

## 8.0 Annex 1 – Guidelines for Providing Inspection Service

### 8.1 Preparation

The ROWP is to inform the property owner/manager of the access needed and all physical actions required for inspection, such as digging to expose a component. Their permission, preferably in writing, is required before commencing the inspection. The ROWP is to comply with all requirements or procedures as set out by the property owner/manager while on the property inspecting an onsite system.

The ROWP is to inform, and take steps to protect, all parties on the property from the physical, biological, and chemical hazards, which may be created temporarily in the area of the onsite system during inspection.

The ROWP is to fully disclose any potential conflict of interest to the client when such a situation may arise. This may result if the ROWP or their employer was previously involved in any manner with the onsite system. Written permission is to be received from the client before commencing the inspection.

### 8.2 To Locate, Expose and Test

**8.2.1** ROWPs are to consider utility location and component materials when locating and exposing to prevent damage. All components are to be exposed in a manner that prevents unnecessary disturbance to the property and must be replaced so as to return the site as closely as possible to its original condition. Components are to be exposed by hand only, unless burial depth is confirmed as beyond 60cm or if there are large obstructions such as boulders or sloughing soils. In such cases, the ROWP may limit the inspection, or may arrange for the use of a machine through, and with the approval of, the property owner. The owner is to be provided with a full explanation of the risks associated to this action. To prevent damage, the ROWP may specify the type and size of equipment and should be on site to supervise any digging.

If components are located under structures, driveways or extensive landscaping, the ROWP may limit the inspection, or arrange through the property owner for the restriction to be cleared. The ROWP is not expected or required to dismantle structures or permanent features.

**8.2.2** Where a feature of the system or the property poses a hazard to the inspector or may break if tested or examined due to its condition, or if a full inspection is prevented, the ROWP is not required to proceed with the inspection. The ROWP is to fully inform the client of the limitation in writing.

**8.2.3** The ROWP is to use appropriate equipment for locating and testing components, and diagnosing problems. Pipe and tank cameras, electronic utility locating equipment, and hand-held photographic equipment, along with shovels, lifting hooks, probing and measuring tools as the minimum expected and additional equipment specific to a system may be required.

**8.2.4** The ROWP is to carry out a flow test to confirm all wastewater sources from the building arrive at the onsite wastewater system. The test shall only use sufficient water to confirm the arrival of the flow and not be allowed to continue for either a particular length of time or volume that is intended to “flood” or “stress” the onsite system. The flow test also aids with confirming whether a soapbox, grease trap or even a separate onsite sewage system serves the building or not. For a Maintenance Inspection, the ROWP may consider reducing the flow test to several water sources only to minimize time and costs to the client, however this should only be considered for a system that the ROWP has already inspected before and believes a more extensive testing is not warranted.

**8.2.5** Fluid movement within the components of the system including the dispersal area is to be tested against the requirements of the design.

**8.2.6** A dye test is not to be used as the sole system performance test.

**8.2.7** Effluent sampling (BOD, TSS) is to be done for all type 2 and 3 systems. Sampling of type 1 systems is at the discretion of the ROWP. The situation may also indicate testing of pH, FOG, ammonia, nitrate, influent, etc.

**8.2.8** The following components are to be exposed, examined and tested when present:

- a) A sewage basin located inside a building is to be tested for function when present but the ROWP is not required to open the sewage basin for further evaluation
- b) All tanks, chambers and treatment plants related to the onsite system at the inlet, outlet, dividing baffles and interior components
- c) All mechanical components or items with moving parts
- d) All treatment devices
- e) All dispersal area components designed to be viewed or tested

### **8.3 Records and Documentation**

**8.3.1** The ROWP is to store all field notes, reports, letters, photographs/videos, test results, etc. in a file devoted to each individual inspection performed. Each inspection file is to be easily and quickly retrievable and protected from damage on a permanent basis. Where no system plan is contained within a permit or Filing, or the plan available is found to be inaccurate or not as-built, the ROWP is to provide the client with either a basic but accurate plan, or a description of the key component locations with photographs such that the property owner may find the components in the future. The plan should:

- a) Be oriented to true north
- b) Be reproducible in black and white
- c) Be on 8.5 x 11, 8.5 x14 or 11/17 paper where possible
- d) Have lettering that is easily readable (minimum 2 mm height)
- e) Include the inspection file or reference number, location address, and date
- f) Show the suspected property lines or distances to them where possible
- g) Any wells, water sources, water bodies, breakouts, buildings & structures (approximate dimensions & locations), retaining walls or similar features that provide a reference to the onsite system components
- h) Approximate slope and direction of the slope on and around the onsite system

**8.3.2** For a performance inspection, a general sketch drawn to a scale is acceptable, or where this cannot be achieved, dimensions should be shown or detail drawings added. This is to include the access points for a septic tank, treatment plant, distribution box and the general dispersal area. For a compliance inspection, a more detailed and accurate reporting of measurements, including the location of the dispersal components and setbacks to any relevant portion of the system where a structure is to be built or added onto and setbacks to the onsite system need to be confirmed. A compliance inspection may be required if no filing is on record, and the owner needs the systems details for legal and/or home conveyance (sale) purposes.

## 8.4 Reporting

**8.4.1** The ROWP is to provide a written report, which is to include the following:

- a) Explanation of system type, expected function and components
- b) Information on the location of the system components, including a general diagram or photographic record for a performance inspection, and a detailed diagram for a compliance inspection
- c) Explanation of the current performance using the terminology as listed in 8.4.2 (written for the lay-person)
- d) Comparison of the system as installed with the permit/Filing documents
- e) Explanation of repairs and improvements
- f) Explanation of system maintenance requirements if included within the Filing documents or creation of simple O&M plan specific to the system being inspected and the client's needs if not included
- g) Explanation of the nature and exact locations of any problems, especially in the case of a "performance malfunction", "illegal or prohibited feature", or a "suspected health or safety hazard"
- h) System use and care information.
- i) If a compliance inspection, a detailed site/system drawing with confirmed setback distances, components, structures and utilities

**8.4.2** The following terminology is to be included and explained within the report:

a) ***This system is operating in a normal manner as intended by its design*** - this is when:

- All wastewater was confirmed to arrive at each component and travel through the system in a normal manner without wastewater backing up or being diverted;
- In a gravity distribution system, all dispersal pipes receive approximately equal flows, or, flows with variations not exceeding 10% for any one pipe;
- In a pressurized distribution system, all laterals receive approximately equal flows and the squirt height as measured at the ends of all laterals does not vary by more than approximately 10% from the original squirt height recorded at time of commissioning, or as compared to all other laterals;
- The effluent sample(s) taken from the treatment plant/process meet the permit/Filing document standards;
- For a lagoon, the effluent level is below the design freeboard;
- Where a treatment plant or process is installed, the results of laboratory testing will determine whether the effluent quality meets the requirements of the design. Even if all other aspects of the system are or appear in good order, where effluent strength exceeds the requirements, the system is identified to be experiencing a "performance malfunction."

b) ***This system is operating, but a partial restriction or backing up is occurring*** - this is when:

- All wastewater was confirmed to arrive at each component but was found to partially back up or was restricted at any component. This can be evident as a fluid level higher than the invert of the outlet pipe but not reaching the mid-point of an inlet or outlet pipe;
- In a gravity distribution system, all dispersal pipes receive flows however variations exceeding 10% but less than 25% for any one pipe was observed inside and along the runs of any dispersal pipe;

- At the end of a pump cycle or flow test, effluent is observed to flow backward into the distribution box from one or more distribution pipes;
- In a pressurized distribution system, flows are visible from all laterals, but one or more laterals had a variation greater than 10% from the original squirt height recorded in the system commissioning or as compared to the other laterals;
- For a lagoon, the effluent level is approximately at the designed freeboard.

c) **Performance malfunction** - this is when:

- The dispersal area has less Vertical Separation than required by the standards at the time of construction
- The fluid level is at or above the mid-point of any inlet or outlet pipe of any component;
- Any backing up is found in a pump chamber, siphon or other dosing device contrary to the normal operating level for that component;
- Wastewater is escaping or groundwater is entering from any point in the system contrary to plan/design;
- In a gravity distribution system, one or more dispersal pipes have no visible flow or variations of 25% or more are observed inside and along the runs of any dispersal pipe;
- In a pressurized distribution system, one or more laterals have no visible flow or variations of 25% or more are observed in any lateral during a squirt test;
- Effluent or monitoring port samples do not meet the requirements of the original permit or Filing document;
- Intrusion of solids into the dispersal area (high BOD due to inadequate septic tank maintenance) and diminished performance of CTDS, type 2 or type 3 technologies (no longer meeting the SSR performance standards);
- For a lagoon, the effluent level is above the design freeboard of the lagoon (normally 0.6 m below the top of berm).

d) **System operation could not be fully determined** - this is when:

- The ROWP could not gain access to the building to confirm where all wastewater flows travel to.
- The system has not been in use for several weeks and the ROWP has concerns that observations may not reasonably reflect behaviour and/or performance of the system when in actual use;
- The water supply into the building was not functioning;
- One or more components could not be accessed, potentially due to:
  - Depth of hand digging required is more than 60 cm below the surface resulting in a large excavation not anticipated or normally encountered,
  - Soils are very compacted and breaking through this layer could result in damage to a component below,
  - Soils contain large rocks, cobble, building debris, that may result in a large excavation not anticipated or normally encountered
  - High groundwater conditions over top of a component,
  - Landscaped areas where the disturbance required for gaining access to a component may upset the property owner and/or require additional restoration work that would add an unforeseen expense to the client's budget,
  - The component is inaccessible due to asphalt, concrete or other paving materials, a structure or other obstruction

- The effluent sample is about to be submitted to the lab. If an effluent sample could not be obtained, the reason should be explained in the report

e) **Illegal or prohibited feature** - this is when:

- It is suspected or confirmed that the system was installed without a permit or completed Filing document. This should be clarified in the report with all details given to substantiate the claim;
- There is an intentional or non-intentional diversion that could or is allowing effluent to escape continuously or seasonally from the system;
- The number of bedrooms or building floor space exceeds the original design of the system or the permit or Filing document issued;
- A second residence or building is connected which exceeds the original design of the system or the permit or Filing document issued;
- A sani-dump or other connection is installed that permits wastewater from sources other than this building to enter the system;
- A garbournator or other device is installed in the building and connected to the system if the permit or Filing documents state they are not allowed for this system;
- Backwash from, or floor drain around, a swimming pool or hot tub is connected to the system;
- Backwash or drain from water treatment equipment is connected to the system;
- A building, or extension to the building, was made over top a component;
- The system is partially/fully within a neighbouring property;  
Note: Only permitted if both property owners make a legal agreement that is registered on the land titles;
- Some or all of the system was modified, reducing horizontal setback standards as required at the time of construction;
- One or more components do not meet required setbacks;
- A residential system is receiving high strength and/or high volumes of wastewater; and,
- The type and/or volume is contrary to the intended design and is not permitted unless prior permission from the Authorized Person/Health Authority was obtained.

f) **Potential health or safety hazard** - this is when:

- A Biological Hazard may be present:
  - Effluent is or appears to be escaping the system to the surface;
  - Effluent is backing up into the building where the effluent is or could likely overflow at some point within a plumbing fixture or appliance; and,
  - Effluent is or has the potential of coming into contact with people in any manner that is or could pose a Health Hazard as defined under the Sewerage System Regulations, provincial *Health Act*, or any other regulation or act that may be applicable.
- An Electrical Hazard may be present:
  - An electrical health hazard is suspected or has been identified.
- A Physical Hazard may be present:
  - A severely broken, damaged, or unsecured lid, or a structurally unsound component that could pose a physical health hazard has been identified.

Where a PI discovers or suspects a health or safety hazard they should report the issue to the landowner immediately. Notification of the location and circumstances needs to be made to the local Health Authority, BC Safety Authority (electrical), local Building Department (electrical), Ministry of Environment, Environment Canada, Department of Fisheries & Oceans, or other appropriate agencies/authorities who will investigate and make a final determination whether such a hazard exists or not. The PI is required to make this notification under the ASTTBC Code of Ethics Principle 1 and 9.

- g) **Improvement** - a recommendation that could improve safety or performance, or prevent a malfunction or health hazard if implemented. Often, these are items that were not required at the time the system was installed, such as risers to the surface, an effluent filter, or other features on systems built pre-Sewerage System Regulations. A baffle still in place but showing deterioration (preventative maintenance), or a pump chamber that does not have a high level alarm are two examples of improvements which could prevent serious future problems.
- h) **Caution** - a component, device, or feature that while allowed or legal to use, can be a source of problems or a need for increased maintenance and monitoring of some or all of the system. Continuous flushing urinals, over-sized jet tubs, multi-headed showers and in-sink garbage disposals for example. If any of these items are specifically not allowed according to the information on the permit or Filing, the item also becomes an “Illegal or Prohibited Feature.”
- i) **Repair** - a requirement that affects safety or performance and is necessary regardless of the system’s age. A missing baffle (performance) or a cracked lid (safety) are two examples of repairs.

## 8.5 Completion

- 8.5.1 If the ROWP is concerned about the quality or function of any electrical works they are to inform the client and/or property owner of the situation and refer to a qualified electrician to assess and correct as required.
- 8.5.2 Where there are significant discrepancies between the Filing document and the existing system, the ROWP is bound by the ASTTBC code of ethics to report the situation to the ASTTBC for investigation.
- 8.5.3 Where the system is used in a manner that is contrary to its design or O&M Plan, the ROWP is to inform the client and warn of consequences to the performance and/or lifespan of the system.
- 8.5.4 Where the ROWP finds that there is or appears to be an error within the plan, installation, or maintenance of the system, the ROWP is to inform the client of the potential problem and contact the ROWP involved and/or the ASTTBC as is appropriate to resolve the situation.
- 8.5.5 Where a potential health or safety hazard is found, the ROWP is to immediately report the situation to the appropriate authorities.
- 8.5.6 The ROWP is to be prepared to act as an expert witness as situations observed during an inspection may become a legal matter with little warning.

- 8.5.7** Legal clauses such as waivers or statements limiting liability within a contract or report may not be supportable due to the nature of the work, and do not eliminate the responsibility of the ROWP to provide inspection services which meet due diligence requirements.
- 8.5.8** If the ROWP also provides planning, installation, or maintenance services that are identified to be needed during the inspection, care must be taken to prevent the perception of a conflict of interest. The ROWP must act in a neutral, unbiased manner at all times during the inspection. They shall not offer services to repair, replace or maintain the system, or promote a particular product or device which the ROWP sells, distributes or receives a fee for, until the inspection is completed and after ensuring the client is provided the names and contact details of other ROWPs in the area who can also provide such services.

## **8.6 Building Departments**

**8.6.1** Where a building department or regional district requires a ROWP to provide a letter or report on the performance or suitability of an existing sewage system as a condition of issuing a building or occupancy permit to the property owner or agent, the ROWP shall:

- a) Review original filings or Health Authority permits associated to the sewage system for size, intended use, and other conditions or restrictions that may apply;
- b) Review building plans, building permit applications and related documents provided by the property owner or agent to determine if a change in size, function and/or location of a building, or other structure will or could negatively impact the sewage system;
- c) Conduct and document an inspection of sufficient thoroughness to confirm location, performance and compliance with the standard “of the day” of the sewage system in relation to the building or occupancy permit. ROWP Private Inspectors are to follow the Guidelines for Inspection as listed in Appendix ‘G’ and all other ROWPs are strongly recommended to adhere to these Guidelines to reduce their liability.

**8.6.2** Where conditions are favourable to support the building or occupancy permit, the ROWP shall:

- a) Provide the property owner/agent and building department/regional district with a stamped, signed and dated report explaining reasons in support of the permit, or a letter in a format requested by the authority requiring the review. The report or letter should reference plans, detailed drawings, or other significant documents examined during the review as being stamped, signed and dated by the ROWP confirming these were the documents examined.
- b) Stamp, sign and date all copies of building plans being submitted by the property owner, preferably near the lower right corner of plans or detailed drawings, with a note clearly stamped or written above stating “Reviewed in relation to sewage system only”. This is to ensure other parties reading the letter or report do not assume the ROWP is taking responsibility for any other aspect of the project than specified within the letter or report and only as it relates to the sewage system serving the property in question.