**5.11 Technical Criteria for Produced Water Pipelines**

**5.11.1 Scope and Definition**

1. These criteria of this section contemplate pipelines (flowlines, lines) used to transport produced water (formation water, flowback) and/or recycled/treated water to or from various locations after separation from the oil and/or gas. Locations may include, but are not limited to, the following:
	1. Water loading point
	2. Point of discharge to a pit
	3. Permitted point of discharge to surface water
	4. Injection/disposal wellhead
	5. Recycling/treatment facility
2. For the purpose of this section the term, “produced water pipeline” is used to capture the various types and purposes of these lines. Where appropriate, states may consider adopting a definition for such lines that is consistent with the risk profile of the fluids being transported.
3. States may consider several factors when determining a fluid’s risk profile, such as constituents of the fluid, potential release quantity, and potential impact to the environment.

**5.11.2 Siting, Permitting, and Financial Assurance**

1. States should have information on the location, purpose, capacity, age, and material type of produced water pipelines.
2. Siting of produced water pipelines should be designed to minimize or avoid impact on natural habitats and wildlife designated sensitive or protected.
3. Where appropriate, states should differentiate between buried lines and above-ground lines.
4. Where appropriate, States should differentiate between temporary and permanent lines.
5. States may consider requiring financial assurance for produced water pipelines, commensurate with the risk profile of the fluids being transported and proximity to environmentally sensitive areas. Financial assurance may be separate from, or incorporated as part of, a broader financial assurance requirement.

**5.11.3 Construction and Operational Requirements**

1. Rules should differentiate between above ground/overland/temporary lines and buried/permanent lines.
2. Pipelines should be constructed and operated in compliance with the manufacturer’s specifications, the state’s mechanical code, and other applicable industry standards.
3. Pipelines should be subjected to a pre-operational hydrostatic integrity test. Additional hydrostatic integrity testing should be required if the pipeline is moved, altered, or repaired.
4. States should require integrity testing for pipelines after an appropriate duration of service, based on criteria such as the type and material of the pipeline, and the fluid being transported. The method of integrity testing should be appropriate for the type of pipeline; including but not limited to, hydrostatic, data metering, visual inspection, and non-destructive testing.
5. States should require operators to maintain documentation of integrity testing, and provide documentation upon request.
6. There should be a means of accounting for and reporting leaks and waste quantities transported by pipeline as discussed in Section 5.10.2.4.
7. States should consider requiring depressurization and duration limits for temporary lines not in continuous operation.
8. Buried/permanent lines left in place should be purged, physically disconnected, and capped when abandoned. Buried lines left in place should be cut off below ground.

**5.11.4 Spill Response and Remediation**

1. Contingency planning and spill risk management should be addressed in accordance with the criteria of Section 4.2.1.
2. Site remediation should be addressed in accordance with the criteria of section 6.6.2 as appropriate.

**Note: red text in the following sections has been added or changed to harmonize the existing Guidelines with the new language of Section 5.11.**

**Section 5 - Technical Criteria**

## **5.1 General**

These technical criteria for E&P waste management practices address waste characterization, waste management hierarchy, pits, land applications, produced water pipelines, tanks and centralized and commercial facilities. In most cases, these criteria are general in scope. States should establish and implement specific performance standards and design specifications based on site-specific or regional differences in geology, hydrology, climate, and waste characteristics. State E&P waste management programs should include the following general provisions as requirements:

**a.** Locations and elements used for the storage, disposal, or transport of wastes derived from the exploration and production of oil and natural gas should be operated and managed at all times to prevent contamination of groundwater, surface water, soil, and air with the goal of protecting public health, safety and the environment, and preventing property damage.

**b.** Facilities and sites operated specifically for the storage or disposal of exempt E&P wastes should not receive, collect, store, or dispose of any wastes that are listed or defined as hazardous wastes and regulated under Subtitle C of RCRA, except in accordance with state and federal hazardous waste laws and regulations.

**c.** Disposal of E&P wastes into landfills may be considered. If such disposal is allowed, it should only be allowed where the landfill is designed to contain such wastes, and the E&P wastes contain no free liquids and are not mixed with non‑exempt wastes prior to disposal.

**d.** Technical criteria for siting, construction, and operation of E&P waste disposal, storage and transport locations and elements should be flexible enough to address site-specific or regional conditions based on findings by the regulatory agency.

**e.** Siting Criteria

 i. States should incorporate siting requirements in statewide rules for pits, landspreading, landfilling and burial, and waste reclamation facilities. Area-wide rules or site-specific permits may contain additional siting conditions.

 ii. No E&P waste management facility should be located in a flowing or intermittent stream.

 iii. Where necessary to protect human health, new E&P waste management facilities should not be located in close proximity to existing residences, schools, hospitals or commercial buildings. The need for minimum distance criteria from residences or other buildings to the boundary of E&P waste management facilities should be considered.

 iv. Generally, applicable siting requirements should address such factors as depth to and quality of groundwater, wetlands, floodplains, topography, proximity to existing drinking water supplies and wells, geology, geologic hazards, and other environmentally sensitive areas.

 v. Siting of E&P waste management facilities should be consistent with applicable land-use requirements.

**6.6.2 Site Remediation**

The extent of surface remediation of an abandoned site should be determined based on surface and subsurface resources and land use. Consultation by the state regulatory agency with the surface owner, surface tenant, and other federal, state and local agencies, as appropriate, should take place prior to remediation.

As appropriate, abandoned sites should be re-vegetated in accordance with state regulatory agency rules, and with consideration given to recommendations from the surface owner, surface tenant, and federal and local agencies. As appropriate, soil should be evaluated to determine if hydrocarbons, produced water[[1]](#footnote-1), chemicals, or NORM were spilled or leaked, and to determine necessary remediation.

Surface equipment or materials on an abandoned site should be removed, and salvaged when possible, unless the state determines otherwise. Procedures should be identified for handling NORM, if present. Due to the expense and potential damage to the land, there may be situations where equipment or materials would not be removed, e.g., a gathering system might be abandoned in place with appropriate protection. When reclaiming a pit, the state should determine the contents of the pit and how the pit can best be remediated. Once emptied, cleaned and tested as appropriate, pits should be backfilled and contoured to prevent erosion from or ponding of surface water. Monitoring wells at an abandoned site should be as necessary to protect groundwater resources. The state should develop additional remediation criteria for commercial disposal sites, as appropriate.

**Section 11 - Reused and Recycled Fluids**

**11.4.1 Pipelines**

Pipelines used to transport produced water should be addressed in accordance with the criteria of Section 5.11.

1. There was discussion about the appropriateness of including “produced water” in this list. The intent was to create a stronger tie to the cross-reference in Section 5.11.4. [↑](#footnote-ref-1)