



ASTTBC
Registered Onsite Wastewater Practitioner
Practice Guidelines

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ABBREVIATIONS AND ACRONYMS

AP	Authorized Person
AP on Record	Authorized person on record – the AP who prepared, signed, stamped and submitted the Filing and is therefore responsible for certification of the system.
ASTTBC	Applied Science Technologists and Technicians of BC
ROWP	Registered Onsite Wastewater Practitioner
SPM	Sewerage System Standard Practice Manual
SSR	Sewerage System Regulation

For other terms and definitions, refer to the Sewerage System Standard Practice Manual glossary (section I- 1).

1.0 PURPOSE AND APPLICATION

These Guidelines describe expectations for professionalism and suitable practice for all Registered Onsite Wastewater Practitioners (ROWPs) registered by the Applied Science Technologists & Technicians of BC (ASTTBC). They apply to the planning, installation, maintenance and private inspection of onsite sewerage systems regardless of what category the ROWP holds.

Where OWRP Policy dictates a section of this or other guideline must be adhered to, ROWPs must comply as a condition of continued registration. Where a ROWP fails to meet the minimum standards set out in this or other OWRP Guidelines, they may subject themselves and their clients to unnecessary risk and liability. Such action is contrary to the ASTTBC Code of Ethics and, therefore, can be subject to an evaluation or an investigation by ASTTBC to determine if a violation of the Code of Ethics has occurred.

ROWPs are expected to be familiar with the principles, policies and guidelines, and apply them at all times through their work. Should a complaint, concern, or a routine review of a ROWP's work be conducted, it will be done in comparisons to all applicable policies, guidelines, and the Code of Ethics.

Where reference is made to SPM standards, the applicable version is the BC Ministry of Health, Health Protection Branch, Sewerage System Standard Practice Manual in effect at the time the ROWP is undertaking their work.

2.0 REGULATORY FRAMEWORK

2.1. THE SEWERAGE SYSTEM REGULATION (SSR)

ROWPs must comply with the SSR. ROWPs are expected to keep current and familiar with Ministry of Health communication bulletins and policy statements related to the SSR and the SPM.

2.1.1. Authorized Persons

The SSR requires that system design, construction and maintenance only be undertaken by or under the supervision of Authorized Persons. Authorized Persons are either Professionals or ROWPs. All ASTTBC members must be registered as a ROWP before offering services as a Planner, Maintenance Provider, Installer or Private Inspector.

2.1.2. Domestic Sewage/Residential Sewage

The SSR applies only to domestic sewage. Planners must determine if the anticipated sewage flows are “domestic sewage” as defined by the SSR (refer to SSR Part 1). If wastewater is not “domestic sewage”, then the SSR is not applicable and the work is outside the scope of practice for ROWPs.

SPM loading rates and other critical standards are intended for use only when sewage falls within specific quantifiable parameters for “residential sewage” (refer to SPM III- 5.1.3.1.(a)).

Planners must gain reasonable assurance that the sewage characteristics and strength will fall within the residential strength parameters. That determination will be based on enquiries of the owner and users, with a signed Owner’s Declaration that accurately conveys the anticipated usage. (Refer to SPM section III- 8.1 for an example of an Owner Declaration). In some cases, sampling and lab analysis of existing sewage flows will be required. If existing or anticipated sewage falls outside the SPM parameters for residential sewage, the SPM standards for system sizing and configuration are generally not applicable.

ROWPs are cautioned that sewage may be characterized as domestic sewage (per the SSR definition) and therefore be regulated by the SSR, but also be characterized as non-residential strength or high strength (per SPM parameters).

ROWPs are cautioned that many commercial facilities will discharge sewage that falls outside the residential sewage parameters of the SPM. A few examples include restaurants, food processing services, bakeries, wineries, hair salons, car washes, Laundromats, RV sewage services and/or Sani-dumps.

Where a ROWP has reasonable evidence to confirm or believe that the wastewater quality does not or will not meet domestic or residential sewage quality as indicated by the SPM, ROWPs should refer the project to a qualified Professional.

When seeking advice from a Professional or other subject matter expert, the ROWP should take reasonable steps to ensure that person is qualified by knowledge, experience, training and/or education to be considered an expert in such matters.

In all cases, ROWPs must take measures to ensure the system is appropriate to treat and disperse the sewage with due regard to strength and characteristics.

2.1.3. SSR design flow limits

The SSR applies to a sewerage system or combination of sewerage systems with a combined design daily domestic sewage flow of **less than 22,700 litres** that serves structures on a single parcel or that serves structures on one or more parcels or strata lots or on a shared interest. For systems with higher flow volume, the BC Municipal Wastewater Regulation (MWR) applies.

The SSR restricts ROWP practice to systems with “estimated minimum daily domestic sewage flow” of 9,100 L or less, unless supervised by a Professional.

To comply with these SSR flow volume limitations, Practitioners shall abide by the following principles:

- a) The SSR terminology of “minimum daily domestic sewage flow” shall be deemed equivalent to daily design flow (includes a peaking factor) as defined by the SPM.
- b) Daily design flow shall be no less than two times the anticipated or actual average flow within any 30 day period. For example, an average flow of 11,350 L per day results in a daily design flow of at least 22,700 L.
- c) ROWPs must advise clients that any system with average flow greater than 11,350 L or daily design flow equal to or greater than 22,700 L is not regulated under the SSR; the Municipal Sewerage Regulation applies, and any work on such a system falls outside the allowable scope of independent practice by a Practitioner.
- d) Planners must not act as the AP on record (must not stamp and submit a Filing or certification) for any system expected to receive more than 4,550 L average flow (1/2 of 9,100 L daily design flow) within any 30 day period, or any system designed for a daily design flow greater than 9,100 L.
- e) Planners may act as the AP on record for systems on a lot with multiple dwellings regardless of the number of systems on that lot, provided that the individual system has a daily design flow less than 9,100 L.

2.1.4. Type 3 ROWP practice restrictions

ROWPs must comply with the SSR, which states that *unless supervised by a professional, a person must not construct or maintain a sewerage system that uses a treatment method classified as Type 3.*

Further to the SSR requirement, Planners must not act as the AP on record for any system designed with vertical separation or horizontal separation dimensions less than those minimum dimensions specified by SPM Volume II critical standards for type 2 effluent.

Private Inspection falls outside the SSR. Therefore, ROWPs could consider inspection of type 3 systems, subject to the following practice requirements:

- a) Any ROWP who provides inspection services for type 3 systems must comply with OWRP Policy Appendix 'G' – Standard Practice Guidelines for Inspections, and must comply with these ROWP Practice Guidelines.
- b) Any ROWP who provides Private Inspection services for a system that uses a treatment method classified as Type 3 must have registration in the category – Private Inspector.
- c) ROWPs are cautioned that type 3 treatment methods are typically used for systems with unusual sewage characteristics and/or severe site or soil constraints. ROWPs must undertake work only if they have suitable knowledge and experience to competently meet the needs of the client.

2.1.5. Professional oversight

Notwithstanding 2.1.2, 2.1.3 and 2.1.4, Practitioners may, within their qualifications and certification, perform certain aspects of the work for systems with high strength waste, daily design flow greater than 9,100 L and/or type 3 systems under the oversight of a Professional. In these cases the Professional must act as the AP on record, but is not required to attend the site full time while the work is carried out by the ROWP. The degree of oversight is determined by the Professional.

For example, Planners may perform site/soil assessments and other aspects of the design; Installers may perform installation, and Maintenance Providers may provide maintenance, monitoring and component repair services (as defined in SPM Table II- 2) - subject to the direction and approval of a Professional.

When a Practitioner engages a Professional to provide direction, approval or written advice, the Practitioner must take reasonable steps to ensure the Professional has suitable competency and experience. A written declaration by the Professional confirming competency in site and soil evaluation, and design of on-site sewerage systems should be included in the Professional's written advice.

2.1.6. SSR 30 m horizontal separation to wells

The SSR requires a sewerage system to be located 30 metres from a well that supplies domestic water.

The Ministry of Health has determined that "sewerage system" in this context includes any septic tanks, treatment plants, pump chambers, and dispersal fields. Questions may arise regarding the

required horizontal separation to other sewerage components. These guidelines establish requirements for ROWP Practice as follows:

- a) The 30 m horizontal separation requirement **is not** applicable to:
 - Sewage transfer pump basins or lift stations located within the foundation of a structure.
 - Sewer service piping from a structure to the first treatment component (i.e. septic tank).
 - Force mains from a pump chamber to a dispersal field.
- b) The 30 m horizontal separation requirement **is** applicable to:
 - Sewage transfer pump basins or lift stations located outside the foundation of a structure.
 - Distribution boxes and piping from the D-box to the dispersal field.
- c) Should conflicts arise between any Ministry of Health directive and these guidelines, the Ministry of Health directive prevails.

Exceptions to the 30 m horizontal separation requirement are allowed for specific circumstances related to repair of existing systems. Refer to Ministry of Health Policy document: <http://www.health.gov.bc.ca/protect/pdf/sewerage-system-repair-policy.pdf>

Exceptions to the 30 m horizontal separation requirement are allowed based on written advice from a Professional competent in the area of hydrogeology. In these cases, a Planner may act as the AP on record only if the Planner attaches written advice from a Professional to the Filing. That written advice must include a conclusion that construction in accordance with the proposed specifications will not likely cause a health hazard, and include technical rationale supporting the departure. Any mitigating strategies prescribed by the Professional should be clearly stated, (and incorporated within the Filing specification by the Planner). The Planner must take reasonable steps to ensure the Professional has suitable competency and experience. A written declaration by the Professional confirming competency in site and soil evaluation, hydrogeology and design of on-site sewerage systems should be included in the Professional's written advice.

When conducting site assessments, ROWPs must identify and document any wells within a minimum 30 m horizontal distance of the proposed or existing sewerage system, including neighbouring properties. This practice requirement is applicable to site assessments for:

- a) Design of new systems, repair or replacement of existing systems, new uses of existing systems, any circumstance that requires a Filing.
- b) Compliance inspections or performance inspections (as defined by OWRP Policy 'G' – Standard Practice Guidelines for Inspections).
- c) Site assessments for the purpose of supporting subdivision applications.

These 30 m separation requirements are applicable to any wells on the subject property and on neighbouring parcels. If access is restricted to neighbouring properties, the Practitioner must make reasonable effort to confirm that no wells exist within the minimum 30 m regulatory setback. In some cases, a visual confirmation could be adequate without entering the neighbouring property. Practitioners are cautioned that the AP on record is responsible for full compliance with the regulatory provisions.

Installers are cautioned that they share a burden of responsibility with Planners and Professionals to ensure compliance with the 30 m horizontal separation regulatory requirement. Installers must ensure the required horizontal separation is achieved and that violations are reported to the Health Authority.

2.1.7. Holding tanks

Part 2 of the SSR regulates the use of Holding Tanks under a permit system. Any person may apply for a permit, and once a permit is issued, construct a holding tank system. ROWPs must ensure a valid permit has been issued before installing a holding tank and follow any other directions of the Health Officer who issued the permit.

Any practitioner who makes application for a holding tank permit or conducts a site assessment to support the owner's application must document the location of any well, including neighbouring properties within a minimum 15 m horizontal distance from the proposed holding tank location (to ensure compliance with the setback requirements of the SSR).

Any Practitioner who designs, installs, maintains or inspects a holding tank must comply with all applicable aspects of the SPM, including standards for tank installation, tank testing, maintenance standards and the quality of documentation.

2.1.8. Federal jurisdiction

For lands under federal jurisdiction, the SSR is not applicable, however, for Reserve lands, the policy of Aboriginal Affairs and Northern Development Canada and the First Nations Health Authority is that onsite sewerage systems should be constructed following SPM standards. Onsite systems on Federal First Nation reserve lands are overseen by the First Nations Health Authority (FNHA). Practitioners must consult the Environmental Health Officer at the local FNHA office to determine local requirements. Refer to <http://www.fnha.ca/> . FNHA requirements generally include submission of filing and certification submissions as per SPM standards.

The ASTTBC requires ROWPs to comply with the SPM for all onsite wastewater projects, including those on lands under federal jurisdiction.

2.2. HEALTH AUTHORITIES AND EHOS

2.2.1. EHO authority

Health Authorities and Environmental Health officers (EHOs) have statutory authority under the Health Authorities Act to:

- a) Administer and enforce the SSR.
- b) Carry out legal remedies such as orders or tickets.
- c) Accept sewerage system filing documents and letters of certification documents for systems and confirm that these meet the documentation standards of the SSR.
- d) Confirm that only Authorized Persons plan, construct or maintain installed onsite systems (or supervise same).
- e) Inspect and take corrective action to alleviate health hazards related to an onsite sewerage system.
- f) Receive and respond to complaints about health hazards.

2.2.2. Health Hazards

Section 2.1 of the SSR prescribes circumstances that may be characterized as health hazards. These include onsite systems or proposed onsite systems or maintenance plans which in the opinion of a Health Officer may cause a health hazard. This section of the SSR clarifies that Health Officers can intervene in the professional reliance model if a health hazard is anticipated. However, Health Authorities are not required to routinely review filings.

The Ministry of Health has produced a Health Hazard Communication Guideline that describes procedures for Health Authorities, including additional examples of circumstances that may pose a health hazard. Refer to:

<http://www.health.gov.bc.ca/protect/pdf/health-hazard-communication-guideline.pdf>

Practitioners must report any suspected health hazard to the local Health Authority. Practitioners must also act in a diligent manner to alleviate any potential health hazard, protect the public interest and inform owners of their regulatory obligations to prevent health hazards.

2.3. OTHER REGULATIONS

In addition to the SSR, ROWPs must also familiarize themselves with, and comply with other applicable regulations, policies and bylaws. Examples include the Work Camps Regulation, Riparian Area Regulation, Public Health Act, Drinking Water Protection Regulation, Health Authority policies regarding subdivision of land, local bylaws and zoning, and restrictive covenants. Inspectors must be familiar with the Sewage Disposal Regulation to evaluate pre SSR systems. Refer to SPM III- 3.2.1 for a more extensive listing.

2.4. GREYWATER

The SPM does not currently include information that aids the practitioner with grey water systems, reuse and recovery. It is recommended that practitioners seek guidance from a qualified Professional. For greywater systems, practitioners must comply with the Ministry of Health Manual of Composting Toilet and Greywater Practice (in draft form at this time, March 19, 2015).

2.5. PRIVIES AND COMPOSTING TOILETS

Pit privies are not allowed under the SSR; however, vault privies may be permitted by the health authority as a holding tank. Also, pit privies may receive health authority approval for use within temporary work camps, as per the Work Camps Regulation - non-permanent camps (< 1 year) and the BC Guideline for Work Camp Operations (in draft form as of March 2015).

Privies were permitted under the former Sewage Disposal Regulation (in effect until May 31, 2005), and a number remain in operation. Privies permitted under the former regulation must be upgraded, repaired or replaced when they no longer function, if they are potentially creating a health hazard or as required by a Health Officer.

These guidelines establish the minimum requirements for repair, upgrade, or construction of privies by ROWPs:

- a) Practitioners must ensure compliance with all regulations applicable to privies and any direction from a Health Officer.
- b) Practitioners must ensure at least 90 cm of vertical separation from the bottom of the privy excavation to any permanent or seasonal high water tables.
- c) Practitioners must ensure at least 30 m horizontal separation from a privy to any source of domestic drinking water and at least 15 m from any freshwater body.

For composting toilets, practitioners must comply with the Ministry of Health Manual of Composting Toilet and Greywater Practice (in draft form as of March 19, 2015).

2.6. STANDARD PRACTICE AND THE SPM

The SSR indicates that to determine whether the plans and specifications, system construction and the system maintenance plan are consistent with standard practice, an authorized person "may have regard to the Ministry of Health Services' publication "Sewerage System Standard Practice Manual", as amended from time to time." This establishes the SPM as a primary source of standard practice guidance but also anticipates that other sources may be used.

This inherent versatility in the regulation is required to support advanced design approaches (i.e. custom design, performance based design or innovative design) by Professionals. It is highly recommended that ROWPs **not** use those advanced design approaches, except with guidance

and documented support from a qualified Professional. Design approaches that fall outside of the prescriptive or semi prescriptive standards of the SPM Volume II are considered “advanced design approaches.”

2.6.1. ROWPs must use the SPM

The SPM was developed for use in British Columbia and it forms the basis for industry standards of planning, installation and maintenance. The ASTTBC has mandated that ROWPs must use the SPM as their primary source of practice guidance.

The SPM is a living document and is subject to change from time-to-time. Practitioners must use the current version of the SPM unless different versions are permitted by ‘sunset’ clauses as set out within the most current version of the SPM.

Where a ROWP utilizes a standard other than the current BC SPM, that alternative standard should be one of those listed within the BC Standard Practice Manual (SPM section IV- 8). The ROWP must provide a rationale for this decision and demonstrate that the other standard of practice is a recognized practice standard resulting in a system having an equal to or better performance level than by using the BC SPM. As with any deviation from the BC SPM or use of other standards, the burden of proving diligence rests upon the ROWP.

2.6.2. Adherence to the SPM

ROWPs are cautioned that any deviations from SPM standards will result in increased exposure to liability. Any deviations from SPM standards will also be a key consideration in any disciplinary procedure or other formal review process by the ASTTBC.

Critical standards

The SPM volume II includes critical standards. Those standards are linked. Proper application of any of those individual standards depends on full compliance with all other standards within volume II. For example, when a hydraulic loading rate (from II- 5.5) is used to determine the area of a dispersal system, then reasonable assurance of adequate performance is achieved only if the linear loading rate standard (from II- 5.6) is used to determine the minimum length of the dispersal system.

Where deviations from Volume II standards are necessary, it is highly recommended that the ROWP seek guidance and documented support from a Professional or refer the project to a Professional. Identification of the departure and rationale for the departure, along with mitigating strategies to ensure performance and lifespan are not adversely affected, must be included in the Record of Design and should be supported by written advice from a Professional.

Guidelines

The SPM volume III includes guidelines. Volume III is intended for use alongside volume II, to explain the standards in volume II and provide guidance on how to meet the volume II standards.

Practitioners may consider departures from volume III guidelines without written advice from a Professional. Where departures from volume III guidelines are necessary, the ROWP must provide a written rationale within the Record of Design, that identifies the departure, explains why the departure is necessary, along with mitigating strategies to ensure performance and lifespan are not adversely affected.

Departures anticipated by the SPM

Note that volume III includes guidance for departures from volume II standards in a few specific circumstances:

- a) III- 2.1.1 describes emergency measures to alleviate a health hazard, as an alternative to immediate system replacement as per Volume II standards.
- b) III- 2.1.2 describes re-use of existing components in repair situations, as an alternative to full system replacement as per Volume II standards.
- c) III- 2.1.4 describes conditions and an evaluation procedure for new use (i.e. increased design flow) of existing systems, as an alternative to full system replacement as per Volume II standards.
- d) III- 2.2 describes special circumstances (e.g. seasonal use, off grid, etc.) that could lead an Authorized Person to consider deviations from Volume II standards.
- e) III- 5.4 describes the application of horizontal separation standards, with guidance on reduced separation distances to upslope and side slope drains or breakouts, sleeved water lines and similar variables related to horizontal separation standards.
- f) III- 5.6 provides guidance for application of Volume II linear loading standards, including specific strategies for deviations from Volume II linear loading rates on sites where available length is constrained.

Linear loading departures

Where a ROWP is unable to reasonably achieve the SPM linear loading rate standards and guidelines due to site constraints or particular conditions, it is recommended that the ROWP seek guidance and documented support from a qualified Professional. Identification of and rationale for departure, along with mitigating strategies to ensure performance and lifespan are not adversely affected, must be provided.

ROWP responsibility for departures

ROWPs are cautioned that these ROWP Practice Guidelines do not constitute approval of any deviations from SPM standards or guidelines. The responsibility for any deviations from the SPM rest solely on the Practitioner.

3.0 ROWP PRACTICE IN ONSITE SEWERAGE

3.1. ONSITE WASTEWATER REGISTRATION PROGRAM

The SSR stipulates that Authorized Persons must be registered with an accrediting body. The Applied Science Technologists & Technicians of BC (ASTTBC) provides accreditation of ROWPs. ROWPs are registered by the Onsite Wastewater Registration Board (OWRB) under the registration policies of the Onsite Wastewater Registration Program (OWRP) and ASTTBC.

3.1.1. Registration categories

The ASTTBC has established three categories of ROWP as authorized persons under the SSR:

- a) Planner, responsible for site and soil evaluation and design of Type 1 & 2 systems
- b) Installer, responsible for installation of Type 1 & 2 systems, and
- c) Maintenance Provider, responsible for maintenance of Type 1 & 2 systems

The ASTTBC provides voluntary registration with 'type 3' designations for Installer and Maintenance Provider. These are not mandated by the SSR. These designations are intended as a guide to assist Professionals for selecting ROWPs with suitable experience and knowledge to work on type 3 systems. The Installer or Maintenance Provider so registered must still be supervised by a professional.

The ASTTBC provides voluntary registration, not mandated by the SSR, for ROWPs providing inspection services:

- a) Private Inspector, Residential
- b) Private Inspector, Commercial.

3.1.2. OWRP Policy

ROWPs must familiarize themselves with and comply with OWRP Policy. Refer to <http://owrp.asttbc.org/p/documents/OnsiteWastewaterRegistrationProgramPolicy.pdf>

3.1.3. Oversight of Construction, Construction Review

The oversight requirements within the OWRP Policy are highlighted here. OWRP Policy includes specific requirements for oversight of ROWPs, trainees, contractors, and homeowners. Note that a ROWP must be in charge and take full responsibility for actions taken by non-Authorized Persons engaged in wastewater activity or tasks, to ensure that they perform their work in accordance with requirements of the SPM.

For oversight of non-authorized persons (including non-ROWP staff, sub-contractors or homeowners) a ROWP must be in charge and take full responsibility for actions taken by the non-authorized persons engaged in wastewater activity or tasks, to ensure that they perform their

work in accordance with requirements of the SPM. The oversight requires that the ROWP must be present on site while the work is being performed (continuous supervision required).

Planners are responsible for providing details, specifications, and interpretation of their design to aid an Installer through the construction work. A Planner cannot provide supervision or direction for the installation of a system by a non-AP unless they the Planner also holds certification as a ROWP Installer.

In order to certify the construction meets the intended design, the Planner must undertake construction reviews at key points through the construction process, and set these requirements within the design specifications in order that any Installer contracted to construct the system contacts the Planner on record prior to commencing the work, ensures they understand the design as set out by the Planner, and contacts the Planner at all key stages or benchmarks during construction to ensure the work is compliant with the Planner's design. Planners are to conduct system commissioning and testing before completing a Letter of Certification for the system as a whole but should also require a similar Letter of Certification from the Installer with a declaration that all aspects of the system were constructed in the manner specified by the Planner and consistent with the SPM.

3.1.4. Requirements for ROWPs conducting inspections

Any ROWP offering services that assess, review, examine, evaluate, or otherwise provide an opinion on the performance, functionality, or suitability for use of an existing sewage system for a property owner, prospective buyer, or any other party who will make a financial decision based on such an opinion, is considered to be conducting an inspection.

Any ASTTBC member who undertakes the inspection of sewerage systems must comply with OWRP Policy Appendix 'G' – Standard Guidelines for Inspection, and must comply with these ROWP Practice Guidelines.

Any ROWP who undertakes inspection of sewerage systems must have the training, equipment, skills and experience to do so, as specified within the ASTTBC OWRP Policy Appendix G. All ROWPs undertaking an inspection of an existing sewage system must have knowledge of and apply the planning and installation standards in place when the sewage system was constructed (Sewage Disposal Regulation pre May 31, 2205. 2005, SSR after May 31, 2005).

3.2. ALLOWABLE SCOPE OF PRACTICE

3.2.1. Scope of practice for each registration category

ROWPs providing services for site and soil evaluation and design of Type 1 & 2 systems must have registration in the Planning category.

ROWPs providing services for installation of Type 1 & 2 systems or system repair and replacement as defined by SPM Table II- 2, must have registration in the installation category.

ROWPS providing services for maintenance, monitoring and component repair services (as defined in SPM Table II- 2) must have registration in the maintenance provider category.

It is highly recommended that all ROWPs engaged in inspection of sewerage systems have registration in the Private Inspection categories. In any case, those performing inspections must ensure suitable competency and equipment as per section 3.2.2 of these guidelines. Any ROWP who provides Private Inspection services for a system that uses a treatment method classified as Type 3 must have registration in the category – Private Inspector. See section 3.1.4 of these guidelines for additional requirements.

ROWPs must comply with any restrictions attached to their registration. Examples include restrictions that limit the ROWP's scope of practice to type 1, lagoons or gravity dispersal. Other restrictions may be stipulated by the Registrar.

3.2.2. Self-Assessment of Qualifications

ROWPs must undertake work only if they have suitable knowledge, experience and equipment to competently meet the needs of the client.

When considering acceptance of a project, the ROWP should self-assess based on the following factors:

- a) Education in the particular field of practice.
- b) Practical experience with the specific task or project type.
- c) Registration in the appropriate category of practice.
- d) Knowledge of the technology available for use.
- e) Knowledge of the applicable regulations and guidelines.
- f) Honest conviction in his or her ability.

When considering competency in relation to a potential project or when determining appropriate Continuing Professional Development activities, the practitioner should self-assess based on the Occupational Competencies found within the Appendix 'K' of the OWRP Policy. These competencies are updated from time to time. ROWPs are expected to familiarize themselves with the occupational competencies relevant to their registration and to compare these competencies to their knowledge and experience as part of a realistic self-assessment. These competencies are also used to assess practices during disciplinary investigations and Practice Reviews.

3.2.3. Work outside of scope of practice

When a project involves tasks that are outside a ROWP's allowable scope of work (as defined by the SSR, these guidelines and OWRP Policy) a ROWP may either refer the entire project to an AP

with suitable qualifications or may participate in certain aspects of the project under the oversight of a ROWP or Professional who has suitable competence and qualifications.

The AP providing oversight determines the degree of oversight and assumes primary responsibility, however, the ROWP receiving oversight retains some degree of liability and remains obligated to perform work in accordance with the ASTTBC Code of Ethics and in compliance with these ROWP Practice Guidelines.

A ROWP Planner, designing a system with guidance or oversight from a Professional, may act as the AP on record (stamp and submit the filing and certification), only if all SSR restrictions to ROWP practice are adhered to, and provided the Professional provides written advice to the ROWP, and that written advice is included in the ROWP's filing.

3.3. BUSINESS PRACTICES AND THE ASTTBC CODE OF ETHICS

The following sections 3.3.1 to 3.3.9 of this ROWP Practice Guideline are an amplification of Code of Ethics principles specific to ROWP practice. Refer to the Code of Ethics and corresponding Amplification statement within the Code of Ethics – Guidelines for Interpretation. <http://asttbc.org/practice/docs/ASTTBCASETCODEOFETHICS.pdf>

3.3.1. Application

The Code of Ethics is intended to give general statements of the principles of ethical conduct in order that the members of ASTTBC may fulfill their duty to the public, the profession and their fellow members. The Code is a general guide and not a denial of the existence of other duties equally imperative and other rights though not specifically mentioned.

All ROWPs are bound by the Code of Ethics, and should expect their actions to be compared to it during the investigation of a complaint, or during a Practice Review. Failure to abide by the Code of Ethics may result in disciplinary action by ASTTBC and as such, ROWPs are expected to familiarize themselves with the principles and their application.

3.3.2. Specification of equipment and potential conflict of interest

(Principle 4). It is important that a design remains site and project specific, and equipment or components selected are appropriate for the site and use.

Where a ROWP specifies equipment or components within a design, full disclosure of any affiliation or financial benefit realized by the ROWP as a result of the specification must be made to the owner or client.

This disclosure must be made in writing to the client and contained within any estimate, quote or proposal to the client, prior to the parties entering an agreement for the work. The ROWP must obtain a signed and dated acknowledgement by the client, confirming that they have been informed of the ROWPs relationship to the manufacturer or supplier and they accept this relationship.

3.3.3. Warning Against Consideration to Secure Work

(Principle 4 and 7). ROWPs are not to offer to pay or agree to pay either directly or indirectly, any commission, gift, or other consideration in order to obtain work. Neither are ROWPs to accept such payment or gift.

ROWPs are cautioned that accepting gifts from suppliers or manufacturer's such as sporting event tickets, vacations, gift certificates or similar, could be construed as a violation of Code of Ethics Principle 7.

3.3.4. Insurance

(Principle 1). To ensure financial protection of clients ROWPs who provide planning or inspection services are strongly advised to have Errors and Omissions insurance coverage. All ROWPs, including Planners, need Commercial General Liability insurance.

In the event that the ROWP does not have such insurance, full disclosure must be made to the client. This disclosure must be made in writing to the client and be contained within any estimate, quote or proposal to the client prior to the client accepting the ROWPs proposal. The ROWP is to obtain a signed and dated acknowledgement from the client, confirming that they have been informed and wish to proceed.

3.3.5. Contracts with Clients

(Principle 4). While the Code of Ethics does not specifically state that a member must have a written contract with a client, Principle 4 does require members to act judiciously when administering a contract on behalf of their client or employer.

ROWPs are strongly advised to have a written contract with each client that clearly sets out expectations between both parties, scope of work, timetables for deliverables, financial consideration, limitations and exclusions. Such a contract is a significant step toward avoiding misunderstandings that lead to complaints and disciplinary action.

(Principle 5). ROWPs should not undertake a contract for anything other than a firm price, and be cautious of contracts containing contingency fee clauses.

(Principle 5). ROWPs should not submit any proposal to secure an engagement or assignment with a firm price or estimated cost lower than the realistic expected full estimated cost of the proposed engagement.

3.3.6. Project Files

(Principles 1 and 3). ROWPs must retain a hard copy or digital file that contains all documentation associated to a project. If a ROWP becomes involved in a legal action, an investigation by the Practice Review Board or undergoes a Practice Review, and no supporting documents for a project are available, it will be very difficult for the practitioner to defend their actions.

Photographic evidence must be included in the practitioner's files. Photographs should show sites before and after work begins and at key stages of the work. They should be taken in a manner that provides credible evidence to confirm compliance with critical standards and standard practice. Conclusions reached during maintenance service or private inspections should be supported by photographic evidence. Site and soil evaluations should be supported by photographs showing soil conditions (i.e. test pits) and key performance boundaries (i.e. horizontal setbacks, vertical separation).

3.3.7. Continuing Professional Development

Principle 6 of the ASTTBC Code of Ethics requires the ROWP to "keep informed to maintain proficiency and competence, to advance the body of knowledge within their discipline and further opportunities for the professional development of their associates."

The science behind onsite wastewater system planning, installation, maintenance and inspection has undergone significant development in recent history. The ROWP is cautioned that prior training may not be appropriate for use today.

ROWPs are expected to abide by the ASTTBC Continuing Professional Development Policy. A few examples of suitable CPD are listed here:

- a) training sessions and workshops
- b) presentations by suppliers of equipment, products and technology
- c) trade shows and general meetings by industry groups
- d) the ASTTBC annual general meeting

3.3.8. Reporting Hazards and Unprofessional Conduct

(Principle 1 and 9). Principle 1 of the ASTTBC Code of Ethics requires the ROWP to "hold paramount the safety, health and welfare of the public, the protection of the environment and the promotion of health and safety within the workplace."

Principle 9 requires the ROWP to "report to the appropriate agencies any hazardous, illegal or unethical professional decisions or practices by fellow members or others."

As a result of these principles and others, Practitioners are expected to report issues that might affect the public interest, to such groups as the Provincial Emergency Program, the Ministry of Environment, and the local Health Authority. For onsite wastewater practice, identification and reporting of potential health hazards to the Health Authority is a key requirement. For example, any breakout of effluent to surface generally constitutes a potential health hazard and must be reported.

Concerns regarding the actions of fellow Practitioners or Professionals are to be reported to ASTTBC and APEGBC respectively.

The role of health authorities, ASTTBC, and APEGBC regarding health hazards is captured in the Ministry of Health publication 'Health Hazard Communication Guideline', and can be found at <http://www.health.gov.bc.ca/protect/pdf/health-hazard-communication-guideline.pdf>

3.3.9. Adequate Knowledge and Honest Conviction

(Principle 3). When providing comment on a topic, such as through a report or a system plan, the ROWP must carry out work of sufficient thoroughness and have collected sufficient information to support their conclusions.

ROWPs are cautioned that conclusions regarding the operation of existing systems must be supported by exposure and testing of components. For example, existing system performance cannot be diligently determined solely by a visual inspection of the septic tank.

ROWPs are cautioned that conclusions regarding site capability, system selection or system design must be supported by a diligent site and soil assessment, typically including excavation of test pits and soil permeability testing. This applies to estimates, preliminary proposals and quotations.

3.4. USE OF ROWP STAMP

The following is an amplification of The ASTTBC Guidelines for Using the Professional Seal and the OWRP Policy Section 5.0 – ROWP Stamp. ROWPs must familiarize themselves with those policy documents.

3.4.1. Use of stamp

Use of the stamp is protected under the Regulations of the Applied Science Technologists and Technicians Act. The stamp can be used only by a ROWP registered and in good standing.

The right to use the stamp is a privilege granted to ROWPs by ASTTBC under the ASTT Act and the privilege can be removed if not used in an ethical or professional manner.

3.4.2. Ownership of stamp

The charge for a member seal or stamp is a lease fee for an indefinite period, provided the ROWP remains in good standing with ASTTBC. This seal or stamp remains the property of ASTTBC and must be returned promptly at the request of the Registrar of ASTTBC.

3.4.3. Application of Stamp

The stamp must be applied in a clear and legible manner. The normal signature of the ROWP must be clearly shown in the space provided. The use of initials without surname is not allowed. A notation should be added, noting the date the stamp is affixed.

The stamp may only be affixed to documents prepared by the ROWP or prepared under his/her direct supervision, with the following exceptions:

- a) If a ROWP adds notations or hand drawn elements on a site plan or other document prepared by others, and that document is attached to a report such as a filing or sewerage certification, the ROWP stamp must be affixed with a notation indicating the original author or source and "notations added by ____" or similar.
- b) If a ROWP reviews a document prepared by another ROWP, and that document is attached to a report such as a filing or sewerage certification, the ROWP stamp must be affixed with a notation indicating "reviewed by ____" or similar.
- c) If a ROWP reviews and includes a building plan or other supporting document, the ROWP stamp must be affixed with a notation indicating "reviewed in relation to sewage system only" or similar. 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.

Use of the stamp is strictly limited to documents describing work or containing information that is within the allowable scope of practice defined by section 3.2 of these guidelines and OWRP Policy.

In general, the stamp must be affixed to documents which:

- a) Transfer technical information, or
- b) Have a technical impact on a third party, or
- c) Have been specifically requested by a client or an authority have jurisdiction.

The following documents require the ROWP stamp:

- a) Health Authority Record of Sewerage form and all attachments included in the filing submission to Health and/or included in the owner's copy of the filing. This includes the site/soil evaluation report, specifications, drawings, record of design.
- b) Health Authority Letter of Certification form and all attachments included in the certification submission to Health and/or the owner's copy of the certification package. This includes the record drawing(s) and maintenance plan.
- c) Installer's Letter of Certification, provided to the AP on record.
- d) Maintenance reports prepared by an authorized Maintenance Provider and provided to the client, Planner, Professional, supplier of treatment technology, or any other party.
- e) Inspection reports (for performance inspections or compliance inspections or any other commentary or opinion on a system) prepared by an authorized Private Inspector or other ROWP, and provided to a client, realtor, building department or any other party.
- f) Any test pit logs, permeability or percolation testing records, field notes, sketches or

other document if that document is included in a filing or certification package or any other report to a third party.

- g) Quotations and project proposals for services related to onsite wastewater.

In general, the stamp should be affixed to each distinct document. For example, each drawing requires a stamp. However, the stamp may be affixed to only the first and last page of a multi-page document such as a record of design or maintenance plan, provided consecutive page numbers are clearly shown on each page.

3.5. Standards for Documentation and Drawings

ROWPs are required to produce many documents as part of their day to day work. Written reports, letters, drawings and other documents must reflect a level of professionalism suited for a Technical Specialist registrant.

Often those documents are created to fulfill an obligation under the SSR, the SPM or the OWRP Standard Practice Guidelines for Inspections, which spell out specific requirements that must be met. In addition, documents must meet a general requirement for neatness, legibility and clarity.

All documents must be carefully proofread, and any spelling, grammar or technical mistakes corrected.

Documents conveying technical information for the design, installation and maintenance of sewerage systems are to be written in a manner that is readily understood by an Authorized Person with entry level knowledge. They must include enough information that an Authorized Person can understand the design concept and application, installation specifications, maintenance requirements, etc. Examples of these documents include site/soil assessment reports, record of design, construction specifications, maintenance plans and associated drawings. Reports written for colleagues can be written from a technical position with the expectation that the audience is familiar with these systems and associated terminology.

Reports intended for building officials, home owners or other clients with limited technical knowledge, should be free of unnecessary technical jargon, and carefully explain the relevant points in such a way that a person with no knowledge of onsite wastewater systems can understand. Examples of these documents include reports of maintenance carried out, performance inspection or compliance inspection reports, and site/soil assessment reports to support subdivision applications.

In general terms, drawings should be created with regard to drafting conventions. Drawings may be created by software or by hand. They must achieve a clear and tidy representation. They must have lettering and dimensioning that is legible. They should generally be drawn to scale, with the scale ratio and dimensioning systems indicated. There must be a title block with the author's

name, date, site location and a drawing title that conveys the purpose of the drawing and the drawing view (e.g. plan view, section, or other appropriate descriptor).

3.6. Portfolio of Work

Practitioners benefit from collecting a portfolio of work. Such a portfolio should include various examples of work product that can be shown to prospective clients and others, to accurately demonstrate competency and work quality. Maintaining a professional portfolio supports continuing professional development by helping to identify a Practitioner's progress of competency development, and provides evidence of diligent professional development.

3.7. Safe Work Practices

ROWPs are subject to the requirements of WorkSafeBC. Practitioners are to be familiar with regulations and best practices related to safety, and take precautions to prevent injury and health risks to themselves and others given the physical, electrical and biological hazards common to onsite wastewater systems.

4.0 PRACTICE GUIDELINES FOR SPECIFIC REGISTRATION CATEGORIES

4.1. PLANNING CONSIDERATIONS

4.1.1. Design options

When reviewing system design options, the Planner shall consider:

- a) Appropriateness of technology, including simplicity, reliability and cost.
- b) For proprietary products, reference should be made to third party testing results, track record of the product in service and relevant peer-reviewed research reports.
- c) Cost of construction.
- d) Cost and complexity of ongoing maintenance
- e) Provisions to facilitate maintenance.
- f) Present or anticipated usage patterns.
- g) Plans for future changes to property or buildings, number of occupants or usage patterns that will effect sewerage.

Typically, a Planner has several design options for system type and configuration that meet SPM standards. A simple, less expensive solution will generally serve the client's interests better than a system with unnecessary complexity or cost. Planners must either specify the system option with lower cost for construction and maintenance, or provide options to the client. When proposing options, the Planner must provide realistic cost estimates for initial construction and long term costs for operation and maintenance. The client should also be informed of

advantages and disadvantages related to system longevity and performance. It is highly recommended that the ROWP obtain a signed and dated acknowledgement by the client, confirming that the client has been informed about options and agrees with the conclusion.

Sewerage lagoons, while allowed in specific circumstances, must not be selected if depth of unsaturated, permeable soil (suitable for dispersal) is 60 cm or more. In those cases, the Planner must specify a conventional in ground or at grade dispersal system.

4.1.2. Pattern of Usage

Patterns of use are an important consideration for both the design and operation of onsite systems. The following parameters should be documented and included in the design process. Special operational requirements need to be included in the operation and maintenance manual:

- a) Variations in use throughout the day, including estimation of required flow equalization.
- b) Variations in use during the week (e.g. schools and churches) including estimation of required flow equalization.
- c) Seasonal variations – periods of high flow followed by very low or no flow (e.g. summer or winter residences, resorts).
- d) Variations in use due to special events (e.g. large gatherings, fairs, concerts, sporting events).

4.1.3. Impact of Climate

Climatic influences such as extremes in temperature or precipitation require special considerations in the design and operation of systems, and in some cases preclude the use of certain systems or provide opportunities for system selection. The following climatic influences should be documented and addressed within the design rationale:

- a) High rainfall rates causing flushing of contaminants and pathogens from sands and coarse grained soils, reduced hydraulic receiving capacity of soil, reduced vertical separation.
- b) Extreme cold temperatures posing risk of freezing within tanks, piping and dispersal systems. Cold temperatures can also severely reduce biological activity and treatment performance.
- c) Dryer climates can provide net positive evaporation, providing opportunities for enhanced evapotranspiration in dispersal systems and for selection of evapotranspiration beds.
- d) Lagoons are allowed only in areas where the climate will provide net positive evaporation.

The SPM provides design guidance for these climatic conditions.

4.1.4. Impact of Isolation

Isolated sites require special considerations in the design and operation of systems, and in some cases preclude the use of certain systems. The following considerations should be documented and addressed within the design rationale:

- a) Intermittent or unreliable electrical power service.
- b) Limited availability of maintenance personnel or high travel costs for maintenance service calls.
- c) Limited accessibility for construction.
- d) High transport costs for certain types of equipment, hardware, aggregates.

The SPM provides design guidance for these isolation impacts.

4.1.5. Timing of Sewerage System Certification

The SSR section 9 (1) requires that a letter of certification be provided within 30 days of completing construction of a sewerage system.

The SPM section III- 3.7 states, *the system is not considered complete until such a time as the Authorized Person has completed a final inspection, and is satisfied that the system is complete and ready to operate. This will include verification that any deficiencies identified by the AP have been fixed or completed. All electrical connections should be complete.*

Questions may arise as to how the 30 day period is determined and at which time certification is required. To clarify the issue, these ROWP Practice Guidelines specify that:

- a) The 30 day period for submission of the Letter of Certification starts at earliest when the system is in full operating condition including all electrical service work, initial operational testing and commissioning.
- b) The 30 day period for submission of the Letter of Certification ends at latest when the system is receiving sewage.
- c) ROWPs must inform clients that they are required under the SSR to discharge sewage only to a sewerage system constructed in accordance with the SSR. A certified system is compliant with the SSR.
- d) To limit liability, the Planner should include in the contract a provision requiring timely completion of any work that depends on the owner (electrical service or water supply are common examples).
- e) After 30 days of usage by the client without certification, the Planner should provide written communication to the Health Authority, copied to the owner, identifying the lack of certification and the reasons for delayed certification.
- f) ROWPs cannot withhold the Letter of Certification from being filed with the health authority due to non-payment for services rendered to owner.

4.1.6. Timing of Construction Start

The SSR states that *before construction of a sewerage system, an authorized person must file with the health authority ...* but does not distinguish between submission of the filing and acceptance of the filing. Health authorities may defer acceptance of the filing for a variety of reasons. To clarify the issue, these ROWP Practice Guidelines specify that ROWPs must not start construction until the filing has been accepted by the health authority and the ROWP has a copy of the Record of Sewerage form with the 'accepted' stamp affixed.

4.1.7. Filing and Certification Documentation

The SSR requires that the filing must include, in a form acceptable to the health authority, owner's contact information, *the type of structure the sewerage system will serve, and the type, depth and porosity of the soil at the site of the sewerage system.* Plans and specifications are also required.

The SPM lists requirements for filings within section II- 3.5.1.

ROWPs must submit filing documents in accordance with those minimum requirements of the SSR and SPM.

The SPM requirements include a 'record of design.' Within that attachment to the filing, Planners must include:

- a) A rationale of design describing how the system type and configuration was selected with regard to site and soil characteristics and SPM standards applicable to system selection and configuration.
- b) Calculations showing how the area of infiltrative surface and system length were determined.
- c) For dosed systems, calculations showing how the dose volume was determined. For timed dose systems this must include calculations for the rest period and dose time.
- d) For pressure dispersal systems, calculations showing determination of the number and spacing of orifices, and a determination of total dynamic head.

The SSR and SPM require APs to attach a record drawing showing the system as constructed. The record drawing should be to scale and must include adequate detail, labelling and dimensions to allow a Maintenance Provider (or other AP) to easily locate every serviceable component of the system. Those components include, but are not limited to:

- a) Access lids for each tank.
- b) Access lid for distribution box (if applicable).
- c) Lawn boxes or other access provision for sewer cleanouts and all observation ports.
- d) For pressure systems, the lawn boxes or other access provisions for force main cleanouts,

lateral isolation valves, and lateral cleanouts.

- e) For dosed systems, the control panel or other provision for flow monitoring.

The plan submitted with the initial filing is not adequate for this purpose. The record drawing must include dimensions with adequate accuracy to locate all components. As a guiding principle, the required accuracy is ± 30 cm. In general, two dimensioning 'lines' are required to most components. For example, a tank lid could be located with a dimension perpendicular to a house wall and a second dimension parallel to the wall, such as from a corner of the structure.

4.1.8. Working with an Installer

When the Planner (AP on record) is not also the installer, the Planner must provide adequate direction to ensure the system is constructed as per the plans and specifications (as filed), and in accordance with the SSR and the SPM. The extent of construction review must be adequate to support the Planner's certification of the system.

The Planner should attend the site:

- a) For a pre-construction meeting, where plans and specifications are reviewed, proposed locations of components are confirmed, and construction techniques are discussed to ensure the system is constructed as intended by the Planner.
- b) At key stages of the work. This should typically include construction review before final backfill of tanks, before cover soil is placed on the dispersal system and a final inspection at system completion.
- c) At system testing and commissioning.

When the Planner (AP on record) is not also the installer, the Planner must obtain, and retain on file, an Installer's Letter of Certification. That document must include the Installer's signed declaration that the system was constructed substantially in compliance with standard practice for installation and as per the specifications and plans provided by the Planner. The Installer's ROWP stamp must be affixed.

4.1.9. Assessments for Subdivision Applications

Planners may provide services to support a client's application for subdivision approval. The subdivision approving officer (person with jurisdictional authority for approval of subdivisions) typically refers the subdivision application to the local Health Authority for an opinion regarding suitability of the site for onsite wastewater dispersal. Health Authorities generally require a site/soil assessment by an Authorized Person as a condition of their recommendation.

The Health Authority guidelines for subdivisions vary for different regions, and are subject to change. Individual Health Officers also have differing approaches and requirements. Planners are cautioned that this work differs significantly from routine planning services related to the SSR and SPM. The work is not limited to determining which system type and configuration will meet

SPM standards. Planners engaged in this work must be familiar with local Health Authority requirements related to subdivision approval.

The Health Authority subdivision guidelines generally specify the required depth of unsaturated, permeable soil (available vertical separation) and the required area of suitable soil, with specific requirements for different proposed lot sizes. Those Health Authority requirements are generally based on historic soil depth and area requirements for gravity dispersal. They are not aligned with current SPM standards. The Planner must conduct the site/soil assessment in a manner that provides adequate information to support conclusions about both the Health Authority guidelines and the SPM standards. The Planner's report must indicate whether conditions on each proposed lot meet the requirements of the local Health Authority subdivision guidelines and must indicate which system type and configuration is required for full compliance with the SSR and the SPM.

ROWPs are cautioned that there is significant exposure to liability for this type of work. Errors can have large financial consequences to clients. ROWPs should ensure adequate insurance coverage for this type of work. The policy conditions should specifically include a description of consulting work in support of subdivision application, making it clear that the work is not excluded. Increased total dollar amount of coverage should also be considered.

ROWPs engaged in consulting work to support subdivision approval must be registered in the Planning category. Also, a Practitioner must, in any case, undertake work only if they have suitable knowledge and experience to competently meet the needs of the client.

The Planner should self-assess to ensure suitable competencies:

- a) Familiarity with local Health Authority subdivision guidelines.
- b) Knowledge about local zoning bylaws and development approval policies/procedures.
- c) Familiarity with additional requirements of the Ministry of Transport and/or other approving agencies for subdivision.
- d) Experience and knowledge related to land development in general. Development issues are inter-related. For example, potential water sources, access provisions and siting of residences are likely to affect sewerage determinations.

Regardless of any specific direction from the Health Authority, the Planner must determine and report whether each individual lot within a proposed subdivision plan has conditions that will allow at least two dispersal systems. For an undeveloped parcel, a primary and reserve dispersal area must be identified. For a parcel with one or more existing structures and sewerage systems, a reserve area must be identified, and each existing sewerage system (if intended for continued usage) must be inspected to confirm adequate performance, condition, size and location as per OWRP Policy - Standard Practice Guidelines for Inspections.

5.1. INSTALLATION CONSIDERATIONS

5.1.1. Timing of Construction Start

Before starting construction, ROWP Installers must have a complete copy of the plans and specifications prepared by the AP on record, and must have a copy of the Health Authority Record of Sewerage System form with the 'accepted' stamp affixed.

5.1.2. Construction Review by the AP on Record

Installer's must notify the AP on record before construction begins, and must provide reasonable opportunity for construction review by the AP on record.

Installers are strongly advised to arrange and participate in a pre-construction review with the AP on record.

The Installer must be familiar with, and construct in accordance with the plans, specifications and direction of the AP on record.

5.1.3. Obligations to Ensure Compliance

Installers must ensure systems are constructed in compliance with the SSR, including the horizontal separation requirements between system components and any well.

Installers must construct systems in accordance with standard practice for installation. The ASTTBC requires Installers to follow the SPM standards and guidelines for installation practices.

Installers are cautioned that they share the professional obligations to construct systems in accordance with critical standards of the SPM. Installers must:

- a) Ensure critical standards for vertical separation and horizontal separation distances are met by the system as constructed.
- b) Report in writing to the AP on record any site or soil condition that prevents installation in accordance with plans or specifications or prevents installation in accordance with critical standards for vertical separation or horizontal separation distances.

5.1.4. Documentation

Installers must record, and retain on file, a log of construction start, key stages of construction and completion.

It is highly recommended that Installers create and retain photographs showing the site before and after construction, and showing key stages of the work in a manner that confirms compliance with standard practice for installation and that confirms construction substantially in accordance with plans and specifications provided by the AP on record.

When the Installer is not also the Planner (AP on record), the Installer must provide the AP on record with an Installer's Letter of Certification and retain a copy on file. That document must

include the Installer's signed declaration that the system was constructed substantially in compliance with standard practice for installation and as per the specifications and plans provided by the Planner. The Installer's ROWP stamp must be affixed.

6.1. MAINTENANCE PROVIDER CONSIDERATIONS

6.1.1. Maintain in Accordance with the Maintenance Plan

When a maintenance plan is included as an attachment to the Letter of Certification, it becomes a regulatory requirement for the owner and a practice requirement for the Maintenance Provider. Maintenance Providers must perform, at minimum, the maintenance and monitoring procedures specified in the maintenance plan.

Maintenance must include a performance evaluation of the dispersal system and associated maintenance tasks. Maintenance must not be limited to assessment and maintenance of only the treatment hardware, except when such maintenance is prescribed by the maintenance plan, and/or when additional maintenance of the remainder of the system is scheduled and completed in a timely manner.

6.1.2. Suitable Equipment

ROWPs must not provide maintenance services unless they have suitable equipment. It is not possible to maintain or assess an onsite system with sufficient thoroughness to produce reliable and accurate conclusions without the proper tools and equipment. Pipe cameras and hand held photographic equipment, along with lifting hooks, probing and measuring tools are the minimum expected, and additional equipment specific to a system may be required.

6.1.3. Maintain in Accordance with Standard Practice

Maintenance Providers must perform maintenance in accordance with standard practice for maintenance. The ASTTBC requires Maintenance Providers to follow the SPM standards and guidelines for maintenance practices. Refer to SPM section III- 7.2 and 7.3.

6.1.4. Obligations to Ensure Compliance

Maintenance Providers are cautioned that they have professional and regulatory obligations to ensure systems do not pose a health hazard, and to report potential health hazards to the Health Authority.

6.1.5. Documentation

Maintenance Providers must provide the owner or client, and retain on file, a report of maintenance in accordance with SPM section III- 7.2.3.

7.1. INSPECTION CONSIDERATIONS

7.1.1. Suitable Competency

ROWPs are reminded that they must not conduct inspections unless they have suitable competency and equipment to do so and must adhere to ASTTBC Standard Practice Guidelines for Inspections. See section 3.1.4 and 3.2.1 of these guidelines. It is highly recommended that Practitioners engaged in inspection work obtain registration as a Private Inspector.

7.1.2. Suitable Equipment

ROWPs must not conduct inspections unless they have suitable equipment. It is not possible to inspect or assess an onsite system with sufficient thoroughness to produce reliable and accurate conclusions without the proper tools and equipment. Pipe cameras and hand held photographic equipment, electronic utility locating equipment, along with lifting hooks, probing and measuring tools are the minimum expected, and additional equipment specific to a system may be required.

7.1.3. Standard Practice for Inspections

Practitioners must conduct inspections in accordance with standard practice for inspections. The ASTTBC requires Practitioners to follow the OWRP Policy Appendix 'G' – Standard Practice Guidelines for the Inspection of Onsite Wastewater Systems. That guideline sets a recognized standard for inspections conducted by all ROWPs, accepted by the ASTTBC Practice Review Board. It provides guidelines for inspection that create consistent, thorough, and defensible practices designed to protect both the consumer and the ROWP. The ASTTBC Guideline is considered the minimum standard; other sources of standard practice may be used for inspections provided the outcome meets or exceeds the requirements of the ASTTBC Guideline (i.e. scope of work, photographic record, documentation and reports).