September 7, 2022

Colorado Department of Public Health & Safety
Water Quality Control/Engineering Section
Attn: Emily Wong
4300 Cherry Creek Drive South, B2
Denver, CO 80246-1530

RE: Pine Canyon Amended Site Location Application – Comments of the Town of Castle Rock

Dear Ms. Wong

Thank you for your August 18, 2022, letter regarding the Pine Canyon Site Application. Castle Rock continues to have significant concerns regarding the potential Pine Canyon wastewater treatment facility. We appreciate the opportunity to provide additional input and share our concerns. Our input and concerns are organized according to the items in your letter, which are repeated in italics for clarity.

1. The comment letter states that the Preliminary Effluent Limits (PELs) have not been updated to include conditions to meet the Land Application Management Plan (LAMP). Please see attached for the most recent version of the PELs dated June 6, 2022, which include the conditions to meet the LAMP. No response is required unless the Town has a separate comment related to this LAMP.

Castle Rock has reviewed the revised Preliminary Effluent Limits (PELs) dated June 6, 2022, updated to include conditions relative to the Land Application Management Plan (LAMP). The conditions added by the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) do not address the primary concern associated with this facility. The facility is supposed to be a zero discharge facility and yet, it would be relying heavily on irrigation of turf grass by residential single-family home owners and commercial development to handle wastewater disposal. Because the applicant relies on the end users to ensure that there is no discharge of phosphorus to waters of the state, the application fails to demonstrate that the proposed domestic wastewater treatment works would be managed to minimize the potential adverse impact on water quality. Therefore, the site location application is inconsistent with the requirements of C.R.S. § 25-8-702(2)(b) and Regulation 22, Section 22.5. Even if compliance with the LAMP and PELs were sufficient to minimize the potential adverse impact on water quality, the applicant's consolidation analysis fails to account for all of the costs required to comply with the LAMP. Therefore, the application fails to demonstrate that the proposed domestic wastewater treatment works can meet the applicable water quality planning targets as required by Reg. 22, Section 22.5(1)(h), or that the proposal is consistent with the policy of encouraging the consolidation of wastewater treatment facilities whenever feasible. C.R.S. § 25-8-702(2)(c); Reg. 22, Section 22.3(1)(c).

It is Castle Rock's extensive experience that single family home owners and commercial development often over apply water to turf landscapes. Water waste is a guarantee, with that water running onto sidewalks, in gutters, soaking into the groundwater, and generally not being strictly applied to the turf grass. Residential customers and commercial customers often also irrigate during precipitation events, even when rain sensors have been installed on the irrigation systems. This is because residential homeowners and commercial customers often do not understand how to work or control their irrigation systems. This water waste with phosphorus and nitrogen will run to the stormwater system and from there to East Plum Creek. This water will

also percolate into the ground not being used by the plants, carrying nitrogen and phosphorus to groundwater. The WQCD has not added any conditions to the PELs and the LAMP which will monitor discharge by single family homes or commercial business owners to stormwater and groundwater. Violations of a potential permit would be common. Without any conditions to monitor for these violations, the WQCD would not be able to enforce a zero discharge permit. The WQCD acknowledges this very issue on page 9 of the PELs, see below:

"Suggested spray head for the lawn and tree and shrubs is HE-VAN, manufactured by Rain Bird. A communication with the manufacturer of the product resulted in a "no water application efficiency" outcome for the product. Therefore, a water application efficiency for HE-VAN type sprinkler head in the LAMP was 80%. This means that the 20% more water than the water needed by the plant would be applied to the LAMP area. This water amount would either be going to deep percolation or running off the site or both. This can be a concern about the whole system even though the contractor says that all the runoff will be collected in treatment ponds for removal of phosphorus before it is released. If released to the creek then some other permitting may apply. The facility will have to work with the Permits Section to address it. A special attention will have to be paid to the potential runoff water from the irrigated sites to lead the water to the treatment ponds."

While the WQCD indicates that the "contractor" says all runoff will be collected in treatment ponds for removal of phosphorus before it is released, it is not clear how they will collect this water from 1,300-plus single-family homes that have over-sprayed irrigation to gutters and sidewalks and or over irrigated, causing water to percolate to groundwater. In fact, there will be no way for the "contractor" to collect the groundwater impacted by over irrigation for treatment in ponds. Further, if the "contractor" is going to treat the water in ponds, then they will by definition have a discharge. Unless they can remove phosphorus to zero, they will need a phosphorus waste load allocation. Castle Rock cannot accept a LAMP that is unenforceable to permit. The WQCD must show how they will enforce a zero discharge facility located in the heart of Castle Rock. The current PELs do not address this issue.

2. The comment letter (page 7) appears to indicate that if Pine Canyon annexed to the Town, reclaimed water would be available to Pine Canyon for reuse. Please clarify whether 100 percent of the water sent to Plum Creek Water Reclamation Authority (PCWRA) wastewater treatment facility from Pine Canyon would be available for Reuse within the Pine Canyon development.

First, it is important to understand that if Pine Canyon annexed to the Town, they would become part of Castle Rock Water's full water and wastewater system. The development would have access to renewable water and reusable water not only from Pine Canyon, but from the whole Town, and not be reliant solely on nonrenewable groundwater.

As explained in Castle Rock's initial comments on the Pine Canyon site location application (August 28, 2020), Pine Canyon proposes to develop on a non-renewable and unsustainable groundwater supply. The nontributary Denver Basin aquifers that Pine Canyon proposes to use as the sole water supply for the proposed development are not recharged by precipitation or streams. *See* C.R.S. § 37-92-103(10.5). Water in these aquifers is allocated based on a 100-year aquifer life, which means that the pumping of wells would deplete the aquifer over time. *Id.* § 137(4)(a). The State Engineer is currently putting a total withdrawal volume limit on all new Denver Basin groundwater (nonrenewable water) wells. This means some day in the future, Pine Canyon will run out of water if they are allowed to develop solely on nonrenewable groundwater. Castle Rock has invested over $234 million dollars to date, with another $500M-plus planned, to transition off of non-renewable groundwater to renewable water supplies to ensure a sustainable, long-term supply for our residents. Therefore, while development as proposed by Pine Canyon would rely on non-renewable water, annexation to the Town would provide water that is both renewable and reusable. For this reason, as noted in the Town's comments on the Pine Canyon amended site location application (June 15, 2022), Pine Canyon's

consolidation analysis was flawed by a lack of reasonable estimates of the cost of providing a renewable water supply.

Castle Rock Water has an indirect reuse system in place for its entire service area. Water used in the Town is treated to environmental standards at the Plum Creek Water Reclamation Authority (PCWRA) wastewater treatment plant. The water is discharged to East Plum Creek and flows downstream to Sedalia, where Castle Rock Water has a diversion, reservoir and pump station. The water is pulled back off of Plum Creek and pumped via a pipeline back to Castle Rock Water's Plum Creek Water Purification Facility (PCWPF), where it is purified and reused by the Town for all municipal purposes. If Pine Canyon annexed into the Town, any water used in the Pine Canyon development would be treated at the PCWRA wastewater treatment plant, recaptured in Sedalia, purified at the PCWPF, and reused throughout the Town. This means that 100 percent of the water sent to PCWRA (minus losses for evaporation, consumption, etc.) would be reused throughout the Town, including in Pine Canyon. This reuse would occur without the need to construct and maintain a separate reclaimed water distribution system. Pine Canyon would be served by reuse water from the entire service area, not just from Pine Canyon.

3. Castle Rock appears to support the idea of wastewater consolidation for the benefit of public health and the environment. In addition, the Division understands that the Pine Canyon development was included in the PCWRA master planning. In the interest of wastewater conveyance and treatment consolidation, please explain the options that Castle Rock and the other members have discussed, offered, or would support for purchase and availability of interceptor and/or treatment capacity to allow Pine Canyon to be served by the Plum Creek Water Reclamation Authority (PCWRA). In addition to all options considered, please specifically discuss how Castle Rock and other members could and would support the following options:
a. Inviting Pine Canyon to become a member of the PCWRA.
b. Providing extra-territorial service to Pine Canyon without annexation into the Town of Castle Rock, and
c. Providing service to Pine Canyon with annexation into the Town of Castle Rock that may exclude specific requirements, like the transfer of water rights.
d. Providing Pine Canyon with special connector status to PCWRA.

Castle Rock definitely supports the concept of wastewater (and water) consolidation for the benefit of public health and the environment. Consolidation also benefits the bottom line of customers. Douglas County already has a number of tiny water and sanitation districts that are failing and cannot provide adequate service. These districts are having to be bailed out by the County (at the expense of the general taxpayer) and Castle Rock Water, because they do not have the resources to provide sustainable service in this complex utility business.

Castle Rock has worked with Pine Canyon and is still willing to work with Pine Canyon on annexation to the Town. We know that annexation and development within the Town is profitable and cost effective, as we are one of the fastest-growing municipalities in the Country, with developers continuing to propose new projects and annexations to the Town every day. Annexation will be the most cost-effective approach for Pine Canyon to obtain water and wastewater service for the planned development and will be the most beneficial approach for the residents and businesses that will ultimately be in Pine Canyon.

a. Inviting Pine Canyon to become a member of the PCWRA.

Castle Rock will not support Pine Canyon becoming a full member of PCWRA. PCWRA was established through an Establishing Agreement in 1989. All of the members would have to approve a new full member. Castle Rock will not approve a 1,300-unit development to become a full member with equal voting rights alongside a Town of 80,000 people. Further, all of the treatment capacity is owned by the existing members. As such, Pine Canyon can only access treatment capacity through one of the existing members.

b. Providing extra-territorial service to Pine Canyon without annexation into the Town of Castle Rock, and

The Town of Castle would oppose the extension of extra-territorial service to unincorporated Pine Canyon. Castle Rock has and will continue to consider and offer extra-territorial service in situations where existing water/wastewater systems need the assistance of Castle Rock, such as the recent Bell Mountain Ranch extension of service. Bell Mountain is an example of a decades-old system, built out residential subdivision, that could not meet environmental standards. Castle Rock will now provide service, with appropriate surcharge costs, to this existing Bell Mountain subdivision. Pine Canyon doesn't currently exist and should not be planned for failure. Extension of Town services for new subdivision growth without annexation is poor public policy. If Pine Canyon desires Castle Rock water and wastewater service, it should annex into the Town of Castle Rock and comply with Castle Rock standards – as hundreds of new residences in Castle Rock successfully do every year.

c. Providing service to Pine Canyon with annexation into the Town of Castle Rock that may exclude specific requirements, like the transfer of water rights.

If Pine Canyon annexes into the Town, they would be required to meet all of the Town's requirements, just like every other development that has proceeded within the Town. We cannot provide a special exclusion just for Pine Canyon. This means Pine Canyon's groundwater rights would need to be dedicated to the Town. However, in return for the dedication of the non-renewable Denver Basin groundwater rights held by the applicant, as explained above, the development would receive a renewable, reusable supply from the Town, and access to the infrastructure needed to accomplish reuse without the need to construct a new reclaimed water distribution system.

Therefore, the requirement to dedicate water to Castle Rock does not impair the applicant's water rights as contemplated by Water Quality Control Division Policy CW-14. Further, consolidation and annexation would not preclude water reuse opportunities, nor impair water conservation efforts, as also contemplated by Policy CW-14. To the contrary, because the Town would provide a renewable water supply, annexation would conserve the non-renewable Denver Basin nontributary groundwater aquifer.

d. Providing Pine Canyon with special connector status to PCWRA.
Castle Rock would not support Pine Canyon becoming a special connector for several reasons. First, this would allow Pine Canyon to continue with a small water and sanitation district that will likely have issues in the future due to inadequate funding and management capacity. Second, since Pine Canyon does not have any way to own treatment capacity in PCWRA without purchasing it from one of the members, Castle Rock would have to sell treatment capacity to Pine Canyon. The other members likely do not have excess capacity to sell. Selling treatment capacity to a small, newly formed water and sanitation district located in the middle of Castle Rock is not in the best interest of the Town, nor the future residents of Pine Canyon. Those residents should be served by Castle Rock Water, either through annexation or an extraterritorial service agreement.

Beyond our response to the WQCD's questions, Castle Rock would like to raise some additional concerns. The concept of a LAMP to dispose of wastewater utilizing residential turf grass is contrary to the current policy concerns facing the State of Colorado. The Colorado River is in crisis. Responsible water providers are moving away from residential turf grass as a luxury we cannot afford in Colorado. Aurora has just passed an ordinance that no longer allows turf grass in the front yard of new houses and limits turf to 500 square feet in the backyard. Castle Rock is considering a similar ordinance. The largest water providers in Colorado have just signed a Memorandum of Understanding (MOU) to eliminate up to 30% of the existing turf grass in their service areas.

While using turf to dispose of wastewater seems like a good idea, it does not allow for that wastewater to become a water supply and be reused multiple times to extinction. If this development proceeds, Pine Canyon

will add hundreds of acres of turf grass requiring supplemental irrigation, which will directly conflict with the course being taken across the State to respond to the crisis at hand. While reuse water will initially be used to irrigate the turf, that water would only be able to be used once. In Castle Rock, we are moving away from turf grass irrigation and making sure that our reuse supplies are available to be reused many times until extinction.

Conclusion and Information Request

Castle Rock is continuing its review of the revised PELs, which incorporated the Land Application Management Plan as a condition. Based on this preliminary review, Castle Rock continues to recommend denial because a) the engineering report does not establish that the proposed domestic wastewater treatment works will meet all of the requirements of the water quality planning targets; b) even if the facility meets all the PELs, the engineering report does not establish that the proposal to dispose of all wastewater through end-user reclaimed water use will minimize the potential adverse effect on water quality; and c) the applicant's alternatives analysis is flawed, because it fails to account for the true costs of meeting the PELs, preventing adverse water quality effects, and providing the proposed community with a renewable and sustainable water supply.

Castle Rock has reviewed the Division's electronic file for the Pine Canyon site location application and, based on that review, it appears that the online electronic file is incomplete. In addition, Castle Rock has not received copies of correspondence concerning the application, even when listed in the cc line of letters (for example, Castle Rock did not receive a copy of the August 17, 2022, letter from Emily Wong to Jim Walker, even though Castle Rock Water was listed as a recipient). To ensure transparency of the application materials, and an adequate opportunity for Castle Rock to review and comment on any updated information provided by the applicant, Castle Rock requests that the Division a) provide copies to Castle Rock Water of all correspondence concerning the application and/or b) upload all applications, correspondence, and other written materials about the application to the Division's online file for the site application under number ES.20.SA.05399.

Sincerely,

Mark Marlowe

Digitally signed by Mark Marlowe
DN: cn=Mark Marlowe, o=Castle Rock Water, ou, email=mmarlowe@crgov.com, c=US
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Mark Marlowe,
Director of Castle Rock Water

Cc: Jason Gray, Mayor of Castle Rock
David Corliss, Town Manager of Castle Rock
Doug DeBord, County Manager of Douglas County
Terence Quinn, Director of Community Development of Douglas County
Curt Weitkunat, Planning Manager, Douglas County
Matt Jakubowski, Principal Planner, Douglas County
Diane Kielty, Authority Manager of Chatfield Watershed Authority
Weston Martin, Chair of the Technical Advisory Committee for Chatfield Watershed Authority
Bob Frachetti, AQUA Engineering
Brian Hlavacek, Tri-County Health Department
Alan Leak, Chatfield Watershed Authority
Sam Bishop, City of Castle Pines
Jim Worley, Castle Pines North Metropolitan District
Ernestine Trujillo, Aqua Engineering
Mike Emming, WQCD Engineering Section, Unit Manager

Bret Icenogle, WQCD Engineering Section, Section Manager
Joni Nuttle, Senior TMDL Specialist, Colorado Department of Public Health and Environment
Brandi Honeycutt, WQCD Permits Section
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