for ULO; and
- Assess the requirement of bunding options for the tank tainers.

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## 1. Introduction

### 1.1 Purpose

This report covers Niue's component of a project involving used oil audits in selected Pacific Island countries. The objective of this audit was to establish volumes of lubricating, hydraulic and transmission oils imported annually into Niue and the volumes of used oil produced, stored or otherwise disposed. The work was carried out by the Secretariat of the Pacific Regional Environment Programme (SPREP), with funding provided by the Global Environment Facility. Most of the information required for the audit was obtained with in country visit's undertaken by Dr. David Haynes, Esther Richards and Scott Willson.

## 2.0 Oil Imports

In talking to various government parties SPREP was able to gather limited data on the quantities of imported oil into Niue. Below is the data for years 2011, 2012 and 2013.

Type of Oil	2011 (litres)	2012 (litres)	2013 (litres)	3-Year Average (litres)
Various Oil Types	7,456	10,300	4,833	8,374
Diesel	1,170,000	1,224,000	1,314,000	873,300

**Table 1 - Oil Import Data for Niue**

### 2.1 Cost and Price Information

Niue government advised that their current costs for diesel fuel was approximately NZD \$2.55 Diesel and \$2.50 Unleaded/ litre in October 2014.

The following price information for lubricating oil was obtained from Niue Government.

Item	Wholesale Price
Lubricating oil, 205 litres	NZD \$800-\$11,00 per drum

### 3.0 Used Oil Production

The information collected on the production of used oil in Niue was obtained by visiting as many companies and operations that could potentially generate used oil. Individuals at each location were asked specifically how much used oil their operation generated over a set period of time. The information was provided verbally as very few operators kept detailed written records.

Used oil was originally stored in metal drums which had deteriorated over the years and began leaking oil into the ground. Twenty eight (28) 1000 litre plastic Intermediate Bulk Containers (IBCs) that are now used to store used oil across the island. These are located on the road side around the island, at Niue Power Station and at mechanic shops.

Concern was raised about UV degradation of IBCs: they are stored in the open, probably becoming brittle and are not banded against leakage.

#### 3.1 Used Oil Recovery by Vehicle and Machinery Servicing

Several sites were visited that maintained or serviced vehicles either for their own use or for offsite customers. The businesses and organisations that were visited included auto repair shops, car rental companies, oil supply depots and air and sea port terminals.

#### 3.2 Used Oil Recovery by Power Stations

In Niue all the generators are diesel fired therefore: any used oil that is being generated is from the use of lubricating oil for running and maintenance of the generators.

The Niue power station is located at Alofi - Liku Road, Niue. Oil collected from the maintenance of the 2 diesel generators is collected in a 1,000 L IBCs which are located on the property. Once an unspecified volume has been collected, the oil is transferred to 10,000lt steel Tank Tainers.



Temporary storage at the Niue power generation site

The annual volume of used oil generated by Niue Power Corporation is estimated to be 2,460 L/yr.

## 4.0 Oil Audit Balance

### 4.1 Theoretical Used Oil Production Rates

An estimate can be made of the quantities of used oil produced based on the information provided in the previous section. The information below will not be broken down any further than total imports due to the small amount of imported oil.

#### ***Waste oil from all lubricating oil:***

The average total annual quantity of lubricating oil imported is approximately 6500 litres, based on the 2010 - 2013 figure provided by the importing companies. The private import company data has been used instead of the customs data as it is felt that there are discrepancies in the way the customs information is collected and recorded that could lead to an under estimation of the actual volume.

Typically about 64%<sup>1</sup> of 6,500 litres being imported would be burnt and 36% would contribute to the total used oil produced. The estimate of used oil from lubricating oil is therefore **2,340 litres/year**.

## 5.0 Current Storage and Disposal Practices

### 5.1 Existing Storage Facilities and Current Stockpiles

There is no specialised oil recovery company based in Niue. There is however; a designated area where used oil can be safely left and stored by individuals or companies. Currently in Niue used oil is mostly being temporarily stored on-site prior to being de-canted into a 10,000lt storage container, below. Niue Power used oil stored temporarily on site in 1,000lt IBCs and then decanted into Tank tainers for long term storage. No bunding or spill equipment on site.



10,000 Lt Tank Tainer

<sup>1</sup> These figures have previously been accepted by SPREP based on Samoan used oil audit

### 5.1.2 Current Stockpiles

There is a very small current stockpile of ULO (approx 4000lts) in Niue due to a shipment that was conducted in 2012.

## 5.2 Current Shipping Costs

An audit questionnaire indicates that the last shipment to leave Niue bound for New Zealand was to a total value of \$18,810.00 NZD. It must be noted that the figures provided do not include hire of the Tank Tainers. Some research will need to be conducted to understand the large insurance charge and what it covers. Niue has purchased 2 x 10,000lt Tank Tainers. A breakdown of the costing is provided below:

Sea freight	2449	MAF	380
Insurance	10000	NZ transport	300
Waigani	500	Container lifts	110
Documents	36	Tank Clean	450
PSC Auk	155	Tank Hire	0
NZ Sec	60	Disposal fee	2880
NZ Customs	1470		
Customs fee	20	<b>Total NZD</b>	<b>\$18,810.00</b>

Cost break down in NZD

## 6.0 National Instruments

The following legislations have been identified that deal with waste oil provisions.

**Niue Water Act (2012)** - talks about the introduction of pollutants into the natural water. It does not directly have any section for ULO.

**Niue Waste Management Plan (Draft)** - Section 10.3 indicates that, no facility is available for the disposal of waste oil on Niue. Shell Fiji Limited had previously made an offer (1998) to remove all waste oil from the Island.

The use of oil for line marking on sports fields is a de-facto method of disposing waste oil to the environment. Potential pollution from this practice may be believed to be insignificant however the cumulative effect should be considered and alternative methods of line marking encouraged.

The provision of waste oil collection facilities is fundamental to environmental protection. The facilities combined with community education and government policy or legislation supporting the correct disposal of waste oil will ensure that environmental pollution from this source is minimised.

The Niue Waste Management Plan contains the following recommendations;

1. *That a waste oil collection facility be established at the Niue Power Corporation and at a suitable central site for receipt of waste oil from commercial premises and the community.*

- II. *That a community education and awareness program be established promoting environmental protection and the appropriate disposal of waste oil to the waste oil collection facility.*
- III. *That removal of waste oil offshore for recycling be pursued.*
- IV. *That alternative methods of sports field line marking be encouraged.*
- V. *That a Codes of Practice be developed for the various industries to specify requirements in relation to waste management and environmental protection.*

**Pollution Regulations currently being drafted (2014) - Not sited**

**The National Integrated Waste Management Strategy 2010 – 2015 - states at Action 12,** The Environment Department will work with interested stakeholders to develop and implement a safe and cost-effective collection program for hazardous wastes, such as E-waste, lead-acid batteries, and waste oil. **The Department will as far as possible employ the polluter pays principle in developing this collection program**

## **7.0 Recommendations**

Based on this audit of used oil in Niue the following recommendations are offered:

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- Re-locate one of the 10,000lt steel shipping containers to Niue Power Station;
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