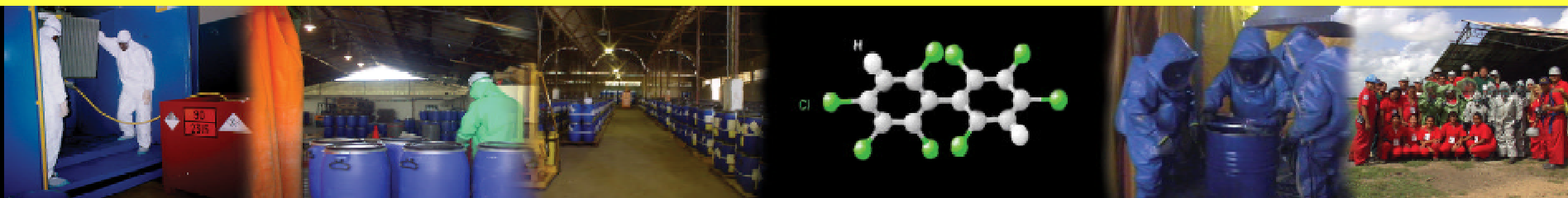


# DESTRUCTION AND DECONTAMINATION TECHNOLOGIES FOR PCBs AND OTHER POPs WASTES UNDER THE BASEL CONVENTION

A Training Manual for Hazardous Waste Project Managers

Volume B

Secretariat of the Basel Convention



# **Destruction and Decontamination Technologies for PCBs and Other POPs Wastes**

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**Volume B**

**Part IV. Implementation Process**

## Step 7

## Implementation

### Introduction

After the technology selection (Part III) is complete then the process of implementation commences. This involves writing specifications and tenders for the various parts of the project. There should be separate tenders for the various parts of the project especially if there are off shore and on shore components and separate destruction and decontamination parts.

A project team will need to be established and when the tenders are sent out on the world market the project can commence. The Implementation plans and tender documentation are shown in detail in PART IV.

Implementation of a Hazardous waste project appears to be complicated but in reality there are a few rules to follow and the process becomes quite manageable.

The important key to implementation and in order to ensure that all the other steps of the project are completed first and in the correct order. Also each of the preceding steps are to be complete with no parts missing. When this is done the process of implementation becomes very straight forward.

Implementation Part IV comprises three main sections

Section One - Operating Document

Section Two - Tender document

Section Three - Contract Document

Because the dimensions and nature of the project are known (from the previous parts of this Training Manual) as well as the selected technology it is appropriate to write the project operational

manual before the tender document. This means that the international companies that will tender against the document will be able to refer to the Operating manual and indeed the manual can be included in the tender document so that the tender when received is compliant with the main operating manual. The operating manual will have several parts depending on what component of the waste is to be treated locally, which component will be sent offshore etc. It may be that there will be two or three tender documents that the operating manual is used in conjunction with and it may be that only some parts of the operating manual are used with any one tender document.

The field manual detailed here in this Part is designed to discharge the hazardous waste work in an environmentally sound manner in accordance with the principles detailed in part I of this Training Manual.

# Field Application Manual (POP's)

## Introduction

The purpose of this manual is to provide legislators, consultants, contractors and other interested bodies with sufficient practical and technical information for the safe and effective handling, packaging, transportation and disposal of POPs as waste in an accepted Environmentally Sound Management manner.

The **Primary Aim** of this manual is to provide the regulatory Authorities, within which the Toxic waste resides, with the highest level of confidence that the project of clearance and disposal will be performed to a high technical level that recognises all environmental safeguards inherent in the resident Country's Waste Laws, in an operationally efficient manner.

The **Primary Goal** of this manual is to ensure that the Clearance and Disposal of POPs Waste is performed without endangering the public or environment of any country or persons. This goal of ensuring there are no accidents or spillage, leaks or escapes to the environment of any kind is to be achieved by rigid enforcement of the plans and programmes described.

The Structure of this manual to achieve the aim and the goal is a Management Plan based on the following parts.

Part 1	Project Plan
Part 2	Safety and Environmental Plan
Part 3	Quality Assurance Plan
Part 4	Work Procedure Instructions

Each part is made up of nine sections as depicted by the POPs Manual Structural Diagram shown on page 5.

The overriding Philosophy behind the Management Plan is "**Plan the work and work the plan**"

## Potential Environmental Impact of the Project.

### Strategy Statement

In order that the management plan is constructed properly for any project involving risk to the environment an Environmental Impact Report must be prepared and the results of that study are imprinted onto the management plan and the QA work procedures and the Project Plan. The material in this section provides an overview of the Environmental Impact of the Clearance and Disposal project and the effect it has on the Management Plan is shown in Part 1. The Quality Assurance effect on the Management Plan is shown in Part 3. The impact of the Environmental Impact Report on the Management Plan is **strictly in accordance with the Aims and Goals** as indicated in the Introduction.

During the course of activities associated with the application of this manual potential for environmental impact relates to the spillage or leakage of POPs waste.

A spill or leak in itself does not represent a high risk to nearby human populations, because direct contact by ingestion, through the skin or by breathing airborne material for a long period is required before a health hazard is likely. As POP's waste does not give off high levels of vapour at normal temperatures exposure to airborne vapours is substantially restricted to the site of the spill. In the case of direct skin contact, the required treatment consists only of thorough washing and proper disposal of contaminated water.

## Manual Format

The procedures and strategies that are adopted in this manual are designed to :

1. Minimise the chances of spills or leaks of POPs waste occurring.
2. Contain and control any leaks or spills that may occur to prevent their escape into the wider environment or their coming into contact with the public.
3. Divide the wastes into individual lots of a size that reduces the volume of a spill or leak to a manageable quantity.
4. Provide a shipping strategy that centres on the movement of relatively small consignments of wastes in any one shipments.
5. Provide Management and audit trail procedures that ensures full accountability and traceability of all waste handled.
6. Ensure all personnel involved in the implementation of the proposal are fully aware of the nature of the materials to be handled and are fully trained in appropriate emergency response procedures.
7. Provide the waste owner with a high level of confidence that the waste clearance and disposal will be conducted at the highest safety level possible.

### Operating manual Design

**The manual has been designed on a matrix basis so that the various elements of the management plan and operational procedures are fully integrated and that the objectives of the project from a safety and environmental point of view are fully discharged. The structure means that only the Work Procedure Instructions need to be on site as these instructions completely integrate all the information in Parts 1 to 3.**

**POPs Handling Manual Structure**

	PART - 1 PROJECT PLAN	PART - 2 SAFETY & ENVIRONMENTAL PLAN	PART - 3 QUALITY ASSURANCE PLAN	PART - 4 WORK PROCEDURE INSTRUCTIONS
Section One	Management Plan	Management S&E Plan	QA Management Plan	WPI 4.1 Management Instructions
Section Two	Site Inspection Plan	Site Inspection S&E Plan	QA Site Inspection Plan	WPI 4.2 Site Inspection Instructions
Section Three	Clearance Plan	Clearance S&E Plan	QA Clearance Plan	WPI 4.3 Clearance Instructions
Section Four	Site Preparation Plan	Site Preparation S&E Plan	QA Site Preparation Plan	WPI 4.4 Site Preparation Instructions
Section Five	Packaging Plan	Packaging S&E Plan	QA Packaging Plan	WPI 4.5 Packaging Instructions
Section Six	Transportation Plan	Transportation S&E Plan	QA Transportation Plan	WPI 4.6 Transportation Instructions
Section Seven	Disposal Plan	Disposal S&E Plan	QA Disposal Plan	WPI 4.7 Disposal Instructions
Section Eight	Insurance Plan	Insurance S&E Plan	QA Insurance Plan	WPI 4.8 Insurance Instructions
Section Nine	Emergency Plan	Emergency S&E Plan	QA Emergency Plan	WPI 4.9 Emergency Instructions

WPI 4.10 Project Documentation

**1.0 Strategy Statement**

The methodology of the Project Plan is to design a set of Plans and Programmes that are specifically directed at achieving the aims and Goals as mentioned in Part 1. These plans are then enumerated within a set of work procedure instructions (WPI's) and are managed, controlled and audited by the management team. The detail included in this section forms the overall Project Plan that is implemented by the management team.

Each of the elements in this manual is presented through each part so that in Part four they are finally integrated into the Work Procedure Instructions. Therefore Parts 1-3 can be viewed as the detail of the hazard and the procedural elements required and Part four presents the working documents that are used on site for the actual project. Within WPI 4.10 are all the working check sheets and QA audit check lists. WPI 4.10 presents all the documentation for the all the recording that is necessary.

**1.1 Management Team**

In order that a coherent Project Plan is written and then implemented a management structure is required. At the outset of a Hazardous Waste project that involves POPs there must be an overall Project Manager. This person must be charged with the entire responsibility for the Goals and Objectives being entirely met. He must be a dedicated and determined manager who while able and willing to delegate the work effort but not to default the responsibilities to the end client and the environment. The first action the Project Manager is to assemble his team set the Project Plan priorities and construct the elements of the Plan. There is a tendency for such teams to immediately make a start on the project without the necessary planning being put in place.

It is essential that the Plan be developed and enumerated and put in place before any site works are undertaken.

The **Project Plan** is constructed from the following sub sections:

Section 1	Management Plan
Section 2	Site Inspection Plan
Section 3	Clearance Plan
Section 4	Site Preparation Plan
Section 5	Packaging Plan
Section 6	Transportation Plan
Section 7	Shipping and Disposal Plan
Section 8	Insurance Plan
Section 9	Emergency Plan

In some cases it will be necessary to modify these plans to suit the end client who may have specific requirements for contractual reasons. However these plans should not be ignored in deference to Contractual requirements, at the very least they should form part of the Contract as to the methodology of the Project.

The Management Plan is represented by the compilation of all the Plans from Part 1 of this manual. As the specific site conditions and the material to be removed become known the management plan reflects these elements and the management plan then becomes specific.

## 2.0 Strategy Statement

Before the Project Plan can be fully developed a Site Inspection must be undertaken. In many instances this may already have been performed for Contractual reasons prior to the operational aspects of the Project being put into place. However it is necessary to perform the exercise again due to the fact that the Project manager needs to be doing the site examination from a different viewpoint to that of the personnel that may have been involved in putting together a Tender or Contractual Document.

The Project Manager needs to have a fresh look at the Sites in order that they can begin to plan the project from the point of view of the Goals and objectives stated in the introduction part of this manual.

## 2.1 Elements of the Site Inspection Plan

- Reasons for Site Inspection
- Site name
- Storage Type
- Type & Quantity
- Goals & Objectives
- Fire Protection
- Residents
- Access

## 2.2 Reasons for Site Inspection

A clearance Plan cannot be developed if there is no knowledge of the POP sites. POPs sites can come in various forms eg.

- \* warehouses with POP material and fluids Properly contained
- \* warehouse with POP material and Fluids improperly contained
- \* POP material Dumped on open ground without environmental protection
- \* POP Still located in original positions (PCBs) within industry but not working
- \* POP (PCB) still located in original positions within industry and still in working operation.

Until the sites that come under the control of the Project Plan are surveyed by the Project manager and his team the subsequent plans cannot be developed.

The Sections that follow comprise the Site Inspection Plan and is presented as a step by step procedure for analysing the various sites and the implications to subsequent plans and environmental protections and the fulfilment of the goals and objectives of the project plan.



The Site Inspection Plan is presented in the Work Procedure Instructions. Its function is to provide a structured schedule that permits the Project Manager to quickly assess the site conditions and presents the necessary data into the other plans. A Site Inspection Sheet should be filled out for each and every site and each and every version of stored material.



Photo : Hard Surface storage (PCBs) without environmental protection

The site inspection plan lays down the foundation of the Project and the sections of the plan are discussed below.

### 2.3 Site Inspection Data Gathering

#### Site name

The name and location of the site are recorded

#### Storage Type

This item is where the site observation of the stored material is noted.

The storage type factor that is assigned to the material is intended to indicate a risk factor associated with that type of storage. If the pops material is safely stored in an approved warehouse sitting in a plastic bag inside a bin then the risk factor assigned to this option would be 1. This factor would be loaded into the clearance plan in terms of site prioritisation. If the material is located on open ground and is not contained then the assignment factor could be as high as 8 and therefore the Clearance plan would receive a higher priority than the previous example. In other words the material stored outside on ground would be cleared before the material stored inside a secure warehouse.



Photo : Pesticides storage in tank with some environmental protection but leaking.

Type and Quantity

This item is where the type of material is recorded. It will be necessary to perform sample testing to determine the level of POPs contamination as this has a significant effect on the techniques adopted to clear the site.

Goals/Objectives

After looking at the storage and material type the Project Manager must revisit the Goals and Objectives and provide an assessment as to the probability of achieving the set goals with the site situation. If a low assessment factor is allocated then the computerised version will generate a secondary report indicating that a Clearance Plan cannot be written. In this situation the Project Plan goes into an emergency plan with subsequent plan of action.

Power/Lighting & Fire Protection

Again the information gained provide options and schedules for filling out with the calculations and decisions slotted into the correct parts of the clearance plans.

Lifts & Hoists

Details of lifts and hoists is applicable are added to the file and the results are sent to the appropriate Parts of the Site Preparation Plans.

Space

This item is critical to the Clearance plan and several details are requested within the WPI's. When all the details are completed the relevant items are transmitted to the Site Preparation Plan and the Clearance Plan.

Residents

This item covers the possibility of nearby residents or housing and several items of information are also to be collected and the implications placed in the Clearance Plan.

Access

This item covers the access to the storage area and notes such things as road condition, accessibility for emergency services and evacuation routes etc.

The resultant output of the application of all the relevant parts of Section 2 within in Parts 1,2,3, are the Work Instructions WPI 4.2. If these instructions are applied as shown in WPI 4.2 then the balance of this manual's Project Plans are then oriented correctly to the nature of the operation. If the provisions of WPI 4.2 are ignored or incomplete then the entire set of plans is rendered ineffective.

The provisions of Section 2 as detailed in WPI 4.2 is to do with planning the work whereas WPI 4.3 to WPI 4.9 are to do with working the plan.

Section Summary**Site Inspection Plan**

- Site Inspection Plan designed to obtain critical site information
- Storage type information requirements
- POPs Type and Quantities information requirements
- Site drawing requirements
- Residential access information requirements

### 3.0 Strategy Statement

The Clearance Plan is an output of the Site Inspection Plan. When all the observations and calculations and risk factors are known the Clearance Plan can be prepared. The Clearance Plan sets down the prioritised clearance schedule based on the risk factors. The Clearance Plan also, by virtue of the prioritised schedule, sets up the relevant parts of the Site Preparation Plan. This activity then allows the allocation and location of the Projects' resources to be applied in a manner that addresses the identified risk factors.

#### 3.1 Elements of the Clearance Plan

- Warehouse or storage clearance priority schedule
- Type and Quantity clearance priority schedule
- Area defence lines
- Resource Positioning
- Impact on Packaging Plan
- Warehouse or site decontamination

#### 3.2 Warehouse or storage facility Clearance Priority.

In order to discharge responsibilities as described under the introduction section of the manual the priority of clearance is to be scheduled according to risk factor obtained during the Site Inspection plan. Therefore the order of Storage clearance shall be:

Type 1 Storage : POPs materials, Solids and free liquids dumped on open ground with no spill protection and major leaking.

Type 2 Storage : POPs materials, Solids and free liquids located in original equipment location still working but with no spill protection and leaking.

Type 3 Storage : POPs materials, Solids and free

liquids dumped on open ground with no spill protection and minor leaking.

Type 4 Storage : POPs materials, Solids and free liquids located in original equipment location but not working but with no spill protection and leaking.

Type 5 Storage : Warehouse with POPs materials, Solids and free liquids that are incorrectly stored or contained and are leaking within warehouse structure and onto ground surface.

Type 6 Storage : POPs materials, Solids and free liquids located in original equipment location but not working but with spill protection and not leaking.

Type 7 Storage : Warehouse with POPs materials, Solids and free liquids that are incorrectly stored or contained and are leaking within warehouse structure but not onto ground surface.

Type 8 Storage : POPs materials, Solids and free liquids dumped on open ground with spill protection and no leaking.

Type 9 Storage : Warehouse with POPs materials, Solids and free liquids that are incorrectly stored or contained and would be threat to the environment if leaking were to occur.

Type 10 Storage : Warehouse with POPs materials, Solids and free liquids that are correctly stored in containment, tagged and registered and provided with full spill containment within warehouse structure and public access is prohibited.



Photo : Warehouse Storage Type 10

**3.3 Clearance Priority Schedule PCB's only**

- Type 1 Type : PCB free liquids with 500,000 to 900,000 ppm Askeral
- Type 2 Type : PCB free liquids with 100,000 to 500,000 ppm Askeral
- Type 3 Type : PCB free liquids with 50,000 to 100,000 ppm Askeral
- Type 4 Type : PCB free liquids with 50 to 50,000 ppm Askeral
- Type 5 Type : PCB free liquids with less than 50 ppm Askeral
- Type 6 Type : PCB Sealed capacitors with 500,000 to

900,000 ppm Askeral

- Type 7 Type : PCB Sealed capacitors with 50-500,000 ppm Askeral
- Type 8 Type : PCB Sealed capacitors with 0 to 50 ppm Askeral
- Type 9 Type : PCB Transformers with 500,000 to 900,000 ppm Askeral
- Type 10 Type : PCB Transformers with 50 to 500,000 ppm Askeral

**3.4 PCB Quantity Priority Schedule**

- Type 1 Quantity : Sealed capacitors Exceeding 500 Tonnes
- Type 2 Quantity : Sealed capacitors 100-500 Tonnes
- Type 3 Quantity : Sealed capacitors 50-100 Tonnes
- Type 4 Quantity : Sealed capacitors 25-50 Tonnes
- Type 5 Quantity : Sealed capacitors 0-25 Tonnes
- Type 6 Quantity : Transformers exceeding 500 tonnes
- Type 7 Quantity : Transformers 100-500 tonnes
- Type 8 Quantity : Transformers 50-100 tonnes
- Type 9 Quantity : Transformers 25-50 tonnes
- Type 10 Quantity : Transformers 0-25 tonnes

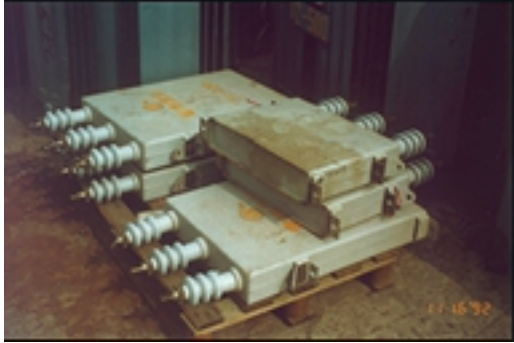


Photo : PCB Capacitors with more than 500,000ppm

### 3.5 Position Allocations

Depending on the information gathered during the site inspection the next area to be decided is the location of the defended area containing the amenities, clean up materials and emergency vehicle etc. Other spatial considerations are packing and containerisation areas etc. Depending on the output of the Site Inspection plan the Clearance plan will have variations of the following spatial considerations.

- Location of Decontamination Facility
- Location of Staff amenities
- Location of emergency Vehicle
- Location of Decanting/Packaging Area
- Location of dispatch area
- Overall Defence Zone.

### 3.6 Location of Decontamination Facility

This facility which is supplied by the Clearance Company under the management of the Project Manager is normally constructed within a shipping container and is purpose built. The design should allow easy loading and unloading so that it can be efficiently moved from site to site. This facility should be located in such a manner that it impedes the progress from the site entry to the site works. This facility should be sited so that any personnel entering the warehouse or storage area must enter the unit and any personnel leaving the work area must exit from the facility. It should not be positioned to one side of the entry to the work site, it must be in line. Facilities required within this structure are fully described within Section 4.



Photo : Decontamination facility mounted on its transport

### 3.7 Location of Staff amenities

The staff amenities which is also normally a purpose built shipping container or similar must be located outside of the work area and beyond the decontamination unit so that in order for the workers to attend the amenities they must pass through the decontamination facility. There must be no positioning of the amenities that would facilitate the avoidance of the decontamination unit.

### 3.8 Location of the Emergency vehicle

This should be located outside of the work area and be accessible without passing through the decontamination facility.

### 3.9 Location of Decanting/Packaging area

This area should be located as close to the work area as possible. If the project involves transformers they should be decanted in situ. In the case of PCB only under extreme conditions should full transformers be moved. The only justification for moving full transformers before decanting may be for reasons of accessibility and even then all possibilities must be exhausted before the decision is made to move the transformer. See section 4 for further details.



Photo : Decanting Power Transformer with temporary bund

### 3.10 Location of Dispatch Area

This area is to be decided after careful consideration of the location. There must be separation from the decanting and bulk fluid handling area and general packaging and dispatch. The two areas must have their own bunded zones as different risks are attached to each activity.

### 3.11 Overall Defence Zone

After the site drawing has been completed during the Site Inspection Plan a defence line must be drawn. This line represents the work area defended area and is to be a physical barrier. For some sites it may be sufficient to have a plastic tape declaring the defended area. For other larger more at risk sites it may be necessary to put up a temporary security fence.

### 3.12 Impact on Packaging Plan

The Clearance plan has an impact on the packaging plan in the sense that details of the product to be cleared will effect the packaging plan. If the site to be cleared consists of small capacitors then the packaging requirements will be quite simple. If on the other hand the site consists of a multitude of transformers, drums of PCB, capacitors and other miscellaneous materials then the packaging requirements are complicated. Therefore one of the outputs of the Clearance Plan is the Packaging plan and this is so indicated within the Work Procedure Plans in Part four of this manual.

### 3.13 Warehouse Decontamination

Once all capacitors, pallets, racking, etc. have been removed from the warehouse the walls must be washed down. It is recommended to use an aqueous non ionic detergent blended with some sodium polyphosphate. A combination brush/washer will be used. Water will be picked up with a wet vacuum cleaner or absorbed with solid absorbent.

The stair ways and the hoist in the building will also be washed down. When the floor is dry, rubber covering should be packed up into smaller pieces and stacked into transport boxes. Areas of potentially high contamination will be identified prior to surface stripping. These will be targeted as "worst case" for confirmation of the efficiency of the cleaning process.

Section Summary

**Clearance Plan**

- warehouse or storage clearance is prioritised by Risk factor
- Resources are located according to defence requirements
- Clearance plan effects Packaging Plan
- Warehouse to be decontaminated at the end of clearance

## 4.0 Strategy Statement

To achieve the objectives as stated in Part 1, an important part of the project plan is the site preparation plan. Section 4 is concerned with the detail of site preparation. It should be noted that the sites will be worked on in a prioritised manner that recognises the comparative risks associated with each site. The sequence of events planned for each site as the "Site Preparation Proposal" is a direct result of the risk factor assessment and is a product of the strategy of **Minimisation of Risk Policy** that is inherent in the Aims and Goals of this manual. In order that the Clearance plan is correctly applied a Site preparation plan must be put in place.

## 4.1 Elements of the Site Preparation plan

- Site Preparation
- Containment barriers and spill protection
- Location of Decontamination and Amenities Units
- Working Areas
- Working Area equipment requirements
- Defence Areas
- Emergency Access
- Fire Protection
- Intruder Alarms
- Telephone and other communications
- Records
- Emergency vehicle

## 4.2 Site Preparation

Each warehouse or storage site will have been prioritised as a result of the Clearance Plan. In addition the Clearance Plan would have provided details of the location of the decontamination and amenities units. The Site Preparation Plan deals with the specific organisational aspects that are required for the various sites.

The site drawing as generated by the Site Inspection Plan now needs to be properly drawn up with the various areas indicated. This drawing must show the following work areas.

- Primary Zone decanting/pumping area
- Primary Zone Unloading/Breakdown area
- Primary Zone Packaging Area
- Primary Zone Transit Bin loading area
- Secondary Zone Transit bin storage area
- Secondary Zone Transit bin consolidation area
- Tertiary Zone Containerisation area

The location of facilities and services must also be shown on this drawing, namely;

- Location of defence zone
- Location of Decontamination unit
- Location of Amenities unit
- Location of emergency vehicle
- Location of public zone
- Location of all emergency materials
- Location of all First Aid equipment
- Location of Fire fighting equipment
- Location of WPI Notice Board

When all the facilities and services are defined and annotated on the site drawing then the Project Manager can proceed to construct the barriers etc. The required barriers and containment systems are discussed below.

During the project it is anticipated that there will be many visitors to view the work. These visitors must be controlled. The work area, which may be potentially contaminated must be clearly defined, eg. with a barrier of flags, plastic tape, etc. and entry restricted to only those who are correctly attired. Those inspecting the work must wear disposable overalls, disposable boot covers, half face respirators fitted with OV/AG/Particulated filters and safety glasses or goggles.



**PART 1**

**Section 4 - Site Preparation Plan (Cont)**

After inspecting the works visitors must pass through the decontamination unit to remove the overalls and boot covers. A system will need to be established to ensure visitor respirators and glasses are kept clean and the filters changed weekly.



Photo : Floor Sealing in Containment area

**4.3 Containment barriers and spill protection (Warehouse type Storage facility)**

All areas of operation during the Clearance of the POPs from the site require environmental protection. That is to say all areas must have some form of physical protection to prevent POPs entering the environment. This normally takes the form of bunding (temporary or permanent) or surface preparation prevent egress. The type and level of the bunding protection relies on the operations expected within the secure area and the level of risk involved. If the operation involves the packing of sealed PCB capacitors into containers and the maximum single capacitor fluid quantity is relatively small then a temporary bund using polythene sheets on top of a sawdust bund is sufficient. On the other hand decanting large power transformers (PCBS) would

justify the construction of a block wall around the intended operational area of sufficient depth to hold all the fluid resident in the largest transformer.



Photo : Temporary bunding for transformer decanting

The following containment barrier structural requirements are designed to be applied against the total Risk factor that the site inspection derives from the addition of the three factors for site, type, quantity.

Type 1 : Containment - Risk factor =

This involves large quantities of high concentration POPs which is poorly stored and leaking with little or no environmental protection.

Three banded areas will be required as follows:

**Primary Zone**

This area will require a block wall bunding and sealed floors. All surface defects and cracks in the nominated primary area shall be cleaned and sealed and the entire floor is to be sealed with a two pot epoxy paint designed to prevent POPs escape. The bund shall be sized to allow the handling of the largest container and it must cope with the greatest amount of fluid loss from any one incident. All access into this bund area shall be over the top of the bund. Primary bund areas must not have removable sections.

**Secondary Zone**

The purpose of this zone is for the storage of filled transit bins. The bund size should be designed to cope with storage of sufficient bins to fill at least one 20 foot shipping container. If it is anticipated that shipping out of the POP will be irregular then more storage space will be required. In the event that the POPs is to be trucked to another warehouse for further consolidation then the Secondary zone will only require an area sufficient to handle a single truck load. The height of the bund wall is a calculation based on the complete loss of a single transit bin filled with free POPs.

**Tertiary Zone**

The purpose of this zone is the containerisation of the transit bins. The area must be bunded but due to the area involved by the use of containers a single block height or hump bund will be sufficient. The surface must also be sealed and all drains provided with pump out interceptor or blocking.

**Type 2 : Containment - Risk factor =**

This involves large quantities of high concentration POPs in containers which are correctly stored and not leaking.

Two bunded areas will be required as follows:

**Secondary Zone**

The purpose of this zone is for the packaging and storage of transit bins. The bund size should be designed to cope with storage of sufficient bins to fill at least one 20 foot shipping container. If it is anticipated that shipping out of the POPs will be irregular then more storage space will be required. In the event that the POPs is to be trucked to another warehouse for further consolidation then the Secondary zone will only require an area sufficient to handle a single truck load. The height of the bund wall is a calculation based on the complete loss of a single transit bin

filled with free POPs.

**Tertiary Zone**

The purpose of this zone is the containerisation of the transit bins. The area must be bunded but due to the area involved by the use of containers a single block height or hump bund will be sufficient. The surface must also be sealed and all drains provided with pump out interceptor or blocking.

**Type 3 : Containment - Risk factor =**

This involves large quantities of high concentration POPs in containers which are incorrectly stored and are leaking.

Three bunded areas will be required as follows:

**Primary Zone**

This area will require a block wall bunding and sealed floors. All surface defects and cracks in the nominated primary area shall be cleaned and sealed and the entire floor is to be sealed with a two pot epoxy paint designed to prevent POPs escape. The bund shall be sized to allow the handling of the largest unit capacity and it must cope with the greatest amount of fluid loss from any one incident. All access into this bund area shall be over the top of the bund. Primary bund areas must not have removable sections.

**Secondary Zone**

The purpose of this zone is for the storage of filled transit bins. The bund size should be designed to cope with storage of sufficient bins to fill at least one 20 foot shipping container. If it is anticipated that shipping out of the POPs will be irregular then more storage space will be required. In the event that the POP is to be trucked to another warehouse for further consolidation then the Secondary zone will only require an area sufficient to handle a single truck load. The height of the bund wall is a calculation based on the complete loss of a single transit bin filled with free POPs. In the case of solid Pesticides superbags may be used within this zone.

<b>PART 1</b>	<b>Section 4 - Site Preparation Plan (Cont)</b>
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Tertiary Zone

The purpose of this zone is the containerisation of the transit bins. The area must be bunded but due to the area involved by the use of containers a single block height or hump bund will be sufficient. The surface must also be sealed and all drains provided with pump out interceptor or blocking.

Type 4 : Containment - Risk factor =

This involves low quantities of low concentration PCB or POPs in containers which are correctly stored and not leaking.

One bunded area will be required as follows:

Tertiary Zone

The purpose of this zone is the packing of transit bins and containerisation of the transit bins. The area must be bunded but due to the area involved by the use of containers a single block height or hump bund will be sufficient. The surface must also be sealed and all drains provided with pump out interceptor or blocking.

Type 5 : Containment - Risk factor =

This involves low quantities of low concentration PCB or POPs in containers which are incorrectly stored and leaking.

One bunded area will be required as follows:

Tertiary Zone

The purpose of this zone is the packing of transit bins and containerisation of the transit bins. The area must be bunded but

due to the area involved by the use of containers a single block height or hump bund will be sufficient. The surface must also be sealed and all drains provided with pump out interceptor or blocking.

4.4 Containment barriers and spill protection (In service equipment) PCB

PCB contaminated equipment in service equipment generally falls into two groups.

- Power Transformers
- Power factor Correction capacitors

Power Transformers

The containment procedures required for in service equipment is very dependent on the individual locations. Power transformers used for local power distribution is usually quite easy to defend with containment barriers. On the other hand power transformers “buried” inside an old Pulp & Paper mill may involve a significant effort to protect the environment during decanting and extraction.

In all cases involving power transformers they must be decanted in situ. There is no justification for moving PCB contaminated Transformers before they have been decanted. This means that careful planning will be required to protect the environment during the decanting procedure. A temporary bund must be erected around the transformer to be decanted, and this must be sized to cope with the entire amount of fluid held by the transformer. All the decanting equipment, piping, pumps and drums must be located within the bunded area. All pumping equipment must be positioned on separate drip trays and all equipment to handled as PCB contaminated equipment.

Any floor cracks and splits must be cleaned and sealed within the bund area and all drains blocked off so that any spill of any size is fully contained. If there are overhead sprinklers (Fire protection) these must be isolated and drained before decanting commences. Large extract fans must also be positioned so as to draft away accumulated fumes from the decanting area. The entire work place is then provided with plastic barrier tape signage placed and the area defended.

<b>PART 1</b>	<b>Section 4 - Site Preparation Plan (Cont)</b>
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Power factor capacitors

These units are much easier to handle and can be moved while still containing the PCB. If only a small number of capacitors are to be removed then a very small protected area can be created around the transit bin immediately beside the site and hand loading can be affected. If a large capacitor bank is involved with more than 20 individual capacitors then a complete area bund will be required with floor protection drains interceptors etc. Bunding in these circumstances can involve the use of sawdust humps with heavy gauge polythene sheets with welded joints. Note that after the extraction the polythene should be regarded as contaminated and sent for disposal.

4.6 Location of the Decontamination and amenities units.

Transportable decontamination and amenities units supplied by the subcontractor will be used in the conduct of the Clearance activity. The location of these units is as described previously in this section. The decontamination unit must be designed with "dirty" and "clean" sections separated by the shower facilities. Clean clothes and towels are located in the "clean end" of the unit, and at the start of each period of work, personnel will go through the following procedure:

- Onto the "clean" side of the decontamination unit.
- Change into work clothes and put on protective clothing and equipment.
- Exit from the "dirty" side of the unit.
- At the end of each period of work, personnel will go through the following procedure :

- Remove and discard protective clothing into receptacle provided.
- Enter the "dirty" side of the decontamination unit.
- Remove clothing and temporarily store (during the work shift) or discard into receptacle provided (at end of shift or if obvious contamination has occurred).
- Shower with soap to ensure complete decontamination.
- Enter the "Clean" side of the decontamination unit.
- Towel down and change into clean clothing.

In the normal course of events, the protective clothing and equipment should ensure that the personnel do not become contaminated. Therefore, the waste water from the shower should not be contaminated and disposal to the sewerage or septic system would be allowable. However, if obvious contamination has occurred, the waste water will be collected, drummed and disposed of along with the other waste.

The amenities unit is considered to be a "clean" area and will therefore be located on the "clean" side of the decontamination unit. The amenities unit consists of lunch room facilities and will be used by personnel during breaks only after going through the decontamination procedures discussed above.

4.7 Working Areas

Within the Primary, Secondary and Tertiary zones various work activities is to take place. As a normal rule of thumb the various work activities that are assigned to each zone should not be undertaken within another zone. It is possible to elevate a work activity up the scale of zone primacy but not downwards. In other words while it is acceptable to perform storage in the Primary zone it is not acceptable to perform Decanting functions in the tertiary zone. In detail the work activities per zone is assigned as follows:

### Primary Zone

Placement of loose capacitors, transformer carcasses, miscellaneous contaminated materials into banded area by forklift onto a receiving platform above the bund height. Lifting onto the work surface within the primary zone bund area by overhead monorail and placed ready for packing into transit bins or UN rated drums. Transit bins and drums lifted into this bund and arranged for the packing of drums, miscellaneous materials etc. Placing into transit bins along with packing materials. Lifting out of primary bund with monorail and placing into the Secondary Bund area. Within this zone other activity such as transformer disassembly and solvent washing can also be performed. Pumping activity associated with PCB drum consolidation into transit bulk containers is performed in this area.

### Secondary Zone

This area is simply for the storage of the transit bins awaiting arrival of a 20 foot shipping container or shipment by truck to a central warehouse for cargo consolidation. No work activity of any kind is allowed in this area other than the loading and unloading and storage of full transit bins.

### Tertiary Zone

This area is reserved for the loading of transit bins onto trucks or into containers. It is possible to use this area for storage of transit bins but it is not recommended practice due to the amount of loading activity in the area. All the timber packing equipment required for the containerisation will be stored in this area ready for the final in container bracing.



Photo : Tertiary Zone - Note barriers at floor level

#### 4.8 Working Area equipment requirements

In general equipment is assigned per working zone and this equipment should not travel between zones. Pumping equipment for the transfer of POPs from partially filled drums to consolidation drums of transit containers should not be moved out of the Primary zone. This equipment should stay there for the duration of the project. Pumps, hoses, spanners and all tools should have a specified place of occupation within the bund and when not in use are to be located in that place. Emergency spill containment materials are to be located outside the primary zone but within easy reach. The emergency shower, fire fighting equipment and first aid equipment is also to be installed immediately adjacent to the primary zone.

#### 4.9 Defence Areas

A defence line should be drawn around both the primary and secondary Zones. Generally the tertiary zone does allow access to authorised personnel such as container truck drivers who are not required to dress in the personnel protection equipment. Such people are not permitted to enter the secondary or primary zones. For major operations the defence line should be a security type fence, for temporary operations then plastic warning tape may be used.

**4.10 Emergency Access**

The defence system shall be so designed that in the event of a full scale emergency the emergency services can have full access to the working platforms without having to go through the defence lines. In other words the defence line must be able to be readily removable by emergency services. During such emergencies that are attended by the fire service a position for a Command vehicle both upwind and down wind must be provided.

If a worker is injured within the primary zone and cannot be readily moved for fear of severe personal injury then members of the emergency services must go through the decontamination facility and place the correct attire before attending the victim. If the injured person is likely to lose his life before emergency personnel can be correctly attired then the emergency personnel must be immediately informed of this possibility, informed as to the danger of the primary zone and then asked to enter the zone without PPE. As soon as the victim is stabilised then the emergency personnel must exit the zone and proceed to full decontamination within the decontamination facility including full body showers and removal and disposal of all clothing. If significant amounts of free POPs are on the working platform during the emergency the personnel entering the zone must be provided with BA sets and after the event blood tests must be organised for those exposed.

**4.11 Fire Protection**

The worst case PCB or POPs scenario involves a fire in the facility. If the fire is collateral then it can be fought using conventional techniques. If the fire however involves the PCB or POPs materials itself then it can only be fought using full body chemical suits with integral breathing apparatus. The fire must be fought with dry agent and must be fought aggressively with short rosters arranged for those at the front. Full body showers and full

chemical decontamination kits will be required. If the local fire service does not have this equipment or provide the training for same then it must be arranged by the Project Manager.

The storage site and workplace areas must be provided with a comprehensive fire fighting capacity so that a substantial fire can be controlled for at least 30 minutes before Fire service help could be expected. For any fires of any size within the storage facility or workplace zones the Fire service must be called immediately for a full scale turn out. Even a small fire in a storage facility can get out of hand within minutes and the threat to humans and the environment is enormous and it is better to have a full scale support team on its way before it gets out of hand.

**4.12 Intruder Alarms**

The warehouse should be fitted with an intruder alarm. This can be a stand alone unit but should be connected to the telephone system and monitored by a security company and should also include 24 hour fire alarms.

**4.13 Telephone and other communications**

Secure telephone and fax is required. If these services are not readily available within the country of activity then a stand alone satellite unit should be purchased.

**4.14 Records**

A complete record system is required for the project and the format of this will depend on the client or POPs owner requirement. The system should be computer based with off site disc holdings and sequence back up copies.

**4.15 Emergency Response Vehicle**

For all POPs projects of a size exceeding 20 tonnes of POPs a comprehensively equipped Emergency Vehicle must be maintained for the duration of the project. This vehicle attends all spills and doubles as the escort vehicle during transshipment of shipping containers or transit bins within the country of the project. The vehicle also attends the final transfer to the ship loading company.

**Section Summary****Site Preparation Plan**

- All POPs extraction require a Site Preparation plan no matter how small
- All POPs extraction requires containment protection
- Warehouse storage sites require decontamination and amenity units
- Primary, Secondary and Tertiary Protection Zones are required
- Working platforms and areas to be defended
- Full emergency access required
- Fire fighting capacity for 30 minutes required
- Emergency vehicle requirements

## PART 1

## Section 5 - Packaging Plan

### 5.0 Strategy Statement

The packaging plan described in this section and the relevant parts of the WPI in part four has been developed using the standards and techniques built up over time and many projects in different countries. In order that the project aims and goals are fully discharged the packaging plan must reflect physically the environmental implications of POPs spillage. The techniques discussed here have been proven over many years to provide the safest methodology of packaging that ensures the POPs arrives in the disposal country or organisation in the same manner in which it was discharged from the country of origin. In all aspects the strategy of packaging is designed to ensure that the transportation of POPs is fully defended against any possibility of leakage, spillage or contamination of any kind. These instructions as enumerated within the WPI's must be carefully adhered to and involves that such packaging be Quality Assured by an independent assessor. The QA requirements are included in Part 3 and also appear in Part 4 WPI's.

### 5.1 Elements of the Packaging Plan

- Waste Packing
- Container Packing
- Weighing
- Labelling
- Container Marine Survey

### 5.2 Waste Packing

All waste from the job site including drummed liquids, drummed containers, solid and liquid pesticides contaminated solid residue from floor treatment or other materials (signs, shelving, fire extinguishers, timber, plastic pallets, plastic tubs, rubber floor coverings, disposable overalls, clothing, boot covers, used respirators

filters, used wipes, etc.) will be packed into either UN rated drums on pallets or UN rated big bags or transit Bins or IBCs or other special containers.

All non UN approved drums containing solid waste material, as well as other solid waste, will be placed into (oversized) drums or UN-approved Big Bags.

Non UN-approved drums containing liquid will be pumped into either ISO-tank containers (18.000l.), UN-approved PE liquid drums or 1.000l. IBC's. The repacked drums will be UN/Y-s approved and will be transported in a dedicated 20ft box container or ISO tank containers, by road and by sea. Transportation will be according to IMDG / ADR regulations.

### 5.2.1 Solid Pesticides and related material

The drums containing solids will be repacked in 200l. PE open head drums, 280 ltr. (oversized) drums or Big Bags. Solids packed in bales, jute sacks or bags and other solid material (like wood) can be loaded manually into UN-approved Big Bags, with inner lining, each up to a maximum weight of 1000 kg. each. However, the average weight per Big Bag will be approximately 750 - 800 kgs. The empty Big Bag will be placed on a sound pallet, prior to be loaded with solid material, to facilitate handling of the loaded Big Bag.

Empty bottles, boxes and aerosols will be first packed in an airtight sealed plastic bag, to prevent any leakage and then placed manually into an open head UN-approved drum (1A2).

### 5.2.2 T-drums

Drums that have been repacked in non UN-tested T-drums will have to be over packed into UN-approved oversized (280ltr.) drums. The content of all T-drums will be visually inspected by opening the lid manually. In the case the T-drum will contain liquids, these liquids will be pumped out of the drum as far as possible (see procedure for Liquid Pesticides). When the liquids have been taken out of the drum in manner the drum will be crushed.



T-drums containing drums with solids will be repacked into oversized drums. As at most POPs sites these drums packed in T-drums are most likely to be in very poor condition and therefore the following procedure will be applied:

The PE T-drum containing the old 200 ltr. drum will be turned upside-down into a special designed drip tray, capable of containing 125% of the original content of the drum. The drum will be released by turning the T-drum off the lid and take it off. Directly after this handling, an steel UN-approved oversized (280 ltr.) will be placed over the old drum and the oversized drum will be then turned back, with the opening upwards. Finally the drum will be closed and directly properly labelled. The drum will be sealed to assure that the drum will not contain any other material than the label indicates.

#### 5.2.3 Liquid Pesticides

Drums that contains liquids will be pumped over into ISO tank containers, UN-approved drums or 1.000 ltr. IBC's (Intermediate Bulk Container). The liquids will be pumped out of the old drums by using an air driven pump equipped with Viton membranes or an explosion proof pump, or use will be made of a vacuum-truck, and pumped directly into an UN-approved packaging (either ISO tank container, 200 ltr. closed head drum (type 1A1) or 1000 ltr. IBC. Liquid products in bottles and cans can be emptied manually, using a big funnel into UN-approved 1A1 drums

#### 5.2.4 Crushing of old drums

Drums that are mostly empty, heavily corroded and containing remaining residues of pesticides will be crushed by means of a drum crusher. First the emptied drums will be filled with absorbent, prior to the crushing. The drum crusher should be equipped with a drip tray to avoid leaking of remaining liquid and small solid

components. The liquid residue of a crushed drum will be pumped out of the drip tray immediately into a closed head drum (Type 1A1). Solid residue will be packed in Big Bags or open head drums, with a PE-liner (sack) of 200 micron.

Drum Crusher requires a specification such that the maximum pressure is 32 tonnes with a cyclustime of 40 sec. The maximum drum size that can be crushed is 200ltr., the minimum drum size is 50 ltr. The crusher will be placed on a plastic foil of sufficient quality to avoid contamination of the soil during crushing. The crushed drums will be packed in UN-approved Big Bags with inner lining of 200 micron. Some 10 crushed drums will be packed per Big Bag, placed on a pallet and banded with steel bandage.

Each open and closed head drum and Big Bag with repacked material and the drums with the disposed safety clothing, filters, PE-lining, etc. will be labelled in accordance to the relevant IMDG transport legislation as well as with a waste stream number , together with description of the content, the name of the storage place of origin and with the reference from the Inventory List.

- Liquids will be drummed in 205 litre steel drums and handled as discussed above.
- Contaminated soil and residue from floor treatments will be placed in 205 litre steel drums.
- All other soft material(disposable overalls, clothing, boot covers, used respirator filters, used wipes etc.) will be double wrapped in polythene and packed into 205 litre steel drums or big bags handled as discussed above.
- Other hard materials (signs, shelving, fire extinguishers, plastic pallets, remaining tubs, rubber floor coverings etc.) will either be placed directly into big bags or packed into 205 litre steel drums and handled as discussed below.
- All drums of liquids are to be placed within a steel transit bin as discussed below.

### Transit Bins

Standard bins will be approximately 1100 mm wide, 1310 mm long, and 1000mm high.

The steel transit bins will have all joints welded and will be leak tested by filling with water. The lids will be bolted and/or strapped in position.

The standard bin will be able to accept the majority of the Waste as follows:

- The bins will be lined with a layer of polythene sheet for its full height to further prevent against leakage and to assist in removal of the absorbent material during unpacking.
- A 15mm deep layer of absorbent material will be placed inside each box prior to packing to allow absorption of any fluid which may leak during transport.
- POPs containers or drums of liquids will be placed in the boxes inside plastic tubs where available in an upright position.



Photo : Welded Joints of Transit bins

- Smaller containers will be placed in the bins in two layers separated with a sheet of plywood placed on the terminals of the first layer.
- Small Containers identified as being in a leaking condition, will be wrapped in a further two layers of polythene sheets before being loaded into the bins.
- PCB Transformers will be drained of liquid and the liquid handled as discussed below. The transformer carcasses will be placed in bins inside plastic tubs where available and lateral movement will be prevented by chocking with timber chocks.
- Liquids will be drummed in 205 litre steel drums and handled as discussed below.



Photo : Transit Bins in storage before use, note forklift stackability

- Contaminated soil and residue from floor treatments will be placed in 205 litre steel drums and these will again be placed three to a bin with lateral movement prevented by using timber chocks.
- All other soft material (disposable overalls, clothing, boot covers, used respirator filters, used wipes etc) will be double wrapped in polythene and packed into 205 litre steel drums handled as discussed below.
- Other hard materials (signs, shelving, fire extinguishers, plastic pallets, remaining tubs, rubber floor coverings etc) will either be placed directly into the boxes or packed into 205 litre steel drums and handled as discussed below.
- All steel drums of waste will be placed three to a transit bin. The boxes will be fitted with a floor of 4mm plywood. Lateral movements of the drums

will be prevented by chocking with timber chocks.

Items which will not be accommodated in the standard transport boxes are as follows:

- Capacitors and transformers of a size too large for the standard boxes will require special transport boxes to be built. These special boxes will be purpose designed at the time required, but the design will be similar to that of the standard size box.
- Liquids which are already drummed in 205 litre steel drums will require re-drumming. See above for procedure. This will be done by lifting the existing drums and placing each one into an oversized (256 litre) drum. The oversized drums will be placed, in a manner similar to that discussed above, into special transport bins which will be purpose designed and built at the time required. The design will be similar to that of the standard transport box.

### 5.3 Container Packing

The standard transport units (transit Bins) discussed in the previous section are designed to fit into a shipping container. Care is to be taken to ensure that the containers are not overloaded or unbalanced. A standard shipping container (20ft) will take 16 Transit bins stacked.

The drums with the liquid waste, solid waste and disposed safety clothing, filters, PE-lining, etc. will be placed per 4 in a single transit bin. The Big Bags will also be placed on pallets. (one Big Bag per pallet). Then the pallets will be placed in the 20ft. box container, using a 1,5 tonnes forklift and a ramp, and properly stuffed.

Big Bags on pallets will be loaded in one layer into the container. (12 Big Bags per container is max. 12 tonnes net weight. Drums with dry material only will be loaded on pallets in two layers, separated with plywood, with a maximum of 72 drums per container (up to 25 tonnes net weight.).

**PART 1**

**Section 5 - Packaging Plan (Cont)**

The material inside the container will be lashed, secured and properly labelled in accordance with the IMDG-code. The containers will also be labelled on each of the 4 sides of the container and transported at soonest to the harbour, according to a transport scheme to be communicated and subject to approval for the export given by the competent authorities.

- The contents of each shipping container will be recorded.
- Liquids and solids are to be placed in separate containers.



Photo : Transport Unit Loading into shipping containers

- Timber dunnage will be used to restrict movement of the transport units during transport and where transport boxes are stacked two high, a sheet of plywood will be placed between the bins.

The requirements of the Port of Entry are that drummed POPs (PCBs) liquid and transformer carcasses cannot be added in the same shipping containers. To comply with these requirements, drummed liquids will be transported in individual

shipping containers in which no other wastes are shipped. In addition, the other requirements of the Port of Entry for the packing of PCB wastes will be complied with if wastes are packed as indicated within this Plan and the shipping containers are packed as discussed above.



Photo : Container bracing, interior view



Photo : Transport unit bracing

## PART 1

## Section 5 - Packaging Plan (Cont)

### 5.4 Weighing

Most contracts require that the POPs waste without the packaging waste be weighed for payment purposes. It is essential that this process be carefully constructed so that the client is completely satisfied that his requirements will be met. The weighing process must be efficient and accurate with all parties happy with the system.



Photo : Drum Loading in Transit bin

### 5.6 Transport Units

Each transport unit will have a self adhesive label attached which will include the following :

- The IMDG (International Maritime Dangerous Goods) placard of a size whereby dimension "D" is 100 mm.
- The IMDG marine pollutant mark of a size whereby dimension "D" is 100 mm.
- The words "POLYCHLORINATED BIPHENYLS" or

### "OBSOLETE PESTCIDES"

- The name of the Holder.
- The full name and address of the Clearance Organisation.
- The full name and address of the Consignee
- A short description of the waste.



Photo : Labelling of Transport units

- The transport unit number.
- The weight of the transport unit.
- The date the unit was packed.
- The shipping container load number.

### Shipping Containers

Each shipping container will be labelled as follows :

- The IMDG placard of a size whereby dimension "D" is 250 mm.
- The IMDG marine pollutant mark of a size whereby dimension "D" is 250 mm.

**PART 1**

**Section 5 - Packaging Plan (Cont)**



Photo: Container Labelling

- When travelling on freeways in the country of origin, the label will be attached to both sides of the container. In addition, a sign with a white background and red lettering showing the following will be placed in a conspicuous position;
  - category
  - name of the substance
  - quantity
  - properties
  - important points in relation to handling
  - emergency contact;
    - . name
    - . telephone number
    - . other details.

5.7 Transport Vehicles

The shipping container transport vehicles will be fitted with a sign showing the following;

- Clearance Company's full name and address
- Clearance Company's telephone number

This sign will be removed from the vehicle when the container is handed into the control of the Port Authorities.

5.8 Container Marine Survey

The services of a marine surveyor must be employed to survey the packing and final disposition of the cargo within the container. The Marine surveyor must be registered and produce a certified report of the packing accompanied with photos showing the various stages of container loading and bracing details etc.

Section Summary

**Packaging Plan**

- All POPs waste material must be packed in a standard manner using transit bins and drums for full transit protection.
- All POPs Transit bins must be properly packed into 20 foot Shipping containers that have been certified for shipment of POPs and all transit bins to be properly braced within the container to prevent any movement.
- All POPs Materials are to be correctly weighed
- All containers are to be Marine surveyed before transport to Port
- All containers to be correctly labelled

**6.0 Strategy Statement**

The detailing and control strategy for Transportation of the packed POPs to storage or ports requires the same level of attention as the other elements of the Clearance project. The Transportation must be carefully planned so that there are no possibilities of surprises during road transportation and that such details such as road works, hours of travel, routes, driver training etc. are fully taken care of in the Transport plan and applied by these WPI's. As for the other sections of this plan all the necessary details are contained within the WPI's including the required Safety and Environmental considerations along with QA implications.

During the transport from the warehouse to the docks the escort vehicle will accompany the containers on every journey. Permission may need to be sought to move more than one container at a time. The crew in the escort vehicle are to be fully trained in all emergency procedures and will be in radio/phone contact with the Clearance Company and the shipping container truck/s. As part of the Management plan there are agreed routes that are traversed and regular 'check ins' to the Clearance Company. Local police, emergency authorities, etc. will be notified of the routes, procedure and precautions as required by local regulations. Consideration will be given to off-peak time for movement in order to minimise the risk of accidents. Because of the attentiveness required of driver and crew a log will be kept of the hours worked and suitable rest periods inserted in the schedule.

**6.1 Elements of the Transport Plan**

- Marine Survey
- EPD Approvals
- Movement Timing
- Driver Briefing
- Escort Vehicle
- Communications

**6.2 Marine Survey**

Before any containers can leave site they must have been prechecked before loading, marine surveyed before final transit bin bracing and final inspection after bracing. When the Marine Survey has been released then the container can be made available for road transport to the port.

**6.3 EPD approvals**

Application for approval to transport the POPs waste on all roads must be made to the local Environmental Protection Department (EPD) for the locality of the waste. This application must include a statement of Quantity, Type, Route, Date and time of day. Approval to transport on ordinary roads will be in the form of a letter. Without this letter of approval the Waste cannot be moved. This is a general requirement for most countries, however where the requirement does not exist for EPD notification then route approval and timing should be made to the District Fire service.

**6.4 Route Planning**

The quality of the delivery of the shipping container is very dependent on the route chosen and the time of day. The various route options should be surveyed and the following items should be examined and thus the routes should be shortlisted to provide the most efficient and safest route selection.

- \* Examine the route options and detail restrictions (One way roads, Traffic densities etc)
- \* Research likely road works and traffic disruption possibilities
- \* Research population densities in selected routes
- \* Examine the access routes for the emergency services likely to take in the event of call out and ensure that the route will always allow for them to get to the site of the emergency as soon as possible without delay.
- \* Examine the various waterways on the routes and ensure that minimum number waterways are traversed.
- \* Avoid routes that have long traffic delays

**6.5 Movement Timing**

The transport of the POPs waste must be done in daylight hours and during such business hours that will ensure that the Delivery will be complete well before the end of the day shift of the local emergency services. The timing however should be planned to avoid rush hour traffic.

The route shall be travelled by the escort vehicle as a dummy run at the timing planned to ensure that the conditions at that hour of the day will not unduly impede the transport.

**6.6 Driver Briefing**

The transport driver is to be selected on the basis of driving experience and record and must have basis Hazardous Substances transport experience and knowledge of emergency procedures. All transports to the port will be accompanied by the Escort vehicle with trained personnel attending who will deal with any emergencies but the driver must be able to handle the situation should the emergency vehicle be separated. The driver is to be fully briefed on the route, timing and emergency procedures and documentation. A kit bag of Driver Personal Protection equipment is to be placed in the cab of the transport vehicle before it leaves the site and the driver is to be fully briefed on its contents and how to use the equipment.

A complete set of transportation documentation as well as the emergency procedures and notifications is also to be placed in the cab. Under most circumstances these emergency procedures would not be used as emergencies will be handled by the escort vehicle and its personnel. But in the event that the Escort vehicle is disabled or involved in an accident the transport driver needs to be able to contain any situation until the back up crews arrive.

**6.7 Escort Vehicle**

The project emergency escort vehicle is to accompany all transport of POPs waste to storage or site. Under no circumstances is a delivery of POPs waste to be performed without the escort vehicle. The escort vehicle is also not allowed to perform the escort duties if its inventory is incomplete or that personnel are missing. details of the escort vehicle design and equipment it carries are shown in Section nine.



**6.8 Communication**

Complete communications systems are to be maintained between the transport vehicle, emergency response escort vehicle and the project control room. This communication is to be a combination radio/cell phone system. A regular check system is to be employed to keep the control room abreast with the delivery progress and any incidents along the route. The control room is to monitor and log the progress and warn of any new information occurring that could impede the progress.

Section Summary**Transport Plan**

- Marine Survey completed
- Route, Timing and official approvals received
- Driver Briefing completed
- Escort vehicle and communications checked

<b>PART 1</b>	<b>Section 7 - Shipping &amp; Disposal Plan</b>
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7.0 Strategy

Shipping POPs waste to an offshore disposal facility must be conducted by a recognised shipping company and full cognizance made of all international laws (in particular the Basel convention) regulating the trans shipment of toxic waste.

7.1 Elements of the Shipping and Disposal Plan

- Labelling
- Lloyds Survey
- Port Acceptance
- Trans Frontier Documentation
- Basel Convention

7.2 Labelling

Before the shipping company can accept the container for loading at the port the following labels must be affixed and in order.

- Four labels Marked Class 9 "Marine Pollutant"
- Correct technical name
- IMDG Classification
- United Nations Number

In the case of pesticides waste the proper shipping name shall be mentioned on all shipping instructions, according to the IMDG-regulations for the several UN-numbers indicated in the Inventory Report.

The remaining 'unknown' pesticides after further analyses of the inventory report, during the progress will be labelled as follows :

**Liquid waste material:**

PESTICIDES, LIQUID, TOXIC, N.O.S.  
ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S.

**Solid waste material:**

PESTICIDES, SOLID, TOXIC.  
ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
SOLID, N.O.S.

7.3 Lloyds Survey

No container can be accepted for shipping unless the marine Survey is available and included as part of the shipping documentation.

7.4 Port of Entry Acceptance

Port acceptance at country of destination may have the following conditions.

- (a) Transformers (PCBs) shall be drained and placed in leak proof trays (steel, all joints welded and leak tested). Trays are to be sized to contain all PCB's assuming the transformer was full. All container contents are to be effectively secured within freight containers.
- (b) 205 ltr approved steel drums (of new condition) UN Rated containing waste POPs are to be placed in leak proof transit bins of such size to contain all the POPs plus one third. A maximum of four by drums must be stood on plywood (4 mm) within the bin. All container contents are to be effectively secured within freight containers. If a second level of stow is required then it must be separated by 15 mm thick plywood.
- (c) POPs contaminated wipes, clothing etc are to be retained in double wrapped polythene bags and placed in steel bins with closed lids.

It is permissible for items defined in (a) and (c), and (b) and

<b>PART 1</b>	<b>Section 7 - Shipping &amp; Disposal Plan</b>
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- (c), to be shipped in the same container. However, under no circumstances is it acceptable for containers holding items defined in (a) and (b) together.
- (d) The Port safety Officer must be notified prior to shipment of the following before approval for entry is given:
  - Source of the waste
  - Packing certificate showing compliance with (a)-(c) above and details of the items packed
  - Trans frontier shipment documents
  - Estimated time of arrival and arrival berth
- (e) Upon discharge, the ships agent must notify the Port Safety Officer in writing the date, time and destination of the transport of the waste. The ships agent will need to have prearranged customs clearance and transportation.
- (g) The Port safety Officer also requires notification of the importers ability to supply a competent emergency response team to deal with any spillages, and needs a 24 hour contact number for the emergency response team and for the importers local agent.

7.5 Trans frontier Documentation

Correct and valid for the importation period trans frontier documentation (TFS) is required to be in place before the shipment leaves the country of origin. This documentation is to be obtained by the importers shipping agent and includes all certificates and documents as detailed below:

- All transport documents for road and sea transport (IMDG/ADR)
- Dangerous goods declaration
- Container packing certificates

- Bills of lading
- IMO labels, UN labels, Marine Pollutant labels, Waste ID labels for each drum.
- Complete script for each load and all shipment related activities.

7.6 Basel Convention

All shipment of POPS waste shall be conducted under the auspices of the Basel Convention. In particular Article 6, 7,8 and 10.

Section Summary

**Shipping & Disposal Plan**

- Labelling completed and correct
- Lloyds Survey completed and sighted
- Port Acceptance standards complied with and attested
- Trans Frontier Documentation valid and in place
- Basel Convention fully complied with

**8.0 Strategy**

The project should be fully covered for all risks. The policy should obviously protect all those involved including the client but it must also be seen to be a provision that protects the environment from harm. A large accident involving a large spill will be very costly to clean up and a comprehensive insurance policy should be in place to cater for this type of event. When obtaining offers of insurance the Project manager should obtain the policy that while protecting himself and his client full protection is offered for environmental protection that will ensure that the funds are available to clean up a substantial problem.

**8.1 Elements of the Insurance Plan**

- Types of insurance
- Who and what should be covered
- Actions by the clearance company to hold harmless

**8.2 Types of insurance**

Depending on the extent of the POPs clearance operations, type and quantity of the POP the insurance packages required are as follows:

Complete "Pollution" Insurance cover for all accidents and incidents involving the removal, packaging and transportation of POP's. In addition complete protection of all contractors, agents, clients, engineers etc is required as well as cover for workers, employers liability insurance where required, machinery insurance, public liability insurance, motor vehicle insurance and professional liability.

**8.3 Who and What should be covered**

Main policy should cover for " Protect the main contractor, his subcontractors, the client, his engineers and agents against their third party bodily injury property damage including any pollution clean up expense arising from the contract for the packaging, removal and transportation to the contractor for disposal of Persistent Organic Pollutants. (POPs). The amount of cover of the policy should be substantial and be at least US\$10 Million.

**8.4 Actions by clearance company to hold harmless.**

Insurance policies of this nature require that the policy holder take all reasonable steps to ensure that:

There is compliance with regulations concerning transportation, storing and packaging of POP's.

The cargo is to be shipped in containers and loaded under professional supervision, and

The master of the carrying vessel is to be fully aware of the substance to be shipped.

**Section Summary****Insurance Plan**

- Types of insurance appropriate to protect the environment
- Actions required by the clearance company to hold harmless

**PART 1**

**Section 9 - Emergency Plan**

9.0 Strategy Statement

The Emergency Plan is concerned with the detail of the equipment, services and methodology during and emergency situation. The system and equipment shown in this WPI is designed to allow a full emergency response to be available during all POPs operations and transport. The emergency plan is to be available at all times in the form of an Emergency Response Unit (ERU). This facility is always to be available during all stages of packaging as well as transportation. During transportation of the POPs waste to the export port the ERU is to act as the escort vehicle. The Emergency plan is discharged by means of Flip charts and these are to be activated during the emergency.

9.1 Elements of the Emergency Response Plan

- ERU Vehicle
- ERU Equipment Inventory
- Escort Duties
- Emergency Response during escort
- Emergency Response for other
- Emergency Response for fire
- Emergency Response for protest

9.2 ERU Vehicle

Due to the substantial amount of equipment to be carried by the ERU and the recovered waste it may also be called upon to transport this vehicle must be substantial. It is recommended that the ERU be housed in modular containers that is easily loaded onto the back of a flat bed truck with a capacity of about 10 Tonnes and the ERU truck should be fitted with a crane with half tonne lifting capacity. The ERU vehicle must be fitted with a communication system with at least two methods of

communication. (EG radio and mobile telephone). The ERU must be capable of maintaining communications with the "Control Room" and the POPs Container truck.

9.3 ERU Equipment Inventory

The equipment to be carried by the ERU is extensive and a continuous inventory list must be maintained for the unit. Whenever the ERU is required for escort duties the inventory list must be checked for any shortages and the delivery of POPs containers to the Export Port must not proceed if the ERU is lacking equipment within its inventory. The schedule of equipment required for the ERU is as shown later in this section of the WPI. Within the check sheets WPI 4.90 is a check indication by the site supervisor that the ERU is properly equipped and its inventory is complete.

9.4 Escort Duties

The ERU is to operate as the primary escort vehicle and is to attend all transport deliveries of POPs waste to the Export Port. During such escort duties the vehicle is to travel behind the waste transport vehicle and its personnel to assume complete control during any kind of on the road incident. The escort vehicle personnel are to regulate the rest and safety stops and authorise the changing of any planned routes. During such escort duties if there are any possibilities of spillage or damage to the POPs cargo then the ERU and its personnel are to begin the notifications procedures and commence the Emergency Response procedures.

9.5 Emergency Response During Escort

In the case of accident, spill or leak during transport, emergency response measures as follows are to be taken immediately. All such incidents require that "An emergency be declared". The words "Emergency" must be used in communications regarding the incident.

\* Immediately following the incident the POPs waste container driver is to notify the ERU escort vehicle.

<b>PART 1</b>	<b>Section 9 - Emergency Plan</b>
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- \* The ERU crew will respond immediately to the initial notification from the Container truck driver and follow the Flip sheets system as outlined in WPI 4.9.
  - \* If the waste discharge is a major spill (ie the spill exceeds 4 litres) then the formal notifications procedure must commence as per the Notification procedure in WPI 4.9
- 9.6 Emergency Response for other
 

In the case of accident, spill or leak at the storage facility or packaging area, emergency response measures as follows are to be taken immediately. All such incidents require that "An emergency be declared". The words "Emergency" must be used in communications regarding the incident.

  - \* Immediately following the incident the site supervisor is to inform the ERU and then to immediately follow the flip sheet system shown in WPI 4.9.
  - \* The ERU crew will respond immediately to the initial notification from the Supervisor and be available at the site if required.
  - \* If the waste discharge is a major spill (ie the spill exceeds 4 litres) then the formal notifications procedure must commence as per the Notification procedure in WPI 4.9.
- 9.7 Emergency Response to fire
 

Fire in the storage facility is extremely serious and all fires must be treated with utmost caution and an emergency declared

immediately and the Flip sheet system applied immediately.

9.8 Residential Protest

If local residents set up a protect at the storage facility this must be treated as an emergency and operations shut down immediately and all actions taken to protect the stored POPs.

Section Summary

**Emergency Plan**

- ERU Vehicle to be fully stocked and available
- Escort Duties to be fully understood by personnel as well as the flip sheets system
- Emergency Response to follow preset procedure as laid down in flip sheets system

## PART TWO

### Safety and Environmental Plan



Photo: Old DDT store showing free form storage and leaking into environment



Photo : Pesticides store

# Safety and Environmental Plan

## Introduction

Part 2 presents the Management Plan implications of the Environmental Impact Report and the support structure for the methodology of the Project Plan as shown in Part 1.

As indicated within the introduction of this manual the sections of the Safety and Environmental Plan are to be read in parallel with the Sections of Part 1 of the Project Plan.

The meaning of Safety, as used within this Part of the manual, means personnel safety as well as Environmental safeguards. Throughout the application of the Work Procedure Instructions (WPI's) a common theme of safety is prescribed. At no stage is this aspect to be left out or overlooked. The design of this documentation ensures that all aspects of personnel and environmental safety are an integral part of the operating procedures. This is why the sections of Part 2 of the Project plan are written to coincide directly with the operational plans as enumerated in Part 1. The application of the safety and Environmental Protection plans are regulated, monitored and audited by the QA plan in Part 3.

The plans as finally set down in Part 4 of this manual as Work Procedure Instructions cannot be applied if all aspects of Part 2 regarding safety and Environmental are not complied with. If the Part 2 plans are in part or in full are not adhered to then the QA reporting structures will indicate that the Project is being conducted out of compliance.

The Safety and Environmental Plans as discussed in this Part of the POPs manual have been constructed using a mass of information derived from many years of POPs extraction operations in many countries over a period of 20 years. The rules of safety that are derived here generally cover those regulations that exist in many countries and in fact enhance the laws and regulations in that they are more specific and accurately deal with the practical reality of POPs recovery operations. The sections of part 2 are as follows:

Section 1	Management S & E Plan
Section 2	Site Inspection S & E Plan
Section 3	Clearance S & E Plan
Section 4	Site Preparation S & E Plan
Section 5	Packaging S & E Plan
Section 6	Transportation S & E Plan
Section 7	Shipping & Disposal S & E Plan
Section 8	Insurance S & E Plan
Section 9	S &E Check List



<b>PART 2</b>	<b>Section 1 - Management Safety and Environmental Plan</b>
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1.0 Strategy statement

The management team that administers the Project via the WPI's must understand that the principles of operation that are inherent in the WPI's emanate from work safety principles and environmental safeguards. Within the work procedures there will be detailed instructions relating to safety and emergency instructions.

To discharge the Project managers responsibilities for the application of the Safety and Environmental Plan a training programme must be undertaken that reflects the operational standards annotated in the WPI's.

1.1 Elements of the Management Safety and Environmental plan

- Management Focus
- Training Programmes
- WPI's audit function

1.2 Management Focus

The management plan and team focus throughout the project has to be conducted from a strong Safety and environmental protection platform. The QA part of the management plan has a series of questions relating to the provision of the management plan and it's capacity to cope with the safety and Environmental protection required.

The emphasis and focus of the entire project plan and all of it's sections must come from the management plan and be based squarely on safety and Environmental Protection. There must be no compromises during operational procedures that will circumvent the requirements of safety and Environmental Protection.

1.2 Hazardous evaluation

1.2.1 Safety procedures

During the activities on site, whenever this is required by the opinion of the project manager, suitable protective clothes will be used and other protective gear in order to prevent direct exposure with hazardous substances.

If a confined space must be entered, an oxygen test will be taken before entering and subject to the opinion of the Project Manager, either a full face mask or a full breathing air protection mask will be worn.

Special care will be applied in case of potential hazards following from poor or dangerous conditions of drums (e.g. over pressure in drums) and other type of packaging.

1.2.2 The main hazard facing the workers at the site is exposure to various types of toxic elements. The concentrations of the toxic elements in the waste materials will be determined. Based on the information from the available MSDS, the S&E manager advises all potential hazards related to the formulated products. From the unidentified products the S&E manager will not know which (agro-) chemicals or POPs they contain but protection of personnel against exposure will be based on working procedures for the most toxic elements.

Pesticides are categorised into groups of pesticides, such as organic chlorine pesticides, organic phosphorus pesticides and pyrethroide pesticides. Pyrethroide pesticides have a low toxicity level, chlorinated pesticides are toxic, but not acute, phosphorus pesticides are acute toxic.

1.2.3 A second hazard is related to the occurrence of 'normal ' work accidents leading to injury. Where several manual jobs are carried out simultaneously a close supervision will be maintained in order to ensure adherence to safe working practices.

A third hazard is the outbreak of fire. Even when remote,

## PART 2

### Section 1 - Management Safety and Environmental Plan

this danger is fully taken into consideration as part of the Emergency Plan (Section 9).

- 1.2.4 A fourth hazard is the influence of climatic conditions (heat in combination with high humidity) on the team member, wearing personnel protective equipment. Fatigue resulting from heavy physical labour under poor climatic conditions is a factor to be aware of.

Due to the potential hazards, different types of protective gear are required. Where necessary, extra PPE has to be used.

- 1.) Face masks with P3 filter.
- 2.) Disposable coveralls and anti-static, fire-proof overalls.
- 3.) PVC gloves.
- 4.) Boots.
- 5.) Helmets.

The spent personal protective equipment will be disposed of.

- 1.2.5 Employee sign off

The project members will be medical checked before the start of the project and after returning from the project. The health check-up will at least consist of a liver function test, a longest, and an overall health check (blood pressure etc.). Further a blood sample will be taken in which the amount of possible toxic elements will be measured.

- 1.3 Training Programmes

The work instructions are in addition to and part of the training sessions. The training activity is part of the Site Preparation requirement and are to be implemented well before the site works actually start. If the team to be employed on the site is already well trained and

experienced in the handling of POPs then only the safety issues relating to the particular site need be reviewed. It should be noted, however, that the WPI's contain an audit feature that tests by the use of personnel questionnaire the current status of knowledge and reviews the individual training.

If an individual fails the questionnaire tests as applied by the QA Audit then he/She must be cycled through additional training. Training as applied by this manual is an ongoing audited feature of the operational aspects of this manual.

The training must be performed by a recognised and experienced POPs recovery operator. If such an organisation or person does not exist within the project team then outside resources have to be selected, and if necessary someone from outside the country may need to be contracted to perform the training required.

- 1.4 WPI's Audit Function

The management plan focus is to be discharged via the Quality Assurance of the Site Preparation Plan (Section 4 of Part 3). The QA audit questions that are raised in this section appear in point format within the WPI and provide the means by which the management team ensure that all the plans adhere to the principles that are inherent in the management focus. If there is non compliance in this section then the focussing principles have been compromised and the Primary aims and goals of this project manual have been circumvented.

#### Section Summary

##### **Management Safety and Environmental Plan**

- Management Plan is Safety and Environmental Focussed
- To achieve this focus Training programmes are implemented
- To monitor the effectiveness a QA audit procedure is used in the WPI's

## PART 2

## Section 2 - Site Inspection Safety and Environmental Plan

### 2.0 Strategy statement

The quality of the Project Plan is very dependent of how well the Site Inspection Plan is executed. In order to determine the correct information is obtained, the Site Inspection Plan is crafted from the safety and Environmental protection aspect.

The very first site attendance must be done using full personal safety precautions. The number of people attending the site inspection must be kept to a minimum and be issued with a minimum personnel Protection equipment (PPE) standard.

The Site inspection Plan documentation shown in the WPI's must be adhered to in the order shown so that the correct documentation is gathered.

### 2.1 Elements of the Site Inspection Safety and Environmental plan

- Personal safety
- Environmental Safety
- Storage Type
- Type and Quantity
- Fire Protection

### 2.2 Personal safety

When planning to visit site for the first time it is necessary to obtain site information from the client regarding the likely conditions on site. The information provided, however, should only be regarded as a guide

- . In many circumstances client representatives may wish to "play down" the nature of site conditions and the situation may easily be misrepresented.

For your own personal safety you must plan to visit the site with a level of personal protection that will allow you and other members of your team to attend the site under most contaminant conditions. For the protection of others and the protection of the environment

you must severely limit the numbers of extra people during the visit. All other members of the site inspection team must be supplied with the minimum protection equipment level.

If other people are required at the site but not on the contaminated area then these people are to be restrained back at a nominated barrier point.

### 2.3 Environmental safety

When attending site for the initial project assessment the Project Manager must be in a position to act immediately if there are conditions that violate environmental waste laws or best practice regulations. Often site have been left to degenerate and the storage situation becomes outside of the Waste Laws of the origin country. The client may not be aware of the nature of the problem and have accepted it for years. This does not absolve the Project Manager from the responsibilities that are inherent in this manual.

If there is a problem on site then it must be dealt with. If the situation constitutes an emergency then the construction of the site inspection must be suspended and the WPI4.9 emergency instructions are to be acted on immediately. It is insufficient to merely advise the client you must act.

In taking responsibility for this project you take responsibility for the protection of the environment. If you arrive on site and find that are large quantities of POPs leaking to ground surface you must call out a full scale emergency and go through the notification procedure as laid down in WPI 4.9. The Project Manager is then required to control and manage the Situation until relieved by the authorities or the emergency is over.

<b>PART 2</b>	<b>Section 2 - Site Inspection Safety and Environmental Plan (Cont)</b>
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2.4 Storage Type

The primary aim of the Site Inspection Plan is to ascertain the risk factors associated with the type of storage encountered at the site. The various types of storage discovered at the site are assigned a Risk Factor for safety and another for environmental protection. The overall risk factor is then loaded into the Clearance Plan to provide the clearance priorities. Risk factors are numbered 1-10 where RF=1 indicates storage in full compliance with containment requirements, safety and full environmental protection is afforded. RF=10 is where there is no environmental protection and the POPs is in free form and leaking into the ground. The risk factors that are associated to the various methods of storage are discussed as follows:

Type 1 Storage : POPs materials, Solids and free liquids dumped on open ground with no spill protection and major leaking.

Risk factor Safety : 10  
 Risk factor Environment : 10  
 Overall Risk factor : 20

Type 2 Storage : POPs materials, Solids and free liquids located in original equipment location still working but with no spill protection and leaking.

Risk factor Safety : 8  
 Risk factor Environment : 9  
 Overall Risk factor : 17

Type 3 Storage : POPs materials, Solids and free liquids dumped on open ground with no spill protection and minor leaking.

Risk factor Safety : 8  
 Risk factor Environment : 8  
 Overall Risk factor : 16

Type 4 Storage : POPs materials, Solids and free liquids located in original equipment location not working but with no spill protection and leaking.

Risk factor Safety : 6  
 Risk factor Environment : 8  
 Overall Risk factor : 14

Type 5 Storage : Warehouse with PCB materials, Solids and free liquids that are incorrectly stored or contained and are leaking within warehouse structure and onto ground surface.

Risk factor Safety : 2  
 Risk factor Environment : 9  
 Overall Risk factor : 11

Type 6 Storage : PCB materials, Solids and free liquids located in original equipment location but not working but with spill protection and not leaking.

Risk factor Safety : 2  
 Risk factor Environment : 4  
 Overall Risk factor : 6

<b>PART 2</b>	<b>Section 2 - Site Inspection Safety and Environmental Plan (Cont)</b>
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Type 7 Storage : Warehouse with PCB materials, Solids and free liquids that are incorrectly stored or contained and are leaking within warehouse structure but not onto ground surface.

Risk factor Safety : 2  
 Risk factor Environment : 6  
 Overall Risk factor : 8

Type 8 Storage : PCB materials, Solids and free liquids dumped on open ground with spill protection and no leaking.

Risk factor Safety : 4  
 Risk factor Environment : 4  
 Overall Risk factor : 8

Type 9 Storage : Warehouse with PCB materials, Solids and free liquids that are incorrectly stored or contained and would be threat to the environment if leaking were to occur.

Risk factor Safety : 2  
 Risk factor Environment : 4  
 Overall Risk factor : 6

Type 10 Storage : Warehouse with PCB materials, Solids and free liquids that are correctly stored in containment, tagged and registered and provided with full spill containment within warehouse structure and public access is

prohibited.

Risk factor Safety : 1  
 Risk factor Environment : 1  
 Overall Risk factor : 2

If the storage method is not described within these ten options then the project manager is to assume the nearest equivalent risk factors.

2.5 Type and Quantity

As for the Storage type, the POP type and its quantities involve a safety and Environmental risk factor. The various POP types and quantities are graded with a risk factor which are also entered into the Clearance plan as a prioritising factor.

Material Type

Type 1 Type : POPs free liquids with 500,000 to 900,000 ppm Concentrations

Risk factor Safety : 10  
 Risk factor Environment : 10  
 Overall Risk factor : 20

Type 2 Type : POP free liquids with 100,000 to 500,000 ppm Concentrations

Risk factor Safety : 8  
 Risk factor Environment : 8  
 Overall Risk factor : 16

Type 3 Type : POP free liquids with 50,000 to 100,000 ppm Concentrations

Risk factor Safety : 6  
 Risk factor Environment : 6  
 Overall Risk factor : 12

<b>PART 2</b>	<b>Section 2 - Site Inspection Safety and Environmental Plan (Cont)</b>
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Type 4 Type : POP free liquids with 50 to 50,000 ppm Concentrations

Risk factor Safety	:	4
Risk factor Environment	:	4
Overall Risk factor	:	8

Type 5 Type : POP free liquids with less than 50 ppm Concentration

Risk factor Safety	:	2
Risk factor Environment	:	2
Overall Risk factor	:	4

Quantity Type

Type 1 Quantity : Solids POPs more than 100 tonnes

Risk factor Safety	:	8
Risk factor Environment	:	8
Overall Risk factor	:	16

Type 2 Quantity : Solids POps 50-100 Tonnes

Risk factor Safety	:	6
Risk factor Environment	:	6
Overall Risk factor	:	12

Type 3 Quantity : Solids POPs 25-50 Tonnes

Risk factor Safety	:	4
Risk factor Environment	:	4
Overall Risk factor	:	8

Type 4 Quantity : Solids POPs 10-25 Tonnes

Risk factor Safety	:	2
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Risk factor Environment	:	2
Overall Risk factor	:	4

Type 5 Quantity : Solids POPs 5-10 Tonnes

Risk factor Safety	:	2
Risk factor Environment	:	2
Overall Risk factor	:	4



Photo : Type 1 Storage



Photo : Type 6 Storage

**PART 2**

**Section 2 - Site Inspection Safety and Environmental Plan (Cont)**



Photo : Type 2 Storage



Photo : Type 7 storage



Photo : Type 10 Storage

If the storage method is not described within these ten options then the project manager is to assume the nearest equivalent risk factors.

**2.6 Fire Protection**

In keeping with international practice, water cannot be used for fire fighting when stored PCB or POPs is involved. Therefore the fire fighting capacity at the site becomes very important.

Dry agent extinguishers must be available and the quantity of these must be sufficient to control a large fire until the arrival of the fire service.

The type and quantity of fire fighting equipment is dependent on the storage type and the type and quantity of the POPs stored. The higher the risk factor the greater the amount of fire fighting equipment required.

Fire in a POPs storage facility is a very serious dangerous event and a full scale emergency call out to all emergency

<b>PART 2</b>	<b>Section 2 - Site Inspection Safety and Environmental Plan (Cont)</b>
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services is warranted during a facility fire. The danger from a fire involving POPs involved the formation of dioxin and furans during combustion of POPs products. These fire byproducts of POPs are extremely hazardous to human health.



Photo : Fire Fighting Equipment

A collateral fire adjacent to the stored POPs can be fought with hand held extinguishers with minimum personnel protection equipment. However if the fire has involved POPs materials then it can only be fought with full BA sets and then only by professional fire fighters. If the fire is out of control then the immediate area is to be evacuated and all nearby residents evacuated. The only member of the site team to remain after evacuation is the site supervisor who must be wearing a full BA set so that he can assist the Fire service with the location of stored POPs and any other

information they may require. All other members of the team should be evacuated.

At the outbreak of fire the Site supervisor is to activate WPI 4.9 emergency procedures and follow the notification procedures to the letter.

As part of the Site Preparation plan a site evacuation plan is to be designed and Command sites for the emergency services are to be determined.

#### Section Summary

##### **Site Inspection Safety and Environmental Plan**

- Number of site inspection personnel kept to minimum.
- Full personnel protective equipment required.
- Site inspection plan to be suspended if emergency situation is present.
- Project Manager must assume full Environmental Protection responsibility.
- Storage types must be fully analysed so that Risk factors can be assigned.



<b>PART 2</b>	<b>Section 3 - Clearance Safety and Environmental Plan (Cont)</b>
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3.0 Strategy Statement

In order to discharge the Safety requirements and provide full environmental protection the clearance plan must be prioritised. This means that the type of storage or warehouse must be cleared by degree of danger. The higher the danger the higher up the priority list the clearance and the earlier the clearance.

3.1 Elements of the Clearance Safety and Environmental plan

- Storage and Type prioritisation
- Waste Packaging prioritisation

3.2 Storage and Type Prioritisation

In order to clear the site in a safe and orderly manner plus maintain the management focus of safety and environmental protection the clearance plan must be prioritised according to the risk factor.

The clearance priority is determined by the site inspection plan and the clearance safety and environment plan simply follows this schedule.

3.3 Waste Packing Prioritisation

In general, wastes will be packed in the following order (where the items exist)

POPs

- leaking containers
- non leaking non UN containers
- drummed liquids non UN containers
- bulked liquids non UN containers
- non leaking brand pesticide containers
- contaminated soil
- other movable items
- residue from floor treatment

In addition, soft materials (overalls, clothes, wipes, etc.) will be packaged as used.

Items which are unable to fit into standard transport units will be packed last so that sufficient time is available to design and manufacture the special transport units.

PCBs

- drummed liquids
- leaking capacitors (when encountered)
- non-leaking capacitors
- transformers (and drained oil)
- contaminated soil
- other movable items
- rubber floor covering
- residue from floor treatment

In addition, soft materials (overalls, clothes, wipes, etc.) will be packaged as used.

Items which are unable to fit into standard transport bins will be packed last so that sufficient time is available to design and manufacture the special transport bins.

Section Summary

**Clearance Safety and Environmental Plan**

- Clearance is performed to management focus on safety
- Clearance is prioritised according to risk factor
- Waste Packaging is prioritised

## PART 2

## Section 4 - Site Preparation Safety and Environmental plan

### 4.0 Strategy Statement

When setting up the site, particular attention must be made to safety and Environment issues. During the design of the various structures required consideration must take into account the reality of each site and the ramifications of the work procedures and POPs types involved. Site preparation in addition to the work platform structures must include training of staff, personal occupational hygiene and safe working practices. Therefore as apart of the site preparation plan a safety and environmental plan is required to be produced which can be QA audited by the safety and Environmental QA plan.

### 4.1 Elements of the Site Preparation Safety and Environmental plan

- Personnel safety Procedures
- Medical Testing Procedures
- Personnel Protection Equipment (PPE)
- Emergency Response vehicle
- Training
- International Labour safety laws
- Environmental protection and work practices

### 4.2 Personnel Safety Procedures

#### Occupational Hygiene Principles

POPs enter the body by inhalation of vapours or dust containing POPs, by absorption through the skin or by ingestion through eating or smoking with contaminated hands and transferring to the mouth.

The ways to reduce exposure are :

1. Have a controlled area where POPs may be handled. Sign and restrict access.
2. Wear full body protective work clothing.



Photo : Full Body Protective Work Clothing

3. Wash thoroughly immediately after exposure to POPs and on exiting from the work area.
4. Training all workers in the hazards, correct use of PPE and correct work practices.
5. Make every effort to keep the POPs contained and enclosed.
6. Use good work practices at all times.

Good work practices would be described as follows :

- \* Workers whose clothing has been contaminated by POPs should change into clean clothing promptly.
- \* Do not take contaminated work clothes home. Family members could be exposed.
- \* If there is the possibility of skin exposure, emergency shower facilities should be provided.
- \* On skin contact with Polychlorinated Biphenyls, immediately wash (using soap) or shower to remove the chemical. At the end of the

## PART 2

## Section 4 - Site Preparation Safety and Environmental plan

workshift, wash any areas of the body that may have contacted POPs, whether or not known skin contact has occurred.

- \* Do not eat, smoke, or drink where POPs are handled, processed, or stored, since the chemicals can be swallowed. Wash hands carefully before eating or smoking.
- \* If Solid, when vacuuming, a high efficiency particulate absolute (HEPA) filter should be used, not a standard domestic or commercial vacuum.



Photo : Personal Protection Equipment

### Medical Testing Procedure

Medical testing for any personnel involved with the on site work prior to employment is considered desirable to ensure that work will not aggravate any preexisting condition. The requirements of international law are :

- \* Physical examination
- \* Chest X-Ray

- \* Blood Pressure
- \* Urine Sugar and protein
- \* White blood cell count
- \* Haemoglobin count
- \* Blood ALT or SGPT and creatinine

Further tests appropriate to planned tasks associated with PCB's are :

- \* Liver function tests
- \* Serum triglycerides level
- \* skin examination
- \* Lung function test

The cardiac/pulmonary tests are considered necessary because of the potential heat stress from working in TYVEK suits in the subtropical & tropical environment. The physical examination should also determine if the workers are able to cope with the physical demands of lifting or moving the capacitors. Complete records of all personnel involved with the Project are to be kept and if the project lasts beyond twelve months then the testing regime is to be repeated.

### Personal Protective Equipment

In addition to good work practices it is necessary for workers to use personal protective equipment. As mentioned above the major routes of exposure are by inhalation and skin absorption.

### Gloves

The gloves should be impermeable to POP's and unaffected by contact. The most suitable types are :

- \* Butyl rubber
- \* Neoprene rubber
- \* Nitrile rubber

The final selection criteria should be on fit, dexterity, snag resistance and price. From our experience the Edmont Solvex gloves (nitrile) have reasonably good dexterity and good snag resistance. The gloves should be worn outside the overall sleeves. If there is a tendency for the gloves and sleeves to separate and

there is risk of skin contact, then they can be held together with masking tape.

Gloves should be removed carefully to avoid contamination of the unprotected hand. If there is excessive sweating in the glove than a cotton underglove can be used. Gloves (both inner and outer ) should be disposed of each day or if they are damaged.

#### Overalls

TYVEK overalls are the primary means of skin protection. The overalls to be used when packing capacitors into boxes and other activities associated with handling capacitors is Type 55427. These overalls have reasonable snag and tear resistance, however if they become torn when lifting capacitors then a cheap protective apron should be worn. It is not expected that this will be a problem during the planned work.

The overalls should be disposed of if they become damaged or contaminated and at the end of the each day.

#### Undergarments

It is recommended that undergarments are worn by workers, primarily for comfort. These should be inexpensive light weight loose fitting shorts, shirts and socks.

#### Respirators

The task being undertaken and the likely hazard determine the type of respiratory equipment to be used. Workers engaged in packing capacitors into shipping boxes will use SURVIVAIR PAPR units fitted with belt

mounted organic vapour, acid gas, HEPA filter cartridges. These units are fitted with flow and battery sensors and training needs to cover these aspects. Filters should be changed every two days. Face pieces require cleaning at the end of each day's work. This should be done using sterile wipes and/or soap and water washing. The SURVIVAIR units have the disadvantage of a close fitting face piece which can prove uncomfortable, particularly, if spectacles are worn. It is recommended to obtain RACAL PAPR's fitted with similar OV, AG/HEPA filters to offer as an alternative. It must be stressed that the RACAL and SURVIVAIR filters are not interchangeable and stocks and training must take this into account.

Training in the use of the respirators must include cleaning, fit testing, changing filters, checking battery condition, charging instructions, and general care and inspection.

The self contained breathing equipment (air line and bottled air) are used on the emergency vehicle. These units have finite time limits and additional supplies of bottled air must be known.

The emergency vehicle equipment is supplemented by full face SURVIVAIR filter respirators.

#### Foot Covering

Since there is a combined risk of physical injury and chemical contamination it is necessary to use steel cap safety boots and chemical protection. The latter being TYVEK 417. If the type 417 prove to have insufficient durability due to scuffing then type 77017 should be used. Boot covers should be disposed of when damaged or alternatively daily.

#### Eye Protection

The workers engaged in removing the capacitors will have eye protection integrated into their respiratory protection.

Visitors to the work must have eye protection in the form of wrap around safety glasses (UVEX) or goggles.

**PART 2**

**Section 4 - Site Preparation Safety and Environmental plan**

Consumables

The anticipated consumables for the project are estimated for both workers and visitors :

Workers :

Tyvek Overalls	2-3 /person/day	(allow for tears)
Tyvek boot covers	2/person/day	
Respiratory cartridges	change/2 days	(2 or 3 cartridges/blower depending on brand)
Racal respirator	1/day	
facelets		
Gloves	1 1/2 pair/person/day	
Underclothes	complete change/person/day	
Respiratory decontamination wipes	1 pack/person/week	

Visitors :

Tyvek overalls	1 pair/visitor
Tyvek boot covers	1 pair/visitor
Visitor respirators	1 set filters/week
Eye protection	reusable - maintain approx. 20 in stock

4.3 Emergency Response Vehicle

An emergency response vehicle has been prepared which will escort each road movement. This vehicle is fitted out with a crane and a covered shipping container for storing the comprehensive range of equipment which may be needed in the event of an incident.

4.4 Decontamination Unit

A decontamination unit has been built in a converted shipping container. This is well fitted out with a gas hot water system, two showers, storage lockers for protective equipment, clean clothes, dirty clothes and is designed for isolation between the "Clean " and "dirty" sections.

4.5 Training

The correct training of all personnel involved in the POPs removal process in one of the key factors.

The training "packages"required will include :

Toxic Hazard : - This should cover the human toxic effects balanced by indications of dose required. should emphasis the relative importance of inhalation and skin absorption.

Personal Hygiene : - This should cover the necessity to wash before eating, drinking or smoking, the care needed when removing dirty clothing so as not introduce additional skin contamination, not removing any equipment or clothing from the site, showering (using soap) before going home.

Respiratory Protection : - How to check the equipment is assembled and operating correctly, checking for low battery or low flow, correct fitting using fit test equipment, eg. saccharin or banana oil, changing filters, charging battery packs.

Personal Protective Equipment : - How to use the overalls boot covers gloves, etc., how to remove contaminated equipment, importance of PPE.

Heat Stress : - What is heat stress and how to recognise the symptoms, the importance of maintaining fluid intake, importance of "working smart" to use mechanical aids, not rushing, interspersing heavy work with light work, doing heavy work in the cooler part of the day, the role of acclimatisation.

Emergency Procedures : - Site emergency procedures if there is a liquid spillage, clean up procedures, personal decontamination if splashed (use of eye wash), isolation of areas and containment, transport emergency, eg. vehicle accident, vehicle fire, deployment

## PART 2

### Section 4 - Site Preparation Safety and Environmental plan

of containment booms, cleanup procedure, selection of suitable protective equipment, emergency communication procedures, notification of authorities, crowd control.

Safe Work Practices : - Not to take personal risks when working, working within personal capabilities, not reaching too far, ensuring footing is secure before lifting/reaching, etc.

#### 4.6 International Labour Safety and Health Law in Relation to POPs

The floor and walls of POPs working areas must be constructed from impervious materials washable with water.

A rest room must be provided outside of the POPs working area. The working area must have facilities for bathing, flushing of the eyes and mouth and changing and washing clothes.

The working area must be marked with the words "Non Operating Staff Prohibited" both in English and Country of POP origin.

All storage containers used in storage and transport of POP's must be clearly marked with the contents and items to be noted in handling.

Contaminated rags and scrap paper must be placed in an impervious container and sealed.

When not in use, storage containers must be kept in a specified area.

Whenever operations are being conducted with POPs a supervisor must be appointed. The supervisor must:

- \* Ensure that workers are not contaminated by the POPs
- \* Direct the operations of the workers.
- \* Examine the exhaust facilities once per month. Records of such inspections must be kept for at least three years.
- \* Ensure that workers wear necessary protective clothing.

The employer must prohibit the workers from smoking or eating in the POPs work area, and mark the area accordingly.

All items which have come into contact with POPs must be marked accordingly.

When POP's are being transferred between containers the outlets of the two containers must be such as to create a seal when transferring.

The condition of the storage vessels must be examined every day prior to commencing operations with POP's and other surrounding areas examined for leakage. If any leaks are found, the storage vessel must be repaired and leaked POPs cleared.

The employer must examine the density of all materials in the air of the work place every six months, record the results of such examination and keep the results for at least three years.

#### 4.7 Environmental Protection and Work Practice

All construction activity must be designed with one purpose in mind and that is environmental protection. At all times during the design phase of the site preparation the question is to be asked about the veracity of the design to protect the environment. The question should be in the format "what happens if the worst case scenario occurs, will the environment be protected?"

The design of the working platforms should be crafted so that it facilitates the use of good working practices that will ensure that accidents are kept to a minimum and this will adhere to the minimisation of risk policy.

**PART 2**

**Section 4 - Site Preparation Safety and Environmental plan (Cont)**

Section Summary

**Site Preparation Safety and Environmental Plan**

- Rigid personnel safety procedures required
- Medical testing of all workers mandatory
- Personal Protective Equipment required to be worn at all times by all personnel during work activities
- All workers to undergo regular and updated training



<b>PART 2</b>	<b>Section 5 - Packaging Safety &amp; Environmental Plan</b>
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5.0 Strategy Statement

The PCB wastes to be handled during the implementation of this proposal are potentially hazardous, creating the need to plan for and put in place, workable emergency response procedures at all phases of the project. These procedures need to cover responses to emergencies involving threats to the environment and the public, as well as those that may threaten the health and safety of personnel involved in the operations.

The handling and storage procedures to be followed in this proposal (as outlined in previous sections of this document) have been developed over time and through considerable experience with actual operations. The procedures therefore are designed specifically to minimise the risks of emergencies arising.

The packaging of wastes to international standards prior to transport is designed to provide at least double containment of the materials. This will substantially limit the volume of wastes likely to be split or to leak in any one incident.

However, it is inappropriate to rely solely on set procedures to achieve a high level of safety. There remains the need to be able to respond in a positive and rapid manner to unforeseen circumstances.

5.1 Elements of the Site Inspection Safety and Environmental plan

- Emergency Response
- Emergency Response Procedures

The following description outlines relevant emergency procedures.

5.2 Emergency response

As described, all personnel involved with the proposal will be properly trained and fully informed of the nature of the materials being handled and the appropriate emergency response procedures.

All trucks will be accompanied by an escort vehicle, which will function as an emergency response vehicle to provide an effective response in the unlikely event of a leak or spillage during the transport phase.

In the case of an accident, spill or leak during transport, emergency response measures will be taken immediately.

- 1 The spill area will be isolated and barricaded. Personnel not involved with the cleanup will be excluded from the secured area.
- 2 Under the EPA Regulations a crew will respond immediately upon notification that a waste spill has occurred.
- 3 All cleanup personnel will wear personal protective clothing and equipment.
- 4 Every reasonable effort will be made to stop or retard the flow of wastes and contain that which has been discharged.
- 5 If the waste spill does reach flowing water, storm sewers or any inaccessible area, timely notification procedures will be initiated immediately the escort crew is aware of a spill. Measures will also be initiated to prevent any additional spill material from reaching water or wetlands.
- 6 Contaminated absorptive material and soils will be placed in steel containers.
- 7 All surfaces exposed to the spilled fluid will be decontaminated.
- 8 At spills in densely populated areas, the spill area will be continuously supervised until the spilled waste and all cleanup materials have been removed from the site, secured in drums, or otherwise neutralised.

## PART 2

### Section 5 - Packaging Safety & Environmental Plan

The periods of highest risk of a spill or leak developing is during loading and unloading of wastes. To minimise potential environmental impact, loading area will have adequate spill response materials and spill prevention measures. When loading or unloading waste equipment at the ship or in the field, spill prevention measures will be taken and spill control and cleanup materials will be readily available.

#### 5.3 Emergency Response Procedures

##### Staff Training and Supervision

- i Medical assessment and certification of fitness for each employee before work commencement. This would establish baseline health status of each staff member for comparison with subsequent examinations.
- ii Continued medical assessment on a monthly basis and on exit of employment within 72 hours of cessation of work.
- iii At request of employer, employee or authorised medical personnel where excessive absorption of wastes is suspected.
- iv Periodic random checks at the discretion of authorised medical personnel.

In addition to medical surveillance, the repackaging and site facilities will be provided with a first aid post, including an ablutions block specifically designed to provide for decontamination and disposal of clothing, towels and other materials as required.

The following items of protective equipment will be available and used as appropriate :

- i. One piece chemical resistant suit with internal zip, external buttons and a hood;
- ii goggles (unless the respirator provides eye protection);
- iii chemical resistant (ie Viton) gauntlet type gloves (note : natural rubber, neoprene or polyethylene are not suitable);
- iv chemical resistant disposable protective overshoes, and
- v. respiratory protection.

A properly fitted full facepiece canister respirator will provide adequate respiratory protection for dealing with waste spillage or releases which are at ambient temperatures. For dealing with such fluids at elevated liquid temperatures, or in general, for work in any confined space, self-contained or compressed air line breathing apparatus will be worn.

The occupational health and safety precautions will include the following :

- i. All personnel should avoid all body contact with wastes.
- ii. Personnel must always wear company approved protective clothing (as described previously).
- iii. Any normal clothing which accidentally comes into contact with wastes must be removed for disposal with other contaminated materials.
- iv. Any cuts or small abrasions must be protected with waterproof dressings beneath the protective clothing.
- vii. On completion of work involving the wastes each person must wash hands and face before eating, drinking or using any toilet facilities.

<b>PART 2</b>	<b>Section 5 - Packaging Safety &amp; Environmental Plan</b>
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clothing and equipment to prevent contamination of clothing or skin, as detailed in Section E1 above.

First aid procedures are :

- i. Eyes - immediately irrigate with water for at least fifteen minutes and obtain medical attention.
- ii. Skin - immediately remove any contaminated clothing and wash affected skin with soap and water, or an industrial cleanser.
- iii. If swallowed - wash out mouth several times with clean water, give water to drink and obtain medical attention.
- iv. If inhaled - remove to fresh air and obtain medical attention.

**Small Spillage**

- 1. The area should be isolated and untrained personnel not involved with the cleanup excluded from the secured area.
- 2. Barricades should be placed as required around the contaminated areas to prevent pedestrians and vehicles from entering until the spill material is cleaned up and removed.
- 3. A crew will respond immediately upon notification that a waste spill has occurred. Trained officers will remain on-site until the emergency has passed.
- 4. All cleanup personnel handling wastes and/or engaged in the actual cleanup are to wear personal protective

- 5. Every reasonable effort should be made to stop or retard the flow of wastes spill and contain that which has been discharged, using personnel, equipment and materials on-site and immediately available.
- 6. If the waste spill does reach flowing water, storm sewers or any inaccessible area, the first employee to the spill area will immediately initiate notification procedures and also initiate measures to prevent any additional spill material from reaching water or lands.
- 7. In most cases, an oil absorptive material is a useful cleanup tool. If used, it should be spread on the contaminated area and should be left in place for at least one hour, or as long as necessary to ensure that all available fluids have been absorbed.
- 8. After spilled fluids have been absorbed, the absorptive material, along with any contaminated soils, are to be placed in the steel containers provided for that specific disposal purpose. If conditions are such that waste penetration cannot be determined, then at least 15cm of soil depth should be removed.
- 9. All surfaces exposed to the spilled fluid should be decontaminated with swabs containing an efficient solvent, such as trichloroethane.
- 10. Any contaminated steel structures, wood racks or cable trays (all types) should also be washed down with solvent. All equipment on these structures that may be contaminated by a waste spill, but will not be removed, must also be similarly cleaned. Use caution with the solvent to prevent further contamination of equipment and vehicles in the spill area.
- 11. All types of structures, buildings, private vehicles that may be contaminated are to be washed down with solvents. (Use caution with solvent on privately owned vehicles to prevent damage to vehicle finish). On each private vehicle involved, fill out a written record. Again, take all necessary measures to prevent solvent and wastes from entering into any sewer or drainage system and treat as other contaminated wastes.

<b>PART 2</b>	<b>Section 5 - Packaging Safety &amp; Environmental Plan (Cont)</b>
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- 12. All contaminated items, including tools, clothing, boots and any other equipment, must either be thoroughly cleaned with solvent where practical, or disposed of in the steel containers provided specifically for disposal purposes.
- 13. All drums should be clearly identified, loaded on a vehicle and carefully secured to minimise the chance of another spill.
- 14. The vehicle carrying the drum(s) must also be labelled in accordance with Dangerous Good (Road Transport) Regulations.
- 15. The containers are to be taken directly to the central receival point for subsequent shipment for disposal.
- 16. At spills in densely populated areas, the spill areas will be continuously manned until the spilled waste and all cleanup materials have been removed from the site, secured in drums, or otherwise neutralised.
- 17. If skin contact with wastes does occur, remove with waterless hand cleaner, wipe with towels and dispose of these towels in the containers provided for that purpose. If eye contact occurs, flush eye thoroughly with water for at least 15 minutes.
- 18. Spills water require special treatment, as follows :

- (i) The water will be bailed and pumped into secure 205 litre drums and sealed. The sediments and sludge from the bottom of the puddle should then be cleaned up to a depth of at least 7.5 - 15.0 cm, depending on the percolation, and placed in drums. All containers will

then be sent to the central receival point for appropriate disposal.

- (ii) Residual contaminated water will be soaked up in dry sand, ash, sawdust or commercial absorbents. The saturated material will be placed in "open Head" 205 litre drums and sealed. The sediment and sludge from the bottom of the puddle should then be removed to a depth of at least 7.5-15.0 cm, depending on the percolation, and placed in drums.

Section Summary

**Packaging Safety & Environmental Plan**

- Emergency repose during packaging failures
- standard clean up systems

<b>PART 2</b>	<b>Section 6 - Transportation Safety and Environmental Plan</b>
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6.0 Strategy Statement

In order to discharge the Safety requirements and provide full environmental protection and to maintain the policy of risk minimisation the Transport Plan must be not only carefully adhered to but must be continuously monitored for any non compliance.

6.1 Elements of the Transport Safety & Environmental Plan

- Driver Briefing
- Route adherence
- Communication
- Vehicle Inspection
- Load Security
- Emergency Procedure

6.2 Driver Briefing and PPE

The driver is to be fully briefed as to his duties of care during the transportation of the POPs to site. This briefing should be over and above the specific driver training and should be delivered on the day of dispatch of each and every container. This briefing shall include the following point by point schedule.

- \* Is the driver of good health and sobriety
- \* Is the driver fully aware of the route
- \* Brief the driver of any changes to route, timing, destination, road hazards.
- \* Brief the driver as to communication check times to escort and control
- \* Brief the driver as to rest stops (one per hour)
- \* Brief the driver to load check stops (one per hour)

\* Check driver has loaded PPE Kit Bag and knows how to use it.

- \* Check driver is aware of his duties if escort vehicle delayed
- \* Check emergency procedures and notification schedule is in drivers cab
- \* Check driver is aware of how to cope initially with emergency

6.3 Route and adherence

The planned route shall be shown on a road map and placed in the cab after driver briefing. The points of radio progress reports are to be indicated on the map. Should it become necessary to change the route during the course of the delivery the driver shall advise the escort vehicle and pull over when safe to do so and await authorisation to alter the route.

6.4 Communication

The safety of the POPs delivery is dependent on good communication. No delivery of POPs shall commence until a full communication check with the escort vehicle at the control room has been effected. No containers shall be delivered until the communication check has been carried out and proved effective. The control room is to be located at the Clearance Contractors main offices and it to be manned continuously during container delivery. The person in charge of the control room shall be fully conversant with the route and all its particulars. He shall be capable of accepting full control responsibility during any incidents.

6.5 Vehicle

Inspect the vehicle for tyre or suspension damage and look for obvious mechanical reasons for the vehicle to be unfit for duty. Also inspect the COF.

**6.6 Load Security**

The supervisor and the driver must together inspect the load and determine that the load is correctly fastened onto the container truck by its locking turrets. No container is to be dispatched unless the container is locked in position and that the locking has been witnessed by the supervisor and the driver. The load security is to be checked at least once per hour or 100Km.

**6.7 Emergency Procedure and Escort vehicle**

All trans shipment of containers of POPs Waste to the port shall be escorted the entire route up to receipt and acceptance by the Port Authority. The escort vehicle personnel are to be fully trained in all aspects of spill control and are to assume full responsibility for the cargo during all aspects of the delivery. Any route changes must be authorised by the Escort vehicle personnel only after clearance from control room.

**Section Summary**

- Driver briefing and Route planning
- Emergency procedures
- Communication
- Vehicle stops

<b>PART 2</b>	<b>Section 7 - Shipping and Disposal Safety &amp; Environmental Plan</b>
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7.0 Strategy Statement

All the previous plans and strategies of this manual if applied properly will ensure that the shipping of the containers of waste is safe. The adherence to the IMDG code ensures that the cargo is placed on the correct area of the ship away from foodstuffs etc. Provided that all of the packaging codes and plans and QA have been followed then the complete safety of the public and the environment during shipment to the country of disposal will be achieved.

7.1 Elements of the Shipping and Disposal Safety and Environmental plan

- Labelling
- Lloyds Survey
- Basel Convention

7.2 Labelling

Part of the safety to the environment is the proper placement of the hazardous goods labels on the containers. It is most important for environmental protection that the correct action is taken during an incident involving the POPs waste container and if the labelling is incorrect then inadvertent damage to the environment will occur if the incident is mishandled.

7.2 Lloyds Survey

The standard of the container packing will determine the amount of damage the waste will incur during incidents or

accidents. The Lloyds Survey is the method by which final environmental protection is achieved. It is most important that the Lloyds Survey is properly done and certified. The method of packing will ensure that only the most severe of accident will cause a leakage. The Lloyds survey is the final QA for this procedure.

7.3 Basel Convention

The Basel convention governs the packing, and movement of POPs Waste from export country to country of disposal. This manual supports all the articles of the Basel convention and all its provisions regarding notifications and compliance. The entire shipping and disposal of the POPs must follow the declarations of the Basel convention. This will apply even if the country of waste origin is not a signatory to the convention.

Section Summary

**Shipping and Disposal Safety and Environmental Plan**

- Correct Labelling ensures safety and environmental protection during incidents
- Lloyds Survey ensures that environmental protection for almost all incidents
- Basel Convention compliance ensures environmental protection

**PART 2** | **Section 8 - Insurance Safety and Environmental Plan**

8.0 Strategy Statement

While the need for insurance cover is obvious in order to protect the participants of the POPs clearance operation, the main purpose of the insurance policy is to provide a high degree of environmental protection. By having a comprehensive package in place that is the ultimate pollution policy means that clean is assured in the unlikely event that a POPs escape occurs. This is not to say that the packaging and transportation can therefore be of a lesser standard because at the end of the day the policy will do the clean up. The policy is only to be the absolute back stop environmental protection should all the other plans and strategies fail.

Therefore the primary aim of the insurance policy is to provide funds for environmental protection should all the other procedures fail in the event of a catastrophic loss.

8.1 Elements of Insurance Safety and Environmental Plan

- Appropriate Insurance policy

8.2 Appropriate Insurance Policy

In the event of a catastrophic event where uncontrolled POPs enters the environment the only final capacity to protect the environment lies in the strength of the insurance policy to provide the funds for the cleanup. This means that the insurance policy chosen for the project must be designed with the protection of the environment firmly in mind.

Section Summary

**Insurance safety and Environmental Plan**

- The environmental protection in the end relies on an appropriate insurance policy in place.



**PART 2**

**Section 9 - Emergency Safety & Environmental Plan**

9.0 Strategy Statement

During an emergency where POPs has spilled or is threatening the environment or the safety of personnel the only strategy that can exist for the emergency procedures is the the procedural process of the emergency be strictly followed as shown by the Flip sheets in the WPI's. If the procedures are carefully adhered to then the damage to the environment will be minimised.

9.1 Elements of the Emergency safety and Environmental Plan

- ERU
- Flip Sheets

9.2 ERU

Discharge of environmental protection and safety of public and personnel can only be achieved with the use of a fully equipped ERU and the provision of trained staff and procedures.

9.3 Flip Sheets

The entire emergency procedures are to be discharged via the flip sheets as indicated in WPI 4.9.

Section Summary

**Emergency safety and Environmental Plan**

- A fully equipped ERU is required to effectively provide an emergency service
- The emergency procedures is discharged via flip sheets

**PART THREE  
QUALITY ASSURANCE PLAN**

## PART 3

## Section 1 - QA Management Policies

### 1.0 Strategy Statement

This section sets out the Management Plan Quality Control and assurance for the project. The QA policies and objectives are a direct result of the Environmental Impact Report and the Aims and Objectives as shown in Part 1. It is proposed within this manual that a full QA schedule be applied to this project to ensure that the aims and objectives as shown in Part 1 are fully met and complied with and conforms with ISO 14000.

The basis of the ISO system is the application of a detailed Quality Manual. This Quality Manual is a broad description of the elements of the Quality system, setting out Policy, Organisation, Standards and Objectives and describing what is to be achieved. Part 3 of this manual forms the Quality manual for the Project.

### 1.2 Elements of QA Management Policies

- Policy
- Standards
- Objectives

### 1.3 Policy

The Quality Manual must have as its basis a policy statement the carefully states the Contractors Quality Policy. This policy by its very definition must be aligned to the aims and goals that have been set for the project work to be undertaken. Therefore the policy for the QA manual is an expanded version of the aims and goals as shown under Part 1.

The **primary Aim** of this POPs Manual is to provide the Client with a level of confidence that the project will be performed to a

high technical level that fully recognises all environmental safeguards inherent in the country's Waste laws, in an operationally efficient manner. This aim is achieved by the presentation of the plans and programmes within this manual.

The **primary Goal** of this Technical Proposal is to ensure that the Clearance and Disposal of the POPs Waste is performed without endangering the public or environment of any other country or persons. This goal of ensuring there are no accidents or spillage, leaks or escapes to the environment of any kind is to be achieved by rigid enforcement of the plans and programmes by utilising a Quality Assurance programme.

Thus the aim and goal of this POPs manual can be expressed as follows:

It is the aim to put in place efficient, audited plans and programmes that ensure the discharge of all obligations under law and in so doing, achieve the goal of no endangerment to the environment or people.

The majority of the community, accept wholeheartedly that the long-term quality of life we enjoy depends on the quality of our environment. We firmly believe we have a responsibility to operate in a manner that conserves resources, minimises waste and pollution and safeguards the environment for future generations.

### 1.4 Objectives

Quality Assurance in the management of intractable wastes is often a requirement of tenders or contracts. It is also a necessary segment of the Management Plan for any project involving the Clearance and Disposal of Intractable Waste such as POPs in order that the stated Aims and Goals can be achieved.

Analysis of the task of managing intractable wastes leads to identification of the following areas as critical to the assuring the quality of the process:

1. Selection & Training of Personnel
2. Use & Maintenance of Personal Protective Equipment
3. Identification and Labelling of Consignment
4. Packaging of Consignment
5. Transport of Consignment by Road

**PART 3**

**Section 1 - QA Management Policies(Cont)**

- 6. Transport of Consignment by Ship
- 7. Emergency Management
- 8. Assessment and Decontamination of Warehouse
- 9. Quality Control
- 10. Document Control
- 11. Internal Audits & Corrective Action

In each of these areas there will be numerous Procedures and Work Instructions required to fully describe and manage the system. These basic components of any Quality system are identified below in point form and are fully described in the Work procedure instructions in part four of this operations manual.

**Selection & Training of Personnel**

Principal objectives are to ;

- \* Have adequately educated and trained personnel to conduct the task.
- \* Have sufficient personnel selected and trained to avoid any interruption to the project due to staff shortage.
- \* Give complete training in the specifics of the task and routinely reinforce this training.
- \* Know the complete health background of all employees ensuring avoidance of health issues arising from the particular disposal programme.

**Selection, Use & Maintenance of Personal Protective Equipment (PPE)**

Principal objectives are to ;

- \* Select correct PPE for the task with full understanding of all Occupational Hygiene and Safety aspects of the particular task.
- \* Train all personnel in the correct use of the PPE
- \* Maintain all PPE in optimum operating condition

**Identification & labelling of Consignment**

Principal objectives are to ;

- \* Identify each item of a consignment uniquely
- \* identify the location and its status of each item to be disposed of,
- \* Label all containers, both primary and external with all necessary local, national and international required shipping codes, dangerous goods labels, identity and contact for consignor and emergency information.

**Packaging of Consignment**

Principal objectives are to;

- \* Package the consignment such that minimum risk is posed to operators, transporters, the public and environment in ongoing handling, transport of the consignment.
- \* Meet all local, national and international regulatory requirements and maritime agreements/conventions on the transport of dangerous or environmentally hazardous material.
- \* Contain the packing area ensuring avoidance of any contamination of the local environment.

## PART 3

## Section 1 - QA Management Policies(Cont)

### Transport of Consignment by Road

Principal objectives are to ;

- \* Transport the consignment with the full knowledge of risks posed by the transport route and method, and to minimise those risks.
- \* Fully comply with all regulatory requirements concerning transport of dangerous or environmentally hazardous materials
- \* Avoid or minimise disruption to normal traffic

### Transport of Consignment by Ship

Principal objectives are to ;

- \* Transport the consignment with the full knowledge of risks posed by the transport route and method, and to minimise those risks.
- \* Fully comply with all local, national and international regulatory requirements and maritime agreements/conventions concerning transport of dangerous and environmentally hazardous waste.

### Emergency Management

Principal objectives are to ;

- \* Avoid or minimise risk posed to the public and environment by emergencies involving the consignment
- \* Respond to defined levels and types of emergencies with appropriate levels of action
- \* Ensure adequately trained and drilled personnel are available whenever and wherever required for the handling of any emergency involving the consignment
- \* Supply and manage emergency equipment specific to likely incidents involving the consignment.

### Assessment and Decontamination of Warehouse

Principal objectives are to;

- \* Accurately and thoroughly assess the level of contamination of storage areas and surrounding land in a scientifically valid and repeatable manner
- \* Decontaminate storage areas and surrounding land to levels of contamination agreed to by contract.
- \* Conduct the assessment and decontamination at minimum risk to the personnel involved and the public at large

### Quality Control

Principal objectives are to ;

- \* Ensure the quality of critical steps of the process is controlled in a defined manner and records are kept of that control
- \* Meet all Quality Control requirements defined by contract.

<b>PART 3</b>	<b>Section 1 - QA Management Policies(Cont)</b>
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Document Control

Principal objectives are to ;

- \* Ensure all required documents/records are fully defined, available, completed and accurate
- \* Ensure all documents ( Contracts, reports, procedures, instructions etc.) to be uniquely identified
- \* Ensure responsibility for generation, transmittance, security, confidentiality and archiving of documents is defined.
- \* Ensure alteration of any issued document can only be performed by authorised personnel, leaving a record of the alteration.

Internal Audits & Corrective Action

Principal objectives are to ;

- \* Audit all aspects of the process at least once every 6 months.
- \* Ensure the audit system is maintained by defined Manager
- \* Ensure that audits are conducted by suitably trained and experienced auditors.

- \* Ensure a corrective action system accurately records all non-conformance and manages implementation of root cause elimination.
- \* Ensure line management is responsible for correction of non-conformance.

Section Summary

**QA Management Polices**

- **ISO 9001 and ISO 14001 standards apply**

## PART 3

## Section 2 - QA Site Inspection Plan

### 2.0 Strategy Statement

This section provides the Quality Assurance detail for the Site Inspection plan. This section should be read in conjunction with Part 1 Section 2. The QA of the site inspection plan follows the sections as shown in Part 1. The Work Procedure Instructions in Part 4 include in point format the QA issues raised in this section. As the Site specific details are filled in WPI 4.2 the QA part of the Instruction covers those aspects as discussed below. The QA-Audit comprises a series of questions against each part of the Site Inspection Plan and are complete with instructions for compliance and noncompliance. Most of the noncompliance responses will initiate a noncompliance report. This Report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the noncompliance reports.

### 2.1 Elements of the QA Site Inspection Plan

- Site Name
- Storage Type
- Type and Quantity
- Goals & Objectives
- Power/Lighting & Fire Protection
- Lifts & Hoists
- Space
- Residents
- Access

### 2.2 Site name

*QA-Audit*

Question: Is the name for the site clearly stated and includes sufficient information to accurately identify the site?

**Compliance:** No Action

**Noncompliance:** Action

Establish name and include sufficient detail to clearly identify site. It is not enough to simply call the site "Number Five". The site name must include an area name that is instantly recognised by all associated with the project as well as the emergency services. During the establishment of the site name a check with the local Fire service should be made in order to see if the site name that is intended to be used is adequate for their purposes.

Question: Is the name in keeping with the Client register of sites and is the name readily recognised by the local EPA.?

**Compliance:** No Action

**Noncompliance :** Action

After checking with the emergency services and the client a final check should be done with the local EPA to ensure that the site name agrees with their Hazardous waste register and that no confusion will be caused by the use of the chosen name.

### 2.3 Storage Type

*QA-Audit*

Question: Are all the site storage types listed in the schedule ?

<b>PART 3</b>	<b>Section 2 - QA Site Inspection Plan(Cont)</b>
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**Compliance** : No Action

**Noncompliance:** Action

Audit check the site until the total schedule is completed and that all individual items are clearly identified and accounted for on the schedule. The total number of items should be counted as a total and this total should be made up of subtotals of individual storage types.

Question: Are there any items in storage that are an immediate threat to the environment.?

**Compliance** : No Action

**Noncompliance:** Action

If during the site inspection some or all of the POPs stored are an immediate threat to the environment, then the site inspection process is to be immediately suspended and the emergency plan put into operation. This means that WPI 4.9 Emergency instruction is drawn up the emergency vehicle is called out and the cleanup operation is put in motion. During the formulation of the WPI 4.9 the entire site is checked for other items that are an immediate threat to the environment.

Question : Are there any items on storage that are structurally unstable?

**Compliance:** No Action

**Noncompliance** : Action

Make immediate arrangements to have the stacked storage items restacked so that the stacked structure is no longer unstable. This can be achieved by the use of WPI 4.3.

Question : Are any of the items of storage that are leaking?

**Compliance** : No Action

**Noncompliance** : Action

The same action as for "Threat to the environment" is required.

Question : Is there any free Liquid POPs on storage surface.?

**Compliance** : No Action

**Noncompliance** : Action

The same action as for "Threat to the environment" is required.

Question : Are there any items that are an earthquake risk?

**Compliance** : No Action

**Noncompliance** : Action

Isolate those items at risk from the surrounding equipment and stabilise against earthquake. This activity should receive urgent priority in the clearance plan.

Question : Is the storage area protected from the elements?

**Compliance** : No Action

**Noncompliance** : Action

Urgent action is required to provide protection even if this has to be a temporary cover. This activity should receive urgent priority in the clearance plan.



**PART 3      Section 2 - QA Site Inspection Plan(Cont)**

Question : Are there any items of building configurations that are a fire risk?

**Compliance** : No Action

**Noncompliance** : Action

Either the PCB material must be urgently removed to a safe location or the building configuration changed. This is an urgent activity in the clearance plan

Question : Is there a public access risk to the storage?

**Compliance** : No Action

**Noncompliance** :Action

Urgent steps are to be taken to prevent further public access. This may mean the immediate installation of a security fence or security guard until more permanent arrangements can be made.

Question : Is the storage area lockable?

**Compliance** : No Action

**Noncompliance** :Action

Immediate arrangements to made to secure storage area.

Question : Is the PCB in storage correctly registered and tagged with identifiers?

**Compliance** : No Action

**Noncompliance** :Action

Review the methodology that was used to store the material in the first place and see if a suitable system is available that can be extended to this project. If this is not feasible and the client is unable to advise the system used then the Clearance plan will need to establish a tagging system and method of recording as depicted in the clearance plans.

Question : Are there any items in storage that should not be stored with POPs.?

**Compliance** : No Action

**Noncompliance** :Action

Make immediate arrangements to remove these items. If there is any machinery or vehicles or other equipment that is not contaminated then they must be removed immediately.

Question : Is there any aspect of the storage that should be immediately notified to local EPA ?

**Compliance** : No Action

**Noncompliance** :Action

Issue a report and immediately notify the EPA citing the noncompliance. This must not be neglected.

2.4 Type and Quantity

*QA -Audit*

Question : Are all the POps types listed and quantities noted?

**Compliance** : No Action

**PART 3**

**Section 2 - QA Site Inspection Plan(Cont)**

**Noncompliance** :Action

Proceed to complete the entire register of POPs types and quantities. The clearance plan cannot be completed without the completion of this register. If a client generated register has been supplied then its contents must be site audited for accuracy.

Question : Are all risk assessments noted in the schedule.?

**Compliance** : No Action

**Noncompliance** :Action

Provide all risk assessment information so that the risk assessment factors can be noted.

Question : Are there any items that cannot be handled safely with the standard POPs handling techniques that will require a specialist approach?

**Compliance** : No Action

**Noncompliance** :Action

Issue Report "Special Handling Requirement" as per the instructions WPI 4.3

2.5 Goals/Objectives

*QA Audit*

Question : In reviewing the Goals and Objectives of the project are there any aspects of the site, storage, type and quantities that are not in strict accordance with achieving the Goals and objectives.?

**Compliance** : No Action

**Noncompliance** :Action

Issue Report "Primary Aim Noncompliance" as per WPI 4.2

2.6 Power/Lighting and Fire Protection

*QA-Audit*

Question : Is the site provided with sufficient Power and lighting for the efficient project execution.?

**Compliance** : No Action

**Noncompliance** :Action

Issue Specification for additional Power and lighting resources as per WPI 4.2

Question : Are the site electrical services safe and of a good standard and are there overhead power conductors interfering with operations?

**Compliance** : No Action

**Noncompliance** :Action

Issue Specification for additional work as per WPI 4.2

Question : Is there sufficient fire protection for the fighting of substantial fires for 30 minutes before the fire service arrives?

**Compliance** : No Action

**Noncompliance** :Action

Issue Report "Fire Fighting Resources" as per WPI 4.2

<b>PART 3</b>	<b>Section 2 - QA Site Inspection Plan(Cont)</b>
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2.7 Lifts & Hoists

*QA -Audit*

Question : Does the site have sufficient lifts and hoists in working order if the storage is multilevel?

**Compliance** : No Action

**Noncompliance** :Action

Issue report “Lifts & Hoists” as per WPI 4.2

2.8 Space

*QA-Audit*

Question : Is there sufficient space within the storage area to layout the packaging system?

**Compliance** : Action

Produce preliminary sketch of the layout area to assist the Site Preparation Plan

**Noncompliance** :Action

Issue Report “ Spatial Requirements Noncompliance” as per WPI 4.2

Question : Is there sufficient appropriate space for the location of Decontamination and amenities facility?

**Compliance** : Action

Produce preliminary sketch of the layout area to assist the Site Preparation Plan

**Noncompliance** :Action

Issue Report “ Spatial Requirements Noncompliance” as per WPI 4.2

Question : Is there sufficient space to locate the Fire service command vehicle and other emergency services during an emergency?

**Compliance** : Action

Produce preliminary sketch of the layout area to assist the Site Preparation Plan

**Noncompliance** :Action

Issue Report “ Spatial Requirements Noncompliance” as per WPI 4.2

Question : Can the working areas be completely defended against the intrusion of public and unauthorised access?

**Compliance** : Action

Produce sketch showing defended boundaries

**Noncompliance** : Action

Issue Report “Unauthorised Access noncompliance” as per WPI 4.2

Question : Can the working areas be defended against burglars and arsonists or environmental activists?

**Compliance** : Action

Produce sketch showing defended boundaries

<b>PART 3</b>	<b>Section 2 - QA Site Inspection Plan(Cont)</b>
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**Noncompliance** : Action

Issue Report “Unauthorised Access noncompliance” as per WPI 4.2

2.9 Residents

*QA-Audit*

Question : Are there nearby residential accommodations?

**Compliance** : No Action

**Noncompliance** : Action

Produce sketch showing proximity of residential dwellings for clearance plan

Question : Are these accommodations at risk of fire in storage items?

**Compliance** : No Action

**Noncompliance** : Action

Issue Report “Fire Risks” as per WPI 4.2

Question : With the proximity of residential accommodations are the Aims and goals of the project compromised ?

**Compliance** : No Action

**Noncompliance** : Action

Issue Report “Primary Aims and Goals noncompliance” as per WPI 4.2

Question : Are the nearby residents appraised of evacuation criteria if fire breaks out in storage area?

**Compliance** : No Action

**Noncompliance** : Action

Provide to Client for distribution to the residents the Fire evacuation instructions.

2.10 Access

*QA-Audit*

Question : Are the roads and streets up to the Storage area adequate for the planned activity.?

**Compliance** : No Action

**Noncompliance** : Action

Issue Report “Access Roads” as per WPI 4.2

Question : Will there be easy access to the storage area for all emergency vehicles?

**Compliance** : No Action

**Noncompliance** : Action

Issue report “Storage Area Access for Emergency vehicles” and in addition visit with the emergency authorities to ascertain options.

Question : Are the roads and streets adequate for a full scale evacuation should it be required.?

<b>PART 3</b>	<b>Section 3 - QA Clearance Plan</b>
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3.0 Strategy Statement

This section provides the Quality Assurance detail for the Clearance plan. This section should be read in conjunction with Part 1 & 2 Section 3. The QA of the Clearance plan follows the sections as shown in Part 1. The Work Procedure Instructions in Part 4 include in point format the QA issues raised in this section. As the Site specific details are filled in WPI 4.3 the QA part of the Instruction covers those aspects as discussed below. The QA-Audit comprises a series of questions against each part of the Clearance Plan and are complete with instructions for compliance and noncompliance. Most of the noncompliance responses will initiate a noncompliance report. This Report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the noncompliance reports.

3.1 Elements of the QA Clearance Plan

- Ware house or storage facility Clearance priority
- Type and Quantity clearance priority schedule
- Position Allocations
- Location of Emergency vehicle
- Location of the Decanting/Packaging area
- Location of the Dispatch area
- Location of the Overall Defence Zone

3.2 Warehouse or Storage facility Clearance Priority

Question : Are all the types of storage correctly indicated on the Schedule?

**Compliance** : No Action

**Noncompliance** : Action

Complete the schedule as required under the WPI 4.3 filling out the entire details as to Storage types.

3.3 Type and Quantity clearance priority schedule

Question : Are all the POPs types and quantities entered into the schedules?

**Compliance** : No Action

**Noncompliance** : Action

Complete the schedule as required under the WPI 4.3 filling out the entire details as to POPs types and quantities.

3.4 Position Allocations

Question : Are the locations of the Decontamination and amenities units drawn on the site plan?

**Compliance** : No Action

**Noncompliance** : Action

Complete the drawing of the site showing the location of the decontamination and amenities units and indicating the flow of personnel.

3.5 Location of Emergency vehicle

Question : Is the location of The emergency Vehicle indicated on the site drawing?

**Compliance** : No Action

**Noncompliance** : Action

Complete the drawing of the site showing the location of the emergency Vehicle.

**Compliance** : No Action

**Noncompliance** : Action

Complete the drawing of the site showing the location of the defence area.

<b>PART 3</b>	<b>Section 3 - QA Clearance Plan(Cont)</b>
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3.6 Location of the Decanting/Packaging area

Question : Are the locations of the decanting/packaging areas indicated on the site drawing?

**Compliance** : No Action

**Noncompliance** : Action

Complete the drawing of the site showing the location of the decanting and packaging areas.

3.7 Location of the Dispatch area

Question : Is the location of the Dispatch area indicated on the site drawing?

**Compliance** : No Action

**Noncompliance** : Action

Complete the drawing of the site showing the location of the dispatch area.

3.8 Location of the Overall Defence Zone

Question : Is the location of the Defence Zone indicated on the site drawing?

## PART 3

## Section 4 - QA Site Preparation Plan

### 4.0 Strategy Statement

This section provides the Quality Assurance detail for the Site Preparation plan. This section should be read in conjunction with Part 1 & 2 Section 4. The QA of the Site Preparation plan follows the sections as shown in Part 1. The Work Procedure Instructions in Part 4 include in point format the QA issues raised in this section. As the Site specific details are filled in WPI 4.4 the QA part of the Instruction covers those aspects as discussed below. The QA-Audit comprises a series of questions against each part of the Site Preparation Plan and are complete with instructions for compliance and noncompliance. Most of the noncompliance responses will initiate a noncompliance report. This Report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the noncompliance reports.

### 4.1 Elements of the QA Site Preparation Plan

- Site Preparation
- Containment barriers and spill protection(Warehouse)
- Location of Decontamination and Amenities Units
- Working Areas
- Working Area equipment requirements
- Defence Areas
- Emergency Access
- Fire Protection
- Intruder Alarms
- Telephone and other communications
- Records
- Emergency vehicle

### 4.2 Site Preparation

Question : Are the Primary, Secondary and Tertiary Zones shown on the Site drawing?

**Compliance** : No Action

**Noncompliance** : Action

Design the Primary, secondary and tertiary zones and show their outlines on the site drawings.

Question : Is the Public Zone indicated on the Site drawings?

**Compliance** : No Action

**Noncompliance** : Action

Design the Public Zone area that should be accessible for members of the public that will not require PPE. This area should include the main office for the project.

Question : Are the Emergency and First Aid material locations indicated on the Site drawings?

**Compliance** : No Action

**Noncompliance** : Action

Draw the locations of the emergency spill containment materials and the first aid stations on the site drawing.

Question : Is the Fire Fighting equipment indicated on the Site drawings?

**Compliance** : No Action

**Noncompliance** : Action

Calculate the fire fighting systems require and indicate on the site drawing.

**PART 3**

**Section 4 - QA Site Preparation Plan**

Question : Is the Work Procedure Instruction Notice Board indicated on the site drawing?

**Compliance** : No Action

**Noncompliance** : Action

Position the WPI notice board and indicate on the site drawing.

4.3 Containment barriers and spill protection(Warehouse)

Question : Have the correct bunding requirements been applied to each operating zone?

**Compliance** : No Action

**Noncompliance** : Action

Design each bunding requirements in accordance with the local waste laws and the requirements of this manual.

Question : Has the schedule been correctly filled out with the total risk factor calculations?

**Compliance** : No Action

**Noncompliance** : Action

From the Site Inspection Plan and the Clearance Plan calculate the Total Risk Factors and determine the minimum methods of containment.

Question : Do the calculated Total risk factors conform with the

policy of minimum risk policy.

**Compliance** : No Action

**Noncompliance** : Action

Reassess the calculated Total Risk factor and elevate to the next level if it appears that the minimum Risk Policy is not complied with.

Question : Have the "In service" POPs (PCBs) types and quantities been entered into the schedule

**Compliance** : No Action

**Noncompliance** : Action

Correctly assess the types and quantities of the "In service" equipment and place results onto the schedule.

4.4 Location of Decontamination and Amenities Units

Question : Have both the decontamination unit and the amenities units been clearly shown on the site plan and all access routes clearly shown and defended.

**Compliance** : No Action

**Noncompliance** : Action

Assess the site for the location of the Decontamination and amenities units and clearly show these on the site plan along with the ingress and egress paths, indicating how the routes are defended.

4.5 Working Areas

Question : Are the working areas clearly indicated showing exactly which part of the operations are to be performed within the designated zones including storage of tools and equipment etc.

**Compliance** : No Action



## PART 3

## Section 4 - QA Site Preparation Plan

on the site plan to show how the work activity is to be executed and how each area is autonomous in that work activity does not spill out into the other areas.

### 4.6 Working Area equipment requirements

Question : Has the equipment required for each work activity been assessed and list generated.

**Compliance** : No Action

**Noncompliance** : Action

Assess the work activity requirements and create a listing of area tool and equipment requirements.

### 4.7 Defence Areas

Question : Are all areas adequately defended against incorrect work activity and are these areas properly fenced and defended against unauthorised access.

**Compliance** : No Action

**Noncompliance** : Action

Design the defence areas and methods to prevent the intrusion of the areas by unauthorised personnel and inappropriate work activities.

### 4.8 Emergency Access

Question : Can the emergency services gain unrestricted access during an emergency of any kind.

**Compliance** : No Action

**Noncompliance** : Action

Assess the access under emergency conditions and ensure that all emergency services can access the site without undue restriction.

### 4.9 Fire Protection

Question : Is there adequate fire fighting equipment to handle a fire for at least 30 minutes.

**Compliance** : No Action

**Noncompliance** : Action

Provide a minimum equipment level to allow the fire fighting capacity on site to be at least 30 minutes.

### 4.10 Intruder Alarms

Question : Does the site have sufficient monitored intruder alarms system

**Compliance** : No Action

**Noncompliance** : Action

Install a 24 hr. monitored fire and intruder alarm system

### 4.11 Telephone and other communications

Question : Is the site provided with adequate telephone and communications systems

**Compliance** : No Action

**Noncompliance** : Action

Provide a secure telephone line for phone (toll free) and fax. Also provide Cell phone where possible, Pager and radio telephone

**PART 3**

**Section 4 - QA Site Preparation Plan(Cont)**

4.12 Records

Question : Is the site provided with an adequate record keeping facility

**Compliance** : No Action

**Noncompliance** : Action

Purchase a computer based record keeping facility complete with printing capability and organise off site storage of data.

4.13 Emergency vehicle

Question : Is there are comprehensively equipped Emergency vehicle available on call.

**Compliance** : No Action

**Noncompliance** : Action

Provide a fully equipped vehicle for emergency call out and escort duties.

**PART 3****Section 5 - QA Packaging Plan(Cont)**

## 5.0 Strategy Statement

This section provides the Quality Assurance detail for the Packaging plan. This section should be read in conjunction with Part 1 & 2 Section 5. The QA of the Packaging plan follows the sections as shown in Part 1. The Work Procedure Instructions in Part 4 include in point format the QA issues raised in this section. As the Site specific details are filled in WPI 4.5 the QA part of the Instruction covers those aspects as discussed below. The QA-Audit comprises a series of questions against each part of the Packaging Plan and are complete with instructions for compliance and noncompliance. Most of the noncompliance responses will initiate a noncompliance report. This Report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the noncompliance reports.

## 5.1 Elements of the QA Packaging

- Waste Packaging
- Container Packing
- Weighing
- Labelling
- Container Marine Survey

## 5.2 Waste Packaging

Question : Have purpose built transit bins been provided

**Compliance** : No Action

**Noncompliance** : Action

Organise the construction or purchase or obtain from the Disposal company purpose built transit bins in sufficient quantity to keep up with the proposed clearance rate.

Question : Are the dimensions of the transit bins approximately 1100 x 1310 x 1000mm

**Compliance** : No Action

**Noncompliance** : Action

Bins of other sizes are unlikely to fit correctly into the shipping container and therefore should be reordered.

Question : Have the transit bins been leak tested and certified

**Compliance** : No Action

**Noncompliance** : Action

Organise leak testing before use.

Question : Are all the joints fully welded

**Compliance** : No Action

**Noncompliance** : Action

Organise additional welding to ensure liquid tightness.

Question : During the packaging process is each stage of packing provided with the full protection elements as demanded by the packaging Plan Part 1 section 5

**Compliance** : No Action

**Noncompliance** : Action

Repack in accordance with the Packaging Plan. No transit bins are to be exported without all the integral packaging protection elements.

<b>PART 3</b>	<b>Section 4 - QA Site Preparation Plan</b>
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5.3 Container Packing

Question : Are the Transit bins packed in the 20 foot shipping container two wide and two high

**Compliance** : No Action

**Noncompliance** : Action

Repack so that a total of 16 bins can be packed into the standard 20 foot container.

Question : During the loading of the shipping container were total weights recorded and checked against the total loading capacity of the container.

**Compliance** : No Action

**Noncompliance** : Action

Arrange for weighing of transit bins during loading and record compliance with weight restrictions.

5.4 Weighing

Question : During the packing process has the POPs minus packing material been weighed for payment purposes.

**Compliance** : No Action

**Noncompliance** : Action

Provide accurate and efficient weighing process for the weighing of the POPs.

5.5 Labelling

Question : Has all the correct labelling been applied to the transit bins using self adhesive labels

**Compliance** : No Action

**Noncompliance** : Action

No transit bin or transport unit is to leave the site without the correct labelling. Provide a complete stock of labels as required by the packaging plan.

5.6 Container Marine Survey

Question : Have the shipping containers been marine surveyed by a registered marine Surveyor.

**Compliance** : No Action

**Noncompliance** : Action

Arrange for Marine surveyor to survey the shipping containers and their packing.

<b>PART 3</b>	<b>Section 6 - QA Transportation Plan</b>
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6.0 Strategy Statement

This section provides the Quality Assurance detail for the Transportation plan. This section should be read in conjunction with Part 1 & 2 Section 6. The QA of the Transportation plan follows the sections as shown in Part 1. The Work Procedure Instructions in Part 4 include in point format the QA issues raised in this section. As the Site specific details are filled in WPI 4.6 the QA part of the Instruction covers those aspects as discussed below. The QA-Audit comprises a series of questions against each part of the Transportation Plan and are complete with instructions for compliance and noncompliance. Most of the noncompliance responses will initiate a noncompliance report. This Report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the noncompliance reports. This QA schedule is based on a single shipment and this QA schedule should be used as a general document with compliance noted on the individual check sheets for each container.

6.1 Elements of the QA Transportation Plan

- Marine Survey
- EPD Approval
- Route Planning
- Escort vehicle
- Driver Briefing
- Load Security

6.2 Marine Survey

*QA-Audit*

Question : Have all containers been prechecked and marine surveyed and has the MS report been sighted?

**Compliance** : No Action

**Noncompliance** : Action

No containers are permitted to travel to the export port if they have not been Marine Surveyed. If they have not been surveyed and a certificate not sighted then the supervisor is to make arrangements for the containers to be surveyed. If this does not happen then a NCR report is to be urgently generated for the attention of the project manager.

6.3 EPD Approval

Question : Has the application for EPD approval been filed and the approval letter received?

**Compliance** : No Action

**Noncompliance** : Action

Unless the letter of approval is received then the containers must not leave for the port. Most countries have a requirement by the local EPD that requires a permit for the road delivery of hazardous waste. Without it there is no permission to leave. If the approval is not obtained an urgent NCR is to be generated for the project managers attention.

6.4 Route Planning

Question : Has the route been carefully planned, inspected and travelled to ensure that the cargo will be safe at all times?

**Compliance** : No Action

**Noncompliance** : Action

Unless the route has been carefully checked, travelled and all obstructions, overhead wires etc have been investigated the dispatch cannot go ahead. No delivery to port is allowed to be

**PART 3**

**Section 6 - QA Transportation Plan(Cont)**

effected unless a full route investigation has been carried and properly documented.

Question : Has the route been surveyed for traffic delays?

**Compliance** : No Action

**Noncompliance** : Action

During the route investigation careful note should be made of the traffic densities and possible delays and the route planned to go around these.

Question : Have the routes times been carefully worked out to avoid rush hour traffic conditions?

**Compliance** : No Action

**Noncompliance** : Action

The route must avoid rush hour times. It is unacceptable to have the container truck stranded for long periods of time in stalled traffic.

6.5 Escort Vehicle

Question : Is the Escort vehicle fully stocked and available for the escorting of the container truck to the Port and the check lists checked off?

**Compliance** : No Action

**Noncompliance** : Action

No delivery to port or anywhere else may take place unless the escort vehicle is fully stocked and fully manned and its communications channels are functioning. If a delivery is effected without the escort vehicle then an urgent NCR is to be faxed to the Project manager.

6.6 Communications

Question : Has the entire communication system been checked out between the container truck, escort vehicle and the control room?

**Compliance** : No Action

**Noncompliance** : Action

Unless there is substantial and well connected communication links between the container truck, the escort vehicle and the control room then no deliveries are allowed to be effected. If a delivery is effected and the communications are defective then an urgent NCR is to be faxed to the Project Manager.

6.7 Driver Briefing

Question : Have all the driver briefing statements been complied with?

**Compliance** : No Action

**Noncompliance** : Action

Unless ALL the driver briefing statements have been made and checked off the Transport check list then no delivery of containers can be effected. POPs cargo must not be transported by drivers that have no training or comprehension of the transport of hazardous waste. If the driver arrives at the site and is unsuitable he must be rejected.

**PART 3**

**Section 6 - QA Transportation Plan(Cont)**

6.8 Load Security

Question : Has the supervisor and the driver performed the load security check?

**Compliance** : No Action

**Noncompliance** : Action

Unless both the driver and the supervisor personally check the load security the delivery must not be effected. If either the driver or the supervisor have not checked the load security then a NCR must be filed.

Question : Has the Container truck a current COF ?

**Compliance** : No Action

**Noncompliance** : Action

No truck is to be used if it does not have a current Certificate of Fitness. There are no exceptions. If a delivery is effected using a truck without a current COF then an urgent NCR is to be faxed to the project manager.

<b>PART 3</b>	<b>Section 7 - QA Shipping &amp; Disposal Plan</b>
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7.0 Strategy Statement

This section provides the Quality Assurance detail for the Shipping & disposal plan. This section should be read in conjunction with Part 1 & 2 Section 7. The QA of the Shipping & Disposal plan follows the sections as shown in Part 1. The Work Procedure Instructions in Part 4 include in point format the QA issues raised in this section. As the Site specific details are filled in WPI 4.7 the QA part of the Instruction covers those aspects as discussed below. The QA-Audit comprises a series of questions against each part of the Shipping & Disposal Plan and are complete with instructions for compliance and noncompliance. Most of the noncompliance responses will initiate a noncompliance report. This Report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the noncompliance reports.

7.1 Elements of the QA Shipping & Disposal Plan Audit Questions

Question : Have all the labelling been correctly applied and affixed to the container?

**Compliance** : No Action

**Noncompliance** : Action

Ensure that the correct labelling of the container is placed as failure will result in non acceptance by the Port.

Question : Has the Lloyds survey certificate been sighted and is it part of the shipping documentation?

**Compliance** : No Action

**Noncompliance** : Action

The Lloyds certificate must be sighted. No container is to be presented for shipping unless this document is included with the shipping documents.

Question : Has all the packaging been done in accordance with the port of the acceptance country and a certificate attesting to this?

**Compliance** : No Action

**Noncompliance** : Action

If this certificate is not presented with the shipping document attesting to packaging standards then the container is not to be presented to the export port.

Question : Is the shipping documentation complete with the inclusion of the completed and valid Trans Frontier document?

**Compliance** : No Action

**Noncompliance** : Action

Without the Trans frontier documentation the container cannot be presented to the export port.

Question : Are all aspects of the Basel convention been checked and complied with?

**Compliance** : No Action

**Noncompliance** : Action

If the Basel conventions cannot be complied with then the container cannot be presented to the export port.



## PART 3

## Section 8 - QA Insurance Plan

### 8.0 Strategy Statement

This section provides the Quality Assurance detail for the Insurance plan. This section should be read in conjunction with Part 1 & 2 Section 8. The QA of the Insurance plan follows the sections as shown in Part 1. The Work Procedure Instructions in Part 4 include in point format the QA issues raised in this section. As the Site specific details are filled in WPI 4.8 the QA part of the Instruction covers those aspects as discussed below. The QA-Audit comprises a series of questions against each part of the Insurance Plan and are complete with instructions for compliance and noncompliance. Most of the noncompliance responses will initiate a noncompliance report. This Report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the noncompliance reports.

### 8.1 Elements of the QA Insurance Plan

Question : Does the proposed insurance policy provide the necessary funds to protect the environment for any conceivable accident ?

**Compliance** : No Action

**Noncompliance** : Action

Unless the policy covers all incidents to protect the environment then it should be renegotiated.

**Compliance** : No Action

**Noncompliance** : Action

Ensure that after all incidents a report is generated.

## PART 3

## Section 9 - QA Emergency Plan

### 9.0 Strategy Statement

The QA procedure of the emergency plan is embedded in the flip sheets. Unless the flip sheets system is followed there is no QA. If the flip sheet system is correctly applied during the emergency then the QA aspect of the emergency plan is correctly applied.

### 9.1 Elements of Quality Assurance

- Flip Sheets
- Incident reports

### 9.2 Flip Sheets

Question: Are all the emergency procedures correctly applied as per the flip sheets?

**Compliance** : No Action

**Noncompliance** : Action

Provide the complete Flip Sheets system as outlined in the WPI 4.9. Ensure that all personnel are familiar with the Flip system

Incidents Reports

Question: Have the appropriate incidents reports been produced after incident.?

## WORK PROCEDURE INSTRUCTIONS WPI's

### Note colour codes

Operational Instructions

Safety and Environmental Instructions

Quality Assurance Instructions

Reports

## WPI 4.1 Management Instructions

WPI 4.1	Management Plan
WPI 4.2	Site Inspection Plan
WPI 4.3	Clearance Plan
WPI 4.4	Site Preparation Plan
WPI 4.5	Packaging Plan
WPI 4.6	Transportation Plan
WPI 4.7	Shipping and Disposal Plan
WPI 4.8	Insurance Plan
WPI 4.9	Emergency Plan
WPI 4.10	Documentation

Note that these WPI's are an example of the WPI's that would be generated for a particular project.

WPI		Operational Instructions	WPI 4.1
Item	Instruction Number	Procedural Instruction [name] Project	Page 1
<b>Management Plan</b>			
1	WPI 4.1.1	<p><b>Goals &amp; Objectives</b></p> <p>The Primary Aim of these Procedural Instruction is to provide the authorities with the highest level of confidence that the project of clearance and disposal will be performed to a high technical level that recognises all environmental safeguards in an operationally efficient manner.</p> <p>The Primary Goal of these procedural Instructions is to ensure that the Clearance and Disposal of the Pesticide Waste is performed without endangering the public or environment of any country or persons. This goal of ensuring there are no accidents or spillage, leaks or escapes to the environment of any kind is to be achieved by rigid enforcement of the plans and programs described in these Work Procedure Instructions.</p>	
2	WPI 4.1.2	<p><b>Procedures and Strategies</b></p> <p>The procedures and strategies that form the principles of operation include the following:</p> <ul style="list-style-type: none"> <li>- Minimise the chances of spills of contaminated waste occurring.</li> <li>- Contain and Control any leaks or spills that may occur to prevent their escape into the wider environment or their coming into contact with the public.</li> <li>- Divide the wastes into individual lots of a size that reduces the volume of a spill or leak to a manageable quantity.</li> <li>- Provide a transport strategy that centers on the movement of relatively small consignments of wastes in any one convoy.</li> <li>- Provide Management and audit trail procedures that ensures full accountability and traceability of all waste handled.</li> <li>- Ensure that all personnel involved in the implementation of the proposal are fully aware of the nature of the materials to be handled and are fully trained in appropriate emergency response procedures.</li> </ul>	
3	WPI 4.1.3	<p><b>Project Plan</b></p> <p>The methodology of the Project Plan is to design a set of plans and programmes that are specifically directed at achieving the aims and goals indicated above. These plans are then enumerated within a set of Work Procedure Instructions (WPI's) and are managed, controlled and audited by the management team.</p> <p>The Project Plan is constructed from the following sub sections:</p> <ul style="list-style-type: none"> <li>Section 1 Management Plan</li> <li>Section 2 Site Inspection Plan</li> <li>Section 3 Clearance Plan</li> <li>Section 4 Site Preparation Plan</li> <li>Section 5 Packaging Plan</li> <li>Section 6 Transportation Plan</li> <li>Section 7 Shipping &amp; Disposal Plan</li> <li>Section 8 Insurance Plan</li> <li>Section 9 Emergency Plan</li> </ul>	
4	WPI4.1.4	<p>Each of these sections culminates in a set of Work Procedure Instructions.</p> <p><b>Management Plan</b></p> <p>The Management Plan is based around the concept of the QA auditing the work procedure Instructions (WPI's). All the necessary project controlling detail are enumerated within these WPI's and the QA section provides the audit function. Should a section of the works be out of compliance then the appropriate report would be generated. To set up and monitor this set of plans the Project Director must first create a Management Team.</p>	

WPI		Operational Instructions	WPI 4.1
Item	Instruction Number	Procedural Instruction [Name] Project	Page 2
<b>Management Plan</b>			
5	WPI 4.1.5	<p><b>Management Team Structure</b></p> <p>The management team is to be set up around the Main Contractor Subcontractor concept based on the Client contract Document. The main Contractor is XYZ International who are entirely responsible to the Client and the Environment for the safe and efficient discharge of the obligations under contract. The Subcontractor is the nominated Clearance company on site.</p> <p>At all times the Main Contractor is responsible for the complete Contract of clearance and the Management Team Structure is to be structured in recognition of this responsibility. Members of the team are to be appointed as follows:</p>	
6	WPI 4.1.6	<p><b>Project Director [ ]</b></p> <p>Overall Project Director with top level access to Client. Government, Disposal services etc. Maintains a constant monitoring of the discharge of the contractual responsibilities as well as ensuring safety and environmental protection. All decisions regarding Safety, environmental, economic etc are referred to this office.</p>	
7	WPI 4.1.7	<p><b>Project Manager [ ]</b></p> <p>All day to day management of the entire project from site inspections to shipping and disposal are responsibility of this officer. He has direct in line management responsibility to ensure the total discharge of all obligations under contract and to ensure that the operation is rigidly performed according to the safety and Environmental instructions and the that all work is supervised using the Work Procedure Instructions. All project communications and instructions are to be issued by this office. All QA auditing and Reporting to be the responsibility of this office.</p>	
8	WPI 4.1.8	<p><b>Subcontract Project manager</b></p> <p>This position is filled by an experienced manager from the Clearance Company and reports directly to the Project Manager. Responsibilities include the supervision of the WPI's, training and emergency management. All site clearance, packaging and local transport are included in this office. Directly responsible for the discharge of all safety and environmental requirements and the completion of all QA requirements.</p>	
9	WPI 4.1.9	<p><b>QA Inspectors</b></p> <p>This position reporting Directly to both the Project manager and the Client is to be an independent Engineering Auditor experienced with Hazardous waste management.</p>	
10	WPI 4.1.10	<p><b>Clearance and Packaging Manager</b></p> <p>Reports to Subcontract Project Manager and is responsible for the day to day site management of the Clearance Plan and the discharge of all the obligations of the Clearance Plan. All matters of safety and environmental protection relative to the clearance plan are the direct responsibility of this office. All emergency situations are initially under the management of this officer until relieved by the Subcontract manager. This officer is responsible for the veracity of the check sheets by the application of his signature daily.</p>	
11	WPI 4.1.11	<p><b>Documentation &amp; Regulations manager</b></p> <p>This position handles the day to day documentation between the client and regulatory authorities. The position does not handle the contractual communication but it handles the advice communication regarding shipments, weighing, permits etc.</p>	
12	WPI 4.1.12	<p><b>WPI Structure</b></p> <p>Each set of Work Procedure Instructions is set up as a 6 x 4 mosaic of 24 sheets.</p> <ul style="list-style-type: none"> <li>Sheets 1-6 Operational Instructions</li> <li>Sheets 7-12 Safety and Environmental Instructions</li> <li>Sheets 13-18 QA Audit Check Lists and registers</li> <li>Sheets 19-24 Reports</li> </ul>	

Item	Instruction Number	Procedural Instruction [name] Project	Page 3
12	WPI 4.1.12	<p><b>Management Plan</b></p> <p><b>Management Structure</b></p> <pre> graph TD     Client --&gt; Gov[Government Ministry for Environment]     Funding[Funding Org] --&gt; Gov     PM[Project Director XYZ International] --&gt; Gov     Gov --&gt; PM     DFM[Disposal Facility Manager] --&gt; PM     SC[Shipping Company] --&gt; PM     QA[QA Auditor] --&gt; PM     PM --&gt; SPM[Site Project Manager]     TM[Transportation Manager] --&gt; SPM     CPM[Clearance &amp; Packaging Manager] --&gt; SPM     DM[Documentation Manager] --&gt; SPM     JSS[Job Site Supervisors] --&gt; CPM                     </pre>	

Item	Instruction Number	Procedural Instruction [name] Project	Page 4
		<p><b>Management Plan</b></p> <pre> graph TD     WC[WPI Concept] --&gt; EO[Examine Operating Instructions and apply Sheets 1-6]     EO --&gt; ESE[Examine Safety &amp; Environmental and apply Sheets 7-12]     ESE --&gt; EQA[Examine all QA audit questions Sheets 13-18]     EQA --&gt; FODR[Fill Out data requests and schedules QA Audit Check Lists and Registers]     EQA --&gt; PNCR[Produce Non Compliance Reports]     FODR --&gt; CFWR[Complete Final WPI Report Sheets 19-24]     PNCR --&gt; CFWR                     </pre>	

WPI		Safety and Environmental Instructions	WPI 4.1
Item	Instruction Number	Procedural Instruction [name] - Project	Page 5
<b>Management Plan</b>			
1	S&E 4.1.1	<p><b>Strategy</b></p> <p>The Management Team must understand that the principles of operation that are inherent in the WPI's emanate from work safety principles and environmental safeguards. Throughout these WPI's there will be detailed instructions relating to safety and emergency instructions. The management team is charged with the responsibility for the application of the Safety and Environmental Plan and personnel training programmes must be undertaken to reflect these standards and ensure that the WPI's are correctly enforced.</p>	
2	S&E 4.1.2	<p><b>Job Descriptions</b></p> <p>Before the appointments of the Management Team are confirmed the Job Descriptions must be completed. Within each of the Job Descriptions a restatement of the Safety and Environmental Aims and Objectives thus indicating the managerial principles. Each of the Job Descriptions must have a full description as follows;</p> <ul style="list-style-type: none"> <li>- Primary Aims and Goals</li> <li>- Managerial Plan Strategy</li> <li>- Safety and Environmental responsibilities</li> <li>- QA Auditing Function</li> </ul> <p>These functions are to be embodied in the following structures:</p> <ul style="list-style-type: none"> <li>- Management Focus</li> <li>- Training Programmes</li> <li>- WPI Audit function</li> </ul>	
3	S&E 4.1.3	<p><b>Environmental Impact</b></p> <p>For any managerial plan that involves handling a hazardous chemical the plan must be cognizance of the risk to the environment. In order that the plans are entirely consistent with the risk an Environmental Impact Report must be generated that outlines the environmental risks and the results of this study are imprinted on the management plan.</p> <p>The environmental Impact Report for this specific project appears in the report section of WPI 4.1.</p>	

WPI		Quality Assurance	WPI 4.1
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 13
<b>Management Plan</b>			
1	QA 4.1.1	It is the aim this Plan to put in place efficient, audited plans and programmes that ensure the discharge of all obligations under International law and in so doing, achieve the goal of no endangerment to the environment or people of any other country.	
2	QA 4.1.2	<p><b>QA Standards</b></p> <p>The Quality Assurance standard to which this project will be conducted will be ISO 14001. All the plans and QA documentation that accompanies this plan are designed with this standard in mind.</p> <p>The Management plan must therefore be designed to meet the following:</p>	
3	QA 4.1.3	<p><b>Management Responsibility</b></p> <p>Establish the responsibility, authority and the interrelation of all personnel who manage, perform and verify work affecting quality and the discharge of contractual responsibilities. Verification resources shall be resourced and conducted and a management system established to implement and maintain the quality system.</p>	
4	QA 4.1.4	<p><b>Quality System</b></p> <p>Establish and maintain a documented Quality System.</p>	
5	QA 4.1.5	<p><b>Contract Review</b></p> <p>Establish and maintain procedures for contract review to ensure all requirements are adequately and clearly defined and that resources are available to meet those requirements.</p>	
6	QA 4.1.6	<p><b>Document Control</b></p> <p>Establish and maintain procedures which ensure current issues of all documents critical to quality are available where and when needed, and that obsolete documents are promptly removed.</p>	
7	QA 4.1.7	<p><b>Purchasing</b></p> <p>Ensure purchased products and services conform to specified requirements.,</p>	
8	QA 4.1.8	<p><b>Purchaser Supplied Product.</b></p> <p>Establish and maintain procedures for verification, storage and maintenance of purchaser supplied product provided for incorporation in supplies necessary for delivery of the service.</p>	
9	QU 4.1.9	<p><b>Product Identification and Traceability</b></p> <p>Establish and maintain procedures for identifying and tracing individual products and services through all stages of the project.</p>	
10	QA 4.1.10	<p><b>Inspection and Testing</b></p> <p>Implement a plan and quality procedures ensuring that all materials and equipment used in delivering the clearance service conform to the requirements, and that all services and goods provided conform to the client needs.</p>	

WPI		Quality Assurance	WPI 4.1
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 14
		<b>Management Plan</b>	
11	QA 4.1.11	<p><b>Corrective Action</b></p> <p>Establish and maintain document procedures which investigate the cause of nonconforming service and initiates corrective action needed to prevent recurrence, analyse all processes and systems to eliminate potential causes of non conforming services and implement and record changes in p[Procedures resulting from corrective action.</p>	
12	QA 4.1.12	<p><b>Internal Quality Audits</b></p> <p>Maintain and carry out a comprehensive system of planned and documented internal quality audits to verify whether all activities complied with procedures and to determine effectiveness of the quality system.</p>	
13	QA 4.1.13	<p><b>Training</b></p> <p>Establish and maintain procedures for identifying the training needs and provide for the training of all individuals affecting quality.            Establish the responsibility, authority and the interrelation of all personnel who manage, perform and verify work affecting quality and the discharge of contractual responsibilities.            Verification resources shall be resourced and conducted and a management system established to implement and maintain the quality system.</p>	

WPI		Quality Assurance	WPI 4.1
Item	Audit Number	Quality System Audit Check	Page 15
		<b>Management Plan</b>	<b>Non Compliance Report</b>
1	QA 4.1-A	<p>Question: Have the Job descriptions been prepared for each of the management team using the information contained in WPI 4.1.5?</p> <p>Compliance Signature:</p>	See Rpt 4.1-A
2	QA 4.1-B	<p>Question: Do the managers understand the Goals and Objectives and are capable of discharging their responsibilities</p> <p>Compliance Signature:</p>	See Rpt 4.1-B
3	QA 4.1-C	<p>Question : Do all managers understand the structure of the project plan and how that fits into achieving the goals and objectives.?</p> <p>Compliance Signature:</p>	See Rpt 4.1-C
4	QA 4.1-D	<p>Question: Do all managers understand the level of activity that they are responsible for and the lines of communication.?</p> <p>Compliance Signature:</p>	See Rpt 4.2-D
5	QA 4.1-E	<p>Question: Are all managers aware of the Flow chart requirements for each area of activity and have studied the relevant sections of the project plan?</p> <p>Compliance Signature:</p>	See Rpt 4.1-E
6	QA 4.1-F	<p>Question: Are all managers experienced with hazardous waste management and have received recent training and briefing on this project?</p> <p>Compliance Signature:</p>	See Rpt 4.1-F





## WPI 4.2 Site Inspection Instructions

WPI		Operational Instructions		WPI 4.2
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 1	
<b>Site Inspection Plan</b>				
1	WPI 4.2.1	<p><b>Strategy Statement</b></p> <p>Notwithstanding any previous Site Inspection prior to the formation of the Clearance Contract the Project Manager must perform a full site inspection and evaluation and present the findings in detailed Site Inspection Report. For this project the initial site inspection was performed by representatives from XYZ International. The site report appears at the end of this section. These Work Procedure Instructions detail the activities that are required to complete the required information gathering and include a reporting structure to assist the output reports. The specific instructions for risk assessment factors are contained within the Safety &amp; Environmental Section pages 5-8.</p> <p style="text-align: center;"><b>Elements of the Site Inspection Plan</b></p> <p><b>Site Name</b></p> <p>Record the name and location of the site in the report section of the site</p> <p><b>Storage Type</b></p> <p>Investigate and record all the various types of storage. This item is where the site observations of the stored material is noted. The storage type factor that is assigned to the material is intended to indicate a risk factor associated with that type of storage. This information is required so that the clearance plan can be prioritized. (See assigning factors in pages 5-8)</p> <p><b>Type and Quantity</b></p> <p>The waste type and quantity are required to be investigated and recorded.</p> <p><b>Dimensions</b></p> <p>Details of the site dimensions as well as any storage facilities or units used are to be noted. Waste weight estimates and special requirements are to be noted.</p>		
2	WPI 4.2.2	<p><b>Lighting and Power</b></p> <p>Investigate all power and lighting systems for safety of wiring and fire. Lighting levels should be measured to ascertain if they are adequate for the work areas from an operational and a safety point of view. Power supplies should be checked to ensure that sufficient capacity is available for the loads that will be imposed during the clearance. Details from this examination should be included in the Final Site Inspection Report.</p>		
3	WPI 4.2.3	<p><b>Cranes and other Machinery</b></p> <p>Availability and capacity of available cranes and support machinery to be investigated and noted</p>		
4	WPI 4.2.4	<p><b>Space</b></p> <p>A preliminary examination of the space available around the storage area is required to ensure that it will be possible to establish the necessary facilities to handle the works. If there is insufficient space then the Final report should indicate alternatives.</p>		

WPI		Operational Instructions		WPI 4.2	
Item	Instruction Number	Procedural Instruction [name] - Project		Page 2	
<b>Site Inspection Plan</b>					
6	WPI 4.2.6	<b>Residents</b>	The location and density of nearby accommodation should be examined and reported. There should be no attempt to contact residents at this stage, merely ascertain the proximity and density by casual observation.		
7	WPI 4.2.7	<b>Access</b>	Full survey of the existing road or street access to the site is required with the report highlighting any areas that will cause problems for emergency services and container trucks etc. Information required includes building access, accessibility for emergency services, evacuation routes, road condition. The details of this examination should be included within the Final Site Inspection Report.		

WPI		Safety and Environmental Instructions		WPI 4.2	
Item	Instruction Number	Procedural Instruction [name] - Project		Page 7	
<b>Site Inspection Plan</b>					
1	S&E4.2.1	<b>Strategy Statement</b>	<p>For the Project Plan to proceed smoothly the correct set of information must be collated and recorded by the Site Inspection plan and this activity must be regulated from the Safety &amp; Environment viewpoint.</p> <p>When planning to visit site for the first time after contract award it is necessary to obtain site information from the client as to the likely conditions on site. For your own personal safety the personnel attending the site inspection must plan to visit with a level of personal protection that will allow the project manager and other members of the team to attend site under most contaminated conditions.</p> <p>For the protection of others and the protection of the environment the project manager must severely limit the numbers of extra people during the site inspection visits. All other members of the site inspection team must be provided with a minimum level of PP.</p> <p>All other people required at the site but not in the contaminated area are to be restrained at a nominated barrier point.</p> <p>When attending site for the initial project assessment the Project Manager must be in a position to act immediately if there are conditions that violate environmental waste laws or best practice regulations.</p> <p>If there is a problem on the site then it must be dealt with. If the situation constitutes an emergency then the construction of the Site Inspection plan must be suspended and the emergency instructions are to be acted on immediately.</p>		
<b>S&amp;E Elements of the Site Inspection Plan</b>					
2	S&E 4.2.2	<b>Site name</b>	Establish the site name and location clearly and without confusion. Check with Fire service and other emergency services that the name is instantly recognizable. The name must be fully described in the Report and all plans and instructions must adhere to that site name.		
3	S&E 4.2.3	<b>Storage Type</b>	<p>The primary aim of the Site Inspection Plan is to ascertain the risk factors associated with the type of storage encountered at the site.</p> <p>The various types of storage discovered at the site are to be assigned a Risk factor for safety and a risk factor for environmental protection.</p> <p>The overall risk factors are then loaded into the Site Inspection Reports to be integrated into the site Clearance plan.</p> <p>The risk factors that are associated with the storage types are as follows:</p> <p><b>Type 1 Storage</b> Pesticides Contaminated Materials, Solids dumped on open ground with no protection and major loss capacity.</p> <p style="text-align: right;"><i>Risk factor Safety</i> 10 <i>Risk factor environment</i> 10 <i>Overall Risk factor</i> 20</p> <p><b>Type 2 Storage</b> Pesticides Contaminated Materials, Solids dumped on open ground with no protection and minor loss capacity.</p> <p style="text-align: right;"><i>Risk factor Safety</i> 8 <i>Risk factor environment</i> 9 <i>Overall Risk factor</i> 17</p>		

WPI		Safety and Environmental Instructions	WPI 4.2
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 8
		<b>Site Inspection Plan</b>	
		<b>Type 3 Storage</b> Pesticides Contaminated Materials, Solids dumped on open ground with no protection and no loss capacity. <i>Risk factor Safety</i> 8 <i>Risk factor environment</i> 8 <i>Overall Risk factor</i> 16	
		<b>Type 4 Storage</b> Warehouse with Pesticides Contaminated Materials, Solids and liquids that are incorrectly stored or contained and are leaking within structure and onto ground <i>Risk factor Safety</i> 8 <i>Risk factor environment</i> 8 <i>Overall Risk factor</i> 16	
		<b>Type 5 Storage</b> Warehouse with Pesticides Contaminated Materials, Solids and liquids that are incorrectly stored or contained and are leaking within structure but not onto ground <i>Risk factor Safety</i> 8 <i>Risk factor environment</i> 8 <i>Overall Risk factor</i> 16	
		<b>Type 6 Storage</b> Warehouse with Pesticides Contaminated Materials, Solids and liquids that are incorrectly stored or contained and would be a treat to the environmet if leaking occurred. <i>Risk factor Safety</i> 7 <i>Risk factor environment</i> 7 <i>Overall Risk factor</i> 14	
		<b>Type 7 Storage</b> Warehouse with Pesticides Contaminated Materials, Solids and liquids that are correctly stored or contained, tagged and registered and provided with full spill containment. <i>Risk factor Safety</i> 3 <i>Risk factor environment</i> 4 <i>Overall Risk factor</i> 7	
		<b>Type &amp; Quantity</b> A for the storage type information is to be collected regarding the type and quantity. The various waste types and quantities must be graded as to risk factor. This information is also used in the clearance plan.	
		<b>Type and Quantity of Waste material</b> The type, nature, composition and the estimated quantity of the waste information is required for the Final site inspection report	

WPI		Quality Assurance	WPI 4.2
Item	Audit Number	Procedural Instruction [Name] - Project	Page 13
		<b>Site Inspection Plan</b>	<b>Non Compliance Report</b>
1	QA 4.2-A	<b>Site name/Storage</b> Question: Is the name for the site clearly stated and includes sufficient information to accurately identify the site? Compliance Signature : See Rpt 4.2-A	
2	QA 4.2-B	Question: Are all the site storage types listed in the schedule ? Compliance Signature : See Rpt 4.2-B	
3	QA 4.2-C	Question : Are there any items in storage that are an immediate threat to the environment.? Compliance Signature : See Rpt 4.2-C	
4	QA 4.2-D	Question : Are there any items on storage that are structurally unstable.? Compliance Signature : See Rpt 4.2-D	
5	QA 4.2-E	Question : Are any of the items of storage that are leaking? Compliance Signature: See Rpt 4.2-E	
6	QA 4.2-F	Question : Is there any free waste on storage surface? Compliance Signature: See Rpt 4.2-F	
7	QA 4.2-G	Question : Are there any items that are an earthquake risk? Compliance Signature : See Rpt 4.2-G	
8	QA 4.2-H	Question Is the storage area protected from the elements? Compliance Signature : See Rpt 4.2-H	
9	QA 4.2-J	Question : Are there any items of building configurations that are a fire risk? Compliance Signature : See Rpt 4.2-J	
10	QA 4.2-K	Question : Is there public access to the storage? Compliance Signature : See Rpt 4.2-K	
11	QA 4.2-L	Question : Is the storage area lockable? Compliance Signature See Rpt 4.2-L	
12	QA 4.2-M	Question : Is the Waste in storage correctly registered and tagged with identifiers? Compliance Signature: See Rpt 4.2-M	
13	QA 4.2-N	Question : Are there any items in storage that should not be stored with waste? Compliance Signature See Rpt 4.2-N	
14	QA 4.2-O	Question : Is there any aspect of the storage that should be immediately notified to the Govt? Compliance Signature: See Rpt 4.2-O	
15	QA 4.2-P	<b>Type &amp; Quantity</b> Question : Are all the Waste Types listed and quantities noted? Compliance Signature : See Rpt 4.2-P	
16	QA 4.2-Q	Question : Are all risk assessment noted in the schedule: Compliance Signature : See Rpt 4.2-Q	
17	QA 4.2-R	Question : Are there any items that cannot be handled safely with the standard waste handling techniques that will require a specialist approach? Compliance Signature : See Rpt 4.2-R	

WPI		Quality Assurance	WPI 4.2
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 14
		<b>Site Inspection Plan</b>	Non Compliance Report
		<b>Goals/Objectives</b>	
18	QA 4.2-S	Question : In reviewing the Goals and objectives of the project are there any aspects of the site, storage, type, and quantities that are not in strict accordance with achieving the Goals and Objectives? Compliance Signature	See Rpt 4.2-S
		<b>Power/Lighting and Fire Protection</b>	
19	QA 4.2-T	Question : Is the site provided with sufficient power and lighting for efficient project execution? Compliance Signature :	See Rpt 4.2-T
20	QA 4.2-U	Question : Are the site electrical services safe and of a good standard? Compliance Signature:	See Rpt 4.2-U
21	QA 4.2-V	Question : Is there sufficient fire protection equipment for the fighting of substantial fires for 30 minutes before the fire service arrives? Compliance Signature :	See Rpt 4.2-V
		<b>Cranes and Machinery</b>	
22	QA 4.2-W	Question : Does the site have sufficient cranes and hoists in working order? Compliance Signature :	See Rpt 4.2-W
		<b>Space</b>	
23	QA 4.2-X	Question : Is there sufficient room within the storage area to layout the packaging system? Compliance Signature :	See Rpt 4.2-X
24	QA 4.2-Y	Question : Is there sufficient appropriate space for the location of the decontamination and amenities facilities? Compliance Signature :	See Rpt 4.2-Y
25	QA 4.2-Z	Question : Is there sufficient space to locate the Fire service command vehicle and other emergency services during an emergency. Compliance Signature :	See Rpt 4.2-Z
26	QA 4.2-AA	Question: Can the working areas be completely defended against the intrusion of public and unauthorised access? Compliance Signature :	See Rpt 4.2-AA
27	QA 4.2-AB	Question : Can the working areas be defended against burglars and arsonists or environmental activists? Compliance Signature :	See Rpt 4.2-AB
		<b>Residents</b>	
28	QA 4.2-AC	Question: Are there nearby residential accommodations? Compliance Signature :	See Rpt 4.2-AC
29	QA 4.2-AD	Question : Are these accommodations at risk of fire in storage items? Compliance Signature :	See Rpt 4.2-AD
30	QA 4.2-AE	Question : With the proximity of residential accommodations are the Aims and goals of the project compromised? Compliance Signature:	See Rpt 4.2-AE

WPI		Quality Assurance	WPI 4.2
Item	Instruction Number	Procedural Instruction [name] - Project	Page 15
		<b>Site Inspection Plan</b>	Non Compliance Report
31	QA 4.2-AF	Question :Are the nearby residents appraised of evacuation criteria if fire breaks out in the storage area? Compliance Signature :	See Rpt 4.2-AF
		<b>Access</b>	
32	QA 4.2-AG	Question : Are the roads and streets up to the storage area adequate for the planned activity? Compliance Signature :	See Rpt 4.2-AG
33	QA 4.2-AH	Question : Will there be easy access to the storage area for all emergency vehicles? Compliance Signature:	See Rpt 4.2-AH
34	QA 4.2-AI	Question : Are the roads and streets adequate for a full scale evacuation should it be required? Compliance Signature :	See Rpt 4.2-AI
35	QA 4.2-AJ	Question : Is the report schedule for the waste completed completed? Compliance Signature	See Rpt 4.2-AJ
		<b>Hazards</b>	
36	QA 4.2-AK	Question: Are there any overhead transmission lines or power cables above the Storage site that will impede loading operations? Compliance Signature:	See Rpt 4.2-AK



WPI Reports		WPI 4.2
Item	Procedural Instruction [Name] - Project	Page 21
	<p style="text-align: center;"><b>Site Inspection Final Report</b></p> <p style="text-align: center;"><i>"Use the format here to produce the Final Site Inspection Report"</i></p> <p style="text-align: center;"><b>FINAL REPORT FORMAT</b></p> <p><b>Introduction</b> This report for [ ] storage is the result of the application of the Site Inspection Plan and covers aspects of storage type, Waste type and quantity. Information provided by the Final Site Inspection report is to be used within the Site Clearance and preparations plans.</p> <p style="text-align: center;"><b>Site Inspection Data</b></p> <p><b>Site Name</b> The confirmed site name that has been verified by the emergency services, the client and is [ ].</p> <p><b>Storage Types</b> The types of storage that are present at the named site are as per the following list.</p> <p><b>Waste Types</b> The waste type is constant throughout the site quantity;</p> <p><b>Waste Quantity</b> The quantities of Stored waste that are present at the named site are included in the following list.</p> <p><b>Light, Power and Fire Fighting Equipment</b> There are minimum power available and no lighting. There are no fire fighting facilities available onsite</p> <p><b>Lifts and Hoists</b></p> <p><b>Space</b></p> <p><b>Residents</b></p> <p><b>Access</b></p> <p><b>Waste Material</b></p>	

WPI Reports		WPI 4.2
Item	Procedural Instruction (name)- Project	Page 22
	<p style="text-align: center;"><b>Site Inspection Final Report Format</b></p> <p style="text-align: center;"><b>FINAL REPORT FORMAT Continued.</b></p> <p style="text-align: center;"><b>Non Compliance Reports</b></p> <p><b>Special Handling Requirement (Rpt 4.2-R)</b></p> <p><b>Primary Aim and Goals Non Compliance (Rpt 4.2-S,AE)</b></p> <p><b>Fire Fighting Resources (Rpt 4.2-V)</b></p> <p><b>Lifts and Hoists (Rpt 4.2-W)</b></p> <p><b>Spatial Requirements (Rpt 4.2-X,Y,Z)</b></p> <p><b>Unauthorized Access Non Compliance (Rpt 4.2-AA,AB)</b></p> <p><b>Fire Risks (Rpt 4.2-AD)</b></p>	

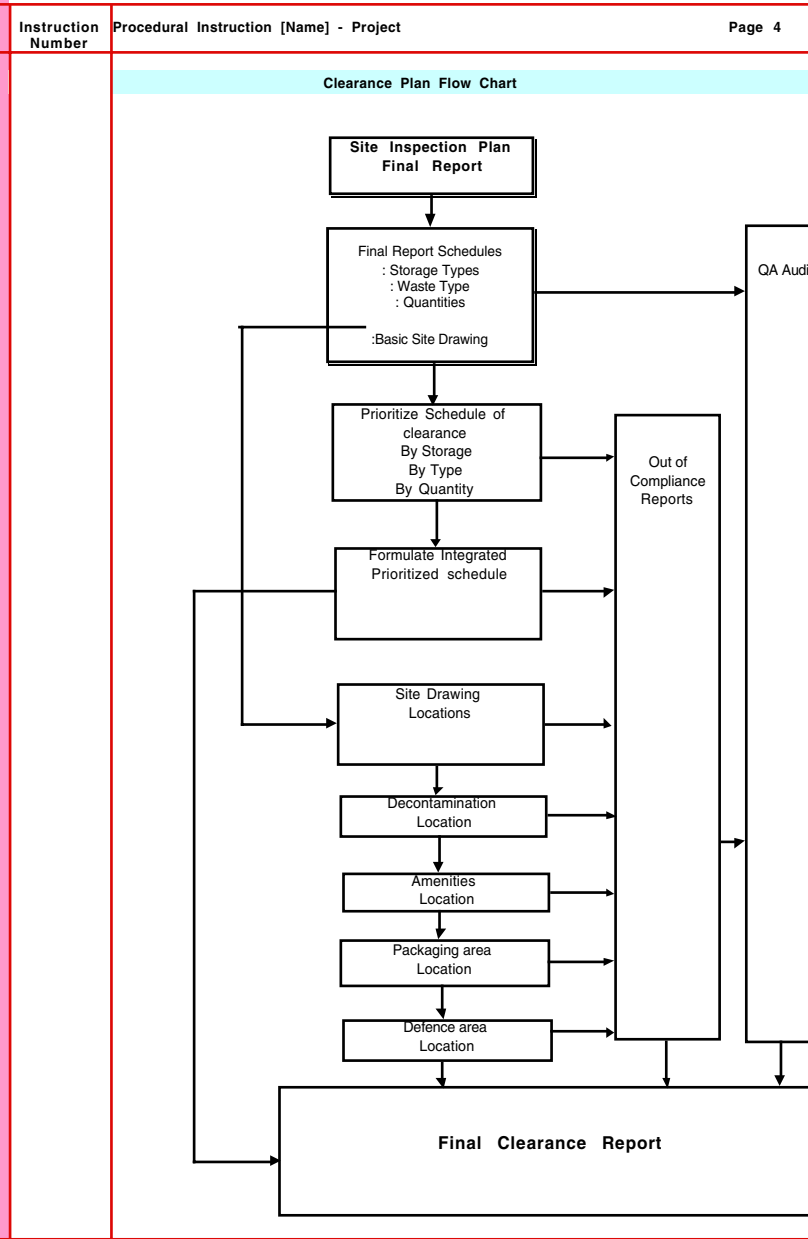
## WPI 4.3 Clearance Instructions

WPI		Operational Instructions	WPI 4.3
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 1
		<b>Clearance Plan</b>	
1	WPI 4.3.1	<p><b>Strategy Statement</b></p> <p>The clearance Plan is an output of the site inspection plan. When all the observations and calculations and risk factors are formulated within the Final Site Inspection Report then the Clearance Plan can be written. The Clearance Plan sets down the prioritized clearance schedule based on risk factors. The Clearance plan also, by virtue of the prioritized schedule, sets up the relevant parts of the Site Preparation Plan. This activity then allows the allocation and location of the Project resources to be applied in a manner that addresses the identified risk factors.</p> <p style="text-align: center;"><b>Elements of the Clearance Plan</b></p> <p><b>Storage clearance priority schedule</b></p> <p>Within the final site inspection report there is a completed schedule of the observed storage area types. These listed Types are numbered 1-10. Under the stated policy of minimization of risk those storage types that have the highest risk factors are to be cleared first. If there an outside influence that requires a different order to that of risk minimization then a non compliance report is to be completed.</p> <p>The order of clearance is therefore to be based on the following order and those storage types that appear in the Site Inspection Plan are to appear in the order shown in the Clearance Plan Final report.</p> <p><b>Prioritized order of Storage Clearance</b></p> <p>Within each storage type there are further risk considerations. These considerations include waste Type and quantity. In order that the policy of risk minimization is fully carried out the Clearance plan must indicate the correct clearance priorities for waste Type and quantity. The Site Inspection Final report reports on the various types and quantities. The priority schedule for these types and quantities is as follows: When the details of the Site Inspection Plan are known then the prioritized clearance schedule can be completed within the Clearance Final report.</p> <p>Type 1 Storage PCB materials, Solids and free liquids dumped on open ground with no spill protection and major leaking.</p> <p>Type 2 Storage PCB materials, Solids and free liquids located in original equipment location still working but with no spill protection and leaking.</p> <p>Type 3 Storage PCB materials, Solids and free liquids dumped on open ground with no spill protection and minor leaking</p> <p>Type 4 Storage PCB materials, Solids and free liquids located in original equipment location but not working but with no spill protection and leaking.</p> <p>Type 5 Storage Ware house with PCB materials, Solids and free liquids that are incorrectly stored or contained and are leaking within warehouse structure and onto ground surface.</p> <p>Type 6 Storage PCB materials, Solids and free liquids located in original equipment but not working but with spill protection and not leaking.</p> <p>Type 7 Storage Warehouse with PCB materials ,Solids and free liquids that are incorrectly stored or contained and are leaking within warehouse structure but not onto ground surface.</p> <p>Type 8 Storage PCB materials, Solids and free liquids dumped on open ground with spill protection and no leaking.</p> <p>Type 9 Storage Warehouse with PCB materials, Solids and free liquids that are incorrectly stored or contained and would be a threat to the environment if leaking were to occur.</p> <p>Type 10 Storage Warehouse with PCB materials, Solids and free liquids that are correctly stored in containment, tagged and registered and provided with full containment within warehouse structure and public access is prohibited.</p>	

Item	Instruction Number	Procedural Instruction [Name] - Project	Page 2
		<b>Clearance Plan</b>	
		<b>Prioritised order of PCB Type Clearance</b>	
	Type 1 PCB	PCB free liquids with 500,000 - 900,000 ppm Askeral	
	Type 2 PCB	PCB free liquids with 100,000 - 500,000 ppm Askeral	
	Type 3 PCB	PCB free liquids with 50,000 - 100,000 ppm Askeral	
	Type 4 PCB	PCB free liquids with 50-50,000 ppm Askeral	
	Type 5 PCB	PCB free liquids with less than 50 ppm Askeral	
	Type 6 PCB	PCB Sealed capacitors with 500,000 to 900,000 ppm Askeral	
	Type 7 PCB	PCB Sealed capacitors with 50 - 500,000 ppm Askeral	
	Type 8 PCB	PCB Sealed capacitors with 0-50 ppm Askeral	
	Type 9 PCB	PCB Transformers with 500,000 to 900,000 ppm Askeral	
	Type 10 PCB	PCB Transformers with 50 to 500,000 ppm Askeral	
		<b>Prioritised Order of Clearance for PCB Quantity</b>	
	Type 1 Quantity	Sealed capacitors Exceeding 500 Tonnes	
	Type 2 Quantity	Sealed capacitors 100-500 Tonnes	
	Type 3 Quantity	Sealed capacitors 50-100 Tonnes	
	Type 4 Quantity	Sealed capacitors 25-50 Tonnes	
	Type 5 Quantity	Sealed capacitors 0-25 Tonnes	
	Type 6 Quantity	Transformers exceeding 500 Tonnes	
	Type 7 Quantity	Transformers 100-500 Tonnes	
	Type 8 Quantity	Transformers 50-100 Tonnes	
	Type 9 Quantity	Transformers 25-50 Tonnes	
	Type 10 Quantity	Transformers 0-25 Tonnes.	

Item	Instruction Number	Procedural Instruction [Name] - Project	Page 3
		<b>Clearance Plan</b>	
2	WPI 4.3.2	<b>Location of Services and amenities</b>	
		<p>The Clearance Plan includes final details of the locations of the various services and amenities. careful planning is required to correctly locate these services and facilities so that the worker safety and site protection is guaranteed. As part of the Site Inspection plan a site drawing indicating the various boundary restraints and limitations is to be produced. This drawing shall under the Clearance Plan be annotated with the allocations of the positions of the various services and facilities. The type and disposition of these services and facilities is described below and their characteristics are to be taken into account when deciding where to place them on the site drawing.</p> <p>The various locations and positions that require positional decisions within the Clearance Plan are as follows.</p> <ul style="list-style-type: none"> <li>Location of Decontamination Facility</li> <li>Location of Staff amenities</li> <li>Location of Emergency vehicle</li> <li>Location of Packaging Area</li> <li>Location of Dispatch area</li> <li>Overall Defence zone</li> </ul> <p><b>Location of Decontamination Facility</b></p> <p>The location of this facility within the site drawing must take into consideration the access to the work areas. The positioning of this facility must impede normal site access so that all workers and site visitors are required to pass through this facility. Consideration shall also be given to ensure that if the site is required to be attended by emergency services that their access is not impeded by the Decontamination facility.</p> <p>This facility is to be sited so that any personnel entering the warehouse or storage area must enter the unit and any personnel leaving the work area must exit from the facility. It must not be positioned to one side of the entry to the work site, it must be in line. There must be a method however that allows the unit to be by-passed in the event that rapid entry is required by emergency services.</p> <p><b>Location of Staff amenities</b></p> <p>This unit must be located outside of the work area beyond the decontamination facility. The positioning of this unit must not impede access to the work site and it must be installed at a reasonable distance away from the work site. There must be no positioning of the amenities unit that would facilitate the avoidance of the decontamination unit.</p> <p><b>Location of Emergency vehicle</b></p> <p>The emergency vehicle shall be located outside of the working area and shall be accessible without passing through the decontamination facility.</p> <p><b>Location of the Packaging area.</b></p> <p>This area should be located as close to the work area as possible. The packaging area is to be clearly shown on the site drawing. The location should clearly indicate the position of all the equipment, tools and storage items as well as forklift movement plan and shipping container positions. The overall bunding protection should also be shown as it interlocks with the movement plan.</p> <p><b>Location of Dispatch Area</b></p> <p>This area is to be accessible by members of the public. (Truck drivers and the like). This area must be completely separate from the packing areas. The location of the container dispatch and how the separation is to be achieved is to be shown.</p> <p><b>Overall defense zone</b></p> <p>If the warehouse or storage site is not already provided with a fenced boundary then the site drawing must indicate the site fence requirements and the Final Clearance report includes a section to be completed regarding the site fencing.</p>	





Item	Instruction Number	Procedural Instruction [Name] - Project	Page 7
<b>Clearance Plan</b>			
1	S&E 4.3.1	<p><b>Strategy Statement</b></p> <p>In order to discharge the Safety requirements and provide full environmental protection and to maintain the policy of risk minimization the Clearance plan must be prioritized. This means that the Clearance Plan must be constructed so that the warehouse or storage areas must be cleared by degree of danger. The higher the danger the higher up the priority list the clearance and the earlier the clearance. The integration of the clearance schedule as contained within the Final report of the clearance plan is designed to adhere to this policy.</p>	
2	S&E 4.3.2	<p><b>Elements of the Clearance Safety and Environmental Plan</b></p> <p><b>Storage and type prioritization</b></p> <p>In order to clear the site in a safe and orderly manner plus maintain management focus of safety and environmental protection the clearance plan must be prioritized according to the risk factor. The clearance priority is determined by the site inspection plan and the clearance safety and environment plan simply follows the schedule.</p> <p><b>Waste packing Prioritization</b></p> <p>In general, wastes will be packed in the following order (where items exist)</p> <ul style="list-style-type: none"> <li>Waste material exposed to environment where there is no protection</li> <li>Waste material exposed to environment but with protection</li> <li>Waste drummed but exposed to the open</li> <li>waste material contained protected and not in the open.</li> </ul> <p>In addition, soft materials (overall, clothes, wipes etc.) will be packaged as used.</p>	

WPI		Quality Assurance	WPI 4.3
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 13
		<b>Clearance Plan</b>	<b>Non Compliance Report</b>
		<b>Warehouse or Storage facility Clearance Priority</b>	
1	QA 4.3-A	Question: Are all the types of storage correctly indicated on the schedules from WPI 4.2 ? Compliance Signature	See Rpt 4.3-A
		<b>Type and Quantity clearance priority schedule</b>	
2	QA 4.3-B	Question : Are all the Waste types and quantities entered into the schedules from WPI 4.2 ? Compliance Signature	See Rpt 4.3-B
		<b>Position allocations</b>	
3	QA 4.3-C	Question: Within the Final Report for the Site Inspection plan is there a site drawing? Compliance Signature	See Rpt 4.3-C
4	QA 4.3-D	Question: Are the locations of the Decontamination and amenities units drawn up on the site plan? Compliance Signature	See Rpt 4.3-D
5	QA 4.3-E	Question: Is the location of the Emergency vehicle indicated on the site drawing? Compliance Signature	See Rpt 4.3-E
6	QA 4.3-F	Question: Are the locations of the Packaging areas indicated on the site drawing? Compliance Signature	See Rpt 4.3-F
7	QA 4.3-G	Question: Is the location of the dispatch area shown on the site drawing? Compliance Signature	See Rpt 4.3-G
8	QA 4.3-H	Question: Is the location of the defence zone indicated on the site drawing? Compliance Signature	See Rpt 4.3-H
9	QA 4.3-I	Question : Are the details of clearance start date and end date noted? Compliance signature	See Rpt 4.3-I

WPI		Reports	WPI 4.3
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 20
		<b>Clearance Non Compliance Report</b>	
1	Rpt 4.3-A	Complete the schedule as required under the WPI 4.2 filling out the entire details as to storage types	
2	Rpt 4.3-B	Complete the Schedule as required under WI 4.2 filling out the entire details as to Waste types and quantities.	
3	Rpt 4.3-C	Complete the site drawing as required by WPI 4.2	
4	Rpt 4.3-D	Complete the drawing of the site and display as a separate drawing showing the location of the decontamination and amenities units and indicating the flow of personnel.	
5	Rpt 4.3-E	Complete the site drawing showing the location of the emergency vehicle.	
6	Rpt 4.3-F	Complete the drawing of the site showing the location of the decanting/packaging areas.	
7	Rpt 4.3-G	Complete the site drawing showing the location of the dispatch area with movement indications.	
8	Rpt 4.3-H	Complete the site drawing showing the location of the defence area.	
9	Rpt 4.3-I	Complete the schedule of start and end dates	

Item	Instruction Number	Procedural Instruction [Name] - Project	Page 1521
		<p><b>Clearance Plan</b></p> <p><b>FINAL REPORT FORMAT</b></p> <p><b>Introduction</b>                      This report for [ ] Waste storage facility is the result of the application of the Clearance Plan and covers aspects of waste Clearance prioritizing by storage type, Waste type and quantity. Information provided for within this report and the conclusions are to be used for the Site Preparation plan.</p> <p style="text-align: center;"><b>Clearance Data</b></p> <p><b>Storage Type priority</b>                      The types of storage that exist at the [Site name] are listed in order of priority in descending danger.</p> <p><b>Waste Type Priority</b>                      The types of waste that exist at the [Site name] are listed in order of priority in descending danger</p> <p><b>Waste Quantity priority</b>                      The quantities of Waste that exist at the [site name] are listed in order of priority in descending danger</p> <p><b>Integrated Clearance priority</b>                      In considering the above individual priority allocation to the three categories above the final recommendation as to prioritized clearance is as per the following list in order of clearance.</p> <p><b>Time table</b>                      Clearance dates required include:                      Start date .....                      Clearance of waste by date.....                      Decontamination of site date.....                      Site finished date.....</p>	

Item	Instruction Number	Procedural Instruction [Name] - Project	Page 22
		<p><b>Clearance Plan</b></p> <p><b>FINAL REPORT FORMAT Continued.</b></p> <p><b>Insufficient Data from Site Inspection Plan (Rpt 4.3-A-C)</b></p> <p><b>Primary Aims and Goals Non Compliance</b></p> <p><b>Unacceptable Locations (Rpt D-H)</b></p> <p style="text-align: center;"><b>Conclusions</b></p> <p>At the [site name] there are the following storage types, waste types and quantities that have scheduled as follows in accordance with the required safety and environmental standards                      This schedule indicates the exact method of clearance that is to be undertaken to minimize the risk and maximize the protection.</p> <p>The locations of the decontamination and amenities as well as the decanting/packaging area and defence zones is shown on the attached site drawings and these indicate that the works can proceed.</p> <p>Non Compliance Reports are summarized as follows:</p> <p>The overall conclusion of the Clearance report is that the works may proceed with the following criteria:                      Full zone protection required.</p> <p style="text-align: center;"><b>Information for the Site Preparation Plans</b></p> <p>"Include the QA check schedules, Clearance Data Reports, Non Compliance reports and any other matters that will require attention from within the Site Preparation plan."</p> <p style="text-align: center;"><b>Appendices</b></p> <p>"Appendices to the final report should include the following"                      Clearance Data reports, Site drawings</p>	

## WPI 4.4 Site Preparation Instructions

WPI		Operational Instructions	WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 1
1	WPI 4.4	<p style="text-align: center;"><b>Site Preparation Plan</b></p> <p><b>Strategy Statement</b></p> <p>The Site Preparation Plan is concerned with the detail of site preparation. The sequence of events planned for each site is a direct result of the risk factor assessment and is a product of the Strategy of Minimisation of Risk policy that is inherent in the Aims and Goals of this plan. The Site preparation Plan is the means by which the Clearance plan is implemented.</p> <p style="text-align: center;"><b>Elements of the Site Preparation Plan</b></p> <p><b>Site Preparation</b></p> <p>Each storage area will have been prioritised as a result of the Clearance Plan. In addition the Clearance Plan would have provided details of the location of the Decontamination and amenities units. The Site preparation plan deals with the specific organizational elements that are required for the various sites.</p> <p>The site drawings and sketches now need to be properly drawn up with the various areas indicated. This drawing must show the following work areas.</p> <ul style="list-style-type: none"> <li>- Primary Zone unloading/Breakdown area</li> <li>- Primary Zone packaging area</li> <li>- Secondary Zone Transit storage area</li> <li>- Secondary Zone Transit consolidation area</li> <li>- Tertiary Zone containerization area</li> </ul> <p>Each site will require some or all of these areas. The actual requirement will depend on the Clearance plan conclusions.</p> <p>The locations of services and facilities must also be shown on these drawings, namely,</p> <ul style="list-style-type: none"> <li>- Location of Defence Zone</li> <li>- Location of Decontamination Unit</li> <li>- Location of Amenities unit</li> <li>- Location of emergency vehicle</li> <li>- Location of Public Zone</li> <li>- Location of all emergency materials</li> <li>- Location of all First Aid equipment</li> <li>- Location of all fire fighting equipment</li> <li>- Location of WPI notice board</li> </ul> <p>When all these facilities and services are fully annotated and defined within the working site drawings then construction of the barriers can proceed.</p> <p><b>Visitors</b></p> <p>During the clearance of the Waste material there will be may be some visitors wanting to inspect the operation. Visitors must be controlled. The work area, which may be potentially contaminated, must be clearly defined. e.g., with a barrier of flags, plastic tape, etc. and entry restricted to only those who are correctly attired. Those inspecting the work must wear disposable overalls, disposable boot covers, half face respirators fitted with OV/AG/Particulated filters and safety glasses.</p> <p><b>THERE ARE TO BE NO EXCEPTIONS TO THESE PROTECTION REQUIREMENTS REGARDING VISITORS</b></p> <p>After inspecting the works visitors must pass through the decontamination unit to remove the overalls and boot covers. The site supervisor is to ensure that visitor respirators and glasses are kept clean and the filters changed weekly.</p> <p>No visitors are permitted onto the site unless they are authorised by the client project engineer and the project manager.</p>	

WPI		Operational Instructions	WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 2
		<b>Site Preparation Plan</b>	
		<p><b>Containment Barriers and spill protection</b></p> <p>All areas of operation during the clearance of pesticide waste from the site require environmental protection. That is to say all areas must have some form of physical protection to prevent the waste from entering the environment. This normally takes the form of bunding (temporary or permanent) or surface preparation. The type and level of the bunding protection relies on the operations expected within the secure area and the level of risk involved.</p> <p>The following containment barrier structural requirements are designed to be applied against the total risk factor that the Site inspection plan and the clearance plan derives from the addition of the three factors of Storage, type and quantity.</p> <p><b>Type 1 Containment - Risk factor = (55-60)</b></p> <p><b>Three protected areas will be required as follows:</b></p> <p><b>Primary Zone</b></p> <p>Full PPE is required in this zone</p> <p><b>Secondary Zone</b></p> <p><b>Tertiary Zone</b></p> <p>This zone has the amenities and decontamination units as per the layout drawing. No PPE is required apart from the in the dirty area of the decontamination unit.</p> <p><b>Equipment required</b></p> <p>Emergency shower</p> <p>Fire fighting equipment (5 x 5Kg )</p> <p>First aid equipment</p> <p>decontamination container</p> <p>Amenities unit</p> <p>Office unit</p> <p>Air-conditioning plant</p>	

WPI		Operational Instructions	WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 3
		<b>Site Preparation Plan</b>	
3	WPI 4.4-3	<p><b>Location of the Decontamination and Amenities units</b></p> <p>Provisional location of these units should have been provided during the site inspection stage and after the drawings have been updated to show the level of bunding required they are further annotated with the locations of the decontamination facility and the amenities units.</p> <p>The decontamination unit must be designed with "Dirty" and "Clean" sections separated by shower facilities. Clean clothes and towels are located in the "Clean" End of the unit, and at the start of each period of work, personnel will go through the procedure as shown on the flow sheet. In the normal course of events, the protective clothing and equipment should ensure that personnel do not become contaminated. Therefore waste water will be collected, drummed and disposed of along with the other waste.</p> <p>The amenities unit is considered a "clean" area and is therefore to be located on the "clean" side of the decontamination unit. Under no circumstances is this unit to be located in the "Dirty" area or work areas. The amenities unit is to consist of lunch room facilities and is to be used by personnel during breaks only after going through the decontamination procedures as shown on the flow chart.</p>	
4	WPI 4.4.4	<p><b>Work Areas</b></p> <p>After the correct zones have been allocated it is necessary to plan and develop the working activity in each zone.</p> <p>Within the Primary, secondary and tertiary zones various work activities are to take place. As a normal rule of thumb the various work activities that are assigned to each zone should not be undertaken in another zone. It is possible to elevate a work activity up the scale of zone primacy but not downwards.</p> <p>In detail the work activities that are to be assigned per zone are as follows:</p> <p><b>Primary Zone</b></p> <p><b>Secondary Zone</b></p> <p>Unloading and loading of full and empty containers. Stacker operation.</p> <p><b>Tertiary Zone</b></p> <p>Visitors access to this area only and personnel. Amenities and decontamination unit as well as the ERU are located in this area. Office, telephones fax etc as well as computer records etc.</p>	
5	WPI 4.4.5	<p><b>Working Area equipment Requirements.</b></p> <p>In general equipment is assigned per working zone and this equipment should not travel between zones.</p> <p>This equipment should stay there for the duration of the project. Pumps, hoses, spanners and all tools should have a specific place of occupation within the bund and when not in use are to be located in that place. Emergency spill containment materials are to be located outside the primary zone but within easy reach. The emergency shower, fire fighting equipment and first aid equipment is also to be installed immediately adjacent to the primary zone.</p>	

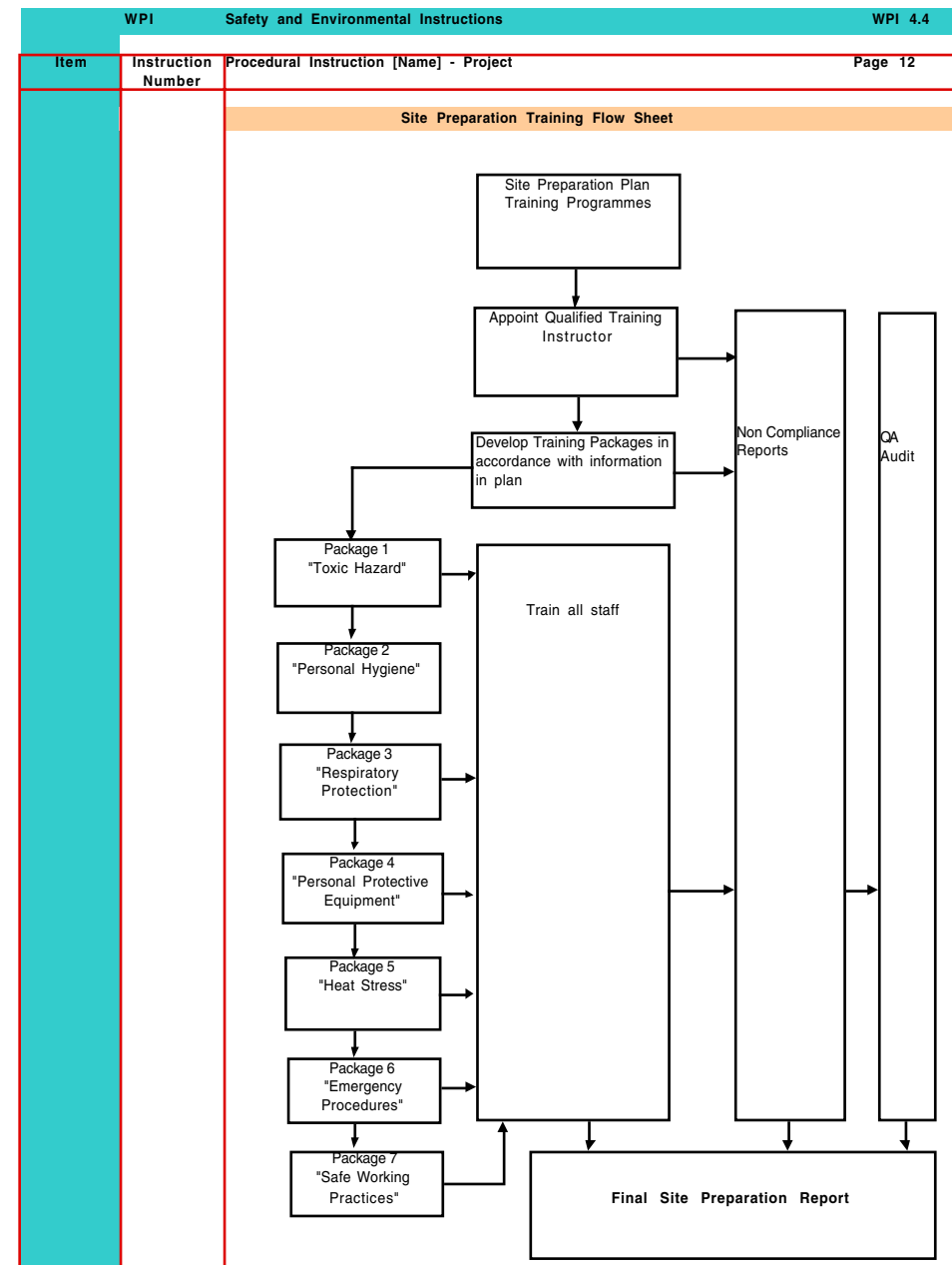
WPI Operational Instructions WPI 4.4		
Item	Instruction Number	Procedural Instruction [Name] - Project Page 4
<b>Site Preparation Plan</b>		
6	WPI 4.4.6	<p><b>Defence Areas</b></p> <p>A defence line should be drawn around both the primary and secondary zones. Generally the tertiary zone does not allow access to authorised personnel such as container truck drivers who are not required to dress in the personnel protection equipment. Such people are not permitted to enter the secondary or primary zones. For major operations the defence line should be a security type fence, for temporary operations then a plastic warning tape can be used.</p>
7	WPI 4.4.7	<p><b>Emergency access</b></p> <p>The defence system shall be so designed that in the event of a full scale emergency the emergency services can have full access to the working platforms without having to go through the defence lines. In other words the defence line must be able to be readily removable by emergency services. During such emergencies that are attended by the fire service a position for a command vehicle both upwind and down wind must be provided.</p>
8	WPI 4.4.8	<p><b>Fire protection</b></p> <p>The worst case scenario involves a fire in the facility. If the fire is collateral then it can be fought using conventional techniques. If the fire however involves the waste itself then it can only be fought using fullbody chemical suits with integral breathing apparatus. The fire must be fought with dry agent and must be fought aggressively with short rosters arranged for those at the front. Full body showers and full chemical decontamination kits will be required. If the local fire service does not have this equipment then it must be provided by the Project manager.</p>
9	WPI 4.4.9	<p><b>Intruder alarms</b></p>
10	WPI 4.4.10	<p><b>Telephone and Fax</b></p> <p>Secure telephone and fax service is required. No site activity is to commence unless the telephone service is connected and available.</p>
11	WPI 4.4.11	<p><b>Records</b></p> <p>A complete record system is required for each site and the format of this will depend on the client needs. The system should be computer based with off site disc holdings etc. All the daily records, QA schedules should be recorded in a hard copy format as well as on the site computer. If it is not possible to have a computer on site then the forms shown in this WPI are to be adhered to.</p>
12	WPI 4.4.12	<p><b>Emergency Response vehicle</b></p> <p>For all waste projects exceeding 200 Tonnes of waste a comprehensively equipped emergency vehicle must be maintained for the duration of the project. This vehicle attends all spills and doubles as the escort vehicle during transshipment of containers or transit bins within the country of the project. The vehicle also attends the final transfer to the ship loading company. details of this vehicle are contained in WPI 4.9.</p>

WPI Safety and Environmental Instructions WPI 4.4		
Item	Instruction Number	Procedural Instruction [Name] - Project Page 8
<b>Site Preparation Plan</b>		
1	S&E 4.4.1	<p><b>Strategy Statement</b></p> <p>During the process of setting up the site ready for packing operations, particular attention must be paid to Safety and environmental issues. During the design of the various structures required on the site the Project Manager and site supervisor must take into account the reality of each site and the ramifications of the work procedures and the waste types involved. Site preparation in addition to the work platform structures must include training of staff, personal occupational hygiene and safe working practices.</p> <p>These WPI's include below details and instructions to ensure that the site preparation includes those necessary elements for the Safety and Environmental Plan are carried out.</p> <p style="text-align: center;"><b>Elements of the Site Preparation Safety and Environmental Plan</b></p> <p>Personnel Safety Procedures &amp; Occupational Hygiene Principles</p> <p>All staff working on the site are to be trained in and adhere to the following procedures.</p> <p>Pesticides waste enters the body by inhalation of vapours or dust , by absorption through the skin or by ingesting through eating or smoking with contaminated hands and transferring to the mouth.</p> <p>To protect staff the project manager and the site supervisor must adopt and carefully control the following.</p> <p><i>Have a controlled area where wastes are handled. Sign and restrict access. This relates to the definition of the containment zones. These must be policed rigidly.</i></p> <p><i>- Wear full body protective work clothing. The project Manager and site supervisor is responsible for assuring that all workers in the waste zone are correctly attired. There are to be no exceptions. If any staff members do not adhere to this ruling they must be removed from the site</i></p> <p><i>-Wash thoroughly immediately after exposure to HgS and on exiting from the work area. This includes for all daily breaks.</i></p> <p><i>- The project manager and the site supervisor are responsible for the training of all staff in the operational hazards, correct use of the PPE and correct work practices and the application of the WPI's and the QA standards therein.</i></p> <p><i>-The site supervisor and the staff are responsible for ensuring that the HsG is always kept contained and safe.</i></p> <p><i>- All staff are responsible in applying good working practices.</i></p> <p style="text-align: center;"><b>GOOD WORKING PRACTICES ARE DEFINED AS FOLLOWS</b></p> <p>* Workers whose clothing has been contaminated by waste should change into clean clothing promptly.</p> <p>* Workers must not take contaminated work clothes home.</p> <p>* If there is any possibility of skin exposure, emergency shower facilities should be provided and used.</p> <p>* On skin contact with waste immediately wash (using Soap) or shower to removes the chemical. At the end of the worksift, wash any areas of the body that may have contacted waste, whether or not known skin contact has occurred.</p> <p>* Do not eat, smoke or drink where waste is handled, processed, or stored, ad always wash hands before eating and smoking.</p>

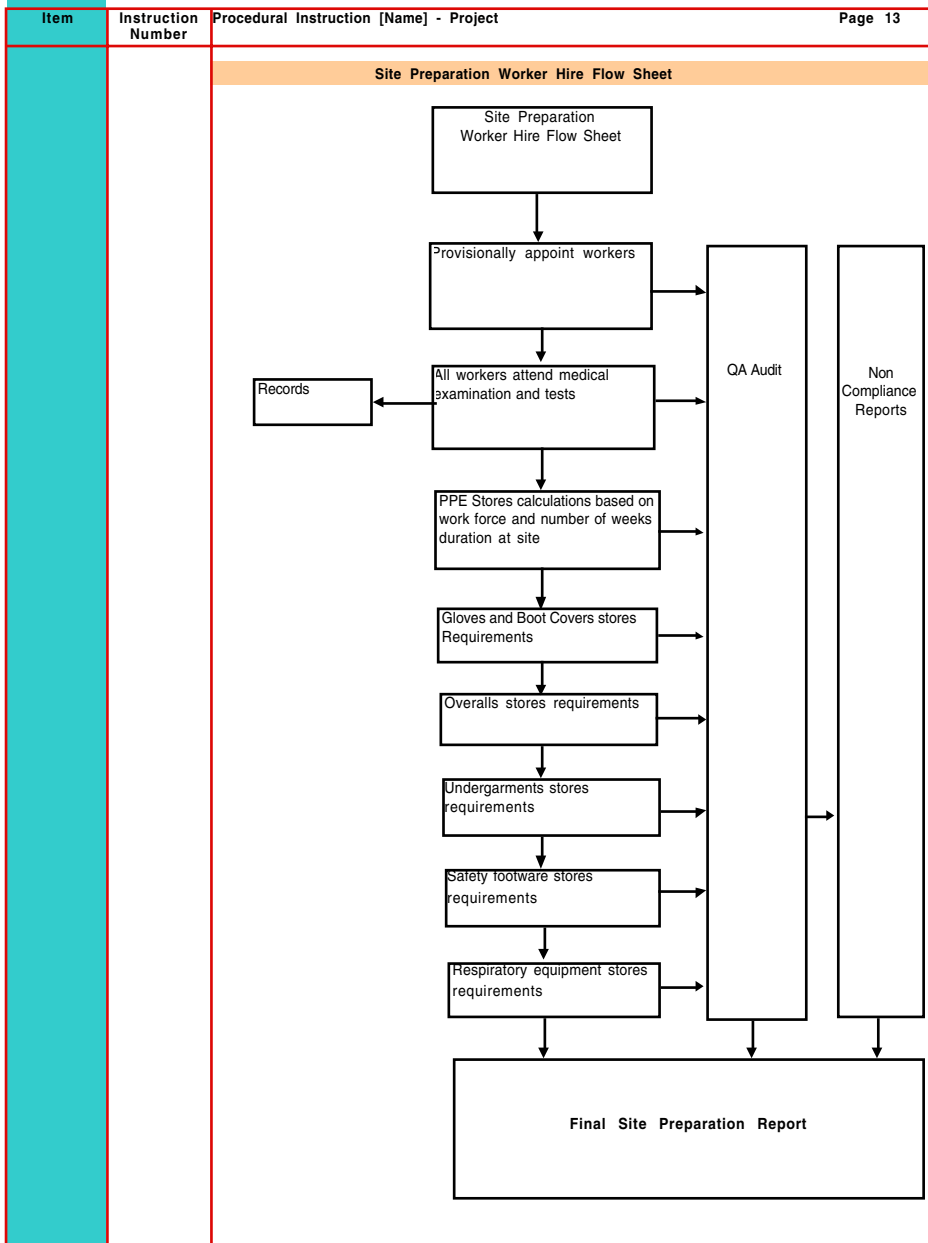
WPI		Safety and Environmental Instructions	WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 9
		<b>Site Preparation Plan</b>	
2	S&E 4.4.2	<p><b>Medical testing</b></p> <p>All potential workers must be prepared for the site not only in the work practices but also all must have a medical examination and testing before they can be admitted to the site.</p> <p>Such medical examination and testing must include the following.</p> <p>* An examination to ensure the fitness of the person to undertake heavy lifting work while attired in chemical suits and perhaps under extreme heat conditions. It is essential that the medical examiner determine the workers state of health to ensure that the planned work activity will not aggravate a pre-existing condition. The examination must include:</p> <ul style="list-style-type: none"> <li>* Physical Examination</li> <li>* Chest X-ray</li> <li>* Blood Pressure</li> <li>* Urine Sugar and protein</li> <li>* White blood cell count</li> <li>* Haemoglobin count</li> <li>* Blood ALT or SGPT and Creatine</li> </ul> <p>In addition the following tests are to be undertaken:</p> <ul style="list-style-type: none"> <li>* Liver Function Tests</li> <li>* Serum triglycerides level</li> <li>* skin examination</li> <li>* Lung function test</li> </ul> <p>Complete records of all these tests are to be kept by the Project manager and if the project extends past 12 months then the tests are to be repeated.</p> <p><b>THESE TESTS ARE TO BE PERFORMED ON ALL PERSONNEL EXPECTED TO WORK ON THE SITE BEFORE WORK COMMENCES ON THE SITE PREPARATION</b></p>	
3	S&E 4.4.3	<p><b>Personal Protective Equipment (PPE)</b></p> <p>In addition to the good working practices described above it is necessary for workers to use personal protective equipment (PPE). During the site preparation all this equipment should be sourced.</p> <p><b>Gloves</b> These should be a quality similar to Edmont Solex(Nitrile) and are to be worn during all work activity in the Primary and secondary zones. The gloves should be worn outside of the overall sleeves. If there is a tendency for the glove and sleeve then use masking tape to hold them together. Gloves should be removed carefully to avoid contamination of the unprotected hand. Gloves are to be disposed of daily at the end of the workshift therefore quantities are required to be calculated during the site preparation process.</p> <p><b>Overalls</b> TYVEK overalls are the primary means of skin protection. Type 55427 overalls are to be used The overalls are to be disposed of if they become damaged or contaminated during the workshift and at the end of each day. Overalls must not be used for more than one full day.</p> <p><b>Undergarments</b> It is recommended that the workers wear light undergarments under the overalls for comfort.</p> <p><b>Respirators</b> The task being undertaken and the likely hazard determine the type of respiratory system equipment to be used. When dust laden HgS exists then the workers are to be equipped with SURVIVAIR PAPR units fitted with belt mounted organic vapour, acid gas, HEPA filters cartridges.</p>	

WPI		Safety and Environmental Instructions	WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 10
		<b>Site Preparation Plan</b>	
		<p>These units are fitted with flow and battery sensors and training needs to be conducted to cover these aspects. When used the filters need to be changed every two days. Face pieces required cleaning at the end of each day's work. This should be done using sterile wipes and/or soap and water washing.</p> <p>Training in the use of the respirators must include cleaning, fit testing, changing filters, checking battery condition, charging instructions and general care and inspection.</p> <p><b>Foot Covering</b> Since there is a combined risk of physical injury and chemical contamination it is necessary to use steel capped safety boots and chemical protection. The latter being TYVEK 417. Boot covers should be disposed of daily or when damaged. Consumables</p> <p>daily consumption of safety equipment per person per day is expected to be as follows and the site preparation should allow for the purchase and storage.</p> <p><b>Workers</b> Thyme Overalls 2-3 per person per day Tyvek boot covers 2 per person per day Gloves 2 pair per person per day Undergarments one complete change per person per day Respiratory Decontamination wipes 1 pack per person per week. If Free HgS then Racal respirator faclets 1 per person per day Respirator cartridges 2 per day per person. Eye protection 1 pair per week</p> <p><b>Visitors</b> Tyvek Overalls 1 per visitor Tyvek Book covers 1 pair per visitor Visitor respirator 1 set filters per week Eye protection reusable 20 in stock.</p>	
4	S&E 4.4.4	<p><b>Training</b></p> <p>For successful and safe operations the aspect of training is a key element.</p> <p>As part of the site preparation a comprehensive training package is to be assembled and all potential staff are to be passed through the scheme.</p> <p>The "training" packages required must include the following:</p> <p><b>Toxic hazard:-</b> This training should cover the human toxic effects balances by the indications of dose required. The training of Toxic hazard should include the environmental impact information and the relative importance of inhalation and skin absorption.</p> <p><b>Personal Hygiene:-</b> This should cover the necessity to wash before eating, drinking or smoking, the care needed when removing dirty clothing so as not to introduce additional skin contamination, not removing any equipment or clothing from site, showering (using soap) before going home.</p> <p><b>Respiratory Protection:-</b> Training should include how to check the equipment is assembled and operating correctly, checking for low battery or low flow, correct fitting using fit test equipment, changing filters and battery packs.</p> <p><b>Personal Protective Equipment:-</b> How to use the overalls, boot covers, gloves and just as important how to remove contaminated clothing so that the contamination does not get onto unprotected skin.</p> <p><b>Heat Stress:-</b> Training should detail what is heat stress and how to recognise the symptoms, the importance of fluid intake, importance of working "smart" to use mechanical aids, not rushing, interspersing heavy work with light work, doing heavy work in the cooler parts of the day, and the role of acclimatisation.</p>	

WPI		Safety and Environmental Instructions	WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 11
5	S&E 4.4.5	<b>Site Preparation Plan</b>	
		<p>Emergency procedures:- Training is to include instruction of site emergencies procedures if there is a liquid spillage, clean up procedures, personal decontamination if splashed (use of eye wash), isolation of areas and containment, transport emergency, e.g., vehicle accident, vehicle fire, deployment of containment booms, clean-up procedure, selection of suitable protective equipment, emergency communication procedures, notification of authorities, crowd control. Details of the actual activity involved for emergency can be found in WPI 4.9.</p> <p>Safe working practices:- Training should clearly demonstrate the need to avoid risk taking activity, working within personal capability, not reaching too far, ensuring footing is secure before lifting etc.</p> <p><b>Responsibility of Supervisor</b></p> <p>After work has commenced on the site and all training is complete the supervisor is responsible for the ongoing application of the standards and techniques that were taught in the training programmes. he is particularly responsible for the following:</p> <ul style="list-style-type: none"> <li>* Ensure that the workers continue good working practices that ensure they are not exposed to contamination</li> <li>* Completely direct the workers in all activities thus ensuring they are always properly prepared for the work at hand.</li> <li>* Ensure that all workers wear PPE at all times.</li> <li>* Ensure that personal hygiene rules are followed.</li> </ul>	







Item	Instruction Number	Procedural Instruction [Name] - Project	Page 14
<b>Site Preparation Plan</b>			
<b>Non Compliance Report</b>			
1	QA 4.4-A	<b>Site Preparation</b> Question: Are the primary, Secondary and tertiary Zones shown on the site drawing? Compliance Signature: _____ Question: Is the public Zone indicated on the drawings?	See Rpt 4.4-A
2	QA 4.4-B	Compliance Signature _____ Question: Are the emergency and first aid material locations indicated on the site drawings?	See Rpt 4.4-B
3	QA 4.4-C	Compliance Signature _____ Question : Is the fire fighting equipment location shown on the drawings?	See Rpt 4.4-C
4	QA 4.4-D	Compliance Signature _____ Question: Is the work procedure Instruction Notice Board indicated on the site drawing?	See Rpt 4.4-D
5	QA 4.4-E	Compliance Signature _____ Question : Have the correct bunding requirements been applied to each operating area?	See Rpt 4.4-E
6	QA 4.4-F	Compliance Signature _____ Question : Has the schedule been correctly filled out with the total risk factor?	See Rpt 4.4-F
7	QA 4.4-G	Compliance Signature _____ Question : Do the calculated total risk factors conform with the policy of minimum risk policy?	See Rpt 4.4-G
8	QA 4.4-H	Compliance Signature: _____	See Rpt 4.4-H
<b>Locations of Decontamination and amenities Units</b>			
9	QA 4.4-I	Question: Have both the decontamination unit and the amenities units locations been shown on the site drawing with all access routes shown and defence lines? Compliance Signature _____	See Rpt 4.4-I
<b>Working Areas</b>			
10	QA 4.4-J	Question: Are the working areas clearly indicated showing exactly which part of the operations are to be performed within the designated zones including storage of tools and equipment etc? Compliance Signature _____	See Rpt 4.4-J
11	QA 4.4-K	Question: Has the equipment required for each work activity been assessed and list generated. Compliance Signature _____	See Rpt 4.4-K
<b>Defence areas</b>			
12	QA 4.4-L	Question: Are all areas adequately defended against incorrect work activity and are these areas properly fenced and defended against unauthorised access? Compliance Signature _____	See Rpt 4.4-L
<b>Emergency Access</b>			
13	QA 4.4-M	Question: Can the emergency Services gain unrestricted access during and emergency of any kind? Compliance Signature _____	See Rpt 4.4-M
<b>Fire Protection</b>			
14	QA 4.4-N	Question: Is there adequate fire fighting equipment to handle a fire for at least 30 minutes? Compliance Signature _____	See Rpt 4.4-N

WPI		Quality Assurance Check Lists	WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 16
		<b>Site Preparation Plan</b>	
		<p><b>Quality Assurance Check Lists and registers.</b></p> <p>The check lists and registers attached to this section are the day to day QA audit sheets which record all the QA check points and list the modifications and adjustments to the work activity. These check sheets also include the Waste registers and worker movement etc.</p> <p>As part of the Site Preparation activity these check sheets are to be copied off into a central register for each storage site.</p> <p>These check sheets are in addition to the Quality assurance questions and the non compliance reports. The check sheets and registers are to be used on a daily basis whereas the quality assurance questions are on a reporting basis.</p> <p>The check sheets and registers include the following standard forms.</p> <p>Register of Personnel Movement (Site Workers)</p> <p>Register of Personnel Movement (Others-Drivers etc)</p> <p>Register of waste</p> <p>QA Check list (Control of Personnel/Vehicles)</p> <p>QA Check list (Clearance)</p> <p>QA Check list (Documentation)</p>	

WPI		Reports	WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 17
		<b>Site Preparation Plan</b>	
1	Rpt 4.4-A	Design the Primary, Secondary and tertiary Zones and show their outlines on the site drawings.	
2	Rpt 4.4-B	Design the public zone area that should be accessible for members of the public that will not require PPE. This area should include the main office for the project.	
3	Rpt 4.4-C	Draw the locations of the emergency spill containment materials and the first aid stations on the site drawing.	
4	Rpt 4.4-D	Calculate the fire fighting equipment level required and indicate location on the site drawing.	
5	Rpt 4.4-E	Position the WPI board and indicate on the site drawing.	
6	Rpt 4.4-F	Design each bunding requirement in accordance with local waste laws and the requirements of this manual	
7	Rpt 4.4-G	From the site inspection plan and the clearance plan calculate the total risk factors and determine the minimum methods of containment.	
8	Rpt 4.4-H	Reassess the calculated Total Risk factor and elevate to the next level if it appears that the Minimum risk policy is not complied with.	
9	Rpt 4.4-I	Assess the site for the location of the Decontamination and amenities units and clearly show these along with the site plan along with the egress and ingress paths, indicating how the routes are defended.	
10	Rpt 4.4-J	Assess the work activity in each area and place this information on the site plan to show how the work activity is to be executed and how each area is autonomous in that work activity does not spill out to other areas.	
11	Rpt 4.4-K	Assess the work activity requirements and create a listing of area tool and equipment requirements.	
12	Rpt 4.4-L	Design the defence areas and methods to prevent the intrusion of areas by unauthorised personnel and inappropriate work activities.	
13	Rpt 4.4-M	Assess the access under emergency conditions and ensure that all emergency services can access the site without undue restriction.	
14	Rpt 4.4-N	Provide a minimum equipment level to allow the fire fighting capacity on site to be at least 30 minutes.	
15	Rpt 4.4-O	Install 24 hour monitored alarm system	
16	Rpt 4.4-P	Provide a secure telephone line for phone (toll free) and fax. Also provide cell phone where possible, pager and radio telephone where appropriate.	
17	Rpt 4.4-Q	Purchase a computer based record keeping facility complete with printing capability and organise off site data storage.	
18	Rpt 4.4-R	Provide a fully equipped emergency vehicle for call out and escort duties.	
19	Rpt 4.4-S	Hire or appoint a training officer that fully understands the training systems needed for Toxic waste handling and clean-up. Ensure that this person is fully qualified.	
20	Rpt 4.4-T-Z	Reassess the programmes to ensure that they comply with the plan standards and the Waste laws of [Name].	
21	Rpt 4.4-AA	Obtain client approval for QA check list or obtain from client preferred lists.	

WPI Reports		WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project Page 18
		<p style="text-align: center;"><b>Site Preparation Plan</b></p> <p style="text-align: center;"><i>"Use the format here to construct the Final Site Inspection Report"</i></p> <p style="text-align: center;"><b>FINAL REPORT FORMAT</b></p> <p><b>Introduction</b> This report for [Site name] storage facility is the result of application of the site inspection plan and covers the details that are required to be constructed at the site to allow for the removal of the waste. After all the constructional elements of this report have been complied with can the packing operation commence.</p> <p style="text-align: center;"><b>Working Zones</b></p> <p><b>Primary Zone</b> The site drawing attached to the appendices of this report show the location and extent of the primary zone. <i>"Attach the drawing showing the design of the primary zone if applicable"</i></p> <p><b>Secondary Zone</b> The site drawing attached to the appendices of this report show the location and extent of the Secondary Zone. <i>"Attach the drawing showing the design of the primary zone if applicable"</i></p> <p><b>Tertiary Zone</b> The site drawing attached to the appendices of this report show the location and extent of the tertiary zone. <i>"Attach the drawing showing the design of the primary zone if applicable"</i></p> <p style="text-align: center;"><b>Locations</b></p> <p><b>Decontamination and Amenities units</b> The drawings attached show the location of the decontamination, amenities units and the method by which the workers must enter the unit.</p> <p><b>Defence Zone</b> The site drawing attached shows the overall defence zones and how the emergency services can easily enter the building or storage area.</p> <p><b>Emergency materials, First aid equipment and fire fighting systems</b> The site drawing attached shows the locations and methods of access to the emergency spill materials, First aid equipment and the fire fighting equipment.</p> <p><b>WPI Notice Board</b> The location of the notice board on which the WPI instructions are placed is shown on the site drawings.</p> <p style="text-align: center;"><b>Containment Risk factors</b></p> <p>The summarised containment risk factors are shown below:- <i>"Indicate the Containment Risk Factor summary from the Site Preparation data"</i></p>

WPI Reports		WPI 4.4
Item	Instruction Number	Procedural Instruction [Name] - Project Page 19
		<p style="text-align: center;"><b>Site Preparation Plan</b></p> <p style="text-align: center;"><b>FINAL REPORT FORMAT Continued</b></p> <p style="text-align: center;"><b>Working Area Equipment requirement</b></p> <p><i>"Insert list of equipment required to be placed in each of the working zones as identified in the allocated zones."</i></p> <p><b>Insufficient Data from the Clearance Plan</b> <i>"This report to be completed if any part of the schedules and drawings is missing or incomplete from the Clearance Plan Final Report."</i></p> <p><b>Primary Aims and Goals Non Compliance</b> <i>"This report by its nature invoke a serious review of the situation. For any situation that the Project Manager feels violates the spirit or intent of the Project's Aims and Goals, must generate this report. Within it the Project Manager must clearly state what part of the Aims and Goals are violated and why he thinks that such conditions will prevent the Main Contractor from discharging its responsibilities to the client. Included with this statement must be a suggested solution that will bring the project back on strategy."</i></p> <p><b>Non Compliance Reports</b> <i>"Insert all Non compliance Reports that remain unattended or corrected."</i></p> <p style="text-align: center;"><b>Conclusions</b></p> <p>At the [site name] storage facility the following working zones have been designed and constructed and these are indicated on the attached drawings. <i>"Insert the working zone schedule as created from the Clearance plan information"</i></p> <p>At the [site name] the final positions for the decontamination facility and the amenities emergency materials first aid and fire fighting equipment is as shown on the attached drawings.</p> <p>The Registers and the QA audit sheets have been placed in folders for the continuous recording on site and are ready to receive data. These QA check lists and registers have been approved by the client.</p> <p>All workers personal protection equipment has been specified ordered and delivered.</p> <p>Intruder alarms are fitted, tested and the telephone/ fax lines are operational.</p> <p>The site records computer is established as has an off site data storage system.</p> <p style="text-align: center;"><b>Appendices</b></p> <p><i>"Include all site drawings and schedules"</i></p>

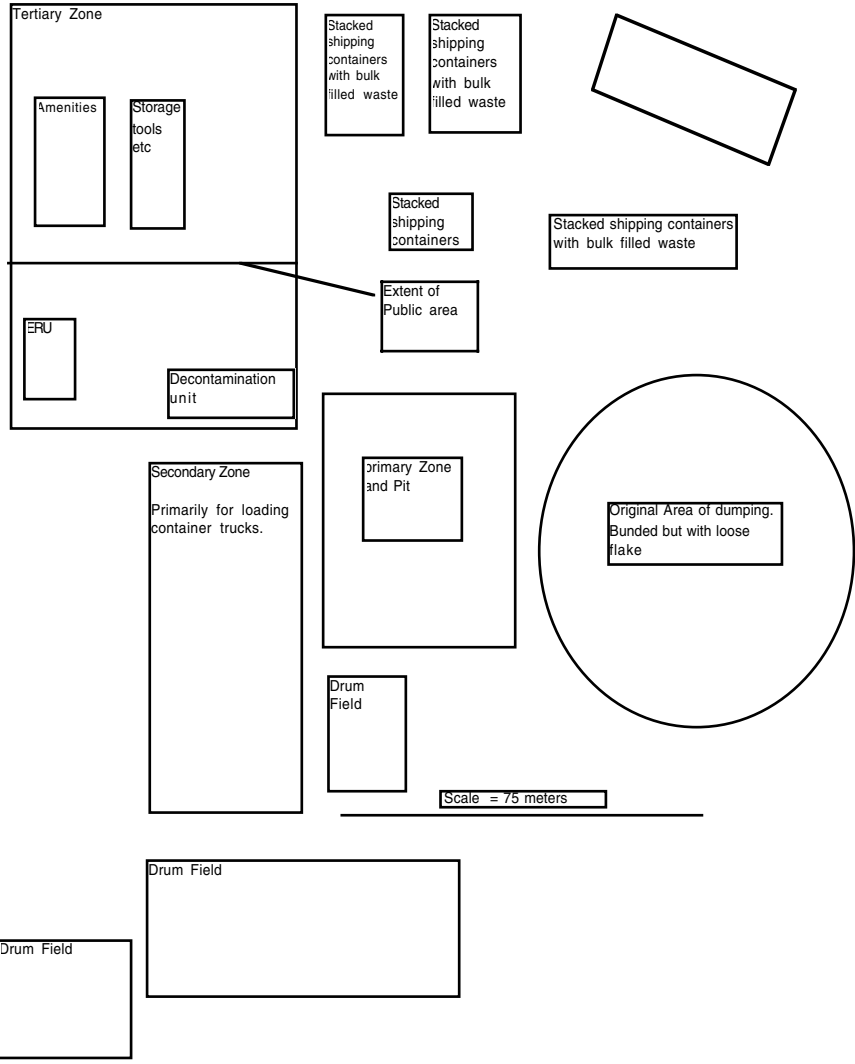
Item

Instruction Number

Procedural Instruction [Name] - Project

Page 20

Site Preparation Plan

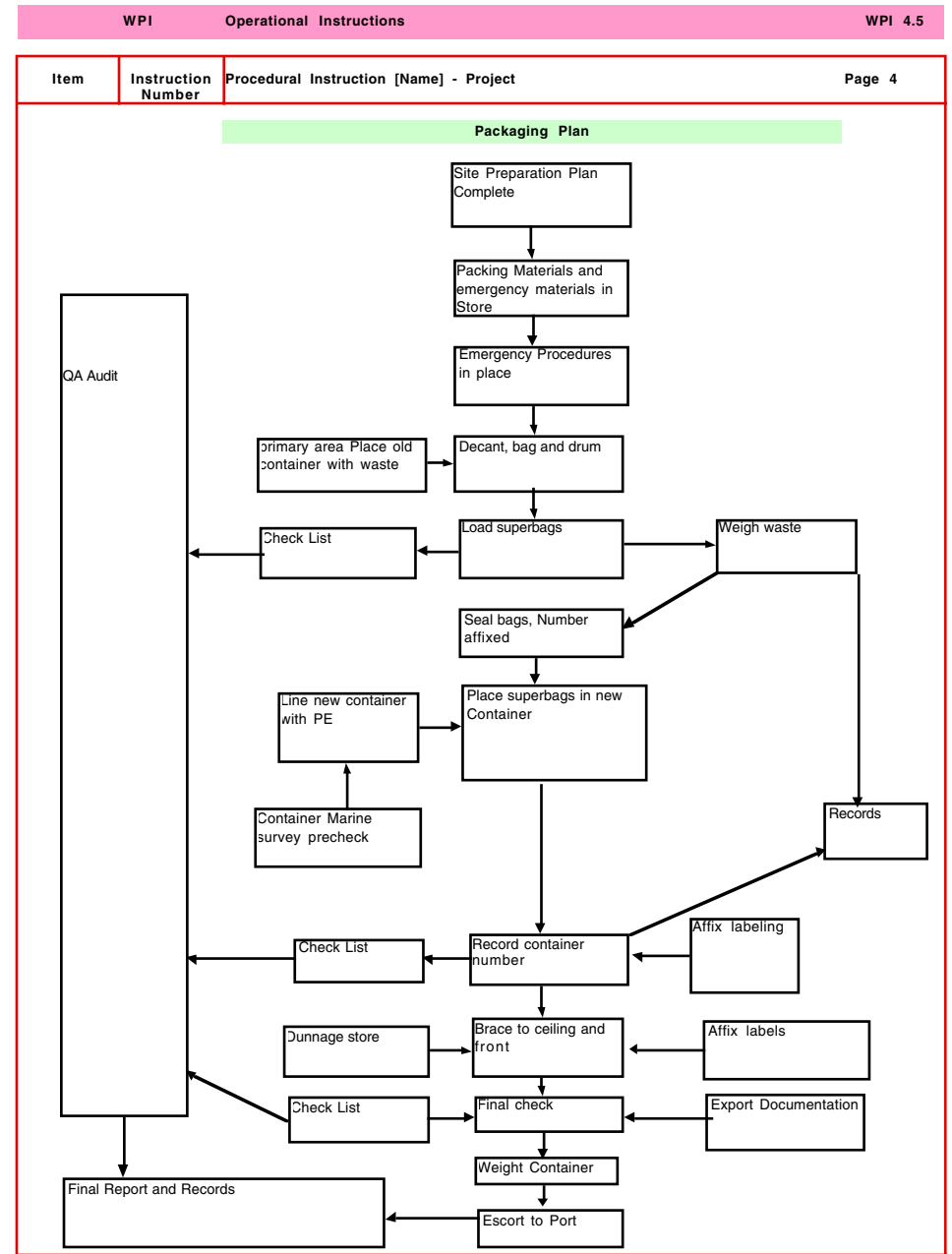


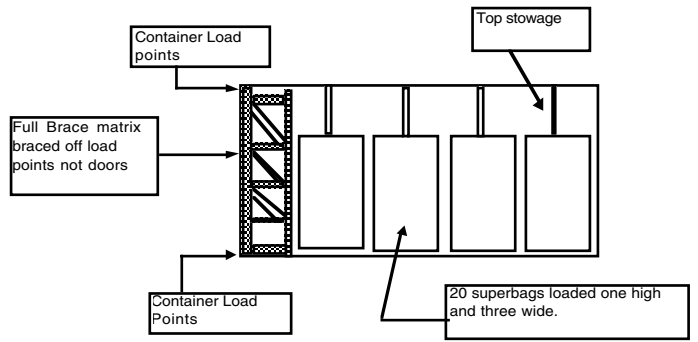
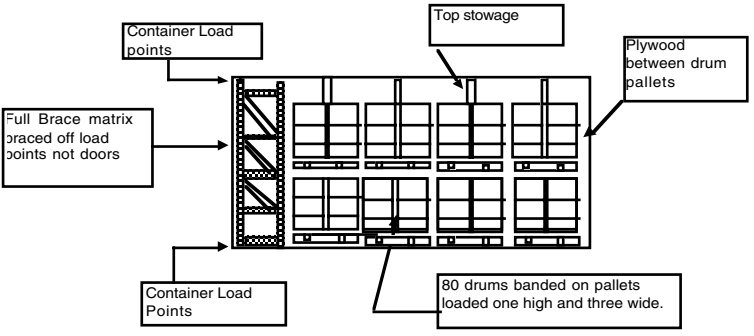
### WPI 4.5 Packaging Instructions

WPI		Operational Instructions	WPI 4.5
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 1
<b>Packaging Plan</b>			
1	WPI 4.5.1	<p><b>Strategy Statement</b></p> <p>In order that the project aims and goals are fully discharged the packaging plan must reflect physically the environmental implications of spillage. The techniques discussed here have been proven over many years to provide the safest methodology of packaging that ensures the waste arrives in the disposal country in the same manner in which it was discharged from the country of origin. In all aspects the strategy of packaging is designed to ensure that the transportation of the waste is fully defended against any possibility of leakage, spillage or contamination of any kind. These instructions as enumerated within this WPI must be carefully adhered to and includes that such packaging be Quality Assured by an independent assessor.</p>	
2	WPI 4.5.2	<p><b>Elements of the Packaging Plan</b></p> <ol style="list-style-type: none"> <li>1. Waste Packing</li> <li>2. Container Packing</li> <li>3. Weighing</li> <li>4. Labeling</li> <li>5. Container Marine Survey</li> <li>6. Decontamination</li> </ol>	
3	WPI 4.5.3	<p><b>Waste Packing</b></p> <p>Drums containing solids will be repacked in UN 200 ltr PE open head drums, 280 ltr oversize drums or big bags. Solids packed in jute sacks or bags and other solid material like wood can be loaded manually into big bags, with inner lining, each up to max 1000 Kg each. The big bags will be placed on pallets. Empty bottles, boxes and aerosols will be first packed into airtight sealed plastic bags and then placed into open head drums. Drums that have been repacked into non UN T drums will have to be placed into UN overdrams. The contents of all T drums can be checked by lid removal. For drums of liquids the contents are to be redrummed by pumping out the contents into a UN drum. T drums with solids to be repacked into oversize drums. Drums containing liquids will be pumped into ISO tank containers or 1000 ltr IBC's. All old drums are to be crushed and packed into big bags for transport.</p>	
4	WPI 4.5.4	<p><b>The standard container will be able to accept the majority of the Waste as follows:</b></p> <p>The drums with the liquid waste, solid waste and disposed safety clothing, filters, PE Lining etc will be placed per 4 on one pallet. The drums on pallets will be banded. The big nags will also be placed on pallets (one big nag per pallet) Then the pallets will be loaded into the box containers and properly stuffed.</p> <p>Big bags on pallets will be loaded in one layer into the container. 12 Big bags per container. Drums will be loaded on pallets into two layers, separated with plywood with max 72 drums per container.</p>	
5	WPI 4.5.5	<p><b>Weighing</b></p>	
6	WPI 4.5.6	<p><b>Labeling</b></p> <p>The following labeling satisfied all regulations governing the labeling of wastes for transport in most countries, transport by ocean going vessels. Packaging without clear labelling are to be relabelled. An AVR label will be produced with a reference number for AVR combined with information from the original label.</p>	

WPI		Operational Instructions	WPI 4.5
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 2
<b>Packaging Plan</b>			
8	WPI 4.5.8	<p><b>Transport Units</b></p> <p>Each transport unit will have a self adhesive label attached which will include the following:</p> <ol style="list-style-type: none"> <li>1. The IMDG (International Maritime Dangerous Goods) placard of a size whereby dimension "D" is 100 mm.</li> <li>2. The words "Unidentified Pesticide " where necessary</li> <li>3. The name of the Holder.</li> <li>4. The full name and address of the Clearance Organisation.</li> <li>5. The full name and address of the Consignee.</li> <li>6. A short description of the waste.</li> <li>7. The transport Unit number.</li> <li>8. The weight of the transport unit.</li> <li>9. The date the unit was packed.</li> <li>10. The shipping container load number.</li> </ol>	
9	WPI 4.5.9	<p><b>Shipping Containers</b></p> <p>Each shipping container will be labeled as follows:</p> <ol style="list-style-type: none"> <li>1. The IMDG placard of a size whereby dimension "D" is 250 mm. (Mounted one in each corner of the shipping container &amp; 4 "Marine Pollutant")</li> <li>2. When travelling on freeways in the country of origin, the label will be attached to both sides of the container. In addition, a sign with a white background and red lettering showing the following will be placed in a conspicuous position: <ol style="list-style-type: none"> <li>a. Category (Class 6.1)</li> <li>b. name of the substance</li> <li>c. quantity</li> <li>d. properties</li> <li>e. important points in relation to handling</li> <li>f. emergency contact; <ol style="list-style-type: none"> <li>i. name</li> <li>ii. telephone number</li> <li>iii. other details</li> </ol> </li> </ol> </li> </ol>	
	WPI 4.5.6	<p><b>Decontamination</b></p>	

WPI		Operational Instructions	WPI 4.5
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 3
<b>Packaging Plan</b>			
10	WPI 4.5.10	<p><b>Transport Vehicles</b></p> <p>The shipping container transport vehicles will be fitted with a sign showing the following:</p> <ol style="list-style-type: none"> <li>1. Clearance Company's full name and address.</li> <li>2. Clearance Company's telephone number.</li> </ol> <p>This sign will be removed from the vehicle when the container is handed into the control of the Port Authorities.</p>	
11	WPI 4.5.11	<p><b>Container Marine Survey</b></p> <p>A prepacking survey must be carried out on each container. This comprises an inspection of the door seal, Close door test, sound floor inspection and plate date inspection.</p> <p>The services of a marine surveyor must be employed to survey the packing and final disposition of the cargo within the container. The Marine surveyor must be registered and produce a certified report of the packing accompanied with photos showing the various stages of container loading and bracing details etc. After approval then the surveyor must affix the box seal and note the number on the BOL.</p>	



Item	Instruction Number	Procedural Instruction [Name] - Project	Page 5
<b>Packaging Plan</b>			
<b>Container Bracing Plan</b>			
			
			

Item	Instruction Number	Procedural Instruction [Name] - Project	Page 8
<b>Packaging Plan</b>			
1	S&E4.5.1	<p><b>Strategy Statement</b></p> <p>The wastes to be handled during the implementation of this proposal are potentially hazardous, creating the need to plan for and put in place, workable emergency response procedures at all phases of the project. These procedures need to cover responses to emergencies involving threats to the environment and the public, as well as those that may threaten the health and safety of personnel involved in the operations. The Emergency response procedures are detailed in WPI 4.9. When there is spillage of any kind then WPI 4.9 is to be uplifted and put into action immediately. The handling, packing and storage procedures to be followed in this proposal (as outlined in previous sections of this document) have been developed over time and through considerable experience with actual operations. The procedures therefore are designed specifically to minimise the risks of emergencies arising.</p> <p>The packaging of wastes to international standards prior to transport is designed to provide at least double containment of the materials. This will substantially limit the volume of wastes likely to be split or to leak in any one incident.</p> <p>However, it is inappropriate to rely solely on set procedures to achieve a high level of safety. There remains the need to be able to respond in a positive and rapid manner to unforeseen circumstances.</p>	
2	S&E4.5.2	<p><b>Elements of the Site Inspection Safety and Environmental plan.</b></p> <ol style="list-style-type: none"> <li>1. Emergency Response</li> <li>2. Emergency Response Procedures</li> </ol> <p>The following description outlines relevant emergency procedures.</p>	
3	S&E4.5.3	<p><b>Emergency response</b></p> <p>As described, all personnel involved with the proposal will be properly trained and fully informed of the nature of the materials being handled and the appropriate emergency response procedures.</p> <p>All waste Transport trucks will be accompanied by an escort vehicle, which will function as an emergency response vehicle to provide an effective response in the unlikely event of a leak or spillage during the transport phase.</p> <p>In the case of an accident, spill or leak during transport, emergency response measures will be taken immediately and the WPI 4.9 uplifted and placed into action.</p> <p>The periods of highest risk of a spill or leak developing is during loading and unloading of wastes. To minimise potential environmental impact, loading area must have adequate spill response materials and spill response materials and spill prevention measures. When loading or unloading waste equipment at the ship or in the field, spill prevention measures must be undertaken and spill control and clean-up materials are to be readily available.</p>	
4	S&E4.5.4	<p><b>Staff Health and Supervision Requirements</b></p> <ol style="list-style-type: none"> <li>i. Medical assessment and certification of fitness for each employee before work commencement. This would establish baseline health status of each staff member for comparison with subsequent examinations.</li> <li>ii. Continued medical assessment on a monthly basis and on exit of employment within 72 hours of cessation of work.</li> <li>iii. At request of employer, employee or authorised medical personnel where excessive absorption of wastes is suspected.</li> <li>iv. Periodic random checks at the discretion of authorised medical personnel.</li> </ol> <p>In addition to medical surveillance, the repacking and site facilities will be provided with a first aid post, including an ablutions block specifically designed to provide for decontamination and disposal of clothing, towels and other materials as required.</p>	

Item	Instruction Number	Procedural Instruction [Name] - Project	Page 9
		<b>Packaging Plan</b>	
		The following items of protective equipment will be available and used as appropriate.	
		i. One piece chemical resistant suit with internal zip, external buttons and a hood;	
		ii. goggle (unless the respirator provides eye protection);	
		iii. Any normal clothing which accidentally comes into contact with wastes must be removed for disposal with other contaminated materials.	
		iv. Any normal clothing which accidentally comes into contact with wastes must be removed for disposal with other contaminated materials.	
		v. On completion of work involving the wastes each person must wash hands and face before eating, drinking or using any toilet facilities.	
		First aid procedures are:	
		i. Eyes - immediately irrigate with water for at least fifteen minutes and obtain medical attention.	
		ii. Skin - immediately remove any contaminated clothing and wash affected skin with soap and water, or an industrial cleanser.	
		iii. If swallowed - wash out mouth several times with clean water, give water to drink and obtain medical attention.	
		iv. If inhaled - remove to fresh air and obtain medical attention.	

Item	Instruction Number	Procedural Instruction [Name] - Project	Page 15
		<b>Packaging Plan</b>	
		The QA - Audit comprises a series of questions against each part of the Packaging plan and are complete with instructions for compliance and non compliance. Most of the non compliance responses will initiate a non compliance report. This report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the non compliance reports.	
		<b>Elements of the QA Packaging</b>	
		- Waste Packaging - Container Packing - Weighing - Labeling	
		<b>Waste Packaging</b>	
1	QA 4.5-A	Question: Are the superbags filled correctly with no overfilling? Compliance Signature:	See Rpt 4.5-A
2	QA 4.5-B	Question : Are the superbags correctly tied? Compliance Signature	See Rpt 4.5-B
3	QA 4.5-C	Question : Are the super bags provided with a recorded number? Compliance Signature:	See Rpt 4.5-C
4	QA 4.5-D	Question : Have the drums been banded and provided onto pallets? Compliance Signature	See Rpt 4.5-D
5	QA 4.5-E	Question : Have the bags and drums been weighed and recorded ? Compliance Signature:	See Rpt 4.5-E
6	QA 4.5-F	Question: Compliance Signature:	See Rpt 4.5-F
7	QA 4.5-G	Question : Are the correct labelling been applied? Compliance Signature:	See Rpt 4.5-G
		<b>Container Packing</b>	
8	QA 4.5-H	Question : Are the superbags packed in the 20 foot shipping container three wide and one high Compliance Signature:	See Rpt 4.5-H
9	QA4.5-I	Question: Have the containers been inspected for suitability of purpose and have no damage? Compliance signature:	See Rpt 4.5-I
10	QA 4.5-J	Question: During loading of the containers were total weights recorded and checked against the total loading capacity of the containers.? Compliance Signature:	See Rpt 4.5-J
11	QA 4.5-K	Question: During the waste packing and container loading are all check sheets as shown in WPI 4.4 been correctly filled out? Compliance Signature:	See Rpt 4.5-K
12	QA 4.5-L	Question: Have the superbags been packed within the container with dunnage to restrict movement during shipment? Compliance Signature	See Rpt 4.5-L
13	QA 4.5-M	Question: Is the construction of the container door dunnage matrix fully braced diagonally to prevent the possibility of transit boxes falling against the door of the container and is that matrix braced against the container load points and not the door? Compliance Signature:	See Rpt 4.5-M



WPI		Quality Assurance		WPI 4.5	
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 16		
<b>Packaging Plan</b>					
13	QA 4.5-O	Question:			
		Compliance Signature:			See Rpt 4.5-O
14	QA 4.5-P	Question:			
		Compliance Signature:			See Rpt 4.5-P
<b>Weighing</b>					
15	QA 4.5-Q	Question:			
		Compliance Signature:			See Rpt 4.5-Q
<b>Labeling</b>					
16	QA 4.5-R	Question: Have the containers been provided with the correct labeling standards and have the check lists for labels been filled out as per WPI 4.4?			
		Compliance Signature:			See Rpt 4.5-R
17	QA 4.5-S	Question: Does each transport unit, bin etc have a self adhesive labels per page 3 of the Operational instructions of this WPI?			
		Compliance Signature:			See Rpt 4.5-S
<b>Marine Survey</b>					
18	QA 4.5-T	Question : Have all the filled containers been Marine Surveyed by a registered Marine Surveyor?			
		Compliance Signature:			See Rpt 4.5-T
19	QA 4.5-U	Question : Has each shipping container been prechecked before loading for WOF, Door Seals, Door test etc?			
		Compliance Signature:			See Rpt 4.5-U

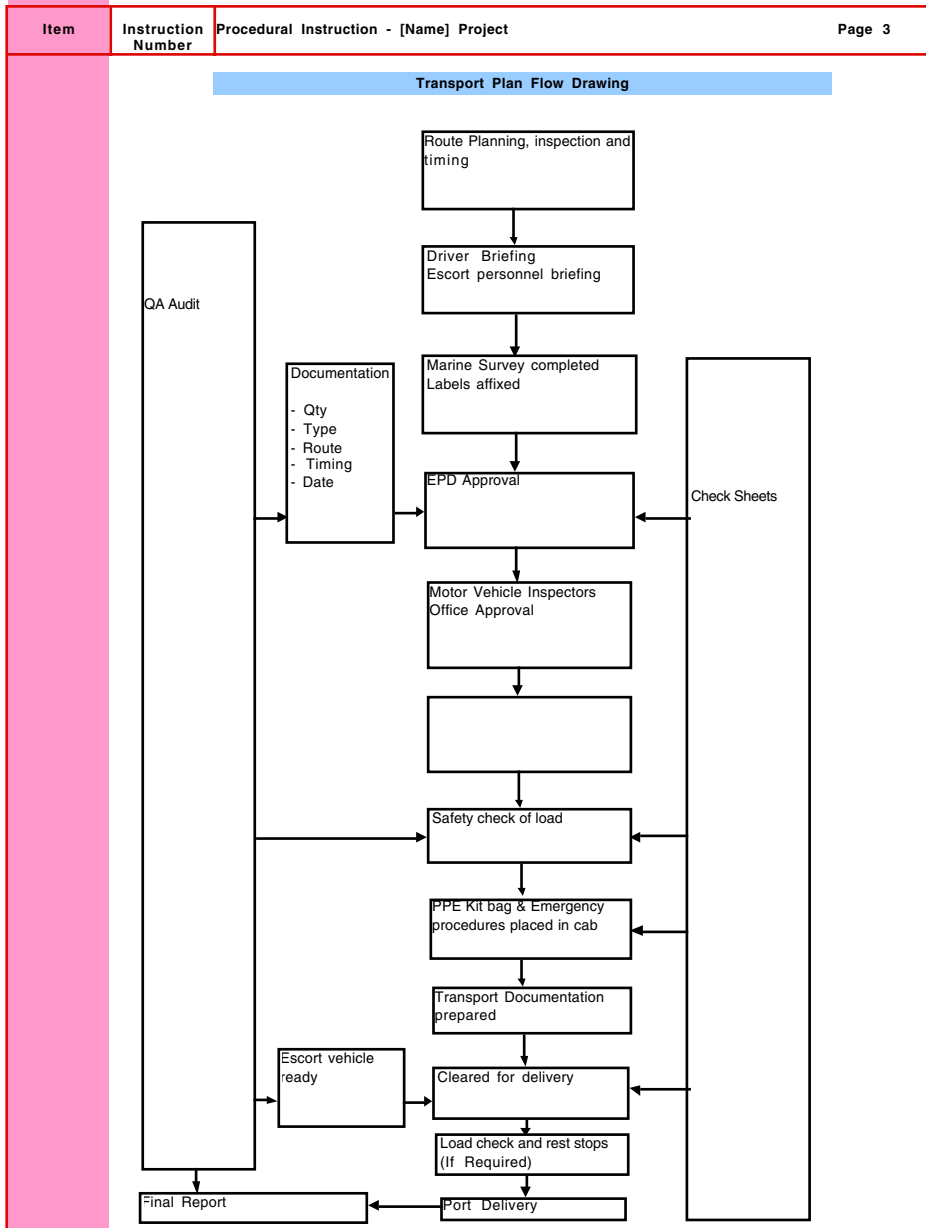
WPI		Reports		WPI 4.5	
Item	Instruction Number	Procedural Instruction [Name] - Project	Page 22		
<b>Packaging Non Compliance Action Instructions</b>					
1	Rpt 4.5-A	Do not overfill bags			
2	Rpt 4.5-B	Ensure that the bags are correctly tied off			
3	Rpt 4.5-C	All bags are to be provided with a number that relates to the weighed amount			
4	Rpt 4.5-D	Ensure pallets are provided and all drums groups are banded			
5	Rpt 4.5-E	Ensure that all weighing procedures are followed			
6	Rpt 4.5-F				
7	Rpt 4.5-G				
8	Rpt 4.5-H	For stability and efficiency the superbags should be restacked so that they fit one high and three wide.			
9	Rpt 4.5-I	Any damaged containers should be rejected and returned to the shipper. There should be no door damage or load point damage. The floors must be integral and still sealed.			
10	Rpt 4.5-J	Ensure that all check sheets as depicted in WPI 4.4 are fully completed for each shipment.			
11	Rpt 4.5-K	Ensure that all check sheets as depicted in WPI 4.4 are fully completed for each shipment.			
12	Rpt 4.5-L	Ensure that the packing process correctly schedules the weighing and that the clients check sheets are correctly filled out.			
13	Rpt 4.5-O				
14	Rpt 4.5-P				
15	Rpt 4.5-Q	Ensure that the correct weighing and documentation procedure is applied.			
16	Rpt 4.5-R	Ensure that correct labeling is applied. The transit bins and containers must not leave the storage unless the correct labeling is affixed.			
17	Rpt 4.5-S				
18	Rpt 4.5-T	All containers must be Marine surveyed by a registered surveyor and a report generated.			
19	Rpt 4.5-U	All containers must undergo a precheck to ensure suitability of use.			

WPI Reports		WPI 4.5
Item	Instruction Number	Procedural Instruction [Name] - Project Page 23
		<p><b>Packaging Plan Quality Assurance Audit</b></p> <p><b>QA AUDIT REPORT FOR PACKAGING</b></p> <p><b>Introduction</b>  This Report for [ ] has been generated during the QA Audit Site Inspection of packaging operations. The QA Site inspection is intended to confirm that the packaging plan has been adhered to and that all the provisions of safety have been complied with.</p> <p><b>Handling Methodology</b>  The QA Audit procedure confirmed that the handling procedures during the extraction packaging and container loading is in accordance with the Project manual. The handling methodology as detailed in the Clearance plan and the order of clearance is confirmed as complying with all aspects of the Project Manual.</p> <p><b>Packaging Methodology</b>  The QA Audit procedure confirmed that the packaging procedure fully complies with all aspects of WPI 4.5.</p> <p><b>Spatial layouts and facility locations.</b></p> <p><b>Materials</b></p> <p><b>Project manuals and WPI Documentation</b>  Comment on site availability</p> <p><b>Non Compliance Report</b>  Refer to NCR's in QA Audit report</p> <p><b>Primary Aims and Goals non compliance</b></p> <p style="text-align: center;"><b>Conclusions</b></p> <p>At the [ ] storage facility all the working zones and equipment necessary to carry out the Packaging plan are in place and packaging is in compliance. The correct check sheets are been correctly filled out. The site now has its first QA inspection.</p> <p>Signed QA Audit Engineer</p>

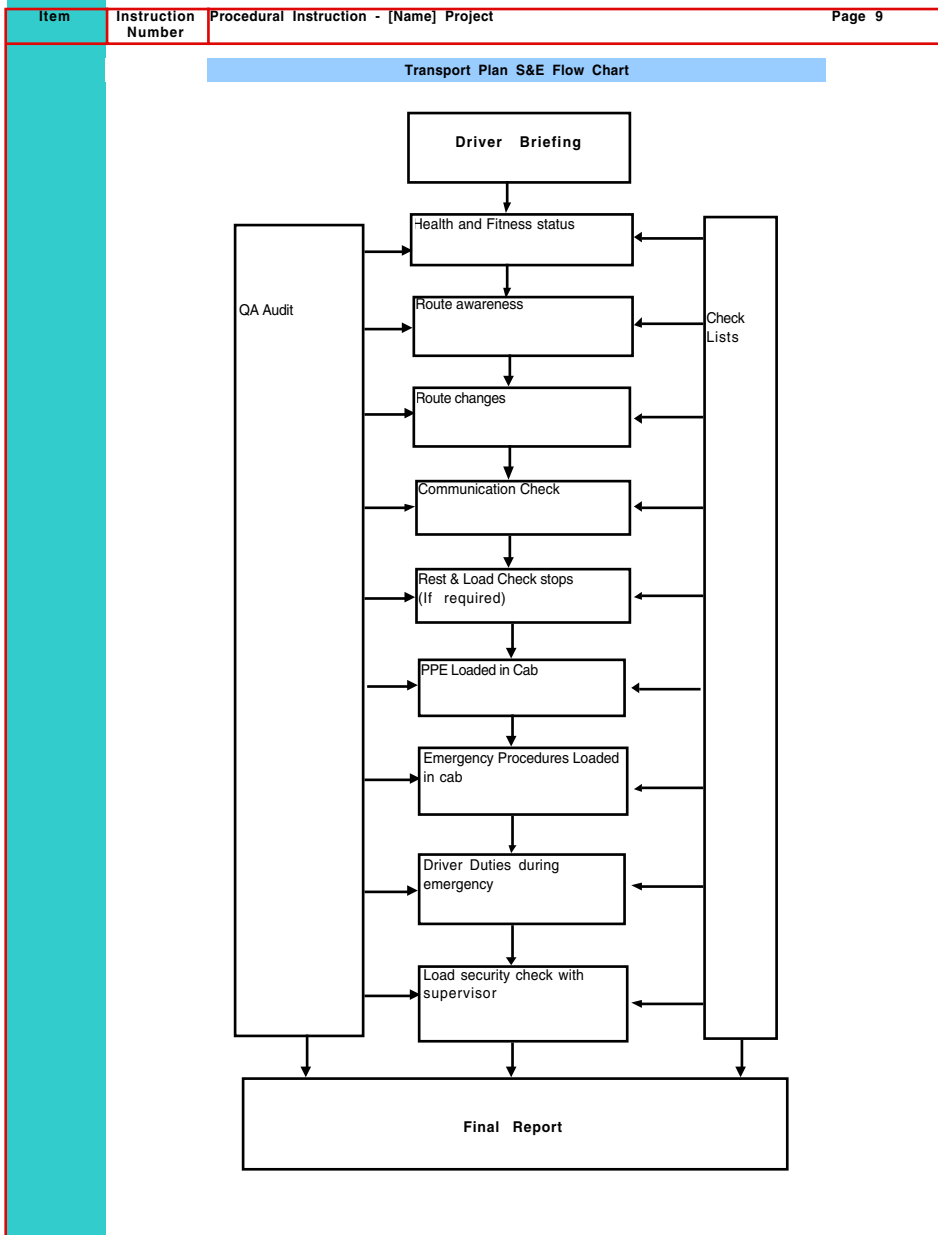
## WPI 4.6 Transportation Instructions

WPI		Operational Instructions	WPI 4.6
Item	Instruction Number	Procedural Instruction - [Name] Project	Page 1
		<b>Transport Plan</b>	
1	WPI 4.6.1	<p><b>Strategy Statement</b></p> <p>The detailing and control strategy for Transportation of the packed waste to the ports requires the same level of attention as the other elements of the Clearance project. The Transportation must be carefully planned so that there are no possibilities of surprises during road transportation and that such details such as road works, hours of travel, routes, driver training etc. are fully taken care of in the Transport plan and applied by these WPI's.</p>	
		<b>Elements of the Transport Plan</b>	
2	WPI 4.6.2	<p><b>Marine Survey</b></p> <p>Before any containers can leave site they must have been prechecked before loading, marine surveyed before final transit bin bracing and final inspection after bracing. When the Marine Survey has been released then the container can be made available for road transport to the port.</p>	
3	WPI 4.6.3	<p><b>MFE approvals</b></p> <p>Application for approval to transport the waste on all roads must be made to the local Environmental Protection Department (EPD) for the locality of the waste. This application must include a statement of Quantity, Type, Route, Date and time of day. Approval to transport on ordinary roads will be in the form of a letter. Without this letter of approval the Waste cannot be moved.</p>	
4	WPI 4.6.4		
5	WPI 4.6.5		
6	WPI 4.6.6	<p><b>Route Planning</b></p> <p>The quality of the delivery of the shipping container is very dependent on the route chosen and the time of day. The various route options should be surveyed and the following items should be examined and thus the routes should be sorted to provide the most efficient and safest route selection.</p> <ul style="list-style-type: none"> <li>* Examine the route options and detail restrictions (One way roads, Traffic densities etc)</li> <li>* Research likely road works and traffic disruption possibilities</li> <li>* Research overhead cable and wire obstructions in selected routes</li> <li>* Examine the access routes for the emergency services likely to take in the event of call out and ensure that the route will always allow for them to get to the site of the emergency as soon as possible without delay.</li> <li>* Examine the various waterways the routes and ensure that minimum waterways are traversed.</li> <li>* Avoid routes that have long traffic delays</li> </ul>	
7	WPI 4.6.7	<p><b>Movement Timing</b></p> <p>The transport of the waste must be done in daylight hours and during such business hours that will ensure that the Delivery will be complete well before the end of the day shift of the local emergency services. The timing however should be planned to avoid rush hour traffic. The route shall be travelled by the escort vehicle as a dummy run at the timing planned to ensure that the conditions at that hour of the day will not unduly impede the transport.</p>	
8	WPI 4.6.8	<p><b>Driver Briefing</b></p> <p>The transport driver is to be selected on the basis of driving experience and record.</p> <p>All transports to the port will be accompanied by the Escort vehicle with trained personnel attending who will deal with any emergencies. The driver is to be fully briefed on the route, timing and emergency procedures and documentation.</p>	

WPI		Operational Instructions	WPI 4.6
Item	Instruction Number	Procedural Instruction - [Name] Project	Page 2
		<b>Transport Plan</b>	
9	WPI 4.6.9	<p><b>Driver Briefing Continued</b></p> <p>A kit bag of Driver Personal Protection equipment is to be placed in the cab of the transport vehicle before it leaves the site and the driver is to be fully briefed on its contents and how to use the equipment.</p> <p>A complete set of transportation documentation as well as the emergency procedures and notifications is also to be placed in the cab. Under most circumstances these emergency procedures would not be used as emergencies will be handled by the escort vehicle and its personnel. But in the event that the Escort vehicle is disabled or involved in an accident the transport driver needs to be able to contain any situation until the back up crews arrive.</p>	
10	WPI 4.6.10	<p><b>Escort Vehicle</b></p> <p>The project emergency escort vehicle is to accompany all transport of waste to the port or site. Under no circumstances is a delivery of waste to be performed without the escort vehicle. The escort vehicle is also not allowed to perform the escort duties if its inventory is inadequate or that personnel are missing.</p>	
11	WPI 4.6.11	<p><b>Communication</b></p> <p>Complete communications systems are to be maintained between the transport vehicle, emergency response escort vehicle. This communication is to be a combination radio/mobile phone system.</p>	



Item	Instruction Number	Procedural Instruction - [Name] Project	Page 8
<b>Transport Plan</b>			
1	S&E 4.6.1	<p><b>Strategy Statement</b></p> <p>In order to discharge the Safety requirements and provide full environmental protection and to maintain the policy of risk minimisation the Transport Plan must be not only carefully adhered to but must be continuously monitored for any non compliance.</p> <p style="text-align: center;"><b>Elements of the Transport Safety &amp; Environmental Plan</b></p>	
2	S&E 4.6.2	<p><b>Driver Briefing and PPE</b></p> <p>The driver is to be fully briefed as to his duties of care during the transportation of the waste. This briefing should be over and above the specific driver training and should be delivered on the day of despatch of each and every container. This briefing shall include the following point by point schedule.</p> <ul style="list-style-type: none"> <li>* Is the driver of good health and fitness</li> <li>* Is the driver fully aware of the route</li> <li>* Brief the driver of any changes to route, timing, destination, road hazards.</li> <li>* Brief the driver as to communication check times to escort and Contractor control</li> <li>* Brief the driver as to rest stops (one per hour if required)</li> <li>* Brief the driver to load check stops (one per hour if required)</li> <li>* Check driver has loaded PPE Kit Bag and knows how to use it.</li> <li>* Check driver is aware of his duties if escort vehicle delayed</li> <li>* Check emergency procedures and notification schedule is in drivers cab</li> <li>* Check driver is aware of how to cope initially with emergency</li> </ul>	
3	S&E 4.6.3	<p><b>Route and adherence</b></p> <p>The planned route shall be shown on a road map and placed in the cab after driver briefing. The points of radio progress reports are to be indicated on the map. Should it become necessary to change the route during the course of the delivery the driver shall advise the escort vehicle and pull over when safe to do so and await authorisation to alter the route.</p>	
4	S&E 4.6.4	<p><b>Communication</b></p> <p>The safety of the waste delivery is dependent on good communication. No delivery of waste shall commence until a full communication check with the escort vehicle has been effected. No containers shall be delivered until the communication check has been carried out and proved effective.</p>	
5	S&E 4.6.5	<p><b>Vehicle</b></p> <p>Inspect the vehicle for tyre or suspension damage and look for obvious mechanical reasons for the vehicle to be unfit for duty. Also inspect the COF.</p>	
6	S&E 4.6.6	<p><b>Load Security</b></p> <p>The supervisor and the driver must together inspect the load and determine that the load is correctly fastened onto the container truck by its locking turrets. No container is to be despatched unless the container is locked in position and that the locking has been witnessed by the supervisor and the driver..</p>	
7	S&E 4.6.7	<p><b>Emergency Procedure and Escort vehicle</b></p> <p>All trans shipment of containers of Waste to the port shall be escorted the entire route up to receipt and acceptance by the Port Authority. The escort vehicle personnel are to be fully trained in all aspects of spill control and are to assume full responsibility for the cargo during all aspects of the delivery. Any route changes must be authorised by the Escort vehicle personnel only after clearance from Contractor control room.</p>	



WPI Quality Assurance		WPI 4.6	
Item	Instruction Number	Procedural Instruction - [Name] Project	Page 15
		Transport Plan	Non Compliance Report #
		<p>The QA - Audit comprises a series of questions against each part of the Transport plan and are complete with instructions for compliance and non compliance. Most of the non compliance responses will initiate a non compliance report. This report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the non compliance reports. This QA schedule is based on a single shipment and this QA schedule should used as a general document with compliance noted on the individual check sheets for each container.</p> <p style="text-align: center;"><b>Elements of QA Transport</b></p> <ul style="list-style-type: none"> <li>- EPD Approval</li> <li>- MVI Approval</li> <li>- Freeways Approval</li> <li>- Route Planning</li> <li>- Escort vehicle</li> <li>- Driver Briefing</li> <li>- Load Security</li> </ul>	
1	QA 4.6-A	Compliance signature: _____	See Rpt 4.6-A
		<b>EPD Approval</b>	
2	QA 4.6-B	Question: Has the application for EPD approval been filed and the approval letter received? Compliance Signature: _____	See Rpt 4.6-B
		<b>Route Planning</b>	
3	QA 4.6-C	Question: _____ Compliance Signature: _____	See Rpt 4.6-C
4	QA 4.6-D	Question: Has the route been carefully planned, inspected and travelled to ensure that the cargo will be safe at all times? Compliance Signature: _____	See Rpt 4.6-D
5	QA 4.6-E	Question: Have all road works on the route been taken into account and all overhead obstructions? Compliance Signature: _____	See Rpt 4.6-E
6	QA 4.6-F	Question: Has the route been surveyed for traffic delays? Compliance Signature: _____	See Rpt 4.6-F
7	QA 4.6-G	Question: Have the routes times been carefully worked out to avoid rush hour traffic conditions? Compliance signature: _____	See Rpt 4.6-G
		<b>Escort vehicle</b>	
8	QA 4.6-H	Question : Is the Escort vehicle fully stocked and available for the escorting of the container truck to the Port and the check lists checked off? Compliance Signature: _____	See Rpt 4.6-H
		<b>Communication</b>	
9	QA 4.6-I	Question: has the entire communication system been checked out between the container truck, escort vehicle and Contractor control room? Compliance Signature: _____	See Rpt 4.6-I
		<b>S&amp;E Driver Briefing</b>	
10	QA 4.6-J	Question: Have all the driver briefing statements been complied with? Compliance Signature: _____	See Rpt 4.6-J

WPI		Quality Assurance		WPI 4.6	
Item	Instruction Number	Procedural Instruction - [Name] Project	Page 16		
		<b>Transport Plan</b>	<b>Non Compliance Report #</b>		
		<b>Load Security</b>			
11	QA 4.6-K	Question: Has the supervisor and the Driver performed the load security check?	See Rpt 4.6-K		
		Compliance Signature:			
12	QA 4.6-L	Question: Has the Container Truck a current COF?	See Rpt 4.6-L		
		Compliance Signature:			
13	QA 4.6-M	Question: Has the supervisor checked the vehicle for any obvious mechanical faults?	See Rpt 4.6-M		
		Compliance Signature:			

WPI		Reports		WPI 4.6	
Item	Instruction Number	Procedural Instruction - [Name] Project	Page 22		
		<b>Transport Non Compliance Action Instructions</b>			
1	Rpt 4.6-A				
2	Rpt 4.6-B	Containers with waste may not leave the storage site unless written approval from EPD has been received for that particular shipment. If this approval is not obtained then a NCR must be produced.			
3	Rpt 4.6-C	Containers with waste may not leave the storage site unless written approval from MVIO has been received for that particular shipment. If this approval is not obtained then a NCR must be produced.			
4	Rpt 4.6-D	Ensure that the route is carefully planned and travelled. If this has not been performed of the supervisor believes that it has not been done properly then a NCR must be filled out.			
5	Rpt 4.6-E	All road works must be inspected to ascertain if they are a hazard or not. If this has not been done then write NCR.			
6	Rpt 4.6-F	All routes must be surveyed for traffic delays during the planned travel time. If this has not been performed then write NCR.			
7	Rpt 4.6-G	All routes must be surveyed for rush hour traffic congestion. If this has not been done then write out NCR.			
8	Rpt 4.6-H	Unless the escort vehicle is completely stocked with all required equipment and is available for duty no container must leave the site name. If the container truck leaves without the Escort vehicle it must be recalled. If this is not done then write NCR and urgently advise Contractor..			
9	Rpt 4.6-I	Unless all communication checks are completed and OK the delivery must not happen. If it does then write out NCR and immediately advise Contractor control room.			
10	Rpt 4.6-J	Complete all driver briefings. If this is not done write out NCR and advise Contractor control Room			
11	Rpt 4.6-K	Ensure that the supervisor and the driver inspects the load for security. If this is not done then write NCR.			
12	Rpt 4.6-L	No container trucks are to be used if it does not have a current COF.			
13	Rpt 4.6-M	The supervisor must check the container truck for any obvious signs of damage etc. If this is not done then write NCR.			

Item	Instruction Number	Procedural Instruction - [Name] Project <span style="float: right;">Page 23</span>
		<p style="text-align: center;"><b>Transport Plan</b></p> <p style="text-align: center;"><i>"Use the format provided here to construct the final Transport Report. This report is required to be filed during the first week of container despatch from the site name"</i>  <i>"This report is to be produced at the time of first delivery"</i></p> <p style="text-align: center;"><b>FINAL REPORT FORMAT</b></p> <p><b>Introduction</b>                      This Report for [Site name] has been generated during the first of the Transport operations. This report is intended to confirm that the Transport plan has been adhered to and that all the provisions of safety have been complied with. Information provided for in this report is to be used by the Quality Assurance Engineer during site inspections of the Transport process to ensure compliance.</p> <p><b>Route Planning</b>                      The planning of the route and all of its implications of traffic, road works, population densities, waterways and time of day have been carefully investigated and the selected routes will maximise the safety and delivery.  <i>"If the Route planning investigation reveals any safety issue or hazard whatsoever then that is to be discussed here"</i></p> <p><b>Driver Briefing</b>                      Compete driver briefing has been carried out as detailed in the WPI.  <i>"If the Driver briefing has raised problems then this needs to be stated here"</i></p> <p><b>Communications</b>                      The complete communication system between the escort vehicle, the container truck and Contractor has been properly checked out and approved.  <i>"If the Communication system is less than adequate then this must be discussed here"</i></p> <p><b>Non Compliance Report</b>  <i>"All non compliance reports that remain unattended or corrected are to be clearly stated"</i></p> <p><b>Primary Aims and Goals non compliance</b>  <i>"This report by its nature invokes a serious review of the situation. For any situation that the site supervisor feels violates the spirit or intent of the projects Aims and Goals, must generate this report. Within it the site supervisor must clearly state what part of the Aims and goals are violated and why he thinks that such conditions will prevent the Main Contractor from discharging its responsibilities to the client. Included with this statement must be a suggested solution that will bring the project back on strategy"</i></p> <p style="text-align: center;"><b>Conclusions</b></p> <p>At the [Site name] storage facility all the Transport requirements have been adhered to and the delivery process commenced. The correct check sheets are being filled out and Non compliance reports generated as required.</p> <p>Signed Site Supervisor &amp; Project Manager</p>

## WPI 4.7 Shipping and Disposal Instructions

WPI		Operational Instructions	WPI 4.1
Item	Instruction Number	Procedural Instruction	Page 1
<b>Shipping and Disposal Plan</b>			
<b>Strategy</b>			
1	7.0	Shipping waste pesticides waste to an offshore disposal facility must be conducted by a recognised shipping company and full cognisance made of all international laws (in particular the Basel convention) regulating the trans shipment of toxic waste.	
2	7.1	<b>Elements of the Shipping and Disposal Plan</b>	
Labelling Port Acceptance Trans Frontier Documentation Basel Convention Inland transportation			
3	7.2	<b>Labelling</b>  Before the shipping company can accept the container for loading at the port the following labels must be affixed and in order.  Four labels Marked Class 9 "Marine Pollutant" Correct technical name IMDG Classification United Nations Number  The proper shipping name shall be mentioned on all shipping instructions, according to the IMDG-regulations for the several UN-numbers indicated in the Inventory Report. The remaining 'unknown' pesticides after further analyses of the inventory report, during the progress will be labelled as follows : <b>Liquid waste material:</b>  PESTICIDES, LIQUID, TOXIC, N.O.S. ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  <b>Solid waste material:</b>  PESTICIDES, SOLID, TOXIC. ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  The shipping documents and shipping instructions will be issued by the SHE&Q manager.	
4	7.3	<b>Port of Entry Acceptance</b>  Port acceptance at country of destination has the following conditions.  (a) The Port safety Officer must be notified prior to shipment of the following before approval for entry is given:  Source of the waste Trans frontier shipment documents Estimated time of arrival and arrival berth  (b) Upon discharge, the ships agent must notify the Port Safety Officer in writing the date, time and destination of the transport of the waste. The ships agent will need to have prearranged customs clearance and transportation. (c) The Port safety Officer also requires notification of the importers ability to supply a competent emergency response team to deal with any spillages, and needs a 24 hour contact number for the emergency response team and for the importers local agent.	

WPI		Operational Instructions	WPI 4.1
Item	Instruction Number	Procedural Instruction	Page 2
<b>Shipping and Disposal Plan</b>			
5	7.4	<b>Trans frontier Documentation</b>  Correct and valid for the importation period trans frontier documentation (TFS) is required to be in place before the shipment leaves the country of origin. This documentation is to be obtained by the importers shipping agent and includes all certificates and documents as detailed below:  <ul style="list-style-type: none"> <li>• All transport documents for road and sea transport (IMDG/ADR)</li> <li>• Dangerous goods declaration</li> <li>• <b>Container packing certificates</b></li> <li>• Bills of lading</li> <li>• IMO labels, UN labels, Marine Pollutant labels, Waste ID labels for each Drum</li> <li>• Complete script for each load and all shipment related activities.</li> </ul>	
	7.4.1	<b>Export/import documentation of waste</b>  The total amount of the material will be determined on a weigh bridge in the harbour, in order to fulfil TFS requirements (pre announcement) for import of this waste into the EU. After finalising the needed documentation for export of the waste the containers will be stored at a secured area of the shipping line, awaiting loading on a sea-going vessel from a first class international shipping company and transport to the EU.	
	7.4.2	<b>Shipping of hazardous materials by sea-going vessels</b>  All the transport of containers over sea will be arranged with an international recommended shipping liner, directly from the harbour.	
6	7.5	<b>Basel Convention</b>  All shipment of Pesticides waste shall be conducted under the auspices of the Basel Convention. In particular Article 6, 7,8 and 10.	





Item	Instruction Number	Procedural Instruction	Page 13
		<b>Shipping and Disposal NCR REPORT</b>	
1	Rpt 4.7-A	Ensure that the correct labelling of the container is placed as failure will result in non acceptance by the Port	
2	Rpt 4.7-B	The Lloyds certificate must be sighted. No container is to be presented for shipping unless this document is included with the shipping documents.	
3	Rpt 4.7-C	If this certificate is not presented with the shipping document attesting to packaging standards then the container is not to be presented to the export port.	
4	Rpt 4.7-D	Without the Trans frontier documentation the container cannot be presented to the export port.	
5	Rpt 4.7-E	If the Basel conventions cannot be complied with then the container cannot be presented to the export port	
6	Rpt 4.7-F		

## WPI 4.8 Insurance Instructions

WPI		Operational Instructions	WPI 4.1
Item	Instruction Number	Procedural Instruction	Page 1
<b>Insurance Plan</b>			
1	8.0	<p><b>Strategy</b></p> <p>The project should be fully covered for all risks. The policy should obviously protect all those involved including the client but it must also be seen to be a provision that protects the environment from harm. A large accident involving a large spill will be very costly to clean up and a comprehensive insurance policy should be in place to cater for this type of event. When obtaining offers of insurance the Project manager should obtain the policy that while protecting himself and his client full protection is offered for environmental protection that will ensure that the funds are available to clean up a substantial problem. The amount and type of insurance will depend on the client requirements and all or part or none of the insurance capacity noted here may or may not apply.</p>	
2	8.1	<p><b>Elements of the Insurance Plan</b></p> <ul style="list-style-type: none"> <li>- Types of insurance</li> <li>- Who and what should be covered</li> <li>- Actions by the clearance company to hold harmless</li> </ul> <p><b>Types of insurance</b></p> <p>Complete "Pollution" Insurance cover for all accidents and incidents involving the removal, packaging and transportation of waste pesticides. In addition complete protection of all contractors, agents, clients, engineers etc. is required as well as cover for workers, employers liability insurance where required, machinery insurance, public liability insurance, motor vehicle insurance and professional liability.</p>	
3	8.3	<p><b>Who and What should be covered</b></p> <p>Main policy should cover for " Protect the main contractor, his subcontractors, the client, his engineers and agents against their third party bodily injury property damage including any pollution clean up expense arising from the contract for the packaging, removal and transportation to the contractor for disposal of waste pesticides. The amount of cover of the policy should be substantial and be at least US\$10 Million.</p>	
4	8.4	<p><b>Actions by clearance company to hold harmless.</b></p> <p>Insurance policies of this nature require that the policy holder take all reasonable steps to ensure that:</p> <p>There is compliance with regulations concerning transportation, storing and packaging of pesticide waste.</p> <p>The cargo is to be shipped in containers and loaded under professional supervision, and</p> <p>The master of the carrying vessel is to be fully aware of the substance to be shipped.</p>	

WPI		Safety and Environmental Instructions	WPI 4.1
Item	Instruction Number	Procedural Instruction	Page 5
<b>Insurance Plan</b>			
5	S&E8.0	<p><b>Strategy Statement</b></p> <p>While the need for insurance cover is obvious in order to protect the participants of the Pesticide waste clearance operation, the main purpose of the insurance policy is to provide a high degree of environmental protection. By having a comprehensive package in place that is the ultimate pollution policy means that clean is assured in the unlikely event that a Pesticide waste escape occurs. This is not to say that the packaging and transportation can therefore be of a lesser standard because at the end of the day the policy will do the clean up. The policy is only to be the absolute back stop environmental protection should all the other plans and strategies fail.</p> <p>Therefore the primary aim of the insurance policy is to provide funds for environmental protection should all the other procedures fail in the event of a catastrophic loss.</p>	
6	S&E 8.1	<p><b>Elements of Insurance Safety and Environmental Plan</b></p> <ul style="list-style-type: none"> <li>- Appropriate Insurance policy</li> </ul>	
7	S&E8.2	<p><b>Appropriate Insurance Policy</b></p> <p>In the event of a catastrophic event where uncontrolled Pesticide waste enters the environment the only final capacity to protect the environment lies in the strength of the insurance policy to provide the funds for the cleanup. This means that the insurance policy chosen for the project must be designed with the protection of the environment firmly in mind.</p>	

WPI		Quality Assurance	WPI 4.1
Item	Instruction Number	Procedural Instruction	Page 9
		<b>Insurance Plan</b>	
8	QA8.0	<p><b>Strategy Statement</b></p> <p>This section provides the Quality Assurance detail for the Insurance plan. This section should be read in conjunction with Part 1 &amp; 2 Section 8. The QA of the Insurance plan follows the sections as shown in Part 1. The Work Procedure Instructions in Part 4 include in point format the QA issues raised in this section. As the Site specific details are filled in WPI 4.8 the QA part of the Instruction covers those aspects as discussed below. The QA-Audit comprises a series of questions against each part of the Insurance Plan and are complete with instructions for compliance and noncompliance. Most of the noncompliance responses will initiate a noncompliance report. This Report then becomes part of the management reporting to the client who is then required to provide an ongoing direction to the conclusions of the noncompliance reports.</p>	<b>Non Compliance Report #</b>
1	QA 4.8-A	<p>Question : Does the proposed insurance policy provide the necessary funds to protect the environment for any conceivable accident ?</p> <p>Compliance signature: _____</p>	See Rpt 4.8-A
1	QA 4.8-B	<p>Compliance signature: _____</p>	See Rpt 4.8-B
1	QA 4.8-C	<p>Compliance signature: _____</p>	See Rpt 4.8-C
1	QA 4.8-D	<p>Compliance signature: _____</p>	See Rpt 4.8-D

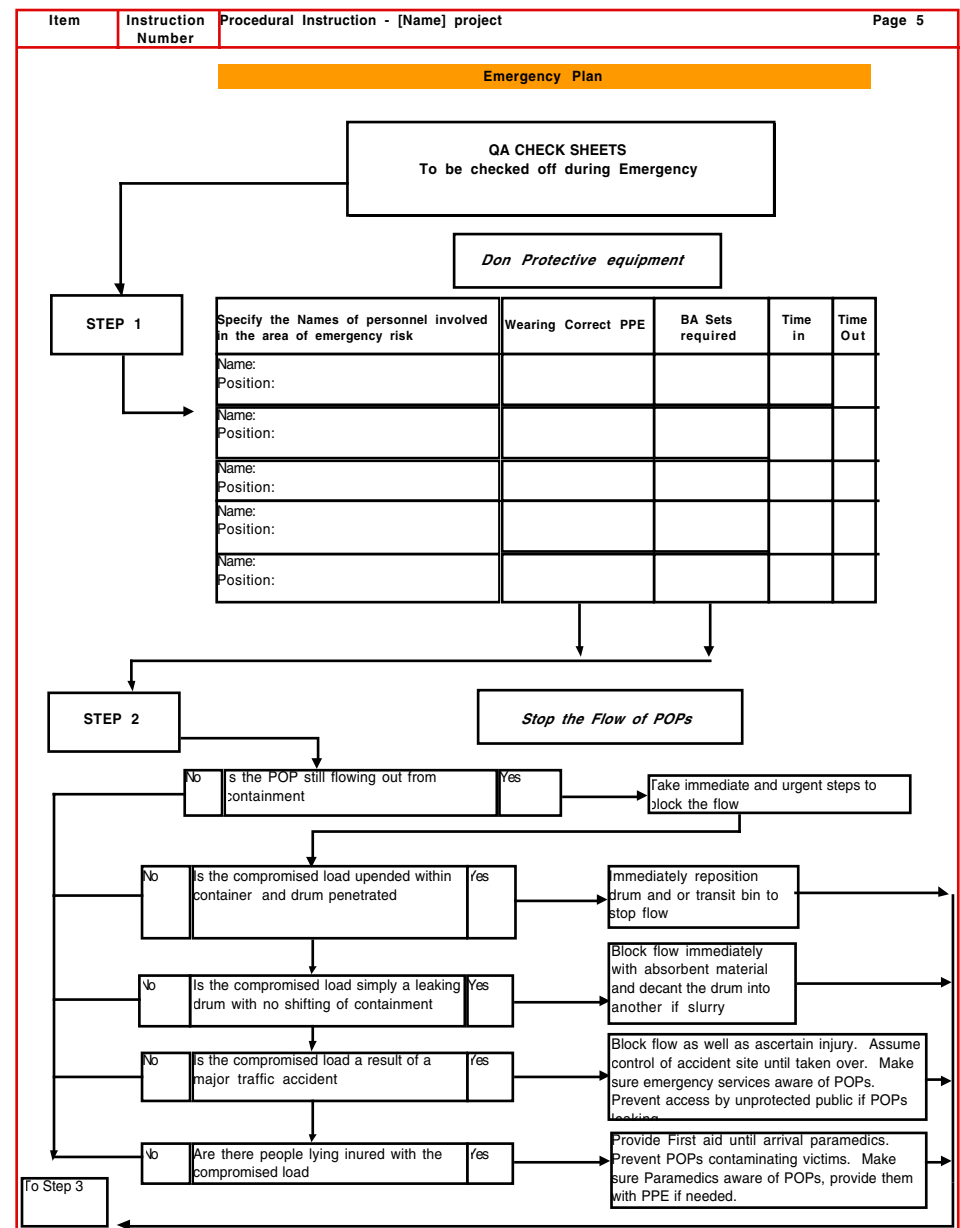
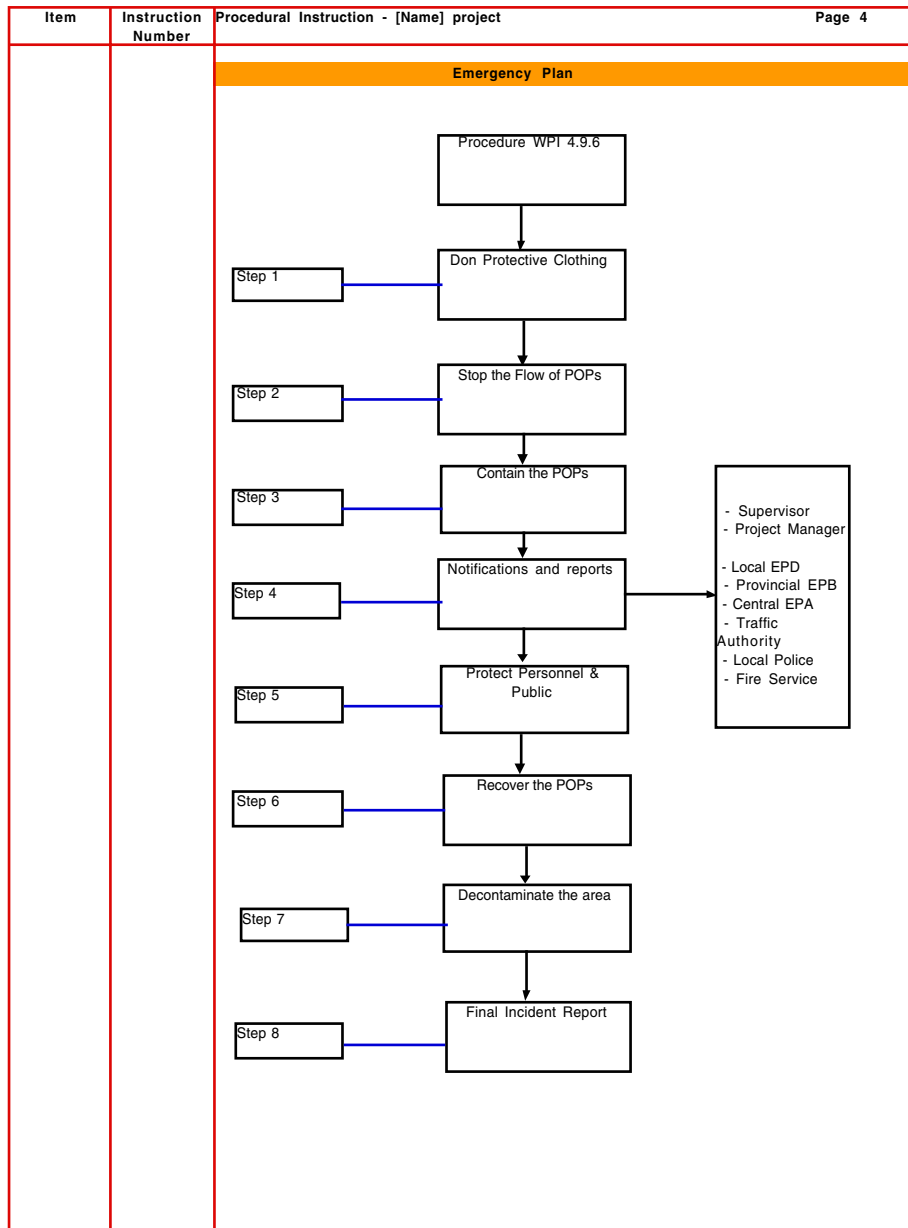
WPI		Reports	WPI 4.1
Item	Instruction Number	Procedural Instruction	Page 13
		<b>Insurance Plan</b>	
1	Rpt 4.8-A	Unless the policy covers all incidents to protect the environment then it should be renegotiated	
2	Rpt 4.8-B		
3	Rpt 4.8-C		
4	Rpt 4.8-D		
5	Rpt 4.8-E		

## WPI 4.9 Emergency Instructions

WPI		Operational Instructions	WPI 4.9
Item	Instruction Number	Procedural Instruction - [Name] project	Page 1
		<b>Emergency Plan</b>	
1	WPI 4.9.1	<p><b>Strategy Statement</b></p> <p>The Emergency Plan is concerned with the detail of the equipment, services and methodology during and emergency situation. The system and equipment shown in this WPI is designed to allow a full emergency response to be available during all waste operations and transport. The emergency plan is to be available at all times in the form of an Emergency Response Unit (ERU). This facility is always to be available during all stages of packaging as well as transportation. During transportation of the waste waste to the export port the ERU is to act as the escort vehicle. The Emergency plan is discharged by means of Flip charts and these are to be activated during the emergency.</p> <p style="text-align: center;"><b>Elements of the Emergency Response Plan</b></p>	
2	WPI 4.9.2	<p><b>ERU Vehicle</b></p> <p>Due to the substantial amount of equipment to be carried by the ERU and the recovered waste it may also be called upon to transport this vehicle must be substantial. It is recommended that the ERU be housed in modular containers that is easily loaded onto the back of a flat bed truck with a capacity of about 1 Tonnes . The ERU vehicle must be fitted with a communication system with at least two methods of communication. (EG radio and mobile telephone). The ERU must be capable of maintaining communications with the "Control Room" and the waste Container truck.</p>	
3	WPI 4.9.3	<p><b>ERU Equipment Inventory</b></p> <p>The equipment to be carried by the ERU is extensive and a continuous inventory list must be maintained for the unit. Whenever the ERU is required for escort duties the inventory list must be checked for any shortages and the delivery of waste containers to the Export Port must not proceed if the ERU is lacking equipment within its inventory.</p> <p>The schedule of equipment required for the ERU is as shown later in this section of the WPI. Within the check sheets WPI 4.90 is a check indication by the site supervisor that the ERU is properly equipped and its inventory is complete.</p>	
4	WPI 4.9.4	<p><b>Escort Duties</b></p> <p>The ERU is to operate as the primary escort vehicle and is to attend all transport deliveries of waste waste to the Export Port. During such escort duties the vehicle is to travel behind the waste transport vehicle and its personnel to assume complete control during any kind of on the road incident.</p> <p>The escort vehicle personnel are to regulate the rest and safety stops and authorise the changing of any planned routes. During such escort duties if there are any possibilities of spillage or damage to the cargo then the ERU and its personnel are to begin the notifications procedures and commence the Emergency Response procedures.</p>	
5	WPI 4.9.5	<p><b>Emergency Response During Escort</b></p> <p>In the case of accident, spill or leak during transport, emergency response measures as follows are to be taken immediately. All such incidents require that "An emergency be declared". The words "Emergency" must be used in communications regarding the incident.</p> <p>* Immediately following the incident the waste container driver is to notify the ERU escort vehicle.</p> <p>* The ERU crew will respond immediately to the initial notification from the Container truck driver</p> <p>* If the waste discharge is a major spill then the formal notifications procedure must commence as per the Notification procedure.</p>	

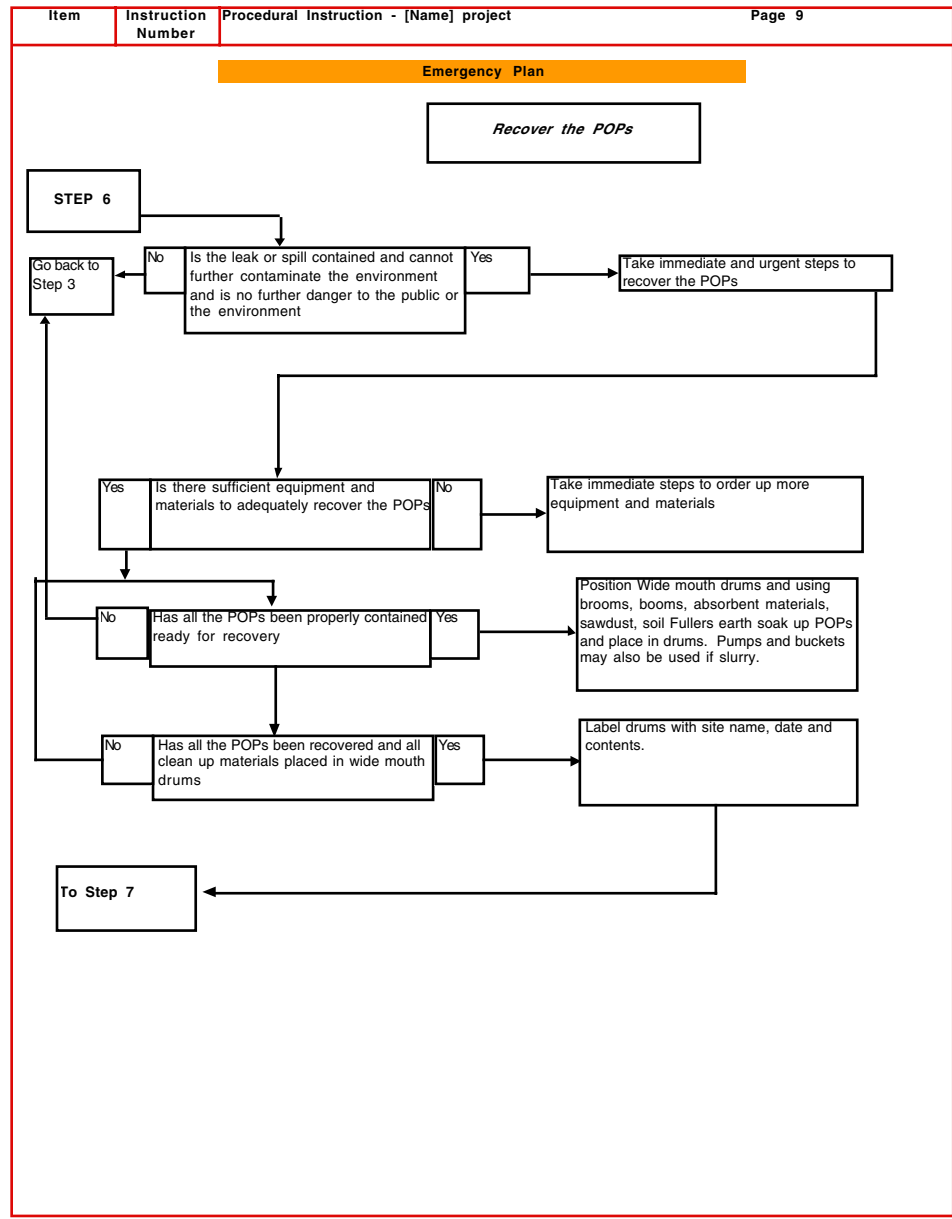
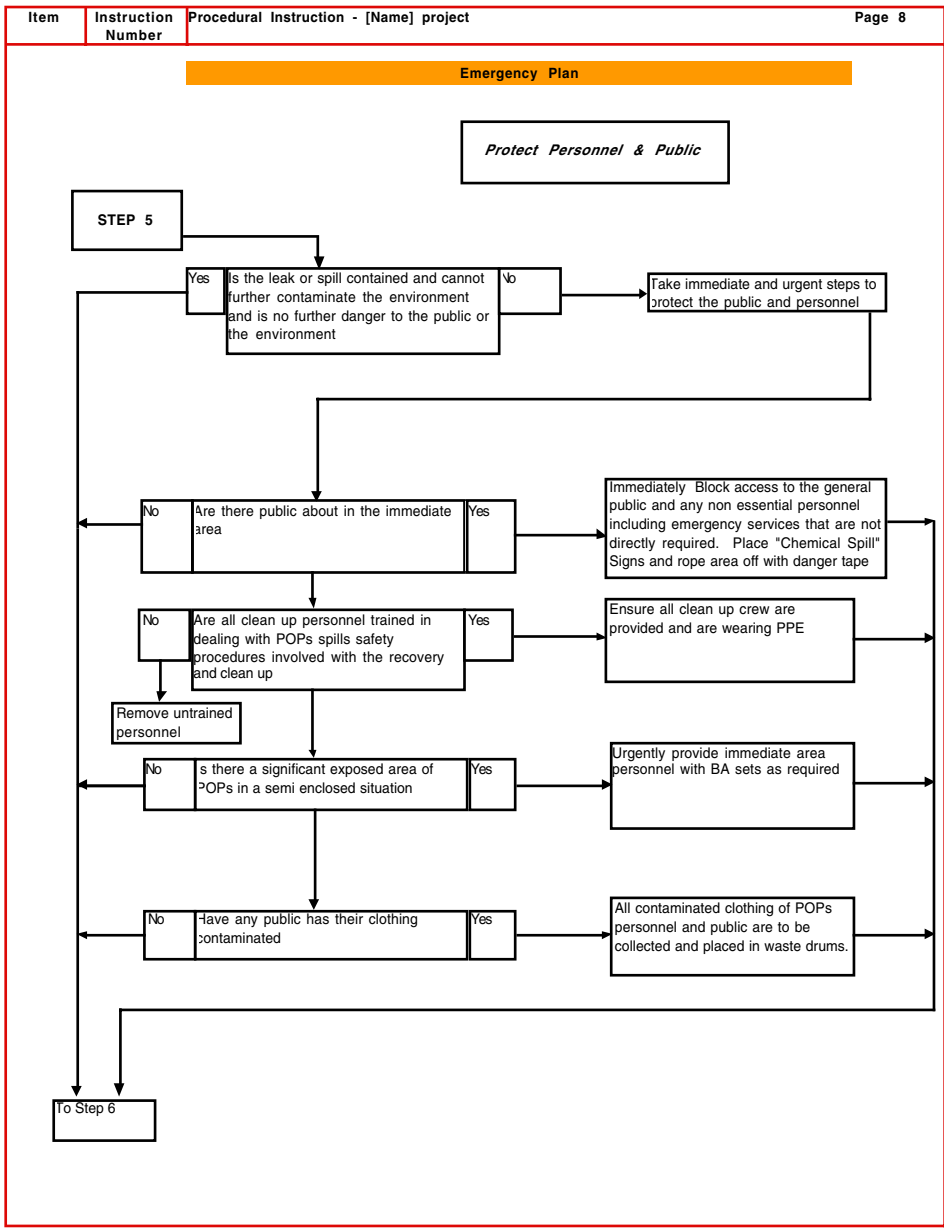
Item	Instruction Number	Procedural Instruction - [Name] project	Page 2
<b>Emergency Plan</b>			
6	WPI 4.9.6	<p><b>EMERGENCY PROCEDURE FOR A MAJOR SPILL DURING ESCORT OF PESTICIDE WASTE</b></p> <p><i>General</i> Because of the known persistent nature of POPs in the environment and their tendency to bioaccumulate, it is important to prevent entry into the environment. Therefore:</p> <ol style="list-style-type: none"> <li>1 - It is essential to prevent waste leaking into drains or natural waterways.</li> <li>2 - All wastes and residues containing POPs shall be collected for disposal</li> <li>3 - Carry out necessary recording and notifications.</li> </ol> <p><b>Emergency Procedure priority Steps</b></p> <ol style="list-style-type: none"> <li>1 - Don Protective Clothing</li> <li>2 - Stop the flow of pesticides waste</li> <li>3 - Contain POPs</li> <li>4 - Report Incident</li> <li>5 - Keep non essential people and staff away</li> <li>6 - Recover all POPs Contaminated material</li> </ol> <p><b>Step 1 Don Protective Clothing</b></p> <p>Personnel from the ERU must wear PPE before entering the leak or spill area. If the waste Container truck driver is required to assist then he must also wear PPE.</p> <p><b>Step 2 Stop the Flow of waste</b></p> <ul style="list-style-type: none"> <li>*Reposition the drum to stop the flow</li> <li>*Reposition the transit bin or tray within container</li> <li>* If possible stop the leakage with temporary seals within containers</li> <li>*If Shipping container has fallen off truck deck then reposition level urgently</li> <li>* If necessary transfer fluid to spare drum</li> </ul> <p><b>Step 3 Contain the waste</b></p> <ul style="list-style-type: none"> <li>* Dyke major spills with soils, fullers earth or other materials. This action may involve the use of front end loaders creating emergency dam</li> <li>* If at all possible prevent waste entering drains, waterways or spilling to ground. Place bund bags on nearby drains.</li> <li>* Use sand or sawdust to absorb and recover the waste, all of this to be recovered in a wide mouth drum</li> <li>* Recover all contaminated soils by digging down at least 100 mm more if soil is loose.</li> <li>*If leaking from truck tray then drive truck onto prepared sheet of plastic to contain the waste.</li> </ul> <p><b>Step 4 Notifications and reports</b></p> <p>If a major spill or accident has occurred during the escort of waste to the export port then the following services are to be notified immediately in order as shown:</p> <ul style="list-style-type: none"> <li>- Supervisors</li> <li>- Project Manager</li> <li>- Control room</li> <li>- Client Project Engineer</li> <li>- Local EPD</li> </ul>	

Item	Instruction Number	Procedural Instruction - [Name] project	Page 3
<b>Emergency Plan</b>			
		<ul style="list-style-type: none"> <li>- Provincial EP</li> <li>- Central EPA</li> <li>- Road and traffic Authority</li> <li>- Local Police bureau</li> <li>- Fire Service Department</li> </ul> <p><b>Step 5 Protect Personnel and the public</b></p> <ul style="list-style-type: none"> <li>* All non- essential personnel and publics shall be kept out of the immediate leak or spill area. The area should be roped off to prevent any spread of waste material by vehicle or pedestrian traffic.</li> <li>* Only personnel familiar with waste safety procedures will be used to shut off the source of the waste spill, contain the spill waste, and carry out recovery and clean up work.</li> <li>*The repair of equipment or the clean-up of spillages and leaks containing waste should be carried out by competent staff only. PPE must be worn.</li> <li>* Where a significant area of waste slurry is exposed to the air in an indoor situation or within a container then breathing apparatus must be worn.</li> <li>* Contaminated clothing must be placed in waste waste materials drums.</li> </ul> <p><b>Step 6 Recover the waste</b></p> <p>Once the waste flow has been stopped and the waste contained then the waste must be recovered. This can be performed using absorbent materials, buckets, brooms rags, sawdust, booms etc. All such recovered waste must be placed in wide mouth drums.</p> <p><b>Step 7 Decontaminate the area</b></p> <p>All surface subject to the waste slurry must be decontaminated with solvent. Any spill on cars etc must be wiped down in situ with absorbent cloth.</p> <p><b>Step 8 Final incident report</b></p> <p>This report should be generated within 24 hours of the incident and cover matters of spill type and quantity and methods used to clean up.</p>	















Ware House Name : \_\_\_\_\_ Date: \_\_\_\_\_ Form WPI 4.10-E

QA Check List (Site Workers)

Description	Compliance Record		Improvement/Remedy	Comments
	Y	N		
Training Programme Completed				
Medical Examinations completed				
Site briefing completed				
Protective Clothing for clearance workers				
Uniform for other workers				
Decontamination procedures correct				
Defence Lines in place				
Clothing changes				
Register of Staff Movements completed				

QA Inspector Compliance Signature: \_\_\_\_\_  
 Job Site Supervisor Signature: \_\_\_\_\_

Ware House Name : \_\_\_\_\_ Date: \_\_\_\_\_ Form WPI 4.10-F

QA Check List (Drivers)

Description	Compliance Record		Improvement/Remedy	Comments
	Y	N		
Register of vehicle movements completed				
Transport vehicle labelling correct				
Weights of tare for Transport vehicles recorded				
ERU Vehicle available for escort duties				
Drivers briefed				

QA Inspector Compliance Signature: \_\_\_\_\_  
 Job Site Supervisor Signature: \_\_\_\_\_

Ware House Name : \_\_\_\_\_ Date: \_\_\_\_\_ Form WPI 4.10-G

QA Check List (Visitors)

Description	Compliance Record		Improvement/Remedy	Comments
	Y	N		
Valid Authorisations				
Correct Attire				
Correct PPE				
Register for Visitors completed.				
Visitor briefing completed				
Visitor guide provided				

QA Inspector Compliance Signature: \_\_\_\_\_  
 Job Site Supervisor Signature: \_\_\_\_\_

Site Name : \_\_\_\_\_ Date: \_\_\_\_\_ Form WPI 4.10-H

QA Check List [Equipment]

Description	Compliance Record		Improvement/Remedy	Comments
	Y	N		
Primary Zone equipment in place				
Secondary Zone equipment in place				
Tertiary Zone equipment in place				
Fire fighting equipment in place and all present				
Telephone and fax available				
First Aid equipment in place				
Spill clean-up materials in place				
Decontamination Facility in place				

QA Inspector Compliance Signature: \_\_\_\_\_  
 Job Site Supervisor Signature: \_\_\_\_\_

Ware House Name : \_\_\_\_\_ Date: \_\_\_\_\_ Form WPI 4.10-I

**QA Check List [Emergency Systems]**

Description	Compliance Record		Comments
	Y	N	
			Improvement/Remedy
ERU Unit Available			
Packaged Spill Systems in place during operations			
Fire fighting systems in place during operations			
First aid systems in place during operations			

QA Inspector Compliance Signature: \_\_\_\_\_

Job Site Supervisor Signature: \_\_\_\_\_

Site Name : \_\_\_\_\_ Date: \_\_\_\_\_ Form WPI 4.10-J

**QA Check List [Waste Labelling & Recording]**

Description	Compliance Record		Comments
	Y	N	
			Improvement/Remedy
<b>Labelling of Capacitors/Transf</b>			
Classification sticker			
Recording of Waste information and Waste name on Form WPI 4.10-M			
Recording of Individual Big bags and drums on WPI 4.10-M			
Placement of all transit units labels as per the Packaging Plan WPI 4.5			
<b>Labelling of Containers</b>			
Correct Naming of Waste			
UN Classification Number			
Waste Type labels			
Toxic Chemical Ref 4 x			
Consignee name and address			
Emergency Contact Numbers			
<b>Labelling of Transport Vehicle</b>			
Name of Clearance Company			
Telephone Number			
Waste stickers			
Emergency procedures handbook			

QA Inspector Compliance Signature: \_\_\_\_\_

Job Site Supervisor Signature: \_\_\_\_\_

Ware House Name : \_\_\_\_\_ Date: \_\_\_\_\_ Form WPI 4.10-K

QA Check List [Container Survey]

Description	Compliance Record		Comments
	Y	N	
			Improvement/Remedy
<b>Container Precheck</b>			
Container Survey check			
Door Seal inspection			
Close Door Test			
Sound Floor inspection			
Plate date inspection			
Recording of tare and number			
<b>Marine Survey</b>			
No required			

QA Inspector Compliance Signature: \_\_\_\_\_  
 Job Site Supervisor Signature: \_\_\_\_\_

Site Name : \_\_\_\_\_ Date: \_\_\_\_\_ Form WPI 4.10-L

QA Check List [Packaging]

Description	Compliance Record		Comments
	Y	N	
			Improvement/Remedy
<b>Packaging Standards</b>			
Packing of Transit units according to WPI 4.5			
Correct internal big bag liners and Drum PE Liners			
Correct internal corner and layer bracing			
Inspection of transit unit before close			
Correct recording of Transit units per container			

QA Inspector Compliance Signature: \_\_\_\_\_  
 Job Site Supervisor Signature: \_\_\_\_\_





## **SECTION TWO - TENDER DOCUMENTATION**

### Introduction

The information that appears on the following pages is a sample tender and contract document. This document is constructed on the basis of the operating manual being established and thus this documentation uses the information contained in the above manual.

**Tender**

**Contract : A-Chem 1**

**Handling, Packaging, Transportation and  
Destruction of Unwanted Agri-chemicals**

**For**

**XXXXXXXXXXXX**

**Contents**

<b>Section</b>	<b>Description</b>
1	Instructions to Tenders
2	Conditions of Contract
3	Special Conditions to Contract
4	Scope of Work
5	Tender Response Documentation
	Form 1 - Form of Tender
	Form 2 - Price Schedule
	Form 3 - Previous experience and history
	Form 4 - Time Programme
	Form 5 - Quality Assurance certifications
	Form 6 - Transboundary documentation
	Form 7 - Insurance certificates
	Form 8 - Disposal facility and licences
	Form 9 - Methodology and Systems
	Sections 1-9
6	Specification - Preliminary and General
7	Technical Specification
	Section One : Management Plan
	Section two : Site Inspection Plan
	Section three : Clearance plan
	Section four : Site Preparation plan
	Section five : Packaging plan
	Section six : Transportation plan
	Section Seven : Shipping and Disposal
	Section eight : Insurance Plan
	Section nine : Emergency plan
Appendices	
Appendix A	Quantities and Type Schedules
Appendix B	Existing Store layout and Configuration

## SECTION ONE

### INSTRUCTIONS TO TENDERER

#### 1.1 Introduction

This Contract is for the removal of hazardous agri-chemicals as per Appendix A from their current store in ....., their repacking and transportation to a disposal site and the ultimate disposal in an environmentally sustainable manner.

#### 1.2 Principal

The Principal is ...

#### 1.3 Superintendent

The Principal is represented by his Superintendent;

#### 1.4 Delivery of Tenders

Two copies of the Tender offer and response shall be delivered to

Attention

By the end of business : Friday XXXXXX

#### 1.5 Copy of Specification

One copy of the Tender document is made available free of charge. Additional copies will be available for \$50 each. This sum is to cover the reproduction costs and is not refundable

#### 1.6 Alternatives

Should the Tenderer consider that it can offer any advantages to the Principal by a modification to the Specification, it may set this out in a covering letter a description of the modification and the reduction in price if such modification is accepted by the Principal. Notwithstanding the description, drawings or literature which may be submitted with the Tender, all details will be assumed to be in accordance with this Tender document.

#### 1.7 Interpretation

If the Tenderer has any doubt as to the meaning of any part of the Conditions of Contract or of the specification, it shall set out in his covering letter the interpretation on which it relies.

#### 1.8 Additional Information

Additional information the Tenderer may require during their Tender document compilation may be obtained from;

#### 1.9 Validity

All Tenders shall remain open to acceptance by the Principal for a period of not less than 60 business days after Tender closing.

#### 1.10 Scope of Tender

Tenders shall be for the complete supply of all equipment and services covered by the specification. Part Tenders will not be considered.

#### 1.11 Information with Tenders

Tenders shall be submitted with all information requested in the specification. The tenderer shall provide details of current staff and a reference list of similar completed projects of this nature with telephone numbers of clients for reference purposes. All schedules in Section 5 shall be completed as part of the Tender response.

#### 1.12 Scope of project

This specification covers the total management of the agri-chemicals stockpile from initial handling right through to the ultimate disposal. The stockpile is currently stored in transit bins in a storage facility in .....

#### 1.13 Drawings

The drawings as listed in the appendices have been provided in order to show the scope of the works.

#### 1.14 Local information

The Agri-chemicals are stored in a hazardous goods storage facility in xxxxxxx and in the main are held in UN rated drums

within transit bins. The schedule of bins, drums and contents are as shown in Appendix A

### **1.15 Regulations and bylaws**

The whole of the Contract shall be carried out in accordance with local and international regulations which include but are not limited to the following:

Resource Management Act 1991  
Toxic Substances Act 1979  
HSNO 1996  
Hazardous Substances Storage Regulations  
Dangerous Goods Act  
Code of Practice for The transport of hazardous Substances on Land S5433 1988  
UNEP Basel Convention  
IMO  
IMDG

### **1.16 Project Description**

The project consists of extraction from an existing warehouse of Agricultural waste as per the Appendix A attached, their unpacking from their existing bins and their repacking into new bins, transportation, interim storage containerisation and then ultimate destruction. The project includes all documentation and safety issues associated with such a project.

### **1.17 Project timing**

Refer to the attached Project Time scales

## SECTION TWO

### CONDITIONS OF CONTRACT

#### 2.1 Conditions of Contract

The Conditions of Contract shall be the Australian Standard Conditions of Contract AS2124. 1992

#### 2.2 Amendments to the General Conditions of Contract

The following clauses have been deleted or amended in the General Conditions of Contract.

For additions to the General Conditions of Contract refer to the Special Conditions of Contract.

#### Clause 1 Construction of Contract

In the first paragraph delete “the State or Territory named in the annexure” and insert .....

#### Clause 2 Interpretation

Page 6 Delete from this clause the section entitled “practical Completion” Part (c) of the following:

“.....which in the opinion of the Superintendent, are essential for the use, operation and maintenance of the works.....”

#### Clause 8.4 Supply of Documents

Delete the last paragraph of this clause and insert the following:

All documentation prepared under this Contract shall be the property of the Principal. The Principal shall be entitled to use these documents for any purpose other than for resale.

The Contractor shall at the time stated in the Contract deliver the Principal copies of all documents.

The Principal's Superintendent has the right to inspect, check and verify all detailed design and construction documents, planning and scheduling documentation, trans frontier documentation and any other documentation pertinent to this Contract and at the Principal options may make this documentation available to an independent auditor appointed by the Principal.

#### Clause 10.6 Direct Payment of Designated or Nominated Sub Contractors

Page 17 Delete this clause in its entirety.

#### Clause 13 Patents, Copyright and other intellectual property rights.

Page 19 Delete the last paragraph of this clause and insert the following:

The Contractor warrants and guarantees that all designs, drawings, specifications, programming, methodology and planning systems, methods of operation and working provided for or prepared by the Contractor under this Contract do not infringe any valid patent, registered design, trademark or name, copyright or other protected right. The Contractor agrees to indemnify and hold harmless the Principal against all actions, proceedings, claims, demands, liabilities either expressed or implied and all costs, losses, damages and expenses whatsoever resulting or arising from any claim or infringement of any patent, registered design, trademark, copyright or any other property interest of a third party resulting from the designs, drawings, specifications and other documentation provided or prepared by the Contractor under this Contract. The Contractor shall at his expense take all necessary action to ensure the Principal's use of such documentation, material and equipment during any such proceedings or actions referred to in this clause.

#### Clause 14.2 Payment where there is no variation

Page 20 Delete this clause in its entirety

#### Clause 14.3 Notice and fees

Page 20 Delete this clause in its entirety

**Clause 17.1 Indemnity by the Contractor**

Page 22 Delete sub-points (d) and (e)

**Clause 17.2 Indemnity by the Principal**

Page 23 Delete this clause in its entirety

**Clause 27.1 Possession of Site**

Page 27 The following additional paragraph is to be inserted:

“Should any delay take place in giving the Contractor such possession of the site the delay shall be deemed not to constitute a breach of Contract on the part of the Principal but shall be a ground for an extension of time for Practical Completion”

**Clause 29 Materials, Labour and Construction plant**

Page 29 Add new subclause 29.4 as follows:

**Clause 29.4 Liens and charges**

The Contractor warrants that all equipment and material supplied by him under the Contract are free from all claims and encumbrances whatsoever and the Contractor shall hold the Principal free and harmless against any and all claimants furnishing labour, equipment, services and material in connection with the performance of the Contract.

**Clause 35.5 Extensions of time for practical completion**

Page 35 Amend this clause as follows:

(i) In the second paragraph, after “to an extension of time for practical completion” insert “for that delay which the Contractor has clearly demonstrated delayed the critical path of the works.”

**Clause 38 Clean up**

Page 38 Amend this clause as follows:

(i) Add a new paragraph below the first paragraph as follows:

“in the event that the Contractor fails to keep the site in an environmentally clean, and tidy condition and does not remedy such default within 24 hours of receipt of a written instruction from the Superintendent, the Superintendent may then, without giving further notice to the Contractor, have the work of cleaning and tidying up carried out by other persons. In this event the Contractor shall pay the Principal for the incurred and reasonable cost of cleaning arranged by the Superintendent . Any amounts due the Principal pursuant to this clause may be deducted from moneys otherwise due to the Contractor or may be recovered by the Principal as a debt due to the Principal by the Contractor.

**Clause 48.5 Arbitration**

Page 53 Delete reference to “Australia” and insert “.....”.

## **SECTION THREE**

### **SPECIAL CONDITIONS OF CONTRACT**

#### **SC1 INDEPENDENT CONTRACTOR**

The Contractor warrants to the Principal as at the date of the Contract and at all times during the performance of the work under the Contract that it shall act as an independent Contractor and shall not act as an agent of the Principal or the Superintendent in executing the work under the Contract and maintaining control over his employees and sub Contractors and shall execute all the work under the Contract in accordance with his own methods, subject to complying with the Contract, and nothing contained in the Contract or any sub Contract ordered by the Contractor shall create any Contractual relationship between any sub Contractor and either the Principal or Superintendent.

Where the Contract provides for the Contractor to design or develop systems equipment and methodology the Contractor hereby acknowledges that the Principal is relying on the Contractors knowledge, skill and judgement to produce a completed product that is fit for the purpose.

#### **SC2 APPROVAL BY THE SUPERINTENDENT**

Whenever the words “or equal” or “equivalent” appear in the Contract, they shall mean “or approved equal” or “ approved equivalent” as the case may be.

Unless expressly stated to the contrary, or unless the context does not permit, whenever the word “approved” or approval appears in the Contract, then such words shall mean “approved by the Superintendent” and “approval by the Superintendent” as the case requires.

All documentation prepared by the Contractor shall be provided to the Superintendent for review in the period specified in the Contract or where there is no period specified at a reasonable time prior to their issue for use for the purposes of the works. The Contractor shall not perform any change to the works which affects the functional quality of the works or any part thereof including the substitution of any

alternative or equivalent material or systems or methods for the materials, systems or methods described in the Contract and specifications and/or included in any documentation previously approved by the Superintendent without first obtaining the further review of the Superintendent of the documents indicating such changes. The Superintendents view shall not relieve the Contractor from responsibility for any errors or omissions contained in the documentation prepared by the Contractor or from his obligations to comply with the requirements of this Contract.

#### **SC3 CO-ORDINATION WITH THE PRINCIPAL AND OTHERS**

The Contractor shall be solely responsible for the direction, coordination and co-operation of all persons employed by him including all nominated sub Contractors and suppliers.

The Contractor acknowledges that during the execution of the work under this Contract that there may be other Contract work proceeding on the same site. The Contractor shall fully cooperate with and take all necessary steps, and comply with all directions issued by the Superintendent where those steps or directions are necessary to avoid impeding the work of others. The Contractor shall also cooperate fully with any other persons engaged by the Principal in coordinating the provision of emergency services and security services and any other mater relating to the project as a whole.

In the event of differences arising with regard to priorities on Site between the Contractor and other parties, the Superintendent shall decide the issue and his decision shall be binding on all parties.

#### **SC4 DATA AND INFORMATION**

Comprehensive information and data capture is required as part of this Contract and such information and data shall be submitted to the Superintendent during the progress of the project in accordance with the schedules in the annexure.

#### **SC5 CONTRACTOR’S INVOICE AND REPORTING DOCUMENTS**

The Contractors Payment claim shall be completed in an acceptable manner and shall comprise the following documents.

- Progress Payment Claim
- Network programme update
- Updated cash flow payments forecast



Other reports to be provided at regular intervals are;

- On a daily basis
- Site Injury report
- Daily Site report
- On a weekly basis
- All QA Documentation as per performance specification
- Summary activity reports

Failure or lack of co-operation of the Contractor to prepare the payment claim as required with all the supplementary documents shall be cause for withholding all or part of the progress payment then pending until such time as the Contractor has met the requirements to the satisfaction of the Superintendent.

#### **SC6 OFF SITE INSPECTIONS**

The Superintendent shall have the right to inspect the Contract at any point in the life of the Contract including the premises of the ultimate disposal facility that is to be used under this Contract. Any such inspections, checking or approvals or acceptance given by the Superintendent shall not relieve the Contractor of his obligations under this Contract.

#### **SC7 POWER OR PRINCIPAL TO TERMINATE**

The Principal may, at any time and at his absolute discretion, terminate the Contract in whole or from time to time in part by giving the Contractor 7 days written notice thereof whether or not the Contractor is in default.

#### **SC8 ACKNOWLEDGEMENT BY THE CONTRACTOR**

The Principal, Superintendent and/or their agents, employees, consultants and representatives shall not be liable whether in Contract, tort (including negligence) or to the extent legally possible pursuant to any other principle of law for any information provided to the Contractor for any errors therein or arising therefrom;

The Contractor acknowledges that it did not in any way rely upon information whether contained in the Contract or not which may have been provided to him by the Principal or the Superintendent or any other party referred to in the proceeding paragraph for the purposes of entering into the Contract and further acknowledges that all such information was furnished for the convenience of the Contractor only;

The Contractor further acknowledges that it enters into this Contract based on his own investigations and determinations.

#### **SC9 REGULATORY AUTHORITIES**

The Contractor shall comply with that all laws and regulations and valid directions of governmental authorities and other relevant Regulatory Authorities (e.g. Basel Convention).

#### **SC10 INVOICES AND RECORDS**

During the term of this agreement and for a period of three months after the final certificate of destruction;

The Principal may question any invoice presented by the Contractor and may require correction of any error therein whether or not the invoice relates to a payment which has already been made; and

The Contractor shall keep and maintain books, receipts, vouchers, dockets, certificates and other documents relating to items of expense for which the Principal is required to make reimbursement to the Contractor and if required by the Principal shall allow an audit thereof by the auditor appointed by the Principal.

#### **SC11 SUPERVISORY PERSONNEL**

The Contractor shall assign adequate supervisory personnel to the Contract to ensure that the works are performed in accordance with the Contract and Contract programme. If the Superintendent, having given the Contractor reasonable notice to rectify the situation is not satisfied that this is being achieved, it may instruct the Contractor to supply additional personnel to the Contract at no additional cost.

#### **SC12 COMMUNICATIONS**

Formal communication between the Contractor and the Superintendent, including notification of claims for variations and extensions of time for practical completion, safety issues, design and method changes, Non compliance reports, substitutions and site and transport issues, shall be in writing and signed by the Contractors representative.

#### **SC13 CONSEQUENTIAL DAMAGES**

Except as otherwise expressly provided , neither party to the Contract

shall be liable to the other party by way of consequential dangers including loss of production, loss of use, loss of revenue, loss of profit, business interruption, or any indirect loss whatsoever.

#### **SC14 INSURANCE SPECIAL CONDITIONS**

In addition to the General Conditions of Contract the following shall apply:

Insurance to be maintained by the Contractor (See section 8).

### **SECTION FOUR**

#### **SCOPE OF WORK**

##### **4.1 Introduction**

This section of the Contract covers the detail of the overall Scope of Works. This document does not attempt to describe and specify the entire schedule of works. The Contractor is responsible for placing before the Superintendent for his approval a comprehensive written project plan as part of his contractual duties that fully describes how the project will be conducted. The descriptions here are simply to assist the tenderer understand the overall scope of the project.

##### **4.2 Current storage**

The Agri-chemicals that are the subject of this Contract are currently safely and correctly stored at a hazardous goods storage facility in xxxxxx.

##### **4.3 Scope of works**

This Contract involves the removal of approximately XXX steel bins that contain approx XXX UN rated drums (205lt). The bins are to be unpacked and returned to the hazardous storage facility. The removal and transportation of the bins from the hazardous storage facility must be performed under the technical specifications noted in section seven of this Contract (ie with full escort etc.).

When the bins have arrived in an approved facility for repackaging (this facility

must be in compliance with the XX storage code) they must be repacked into new containers prior to packing into shipping containers. Rules of segregation apply.

After the containers are marine surveyed they are to be transported to the port of departure (if disposal offshore) and the Transboundary documentation prepared and executed. All transportation to be escorted within xxxxxxxx and overseas if required by regulation.

Upon arrival the shipment is to be taken to the site of disposal and disposed of.

The execution of this Contract also involves an extensive documentation system to ensure compliance with the procedures as written in the Contractor project plan. This plan will be extensive and require substantial time to compile and manage during all aspects of the project.

The primary Aim of the project methodology within this project is to provide the highest level of confidence that the disposal of the agri-chemicals will be performed to a high technical level that recognizes all environmental safeguards inherent in the laws and regulations of xxxxxx , the Basel Convention and the Country of destination. The primary Goal of the methodology contained within this document is to ensure that the clearance, transportation and ultimate destruction is performed without endangering the public or environment. This goal of ensuring there are no accidents or spillage, leaks or escapes to the environment of any kind to be achieved by rigid enforcement of the plans and procedures that are proposed to be utilized by the contractor.

It should be noted that within the drums of waste are the original containers. There are several thousands of these containers from plastic cans, to glass bottles. This project covers the safe destruction of all of these containers.

**SECTION FIVE**

**TENDER RESPONSE DOCUMENTATION**

**5.1 Preliminary**

All parts of section five are required to be completed in every detail for the Tender to be considered valid.

Tenders may photocopy the forms that make up this section and type the data required on them.

**5.2 Tender Procedure**

Tenders shall be submitted in two sealed envelopes contained in a single larger envelope, also sealed. The second envelope shall contain the price offered. No disclosure of price shall be made in the first envelope. The envelopes shall be clearly labeled “Envelope No.1 (Proposal, excluding price)” and “Envelope No.2 (Price)”.

The tenders will be evaluated from a technical proposal first and ranked. The prices will then be assessed and the Principal will then hold negotiations with the preferred contractor.

FORM OF TENDER (FORM 1)

PROJECT :  
AGRI-CHEMICALS DESTRUCTION

**TENDER FORM**

**Name of person,  
firm or company  
tendering  
USE BLOCK  
LETTERS.....**

address  
of.....  
hereby Tender(s) to perform the work for

Description  
of works  
(Contract No. A-Chem 1) in accordance with  
the following document

.....  
List Documents  
.....  
.....

If the Tenderer is a firm the  
1. For the lump sum of (A-H).....  
full names of the individual  
.....  
members of the firm must  
be stated here.  
2. At the rates (I) in the Price Schedule.....  
.....  
Dated this.....day of.....1998

.....  
Signature of Tenderer

PRICE SCHEDULE (FORM 2)

PROJECT :  
AGRI-CHEMICALS DESTRUCTION

Name of tenderer  
.....

Part Description  
Amount (\$)  
(Scope and Quantity as per Appendix A Schedules)

- A Project Management and documentation systems
- B Receiving transit bins and unpacking
- C transport to interim storage site
- D Repacking into new transport media
- E Containerisation and Port transport
- F Shipping and offshore transport
- G Receiving, handling and disposal
- H Other (Specify)

TOTAL FIXED PRICE OFFER AS PER APPENDIX A

\$.....

Signed by Duly Authorised Officer of the  
Company.....

Name:.....

Title:.....

Company name and stamp:.....

Date:.....

PREVIOUS EXPERIENCE AND HISTORY (FORM 3)

PROJECT :  
AGRI-CHEMICALS DESTRUCTION

The Tenderer is to list his entire experience with the management, handling and disposal of hazardous Agri-chemicals as described in the Scope of Works. The detail here should include CV's of personnel that are proposed, the Company's overall experience, the total tonnages last five years. All countries that the Tenderer has operated in shall be listed along with a project listing in those countries

TIME AND ACTIVITY PROGRAMME (FORM 4)

PROJECT : REGIONAL COUNCIL CONSORTIUM  
AGRI-CHEMICALS DESTRUCTION

The Tenderer is to provide his expected time and activity schedule that will provide sufficient detail to see that deadlines can be met and the logical sequence of activity required.

The deadlines are as follows:

**Removal of all Agri-chemicals from xxxx storage by xxxxx.**

**Destruction certificates by xxxxxxxx.**

QUALITY ASSURANCE AND CERTIFICATIONS (FORM 5)

PROJECT :  
AGRI-CHEMICALS DESTRUCTION

The Tenderer is to provide a detailed description of the Quality Assurance system it uses and the certifications it holds. The preference is for ISO 9001 and ISO 14000 but if the Tenderer has a different system then full details are required. In addition copies of the certificates and the citations are required along with the name of the certifying authorities.

TRANSBOUNDARY DOCUMENTATION (FORM 6)

PROJECT :  
AGRI-CHEMICALS DESTRUCTION

If the Tenderer intends to ship the waste offshore for disposal then they are to provide evidence of previous CERFA documentation and evidence that the offshore disposal facility will accept the waste and if

necessary copies of bilateral letters between xxxxxx and the receiving Government

INSURANCE CERTIFICATIONS (FORM 7)

PROJECT :

AGRI-CHEMICALS DESTRUCTION

The Tenderer is to provide copies of statements from its insurance company that confirm that cover is held as required by the specifications and the amounts provided for and the type of policy involved.

The contractor is also required to comply (for offshore disposal) with the EU requirement Art 27 (2.5.9-93) with respect to return of shipments. A bank bond will be required to provide at least \$ 50,000 to cover for the possibility of the waste return to xxxx. The Bond cover confirmation availability will be required.

DISPOSAL FACILITY AND LICENCES (FORM 8)

PROJECT :

AGRI-CHEMICALS DESTRUCTION

Onshore facility

If the tenderer intends to use an on shore facility then it must provide comprehensive details on the facility, method of operation, emissions, licences, owners, history etc.

Offshore Facility

If the tenderer intends to use an offshore facility for disposal then it must supply complete details of the facility including mode of operation of the destruction process, all relevant details regarding emissions, owner, location, years in business, capacity, etc. In addition a copy of all current operating licences are required as well as trial burn data. A letter from the administering EPA of the off shore company is required indicating that the plant has the appropriate licences and warrants to operate the facility for the destruction of waste Agri-chemicals.

METHODOLOGY AND SYSTEMS SECTIONS 1-9 (FORM 9)

PROJECT :

AGRI-CHEMICALS DESTRUCTION

The Tenderer shall provide comprehensive examples and evidence of his project plan and the methodology that will be engaged to perform the scope of works in the manner as described in Section seven of this document. The tenderer must provide sufficient information to allow the Principal to ascertain the Tenderers ability to perform the works in the manner described.

## **SECTION SIX**

### **SPECIFICATION - PRELIMINARY AND GENERAL**

#### **6.1 Preliminary**

The work is to be carried out in accordance with the accompanying specification and the General and special conditions of Contract.

#### **6.2 Intent**

The intent of the specification is to show the Contractor the minimum standards that are required to complete the scope of works. The tenderer is required as part of the tendering procedure to clearly demonstrate that it has the experience and history to undertake a project of this nature. This demonstration of his ability to undertake the works will include detailed documentation standards, Quality Assurance standards and a photographic history of previous similar works.

#### **6.3 Tender Documentation**

The documentation required as part of the Tender response is detailed in section five of this document. All sections of section five are required to be completed to ensure that a valid Tender is submitted. If any part of section five is not provided then the Tender is likely to be rejected.

#### **6.4 Contractor to satisfy themselves**

The Contractor shall be deemed to have satisfied themselves by personal inspection of the current storage site and the interim repacking site and the interim storage site that the works planned are feasible and that his organisation can perform the works prior to commencing the works.

#### **6.5 Sub-contractors**

If the Contractor proposes to sublet any part of the Contract or works specified in this Contract then they shall first obtain the Superintendent's approval of the firms to whom proposes such work shall be sublet.

#### **6.6 Other Contractors or Service authorities**

Where necessary, the Contractor shall coordinate the activities of other

contractors or service authorities in association with his own programme of work. The Contractor shall be deemed to have made sufficient allowance in his Contract price for such coordination.

#### **6.7 The Contract**

The Contract shall be a lump sum Contract based on the price quoted provided in the Schedules enclosed in this specification (section 5), and subject to authorised extras, or deductions from, the Contract and to variations of final costs of provisional sums allowed.

Where extra items of work, which is not covered under this Contract has been requested by the Superintendent then these items must be covered by an authorised variation order issued by the Superintendent.

#### **6.8 Variations to the Contract**

The Superintendent may order variations to the Contract as set out in the Conditions of Contract.

#### **6.9 Possession**

The Principal shall have the right to take possession of, and use any completed or partially completed portion of the work, notwithstanding the time for completion of the whole work or portions of the work that may not have expired.

#### **6.10 Project Plan**

The entire project shall be conducted from a written set of procedures that are produced by the Contractor and approved by the Superintendent. The project plan is to be completely integrated across all facets of the project and cover all detail for the entire project. No part of the project is to be performed without a written procedure that is part of an overall QA system that is to be regularly audited ( with copies of the audits being sent to the superintendent) during the project.

#### **6.11 Materials and workmanship**

All materials and workmanship shall be of the best quality throughout and subject to the approval of the Superintendent and generally in accordance with the requirements of the UN packaging codes and the Basel convention standards.

## 6.12 Transboundary Documentation

All offshore shipments of hazardous waste are to be provided with the correct documentation as required by the Basel Convention. If the destination country is not a Basel member then the Tenderer will be required to demonstrate that it has a bilateral letter from the two Governments involved that the shipment will be accepted by both parties. Under no circumstances is the shipment allowed to go to a non OECD country for disposal.

## 6.13 Reporting Requirements

The Contractor is required to present a project programme on a continuous basis. This programme will be drafted on a time scaled network, showing the logical progression of the all activities necessary for the orderly completion of the works in sufficient detail to enable the Superintendent to evaluate progress and to order additional activity should the programme be behind schedule. To that end the Contractor shall be required to furnish progress information in report format on a weekly basis and shall be based on activity points in each area of work.

## 6.14 Project Management & Planning

This project requires a full project management approach involving a hierarchy of activity compiled within a project manual as follows:

The structure of the manual is to have at least four parts;

Part 1	Project Plan
Part 2	Safety and Environmental Plan
Part 3	Quality Assurance Plan
Part 4	Work Procedure Instruction

Within each of those parts are to be sections covering the following;

Section One	:	Management Plan
Section two	:	Site Inspection Plan
Section three	:	Clearance plan
Section four	:	Site Preparation plan
Section five	:	Packaging plan
Section six	:	Transportation plan
Section Seven	:	Shipping and Disposal plan
Section eight	:	Insurance Plan
Section nine	:	Emergency plan

The Contractor will be required to compile a similar project plan and the Tenderer is required to describe in detail the type of plan it proposes. It is in the Tenderers interest to provide as much detail as possible of his management system. The sections one to nine form the basis of the technical specification and are described in section seven.

## 6.15 Quality Assurance

This project is to be driven completely by a comprehensive QA system. The Contractor must have in place a recognised QA system and is required to indicate within the Tender response how the QA system is integrated with the actual activity. Throughout the project it is expected that all documentation generated will be part of this QA system and will form the reporting information required. Tenderers are to provide detailed information as to the certifications they hold and examples of the documentation systems that are employed by that certification. Copies of the certifications are required. Throughout the Contract substantial documentation is required as detailed in the specification. All such documentation is to be managed in a manner that ensures the correct documentation and procedures are being applied.

As a minimum the QA system shall have a documentation structure that includes:

1	Registers	- Staff
		- Drivers
		- Visitors
		- Transit Bins etc.
2	QA Check Lists	- Staff
		- Drivers
		- Visitors
3	QA Check Lists	- Equipment
		- Emergency Systems
		- Labeling
		- Container Survey
		- Packaging
4	Chemical Waste Registers	- Waste
		- Containers
		- Dispatch
5	Daily Diary	- Diary

**6.16 Ownership of the waste**

The owner of the waste at all times up to destruction shall be the principal.

**SECTION SEVEN****TECHNICAL REQUIREMENTS****Introduction**

The technical specification outlines the basic management structure that is required to perform the works as described in the Scope of works. This technical specification does not provide the detail of how the work should proceed it concentrates on the elements of what should be achieved. The Contractor is required to integrate these criteria into a fully detailed tactical plan. For Tender purposes a comprehensive demonstration of his plan is required in the Tender response documentation. It is felt that if a Tenderer cannot provide substantial evidence of a plan using the structure described here then it will not be suitable for this project.

Part one	:	Management Plan
Part two	:	Site Inspection Plan
Part three	:	Clearance plan
Part four	:	Site Preparation plan
Part five	:	Packaging plan
Part six	:	Transportation plan
Part Seven	:	Shipping and Disposal plan
Part eight	:	Insurance Plan
Part nine	:	Emergency plan

**Part One : Management Plan**

The methodology of the Management Plan is to design a set of Plans and

Programmes that are specifically directed at achieving the aims and Goals as mentioned in the scope of works (section 4.3). These plans are then enumerated within a set of work procedure instructions and are managed, controlled and audited by the management team.

In order that a coherent Project Plan is written and then implemented a management structure is required. At the outset of a Hazardous Waste project that involves hazardous Agri-chemicals there must be an overall Project Manager provided by the Contractor. This person must be charged with the entire responsibility for the Goals and Objectives being entirely met. they must be a dedicated and determined manager who while able and willing to delegate the work effort but not to default the responsibilities to the end client and the environment. The first action the Project Manager is to assemble his team set the Project Plan priorities and construct the elements of the Plan. There is a tendency for such teams to immediately make a start on the project without the necessary planning being put in place.

It is essential that the Plan be developed and enumerated and put in place before any site works are undertaken. Prior to any activity taking place the Contractor will be required to submit to the Superintendent a completed copy of the management plan for approval.

**Part two : Site Inspection Plan**

Before the Project Plan can be fully developed a Site Inspection must be undertaken. There are two sites to be considered and planned for. The first is the existing storage facility and the other is the site where the repacking is to take place. For the second area the following plans are required.

Elements of the Site Inspection Plan includes;

- Reasons for Site Inspection
- Site name
- Storage Type
- Type & Quantity
- Goals & Objectives
- Fire Protection
- Residents
- Access

The quality of the Project Plan is very dependent of how well the Site



Inspection Plan is executed. In order to determine the correct information is obtained the Site Inspection Plan is crafted from the safety and Environmental protection aspect.

Elements of the Site Inspection Safety and Environmental plan includes;

- Personal safety
- Environmental Safety
- Storage Type
- Type and Quantity
- Fire Protection

This element of the project plan must be fully configured by the Contractor and examples of this must be submitted with the Tender document.

### **Part three : Clearance plan**

The Clearance Plan is an output of the Site Inspection Plan. When all the observations and calculations and risk factors are known the Clearance Plan can be prepared. The Clearance Plan sets down the prioritised clearance schedule based on the risk factors. The Clearance Plan also, by virtue of the prioritised schedule, sets up the relevant parts of the Site Preparation Plan. This activity then allows the allocation and location of the Projects' resources to be applied in a manner that addresses the identified risk factors.

Elements of the Clearance Plan includes;

- Warehouse or storage clearance priority schedule
- Type and Quantity clearance priority schedule
- Area defence lines
- Resource Positioning
- Impact on Packaging Plan
- Warehouse or site decontamination

In order to discharge the Safety requirements and provide full environmental protection the clearance plan must be prioritised. This means that the type of storage or warehouse must be cleared by degree of danger. The higher the danger the higher up the priority list the clearance and the earlier the

clearance.

Elements of the Clearance Safety and Environmental plan

- Storage and Type prioritisation
- Waste Packaging prioritisation

This element of the project plan must be fully configured by the Contractor and examples of this must be submitted with the Tender document.

### **Part four : Site Preparation plan**

To achieve the objectives as stated in the scope of works, an important part of the project plan is the site preparation plan. Section 4 is concerned with the detail of site preparation. The sequence of events planned for each site as the "Site Preparation Proposal" is a direct result of the risk factor assessment and is a product of the strategy of Minimisation of Risk Policy that is inherent in the Aims and Goals of this Contract. In order that the Clearance plan is correctly applied a Site preparation plan must be put in place.

Elements of the Site Preparation plan includes;

- Site Preparation
- Containment barriers and spill protection
- Location of Decontamination and Amenities Units
- Working Areas
- Working Area equipment requirements
- Defence Areas
- Emergency Access
- Fire Protection
- Intruder Alarms
- Telephone and other communications
- Records
- Emergency vehicle

When setting up the site, particular attention must be made to safety and Environment issues. During the design of the various structures required consideration must take into account the reality of each site

and the ramifications of the work procedures and Agri-chemicals types involved. Site preparation in addition to the work platform structures must include training of staff, personal occupational hygiene and safe working practices. Therefore as apart of the site preparation plan a safety and environmental plan is required to be produced which can be QA audited by the safety and Environmental QA plan.

#### Elements of the Site Preparation Safety and Environmental plan

- Personnel safety Procedures
- Medical Testing Procedures
- Personnel Protection Equipment (PPE)
- Emergency Response vehicle
- Training
- International Labour safety laws
- Environmental protection and work practices

This element of the project plan must be fully configured by the Contractor and examples of this must be submitted with the Tender document.

#### Part five : Packaging plan

In order that the project aims and goals are fully discharged the packaging plan must reflect physically the environmental implications of spillage. The techniques and methodologies that are to be placed here must be proven over many years to provide the safest methodology of packaging that ensures the waste arrives in the disposal location or country in the same manner in which it was discharged from the storage facility. The Tenderer is required to describe in detail how it intends to achieve that.

In all aspects the strategy of packaging must be designed to ensure that the transportation of waste is fully defended against any possibility of leakage, spillage or contamination of any kind.

#### Elements of the Packaging Plan include;

- Waste Packing
- Container Packing
- Weighing of container
- Labeling
- Container Marine Survey (for offshore disposal)

The Agri-chemicals wastes to be handled during the implementation of this proposal are potentially hazardous, creating the need to plan for and put in place, workable emergency response procedures at all phases of the project. These procedures need to cover responses to emergencies involving threats to the environment and the public, as well as those that may threaten the health and safety of personnel involved in the operations.

The packaging procedures to be followed in this proposal must have been developed over time and through considerable experience with actual operations. The procedures therefore are to be designed specifically to minimise the risks of emergencies arising.

The packaging of wastes to international standards (UN II or better) prior to transport is designed to provide at least double containment of the materials. This will substantially limit the volume of wastes likely to be spilt or to leak in any one incident.

However, it is inappropriate to rely solely on set procedures to achieve a high level of safety. There remains the need to be able to respond in a positive and rapid manner to unforeseen circumstances.

#### Elements of the packaging Safety and Environmental plan include;

- Emergency Response
- Emergency Response Procedures

#### Segregation

The following segregation strategy is to apply with the Contractor providing the methodology to achieve the segregation within the project plan.

All waste material to be segregated into separate steel bins according to their hazard classes. No bin to contain Waste materials of different hazard classes.

Segregation for the agri-chemicals shall follow the following rules:

These segregation rules are based on primary risk as defined in S 5433 Table 5. In practice the rules are:

All waste materials within each hazard class to be segregated into compatible families of chemicals and the families segregated into

separate 205 litre drums or other suitable UN rated containers.  
Segregation will be into the following families for Class 6 chemicals;

- Herbicides
- Fungicides
- Insecticides
- Fertilisers/Mineral supplements
- Animal remedies
- Vertebrate Remedies
- Laboratory Chemicals

All solid and liquid chemicals whether or not of the same hazard class to be segregated into separate steel bins. No bin to contain drums of solid and liquid chemicals whether or not of the same hazard class.

Liquid chemical of the same hazard class and compatible family has been aggregated within one drum.

205 litre FOH drums are used for solids and 205 litre bung top drums are to be used for liquids. All drums should be heavy duty (1.6mm wall) triple seam, UN rated 1A1 and new or as in new condition. All drums are to be lined with 100 micron HD plastic liner.

Class 3 and Class 8 chemicals to be subject to special isolation and/or packing arrangements, wood or other corrosion resistant primary packing and polypropylene cubic storage bins.

This element of the project plan must be fully configured by the Contractor and examples of this must be submitted with the Tender document.

#### **Part six : Transportation plan**

The detailing and control strategy for Transportation of the packed waste to storage or ports requires the same level of attention as the other elements of the destruction project. The Transportation must be carefully planned so that there are no possibilities of surprises during road transportation and that such details such as road works, hours of travel, routes, driver training etc. As for the other sections of this plan all the necessary details are to be contained within the Work Procedure Instructions (WPI's) including the required Safety and Environmental considerations along with QA implications.

During the transport from the warehouse to the docks the escort vehicle will accompany the containers on every journey. Permission may need to be sought to move more than one container at a time. The crew in the escort vehicle are to be fully trained in all emergency procedures and will be in radio/phone contact with the Contractor project manager and the shipping container trucks. As part of the Management plan there are agreed routes that are traversed and regular 'check ins' to the Clearance Company. Local police, emergency authorities, etc. will be notified of the routes, procedure and precautions as required by local regulations. Consideration will be given to off-peak time for movement in order to minimise the risk of accidents.

Elements of the Transport Plan include;

- Marine Survey
- Movement Timing
- Driver Briefing
- Escort Vehicle
- Communications

In order to discharge the Safety requirements and provide full environmental protection and to maintain the policy of risk minimisation the Transport Plan must be not only carefully adhered to but must be continuously monitored for any non compliance.

Elements of the Transport Safety & Environmental Plan includes;

- Driver Briefing
- Route adherence
- Communication
- Vehicle Inspection
- Load Security
- Emergency Procedure

This element of the project plan must be fully configured by the Contractor and examples of this must be submitted with the Tender document.

#### **Part Seven : Shipping and Destruction plan**

Shipping Chemical waste to an offshore destruction facility must be

conducted by a recognised shipping company and full cognizance made of all international laws (in particular the Basel convention) regulating the trans shipment of toxic waste.

Elements of the Shipping and Destruction Plan includes;

- Labeling
- Lloyds Survey
- Port Acceptance
- Trans Frontier Documentation
- Basel Convention

All the plans and strategies of this project if applied properly will ensure that the shipping of the containers of waste is safe. The adherence to the IMDG code ensures that the cargo is placed on the correct area of the ship away from foodstuffs etc. Provided that all of the packaging codes and plans and QA have been followed then the complete safety of the public and the environment during shipment to the country of disposal will be achieved. The Tenderer is to demonstrate how this is to be achieved and also note which shipping lines will be used if the disposal facility is offshore.

Elements of the Shipping and Destruction Safety and Environmental plan includes;

- Labeling
- Lloyds Survey
- Basel Convention

This element of the project plan must be fully configured by the Contractor and examples of this must be submitted with the Tender document.

Elements of the Destruction plan includes;

The disposal plan must be completely integrated with the overall project plan even if the disposal company is a different company. The complete detail of how the disposal company handles the waste, by what methods it is destroyed of and under what licence conditions does the plant operate. The plan is to include the transportation arrangements in the destination country and all relevant details of destruction and the method by which a final certificate is produced. Within the Tender document response is a comprehensive requirement for details of the proposed disposal facility.

This element of the project plan must be fully configured by the Contractor and examples of this must be submitted with the Tender document.

#### **Part eight : Insurance Plan**

The project should be fully covered for all risks. The policy should obviously protect all those involved including the client but it must also be seen to be a provision that protects the environment from harm. A large accident involving a large spill will be very costly to clean up and a comprehensive insurance policy should be in place to cater for this type of event. When obtaining offers of insurance the Project manager should obtain the policy that while protecting himself and his client full protection is offered for environmental protection that will ensure that the funds are available to clean up a substantial problem.

Elements of the Insurance Plan include;

- Types of insurance
- Who and what should be covered
- Actions by the clearance company to hold harmless

Complete "Pollution" Insurance cover for all accidents and incidents involving the removal, packaging and transportation of waste Agri-chemicals. In addition complete protection of all contractors, agents, clients, engineers etc. is required as well as cover for workers, employers liability insurance where required, machinery insurance, public liability insurance, motor vehicle insurance and professional liability.

Main policy should cover for " Protect the main Contractor, his subcontractors, the Principal , his engineers and agents against their third party bodily injury property damage including any pollution clean up expense arising from the Contract for the packaging, removal and transportation to the Contractor for disposal of Agri-chemicals. The amount of cover of the policy should be substantial and be at least US\$5 Million.

The contractor is also required to comply (for offshore disposal) with the EU requirement Art 27 (2.5.9-93) with respect to return of shipments. A bank bond will be required to provide at least \$ 50,000 to cover for the possibility of the waste return to xxxxxx .

Insurance policies of this nature require that the policy holder take all reasonable steps to ensure that:

There is compliance with regulations concerning transportation, storing and packaging of Agri-chemicals wastes.

The cargo is to be shipped in containers and loaded under professional supervision, and

The master of the carrying vessel is to be fully aware of the substance to be shipped.

While the need for insurance cover is obvious in order to protect the participants of the waste clearance operation, the main purpose of the insurance policy is to provide a high degree of environmental protection. By having a comprehensive package in place that is the ultimate pollution policy means that clean is assured in the unlikely event that an escape occurs. This is not to say that the packaging and transportation can therefore be of a lesser standard because at the end of the day the policy will do the clean up. The policy is only to be the absolute back stop environmental protection should all the other plans and strategies fail.

Therefore the primary aim of the insurance policy is to provide funds for environmental protection should all the other procedures fail in the event of a catastrophic loss.

In the event of a catastrophic event where uncontrolled waste enters the environment the only final capacity to protect the environment lies in the strength of the insurance policy to provide the funds for the cleanup. This means that the insurance policy chosen for the project must be designed with the protection of the environment firmly in mind.

### **Part nine : Emergency plan**

The Emergency Plan is concerned with the detail of the equipment, services and methodology during and emergency situation. The system and equipment detailed in this plan must be designed to allow a full emergency response to be available during all operations and transport. The emergency plan is to be available at all times in the form of an Emergency Response Unit (ERU). This facility is always to be available during all stages of packaging as well as transportation. During transportation of the waste to the export port

the ERU is to act as the escort vehicle. The Emergency plan is discharged by means of Flip charts and these are to be activated during the emergency.

Elements of the Emergency Response Plan includes;

- ERU Vehicle
- ERU Equipment Inventory
- Escort Duties
- Emergency Response during escort
- Emergency Response for other
- Emergency Response for fire
- Emergency Response for protest

During an emergency where waste has spilled or is threatening the environment or the safety of personnel the only strategy that can exist for the emergency procedures is the the procedural process of the emergency be strictly followed as shown by the Flip sheets in the WPI's. If the procedures are carefully adhered to then the damage to the environment will be minimised.

Elements of the Emergency safety and Environmental Plan include;

- ERU
- Flip Sheets

#### **ERU**

Discharge of environmental protection and safety of public and personnel can only be achieved with the use of a fully equipped ERU and the provision of trained staff and procedures.

#### **Flip Sheets**

The entire emergency procedures are to be discharged via the flip sheets.

This element of the project plan must be fully configured by the Contractor and examples of this must be submitted with the Tender document.

### **APPENDICES**

**Appendix A - Schedule of Agri-chemicals**

**Appendix B - Layout of existing stor**

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal was adopted in 1989 and entered into force in 1992. Its purpose is to protect human health and the environment from the adverse effects caused by the generation, management and transboundary movements of hazardous and other wastes.

To achieve its purpose the Basel Convention aims at reducing the transboundary movements of hazardous wastes, the prevention and minimization of their generation, the environmentally sound management of such wastes, and the active promotion of the transfer and use of cleaner technologies.

Presently, there are over 150 Parties to the Basel Convention.

In December 1999, the Parties to the Basel Convention adopted the Basel Protocol on Liability and Compensation for Damage resulting from the Transboundary Movements of Hazardous Wastes and Their Disposal.

[www.basel.int](http://www.basel.int)

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