GUIDANCE: OPERATIONS PLAN FOR SMALL SYSTEMS with Chlorination

*Tip: In preparing your Operations Plan, 1) list all your water system components, 2) describe how you will maintain and operate each component, and 3) list the person responsible for each task, e.g. certified treatment operator, certified distribution operator, manager, board president, etc.*

Provide an operations plan that describes all of the activities needed to maintain the system in compliance with all standards. This plan should describe the daily, weekly, monthly, and yearly tasks that would enable another qualified operator to assume the operation of the system in an emergency. The plan should also describe non-routine activities such as positive analytical results, responses to complaints, emergency operational practices, record keeping, and other duties. Operations plans need to be updated whenever changes occur.

This is an example for operation of a small water system with a well, storage tank, chlorinator, and distribution system.

* Brief description of source, storage, chlorinator unit (treatment) and number of connections. Example; 200 foot well drilled in 1972, 1500 gallon welded steel storage tank, chlorinator with a diaphragm type pump (manufacturer and model) and 25 gallon disinfectant reservoir, serving 15 connections.
* Routine Operational Procedures for each component of the system:

1. Visual inspection of **WELL** (daily).
2. Check for the following; leaks, openings, lubricants, electrical hazards, chemical hazards, etc. (record observations and correct problem).
3. Check the pump for proper operation.
4. Visual inspection of the **STORAGE TANKS** (daily).
5. Inspect for any leaks or damage (record observations and repair as needed).
6. Record system pressure. Record the pressure the pump turns on, the pressure the pump turns off and the duration of the run time.
7. Cleaning of storage tank (quarterly, semi-annually or annually). Record date cleaned and observations.
8. Visual inspection of **CHLORINATOR PUMP** and disinfection reservoir (daily).
9. Inspect the pump for proper operation.
10. Inspect the disinfectant in the reservoir for concentration and adequate volume for the operational period (record results).
11. Determine if there is enough disinfectant on hand for one or more weeks. How much is needed?
12. Measure the **DISINFECTANT RESIDUAL** in the distribution system (free chlorine test kit required).
13. Record the results (daily, on attached sheet).
14. Determine if an adequate level of disinfectant is maintained. What level?
15. If disinfectant level is low, determine the reason and correct.
16. If no measurable disinfectant, notify owner, determine reason, and remedy. If no disinfectant for 24 hours, notify Division.
17. Maintenance of **GAUGES and METERS**.
18. Inspect all gauges and meters for leaks and proper function daily. Repair or replace as needed (keep record of date).
19. Inspection and **EXERCISING of the VALVES**.
20. Inspect valves for leaks (record observations, repair or replace if leaking).
21. Exercise valves on a schedule, as needed (i.e. quarterly, semi-annually, annually, record dates on attached sheet).
22. Operation and maintenance of **DISTRIBUTION FACILITIES**.
23. Visually inspect the distribution system for leaks on a regular basis. Record date and observations.
24. Flush dead end mains or lines periodically (quarterly, semi-annually, annually as needed. Record date and observations).

* Monitoring and Reporting.

1. **BACTERIOLOGICAL MONITORING**; As per approved Sample Siting Plan (attached), required monthly, report to the Division by the 10th of each month, following the sample.
2. If sample positive, notify Division and take four repeat samples.
3. Take five routine samples the month following a positive sample.
4. **CHEMICAL MONITORING**; as required by the Division, forward results to the Division.
5. Keep chemical results for ten years.
6. Keep variance and exemptions for five years.

* Response to violations.

1. **PUBLIC NOTIFICTION** of violation required.
2. Notification shall be given as per "Emergency public notification" method on record with the Division (attached), or in a manor directed by the Division.
3. State problem and what has been done to correct it.
4. Send a copy of the notification to the Division.

* Consumer complaint response procedures.

1. **CONSUMER COMPLAINT** procedures.
2. Record in complaint log (name, address and nature of the problem).
3. Investigate the complaint.
4. Verify or dismiss the complaint.
5. Record the steps taken to address or correct the problem.
6. Notify complainant of action taken.
7. Keep complaint records with corrective action for five years.

* **Emergency Operational Practices**. (*See Emergency/Disaster Plan for complete description).*

1. List of **equipment on hand** for emergency repairs.
2. Miscellaneous wrenches.
3. Leak clamps.
4. List of sources of needed **equipment, not on hand**.
5. Name and address of supplier and type of equipment.
6. If under contract or rental.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Address** | **Phone #** | **Equipment** | **Rental/**  **Contract** |
|  |  |  | Steel Tank Welder |  |
|  |  |  | Electrical repair |  |
|  |  |  | Digging equipment |  |
|  |  |  | Generator |  |
|  |  |  | Chemicals |  |

1. List of distributors or suppliers of **replacement parts** for the system.
2. Name and address of supplier and type of equipment.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Address** | **Phone #** | **Equipment** |
|  |  |  | PVC pipe, valves, and fittings |
|  |  |  | pumps, pressure tank and gauges |
|  |  |  | Chlorinator |
|  |  |  |  |

1. List of **emergency contact numbers**:

|  |  |  |
| --- | --- | --- |
|  | Name | **Phone #** |
| 1. | SWRCB- Division of Drinking Water |  |
| 2. | Law Enforcement - |  |
| 3. | Electrician |  |
| 4. | Laboratory |  |
| 5. | Pump repair service |  |
| 6. | Chemical disinfectant supplier |  |
| 7. | Equipment supplier |  |
| 8. | Owner |  |

(Attachments)