



Submitted by email to tvanholland@tetoncountywy.gov

April 23, 2020

Ted Van Holland, P.E.
Teton County Engineering Department
320 S King St.
Jackson, WY 83001

RE: COMMENTS ON PROPOSED REVISIONS TO TETON COUNTY SWF REGULATIONS

Dear Mr. Van Holland:

We are pleased to submit the following comments on the proposed revisions to Teton County's small wastewater facility (SWF) regulations. The existing SWF regulations were adopted by the Teton County Board of County Commissioners (BCC) on July 6, 2010. Amendments to Wyoming Department of Environmental Quality (DEQ) regulations governing wastewater facilities necessitate revisions to the county's regulations.¹ Overall, although the proposed revisions contain a number of requirements likely to achieve environmental benefits, they lack many basic safeguards recommended by the U.S. Environmental Protection Agency (EPA) in its Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems.² The threat of significant impacts to both ground and surface water from a proliferation of residential septic systems in Teton County highlights a need for bold and decisive action to better protect public health and the environment in Teton County.

¹ The Delegation Agreement between Wyoming DEQ and the BCC (dated January 25, 2018) states that "it is the intent of the Teton County Engineering Department, acting through the Sanitarian, to prepare a revision of the current rules and regulations in 2018, to more closely align in structure and content with Chapter 25." See Delegation Agreement, Attachment D.

² Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems. 2003. Ebook. Washington D.C.: Office of Water Office of Research and Development, U.S. Environmental Protection Agency.

<https://nepis.epa.gov/Exe/ZyPDF.cgi/20009NAM.PDF?Dockey=20009NAM.PDF>

I. DESCRIPTION AND INTEREST OF PARTIES

Originally formed as Friends of Fish Creek in 2014, Protect Our Water Jackson Hole was established in response to increasing nutrient pollution in the Jackson Hole region. With over 500 supporters in Teton County, Wyoming, our mission is to serve as a powerful advocate for reducing nutrient pollution and protecting water quality in Jackson Hole, Wyoming, now, and for the future.

Since 1979, the Jackson Hole Conservation Alliance has worked as a watchdog to keep Jackson Hole wild and beautiful. The results of our work are all around us, most of which are things we *don't* see today - whether that's a dam that would have flooded Oxbow Bend or a hotel that would have obliterated the historic Cafe Genevieve block. Our grassroots advocacy relies on nearly 2,000 members who share a belief in our mission to protect the wildlife, wild places, and community character that make this place so incredible.

Established in 1967, the Wyoming Outdoor Council is the state's oldest and largest independent conservation organization. Our mission is to protect Wyoming's environment and quality of life now and for future generations. With over 750 members and supporters in Teton County, our organization has a significant interest in the outcome of this rulemaking.

II. ORGANIZATION OF THESE COMMENTS

Our comments begin with a background and overview in Section III, followed by a detailed review of the proposed revisions in Section IV. This section consists of three parts: Part 1 identifies and discusses proposed revisions that may have environmental benefits. Part 2 identifies proposed revisions that signal a retreat from environmental protections. Part 3 provides a detailed section-by-section review of the proposed revisions. In each of these parts, we provide comments, ask questions, and offer suggestions. In Section V we offer a number of recommendations for the county's consideration, including a new requirement for inspections and maintenance of existing septic systems, and adoption of EPA's national guidelines as an appropriate approach for the revision of the county's SWF regulations. Finally, in Section VI, we urge the county to move expeditiously to develop a comprehensive wastewater management plan to guide future decisions and actions in Teton County.

III. BACKGROUND

Teton County is confronting a range of water quality problems. Drinking water in the Hoback Junction area is unsafe for human consumption due to high concentrations of nitrates that exceed the EPA's maximum contaminant level (MCL) for drinking water. These exceedances violate Wyoming DEQ's groundwater standards which require that the quality of domestic water supplies be maintained for domestic use.³ Septic systems are a known source of nitrates and are believed to be responsible for the Hoback drinking water standard

³ See DEQ Water Quality Rules and Regulations, Chapter 8, Section 3(c) ("Water being used for a purpose identified in W.S. 35-11-102 and 103(c)(i) shall be protected for its intended use and uses for which it is suitable.")

exceedances and nuisance levels of algae in Fish Creek near Wilson, Wyoming. Regarding Hoback Junction, a DEQ official opined that: "I think the Hoback Junction case may be a combination of some lack of oversight in the past," Brough said, "and a high-density of septic systems for the area." ^{4,5}

The effectiveness of septic systems at removing contaminants has been the subject of many scientific investigations and peer-reviewed journal articles. Conventional septic systems are not able to completely remove several of the constituents found in wastewater. The table below summarizes the effectiveness of typical properly operating septic system in removing the common constituents of wastewater. It is well understood that a major weakness of conventional septic systems is the inability to effectively treat nitrogen. Once septic effluent enters the soil profile below the drainfield, almost all the nitrogen is converted, by a process known as nitrification, to nitrate (NO₃). Nitrate is a very soluble and rapidly transported into groundwater and ultimately to surface water. Many rapidly growing mountain-west resort communities are now trying to mitigate the harmful effects of large numbers of septic systems, in poor soil conditions that have led to elevated nitrate levels in surface and groundwater. ⁶

Constituent:	Effluent content (leaving tank): mg/L	Removal after percolation and treatment in a 3 - 5 foot vertical infiltration zone
Biological Oxygen Demand	140-200	>90%
Nitrogen	40-100	10-20%
Phosphorus	5-15	0-100 (often 85-90%)
Fecal Coliform Bacteria	106-108	>99.99%
Organic Chemicals (solvents, pesticides, etc.)	trace	>99%

Source: "Septic System Impact on Surface Waters - A Review for The Inland Northwest" 2012.

In addition, two of our prized local streams, Flat Creek and Fish Creek (a DEQ Class 1 surface water), are now *E. coli* impaired. Septic systems are a major source of pathogens,

⁴ Koshmrl, Mike. 2018. "Hoback Folks Avoid Drinking Their Well Water, Contamination's Cause Is Unknown as Homeowners Face Higher Costs.". Jackson Hole News and Guide, 1st Aug. 2018. https://www.jhnewsandguide.com/news/environmental/hoback-folks-avoid-drinking-their-well-water/article_15df2e0a-7f8f-5aef-abde-d33815c2577e.html.

⁵ Eddy-Miller, Cheryl A., David A. Peterson, Jerrod D. Wheeler, C. Scott Edmiston, Michelle L. Taylor, and Daniel J. Leemon. 2013. "USGS Scientific Investigations Report 2013–5117: Characterization of Water Quality and Biological Communities, Fish Creek, Teton County, Wyoming, 2007–2011". Pubs.Usgs.Gov. <https://pubs.usgs.gov/sir/2013/5117/>.

⁶ Septic System Impact on Surface Waters - A Review for The Inland Northwest". 2012. Deq.Idaho.Gov. <https://www.deq.idaho.gov/media/892720-septic-system-impact-surface-waters-0605.pdf>.

including *E. coli*, and evidence points to septic systems as a contributing factor.⁷ Management of the effluent produced by septic systems, particularly older systems located in areas with unsuitable soils and shallow water tables, presents a major environmental and public health challenge for Teton County.

As with most septic systems, the small wastewater facilities permitted by Teton County discharge wastewater into tanks and absorption fields located a few feet underground. The effluent percolates through the soils and eventually enters the groundwater. This is where the similarity with most other regions of the country ends. The geology and hydrology of the Snake River floodplain make many areas unsuitable for septic systems due to the inability to remove nitrates.^{8,9}

Teton County is unique in that the groundwater into which this waste flows comprises part of the Snake River Aquifer, which has been designated a sole source aquifer by the U.S. EPA. This aquifer is the only source of drinking water for county residents, and is supplied by 114 public water systems and thousands of individual residential wells. Regrettably, only three of the 114 public water systems have taken concrete steps to protect the source of their drinking water by developing source water protection plans.

A. The Snake River Aquifer is an EPA-Designated Sole Source Aquifer. The U.S. EPA designated the Snake River Aquifer a Sole Source Aquifer (SSA) nearly thirty years ago. See 56 Fed. Reg. 50634, October 7, 1991. As explained by EPA:

The Sole Source Aquifer protection program is authorized by section 1424(e) of the Safe Drinking Water Act of 1974. This program is designed to protect drinking water supplies in areas with few or no alternative sources to the ground water resource, and where, *if contamination occurred, using an alternative source would be extremely expensive*. EPA defines a sole or principal source aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas may have no alternative drinking water source(s) that could physically, legally and economically supply all those who depend on the aquifer for drinking water.

See https://www.epa.gov/dwssa/overview-drinking-water-sole-source-aquifer-program#What_Is_SSA.

⁷ Source Water Protection Practices Bulletin Managing Septic Systems to Prevent Contamination of Drinking Water. 2001. Ebook. Washington D.C.: United States Office of Water, Environmental Protection Agency. https://www.epa.gov/sites/production/files/2015-06/documents/2006_08_28_sourcewater_pubs_septic.pdf.

⁸ Hauer, Richard, et al., *Gravel-bed river floodplains are the ecological nexus of glaciated mountain landscapes*, Sci. Adv. 2016;2: e1600026 24 June 2016.

⁹ Soil Survey of Teton County, Wyoming, Grand Teton National Park Area. 1982. Ebook. Washington D.C.: United States Department of Agriculture. https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/wyoming/WY666/0/teton.pdf.

Unfortunately, as noted by the EPA, “[s]ole source aquifer designation provides limited protection of ground water resources which serve as drinking water supplies. The SSA program is not a comprehensive ground water protection program. Protection of ground water resources can best be achieved through an integrated and coordinated combination of federal, state, and local efforts.” See <https://www.epa.gov/dwssa/sole-source-aquifer-project-review#excluded>. Yet as we have seen, existing state and local programs have not provided an adequate level of protection for our ground and surface water resources.¹⁰

B. Ground and Surface Water Resources Have Been Impacted by Decades of Neglect and Lack of Attention by Community Leaders. Up until very recently, the general level of public awareness regarding wastewater management and protection of Teton County’s drinking water supplies could best be described as “out of sight, out of mind.” The crisis playing out at Hoback Junction, as well as the recent impairment listing for Fish and Flat creeks, are the direct result of this neglect. Fortunately, the circumstances today appear to be quite different; we are pleased to see growing recognition of the need to do more to protect the county’s ground and surface water resources, and we support state and local efforts to address these issues.

1. Public Water Systems. The Snake River aquifer provides drinking water for nearly all of Teton County residents, as well as for millions of visitors each year. Of the 114 public water systems in Teton County registered with the EPA, the Town of Jackson operates the largest public water system (PWS), with seven wells and 2,725 service connections.¹¹ Smaller communities such as Wilson, Alta, Moose, Moran, Kelly, also operate PWS, as do many of the county’s wastewater and improvement and service districts. Other PWS include those operated by Grand Teton National Park serving visitor centers, campgrounds, concession services, and employee housing. Commercial operations that are not connected to the larger PWS such as rural guest ranches, RV parks, hotels/motels, and gas stations also operate public water systems. A list of Teton County’s public water systems, and water quality data for each of those systems, is available on EPA’s Waterwatch website at: <https://www.epa.gov/region8-waterops/drinking-water-watch-epa-region-8>.

The quality of water supplied by Teton County’s PWS can vary considerably, ranging from nearly pristine in undeveloped areas to unsafe for human consumption in the case of Hoback Junction. Nitrate concentrations in a number of other PWS are a cause for concern and may indicate the presence of leachate.¹² Indeed, the county itself has acknowledged that “[t]here is a growing problem regarding drinking water in southern Teton County.” See <http://tetoncountyywy.gov/DocumentCenter/View/13379/Public-Meeting-Presentation?bidId=>

¹⁰ See, e.g., Koshmrl, Mike, *Nitrates rising: A concerning groundwater pollutant climbs in some JH reaches*, Jackson Hole News and Guide, January 8, 2020; and Koshmrl, Mike, *Bacteria pollutes two prized Jackson Hole streams*, Jackson Hole News and Guide, January 18, 2020.

¹¹ See Source Water Assessment for Jackson, WY, Trihydro Corporation, June 30, 2004 (on file with WOC). The number of service connections in 2020 is undoubtedly much larger than reported in 2004.

¹² Bremer, J.E. and Harter, T., *Domestic wells have high probability of pumping septic tank leachate*, Hydrol. Earth Syst. Sci., 16, 2453–2467, 2012.

Households that are not connected to public water systems rely on private wells for their drinking water. Although the construction of private wells is regulated by the State Engineer's Office, there is no requirement for ongoing water quality testing once the well is in operation.¹³ That responsibility rests with the property owner. Teton Conservation District and POWJH are encouraging well owners to test their wells for the presence of nitrates and other harmful pollutants.

2. Wastewater Disposal. Unfortunately, besides providing drinking water to a majority of the county's residents, the Snake River aquifer also functions as a waste disposal system for Teton County. Approximately 3,600 residential septic systems (permitted by the county), and 48 large capacity wastewater disposal facilities (permitted by the Wyoming DEQ), discharge millions of gallons of partially treated wastewater into this aquifer each and every year.

As noted above, owners of private wells are not required to monitor or test the quality of the water, nor are they required to inspect or maintain their septic systems. This situation – particularly older, unmaintained and/or improperly constructed septic systems located in close proximity to shallow drinking water wells – is leading to a growing concern in the county that some residents may be consuming water that is unfit for human consumption, and has prompted local officials and NGOs to sound the alarm.

3. Source Water Assessments and Protection Plans. Only 44 of the 114 public water systems serving Teton County have prepared source water assessments, and only three have developed source water protection plans.¹⁴ All 44 source water assessments were completed in 2004 by Trihydro, a Laramie-based engineering firm, and to our knowledge, have not been updated since then. Adding to the risk, requirements contained in the DEQ's regulations (cited below) for the protection of public water systems are absent in the existing county SWF regulations:

Small wastewater systems that discharge to the same aquifer that supplies a public water supply well and are located within Zone 1 or 2 (Attenuation) of the public water supply well, as determined by Wyoming Department of Environmental Quality Source Water Assessment Project (2004) or as established in Section 2 of the Wyoming Wellhead Protection Guidance Document (1997), shall provide additional treatment. These systems will be required to obtain an individual permit to construct and will require that a PE sign, stamp, and date the application, as stated in Section 2 of this chapter. The additional treatment shall be in accordance with Chapter 3 Section 2(b)(ii). The treatment system shall be designed to reduce the nitrates to less than 10 mg/L of NO₃- as N and provide 4-

¹³ See Wyoming State Engineers Office webpage, <https://sites.google.com/a/wyo.gov/seo/ground-water/water-well-construction>

¹⁴ See Response to Public Records Request No. 19-598, dated September 11, 2019, available on DEQ's website: <https://wydeq.nextrequest.com/documents>

log removal of pathogens before the discharge leaves the property boundary of each small wastewater system.

See DEQ Water Quality Rules and Regulations, Chapter 25, Section 7, Table 4, Footnote 2. Fortunately, the proposed revisions to the county's SWF regulations will incorporate this provision.

In sum, the lack of comprehensive regulation and rigorous management of septic systems and domestic water wells, is pointing to a significant public health issue in Teton County. The revisions proposed to the county's small wastewater facility regulations are certainly a step in the right direction, yet fall short of action needed to properly address the challenges.

IV. COMMENTS ON PROPOSED REVISIONS

The need for this revision, and the county's commitment to undertake it, is spelled out in the January 2018 Delegation Agreement between the DEQ and Teton County on page D-1. In accordance with W.S. § 35-11-304(a)(iii), the county's regulations must be "at least as stringent as" the rules promulgated by the DEQ. Importantly, there is nothing in the Wyoming Environmental Quality Act that would prohibit the county from promulgating regulations that are *more stringent* than the DEQ's requirements. This view is shared by the Administrator of the DEQ's Water Quality Division.¹⁵ In order to confront the range of water quality issues facing our community, we are encouraging the county to strengthen its SWF regulations, i.e., to adopt regulations that are more stringent than the DEQs.

The following comments are based on a detailed review of the proposed revisions. Part 1 (pp. 8-10) summarizes revisions considered to be an improvement – from an environmental and public health perspective – over the existing regulation. In Part 2 (pp. 10-11), the comments identify and discuss proposed revisions that in our view retreat from environmental protections contained in the existing regulation. Finally, Part 3 (pp. 12-25) includes a detailed, section-by-section review, with comments and questions noted, as appropriate.

The proposed revisions draw heavily on the existing county and DEQ small wastewater facility regulations, and as a result, lack major and essential elements recommended by the EPA and others for the management and regulation of residential septic systems, particularly in sensitive, environmentally vulnerable areas. The following comments should not be construed as offering blanket support for the proposed revisions. Within the context of these revisions, we support some proposed changes, while we question, or simply oppose, others. Although the proposed revisions represent an overall improvement to the existing county SWF regulations, and may also satisfy the DEQ's minimum regulatory requirements, they fall far short of what is required in Teton County to protect ground and surface waters and the health and safety of its residents.

¹⁵ Email communication with Kevin Frederick, DEQ/WQD Administrator, February 28, 2020.

Part 1.

We provisionally support the following proposed revisions. Comments and questions are included where appropriate.

Section 12, Denial of a Permit (Section 13 in existing county regulations). A new subsection (v) is added to authorize the Sanitarian to deny a permit if “the proposed facility will serve a structure that is within five hundred lineal feet of an existing sewer collection system that will accept to serve that structure and necessary easements for the connection is [sic] legally obtainable.” We provisionally support this change, but would like to know the rationale and factors considered in selecting this distance along with the estimated environmental and public health effect, should this revision be adopted in the final rule (e.g., the number of structures potentially affected by this provision and the estimated reduction of nitrate entering groundwater). Recommendation: adopt this proposed revision, and consider expanding the requirement to apply when title to the property is sold or transferred, or when an inspection of the existing facility shows that nitrate concentrations in groundwater in Zone 1 indicate the presence of leachate; i.e., exceeding 3 mg/L.

Section 15, Environmental Monitoring Program; Permit Application Requirements (no corresponding section in existing county regulations). This new section authorizes the County Sanitarian to require applicants to implement an Environmental Monitoring Program if deemed necessary or to comply with a State and Local Water Quality Management Plan. The scope of the EMP can be narrowly tailored or comprehensive depending on circumstances, and may include ground and surface water quality monitoring. We provisionally support this proposed revision. Recommendations: We recommend replacing the “and” between “State” and “Local” with “or” to make clear that either type of plan may trigger the need for a EMP. Second, rather than (or perhaps in addition to) providing “when deemed necessary” or “when required”, the regulation should specify the presence of conditions, circumstances or factors that would require an EMP, such as a location in an environmentally sensitive area or source water protection zone, as defined and identified in the rule. If those conditions, factors or circumstances did not exist, but justification for an EMP was nonetheless identified, the revised language should allow the sanitarian to require an EMP “or as otherwise deemed necessary...”

Section 16, Compliance with State and Local Water Quality Management Plans (Section 16 in the existing county regulation). Section 16 in the existing county rule prohibits the issuance of a permit “for any facility which is in conflict with an approved water quality management plan prepared under Sections 303, 208 and/or 201 of the Federal Clean Water Act, as amended or the Teton County Land Development Regulations.” The proposed revision to Section 16 would expand the prohibition to include conflicts with “WDEQ-approved wellhead protection and/or source water protection plans” and with a “water quality management plan approved or adopted by Teton County.” We support the proposed revision to Section 16, but suggest that references to Clean Water Act sections be retained, and that the phrase “WDEQ-approved” be deleted because DEQ approval is not required for either wellhead or source water protection plans. See Wyoming’s Source Water Assessment and Protection Program,

Version 3, October 2000. (“Due to Wyoming’s unique primacy status, the completion of source water assessments for all public water systems is not mandatory. Instead, Source Water Assessment and Protection is a voluntary program.”)¹⁶

Section 20, Site Suitability (Section 20 in existing county regulation). The proposed revisions to Section 20 include a new subsection (b) that would prohibit the installation of small wastewater systems “in areas that are subject to increased organic or nutrient loading, such as corrals, or heavily fertilized landscape or agriculture.” We support this change and, as discussed elsewhere in these comments, recommend the consideration of additional factors in siting determinations such as nitrate concentrations in groundwater at the proposed location, lot size, density of existing development, and presence of impaired surface waters.

This section is also revised to require that “the site must include area for both the proposed soil absorption system and a future replacement soil absorption system.” We support this change and, as noted above, recommend an expansion of factors that must be considered in siting determinations.

Lastly, proposed Section 20 is revised to incorporate footnote 2 from the WDEQ/WQD Rules and Regulations, Chapter 25, Section 7, Table 4:

Small wastewater systems that discharge to the same aquifer that supplies a public water supply well and are located within Zone 1 or 2 (Attenuation) of the public water supply well, as determined by *Wyoming Department of Environmental Quality Source Water Assessment Project (2004)* or as established in Section 2 of the [Wyoming Wellhead Protection Guidance Document \(1997\)](#), shall provide additional treatment. These systems will be required to obtain an individual permit to construct and will require that a PE sign, stamp, and date the application, as stated in Section 2 of this chapter. The additional treatment shall be in accordance with Chapter 3 Section 2(b)(ii). The treatment system shall be designed to reduce the nitrates to less than 10 mg/L of NO₃- as N and provide 4-log removal of pathogens before the discharge leaves the property boundary of each small wastewater system.

The addition of this provision is required in order for Teton County’s SWF regulations to be “at least as stringent as” applicable State requirements. See W.S. §35-11-304(a)(iv). We support the proposed revision, and recommend that for lots under 5 acres in highly developed areas, the county consider a more stringent nitrate limit at the property boundary, e.g., 3 mg/L.

Due to the absence of this requirement in the existing county regulation, we are concerned that there may be commercial and/or residential units in Teton County with septic

¹⁶ The DEQ’s source water program document is available online at: http://deq.wyoming.gov/media/attachments/Water%20Quality/Source%20Water%20Wellhead%20Protection/Guidance/WQD_WWW_SWAP_Source-Water-Assessment-and-Protection-Documents_2000-10.pdf

systems located in close proximity to public water systems which could be in violation of this provision and therefore presenting a threat to public water supplies. In order to protect the public health, safety and welfare of Teton County residents, we recommend that inspections of existing facilities located within groundwater zones 1 and 2 take place as soon as possible.

Section 23 Septic Tanks and Other Treatment Tanks (Section 28 in existing county regulations). We support the addition of new language in subsection (d) that would require the contents of holding tanks containing waste from recreational vehicles, motorhomes, and similar vehicles to be disposed of into an approved facility.

Section 31 Operation and Maintenance (No corresponding section in existing county regulations). This new section would, among other things, require the submittal of an Operations and Maintenance Manual as part the permit application. While we support the inclusion of this section, we recommend that it clearly indicate that septic systems have a limited lifespan of approximately 20 years and that replacement of the system will be required at the end of that term unless evidence is provided showing that the system is still functioning as designed. Note that if land application of wastewater is removed from the proposed revision as recommended below, the language in subsection (b) referencing this practice should be deleted.

Part 2.

The proposed revisions eliminate a number of environmentally-beneficial provisions contained in the exiting rule and add a number of environmentally questionable practices that are not permitted/authorized in the existing rule. We do not support the following proposed revisions and recommend that they not be included in the revisions.

Elimination of Watercourse Protection Districts (Section 5 and section 19 in the existing county regulations). Section 19 of the existing rule includes enhanced protections for surface waters identified as *watercourse protection districts*, defined in Section 5. The proposed revision eliminates this section. Under the existing rule, Watercourse Protection Districts are defined as:

1. All private lands within 150 feet of the top of each bank of the Snake, Gros Ventre, Hoback, and Buffalo Fork Rivers.
2. All private lands within 50 feet of the top of each bank of all other streams, creeks or irrigation districts including any channelized section created to prevent bank erosion or to stabilize the watercourse, but not including ditches or canals to contain irrigation waters.

Section 19 C. of the existing rule prohibits the construction of sewage treatment lagoons and subsurface disposal systems within watercourse protection districts. This important provision does not appear in the revised draft. We recommend retaining the provision, and expanding the scope of Watershed Production Districts to include: Fish and Flat Creek and other sensitive and/or impaired surface waters; and areas having poor soil characteristics and

shallow groundwater that are unsuitable for conventional septic systems such as those found in many areas on the West Bank.

Land Application of Domestic Septage. Appendix B of the proposed revisions allows the “land application” (i.e. surface disposal) of domestic septage in remote areas. Domestic septage is defined as “liquid or solid material removed from a waste treatment vessel that has received wastes from residences, business buildings, institutions, and other establishments.” Although permitted under the DEQ’s rules, the current Teton County SWF regulations do not expressly authorize or address this practice. We recommend that this practice be expressly forbidden in Teton County, and believe that the majority of county residents would agree. If you intend to retain this provision in subsequent versions of the regulation, please explain why you believe it is necessary.

Small Wastewater Lagoons. Section 28 of the revised regulations would allow the construction and use of surface lagoons to dispose of human wastewater. This disposal system is not expressly authorized or addressed in the county’s existing SWF regulation. Although permitted by the DEQ’s rules (Ch. 25, Section 15) small wastewater lagoons may only be constructed in “areas of Wyoming where the annual evaporation exceeds the annual precipitation during the active use of the lagoon” and in addition, “shall not be constructed within the 100 year floodplain.” Given these constraints and other factors, we recommend that small wastewater lagoons not be permitted in Teton County. If you intend to retain this provision in subsequent versions of the regulation, please explain why you believe it is necessary.

Validity Clause. Section 32 of the existing regulation provides that: “If any section, subsection, sentence, clause, or phrase of these rules and regulations is for any reason held to be unconstitutional or invalid, such decision shall not affect the validity of the remaining portions of these rules and regulations.” This important provision has been removed from the revised rule. We recommend that it be included in the revised rule.

Enforcement Provisions. Section 33 of the existing regulation contains several provisions enumerating the county’s enforcement authorities including inspections, injunctive relief, and penalties. This provision has been removed from the proposed revision. The Wyoming Environmental Quality Act, W.S. §35-11-304(a)(5), requires that the local governmental entity maintain an enforcement program. Article VIII of the Delegation Agreement addresses this requirement. Accordingly, we recommend that an enforcement provision be included in the revised rule, and in addition, that penalties be revised to reflect that nature and severity of the violation. While a maximum penalty of \$100 for each offense may be appropriate in some circumstances, this small amount may be woefully inadequate in others. In all cases, the threat of enforcement and penalties should operate as a meaningful deterrent to unlawful activities.

Part 3 (pp. 12-25).

The following discussion provides a section-by-section review of the proposed revisions. As an initial matter, we must point out that we found review and comment on the proposed revisions to be an unnecessarily complicated and onerous task due to the absence of written summaries of each of the proposed revisions, and lack of commonly accepted editing tools such as page and line numbers, strike and underscore, font size and style, and notations highlighting changes.

As expected, given the stated reason for the update, many of the revisions consist of entire sections taken directly from the DEQ's rules. Yet problematically, in a number of instances, entire sections or subsections that appear to be adopted verbatim have been altered. Sometimes the change is just a single word. Other times it's a new sentence, or the omission of a sentence. As a result, the reviewer must carefully examine every single word, phrase, sentence and section in the existing rule, the DEQ's rule, and the proposed updates to understand the intent and effect of the change. Even then, the reason for the proposed revision is not always discernable.

Therefore, in order to facilitate meaningful public review and comment on the proposed revisions, we suggest that all subsequent versions of the proposed rule contain a detailed list and explanation of all changes be made available to the public. Specifically, every proposed change should be identified and discussed in a section-by-section review (as we have done here), referencing both the existing county regulation and the corresponding language in applicable DEQ rules. Only then will the public have a clear understanding of what is being revised and why.

Structure and organization. We believe the final rule will benefit from revisions to the structure and organization. In general, we found both the existing county regulations and the applicable DEQ regulations much easier to navigate and understand. Among other potential changes, we recommend that the definitions section be moved closer to the front (as is the case with the existing rule), and that the statement of legal authority in the proposed rule, located in Part 2 Permit Administration, also be moved to the front of the documents, as it appears in the existing rule in Section I.

Section 1, Authority (Section 1 in existing county regulation). This section summarizes the legal authority enabling the county to regulate small wastewater facilities. This proposed language seems unnecessarily complicated and therefore recommend retaining the existing language in Section 1.

Section 2, Applicability (Section 3 in existing county regulation). Section 2 provides that "these regulations shall apply to all Small Wastewater Facilities capable of causing or contributing to pollution, that are constructed, modified, or operated within the boundaries of

Teton County, Wyoming.”¹⁷ In addition, a new subsection (b) is added to this section address emergency response activities.

We recommend that the existing language in Section 3 Applicability be retained. Section 3 provides that: “These regulations shall apply to all small wastewater systems as defined in Section 5 of these regulations within Teton County.” In addition, we suggest that subsection (b) be moved to Section 6 Permit Compliance, and identified as an exception.

Section 3, Timing and Compliance with These Regulations. Proposed Section 3 provides:

Small Wastewater Facility Permit applications submitted after the effective date of these regulations shall be processed and evaluated according to these regulations. Small Wastewater Facility permits issued according to these regulations shall remain subject to them. Small Wastewater Facility permits applications that were submitted, and permits issued prior to the effective date of these regulations shall continue to be subject to the previous regulations in force at that time. The effective date of these regulations shall be determined by the Teton County Board of County Commissioners at the time of adoption.

We recommend that this entire section be deleted. The revised regulations should apply to the permitting and operation of all small wastewater systems, as explained in existing regulation in Section 3, Applicability, and not limited in this manner. Compliance requirements are set forth in other sections of the proposed rule that address compliance. We are concerned that this new section, if adopted, will 1) operate to limit the county’s authority to regulate existing systems under the updated provisions and 2) will complicate the administration of the program.

For example, unlike regulations in several other jurisdictions, Teton County’s SWF regulations do not require periodic inspections or maintenance of existing systems. If the proposed section is adopted, the county may forfeit its ability to require these essential safeguards. As discussed elsewhere in these comments, we strongly recommend that this revision include comprehensive requirements for inspection and maintenance of existing systems permitted under previous regulations. Thus, it is imperative that the revised regulations apply to all small wastewater systems in Teton County, not just the systems approved under the revised regulations. Lastly, having two sets of regulations (with the possibility of future amendments) in effect would likely complicate the regulation of small wastewater systems in the county.

¹⁷ The definition of small wastewater facility is found in Section 17, and essentially mirrors the statutory definition contained in W.S. §35-11-103(c)(ix) except that the word “facility” is used in place of “system” and wastewater lift stations and “other wastewater systems that consist of more than simply a building sewer as defined in this section” are included in the definition.

Section 5, Prohibitions (Section 6 in existing county regulations). We have several comments regarding this section. First, this section prohibits the construction, installation or modification of a small wastewater facility without a permit. We suggest adding language that addresses significant repairs to systems. Specifically, any repair that requires earthmoving or excavation should require a permit. This could be addressed in one of two ways. Define modification to include repairs that require excavation, or alternatively, insert the word repair after modification.

Second, the comparable section in the existing SWF regulation, Section 6, provides that: “No person shall, except when authorized by permit issued pursuant to these regulations: A. Construct, install, or modify any small wastewater system.” The proposed regulation alters this language by adding the phrase “capable of causing or contributing to pollution” after “system.” Please explain why this change was made. The language in the existing regulation is preferable because it is clear that all small wastewater systems presumptively require a permit.

Third, the proposed revision deletes language contained in the existing regulation that prohibits the discharge of wastewater to surface waters or to the ground surface. Section 6 in the existing county regulation provides that: “No person shall, except when authorized by permit issued pursuant to these regulations....

E. Discharge wastes to surface waters or ground surface. Effluent from any onsite wastewater system shall not be discharged to surface waters or upon the surface of the ground. Effluent processed by an enhanced treatment system and disinfection may be dispersed by drip irrigation. Sewage shall not be discharged into any abandoned or unused well, or into any crevice, sinkhole, or similar opening, either natural or artificial.

Please explain why this important provision in the existing rule has been deleted from the revision.

Section 6, Permit Compliance (Section 7 in existing county regulations). We have two comments on this section. First, the proposed revision adds an entirely new section that has no counterpart in either the existing county regulation or in applicable DEQ regulations. It reads: “(a) Permittees authorized by a permit shall remain subject to compliance for all actions or inaction in connection with the permit, regardless of other contractual arrangements, agency, or obligations they may enter or accept.” We assume this language is being added to address some problem or question that has arisen regarding the scope or enforceability of a permit? Please explain the rationale for this section. Also, the word “agency” makes no sense as used in this section. Can you clarify the intent?

Second, Section 6(c) provides that “No construction, installation or modification of a small wastewater facility *capable of causing or contributing to pollution* shall be allowed unless a permit to construct, install or modify has been obtained, or the facility is permitted by rule and the proper notification has been received and acknowledged by the sanitarian.” (emphasis

added). The italicized language, “capable of causing or contributing to pollution” is not in the existing regulation, and is not necessary here. There is no benefit to opening the door to unnecessary arguments with the applicant about whether a small wastewater system is capable of causing or contributing to pollution.

Section 7, Permit Application Requirements (Section 8 in the existing county regulations). We support the proposed revisions to this section, particularly those pertaining to the O&M manual in Section 7(a)(i), but are concerned with the omission of the specific information requirements addressing plans and specifications of the wastewater system contained in Section 8.C of the existing regulation. We would appreciate an explanation for this proposed revision. Is this information required in the form referenced in proposed Section 7(a)?

Lastly, and perhaps most importantly, we recommend that this section be revised to require the applicant to submit information needed to determine compliance with Table 4 Footnote 2 pertaining to small wastewater systems “that discharge to the same aquifer that supplies a public water supply well and are located within [groundwater] Zones 1 or 2 (Attenuation) of the public water supply well.” Small wastewater systems located in these zones are required to implement “additional treatment” necessary “to reduce the nitrates to less than 10 mg/L of NO₃- as N and provide 4-log removal of pathogens before the discharge leaves the property boundary of each small wastewater system.”

Section 8, Application Processing Procedures (Section 9 in the existing county regulation). Among other changes, the proposed revisions contain new procedures for processing incomplete applications, which are lacking in the existing regulations. The proposed changes seem reasonable except perhaps the provision in (a)(ii)(B) allowing the applicant up to 6 months to supplement an incomplete application. Six months seems like an overly generous, perhaps even excessive, amount of time to allow an applicant to address deficiencies. Is there a particular reason why the county feels that 6 months is appropriate?

We recommend that the first sentence in Section 8(a)(iii), “All plans and specifications must meet or exceed minimum design standards and these regulations...” be enumerated independently as a stand-alone requirement, just as it appears in the existing regulation, Section 9. C.

Section 9, Construction and Operation in Compliance with Issued Permit (Section 10 in the existing county regulation). This section contains significant differences from the corresponding section in the existing county regulation. The existing regulation at Section 10 D lists four actions that may be taken if the applicant fails to notify the sanitarian 24 hours in advance of the backfilling. In the event notice is not provided as required, the county may require:

1. digging up the system to show compliance with these regulations;
2. revocation of the permit;
3. legal action; or

4. all of the above.

Please explain why this section was removed from the proposed revisions.

Other comments: Proposed Section 9 provides in part that: “The permittee shall: (a) Conduct all construction, installation, or modification of any facility permitted consistent with the terms and conditions of the permit.” This language mirrors the existing regulation. As noted above, we recommend that *repairs* that require earth work or excavation be included in a definition of modification, or inserted directly into this section.

Section 9(b) substitutes the word, “construction” for “procedures” in two cases, but retains “procedures” in a third. Why? We recommend that this section be revised to clearly indicate the kinds of deviations that will require requests and approvals; e.g., construction procedures, construction materials, changes in design, etc.

Section 9(d) adds three new paragraphs, (i), (ii), and (iii), and deletes Section 10. E. contained in the exiting rule. Please provide the rationale for these changes.

Section 10, Duration and Termination of Permits; Transfer of Permits (Section 11 in the existing county regulation). A major revision is proposed to Section 10, extending the duration of the permit to five (5) years from one (1) year in the existing regulation. Please explain why this 500% increase in duration is necessary.

Section 10(e) references “facilities permitted by rule.” It would be helpful to provide a list of the types of facilities that may be permitted by rule, if not in this section, then somewhere else in the rule or in the Statement of Reasons.

Section 11, Renewal of Permit (Section 12 in the existing county regulation). The existing regulation specifies that a “renewal fee is required.” This language is omitted from the proposed revision to Section 12. Is a fee required for a permit renewal?

Section 12, Denial of a Permit (Section 13 in the existing county regulation). Section 12(a) and Section 13(a) in the existing rule authorize –but do not require– the sanitarian to deny a permit for any of the reasons stated in (i) to (vi). We believe this section should be amended to *require* the sanitarian to deny a permit for any of the reasons specified in subsections (ii) and (iii).

Subsection (d) provides that the applicant may request a hearing before the Teton County Board of County Commissioners “in the case of denial of a permit.” We recommend that 1) this section be clarified to allow an interested or affected party to intervene and participate in any such hearings requested by the applicant, and 2) that any affected or interested party be authorized to appeal a decision to issue a permit to the Teton County BCC on the grounds that the substantive requirements in subsection (a) have not be met.

Section 13, Modification of a Permit (Section 14 in the existing county regulation).

Section 13 amends existing procedures and notice requirements for modifications, and eliminates the opportunity for a hearing provided by Section 14.D. in the existing regulation. Please explain the rationale for the proposed changes.

Section 14, Suspension or Revocation of a Permit (Section 15 in the existing county regulation). With a change of “shall” to “may”, the proposed revision makes the mandatory notice required in existing Section 15.B discretionary. We recommend that this proposed change be reconsidered to ensure that due process is provided.

The proposed revision eliminates existing Section 15.B.5 which provides that “noncompliance with any requirements of the regulations” is a justification for permit suspension or revocation. We recommend that this section be retained in the revised regulations.

We recommend that subsection (d) be clarified to authorize an interested or affected party to intervene in any hearing requested by the permittee contesting a suspension or revocation of a permit.

Section 15, Environmental Monitoring Program; Permit Application Requirements (no corresponding section in the existing county regulation). We support this proposed revision. It is quite possible that had this requirement been included in the existing county regulations, the situation at Hoback Junction (exceedances of EPA’s MCL for nitrate) could have been avoided.

This section provides that, “When determined necessary by the Sanitarian or to comply with a State **and** Local Water Quality Management Plan, applications for a permit shall contain the following...” In order to be consistent with other provisions in the revisions, please change the bolded “and” to “or” so that the sentence reads “...to comply with a State or Local Water Quality Management Plan...”

Section 16, Compliance with State and Local Water Quality Management Plans (Section 16 in the existing county regulation). As mentioned above, please delete, “Department of Environmental Quality approved.” It is our understanding that the DEQ may, but is not required to, approve local wellhead protection or source water protection plans. Thus, we recommend changing DEQ-approved to “government-approved” to reflect the fact that such plans can be adopted by a local water district, sewer district, or ISD, by the county, or by some other governmental entity.

Section 17, Definitions (Section 5 in the existing county regulation). Please indicate which definitions are new, which are deleted, and which have been modified from existing definitions contained in the Wyoming Environmental Quality Act, §35-11-103(c); the DEQ’s water quality rules and regulations Chapter 25, Section 4; and Section 5 of the existing county regulations.

We recommend that any definition in the proposed revised regulation that deviates from the definitions contained in the existing county SWF regulation, WDEQ's water quality rules and regulations or in the Wyoming Environmental Quality Act be noted and accompanied by an explanation justifying the proposed deviation.

Section 18, Design Flows (Section 18 in the existing county regulation). We have several questions concerning this section. The following language (contained in the existing regulation) has been deleted from the proposed revision: "The sewerage system, treatment works and disposal system shall have a minimum absorption area based on the minimum peak design flows listed in Table 1." Please reinsert this language into the proposed revision, or provide an explanation as to why you believe it is unnecessary.

This section indicates that the volume of wastewater will be determined by a variety of methods specified in subsections (a) through (d). Proposed Table 1 provides flow rates for private residences that differ from the flow rates listed in the existing rule. What is the source of the flow rates presented in proposed Table 1, and why do the rates differ from the existing rule?

Proposed Table 2 contains non-residential wastewater design flowrates. A footnote explains that the flowrates in this table are based on *Wastewater Engineering Treatment and Reuse*, Metcalf and Eddy, 2003. Many of the rates presented in proposed Table 2 differ from the rates contained in the existing rule, Table 1, page 17. Can you please explain why that is? This reference was available when the county regulations were adopted in 2010.

Section 19, Systems Not Specifically Covered by These Standards (Section 17 in the existing county rule). This section proposes to add a new justification for deviating from the established standards: "to allow for design which addresses site-specific constraints..." We provisionally support this proposed change, along with the other proposed revisions that address application requirements, and the review and evaluation of the application. We particularly support new subsection (d) which authorizes, at the discretion of the county, "ongoing operation, maintenance, or monitoring requirements..."

We are concerned, however, by the absence of specific performance standards (e.g., for nitrate reduction and control of pathogens) that must be achieved by alternative systems. The rule simply requires that "the facility, when constructed and operated, meets the intent of these regulations." Since Section 4, Intent, of the proposed regulation does not contain any measurable or objective criteria upon which the performance of a system can be quantified, we recommend the adoption of numeric criteria addressing nitrate reduction and other pollutants commonly found in wastewater. Perhaps alternative systems should be required to demonstrate—at a minimum—compliance with the performance standards contained in Footnote 2, proposed Section 20: "The treatment system shall be designed to reduce the nitrates to less than 10 mg/L of NO₃- as N and provide 4-log removal of pathogens before the discharge leaves the property boundary..."

Section 20, Site Suitability (Section 20 in the existing county regulation; DEQ Chapter 25, Section 7). As noted above, we support the inclusion of subsection (b) which prohibits the construction of systems “in areas that are subject to increased organic or nutrient loading...”

We were pleased to see many other necessary revisions proposed, including subsection (a) addressing location limitations, and subsection (c) regarding other compacted areas, as well as numerous other provisions contained in WDEQ site suitability regulations Chapter 25, Section 7.

That said, we have the following questions and concerns:

Please explain why the percolation rates specified in proposed subsection (f) are different from the rates shown in the WDEQ’s regulation Chapter 25, Section 7(d) at page 25-7.

Regarding special requirements for slope, please explain why DEQ Chapter 25, Section 7(e)(ii) regarding “serial distribution with the use of drop boxes” was not included in the proposed revisions.

Subsection (g)(iv) authorizes “deviations” from the slope standards. A deviation from slope standards is not permitted in the DEQ’s rules, Chapter 25, Section 7(e) Slope. What is the reason and basis for including this new provision?

Subsection (h)(iv) authorizes the use of “records of subsurface conditions at nearby locations” in lieu of soil exploration pits and percolation tests required by the DEQ rules. This proposed revision appears to create an exception that is not authorized in WDEQ Chapter 25. Please explain the rationale and justification for this proposed exception.

Subsection (i) Table 4 mirrors the minimum horizontal setback distances set forth in the WDEQ’s rule at Chapter 25, Section 7(g) Table 4. As these are “minimum” distances, we recommend inclusion of a new provision that would outline factors that would be considered in making determinations to increase the setback distance, particularly from private and public water supply wells and surface waters/springs. There may be circumstances where the minimum setback distances are not sufficient; for example, in environmentally-sensitive areas, in areas where nitrate concentrations in groundwater are above 3 mg/L (indicating the presence of leachate), in high-density areas, or areas containing unsuitable soils, to name a few.

Section 21, Soil Absorption System Sizing (Section 22 in existing county regulation; DEQ Chapter 25, Section 8). This proposed section appears to mirror WDEQ rule Chapter 25, Section 8 except for subsection (c) which addresses percolation rates in coarse sands. Please explain why different rates are proposed.

Section 22, Building Sewer Pipes (Section 21 in existing county regulation; DEQ Chapter 25, Section 9). This proposed section largely mirrors the DEQ regulation at Chapter 25, Section 9 except for the following: first, the DEQ’s corresponding rule, Chapter 25, Section 9,

requires that “[a]ll building sewers shall be installed in accordance with the 2012 International Plumbing Code (IPC)” while the proposed section omits this requirement. Please explain why this requirement was omitted in the proposed revision.

Second, the DEQ’s rule, Chapter 25, Section 9(e), requires that cleanouts be provided at “every change in alignment” while the proposed county regulation requires cleanouts when the change in alignment is greater than 22.5 degrees.” Please explain how this change is “at least as stringent as” the DEQ’s rule?

Section 23, Septic Tanks and Other Treatment Tanks (Sections 23, 24, and 28 in existing county regulation; DEQ Chapter 25, Section 10). This new section consolidates existing Sections 23, 24 and 25 and contains new provisions to comply with requirements contained in DEQ water quality rules and regulations Chapter 25, Section 10. Our comments follow.

Subsection (a) Applicability. In addition to requiring a permit to “construct, modify, or replace the components described in this section” we recommend that a permit be required for a “repair” to any component of the system if the repair necessitates major excavation or earth moving.

Subsection (b) Septic Tanks. Subsection (b)(iii)(B) allows the use of lightweight materials for backfilling provided they “are intended for such buried use and will not settle appreciably after placement.” Can you provide a trade name of such product in the rule and define what “appreciably” in this context means?

Subsection(b)(v), configuration requirements, occupy over a page of the proposed regulation. The proposed revisions appear to mirror the DEQ’s requirements, except that the requirement for an approved locking device on riser covers terminating above grade appears to be missing from the proposed county rule. We suggest including that requirement in Section 23(b)(vii)(B) in order to ensure that the county SWF regulation is “no less stringent than” the DEQ requirement.

Subsection (b)(viii) Land application of domestic septage. As discussed elsewhere in these comments, we object (and suspect the vast majority of county residents would as well) to the land application of domestic septage and therefore recommend this provision be deleted. On a related point, this topic seems incongruent and out of place in a section that pertains to septic tanks. How did it end up here?

Subsection (c) Dosing Tanks. This subsection largely mirrors the DEQ’s requirements. The change enlarging the minimum diameter of the access opening to 24 inches seems to make sense and we appreciate the improvements to the high-water alarm signal requirements.

Subsection (d) Holding Tanks. As with dosing tanks, above, subsection (d) largely mirrors the DEQ’s requirements, with one significant exception. A new subsection (iii) is added to allow

the receipt and storage of liquid waste discharged from recreational and other vehicles and to address removal and disposal of this waste.

Subsection (e) Lift Stations. This is a new subsection with no counterpart in DEQ Chapter 25. The requirements seem both reasonable and needed, therefore we support the addition of this language.

Subsection (f) Grease Interceptors. This subsection largely mirrors the DEQ's requirements in Chapter 25, Section 10(d), except that the county regulation proposes an exception in (f)(i)(A) that would allow a commercial or institutional food preparation facility to circumvent the requirement for a grease interceptor. We do not support this revision. If a facility is "typically anticipated to exceed the FOG criteria" but is not proposing the installation of a grease interceptor, it should be required to conduct and demonstrate through monitoring that it will not exceed the FOG criteria. A simple fix would be to change "the permittee may be required" to "the permittee shall be required" to conduct monitoring to verify compliance. Question: are guest ranches and motels that serve food subject to this rule?

Subsection (g) Other Interceptors. The proposed requirements for (A) laundries and (B) car washes appear to mirror the DEQ's requirements in Chapter 25. We do request clarification, however, that commercial guest ranches and motels that clean their own sheets and towels, etc., would be considered commercial laundries or laundromats, and if not, whether those facilities should be added to this section.

Subsection (h) Abandonment of Septic and Holding Tanks. We recommend that the owner of the tank to be abandoned be required to notify the county a minimum of 30 days in advance of abandonment through a Notice of Abandonment that would remain on file with the county. The county should have an opportunity to review the plan and intervene if necessary.

Section 24, Effluent Distribution Devices (Section 25 in the existing county regulation; DEQ Chapter 25, Section 11). Section 24 largely mirrors the DEQ's rule, with an occasional revision in places. Subsection (c) contains a typo or transcription error: "The drop boxes shall meet the requirements in paragraphs (a)(i through v) of this section" should read "(a)(i through vi) of this section."

Section 25, Standard Soil Absorption Systems (Section 26 in existing county regulation; DEQ Chapter 25, Section 12). Section 25(a) General Design Requirements. The rationale for changes to this section should be provided. The language proposed by the county in subsection(a)(i) states that: "All soil absorption systems shall be designed in such a manner that the effluent is effectively dispersed and retained below the ground surface. The absorption surface accepts, treats, and disposes the wastewater as it percolates through the soil or porous media." The DEQ's corresponding rule in Chapter 25, Section 12(a)(i) provides that: "All soil absorption systems shall be designed in such a manner that the effluent is effectively *filtered* and retained below the ground surface. The absorption surface accepts, treats, and *disperses* wastewater as it percolates through the soil or porous media." (emphasis added). It appears

the word changes reflect a fundamental difference of opinion regarding the intended function of septic systems. We suggest that the verbiage in the county rule be changed back to the DEQ rule, unless a compelling reason is articulated for the change.

Section 25(a)(vi) omits language that is contained in the corresponding DEQ rule without explanation. This county's proposed language reads: "(G) Minimum spacing of trenches (wall to wall) is three (3) feet. Trench spacing shall be increased to nine (9) feet when the area between each trench is considered as reserve area." The DEQ's rule states: "(F) Minimum spacing of trenches (wall to wall) is three (3) feet. Trench spacing shall be increased to nine (9) feet when the area between each trench is considered as reserve area. *For clay loam soils that have percolation rates greater than 60 min/in., the nine (9) foot spacing shall also be required but it is not considered reserve area.*" (emphasis added). The proposed county rule omits the italicized language. Why?

Section 25(a)(vii) Standard beds. This section contains a typo or transcription error: "(vi)(A through D)" should be "(vi)(A through E)".

Section 25(a)(vii)(C) Sidewalls. Please explain why the following language contained in the corresponding DEQ rule was omitted from this subsection: "Sidewalls shall not be more than three (3) feet from a distribution lateral."

Section 25(a)(vii)(B) omits language contained in the corresponding section of the DEQ rule providing that: "...therefore the site shall be relatively flat, sloping no more than one (1) foot from the highest to the lowest point in the installation area." The county should explain why this language requiring a "relatively flat" site was omitted from the proposed rule, and further explain how this omission does not result in this section being less stringent than the corresponding DEQ requirement.

Section 25(a)(viii) Chambered trenches. We support the proposed addition of paragraph (E) requiring a firm soil foundation and the use of imported fill, as needed, to prevent settling.

Section 25(a)(viii)(G). Please explain why language in the corresponding DEQ rule addressing clay loam soils has been deleted from this subsection.

Section 25(a)(ix) Chambered beds. This subsection contains a typo. Aggregate is addressed in (vi)(C), not in (vi)(B), as noted in the proposed language.

Section 26, Pressure Distribution Systems (Section 26 in existing county regulation; DEQ Chapter 25, Section 13). Section 26 contains a number of specific design requirements not found in the corresponding DEQ rule. An explanation for these revisions should be provided, along with a comparison to the existing county SWF regulation, identifying and providing justification for significant changes.

Section 27, Sand Mound Systems (Section 27 in the existing county regulations; DEQ Chapter 25, Section 14). A number of provisions with no counterpart in the corresponding DEQ rule have been added, while other provisions contained in the DEQ rule and carried over to this section have been altered, including the definition of sand mound. The DEQ rule provides that the “sand mound consists of a sand fill, an aggregate bed and a soil cap” while Section 27 states that “[t]he sand mound consists of a sand fill, an aggregate bed or *chambers containing pressure-dosed laterals*, and a soil cap.” (emphasis added). The county should provide an explanation for this change and its effect on the functioning and efficiency of the system.

Section 27(a) Selection Criteria: This section appears to adopt the corresponding provision in the DEQ rule verbatim.

Section 27(b) Site Requirements: Subsection (b)(i) mirrors the DEQ counterpart, and includes new language that requires “the rise in groundwater due to effluent loading shall be considered in meeting this standard.” Subsection (b)(iii) adds a new siting requirement that provides: “Sand mound systems must not be sited where they may allow effluent to surface.”

Section 27(c) General Design Requirements. Section 27(c)(i) (sand layer) deviates in numerous places from the corresponding section in the DEQ’s rule. We request an explanation for the changes. For example, DEQ Chapter 25, Section 17 provides that:

“(C) The sand mound shall have a combination of at least *four (4) vertical feet of filter sand and unsaturated* native soil above the high groundwater level.

(I) For sand mounds using pressure distribution systems, the depth to high groundwater shall be three (3) feet below the bottom of the absorption surface if the percolation rate of the soil is five (5) minutes per inch or greater (5-60 mpi).” (emphasis added).

Conversely, the county’s proposed language reads: “(C) The total depth of *fill sand, other suitable fill material*, and native soils must provide at least *3 vertical feet* of separation to seasonally high groundwater.” (emphasis added). Filter sand (not “filler” sand) and *unsaturated* native soils are the only kinds of material authorized in the DEQ’s rule. What is the justification for changing “filter sand” (specifications listed in subsection (c)(i)(A)) to “filler sand” (which is not defined in this section), for allowing “other suitable fill material” and deleting “unsaturated”? Why should these changes be permitted? The term “other suitable fill material” is not defined. What does this term mean and who decides whether fill material is “suitable” and based on what objective criteria? Second, please explain how 3 vertical feet is “as effective as” 4 vertical feet required in DEQ’s rule?

Section 27(c)(i)(D), which has no counterpart in the DEQ Section 14, states that “The total depth of fill sand, other suitable fill material, and native soils must provide no less than 4 vertical feet of separation to the top of restrictive soil layers or bedrock” while the DEQ rule requires separation between sand/soil layers and the “high groundwater level” rather than restrictive soil layers or bedrock. Please explain the apparent discordance between the county and DEQ requirements.

Section 27(c)(i)(E) inserts language not included in the DEQ's rule: "...or infiltrative surface which serves as the base for chambers..."

Section 27(c)(i)(H) changes "infiltration area" in Ch. 25, Section 14(c)(i)(G) to "basal area."

Section 27(c)(ii)(B) deletes "after installation and testing of the pressure distribution system" which is required in the corresponding DEQ section: "The aggregate shall be covered with an approved geotextile material after installation and testing of the pressure distribution system."

Section 27(c)(ii)(C) adds new language providing that "Chambers may be used in place of an aggregate bed.

We request that all changes proposed in Section 27, including those discussed above, be identified and discussed, including any justification for the changes.

Section 28, Small Wastewater Lagoons (DEQ Chapter 25, Section 15; no corresponding section in existing county regulations). We outlined our objections to this section in our comments, above. We are not aware of the existence of any such lagoons operating in Teton County today, and cannot imagine circumstances that would justify the use of wastewater lagoons¹⁸ in the foreseeable future. In any event, we suspect that no area of Teton County would meet the site selection criteria contained in section 28(a), and therefore urge the county to make that threshold determination before proceeding any further with this proposal.

Section 29, Privies or Outhouses (Section 29 in existing county regulation; DEQ Chapter 25, Section 16). This section largely mirrors the DEQ's rule, but with a few changes. We question whether the substantial increase proposed by the county to the minimum capacity set forth in the DEQ's rule are necessary and request an explanation for the proposed revision. Proposed Subsection (c) provides that "[t]he vault must have sufficient capacity for the dwelling served, and must have at least 67 cubic feet or 500 gallons of capacity." The DEQ's rule provides that "[t]he vault must have sufficient capacity for the dwelling served, and must have at least 27 cubic feet or 200 gallons of capacity." Has the county identified a need for the larger capacity requirements?

Section 30, Greywater Systems (DEQ Chapter 25, Section 17). We agree that greywater systems should be authorized by individual permit, as proposed and subject to the requirements contained in this section.

Section 31, Operation and Maintenance (No corresponding section in existing county regulations; DEQ Chapter 25, Section 18). We are in agreement with the addition of Section

¹⁸ Wastewater lagoons associated with municipal wastewater treatment facilities are not covered by this section.

31(a) providing for an Operations and Maintenance (O&M) Manual. We suggest that the O&M manual include requirements for inspections, as discussed elsewhere in these comments.

Section 32, Commercial and Industrial Wastes and/or Domestic Wastes Greater Than 2000 Gallons per Day (DEQ Chapter 25, Section 19). The proposed language referencing the Delegation Agreement appears to satisfy applicable regulatory requirements.

APPENDIX A – Percolation Test Procedure (Appendix A in the existing county and DEQ regulations). This section matches DEQ’s requirements. References to other sections in the rule may need to be corrected.

APPENDIX B – Land Application of Domestic Septage in Remote Areas (DEQ Chapter 25, Appendix B; no corresponding provision in existing county regulations). As discussed elsewhere in these comments, we believe that land application of domestic septage is an inappropriate and nonconforming use in Teton County. However, should the county insist on including this provision, we recommend that 1) the activity be authorized by individual permit, with notice and opportunity to comment; and, 2) that “remote area” be defined in this rulemaking.

We would appreciate answers to the following questions: 1) Is land application of domestic septage currently taking place anywhere in Teton County? If so, please provide details. 2) Have you received requests to authorize this practice? If so, when, by whom, and how did you respond?

V. RECOMMENDATIONS

A. The Revised SWF Regulations Should Require Inspections and Maintenance of Existing Facilities to Ensure System Efficiency.

Teton County’s existing regulations require a permit for the “construction, installation or modification of a small wastewater system...” Section 7. B. Once a system has been inspected and installed, however, the county’s role in the regulation, oversight, or management of that system has effectively ended. Section 2 of the existing county regulation provides that:

The purpose of these regulations is to prevent, reduce and eliminate pollution and enhance the waters of the State of Wyoming and to protect the health, safety and welfare of the environment and its inhabitants by ensuring that the *design and construction* of small wastewater systems meet the purpose of the Wyoming Environmental Quality Act.

See Teton County SWF regulations, Section 2. Purpose (emphasis added).

What is missing, of course, are requirements addressing the *operation and maintenance* of the system after installation. While the existing regulation provides that, “[t]he issuance of a permit to construct does not relieve the permittee of its *responsibility* to properly plan, design,

construct, *operate and maintain* the facility...”, specific requirements concerning that “responsibility” are not set forth anywhere in the rule.

Although the proposed revisions include new requirements for an operations and maintenance manual (section 7(b)(i)) and environmental monitoring (section 15), those requirements do not apply to existing facilities. *See* Section 3, Timing and Compliance with These Regulations (“Small Wastewater Facility permits [sic] applications that were submitted, and permits issued prior to the effective date of these regulations shall continue to be subject to the previous regulations in force at that time.”). Thus, for existing systems, the responsibility for operation and maintenance is in the nature of a personal responsibility, the regulation of which is clearly not within the purview of local government.

The revised regulations should address this deficiency. It is well known that septic systems have a limited lifespan: the EPA reports that “the functioning life of septic systems is typically 20 years or less.”¹⁹ A system that may have functioned properly when new is likely not operating effectively after decades of use. Of the approximately 3,600 septic systems in place in Teton County, there are likely hundreds that are beyond their useful life. Yet with no publically available inspection or maintenance records, it is impossible to know anything about the operating efficiencies of these systems. Given what is widely known and reported about the lifespan of septic systems, the presumption should be that many of these systems have failed and that these systems have, for all intents and purposes, become nothing more than wastewater disposal facilities discharging pollutants into groundwater of the state.²⁰

Concerns have been expressed about the county’s authority to impose inspection and maintenance requirements on existing systems. While perhaps understandable in our current political climate, we believe those concerns should not stifle robust consideration of this topic. Article VII of the Delegation Agreement between DEQ and the Teton County BCC addresses authority for inspections. Many other jurisdictions have these requirements.²¹ The bottom line is that something must be done to address older wastewater systems, particularly those located in the most environmentally vulnerable and sensitive areas of the county. At a bare minimum, existing septic systems should be inspected whenever a property is sold, and whenever a system is modified or repaired. Criteria for inspections of existing systems should be included in the revised regulations, with particular emphasis on systems located in groundwater zones 1 and 2.

¹⁹ *See* EPA’s Decentralized Systems Technology Fact Sheet Septic Tank - Soil Absorption Systems, EPA 932-F-99-075, September 1999, available online at: <https://www.epa.gov/sites/production/files/2015-06/documents/septicfc.pdf>

²⁰ Canter, Larry W, and Robert C Knox. 1985. *Septic Tank System Effects on Ground Water Quality*. 1st ed. Chelsea, MI: Lewis Publishers, Inc.

²¹ *See, e.g.*, Massachusetts Department of Environmental Protection, *Guidance for the Inspection of On-site Sewage Disposal Systems*, available online at: <https://www.mass.gov/guides/guidance-for-the-inspection-of-on-site-sewage-disposal-systems>

B. The Proposed Revisions Should Follow the U.S. EPA Management Guidelines for Onsite and Clustered (Decentralized) Wastewater Treatment Systems.

Even assuming adoption of the revisions as proposed, the county's regulations for small wastewater facilities still fall far short of meeting the EPA's Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems ("Guidelines").²² The Management Guidelines, developed in March 2003, are intended "to help communities in meeting water quality and public health goals." Executive Summary at 3.²³ The EPA notes that, "Although implementation of the Management Guidelines is voluntary, EPA *strongly encourages* considering them as a template in strengthening existing management programs and implementing new ones." (emphasis added). Based on extensive study, analysis, and public outreach, the EPA has determined that:

[M]any of the systems in use are improperly managed and do not provide the level of treatment necessary to adequately protect public health and surface and ground water quality. Proper management of decentralized systems involves implementation of a comprehensive, life-cycle series of elements and activities that address public education and participation, planning, performance, site evaluation, design, construction, operation and maintenance, residuals management, training and certification/licensing, inspections and monitoring, corrective actions, recordkeeping/inventorying/reporting, and financial assistance and funding.

Executive Summary (ES) at 3.

The Executive Summary explains that, "Although it is difficult to measure and document specific cause-and-effect relationships between onsite wastewater treatment systems and the quality of our water resources, it is widely accepted that improperly managed systems contribute to major water quality problems. The *National Water Quality Inventory 1996 Report to Congress* states that "improperly constructed and poorly maintained septic systems are believed to cause substantial and widespread nutrient and microbial contamination to ground water." ES at 4.

The EPA states that, "In deciding whether to use onsite systems, it is important to consider the risks they might pose to the environment and public health. *There may be cases where onsite systems are not appropriate because of the environmental sensitivity or public health concerns of an area.* In the cases where onsite systems are appropriate, it is critical that

²² The EPA's Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems are available online at:

<https://www.epa.gov/septic/septic-systems-guidance-policy-and-regulations>

²³ The EPA has prepared a short fact sheet that summarizes key elements of the Guidelines, available online at: https://www.epa.gov/sites/production/files/2015-06/documents/2004_07_07_septics_septic_guidelines_factsheet.pdf

they be managed to prevent environmental and public health impacts.” ES at 5 (emphasis added).

Although this point is addressed in other sections of our comments, we highlight it here because it is a major environmental concern facing our community. Yet we cannot identify a particular decision by the county, or even a point in time, that reflects a conscious intent to opt for onsite systems as the primary method of dealing with wastewater management outside the Town of Jackson. The reality is that approximately 3,600 residential septic systems—each a point source of pollutants such as nitrates and pathogens—are in the ground in Teton County, and untold numbers of new systems are likely, unless and until the community finds the will to undertake comprehensive wastewater management planning. Barring that, it seems the decision has, at least for the present time, been made for us. The predominant means of disposing of wastewater in Teton County outside the Town of Jackson involves onsite (decentralized) wastewater systems, making the proper regulation and management of new, as well as existing, systems paramount.

In order to address the concerns associated with onsite and decentralized wastewater systems, the Guidelines present five management models, each consisting of 13 critical elements that describe activities to be performed to achieve the management goal. “The purpose of the models is to provide a guide to match the needed management controls to the potential public health and water quality risks presented by decentralized systems in a particular area. The models are flexible so that programs can be customized by substituting elements of one program into another to accommodate local needs, practices, and conditions.” ES at 5.

The Five Management Models

- **Management Model 1 - “Homeowner Awareness”** specifies appropriate program elements and activities where treatment systems are owned and operated by individual property owners in areas of low environmental sensitivity. This program is adequate where treatment technologies are limited to conventional systems that require little owner attention. To help ensure that timely maintenance is performed, the regulatory authority mails maintenance reminders to owners at appropriate intervals.
- **Management Model 2 - “Maintenance Contracts”** specifies program elements and activities where more complex designs are employed to enhance the capacity of conventional systems to accept and treat wastewater. Because of treatment complexity, contracts with qualified technicians are needed to ensure proper and timely maintenance.
- **Management Model 3 - “Operating Permits”** specifies program elements and activities where sustained performance of treatment systems is critical to protect public health and water quality. Limited-term operating permits are issued to the owner and are renewable for another term if the owner demonstrates that the system is in compliance with the terms and conditions of the permit. Performance-based designs may be incorporated into programs with management controls at this level.
- **Management Model 4 - “Responsible Management Entity (RME) Operation and Maintenance”** specifies program elements and activities where frequent and highly reliable operation and maintenance of decentralized systems is required to ensure water resource protection in sensitive environments. Under this model, the operating permit is issued to an RME instead of the property owner to provide the needed assurance that the appropriate maintenance is performed.
- **Management Model 5 - “RME Ownership”** specifies that program elements and activities for treatment systems are owned, operated, and maintained by the RME, which removes the property owner from responsibility for the system. This program is analogous to central sewerage and provides the greatest assurance of system performance in the most sensitive of environments.

As explained in the Guidelines:

EPA recognizes that [state, tribal, and local governments] need a flexible framework and guidance to tailor their programs to the specific needs of communities and watersheds. Although each management program model stands alone, the models are intended only to be guides in developing an appropriate management program. Activities in program elements of higher-level models may be incorporated into lower-level programs to assist the local program in achieving its desired objectives. Also, it is possible to implement more than one management program model within a jurisdiction as appropriate for the circumstances encountered, such as housing density, receiving environment characteristics, new development, high-volume or high-strength wastewaters, and so forth. Management models may also be implemented in conjunction with centralized wastewater treatment and collection.

ES at 6.

Rather than a one-size-fits-all management approach reflected in the existing regulations, we recommend that Teton County consider adopting small wastewater facility regulations that are tailored to address the unique circumstances and environmental conditions present in the area and at the location. This approach, which could be done on a sub-watershed scale, would be consistent with the Guidelines, and would be far more likely to address serious problems such as increasing nitrate concentrations in drinking water, and nutrient / *E. coli* impairment in surface waters such as Fish Creek. Highly vulnerable, environmentally sensitive areas, such as Hoback Junction and the West Bank would be subject to the most protective elements adopted from Management Models 3-5.²⁴ Septic systems proposed in areas with a moderate level of environmental risk would be subject to less stringent controls than those required in the most sensitive areas, but would still be managed at a higher level than Model 1. Areas of the county with the least environmental sensitivity, for example, where the risk of ground or surface water contamination is low, would be managed at a level comparable to Model 1. These areas could be identified and delineated as part of this rulemaking process. Such an approach finds support in the EPA's Management Guidelines.

The five models presented in the Guidelines "are structured to reflect an increasing need for more comprehensive management as the sensitivity of the environment or the degree of technological complexity increases. A management program's intensity increases progressively from one management model to another, reflecting the increased level of management activities needed to achieve water quality and public health goals." EPA Guidelines at 9. The EPA Guidelines invite communities to consider "implementing more than one management model, as appropriate, within a jurisdiction for the circumstances encountered (housing density, site and soil characteristics, and treatment technology complexity)." Guidelines at 17.

We urge the county to carefully consider adoption of the structured approach outlined in the EPA's Management Guidelines. We acknowledge that adopting the EPA's approach presents significant challenges, but given the multiple and serious warning signs, which include groundwater unfit to drink, and the *E.coli* impairment of our prized streams, maintaining the status quo would not only be irresponsible, it would constitute a grave disservice to the community, and a costly mistake that would be passed on to others to deal with. "EPA strongly encourages communities to consider the Management Guidelines as a basis for their onsite and clustered wastewater management programs because of the public health and water quality concerns associated with these systems." Guidelines at 9. We do as well.

VI. TETON COUNTY NEEDS A COMPREHENSIVE WASTEWATER MANAGEMENT PLAN

As the County now acknowledges, the need for a comprehensive, county-wide wastewater management plan is acute. While modernizing the county's SWF regulations is

²⁴ According to EPA, areas of greatest environmental sensitivity includes sole source aquifers, wellhead or source water protection zones, critical aquatic habitats, or outstanding value resource waters. EPA Management Guidelines at 16, Table 1.

certainly a step in the right direction, the simple fact is that even the best regulation is not likely to measurably stem the flood of nitrates entering ground and surface waters. This is especially true given that the proposed revisions –as discussed above—fail to address existing systems at all, many of which are decades old and, by modern standards, not properly sited, engineered, constructed or maintained. The Teton Conservation District estimates that approximately 3,600 septic systems have already been installed in the county, and hundreds, perhaps thousands, are likely in the coming years if prompt action is not taken to find alternative means of dealing with human waste. Without a wastewater management plan, this much is certain: new septic systems will continue to be approved in environmentally sensitive areas; older systems – particularly those that have not been properly maintained– will continue to fail; and nitrate concentrations in drinking water supplied by a number of public water systems will continue to rise, threatening the health and safety of consumers.

Planning for wastewater treatment and disposal facilities is critical for every community to protect public health and maintain a high quality of life. The planning, design, construction, and maintenance of wastewater facilities should be environmentally sound and an efficient use of public funds. According to the EPA, public involvement in the wastewater planning process results in cleaner water at a lower overall cost. Only careful public scrutiny can ensure that sewage treatment planning meets the present and future needs of the community; that all the relevant environmental, economic, and political data necessary to ensure effective implementation emerge; that appropriate measures are taken to mitigate negative impacts; and that a community develops a commitment to continued oversight of the operation and maintenance of the facilities.²⁵ As such, if the community is unaware of the issues surrounding wastewater and the current state of its management, there will be no motivation for the public to address the wastewater problems that are evident in Jackson Hole.

Teton County must acknowledge two important factors for the planning process to successfully address the growing wastewater disposal issues in our community. First, that an overwhelming amount of evidence confirms that traditional septic systems, built in accordance with state codes and unmaintained in operation, are failing to adequately treat wastewater for the protection of human health and the environment.²⁶ Secondly, that the Jackson Hole landscape (soils, hydrology, etc.) has a limited capacity to accommodate additional growth that will depend on conventional septic systems in aquifers susceptible to groundwater contamination.²⁷

²⁵ Municipal Wastewater Management - Public Involvement Activities Guide. 1979. Ebook. Washington D.C.: U. S. Environmental Protection Agency Office of Water Program Operations Facility Requirements Division. <https://nepis.epa.gov/Exe/ZyNET.exe/>.

²⁶ Betianu, Camelia, and Maria Gavrilescu. 2004. "WASTEWATER PLANNING AND MANAGEMENT IN SMALL COMMUNITIES". *Environmental Engineering and Management Journal* 3 (4): 845-860. doi:10.30638/eemj.2004.086.

²⁷ Betianu, Camelia, and Maria Gavrilescu. 2004. "WASTEWATER PLANNING AND MANAGEMENT IN SMALL COMMUNITIES". *Environmental Engineering and Management Journal* 3 (4): 845-860. doi:10.30638/eemj.2004.086.

In closing we wish to note that the comments and recommendations contained in this letter were informed by numerous scientific articles, studies, and reports along with federal, state, and local laws, regulations and policies. In the course of preparing these comments, we reviewed volumes of material, the incorporation of which directly into these comments would be unnecessary. We have attached a bibliography containing some of those materials, and hope that these references will be useful to you as you move forward with revisions to Teton County's SWF regulations.

We would be happy to meet with you by phone or in person (following the lifting of COVID-19 physical distancing restrictions) to discuss our concerns and answer any questions. Thank you for your consideration.

Sincerely,



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Enclosure (References)

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