Spill Response Plan
Mary River Project
July 2004

Baffinland

PURPOSE/SUMMARY

The purpose of any Spill Contingency Plan is to provide a plan of action for potential spill events that might occur at sites of mineral exploration activity. The Plan addresses any unintentional releases of petroleum products and other hazardous chemicals. It defines the responsibilities of key response personnel and outlines procedures to be taken to minimise the impact of a spill. The Plan has been prepared to provide to management and field staff the necessary information to deal with a spill.

Although exploration activity is designed to mitigate the possibility of a Spill, the general response to be followed in the event of the spill is:

Identify the product and source of the spill – check container design, warning labels, markings, etc.

SAFETY FIRST/PROTECT PEOPLE – prevent personnel from approaching the site and keep them at a distance sufficiently removed that they will not be injured by, or cause, a fire or explosion.

Baffinland

Do not Panic, contact help from camp and/or nearest source of personnel. Work as a team, plan the response and then REACT:

Remove_stop the flow-source at the source – reduce or terminate the flow of product without endangering anyone, if the fuel source is a drum transfer the fuel to an empty drum. Where ever possible use the empty drums located within the berms specifically designed for that purpose. (Use diesel for diesel, gasoline for gasoline Jet B for Jet B, etc) If using a drum, designed for a different product, ensure that the drum is relabelled in a conspicuous manner.

Envelop the spill, assess the seriousness of the spill – evaluate potential dangers of the spill to human health and safety, the aquatic environment, wildlife, ground water, vegetation and other land resources. Ensure that the Spill is localised and prevent the spread of the spill.

Absorb/accumulate - Utilise the correct spill kit to absorb and clean up spilled material. There are two choices, the small kit that is designed for spills of less than 90 litres (20 gallons) and the larger kits designed for spills up to 300 litres (65-75 gallons) Remember that the spill kit is designed to be used from top to bottom. Remember, safety first, take your time and ensure that the spill cannot do more damage and the initial clean up deals with the spill.

Containerise/clean up the spill – follow procedures appropriate for the location, environment, and material and time of year. Again utilise material in the spill kit. There are leak-proof bags in the kits for much of the material and the containers themselves are designed to contain and isolate contaminated material. Remember your training and the first response is to stop, accumulate and clean up the spill.

Transmit a report detailing the Spill – provide basic information such as location of spill, name of polluter, type and amount of material spilled, date and time of the spill and any perceived threat to human health or environment (complete Nunavut_NWT Spill Report form, a copy of which is attached to this document).

Baffinland

24- Hour Spill Report Line
(867) 920-8130
or
fax (867) 920-8127
Water Resources Inspector (867) 979-4405

(NWT_Nunavut Spill Report Form is appended to this document)

INTRODUCTION

A spill is classified as the discharge of petroleum products or other dangerous substances into the environment. Potential hazards created by the spill for humans, vegetation, water resources, fish and wildlife vary in severity, depending on several factors, including nature of the material, quantity spilled, location and season. This spill contingency plan is intended to cover all exploration and advanced exploration activities to be completed by Baffinland Iron Mines Corporation.

The facility, the Mary River Exploration camp is located at:

Latitude 71 degrees 18' 30" north
Longitude 79 degrees 23' 30" west

Contact telephone number (011) 88 163 146 6078
[note: that the phone is an iridium unit and requires the international dialling code (011)]

The camp consists of a Weatherhaven camp, sufficient for 30 persons, located on Tundra Polygons, located to the immediate southwest of the old Mary River airstrip.. The camp water supply accesses 'Roberts' Lake from a distance of 400 metres away. The pump draws some 3,000 to 5,000 litres per day and the pump intake is covered by a mesh screen. Greywater from the kitchen and ablution tent is deposited in a sump beside the camp. The sump was constructed of local materials consisting of a bed of gravel, rock base and plastic cover before being covered in sand, conforming to the landscape.

The strip has been rehabilitated and has a useable length of some 4,200 feet.

Baffinland

PETROLEUM PRODUCTS, TRANSPORT AND STORAGE

The petroleum products required for project work on site will be transported by air from Yellowknife and/or Nanisivik, or, where available, will be purchased from Pond Inlet.

Helicopters using fuel slings affect fuel movement once delivered by fixed wing aircraft. All fuel on site remains in standard fuel drums, and is stored in designated areas appropriate for the refuelling of aircraft.
The main fuel berms are lined with a 40 mil hypolon liner and sufficient fuel-spill kits are on site to deal with any anticipated spill.

Total petroleum product requirements onsite for a season should not exceed

- 10 gasoline
- 25 aviation fuel
- 250 diesel
- 150 Jet B/Jet A
- 20 cylinders (100lb) propane

Petroleum storage areas at the camp and drill sites are visually inspected on a daily basis to check for leakage or damage to any of the containers. Spill kits (20 gal, 65 gal, 75 gal and 170 gal) are available on site, and used dependent upon the severity of the spill. See attached list for spill kit types and contents

All fuel is stored a minimum of 30 metres from any high water mark, and transfer of fuel from supply vehicles to tanks and from tanks to vehicular equipment is performed with the aid of fuel pumps. Material Safety Data Sheets (MSDS) for all fuels and chemicals are kept on site for reference, should they be required.

If any fuel products are required in other areas within the permit area appropriate amendments to the Land Use License will be applied for and fuel products will be stored and handled at the specific site in accordance with applicable Land Use Permit conditions.

Baffinland

SPILL RISK ASSESSMENT

Potential sources of petroleum product spills could involve the following:

1. Leaking or ruptured fuel drums.
2. Fuel transfer operations between storage drums, and mobile equipment including aircraft. This could include broken supply pipes, hoses, and associated valves during fuel transfer operations.
3. Aircraft, 4x4 vehicles or equipment involved in accidents.
4. Leaks and drips from machinery, pumps, motors, and other equipment

The potential for spills to occur directly on a watercourse is low at project sites because fuel storage and transfer points are located away from watercourses.

RESPONSE ORGANISATION AND REPORTING

RESPONSE CONTACT	NAME_COMPANY
On-site Co-Coordinator	**Godfrey Mason Apps** **Baffinland Iron Mines Corporation** **Tel: 88 163 146 6078**
On-site Co-Coordinator (alternate)	**Roland Landry** **Baffinland Iron Mines Corporation** **Tel: 88 163 146 6078**
Project Manager	**Michael Zurowski** **Baffinland Iron Mines Corporation** **Tel: 416 364 8820** **Cell: 416 897 6540**
Project Manager (alternate)	**Gordon McCreary** **Baffinland Iron Mines Corporation** **Tel: 416 364 8820** **Cell: 416 312 4766**
Project Personnel	**There are 3-12 people on-site to aid in any spill response activities**

The responsibilities of the On-Scene Co-ordinator include the following:

- ⇒ Assume authority over the spill scene and personnel involved.
- ⇒ Activate the REACT Response Plan.
- ⇒ Evaluate the initial situation and assesses the magnitude of the spill.
- ⇒ Report the spill to the Project Manager, who in turn will report it to NWT 24-hour Spill Report Line at (867) 920-8130 and DIAND Water Resources Inspector at (867) 975-4298.
- ⇒ Develop an overall plan of action.
- ⇒ Report to the Project Manager and provide recommendations on resource requirements (additional manpower, equipment, material, etc.) to complete the cleanup effort. The responsibility of the co-ordinator is to mobilise personnel and equipment to implement the cleanup.

The Responsibilities of the Project Manager include the following:

- ⇒ Provide liaison with Management to keep them informed of cleanup activities.
- ⇒ Obtain additional required resources not available on-site for spill response and cleanup.
- ⇒ Act as the spokesperson with government agencies as well as the public and the media as appropriate.
- ⇒ Document the cause of the spill and effectiveness of the cleanup effort, and implement the appropriate measures to prevent a recurrence of the spill.
- ⇒ Prepare and submit follow-up documentation required by appropriate regulators.
- ⇒ Ensure that the spill is cleaned up and all follow-up communication and reports are filed with the DIAND Water Resources and Environment Canada offices.

ACTION PLAN

The following actions have been incorporated to minimise the potential for spills to occur during fuel handling, transfer, or storage operations:

- ⇒ Immediately cleanup minor spills.
- ⇒ Conduct regular inspections of fuel barrel storage areas and hoses for evidence of leaks.
- ⇒ Use impermeable liners at all petroleum transfer sites and under stationary machinery.
- ⇒ Train/retrain personnel (including yourself) in proper fuel handling and spill response procedures. There is no problem with accepting that you are unsure of what to do. Call for help to deal with any incident.

As stated in the Summary the first person on-site of the spill is responsible for initiating the following actions:

Identify the product, location and source of the spill – check container design, warning labels, markings, etc.

SAFETY FIRST/PROTECT PEOPLE – prevent personnel from approaching the site and keep them at a distance sufficiently removed that they will not be injured by, or cause, a fire or explosion.

Do not Panic, contact help from camp and/or nearest source of personnel. Work as a team, plan the response and then REACT:

Remove_stop the flow-source at the source – reduce or terminate the flow of product without endangering anyone, if the fuel source is a drum transfer the fuel to an empty drum. Where ever possible use the empty drums located within the berms specifically designed for that purpose. (Use diesel for diesel, gasoline for gasoline Jet B for Jet B, etc) If using a drum, designed for a different product, ensure that the drum is relabelled in a conspicuous manner.

Envelop the spill, assess the seriousness of the spill – evaluate potential dangers of the spill to human health and safety, the aquatic environment, wildlife, ground water, vegetation and other land resources. Ensure that the Spill is localised and prevent the spread of the spill.

Absorb/accumulate - Utilise the correct spill kit to absorb and clean up spilled material. There are two choices, the small kit that is designed for spills of less than 90 litres (20 gallons) and the larger kits designed for spills up to 300 litres (65-75 gallons) Remember that the spill kit is designed to be used from top to bottom. Remember, safety first, take your time and ensure that the spill cannot do more damage and the initial clean up deals with the spill.

Containerise/clean up the spill – follow procedures appropriate for the location, environment, and material and time of year. Again utilise material in the spill kit. There are leak-proof bags in the kits for much of the material and the containers themselves are designed to contain and isolate contaminated material. Remember your training and the first response is to stop, accumulate and clean up the spill.

Transmit a report detailing the Spill – provide basic information such as location of spill, name of polluter, type and amount of material spilled, date and time of the spill and any perceived threat to human health or environment (complete Nunavut_NWT Spill Report form, a copy of which is attached to this document).

TRAINING

All field personnel have received preliminary and additional training on what to do in case of a spill and in taking preventative measures to mitigate potential spills. . All materials, including this plan are posted at the camp and all individuals are familiar

with its contents and what to do in case of a spill, including reporting requirements. To ensure that all individuals remain aware and cognisant of this document, refresher training will occur at regular and random intervals.

See below for further discussion about specific environments.

SPILLS ON LAND

Response to spills on land will include the Action Plan detailed above and possibly the following specific steps:

- ⇒ Identify the source of the leak or spill.
- ⇒ Contain the spill at the source if possible.
- ⇒ Stop a leak from a barrel by:
- ⇒ Ceasing filling operations if leaking vessel is receiving fuel
- ⇒ Checking valves and seals, and ceasing use of these valves if leaking
- ⇒ Transfer all fuels from leaking barrels
- ⇒ Placing plastic sheeting at the foot of the leak to minimise seepage of the spilled material to the environment.
- ⇒ Spills on land (gravel, rock, vegetation) can be contained and cleaned up by the following methods:
- ⇒ Place a soil berm down slope of the running or seeping fuel. Plastic tarps can be placed at the foot of and over the berm to permit the fuel to pool on the plastic for easy capture. Berms can be made of snow and lined with plastic in the winter. Absorbent sheeting can be used to soak up the fuel. The fuel can be squeezed from the pads into drums or plastic pails, and the pads can then be re-used. Larger pools of fuel can be pumped into empty drums. It will be especially important to prevent fuel from entering a body of water where it will have a greater environmental impact.
- ⇒ Absorbent sheeting can be used to soak up petroleum products from rocks. The sheeting should be placed in the empty drums for eventual disposal by incineration.
- ⇒ A light covering of alternate absorbent material can be used to absorb films of petroleum products from arctic vegetation.
- ⇒ Contaminated soil and vegetation may have to be removed for disposal. Baffinland will contact the appropriate DIAND regional office for approval before undertaking this action.
- ⇒ Snow can work well as natural absorbent, and it can be compacted and used as a berm. Plastic sheeting then can be placed over the snow berm.

SPILLS ON WATER

The likelihood of a spill on or over water is very remote however in the event it does occur the following steps will be implemented to control spills of petroleum products on water:

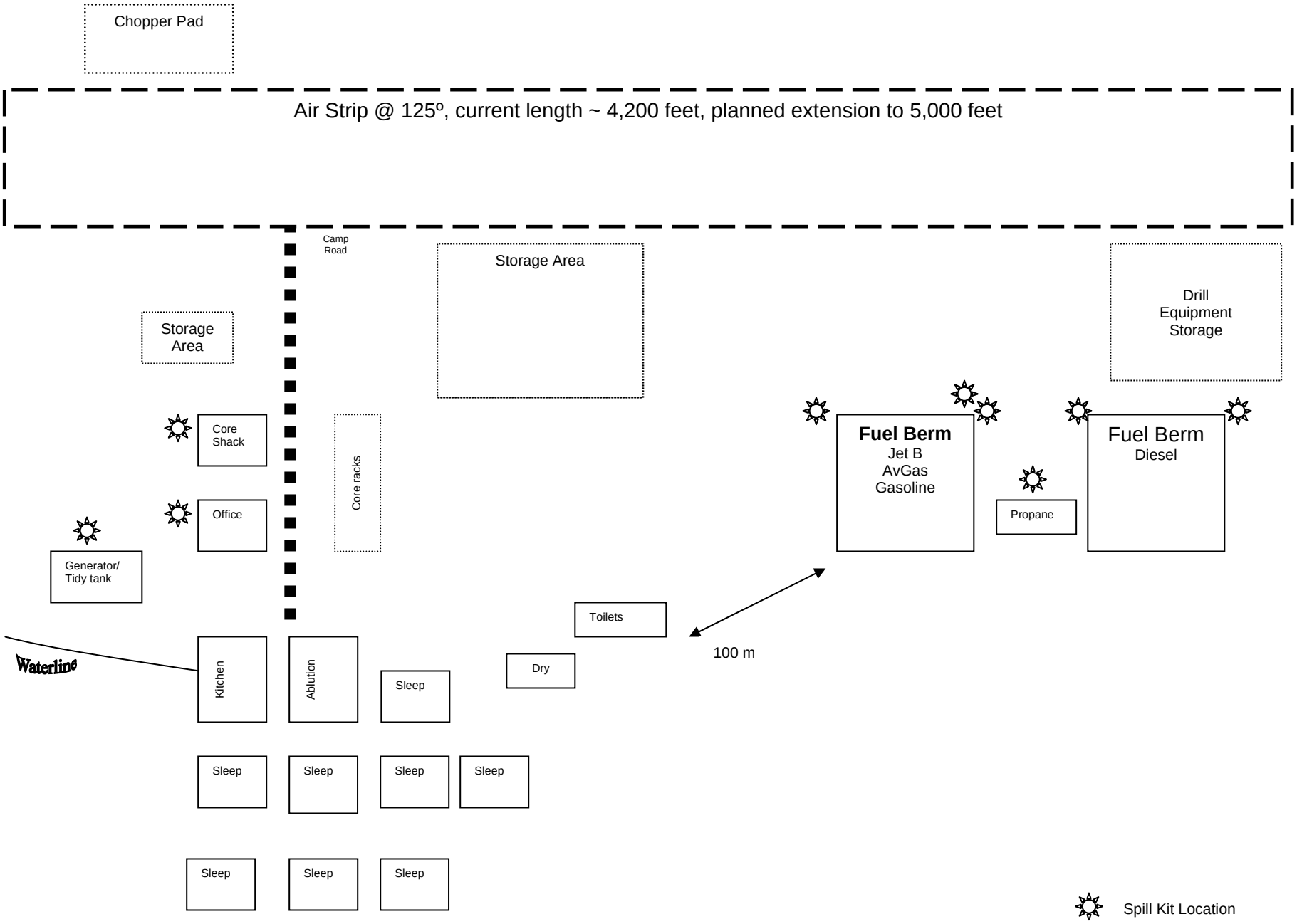
- ⇒ Floating ‘boom(s)’ can be deployed to contain the floating product.
- ⇒ Absorbent pads and similar materials can be used to capture small spills on water. Absorbent booms can be drawn in slowly to encircle spilled fuel and then absorb it. These materials are hydrophobic, and therefore, absorb hydrocarbons but repel water. Absorbent booms are often relied on to recover any hydrocarbons that escape containment booms.
- ⇒ A skimmer may be deployed once a boom has been secured to capture the spilled product, and then pump it through hoses to empty fuel drums.
- ⇒ In the event of a larger spill on water, it will be necessary to limit the extent of the spill by using booms. The 24-Hour Spill Report Line should be used to keep government agencies informed of the situation and if required seek assistance.

SPILLS ON SNOW AND ICE

- ⇒ Where a spill occurs on ice, snow should be compacted around the edge of the spill and lined with plastic sheeting to serve as a berm. The ice will prevent seepage of fuel into the water, but contaminated snow and ice must be scraped up immediately. The contaminated snow can then be placed in drums or on plastic and within plastic lined berms on land.

Baffinland

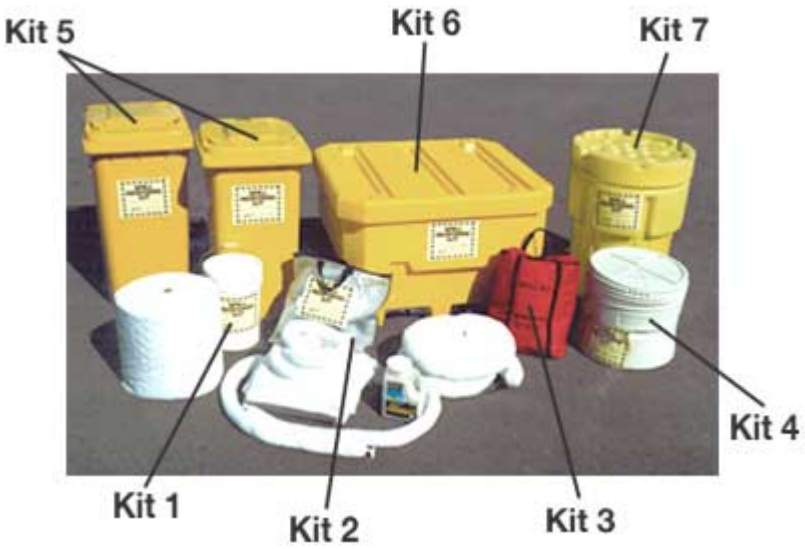
SCHEMATIC OF MARY RIVER CAMP



Baffinland

VERSATECH SPILL KITS ON BAFFINLAND MARY RIVER PROJECT SITE:

Kit # 4	six (6) kits
Kit # 5	four (4) kits
Kit #6	one (1) kit
Kit # 7	four (4) kits



Baffinland

CONTENTS ARE LISTED ON THE LIST BELOW:

KIT No. / DETAILS	CONTENTS	QTY
1,2 or 3 **QUICK RESPONSE KITS** Absorbs up to 12 Gallons 5 Gallon plastic pail/Clear plastic or nylon bag.	Sorbent Pads (19" x 17" x 3/8") Sorbent Socks (3" x 4ft.) Nitrile Gloves (pair) Disposal Bag	15 3 1 2
4 **20 GALLON LAB PACK** Absorbs up to 18 Gallons Lab Pack Container	Sorbent Pads (19" x 17" x 3/8") Sorbent Socks (3" x 4ft.) Sorbent Pillows Nitrile Gloves (pair) Disposal Bag Expoxy Putty	20 5 4 2 3 1
5 **PORTABLE RESPONSE KIT** Absorbs up to 65 Gallons Durable Yellow Rollout Container 2 convenient sizes - 64 Gallon 96 Gallon	Sorbent Pads (19" x 17" x 3/8") Sorbent Socks (3" x 4ft.) Xsorb (6 quart) Hand broom/dust pan Nitrile Gloves (pair) Disposal Bag Disposable Coveralls Drain cover Splash resistant goggles	150 6 1 1 2 4 2 2 2
6 **SPILL CHEST** Absorbs up to 170 Gallons Heavy duty plastic Yellow Container Can be moved with a Forklift	Sorbent Pads (19" x 17" x 3/8") Sorbent Socks (3" x 4ft.) Sorbent Booms (5" x 10ft) Sorbent Pillows (15" x 9ft) Sorbent Roll (38" x 144ft) Nitrile Gloves (pair) Disposal Bag Expoxy Putty Barricade tape (Roll)	100 8 4 16 1 2 4 1 1
7 **HEAVY DUTY DRUM KIT** Absorbs up to 75 Gallons Heavy duty plastic Yellow Container Drum sizes include 65 & 95 US gallons or an economy 45 gallon steel drum	Sorbent Pads (19" x 17" x 3/8") Sorbent Booms (5" x 10ft) Xsorb (6 quart) Nitrile Gloves (pair) Disposal Bag Disposable Coveralls Drain cover Splash resistant goggles	100 4 1 2 4 2 1 2