**WATER SAFETY PLAN**



Name of water supply scheme: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name of CBO: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Registration No.:­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Describe the water supply system map (STEP 1)**

|  |  |
| --- | --- |
| **Village(s)** |  |
| **GND** |  |
| **DSD** |  |
| **District** |  |
| **Numberof connections** | Household:  Institutional:  Commercial: |
| **Number of beneficiaries** |  |
| **Type of system (gravity or pumped)** |  |
| **Source** |  |
| **Treatment components** |  |
| **No. of storage tanks** |  |
| **Length/type of pipeline** |  |

**Water supply system map (STEP 1)**

**Identify hazards and assess risk (STEP 2)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Hazard present? | |  |  |
| No | Hazard | Y | N | Risk level (Green, Yellow, Red) | Notes |
| **Catchment / source / intake** | |  |  |  |  |
| 1 | Are agricultural chemicals (pesticides and/or fertilizers) used within 20 metres 5 km upstream of the source? |  |  |  | Name the products |
| 2 | Is this area affected by soil erosion and landslides? |  |  |  |  |
| 3 | Does open defecation happen in the catchment area? |  |  |  |  |
| 4 | Do animal farms discharge into the river upstream of the intake? |  |  |  |  |
| 5 | Do people bath or wash their animals within 1 km upstream of the intake? |  |  |  |  |
| 6 | Is there any industrial waste discharges and/or vehicle service station discharge within 1 km upstream of intake? |  |  |  | Define the problem if present |
| 7 | Is there any solid waste dumping (e.g. from settlers or municipal dumping) and surface water drainage within 1 km upstream of the intake? |  |  |  |  |
| 8 | Does vehicle transportation occur within 50 metres of the river? |  |  |  |  |
| 9 | Is there any reduction of water quantity due to inappropriate plantation and deforestation? |  |  |  |  |
| 10 | Is fencing to exclude wild animals from the river absent? |  |  |  |  |
| 11 | Is the fencing around the intake missing or damaged or is the gate unlocked? |  |  |  |  |
| 12 |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Hazard present? | |  |  |
| No | Hazard | Y | N | Risk level (Green, Yellow, Red) | Notes |
| **Treatment plant** | |  |  |  |  |
| 1 | Does your water have some bad colour, odour or taste any time of the year (say when)? |  |  |  |  |
| 2 | Is your water muddy any time of the year (say when)? |  |  |  |  |
| 3 | Is chlorination absent? |  |  |  |  |
| 4 | Is the fencing around the treatment plant missing or damaged or is the gate unlocked? |  |  |  |  |
| 5 | Are repairs not carried out in a timely manner? |  |  |  |  |
| 6 | Is preventive maintenance not done? |  |  |  |  |
| 7 | Do you think the caretaker needs more training? |  |  |  | say what training required |
| 8 | Do you need more caretakers to operate the system? |  |  |  |  |
| 9 | Are caretaker operation and maintenance records missing? |  |  |  |  |
| 10 | Is the treatment plant difficult to access? |  |  |  |  |
| 11 |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Hazard present? | |  |  |
| No | Hazard | Y | N | Risk level (Green, Yellow, Red) | Notes |
| **Transmission main / distribution system** | |  |  |  |  |
| 1 | Are there any pipe leaks due to   * improper construction * improper design * lack of preventive maintenance * natural disasters |  |  |  |  |
| 2 | Is there any contamination due to corrosion of pipes (GI pipes)? |  |  |  |  |
| 3 | Are pipes exposed (can be damaged by animals)? |  |  |  |  |
| 4 | Is there illegal tapping of pipeline? |  |  |  |  |
| 5 | Does the system operate intermittently? |  |  |  |  |
| 6 | Are there any stagnant water areas (e.g. dead ends)? |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Hazard present? | |  |  |
| No | Hazard | Y | N | Risk level (Green, Yellow, Red) | Notes |
| **Storage tanks** | |  |  |  |  |
| 1 | Is the top of the tank open or damaged in any way? |  |  |  |  |  |
| 2 | Is the access hatch absent, damaged or unlocked? |  |  |  |  |  |
| 3 | Are the screens protecting the air vents missing or damaged? |  |  |  |  |  |
| 3 | Are there any cracks in the wall? |  |  |  |  |  |
| 4 | Is the inside of the tank dirty? |  |  |  |  |  |
| 5 | Is the tank inundated during flooding? |  |  |  |  |  |
| 6 | Is the fencing around the tank site missing or damaged or is the gate unlocked? |  |  |  |  |  |
| 7 | Is access to the tank restricted? (e.g. ladder missing, no pathway) |  |  |  |  |  |
| 8 | Is the storage capacity of the tank insufficient for demand? |  |  |  |  |  |
|  |  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Hazard present? | |  |  |
| No | Hazard | Y | N | Risk level (Green, Yellow, Red) | Notes |
| **Household** | |  |  |  |  |
|  | Based on the household surveys conducted (using a separate form), are there any risksrelated tohousehold water treatment and storage (HWTS)? |  |  |  | # HH surveys conducted: \_\_\_\_\_\_  Average scores:   1. Collection container: \_\_\_\_/4 2. Main storage tank: \_\_\_\_/5 3. HH storage container: \_\_\_\_/4 4. Drinking water cup: \_\_\_\_/2   # HH felt water ok to drink without treatment: \_\_\_\_\_\_\_\_\_ |

**Improvement plan (STEP 3):**

Some of the risks identified in Step 2 will require community action to make improvements. **Record improvement plans in this table**.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **What improvement is needed?** | **Who will be in charge of this work?**  *(Name of the person)* | **External support needs?**  *(Design support, etc.)* | **Tentative cost** | **When will it be done?**  *(Due date)* | **Check when done**  |
| 1 |  |  |  |  | *EXAMPLE:*  *November 2015* |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |

**Monitoring plans (STEP 4):**

This step covers **2 types of monitoring**:

1. **Operational monitoring: The CBO regularly checks components** of the water system (visual inspection plus water quality testing).
2. **Verification monitoring: External persons (outside the CBO)** visit the community from time to time tocheck that the WSP is being followed by the WSP team and is working to keep water safe.
3. **On-going monitoring by the CBO**

**VISUAL INSPECTION BY CBO**

|  |  |  |
| --- | --- | --- |
| **What should be checked (e.g. hazards)?** | **Name of person who will do the monitoring?** | **When / how often?** |
| **Catchment** |  |  |
| * *Waste dumping* * *Agricultural chemical use* * *Soil erosion* * *Farm animals* | *Person X* | *Seasonally* |
|  |  |  |
|  |  |  |
|  |  |  |
| **Intake** |  |  |
| * Animal access * People bathing * Blocked intake screen * Garbage | *Person X* | *Weekly* |
|  |  |  |
|  |  |  |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Treatment steps** |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| **Storage** |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| **Distribution** |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**WATER QUALITY MONITORING BY CBO***(If applicable)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Where** | **What** | **When** | **Who** | **Critical limits** *(or target range)* | **Corrective actions if critical limits exceeded** |
| *EXAMPLE:*  *Storage tank outlet* | *Cl2* | *Daily* | *Caretaker* | *Cl2: 0.2-0.5 mg/L* | *Technician to check and adjust chlorine dosing as needed.* |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

1. **WSP verification monitoring**

This section is for defining a plan for on-going checking of the WSP by the National Water Supply and Drainage Board or Ministry of Health laboratories to verify WSP implementation and effectiveness.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **System component** | **What needs to be checked?** | **Who will do sampling?** | **Who will do testing?** | **How often?** |
| Catchment and intake | Water quality (chemical, physical, microbiological) at intake point  Flow rate | PHI  CBO | NWSDB  NWSDB analysis | Once every six months (once in dry season and once in wet season)  Once a year |
| Treatment plant | Water quality – microbiological, colour, turbidity and pH at outlet of plant | CBO | NWSDB | Monthly |
| Distribution | Water quality – microbiological, colour, turbidity and pH at various points  Full chemical analysis | PHI / NWSDB | NWSDB | Monthly (once in dry season and once in wet season)  Once every six months |
| Whole system | WSP auditing | NWSDB | NWSDB | Once every two years |

**Water Safety Plan Team (STEP 5)**

WSP team members should sign this table**after**trainers have led them through all steps of the WSP and all team members clearly understand the WSP duties on the next page.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name of WSP team member** | **Designation** | **Role on WSP team**  *(Leader, deputy, member)* | **Phone number** | **Signature to accept duties**  *(#1-9 on next page)* |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Water Safety Plan Team Duties (STEP 5):**

1. Create a village map showing drinking water sources and fill in the system information table (STEP 1)
2. Identify and rank risks to water safety from catchment to consumer (STEP 2)
3. Plan and lead improvements to water system components (STEP 3)
4. Plan and lead on-going monitoring of water system components (STEP 4)
5. Meet as agreed below to check that WSP activities are being carried out as planned and to make updates and changes to the WSP ifnecessary (STEP 6)

**Review and revision plan (STEP 6)**

WSP team members to meet regularly to check that WSP activities are being carried out as planned and that the WSP is up-to-date.

**WSP team review meeting agenda:**

* Is the improvement plan being implemented as defined in the WSP (Step 3)?
* Is system monitoring being carried out as planned (Step 4)?
* Is the WSP team meeting regularly?
* Is the map and description of the water supply system correct or does it need to be updated (Step 1)?
* Are there any additional hazards / risks that need to be added to the WSP (Step 2)?
* Are there any additional improvements that need to be planned (Step 3)?