COCONINO COUNTY ARIZONA
COMMUNITY DEVELOPMENT DEPARTMENT
Environmental Quality

Jay Christelman, Director

Request for Approval of an Alternative Design, Setback, Installation or Operational Feature

Per R18-9-A312(G)

December 6, 2019

The purpose of R18-9-A312(G) is to allow the designer of an onsite wastewater system to propose an alternative design, setback, installation or operational feature that will achieve equal or better performance compared to the general permit requirement.

This CCCD EQ application and justification has been partially completed to assist the applicant and their onsite wastewater system designer with a feature that CCCD EQ believes may be applicable to multiple similar situations.

The designer must complete the application and justification. The designer must sign and date or seal the justification as any other Alternative Feature application.

CCCD EQ will review the request as they would any other request. It may be denied for the same reasons that any other request might be denied.

CINDERS

The volcanic nature of the local geology includes areas of highly permeable cinders with groundwater at significant depths that are often uneconomical for a single-family residence to drill a well. This would include Black Bill and Doney Park in addition to some areas North of Williams and Parks.

In a site investigation performed in accordance with R18-9-A310(D)(1) they would be characterized as Type A soil: “gravelly coarse sand or coarser” which requires a “site-specific SAR” (soil absorption rate) per A312(D)(2)(b). The theoretical SAR would be 1.20+ gpdpsf therefore the vertical separation per A312(E)(1) does not allow septic tank effluent regardless of depth to groundwater.

The areas, particularly Doney Park have been under development for decades. Wells have been drilled giving useful information on the geology below the shallow depths used by onsite wastewater systems. The Rio de Flag carries the discharge from the City of Flagstaff sewers in the past and now the effluent from two treatment plants. The flow does not leave the area unless there is a significant storm event that will not soak into the ground or be used in irrigation. Nevertheless, the drinking water aquifer that is tapped by the Doney Park Water company meets ADEQ Aquifer standards.

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CCCD EQ:	**PERMIT NO.:**	**DATE**

SITE INFORMATION				
ASSESSOR PARCEL #:				
PROPERTY ADDRESS:				
SUBDIVISION		**UNIT**	**LOT**	

APPLICANT (person responsible for design, construction, operation and overall compliance):			
NAME / CO.:			
ADDRESS:			
E-MAIL:		**PHONE#**	

DESIGNER / ENGINEER			
NAME / CO.:			
ADDRESS:			
E-MAIL:		**PHONE#**	

1. Rule Citation of Requirement for Which Change is Requested:

AAC R18-9-A312(D) Soil Absorption Rate (SAR), A312(E) Vertical Separation

2. Description of Requested Change:

Attachments ☒ YES ☐ NO

3. Justification for Requested Change:

Attachments ☒ YES ☐ NO

Designer Signature with date or Engineer's Seal

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1. Rule Citation of Requirement for Which Change is Requested:

AAC R18-9-A312(E) Vertical Separation
AAC R18-9-A312(D) Soil Absorption Rate (SAR)

2. Description of Requested Change:

The use of septic tank effluent will be allowed in the case of Type A soil (gravelly coarse sand or coarser) with a vertical separation of 200 feet to the groundwater that includes restrictive layers.

The site-specific SAR is 0.50 gpdpsf for this Type A soil.

3. Justification for the Requested Change:

Onsite wastewater systems in this region, due to characteristically highly permeable soils, observed in backhoe excavations, would not qualify for the use of conventional systems. It has been established through substantial geological information and well driller logs that the permeable layer is not constant to the groundwater. The lithology for the area shows several layers that would be less permeable than the shallow soil observed as part of the site investigation.

Allowable minimum vertical separation from the bottom of the constructed disposal field to the top of the nearest limiting condition is dependent on the ability of the treatment system and natural soil to reduce harmful microorganisms as evidenced by a reduction in Total Coliform. These documented restrictive, less permeable, layers achieve that reduction despite the high permeability of the upper soil layers. This is evidenced by documented sampling of the aquifer that meets Aquifer Water Quality Standards.

Although these soils are very permeable with a SAR greater than 1.20 gpdpsf, a lower SAR of 0.50 gpdpsf is proposed to assure adequate absorption area in case of variations in the volcanic activity that created the geological layers.

Signature _____ Date _____