## Basic Environmental Management Tools for Pipeline Construction

### Water Management

<table>
<thead>
<tr>
<th>Plan</th>
<th>Divert Where Possible</th>
<th>Manage Run-off</th>
<th>Flood Risk Areas</th>
<th>De-watering &amp; Pumping</th>
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</thead>
<tbody>
<tr>
<td>Look at the available ground information, site topography and</td>
<td>Install land drainage to divert surface water away from your site.</td>
<td>Minimise topsoil stripping where possible.</td>
<td>Minimise storage facilities (cabins, plant, equipment or materials) in floodplains.</td>
<td>Apply for a permit to pump.</td>
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<tr>
<td>information in the public domain to develop plans and drawings of</td>
<td>Use grips, dummy ditches and silt fences to divert &amp; capture water from within your</td>
<td>Compact / cover soil heaps.</td>
<td>Spoil bunds to incorporate significant gaps regularly.</td>
<td>Prevent water from entering excavations, by using cut off ditches.</td>
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<tr>
<td>how the water on the project will be managed.</td>
<td>working area.</td>
<td>Check and maintain grips, silt fences on a regular basis.</td>
<td>May require flood defense consent.</td>
<td>Select discharge locations in agreement with the EA / Client. Install silt</td>
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<td>mitigation at location &amp; monitor regularly.</td>
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<td>Support inlet hoses above the watercourse bed and use appropriate pump rates to</td>
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<td>minimise silt pollution.</td>
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<td>Use guarded pump inlets to avoid drawing in aquatic life.</td>
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### Waste Management

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<thead>
<tr>
<th>Plan &amp; 'Duty of Care'</th>
<th>Segregate &amp; Recycle</th>
<th>Hazardous waste</th>
<th>Transportation</th>
<th>Waste Transfer Notes &amp; Disposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Waste Management Plan shall be developed on projects worth over £300k.</td>
<td>Review materials to be used &amp; identify all recyclables prior to commencing works.</td>
<td>Register with the EA as a producer of hazardous waste prior to the production</td>
<td>Transport of hazardous waste shall be in a marked vehicle and handled by competent</td>
<td>Complete forms fully. It’s Law!</td>
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<tr>
<td>Duty of Care means you must consider disposal alternatives, store waste safely and</td>
<td></td>
<td>of any hazardous waste.</td>
<td>waste disposal contractors.</td>
<td>Retain records for a minimum</td>
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<tr>
<td>securely, manage waste transfer notes, be licensed to carry, store, and dispose of</td>
<td></td>
<td>Construction items include: painting and coating materials and tins, welding</td>
<td>Waste carriers shall hold a valid waste carriers licence.</td>
<td>of 2 years. (5 years for some</td>
</tr>
<tr>
<td>waste, check the waste supply chain also comply with the relevant licenses.</td>
<td></td>
<td>rods, waste oils, aerosols, lubricants, tarmac, contaminated rags, batteries,</td>
<td>When carrying waste ensure there is a consignment note.</td>
<td>hazardous wastes)</td>
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<td>Buy eco products where possible.</td>
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<td>fluorescent tubes and contaminated land, etc.</td>
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<td>All waste management</td>
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<td>facilities used shall hold a valid</td>
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<td>Waste Management License, check</td>
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<td>validity.</td>
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- As a general rule, double bag and tie any hazardous waste and label with contents and waste code as a minimum.
Contamination Management

**Plan**
- Establish Emergency Plans for various spills.
- Identify what you have that could act as a contaminant and understand how it affects your environment around you.
- Ensure mitigation measures are planned, available and suitably sized for the task.

**Plant**
- Use drip trays for static plant items, e.g. pumps, generators.
- Check plant for leaks and damage prior to starting on site.
- Ensure spill kits are with plant.
- Where possible do not site plant near to water courses or local drainage.

**Refueling**
- Use only trained personnel.
- Don’t refuel within 30m of a watercourse or aquifer, where possible.
- Use drip trays where possible.
- Always have spill kits available.
- Ensure nitrile gloves are available in the spill kit.

**Spill Mitigation**
- Practice! Know what you have to do in a spill situation.
- Make sure everyone knows how to use the spill kits and storage requirements for hazardous products.

**Disposal**
- Double bag and label contaminated soil and spill kit materials.
- Return to construction yard and dispose of as hazardous waste.
- Inform the Environmental Team of incidents.

Watercourse Crossings

**Crossing Design**
- Always check true bottom of watercourse level when designing the pipe levels.
- Ensure that the minimum cover from the invert level is achieved. 2.0m cover as a minimum, but check the client’s specifications.
- Ensure tie in welds are located a suitable distance from the bank so to not disturb the bank when excavating a bellhole.

**Vehicle Crossing**
- Never drive through a watercourse, use a flume crossing or a bridge.
- Consult the EA for fluming consent.
- When fluming, use sandbag headwalls, maintain bank vegetation or use straw bales to minimize silt contamination from run-off.
- Ensure flume sizes are a suitable for the anticipated watercourse volumes and flow rates.

**Pipeline Crossing**
- Consult with EA over crossing methodology & consent, use non-intrusive techniques where possible.
- Consult the EA for crossing consent.
- Potentially fish/crayfish surveys. Always consult the EA to find out which need to be undertaken.

**Open Cut Technique**
- Ensure there is an uninterrupted flow of water whilst the pipeline is installed; dam and over-pump or flume and excavate and install around.
- Program operations during periods of good conditions, e.g. weather, river level/flow.
- Minimise the amount of bank vegetation to be disturbed.
- Remove and store the bed and bank material separately and label.
- Use sedimats, silt fences, booms etc. downstream to minimise silt pollution.

**Trenchless Techniques**
- Consult with EA over crossing methodology & consent.
- Ensure there is a validated emergency procedure for a ‘breakout’ if using bentonite or a similar product for lubricant.
- Review geotechnical information to ensure a suitable trenchless method is selected.

Common Invasive Plant Species & Protected Animal Species to look out for in the UK

**Invasive Species**
- **Japanese Knotweed**
- **Giant Hogweed**
- **Himalayan Balsam**

For further information on how to deal with these species, follow this link: [http://publications.environment-agency.gov.uk/pdf/GEHO0410858R-e-e.pdf](http://publications.environment-agency.gov.uk/pdf/GEHO0410858R-e-e.pdf)

**Protected Species**
- **Bat** (The Conservation of Habitats and Species Regulations 2010)
- **Badger** (Protection of Badgers Act 1992)
- **Dormouse** (The Conservation of Habitats and Species Regulations 2010)
- **Great Crested Newt** (The Conservation of Habitats and Species Regulations 2010)
- **Otter** (The Conservation of Habitats and Species Regulations 2010)

For an up to date list of protected species, follow this link: [http://www.naturalengland.org.uk/Images/ProtectedSpeciesLists_tcm6-25123.pdf](http://www.naturalengland.org.uk/Images/ProtectedSpeciesLists_tcm6-25123.pdf)

*From the editor: We have tried to make sure the above article is as accurate and up-to-date as possible. If you think we have something wrong, or you feel we need to update it, please get in touch [here](mailto:editor@environment-agency.gov.uk).*