

## WASTE MANAGEMENT PLAN

### I. Objective

The objectives of the plan are:

- to minimize the generation of waste through the thoughtful use of raw materials,
- to screen and treat waste in order to limit the impact on the environment,
- to sensitize and train staff in good waste management practices,

through the implementation of this plan, to eliminate the risks of pollution of the biophysical environment and indirect impacts on the human environment (health, nuisances).

### II. General Conditions

#### A. Scope of Application

Monitored by ARISE Ivoire HSE team

Implemented and applicable to all sub-contractors

### III. Measures

**Each sub-contractor (SC) has its own waste storage and its own collection plan with an agreed waste collector. The contracting of local companies for the waste collection and disposal is under each SCs responsibility who shall provide all appropriate documentation to ARISE Ivoire to attest to their efficient management (contract of the disposal company, waste tracking, etc.).**

At each sub-contractor site, no intermediate storage is planned, only one site is set up for waste collection with specific containers for each type of waste.

The location for waste storage at each sub-contractor site is chosen at a distance from sensitive receptors:

- 50 m from any watercourse and outside floodplain,
- 200 m from any dwelling.

Following good practices is implemented:

- Creation of an enclosed waste storage area to reduce the risk of waste flying away and avoid attracting wildlife.
- Set up storage areas on an impermeable surface equipped with retention bins.
- Protect the area from the bad weather. Otherwise, rainwater must be recovered and treated.
- Making wood with commercial values/used by communities available to local communities in a form that can be used/transported by the population (cut the wood in a format that can be easily handled).
- Regular cleaning of waste garbage cans and storage areas.
- Avoiding burning waste as much as possible.

### **Collection and storage**

A source separation system is proposed to separate the waste generated and store it under appropriate conditions. **The organization of collection** includes the following points:

- signage of skips for each type of waste and storage points. The identification of the skips will be ensured in particular by means of pictograms or logos easily identifiable by all: wood and green waste, paper and cardboard, putrescible waste, inert waste, medical waste, sludge, motor oil, used chemicals, contaminated or non-contaminated metal waste,
- set up of storage areas on an impermeable and closed surface to prevent the waste from flying away waste and equipped with retention bin.
- hazardous waste is stored in a dedicated container, taken into account the compatibility of the storage of hazardous products.

During construction, following waste are expected:

- green waste from land clearing operations and site maintenance,
- construction waste (plaster, concrete, bricks, wood, drywall, fences, roofing materials, cement blocks, metal or plastic scrap, etc., including excess excavated soil etc.),
- domestic waste from work area and base camp,
- hazardous waste from construction machinery and building materials. Hazardous waste production is limited to contaminated containers, soiled cloth, etc.).

### **Treatment and disposal**

After acting on waste minimisation at source, the treatment strategy is based on the principles of reuse, recovery and recycling before choosing as a last resort to send waste to disposal or landfill. In all cases, no waste is left on site, dumped into the environment or burnt.

Waste disposal is currently under definition, the different types of local disposal channels and associated companies being studied.

Depending on the waste, **the first choice of treatment** is as follows:

- putrescible waste: composting,
- green waste: composted or left at the disposal of the local communities (the modalities will be defined beforehand by the construction company, validated by Arise Ivoire in consultation with the local communities),
- Invasive species: *Nymphaea lotus* is usually found on surface waters during rainy season. Can be composted if the plants have been cut before flowering and fruit development. If not, plants will be disposed in landfill.
- waste glass, paper, cardboard, plastic and metal products not polluted by dangerous products: recycling by approved companies,
- inert waste (rubble, stones, earth, etc.): recovery in the form of quarry fill or reintroduced into a new concrete production process,
- waste oil waste: acceptable recycling (refinery) or disposal (fuel for industry such as cement works, foundries),
- chemical waste and paint residues and associated drums: reuse on site, returned to the supplier or to appropriate waste treatment facilities,
- waste electrical or electronic equipment: batteries, vehicle batteries, oil filters, light bulbs and lamps. The identification of a treatment channel, promoting recycling, will be carried out,
- pneumatic waste: recycling channel,
- sludge from settling ponds (presence of hydrocarbons): collection by a specialized company and treated as hazardous waste (recovery will have to be studied),
- sludge from septic tanks: collected by an approved transporter,
- medical waste: disposal in an approved centre (incinerator).

At the end of the works phase, all waste storage area of work area and base camp will be emptied, cleaned and rehabilitated.

### **Waste transportation**

## **Waste transportation**

This waste tracking presents the following information:

- name and identification number of the material (s),
- physical state (ie solid, liquid, gas or a combination of one or more states),
- quantity (eg kilograms or liters, number of containers),
- date of dispatch, date of transport and date of receipt,
- registration of the sender, receiver and transporter.

The waste tracking is used both for hazardous and non-hazardous waste transportation. The HSE supervisor is in charge of filling and archiving of these tracking.

### **Special case : Contaminated land**

In case where land is identified as potentially contaminated (following an accidental spill), it must be analysed in order to characterize the pollution and its level (if unknown) in order to select the most appropriate treatment process to the elimination of the contaminated soil.

If necessary, samples will be collected by qualified staff applying good sampling practices. To assess soil or groundwater contamination, the following analyses must at least be carried out by an accredited laboratory:

- HCT,
- PAH,
- Metals (As, Ba, Cd, Cr, Cu, Hg, Ni, Pb, Zn).

The analyses must be carried out by the subcontractor who caused the pollution.

A report including soil and groundwater quality results will be sent to the HSE supervisor. This report will highlight the contaminated areas with regard to Ivorian regulations and international standards (Dutch Standard for example). This report will conclude on the impacts of the Project on the natural environment.

In the event of proven pollution, a soil remediation plan must be developed by a specialized company. The rehabilitation strategy depends on the concentration of pollutants found, the availability of rehabilitation techniques in the country as well as the regulations.

Waste from the rehabilitation works will be sent to appropriate disposal facilities.

### **Special case : Green waste**

In case the invasive species are composted, it will be verified that the raw material:

- does not contain seeds, and if it does, it will be treated at a temperature suitable for their destruction,
- does not contain pollutants (heavy metals) and inert materials (unlikely),
- or compostable as such (needs to be shredded or not).

It is preferable to carry out composting operations before the plants are set into seeds, in order to avoid spreading them during the transport of the waste and its storage. If composting is not feasible, because the pathway is not present or the plants have a high reproductive potential, then landfilling or incineration under the conditions described above will be implemented.

During each clearing phase, a temporary storage area will be set up (24 hours minimum) for cleared green waste (before removal, destruction or disposal) in order to give the fauna hidden in this waste (geckos, insects, etc.) time to escape and reclaim the upper part of the site.

<b>Monitoring indicators</b>	<ul style="list-style-type: none"> <li>• presence of waste tracking register</li> <li>• number and type of specific bins/containers installed</li> <li>• volume of waste produced by category,</li> <li>• volume of waste disposed by category,</li> <li>• number of waste tracking,</li> <li>• number of subcontractors in charge of waste disposal / recovery and recycling</li> <li>• presence of contracts with these SCs</li> <li>• number of complaints about waste management (i.e. burnt waste or dumped waste).</li> </ul>
<b>Reference documents</b>	
<b>Procedure approved by</b>	
<b>Emission/last revision date</b>	