Regulatory Risk

Mobile home parks with private drinking water and wastewater systems provide their present owners and future buyers with a unique set of challenges when compared with parks that are on city drinking water and wastewater systems. Some of these challenges are regulatory risks, operational and maintenance costs, capital expenditures, proper managerial over sight, and liability exposure. Regulatory risk will be defined and a brief outline of some past and future regulations will be given for drinking water and waste water to illustrate the potential financial impact of these regulations. Then ways to limit and prepare for regulatory risks will be offered.

Regulatory risk is the ever moving bar of compliance. Compliance with government regulations is never a static target and they are constantly multiplying and becoming ever more stringent. In 1986 the EPA had 22 regulated contaminants in their drinking regulations today that number has risen to 91. The challenges of operating a business in this environment are not for the faint of heart.

I hope that we would all agree that having safe drinking water and a clean environment is a basic human right. Regulators have the admirable task of implementing and enforcing the Safe Drinking Water Act and the Clean Water Act. The general principal is that drinking water must be clean and safe and that our rivers and streams be clean and free of pollution. The limits on contaminants and pollutants are generally health (both human and aquatic organisms) based, however, consideration of the economic burden and technological feasibility of implementation is weighed before adoption. The end result of this push for safer drinking water and cleaner rivers is that operational and capital expenditure costs are rising in an unpredictable and erratic manner.

The EPA was tasked with enforcing and implementing both the Safe Drinking Water Act and the Clean Water Act. States were given the opportunity to take primacy[1] for implementation of both Acts. Most states[2] have taken primacy for the Safe Drinking Water Act but there still are multiple states that have not taken primacy over the Clean Water Act. It is important to understand what regulatory frame work a specific mobile home park is under. The Safe Drinking Water Act classifies[3] water system based on the number of connections, frequency of use (for our purposes we will limit our discussion to parks that have year round occupancy), and complexity of water treatment. A water system is considered a public water system if there are more than 3 connections (think homes) any park with 4 or more homes falls under the purview of the Clean Water Act. 4 to 14 connections are regarded as a non-community and have a lower level of regulation and oversight. 15 and up connections are considered a community water systems. For our purposes we will limit this discussion to community water systems. Wastewater systems are generally classified by the volume of wastewater produced and where it is disposed of. Generally

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[1] Primary enforcement authority, or "primacy"

[2] Wyoming is the only state that does not have primacy over their public drinking water systems

[3] **Public Water System Classifications (different states have slightly different names for non-community systems)**

- **Community Water System**: A water system which supplies drinking water to 25 or more of the same people year-round in their residences. Examples are cities, towns, subdivisions, mobile home parks, and the like.
- **Non-transient Non-community Water System**: A water system which supplies water to 25 or more of the same people at least six months per year in places other than their residences. Examples include schools, hospitals and work places.
- **Transient Non-community Water System**: A water system which provides water in a place such as a restaurant or campground where people do not remain for long periods of time.
- **State Regulated (NonEPA) Water System**: Water systems which provides water to small residential communities between 4 and 14 connections, or serves from 10 to 24 persons a day at least 60 days a year, or is licensed by the Health Division or delegate county health department but is not a Transient Water System

systems that produce less than 2,500[4] gallons per day and that keep the waste water onsite are regulated by the local county or other regional government much in the same way they would a single household. Many regulators use either a 70 gallons per day/ per person formula or a blanket 200 to 250 per home / per day number for classification purposes. Practically this means that parks with more than 10 to 12 homes would fall under EPA regulations. The next consideration is where the treated waste water is disposed of. There are two options as to which regulatory basket the park is placed in, either in a water of the state (stream, river, wetland, lake or leading directly to one of the above) or not to a water of the state (infiltration in to the ground via a leach field or onsite irrigation or other means). Disposal of the treated wastewater in a water of the state requires what is called a National Pollutant Discharge Elimination System (NPDES) permit, while a system that does not discharge to water of the state requires a Water Pollution Control Facilities (WPCF) permit. WPCF permits often carry the name of the particular state under which they are regulated (i.e. OWPCF Oklahoma water pollution control facilities). Many mobile home parks should be technically regarded as WPCF systems but have not yet received that classification due to the fact that they were constructed under local jurisdiction prior falling under EPA regulatory authority. Thus many parks are "grandfathered in" under local jurisdiction not EPA's regulatory frame work however when a substantial component of the wastewater system fails it is required to apply for a WPCF permit[5]. The bottom line is if you have more than 10 to 12 homes in a park it is only a matter of time before the park comes under EPA's regulatory frame work. For states that have not taken primacy over the Clean Water Act the federal EPA through its regional offices are tasked with enforcement of NPDES permits. WPCF and NPDES permit parks will be the realm of this discussion.

The typical pattern is that new regulations are proposed at the federal level, then put out for comment by stake holders and the scientific community. After this comment period modifications may be made and adoption of the new rule is scheduled. The states that have taken primacy then begin implementation and enforcement of the new rule.

Wastewater

Risks inherent with a WPCF or NPDES permit.

- Must be renewed every 5 or 10 years
- Most require a system to connect to regional sewer system should it become available. This could require the park to connect to the regional sewer system right after a large capital expenditure thus not allowing for an opportunity to recoup the capital invested.
- May allow the permit to be reopened if conditions change…
- May allow the permit to be suspended or revoked if permit conditions are violated

A few specific risks are increased permit conditions requiring nutrient removal, lower levels of of the amount TSS[6] or BOD[7] allowed in the treated wastewater, receiving water change in classification (i.e. river being classified as sensitive to temperature, ph, or nutrients), seepage tests for lagoons, biosolids

[4]Oklahoma and some other state have different gallons per day threshold number to be considered a small system. Oklahoma is 5000 gallons per day.

[5]States classify and regulate WPCF type systems in a rather non uniform fashion as they are dealing with the ramifications of all the systems that are "grandfathered in". There are many lagoons that fall in this "grandfathered in" classification. Many are of these lagoons are a single pond and they have increasingly become the target of regulatory scrutiny.

[6] Total suspended solids

[7] Biochemical oxygen demand

levels in lagoons or infiltration ponds and infiltration and intrusion for the collection pipe lines limits being imposed. Nutrient removal, seepage tests for lagoons will be discussed in more detail.

Nutrients

Many WPCF and NPDES permits do not currently require the removal of nutrients however some have already implemented permit conditions requiring that nitrates be removed. Nutrients (nitrates, and phosphates) are very harmful to aquatic life in a receiving water. These nutrients cause algae blooms which use up large quantities of oxygen, the algae then dies and further oxygen is consumed in their decomposition. This lack of oxygen causes many fish and other aquatic species to die. Additionally, the drinking water is contaminated with these nutrients. Elevated levels of nitrates in drinking water cause methemoglobinemia or blue baby disease. The nitrates block the bloods ability to transport oxygen. Nitrate removal is coming or has already arrived for many wastewater systems. For package plants (activated sludge treatment) this means modifying or completely replacing the whole treatment plant. Modification to an existing facility would typically mean the addition of one or two basins, mixers, and chemical injections pumps to the treatment system. These are classified as a major modification requiring engineering, plan review and approval before construction can be done. This could cost $150,000 to $300,000 however I have seen proposals to modify an existing facility to remove nitrates cost $600,000. For $600,000 a complete new package plant could theoretically be purchased that would have the capability to remove nitrates. As far a nutrient removal in a lagoon treatment system very little nitrates are removed. Additional treatment will be required to remove nitrates. There are several approaches (trickling filter, aeration) that could be used but the bottom line is significant capital (over $100,000) will be required. Any modification to a lagoon treatment system to remove nitrates would be a major modification requiring engineering, plan review, and approval. It is prudent to develop a plan for the eventuality that nitrate removal will be required and build the capital reserves for the project. Very few permits have begun to require the reduction of phosphates but it is likely that many will in the next 10 to 30 years.

Seepage tests for lagoons

Many of the lagoons in mobile home parks were installed because they were the most economical to build and operate. Most were constructed by building ponds(s) usual 4 to 7 feet deep out of native soil. Little consideration was given to the permeability of the native soils. This creates a situation where large quantities of untreated or limitedly treated wastewater percolates out the bottom of the pond and finds its way into the ground water. Many jurisdictions have begun to require seepage tests where the amount of water that seeps out of the pond is measured. Idaho limits the seepage rate to 6,800 gallons per acre for ponds constructed prior to 2007 and 3,400 gallons for ponds constructed after 2007. Additionally, in Idaho seepage tests will be required every 10 years after the initial test. If the lagoon fails the seepage test they will be required to be remediated and abandoned. In Oklahoma existing total retention lagoons (lagoon with onsite disposal of the treated wastewater) are limited to a seepage rate of 500 gallon per acre (all new lagoons must meet this standard). If seepage above this amount is discovered self-reporting to the Oklahoma DEQ is required. If the owner wishes to replace and failing lagoon most likely a new lagoon will need to be constructed with a plastic liner. I have seen a proposal for a 50 space park to build a new

lagoon with plastic liner coming in at over $1,000,000. In addition to seepage tests some jurisdictions require monitoring wells be placed around the lagoon to monitor for contaminants (nitrates,…) It may be prudent for owners of lagoons to be preemptive and install monitoring wells to provide documentation to prove they are not polluting the surrounding ground water. The day will come requiring all wastewater systems that dispose of their treated water onsite to monitor (primarily for nitrates) either their water before the infiltration systems or to monitor the infiltrations system with monitoring wells (primarily for nitrates). It has already come for some systems.

Drinking Water

Some examples of new and game changing regulations in the drinking water field are: The lead and copper rule, the ground water rule, revised coliform rule, and the reduction in allowable level of arsenic. Two will be examined in detail: arsenic, and the ground water rule.

Arsenic maximum allowable level history

In 1996 the EPA was tasked by congress to propose a new arsenic standard by 2000. The maximum allowed level in 1996 was 50 ppb (parts per billion). The EPA proposed several levels 3ppb, 5ppb, and 10ppb. These proposals were put out for public comment and the result of this process was the adoption of the 10ppb standard. All public water systems were tasked with complying with the 10ppb standard by 2006. The result was that many systems were required to spend large sums of money to purchase, install and operate treatment systems to meet this standard. Many small systems spent $20,000 to $50,000 to install these treatment systems and thousands of dollars a year to operate them. While many larger systems spent multiple hundreds of thousands of dollars. There still are water systems that have yet to or are struggling to comply with this standard. The take away was that there was a 10 year warning to this coming regulation and that comments from the water systems that had to implement this standard convinced the EPA to adopt the least strict of the standards.

Ground Water Rule

In 2006 the EPA adopted the Ground Water Rule. Enforcement was on a state by state level with many states starting implementation in 2009. The purpose of this rule was in the EPA own words “The GWR establishes a risk-based approach to target ground water systems vulnerable to fecal contamination. Ground water systems that are at risk of fecal contamination must take corrective action. Corrective action reduces potential illness from exposure to microbial pathogens. The rule applies to public water systems that use ground water as a source of drinking water.” The bottom line is that any system that was labeled as having an aquifer defined as “sensitive to contamination” and that had a known fecal source with in a two year travel time had to comply with this new regulation. The ground water source could be labeled as “sensitive” due to geological characteristics or repeat occurrences fecal coliform bacteria in water samples. Compliance requires 3 log (99.9 %) removal of e-coli, giardia, cryptosporidium, and 4 log (99.99) removal of viruses. Viruses are the most difficult to treat and remove. The traditional approach to killing microbial contamination and viruses is with chlorination. Microbial contamination is rendered inactive with relatively low levels of chlorine provided adequate contact time is allowed. For example with a 1.0 ppm (part per million) free chlorine level and 112 minutes of contact time (water temp 10.0 C and ph of 7) will render 99.9 percent of giardia contaminants inactive however viruses require additional

treatment to remove them (either increase contact time, increased chlorine levels or filtration). The practical ramification for systems that are required to comply with the GWR are substantial expenditures to increase their tank sizes (additional contact time), and/or the installation of filtration equipment, and additional operational costs. Free chlorine levels must be measured daily for systems with populations of 3,300 or less.

The real scary part of this rule is that regulators have substantial latitude to determine if an aquifer is "sensitive to contamination". The State of Pennsylvania determined that because of the geology (karst limestone) of their state that **ALL** ground water in the state is "sensitive to contamination" and therefore all community water systems (15 or more connections) are required to have 4 log removal of viruses and daily testing of chlorine levels.

Ways to limit the impact of and prepare for the coming regulations:

- Don't buy parks with private water and wastewater systems.
- Only buy parks that have the ability to connect to city water and sewer should the parks systems fail.
- Know what regulatory classification your park falls in and what is required
- Stay compliant and build good relations by running the park professionally, self-reporting violations when they happen. Noncompliance breeds ill will and brings increased scrutiny. Remember regulators are people and generally have large numbers of systems to oversee. If they know you care, are professional, and responsive they will put their time and energy elsewhere. Generally speaking mobile parks are considered small systems and general stay off the radar unless there is a history of non-compliance and neglect.
- Stay up to date on what is happening with drinking water and wastewater regulations
- Consider becoming licensed to operate the systems yourself as an educational experience this will help you immensely with managing the operation of the drinking water and wastewater systems.
- Be aware of permit renewal terms. Do not allow the permit to expire. Usually an application for a renewal should be made at least 1 year prior to the end of present term.
- Be aware of the permit requirement to report on certain contaminants with no actual limit set. This usually means that they are preparing to change the permit conditions.
- Maintain Large Capital reserves
- Purchase at the correct price
- Purchase with owner finance terms with no recourse to limit liability in the short term should the treatment plant or lagoon fail within a couple years of purchase.
- Make sure there is adequate space for a replacement treatment facility should you have to replace a lagoon (a typical 100 space park might need the area to build 4 ponds that are ½ acre each), infiltration gallery or package.
- Be prepared to offer owner financing when selling the park