Manual Onshore Recovery

A manual for the use of the onshore recovery unit for binders
Acknowledgement

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Foreword

This manual is designed for the user of the onshore recovery unit in case of sorbent application on the coast.

The aim of this manual is the safe and correct use of the gear while using sorbents to respond to a marine oil spill.

This manual describes the handling of the gear to recover alluvial sorbents on the coast.

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• Restore original condition (p. 23 – 25)
Flow chart

ACTIVATING

MOBILIZATION

APPLICATION

Decision for BioBind

- Loading and transport of the onshore recovery technology

- Loading of binders and microorganisms into the dropping aircraft

- Definition of dropping coordinates

Start small airplane for remote sensing

Dropping coordinates

- Dropping binder

- Further binder requirement

Determination of recovery route

- Recovery coordinates

Offshore recovery

Onshore recovery

Oil and oil binder drift monitoring

Onshore recovery

- Prepare onshore recovery unit

- Prepare onshore recovery unit with empty BigBag

- BigBag full

- Set down the full BigBag

- Transport filled BigBags to intermediate storage facilities

- Clean and restore onshore recovery unit

- Onshore Recovery

- Yes

- No
Proposed set-up of the Onshore-Recovery
If good operational procedures are followed and correct Personal Protective Equipment (PPE) is worn, operations should pose minimum risk to health. However there are, as with other such activities, potential risks to all participants.

These risks can be minimised by:

- Conducting a comprehensive risk assessment process and implementing mitigation measures to reduce them where applicable
- Communicating the risks and mitigations in place through a safety brief prior to any operations being carried out.

Minimum PPE standards:

- Ear defenders whilst machinery is running
- Gloves
- Steel toe cap boots
- High visibility clothing
- Overalls
## Risks and mitigations

<table>
<thead>
<tr>
<th>Risks</th>
<th>Impacts</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to Volatile Organic Compounds (VOCs) and potentially also Hydrogen Sulphide H₂S from the oil that has been spilt.</td>
<td>Could cause nausea and if H₂S is present, death in extreme cases.</td>
<td>Enforce a site entry protocol. Provide gas monitoring devices and appropriate respiratory PPE.</td>
</tr>
<tr>
<td>Manual handling.</td>
<td>Potential for back injuries.</td>
<td>Before any deployment commences, manual handling training should be given to anyone involved. Ensure that weights are clearly marked on the packages. Make sure that lifting equipment is available as appropriate.</td>
</tr>
<tr>
<td>Noise (85-90dBA).</td>
<td>Danger of damage to hearing if exposed to loud machinery for prolonged periods of time.</td>
<td>Ear defenders to be provided and worn.</td>
</tr>
</tbody>
</table>

According to Field Guides from Oil Spill Response Limited (OSRL)

While this table lists some of the common hazards that are likely to be present when conducting onshore containment and recovery operations, it does not constitute a risk assessment. A full site-specific risk assessment should always be conducted prior to operations commencing.
This material is inside the 20ft. Container:
- Polaris Ranger® 570
- Trailer with vacuum unit
- Big Bags with inlay
- Drive-on ramps
- Post box for manuals
Application for oil spills on water surface (e.g. oceans, lakes, rivers) especially for marine application; Suitable for air- and ship borne distribution; Suitable for application during bad weather conditions and on shallow water territories; Ship borne recovery by net booms;

The BioBind oil binder is made of biodegradable wood-fiber causes no environmental impact. It shows a high oil absorption capacity of approx. 600 kg m\(^{-3}\) especially for thin oil films down to 0.03 mm and a high retention capacity for oil. On water surface, the binder achieves an oil recovery rate of approx. 80 % with a coverage dosage of 11 %. The binder floats for more than 3 days. The binder material can be equipped with oil degrading microorganisms.

### Product Sheet: Oil-Sorbent: BioBind

#### Technical Data:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>3.5 to 4.2 mm</td>
</tr>
<tr>
<td>Dimension Binder</td>
<td>50 x 50 mm</td>
</tr>
<tr>
<td>Density</td>
<td>250 to 280 kg/m(^3)</td>
</tr>
<tr>
<td>Bulk density</td>
<td>110 to 120 kg/m(^3)</td>
</tr>
<tr>
<td>Material</td>
<td>Spruce Wood (Picea abies)</td>
</tr>
<tr>
<td>Additives</td>
<td>3 % latex or wood extractives</td>
</tr>
<tr>
<td>Oil</td>
<td>Light Oil, Crude Oil, Heavy Oil</td>
</tr>
<tr>
<td>Oil sorption rate per m(^3) (bulk)</td>
<td>230 to 260 kg</td>
</tr>
<tr>
<td>Oil sorption rate per m(^3) (Particle volume)</td>
<td>600 kg</td>
</tr>
<tr>
<td>Oil sorption rate per m(^3) (Binder surface)</td>
<td>2.4 kg</td>
</tr>
<tr>
<td>Oil sorption rate per kg</td>
<td>2.1 kg</td>
</tr>
<tr>
<td>Coverage dosage</td>
<td>&gt; 0.11 m(^2)/m(^2)</td>
</tr>
<tr>
<td>Float Time</td>
<td>&gt; 3d</td>
</tr>
<tr>
<td>Customs-Tariff-Number</td>
<td>44013920</td>
</tr>
</tbody>
</table>
Checklist container

- Car fully refueled

- Tire pressure
  - Car: Front: 0,69 kPa; Rear: 0,69 kPa
  - Trailer:

- Vacuum cleaner fully refueled

- Replacement petrol can

- Sufficient Big Bags with inlays


- Are tools complete: shovel, lashing (both container), slotted screwdriver, 2x 17 wrench (glove compartment)
Preparation on site

It is recommended to remove the cover from the trailer when working on site. At least 2 persons are required.

**Loosen end fittings 18x**

**Loosen ropes 4x**

After loosen ropes and end fittings you can raise the tarplauin and hoops.
Preparation on site

Hang Big Bag in rack

1. Put the empty Big Bag on the trailer
2. Attach the Big Bag with all 4 loops to the fast-shakels
3. Pull the filling skirt over the exhaust spout. If necessary the end of the exhaust spout can be moved or tightened.
4. Attach the filling skirt with a lashing
Starting the engine

! Read motor manual before operation. You can find it in the post box!
1. Move the fuel valve lever to the ON position.

2. To start a cold engine, move the choke lever to the CLOSED position.
   (warm engine → OPEN position)

3. Move the throttle lever away from the MIN. position, about 1/3 of the way toward the MAX position.

4. Turn the engine switch to the ON position.

5. Operate the starter.

6. Set choke lever on the OPEN position.

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Starting the engine

Fuel valve lever

Choke lever

Throttle lever

Engine switch

Starter grip

Direction to pull
Never operate this vehicle without proper instruction!
Gear selector

**Starting the car**

Use the ignition switch to start the engine and to turn the lights on or off. The key can be removed from the switch when it is in the OFF position.

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>Turn the key to the OFF position to stop the engine. Electrical circuits are off.</td>
</tr>
<tr>
<td>LIGHTS ON</td>
<td>All lights are on. Electrical circuits are on. Electrical equipment can be used.</td>
</tr>
<tr>
<td>POSITION LIGHTS ON</td>
<td>The headlights are off. Position lights are on Electrical equipment can be used.</td>
</tr>
<tr>
<td>START</td>
<td>Turn the key to the START position to engage the starter.</td>
</tr>
</tbody>
</table>

- **H**: High Gear: For use on hard-packed surfaces with light loads.
- **L**: Low Gear: Primary driving Range. Operating in rough terrain or over obstacles; Loading the vehicle onto a trailer; Towing heavy loads; Driving frequently at low RPM or at ground speeds below 11 km/h (7 MPH)
- **N**: Neutral
- **R**: Reverse
- **P**: Park

To change gears, stop the vehicle, and with the engine idling, move the lever to the desired gear. Do not attempt to shift gears with engine speed above idle or while the vehicle is moving.
Driving on the beach

- Use Low Gear (L)!
- Choose the right velocity
- Gently start up and become faster with time. Avoid jerky and excessive acceleration.
- Avoid fast driving and sharp turning at the same time
- Use your brakes gently and with feeling in the sand
- Smooth steering movements
- If it's stuck, accept it and dig it out.
- Never operate your vehicle in fast-flowing water or in water deeper than the maximum recommended depth equal to the floorboards ①.

① floorboards
1. Starting engine (p. 16)
2. Adjusting the speed of the vacuum cleaner
   Recommendation: medium speed

3. Rolling the hose over the floor

   When collecting, watch out for colleagues and passers-by.
   Keep visual contact with the “vacuum cleaner”.
1. Loose lashing

2. Loose fast-shakels 4x

3. Close Big Bag

4. Pull Big Bag from trailer
Before cleaning stop the engine!

All components are to be cleaned in the decontamination zone provided for in the management plan.

The procedure corresponds to the standard cleaning process.
Operation completed – Cleaning/ Decontamination

1. Loose shakels (3x)

2. Remove the hose Clamps (2x)

3. Cleaning all components

- Suction hose
- Fan housing! Be careful!
- Suction pipe
- Spout
- Trailer surface
• Assemble the suction unit: Suction pipe, suction hose

• Refuel Polaris Ranger® 570

• Refuel vacuum cleaner

• Controll tools: shovel, slotted screwdriver, lashing, 2x 17 wrench

• Put new Big Bags in the container

• Drive trailer and Polaris Ranger® 570 in the container (p. 25)
Operation completed – Restore original condition

Proposed set-up - container
Operation completed – Restore original condition
Drive trailer and Polaris Ranger® 570 in the container

1. Ramps for trailer
2. Trailer in Container
3. Ramps for Polaris
4. Polaris in Container

Support wheel must run on the pink line
Polaris must park in the marked areas