Oregon
Tina Kotek, Governor

Department of Environmental Quality
Eastern Region Eugene Office
475 NE Bellevue Dr., Suite 110
Bend, OR 97701
(541) 388-6146
FAX (541) 388-8283
TTY 711

July 3, 2024

Pineriver Homes LLC
23410 Hwy 20
Bend, OR 97701

Re: WQ: CAS: Variance Denial: 248-23-000443-VAR: 16992 Downey Rd; T.20; R.10; Sec. 12B; Tax Lot 6000; 0.57 Acres; Deschutes County.

Dear Pineriver Homes LLC,

This correspondence verifies that a variance hearing provided for under Oregon Administrative Rules (OAR) 340-071-0430, was held at 1:30 pm on May 8, 2024 at the property referenced above on Eclipse Drive in south Deschutes County. The purpose of the hearing was to provide a forum for the presentation of supportive facts to show that strict compliance with certain rules regulating onsite sewage disposal are inappropriate, or that special physical conditions at the site render strict compliance unreasonable, burdensome or impractical. The proposal and associated supporting information you provided with the application was presented during the recorded hearing, along with an updated site plan to clarify elevations.

Variance Decision:
Standards found in Oregon Administrative Rules Chapter 340, Division 071 & 073 have been developed to protect public health and the environment in Oregon. The variance officer's duty is to determine if in their professional judgement, the system proposed for this variance consideration is adequate to safeguard the public's health and the environment if variance from the requested standards in the Oregon Administrative Rules are granted. In my opinion, your proposal does not adequately address all of the limitations that are present at the site.

Based on review and evaluation of the variance record, observations made at the site, and testimony given during the variance hearing, I regret to inform you that your variance request is hereby denied. It is my judgement that the proposed system has the potential to present a health hazard risk and/or have significant adverse impact to groundwater or surface water quality if allowed.

Some factors for decision:

- Current Oregon Administrative Rules require that the water table is at least 24 inches below the ground surface throughout the year, and a minimum 24-inch separation is maintained between a water table and the bottom of the sand filter. The proposal assumes a seasonally high shallow permanent water table of 10 inches below ground surface; however, based on observed soil characteristics from the site evaluation by Deschutes County on December 5, 2019 and during the variance officer's site visit on May 1, 2024, it is likely that saturated conditions occur at even shallower depths within the proposed area.
- Southern Deschutes County is an area where nitrate contamination is of concern due to coarse rapidly draining soils overlaying a shallow unconfined aquifer. Many lots are served

by private wells and draw from this aquifer for drinking water. Even with a proposed design capable of producing high quality effluent before discharging into the soil, treatment does not eliminate all nutrients and pathogens from the wastewater.

- Even with a septic design capable of producing high quality effluent, the treatment proposed in conjunction with continued development in the area may still present a risk to the groundwater that may be irreversible to the shallow aquifer system from both an environmental health and public health perspective.
- The downslope of the adjoining lots have the potential to act as receiving areas and have vegetation that is normally found in and around wetland areas such as willows, sedges, and rushes.

Variance Proposal:
The proposal was to install an Orenco AdvanTex®AX20RTN-Mode 3B Alternative Treatment Technology (ATT) System prior to discharge to a 250 square foot reduced sized Bottomless Sand Filter (BSF) system constructed on an additional 16 inches of sand filter media to the ground surface. This provides 31 inches of separation between the bottom of the conventional bottomless sand filter design and the highest potential groundwater in this area (assumed at 16 inches bgs for this design).

You are seeking a variance from the following Oregon Administrative Rules regulating onsite wastewater treatment systems:

1) **OAR 340-071-0130(1) which states: (1)** Protection of public waters from public health hazards. An agent may not authorize installing or using a system that is likely to pollute public waters or create a public health hazard. If, in the judgment of the agent, the minimum standards in this division will not adequately protect public waters or public health on a particular site, the agent must require a system to meet requirements that are protective. This may include but is not limited to increasing setbacks, increasing drainfield sizing, or using an alternative system. The agent must provide the applicant with a written statement of the specific reasons why more stringent requirements are necessary.

2) **OAR 340-071-0150(4)(a)(B) which states: (B)** All criteria for approving a specific type or types of systems, as described in this division are satisfied.

3) **OAR 340-071-0290(4)(a) which states: (4)** Sand filter without a bottom. Sites may use a bottomless sand filter if the site meets the criteria in this section and section (3) of this rule. **(a)** Saprolite; fractured bedrock; gravel; or soil textures of sand, loamy sand, or sandy loam occur in a continuous section at least 2 feet thick in contact with and below the bottom of the sand filter.

4) **OAR 340-071-0290(4)(d) which states: (4)** Sand filter without a bottom. Sites may use a conventional sand filter without a bottom (BSF) if the site meets the criteria in this section and section **(3)** of this rule. **(d)** The water table is at least 24 inches below the ground surface throughout the year, and a minimum 24-inch separation is maintained between a water table and the bottom of the sand filter.

Site History:

Deschutes County conducted a site evaluation with two test pits on the subject property on December 4, 2019 which was denied on December 5, 2019. The denied use of an onsite wastewater system was due to observed conditions associated with saturation that are used to determine water table levels and site suitability. These conditions are present above 24 inches, and were estimated to be between 16 and 19 inches below ground surface (bgs), though the soil notes also suggest that these conditions may occur shallower based on soil characteristics and depleted soil matrix colors closer to the ground surface, as the site evaluation was conducted in winter with the ground being partially frozen.

A site visit was made by the variance officer on April 23, 2024 to observe the site and proposed system layout. The stake-out of the bottomless sand filter locations appeared to match the proposal site plan and were located near the existing test pits 1&2 from the site evaluation conducted by Deschutes County. Gray / depleted soil colors were observed near the ground surface in both pits, indicating that the depth of seasonal high saturation could be higher than the assumed depths used for the proposed system.

Conclusion:
The decision to deny your variance request is a final Order of DEQ. You (or any other person who is adversely affected) have the right to appeal this Order to the Circuit Court for Marion County or the Circuit Court for the county within which you reside or have a principal business office, pursuant to ORS 183.484. To appeal you must file a petition for judicial review with the Circuit Court within 60 days from the day this Order was served on you. If this Order was personally delivered to you, the date of service is the day you received the Order. If this Order was mailed to you, the date of service is the day it was mailed, not the day you received it. If you do not file a petition for judicial review within the 60 day time period, you will lose your right to appeal.

Please feel free to contact me if you have any questions concerning this decision. I can be reached by telephone at (541) 776-6130 or by email at david.hurley@deq.oregon.gov

Sincerely,

David Hurley

David Hurley, REHS
Variance Officer
On-Site Sewage Disposal Program
Water Quality Division

cc:

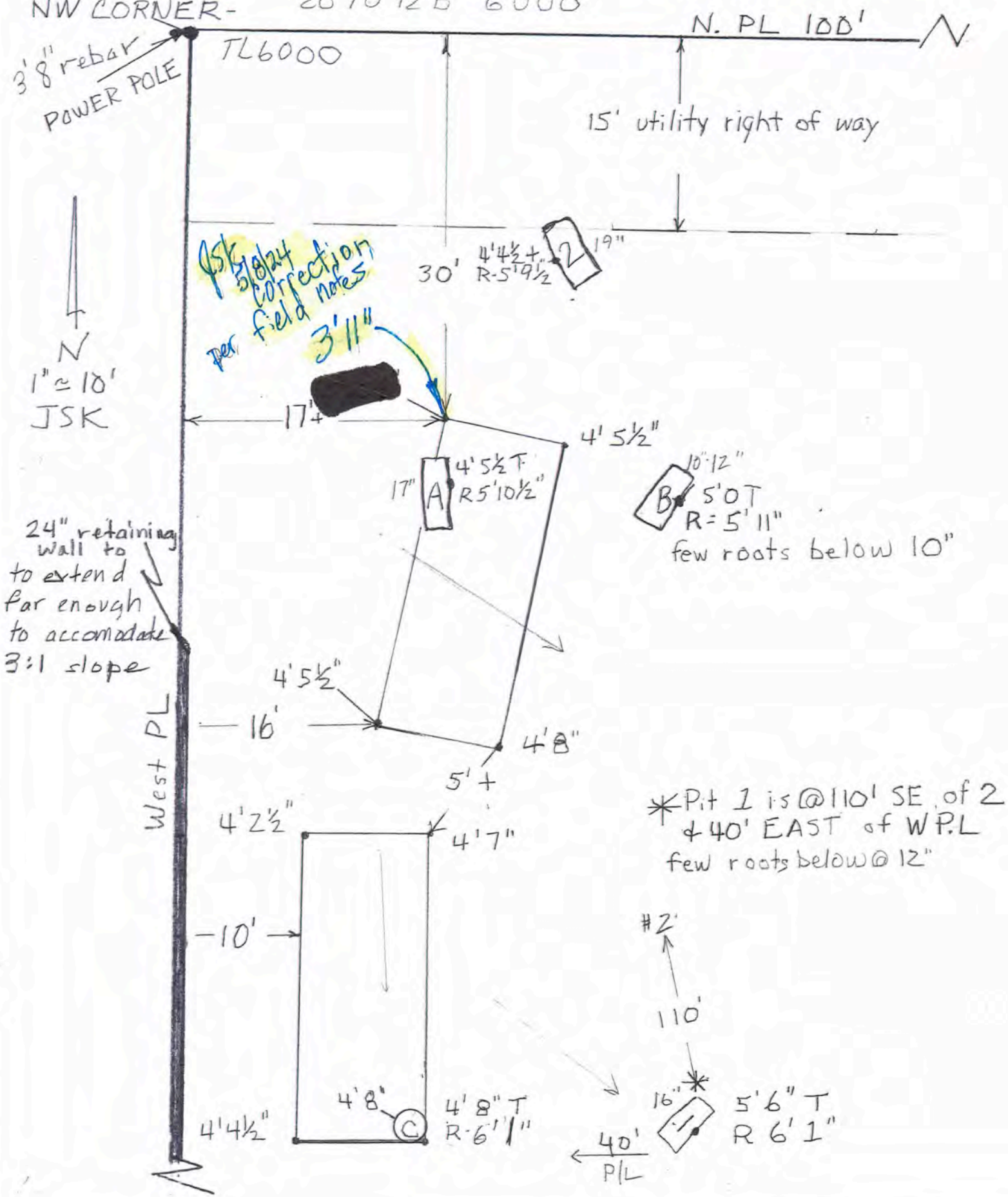
Todd Cleveland, REHS; Deschutes County Onsite Wastewater Division, 117 NW Lafayette Ave, Bend OR 97703
Brian T. Rabe, CPSS, WWS; Principal Soil Scientist, of Elkhorn Consulting LLC, 14833 Goodrich Creek Lane, Baker City, OR 97814
Megan M. Delucia, 12411 SE Yoakam Ln., Happy Valley, OR 97086
Garcia Family Trust, 1205 Country Club Dr., Ojai, CA 93023

Eric L. Moore, 620 Thimbleberry Ln., Sandpoint, ID 83864
Justin & Cheryl Lynn, PO Box 301523, Portland, OR 97294
Larry D. Hager, 307 SE Elliot Ave., Gresham, OR 97080
` Todd A. Fulcher, PO Box 546, Philomath, OR 97370
Gary & Laura Westall, 17081 Indio Rd., Bend, OR 97707

Revised Plot Plan Layout 5/8/24 JSK

PROPOSED FILTER LAYOUT 16992 DOWNEY RD.

NW CORNER- 20 10 12 B 6000



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Department of Environmental Quality
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Bend, OR 97701
(541) 388-6146
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April 25, 2024

Hearing Date/Time is 10:00 AM on May 8, 2024

Re: WQ: CAS: Variance Assignment: 248-23-000443-VAR: 17146 Covina Road; T.20; R.10; Sec. 12B; Tax Lot 6000; Lot 51, Block 24 Deschutes River Recreation Homesites Inc (Block 18-25), 0.57 Acres; Deschutes County.

Dear Resident:

Neighbors of yours, Pineriver Homes LLC , own the property referenced above and herein to be referred to as the "Property", has submitted an application to the Oregon Department of Environmental Quality (DEQ) requesting a "For Cause Variance" from Oregon Administrative Rules regulating Onsite Wastewater Treatment Systems. The Property has been denied due to conditions associated with saturation being within 24 inches of the ground surface.

In the variance application, the applicant's proposal is to install an Orenco® AdvanTex AX20N-Mode 3B Alternative Treatment Technology (ATT) System followed by a reduced sized Bottomless Sand Filter (BSF) system.

For more detail, please review the enclosed variance hearing notice.

A variance to the Oregon Administrative Rules regulating Onsite Wastewater Treatment Systems may be granted if a variance officer finds that:

1. Strict compliance with the rules or standards are inappropriate: or

2. Special physical conditions render strict compliance unreasonable, burdensome or impractical.

Part of the variance process involves an information gathering hearing. In this hearing, information is shared about the site conditions, rule requirements, public health or environmental protection concerns, and how the proposed system design overcomes these concerns. It is also an opportunity for all parties involved, including adjacent property owners, to voice any concerns they might have with the proposal. Department policy requires a variance officer to inform all adjacent property owners of the variance hearing date, time and place. You are not required to attend this hearing, but can, should you desire to do so.

The information gathering hearing for this variance proposal is to begin at **10:00 AM, Wednesday, May 8, 2024,** at the subject property.

The Department is committed to accommodating people with disabilities. Please notify DEQ of any special physical or language accommodations needed as far in advance of the hearing date as possible. To make any of these arrangements please contact, David Hurley, at (541) 776-6130 or toll free at (866)-863-6668, or by email at: david.hurley@deq.oregon.gov. People with hearing impairments can call DEQ's TTY at (800)-735-2900.

If you have any questions concerning this variance process or hearing arrangements, please give me a call.

Sincerely,

David Hurley

David Hurley, REHS
Natural Resource Specialist 4
Variance Officer – Onsite Wastewater Program

cc: Todd Cleveland, REHS; Deschutes County Onsite Wastewater Division, 117 NW Lafayette Ave, Bend OR 97703
Jerry Kathan; 3015 NE Royal Court, Bend OR 97701
Pineriver Homes, 23410 Highway 20, Bend, OR 97701

In Addition, To The Following Adjacent Property Owners:

Pineriver Homes LLC, (16980 Downey Rd., 16996Downey Rd.), 23410 Hwy 20; Bend, OR 97701
Excursion Lodging (16981Covina Rd.) 7955 NW Hope Dr.; Corvallis, OR 97330
Cascade Lakes Properties LLC, (16989 Covina Rd.) 56646 Lloyd Way; Bend, OR 97707
Joseph B. Edwards (16997 Covina Rd.) 39566 Calle De Luz; Fallbrook, CA 92028
Bauhaus Craftsman Retirement Trust (16999 Downey Rd.) 1686 NW Cumberland Ave.; Bend, OR 97703
Colleen M. Mahoney (16991 Downey Rd.), 5482 La Porte Dr.; Colorado Springs, CO 80918
Gilbert A. & Darlene L. Zaccaro (16983 Downey Rd.) PO Box 4189; Sunriver, OR 97707

Encl. Variance Hearing Notice

Oregon
Tina Kotek, Governor

Department of Environmental Quality
Eastern Region Bend Office
475 NE Bellevue Dr., Suite 110
Bend, OR 97701
(541) 388-6146
FAX (541) 388-8283
TTY 711

April 25, 2024

Pineriver Homes LLC
23410 Highway 20
Bend, OR 97701

Re: WQ: CAS: Variance Assignment: 248-23-000443-VAR: 16992 Downey Road; T.20; R.10; Sec. 12B; Tax Lot 6000; Lot 51, Block 24 Deschutes River Recreation Homesites Inc (Blocks 18-25), 0.57 Acres; Deschutes County.

Dear Pineriver Homes LLC,

The Department of Environmental Quality is in receipt of your onsite wastewater variance application and proposal. The application has been assigned to me for further action. I plan to hold an information gathering hearing (as provided under OAR 340-71-430) regarding your proposal on **Wednesday, May 8, 2024, at 10:00 am** at the subject property. Your proposal and system plans have been prepared by Jerry Kathan. It is my understanding that Mr. Kathan will be present to answer any questions regarding the proposal.

Deschutes County conducted a site evaluation with three test pits at the subject property on December 4, 2019, where a denial was issued for the use of an onsite wastewater system on December 5, 2019. The primary reason for denial was due to the predicted depth to the seasonally high permanent water table being less than 24 inches below the ground surface. Observed conditions associated with saturation that are used to determine water table levels and site suitability were observed less than 24 inches from the ground surface between 16 and 19 inches below ground surface (bgs).

Southern Deschutes County has a shallow water table that is typically unconfined in porous pumice soils and is susceptible to contamination from soluble and mobile constituents. The most common constituent of concern is nitrate-nitrogen from septic systems.

The proposal is to overcome the site limitations by installing an Orenco® AdvanTex AX20N-Mode 3B Alternative Treatment Technology (ATT) System followed by a reduced sized Bottomless Sand Filter (BSF) system. You are seeking variance from the following Oregon Administrative Rules (OARs):

OAR 340-071-0135(1): which addresses Department of Environmental Quality approval of new or innovative technologies, materials, or designs for onsite systems.

OAR 340-071-0150(4)(a)(B) which states: All criteria for approving a specific type or types of systems, as described in this division are satisfied.

OAR 340-071-0290(4)(d) which states: Bottomless sand filter. Sites may use a conventional sand filter without a bottom (BSF) if the site meets the criteria in this section and section (3) of this rule. (d) The water table is at least 24 inches below the ground surface throughout the year, and a minimum 24-inch separation is maintained between a water table and the bottom of the sand filter.

Sometimes during a hearing, it can be determined that other rules or standards need to be considered in order to finalize a proposal. Should this occur, based on the proposal, site observations, and other considerations, I may or may not proceed with the hearing and my final decision process until further information is provided.

Notice of the hearing will be mailed to the neighboring property owners and to the Deschutes County Onsite Wastewater Division staff, see copy enclosed. However, all persons who wish to attend the hearing are welcome. The hearing will provide an opportunity for you and others to offer additional facts or reasons either in support of or in opposition to the proposal and requested variance to the rules.

Please remember, it is the burden of the applicant to show that strict compliance to the rules or standards are inappropriate, or that special physical conditions render strict compliance with the rules or standards to be unreasonable, burdensome or impractical. Additionally, the applicant needs to provide prudent reasonable justification in how their proposal will still protect both public health and the environment.

Deschutes County Onsite Wastewater Division staff will get a copy of your proposal and will have an opportunity to provide both written and verbal comments on your proposal. Others wishing to review your proposal can contact me.

The Department is committed to accommodating people with disabilities. Please notify DEQ of any special physical or language accommodations needed as far in advance of the hearing date as possible. To make any of these arrangements please contact, David Hurley, at (541) 776-6130 or toll free at (866)-863-6668, or by email at: david.hurley@deq.oregon.gov. People with hearing impairments can call DEQ's TTY at (800)-735-2900.

If you have questions concerning the variance process or hearing arrangements, please give me a call. You may also visit https://ordeq.org/septicvariance for more information about variances.

Sincerely,

David Hurley

David Hurley, REHS
Natural Resource Specialist 4

Variance Officer – Onsite Wastewater Program

cc: Todd Cleveland, REHS; Deschutes County Onsite Wastewater Division, 117 NW Lafayette Ave, Bend OR 97703
Jerry Kathan; 3015 NE Royal Court, Bend OR 97701

In Addition, To The Following Adjacent Property Owners:

Pineriver Homes LLC, (16980 Downey Rd., 16996Downey Rd.), 23410 Hwy 20; Bend, OR 97701
Excursion Lodging (16981Covina Rd.) 7955 NW Hope Dr.; Corvallis, OR 97330
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Gilbert A. & Darlene L. Zaccaro (16983 Downey Rd.) PO Box 4189; Sunriver, OR 97707

Encl. Neighbor Notice

Business Name Search

New Search | Printer Friendly

Business Entity Data

10-27-2023 13:18

Registry Nbr	Entity Type	Entity Status	Jurisdiction	Registry Date	Next Renewal Date	Renewal Due?
188381-93	DLLC	ACT	OREGON	12-09-2003	12-09-2023	YES

Entity Name	PINERIVER HOMES LLC
Foreign Name	

Online Renewal:

Renew Online

Click here to generate and print an annual report.

New Search | Printer Friendly

Associated Names

Type	PPB	PRINCIPAL PLACE OF BUSINESS				
Addr 1	23410 HWY 20					
Addr 2						
CSZ	BEND	OR	97701		Country	UNITED STATES OF AMERICA

Please click here for general information about registered agents and service of process.

Type	AGT	REGISTERED AGENT			Start Date	11-21-2022	Resign Date	
Name	KEVIN		DOUGLAS	HOLLAND				
Addr 1	23410 HWY 20							
Addr 2								
CSZ	BEND	OR	97701		Country	UNITED STATES OF AMERICA		

Type	MAL	MAILING ADDRESS							
Addr 1	23410 HWY 20								
Addr 2									
CSZ	BEND		OR	97701		Country	UNITED STATES OF AMERICA		

Type	MEM	MEMBER					Resign Date		
Name	DANIELLE			HOLLAND					
Addr 1	23410 HWY 20								
Addr 2									
CSZ	BEND		OR	97701		Country	UNITED STATES OF AMERICA		

Type	MGR	MANAGER					Resign Date		
Name	KEVIN			HOLLAND					
Addr 1	23410 HWY 20								
Addr 2									
CSZ	BEND		OR	97701		Country	UNITED STATES OF AMERICA		

Type	MGR	MANAGER					Resign Date		
Name	BRIAN			HOLLAND					
Addr 1	16970 PITCH CT								
Addr 2									
CSZ	BEND		OR	97707		Country	UNITED STATES OF AMERICA		

Type	MGR	MANAGER					Resign Date		
Name	SUMMER			HOLLAND					
Addr 1	16970 PITCH CT								
Addr 2									
CSZ	BEND		OR	97707		Country	UNITED STATES OF AMERICA		

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Name History

Business Entity Name	Name Type	Name Status	Start Date	End Date
PINERIVER HOMES LLC	EN	CUR	12-09-2003	

Please read before ordering Copies.

New Search Printer Friendly

Summary History

Image Available	Action	Transaction Date	Effective Date	Status	Name/Agent Change	Dissolved By
	AMENDED ANNUAL REPORT	11-21-2022		FI	Agent	
	AMENDED ANNUAL REPORT	10-22-2021		FI		
	AMENDED ANNUAL REPORT	10-28-2020		FI		
	AMENDED ANNUAL REPORT	11-12-2019		FI	Agent	
	AMNDMT TO ANNUAL RPT/INFO STATEMENT	07-24-2019		FI		
	AMNDMT TO ANNUAL RPT/INFO STATEMENT	04-29-2019		FI		
	AMENDED ANNUAL REPORT	10-29-2018		FI	Agent	
	ANNUAL REPORT	11-15-2017		FI		
	ANNUAL REPORT	11-18-2016		FI		
	ANNUAL REPORT	12-02-2015		FI		
	ANNUAL REPORT PAYMENT	11-25-2014		SYS		
	ANNUAL REPORT	11-20-2013		FI		
	ANNUAL REPORT	11-27-2012		FI		
	ANNUAL REPORT	12-16-2011		FI		
	ANNUAL REPORT PAYMENT	12-22-2010	12-21-2010	SYS		
	ANNUAL REPORT PAYMENT	11-10-2009		SYS		
	ANNUAL REPORT PAYMENT	12-16-2008		SYS		
	ANNUAL REPORT PAYMENT	11-20-2007		SYS		
	ANNUAL REPORT	01-19-2007		FI		
	ANNUAL REPORT	11-21-2005		FI		
	AMENDED ANNUAL REPORT	11-17-2004		FI		
	ARTICLES OF ORGANIZATION	12-09-2003		FI	Agent	

please contact : corporation.division@sos.oregon.gov

Jerry Kathan
3015 NE Royal Court
Bend, OR 97701
541-480-0454
jskathan@gmail.com

October 16, 2023

Variance Officer
DEQ Water Quality
Onsite Variance Program
474 NE Bellevue, Ste. 110
Bend, OR 97701

Re: **Variance Request:**
PineRiver Homes, LLC
Brian Holland
16992 Downey Road, Bend OR 97707
Tax lot 2010128006000 .57 Acres (Dial)

Dear Variance Officer,

A variance from the onsite wastewater rules OAR 340-071-150 (4)(a)(B), 0290(4)(d) and 0135(1) is requested for 16992 Downey Road, Bend, OR 97707 under the provisions of Oregon Administrative Rules (OAR) 340-071-0415. The proposed site comprises .573 acres (calculated) and is in the Deschutes River Recreation Homesites subdivision northwest of the intersection of Stellar Drive and Downey Road. *Strict adherence to certain onsite sewage disposal rules (OAR 340-071) is not necessary to achieve adequate public & environmental protection and still allow reasonable use of the property primarily in the form of building a home.*

Oregon DEQ rule (340-071-0290(4)(d)) requires twenty-four inches separation between the permanent water table and the bottom of the conventional sand filter. This proposal will address limitations on this property by increasing the separation distance between the bottom of the conventional sandfilter and the permanent groundwater with the use of additional sand filter media, Alternate Treatment Technology (ATT) and modified bottomless sand filters. This will produce high quality effluent and offer adequate protection to public health, drinking water and the region's groundwater resource.

The Lapine National Demonstration Project stated that nitrate contamination could be slowed or stopped by retrofitting existing standard systems with denitrifying ATTs and that the contamination would in time be flushed from the groundwater via naturally existing discharge points. This suggests confidence in the ability for tested denitrifying systems to mitigate groundwater pollution.

Literature/Permit Review

Deschutes County health department conducted site evaluation 247-19-001579 on December 4, 2019 and denied the lot due to conditions associated with saturation at 16"-19". The test pit in the northwest portion of the property showed iron concentrations at 19" and the second test pit nearer the middle of the lot 16". This NW corner is the highest portion of the lot. I observed 2 additional test pits in northwest corner within the proposed disposal area on May 17, 2023 and noted similar features (appendix 4) with redox at 17" in pit A and 12" in pit B further down the slope. I also augured a hole (test pit C) to the south and observed redox features at 17". Deschutes County staff described the horizons as sandy loam and sand with soil colors of 10YR 2/3, 7/1 and 2/1 (appendix 3).

Address	Feasibility	Year	Depth to Redox	Notes
16992 Downey	247-19-001579	2019	19"/17"	Subject Property
16980 Downey	247-19-0015802	2019	20-22"/20"-23"	Variance ATT/BSF
16997 Covina	F-21187	2003	12"-20"	
16981 Covina	S-55845	2006		BSF
16989 Covina	247-22-000636	2022	24"-38"	ATT/BSF
16991 Downey	F-5307	1976	18"	
16983 Downey	F-4150	1979	23-24"	
16973 Downey	79-949			Std

Drinking water source(s)

The property will be served drinking water by a private well proposed located in the south or southwest portion of the property and all setbacks met. Adjacent properties to the north and northwest and to the southwest are served by private wells (Desc 57129, Desc 5833). The Oregon Water Resources Mapping Tool indicates wells in this area are between 28'-102' in depth. Real estate well sampling in this area indicates 8 wells tested in the immediate area with average nitrate results of 0.46 mg/L ranging from ND-3.05 mg/L. The property to the west, 16980 Downey Road will also be served by a private well.

Nitrogen loading

This property is located within nitrate management area 2 (35% *reduction*/<30 mg/L). Deschutes Dial shows this property at .57 acre but is .573 acres calculated. By including the road right of way of .0459 acre the total loading area equals .6198 acre. Larger lots attenuate overall nitrate loading due to increased surface area and recharge and dilution from precipitation.

The Orenco AX20-RT-Mode B system is currently one of the best available technologies for Total Nitrogen treatment and is approved for use in Oregon. Third-party testing showed the AX20-RTN operating in mode 3B to reduce total nitrogen by 74%. The bottomless sand filter, imported sand and native soil beneath the MBSF will provide additional nitrogen reduction. Further reduction will also occur directly under the MBSF in saturated zones where conditions that are favorable for iron reduction will also denitrify nitrates.

The sand filter, additional imported sand and native soil will provide added protection by further treating the pre-treated effluent to reduce BOD, TSS and pathogens such as fecal coliforms. This configuration will meet or exceed Treatment Standard 2 criteria by reducing 30-day average for BOD/BOD5 and TSS to less than 20/mg/L and fecal coliforms to less than 400/100ml.

Variance Request:

OAR 340-071-0150(4)(a)(B) - All criteria for approving a specific type or types of systems, as described in this division are satisfied.

OAR 340-071-0290(4)(d) - Bottomless sand filter. Sites may use a bottomless sand filter if the site meets the criteria in this section and section (3) of this rule. (d) The water table is at least 24 inches below the ground surface throughout the year, and a minimum 24-inch separation is maintained between a water table and the bottom of the sand filter.

OAR 340-071-0135(1) – which addresses DEQ approval of new or innovative technologies, materials, or designs for onsite systems. This rule is being varied from due to deviating from the approved design for the AX20-RTN in Mode 3B by not requiring UV disinfection. Treatment Standard 2 will still be met or exceeded without the UV disinfection by discharging the treated effluent through a bottomless sand filter.

Variance Proposal

In this project, I propose treating the septic tank effluent using an Orenco AdvanTex AX20-RTN-Mode 3b Advanced Treatment Technology (ATT) system followed by a 250 sq. foot modified bottomless sand filter (MBSF).

On September 25, 2023 (2) additional test pits were dug to determine the feasibility of locating filter footprints for the variance proposal. I had assumed similar site conditions would allow a layout as the variance at 16980 Downey Road. Test pit A & B were dug for this assumption. But after evaluating elevations and the morphology of pit B, I realized there was too much elevation change. And evidence of seasonal high permanent water table could be as high as 10" based on scarcity of roots 10"-12" from the ground surface.

Unfortunately, I came to this conclusion after releasing the backhoe. On October 8th I visited the site to determine the best filter locations to protect the groundwater. I decided to locate one filter at the highest point on the lot in the NW corner as was the case for 16980 Downey Road and locate the other filter south of the other. This location has more favorable elevations and permanent water table separation. In addition, it is located the minimum distance of 10' from the west property line to take advantage of elevation. This filter could accommodate a low retaining wall (<24") constructed at the property line rather than a free-standing retaining box that might require engineering.
I hand dug a shallow test pit (c) 24" deep in the SE corner of the filter footprint which is the lowest corner and observed evidence of redox at 17".

Because these filters will be elevated with sand filter media based on the highest elevation corner of the filter footprints, the filter bottoms will exceed 32" of separation in the area where it may be

closest to the permanent water table. This design does not allow for any countersinking. The sand filter media used to elevate the filters will be the level pad to place the filter on when placed properly. The thickness of this layer will vary and be thicker in the low elevations of the footprint and will exceed the MINIMUM depth specified in the proposal. The footprint must be cleared and scarified WITHOUT leveling the mineral soil. I recommend leaving the fine organic layer found in the upper mineral soil layer.

This system is over-designed to meet or exceed all separation criteria to ensure adequate treatment, hydraulic function, and protection of groundwater.

The ground water is expected to rise to no more than 17" of the ground surface. This design will exceed separation distance for any scenario and overcome this limitation by adding an additional 18 inches of sand filter media under the conventionally designed bottomless sand filter. This will provide 32.5" (NW filter) and 35" (south filter) of vertical separation between the bottom of the absorption facility and any potential groundwater exceeding the standard of 24" (appendix 6).

Elevations/Slope

Relative elevation measurements were taken at all 4 corners of both sand filter boxes, the tops of both original test pits and at test pits A, B and C (Kathan). Relative elevations were also determined at redox levels to comparison. The highest level of the water table is expected to be no less than 17" below the existing ground surface. When factoring in a 2 ½" slope difference in the NW filter footprint, separation to groundwater would theoretically be 14 ½" (17"– 2.5" slope + 14.5").
Comparative elevations of redox features in test pits A and C in the proposed area are consistent with observations and indicate a minimum separation distance of ~17". There is 2.5" elevation difference in the NW box footprint and 5.5" in the other box. However, the 17" of separation here were measured at the lowest part of the box in the SE corner.

The minimal slope will be addressed by adding additional sand downslope to level and not countersinking.

Calculated elevation data

	Test Pit A	Test Pit C
Top of mineral layer	4'-5 1/2"	4'-8"
Redox	5'-10.5"	6'-1"
	17"	17"
Point of reference	Top of pin NE property corner	3'-8"
Minimum separation to groundwater	32.5"	35"

Hydraulic Function

I do not expect any problems associated with hydraulic function, conductivity, or groundwater mounding on this site. County staff described soil textures as coarse loamy sand to gravely sandy loam which will provide free drainage conditions and naturally facilitate the movement of groundwater both vertically and laterally. Even if ground water were to rise temporarily, there will be sufficient lateral flow to prevent it from interfering with the function of the sand filter. My experience has shown that even during high water years or events when groundwater was at or near the surface beneath CBSFs, they were capable of proper functioning and there were no reports of failures due to high groundwater. The soil textures, structure, and heterogeneity of this site along with the excellent effluent quality create a low probability of water mounding.

The 250 square foot sand filter will provide a large infiltration area to reduce infiltration rate and the likelihood of mounding. If the infiltration rate is less than the vertical or lateral hydraulic conductivity, the probability of mounding is decreased.

The existing native coarse soil textures will also provide a preferential lateral flow path for effluent to prevent pooling and ensure sand filter performance.

Installation

I recognize the highest elevation on the ground surface within the MBSF footprint where the sand base intersects the native ground surface as the starting point to level the sand filter. Level will be ensured by adding sand to the lowest point with a consistent gradient tapering to the high point to level. I will not countersink into the upslope, rather add additional sand. This will also maximize separation distances to any groundwater.

This design ensures excellent hydraulic function by not disturbing the native soil structure and creates a favorable interface between similarly textured imported and native material. This also prevents water infiltration (bathtub effect) into any weakened area below the MBSF caused by over-excavating and disturbing the native soil structure. By not removing or disturbing the existing soil, natural hydraulic flow below the filter is maintained and ensures conductivity between the imported sand and similarly textured native soils at the ground-filter interface. I try to preserve the existing soil structure, when possible, to maintain natural hydraulic flow and benefit from the additional treatment provided by the native soil.

-The conventional bottomless sand filter will be of typical design from this point up.

*I consider the bottom of the underdrain media (pea gravel) lens in the CBSF as the point from which to measure separation distance to groundwater 340-071-0290(4)(d) or finer textured soils 340-71-0290(4)(a).

It is my professional opinion that this proposal and wastewater treatment system as described justifies our request and adequately addresses both rule limitations and protection of the groundwater resource.

*If future advances in ATT technology for treatment of Total Nitrogen become approved for use in Oregon before issuance of a construction installation permit for this site, I would support and recommend its use if Deschutes County would allow this new technology instead of the type noted in this application.

Key justifications:

- **Property is within nitrate management area 2** (35% *reduction*/<30 mg/L).
- **.6198 acre loading area**
- **Achieves highest level of nitrogen reduction currently available**
- **Meets or exceeds Treatment Standard 2 for BOD/BOD5, TSS & fecal coliforms**
- **Separation between bottom of conventional bottomless sandfilter and ground water ≥ 33.5"**
- **Excellent hydraulic functionality in the unlikely event groundwater rises**
- **Assured hydraulic conductivity and additional treatment by maintaining native soil**
- **Low probability of groundwater mounding**

Considering the characteristics of this property and the method of wastewater disposal described herein, I feel strict adherence to the rule would be unreasonable. This proposal allows reasonable use of the property while protecting the groundwater resource and public health.

If any clarifications or additional information is needed, please contact me prior to the decision and feel free to contact me if any questions.

Thank you for your consideration.

Jerry Kalkan R.E.H.S

Jerry Kathan

JSK
Encl.
cc: Pineriver Homes LLC

Department of Environmental Quality

Documentation in support that additional field criteria be utilized in the determination of water table levels in Eastern Oregon

The purpose of Chapter 340, Division 71 is to prescribe requirements of on-site sewage disposal to restore and maintain the quality of public waters and to protect the public health and general welfare of the people of the State of Oregon. The current criteria for Conditions Associated with Saturation (CAS) does not correspond with water table observations in various areas of Oregon's Eastern Region. With groundwater degradation being a distinct possibility, the importance of determining the highest level that water would rise in a soil profile becomes more of a concern with respect to on-site sewage disposal systems. This document combines experience and supportive information for the request that additional field criteria be utilized to determine water table levels in Eastern Oregon.

I have evaluated many sites over several years in Eastern Region then returned to those sites under spring conditions to observe water table levels. These observations have raised concerns that the current criteria for CAS were not correlating to actual water table levels. My experience indicates that many soil types do not contain the gray mottles as required in the current criteria for CAS. This phenomenon is not confined to one specific area nor is it confined to a specific soil type. The water table levels observed at these sites are considered as a long duration being present for one month or more in some areas and raises public health concerns.

The plausable reasons that the current criteria for CAS are not adequate in determining the levels to which a water table rises in some parts of Eastern Oregon can be due to a combination of factors. Eastern Oregon has frigid to cryic conditions which have an influence on biological activity that is necessary to create reduced soil regimes normally associated under this definition. Other factors such as aerated water or highly oxygenated water, low amounts of organic carbon, high pH soil and overlying young immature soils only adds to the problem. This is particularly the case in terrace formations along many of the river basins throughout the region.

The Department has recently put together a draft definition for Groundwater Levels which are to be predicted using "CAS" or observed water tables. In those areas where "CAS" do not occur, which is the case in many areas of Eastern Region, groundwater level determinations are to be made during the period of the year in which high groundwater normally occurs in the area. These observations are to be made using a properly installed nest of piezometers or other methods acceptable to the Department. It is believed that the requirement of piezometers would place an unnecessary encumbrance on the Agent, both in cost and time for installation, monitoring, and evaluation. With erratic weather conditions, variable snow melt occurrences, plus the potential for a large number of sites that would have to be monitored in the spring, the turn around time in

Eastern Region for completing such site evaluation's could be an extremely lengthy process and not be politically favorable. It is estimated that in Klamath County that approximately 60% of the site evaluations would fall into this category where the water table would have to be monitored. The monitoring requirement is not just limited to permanent water tables but temporary water tables, as well.

With Oregon's weather conditions not considered as "normal" the use of piezometers would not be accurate on how high the water table would rise in certain years thus providing a predicament for construction permit issuance. Since we are entering what appears to be a wet cycle Eastern Region is already experiencing sites that have approvals and systems installed with Certificate's of Satisfactory Completion's which are now in conflict with Division 71 for permit issuance or Authorizing use of the system due to current high groundwater observations [OAR 340-71-160 (5)(c) and OAR 340-71-205 (3a,c; 4a,d; 7aB; and 8aB)]. Sand Filters without a bottom provide another conflict with the rules where the water table shall be no less than 24 inches below the ground surface at any time of the year [OAR 340-71-290 (5)]. The importance of being able to determine where the water table rises becomes of greater concern, hence, the reason for the request that additional criteria be utilized in Eastern Oregon to determine water table levels.

The experience gained in Eastern Region indicates that we need the ability to apply field indicators by regions which is the state-of-the-art practice for identifying aquic conditions and hydric soils. Using soil morphology alone does not work. There are features that are observed at a site that should raise "Caution flags" to a Sanitarian or a Soil Scientist conducting the inspection. An abundance of hydrophytic plants indicates evidence of a seasonal high water table at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soils. Roots can also be an indicator of both soil saturation and water table duration. There are numerous sites in Northern Klamath County where Lodgepole pine roots grow to a depth of 30 inches or so where they normally grow to depths of 5 to 6 feet or more. In these particular areas where soils consists of an overlying mineral deposit of volcanic pumice, soil colors in the upper organic layers are 10YR3/2 & 3/3 over top of coarse gravely pumice sand of 10YR7/6 down to 4 feet or more. Many prominent coarse Iron masses of 5YR3/4 are present to that of the root levels. Water tables levels observed over the years appear to correlate to the root levels and the iron masses within this regime while current criteria for CAS do not. The experience an individual gains from water table observations would indicate that the plant roots are being prevented from growing and should raise concerns with these particular sites.

Depending upon the water year you would not be able to accurately determine the highest level that water would rise by using piezometers, but by using roots and iron masses in this instance, along with the lack of organic material which has been removed from the profile you would be able to predict where the water table would rise on a consistent basis under "normal" years.

Table of Contents

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DEQ Variance Application

Authorized Representative Form(s)

Variance Application from Oregon Administrative Rules Regulating Onsite Wastewater Treatment Systems

State of Oregon Department of Environmental Quality

Western and Northwest Regions:

Oregon Department of Environmental Quality
Onsite Program
165 East Seventh Ave, Ste 100
Eugene, Oregon 97401

Eastern Region:

Oregon Department of Environmental Quality
Onsite Program
475 NE Bellevue Dr, Ste 110
Bend, OR 97701

Please complete this application form and submit it with the fee and required attachments to one of the addresses above. The fees can be found in the current rule tables on DEQ's website here: https://ordeq.org/variancefees

Please note: Variance approval is not guaranteed, and fees are non-refundable. Learn more about the variance process at https://ordeq.org/septicvariance

Owner Information - Please Print:

Owner Name(s) (Last, First) Pineriver Homes LLC

Mailing Address Po Box 3033

City, State, Zip Sunriver Or 97707

Phone 5415987773 Email pineriverhomesllc@gmail.com

Property Information:

County Deschutes

Township, Range, Section, Tax Lot 20,10,12 6100

Lot and Block Number Lot 51, Block 24 Subdivision Name DRRH

Provide the Following Attachments:

1. A locator map showing accurate directions to the property. List the property's street address if the street address is known.
2. **Two copies** of the parcel's legal description (metes and bounds, warranty deed, sales contract or approved subdivision plat). Include copies of the protective covenants, deed restrictions and easements applicable to the property.
3. **Two copies** of the assessor's tax lot map showing the property or a surveyor's plat map.
4. **Two copies** of a land use compatibility statement from the appropriate land use authority that your proposed land use is compatible with the Land Conservation and Development Commission's acknowledged comprehensive plan or statewide planning goals.
5. **One copy** of the DEQ (or county agent) site evaluation report, field notes, and other correspondence relating to past evaluations for septic system development.

6. **Two copies** of a narrative description for your variance proposal, including system construction specifications and the step-by-step procedures you propose to follow when installing the system. You must clearly describe how your proposal will overcome the limitations cited by DEQ or the county in the original denial.

7. **Two copies** of a plot plan drawn with the location and dimensions of all components of the proposed system. Use a defined scale that is not smaller than one-inch equals 30 feet. Also, be sure to include the replacement absorption facility in the plot plan drawing. Indicate separation distances between disposal trenches, springs, water courses, agricultural drainage tile, ditches, drainage ways, water lines, buildings, roads, embankments, and other identifying features, which help demonstrate parcel-to-drainfield relationships. Locate all wells within 200 feet of the proposed system and the replacement system.

8. The names and mailing addresses of all adjacent property owners and other known interested persons, for hearing notice.

9. The variance officer will request additional items be provided, if found necessary for the variance. The application will be deemed incomplete until the requested items are provided.

A minimum of two test pits must be provided within the specific area where the variance system is proposed, and should be approximately two feet wide, four feet long, and excavated to either bedrock or to a depth of five feet. Similar pits must be provided in the area of the repair system. The variance officer may require the proposed drainfield and the future replacement drainfield to be staked out.

Hardship Variances:

Hardship variances may be considered in cases of extreme and unusual hardship. The following factors may be considered: advanced age or bad health of applicant, need of applicant to care for aged, incapacitated or disabled relative, and the hardship variance will have relative, insignificant environmental impact. Documentation of hardship must be provided.

☐ MARK THIS BOX FOR HARDSHIP CONSIDERATION

By my (our) signature(s), I (we) request DEQ act on this application and hereby grant permission to enter onto the above-described property. I (we) also acknowledge that I (we) have read the Variance Process Fact Sheet found here: https://ordeq.org/septicvariance

10-23-23 Bin Hsu

Date Owner Signature

Date Owner Signature

NOTE: All owners must sign this application form. If there are more than two owners, have them sign additional duplicate applications and include them with submittal.

* Pursuant to ORS 454.662, the applicant is not required to submit the application fee if, at the time of filing the application, the applicant is 65 years of age or older, is a resident of the State of Oregon, and has an annual household income, as defined in ORS 310.630, of $15,000 or less. Appropriate documentation must be submitted with the application.

NOTICE AUTHORIZING REPRESENTATIVE

DEQ

I, Brian Holland (Property Owner Print Name) have authorized Jerry Kathar (Authorized Representative Print Name) to act as my agent in performing the activities necessary to obtain all onsite wastewater treatment program services provided by the Department of Environmental Quality on the property described below in accordance with OAR chapter 340, division 071. I agree that any costs not satisfied by the Authorized Representative are my responsibility and I authorize DEQ agents to conduct required business activities on said property.

PROPERTY IDENTIFICATION:

16992 Downey Rd
(Property Situs or Road Address)

And described in the records of Deschutes County as

Township 20 Range 10 Section 12B Map ID 00 Tax Lot #s 6000

PROPERTY OWNER:

Printed Name: Pineriver Homes LLC, Brian Holland

Address: P.O. Box 3033

City State Zip: Sunriver, OR 97707

Phone: 541-598-7773 Email: Thunderyukon@me.com

Signature: [signature]

AUTHORIZED REPRESENTATIVE:

Printed Name: Jerry Kathan

Address: 3015 NE Royal Ct

City State Zip: Bend, OR 97701

Phone: 541-390-0454 Email: jskathan@gmail.com

Signature: Jerry Kathan

2

Property Information

Deed

Deschutes County Property Information

Summary for account #115746

Summary information is displayed for the selected property.

Account Information

Mailing Name: PINERIVER HOMES LLC
Map and Taxlot: 2011138000100
Account: 115746
Situs Address: 16932 DOWNEY RD, BEND, OR 97707
Tax Status: Assessable

Ownership

Mailing To:
PINERIVER HOMES LLC
73410 HIGHWAY 20
BEND, OR 97701

Taxes

Tax Code Area: 1011

Assessment

Assessor Property Description:
DESCHUTES RIVER RECREATION HOMESITES INC UNIT 6 Lot 52 Block 24

Assessor Acres: 0.57
Property Class: 100

Valuation

Current Year Value Summary
As of Jan 1, 2023
2023 - 2024 Tax Year

Real Market Values:

Land	$70,500
Structures	$0
Total	$70,500

Assessed Values:

Maximum Assessed	$17,630
Assessed Value	$17,630
Veterans Exemption	

[illegible]

Deschutes County Property Information

Development Summary for account #115746

This Deschutes County Community Development Department is responsible for land use and permits for properties in the County's jurisdiction. Contact this department if you need additional information or if you have questions.

Account Information

Mailing Name: RIVERIVER HOMES LLC
Map and Taxlot: 2010128D00500
Account: 115746
Situs Address: 19892 DOWNEY RD. BEND, OR 97707
Tax Status: Assessable

Property Details

Subdivision: DESCHUTES RIVER RECREATION HOMESITES INC UNIT 5 **Lot:** 52 **Block:** 24
Acres: 0.77

Jurisdiction

Planning Jurisdiction: Deschutes County
Urban Growth Boundary: No
Urban Reserve Area: No

Zoning Designation

Jurisdiction	Zone	Description	Link to Zoning Code
COUNTY	RR10	RURAL RESIDENTIAL - 10 ACRE MINIMUM	View Document
COUNTY	AS	AIRPORT SAFETY COMBINING ZONE	View Document
COUNTY	WA	WILDLIFE AREA COMBINING ZONE	View Document

County Development Details

Legal Lot of Record	Contact Community Development Department for information
Wetland (National or Local)	Yes
Conservation Easement	No conservation Easement Recorded
FIRMA 100 Year Flood Plain	Not Within 100 Year Flood Plain
TDC/PRC Restrictive Covenant	No TDC/PRC Restrictive Covenant Found.
Ground Snow Load	50 #/sq. ft.
Subdivision Has Special Setbacks	NO
Is Historic Designated	NO
Fire Mitigation Required	NO

FORM No. 723 – WARRANTY AND SALE DEED (Individual or Corporate)

*DEC TSU2-19-21

Brian Holland
PO Box 3033
Sunriver, OR 97707
Grantor's Name and Address

Pineriver Homes, LLC
PO Box 3033
Sunriver, OR 97707
Grantee's Name and Address

After recording, return to (Name, Address, Zip):
Pineriver Homes, LLC
PO Box 3033
Sunriver, OR 97707

Until requested otherwise, send all tax statements to (Name, Address, Zip):
Pineriver Homes, LLC
PO Box 3033
Sunriver, OR 97707

SPACE RESERVED FOR RECORDER'S USE

STATE OF OREGON, County of _____ } ss.

I certify that the within instrument was

Deschutes County Official Records 2019-50212
D-D
Stn=1 Bin 12/20/2019 10:56 AM
$10.00 $11.00 $10.00 $61.00 $6.00 $98.00

I, Nancy Blankenship, County Clerk for Deschutes County, Oregon, certify that the instrument identified herein was recorded in the Clerk records.

Nancy Blankenship - County Clerk

NAME TITLE

By _____, Deputy

BARGAIN AND SALE DEED

KNOW ALL BY THESE PRESENTS that Brian Holland hereinafter called grantor, for the consideration hereinafter stated, does hereby grant, bargain, sell and convey unto Pineriver Homes, LLC, an Oregon Limited liability company hereinafter called grantee, and unto grantee's heirs, successors and assigns, all of that certain real property, with the tenements, hereditaments and appurtenances thereunto belonging or in any way appertaining, situated in Deschutes County, State of Oregon, described as follows, to-wit:

See Attached Legal descriptions

After recording return to:
First American Title
395 SW Bluff Drive, Suite 100
Bend, OR 97702

Recorded by First American Title as an accommodation only. No liability is accepted for the condition of title or validity, sufficiency, or effect of this document.

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE)

To Have and to Hold the same unto grantee and grantee's heirs, successors and assigns forever.

The true and actual consideration paid for this transfer, stated in terms of dollars, is $ 0.00 ① However, the actual consideration consists of or includes other property or value given or promised which is ☐ part of the ☐ the whole (indicate which) consideration ① (The amounts between the symbols ①, if not applicable, should be deleted. See ORS 93.030.)

In construing this deed, where the context so requires, the singular includes the plural, and all grammatical changes shall be made so that this deed shall apply equally to corporations and to individuals.

IN WITNESS WHEREOF, the grantor has executed this instrument on Dec 20, 2019; if grantor is a corporation, it has caused its name to be signed and its seal, if any, affixed by an officer or other person duly authorized to do so by order of its board of directors.

Brian H

THIS INSTRUMENT WILL NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES AND TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930.

STATE OF OREGON, County of Deschutes

This instrument was acknowledged before me on Dec 20, 2019

by Brian Holland

This instrument was acknowledged before me on _____

by _____

as _____

of _____

OFFICIAL STAMP
SHANA NICOLE BAUMAN
NOTARY PUBLIC - OREGON
COMMISSION NO. 959751
MY COMMISSION EXPIRES DECEMBER 23, 2021

Notary Public for Oregon

My commission expires 12/23/21

EXHIBIT 'A'

LEGAL DESCRIPTION:

Lot 18, Block 20, Deschutes River Recreation Homesites Inc., Deschutes County, Oregon.

LEGAL DESCRIPTION:

LOT 38 IN BLOCK 21 OF DESCHUTES RIVER RECREATIONAL HOMESITES, INC., DESCHUTES COUNTY, OREGON.

DESCHUTES RIVER RECREATION HOMESITES INC. UNIT 5, Lot 51, Block 24, Deschutes County, Oregon, together with a 1/1224 interest as tenants in common in the following described parcels:
PARCEL 1: Lot 1, Block 2, Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon as filed October 11, 1961,
PARCEL 2: Recreation Area, official Plat of Block 9, Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon as filed October 18, 1962,
PARCEL 3: Recreation Area and Boat Docking Facilities, corrected Plat of Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon, as filed May 16, 1963.

Lot Fifty-Two (52), Block Twenty Four (24) DESCHUTES RIVER RECREATON HOMESITES, INC., together with a 1/1224 interest as tenants in common in the following described parcels:
PARCEL 1: Lot 1, Block 2, Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon as filed October 11, 1961,
PARCEL 2: Recreation Area, official Plat of Block 9, Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon as filed October 18, 1962;
PARCEL 3: Recreation Area and Boat Docking Facilities, corrected Plat of Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon, as filed May 16, 1963.

DESCHUTES RIVER RECREATION HOMESITES INC. UNIT 5, Lot 53, Block 24, Deschutes County, Oregon.

Lot Forty-Five (45), Block Nineteen (19), DESCHUTES RIVER RECREATON HOMESITES, INC., together with a 1/1224 interest as tenants in common in the following described parcels:
PARCEL 1: Lot 1, Block 2, Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon as filed October 11, 1961,
PARCEL 2: Recreation Area, official Plat of Block 9, Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon as filed October 18, 1962;
PARCEL 3: Recreation Area and Boat Docking Facilities, corrected Plat of Deschutes River Recreation Homesites, Inc., Deschutes County, Oregon, as filed May 16, 1963.

DESCHUTES RIVER RECREATION HOMESITES INC., Lot 44, Block 19, Deschutes County, Oregon.

LOTS 7 AND 8, BLOCK 36, DESCHUTES RIVER RECREATION HOMESITES, INC., UNIT 4, DESCHUTES COUNTY, OREGON

LOT 4, BLOCK 14, DESCHUTES RIVER RECREATION HOMESITES INC., DESCHUTES COUNTY, OREGON.

3

Maps

Vicinity Map

Tax Map

Aerial Photo

Depth to Groundwater

Nitrate Management Areas

16992 Downey Rd

Pine River Homes

NW1/4 SEC. 12 T.20S. R.10E. W.M.
DESCHUTES COUNTY

20 10 12B

20 10 12B

16992 Downey Rd

Pine River Homes

16992 Downey Rd

Pine River Homes

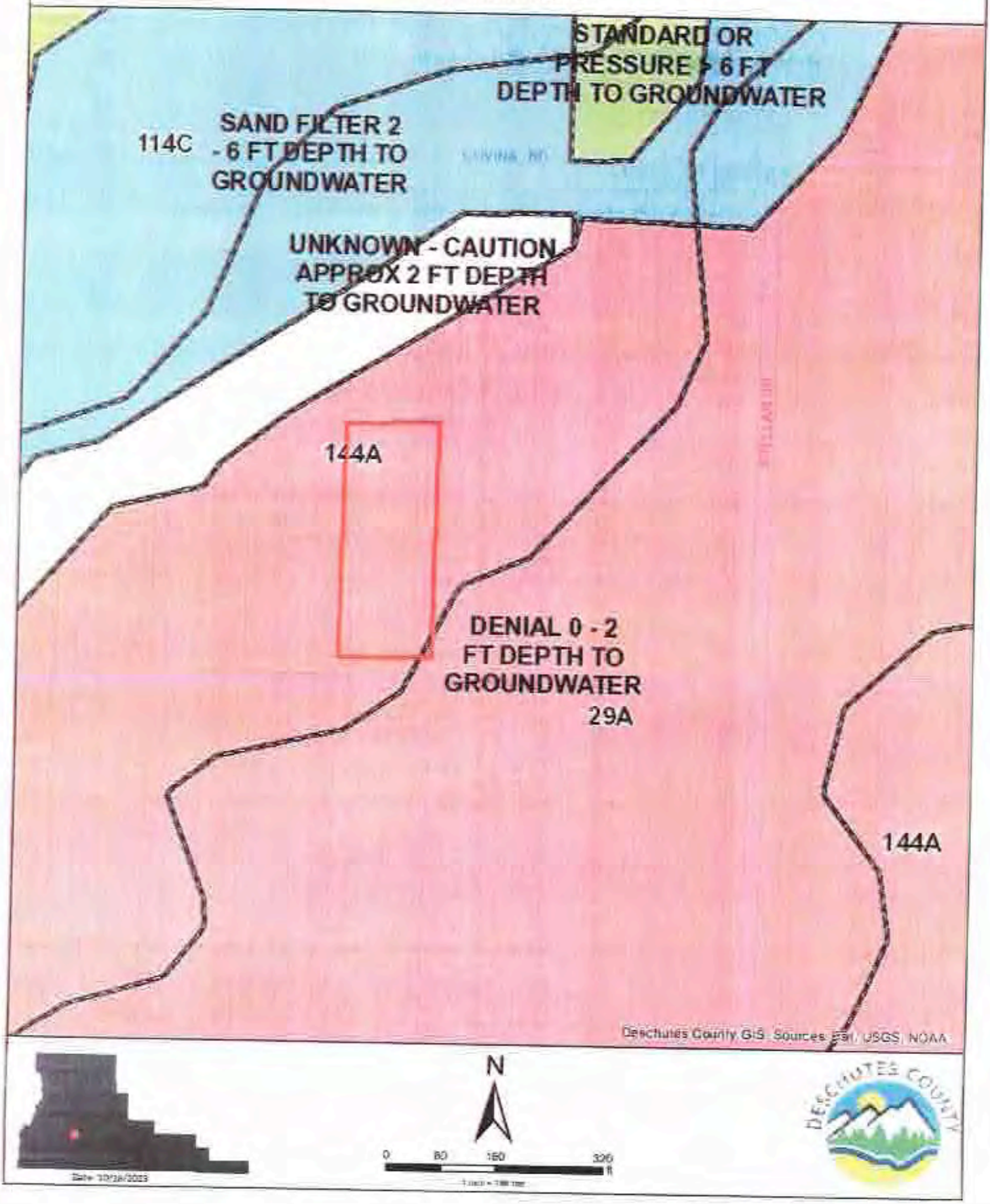


Exhibit "A"
to Resolution 2008-021

Nitrate Loading Management Model
Performance Standards for Existing Systems

Legend

Sewered Area

City of La Pine

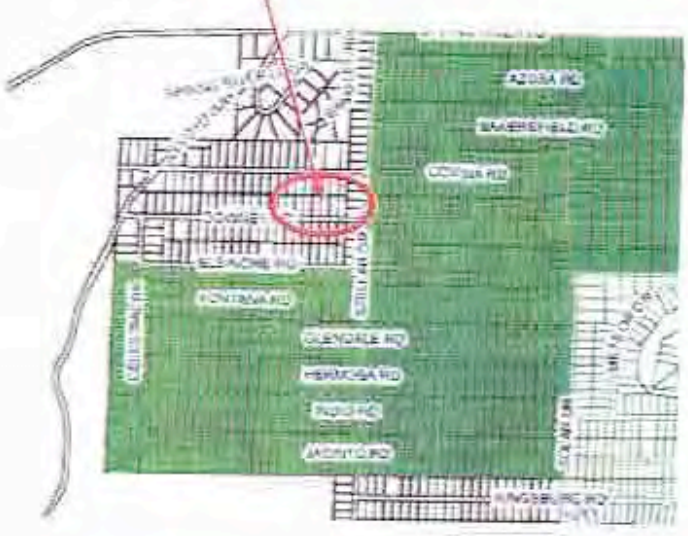
County Boundary

Nitrate Loading Management Area

LOW — Minimum 33% reduction (<30 mg/L)

MEDIUM — 56% - 78% reduction (20-10 mg/L)

HIGH — Minimum 78% reduction (10 mg/L)



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Site Evaluations

Adjacent Feasibilities

Permits

Variances

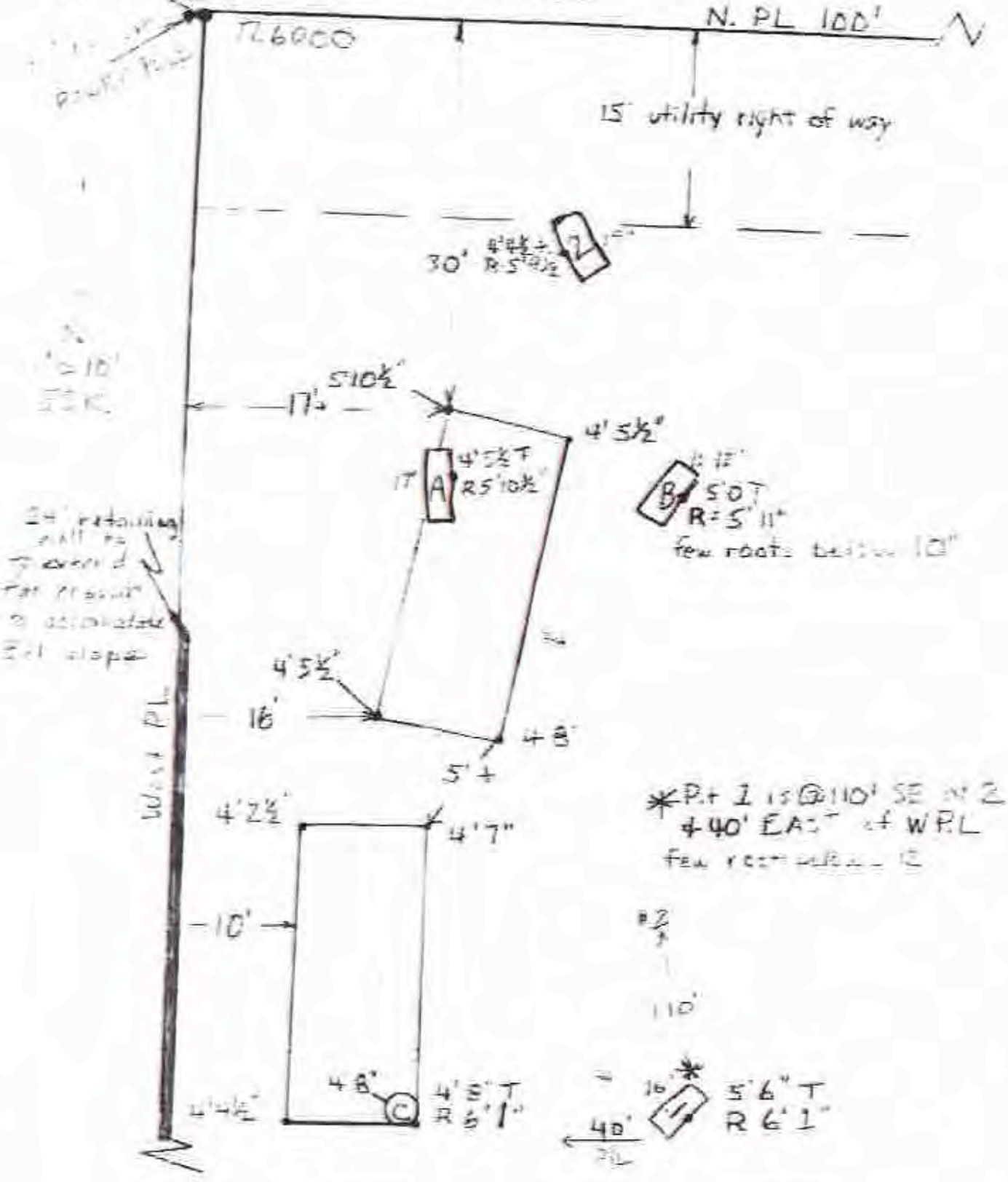
16992 Downey Rd
SITE EVALUATION FIELD WORKSHEET

Tax Reference 20-10-12B-6000 Evaluator Jerry Kathan

Applicant Owner Date 5/17/23 Parcel Size 0.5 ac

	DEPTH	TEXTURE	SOIL, MATRIX COLOR AND CONDITIONS ASSOCIATED WITH SATURATION, ROOTS, STRUCTURE, EFECTIVE SOLID DEPT, ETC.
A	0-6	sl/ls	10YR 2/2, (mvf-m), (sg+gr)
	6-23	cols/s	10YR 7/1, (cf-c) weak sbk+sg
		Redox	evidence at ground 17"
			Pit is similar to Pit 2 - 247-19-001579
	23-41	s/l	redox throughout
B	0-10	ls/s	Similar to A BUT root penetration - 10YR 7/1 almost absent below 10"-12"
	15-24	ls/s	
	24-41	s/l	
			Redox features within 2" of pit 1
			from site evaluation
C	10/8/23		
	0-24	s/l/s	Similar to A + #2
			redox at 17"

PROPOSED FILTER LAYOUT 16992 LOUNEY RD.



DESCHUTES COUNTY

COMMUNITY DEVELOPMENT

December 5, 2019

HOLLAND, BRIAN
PO BOX 3033
BEND, OR 97707

RE: 247-19-001579-EVAL
16992 Downey Rd, Bend

A site evaluation for an onsite wastewater treatment system for a single family dwelling was recently completed at the property noted above. Test pits were evaluated on December 4, 2019. Part of the evaluation is to determine the level to which the ground water rises during the wet season of a normal weather year. Permanent water tables are present throughout the year although they may fluctuate in elevation seasonally. The soil indicators used to determine the level to which the water table rises are gray soils and mottling (discoloration of the soil).

In the test pits on the property the indicators suggest the water table may rise within 24 inches of the ground surface. Past observations and elevation in the surrounding area also verify the presence of a high water table. Extensive study and modeling of the groundwater in south Deschutes County has demonstrated that this area is sensitive to added loading from areas that do not meet separation to groundwater. This site is therefore denied due to high permanent groundwater observed and conditions associated with saturation.

You have 90 days from the initial site visit to provide additional test pits for evaluation at no additional fee. However, it appears that other areas on the property would not be suitable due to the lack of topographical changes.

DEQ rules do not allow installation of a Standard drainfield [OAR 340-071-0220 (1)(b)A], [OAR 340-071-0265(1)(c), Capping Fill drainfield, Pressurized Distribution System or Sand Filter System [OAR 340-71-290(2)(b)] in these circumstances. Installation of an Alternative Treatment Technology (ATT) requires a standard, capping fill, pressurized drainfield or sand filter system for final treatment and dispersal. Therefore, if a conventional drainfield or sand filter system cannot be installed on the property, an ATT cannot be used.

RULE REQUIREMENTS

Oregon Department of Environmental Quality Rules (DEQ) requires a minimum 4-foot separation between the bottom of a wastewater dispersal trench and the highest level a permanent water table may reach. Drainfields must be installed a minimum of 12 inches into the ground. Drainfields can only be installed therefore, where the water table does not rise closer than 5 feet from the ground surface. This allows for the 4-foot separation from the bottom of the trench to the water. [OAR 340-71-220(1)(b). DEQ rules also require 24 inches of separation between the highest level reached by the water table

and the bottom of a surface mounted sand filter system which is an alternative onsite system that provides high quality wastewater treatment [OAR 340-071-290(2)(b)].

REVIEW AVAILABLE

Pursuant to Oregon Administrative rules (OAR 340-071). You may request a site evaluation report review if you believe this report to be in violation of the rules. The Oregon DEQ conducts report reviews upon submission of the appropriate application materials including; a written request that includes all information you have received from Deschutes County, the reason the report is in error including the specific Oregon Administrative Rules that conflict with the report, and the application fee.

The DEQ will review the county's report and visit the site to determine the report's compliance with the appropriate rules.

Also pursuant to this rule, you may request a variance from these rules. The Oregon DEQ reviews variance requests upon application. This is not an automatic variance. You must provide technical justification that demonstrates your proposed system will operate over an extended period of time, will not degrade the environment, and will provide public health protection.

An application, application fee, justification and exhibits, including this report, a land use compatibility statement and detailed plans of your proposed system are required for the application. Technical advice from a knowledgeable consultant is recommended. A Variance Officer from DEQ will review your application and the property and issue a written determination following an informational hearing.

Deschutes County recognizes your right to a variance request. This property, however, has severe limitations for onsite wastewater treatment as noted above. Unless public health and environmental protection can be assured, a variance request cannot be supported by the Deschutes County Environmental Soil Division and will not likely be approved by DEQ.

For further information regarding a report review for a variance request, please contact the Oregon Department of Environmental Quality at 471 NE Bellevue Dr., #110, Bend, OR 97701, phone 541-388-6146.

If you have any questions, please do not hesitate to call this office at 541-388-6519.

Sincerely,
Environmental Soils Division

Kevin Hesson
Environmental Health Specialist Trainee

KMH/mas

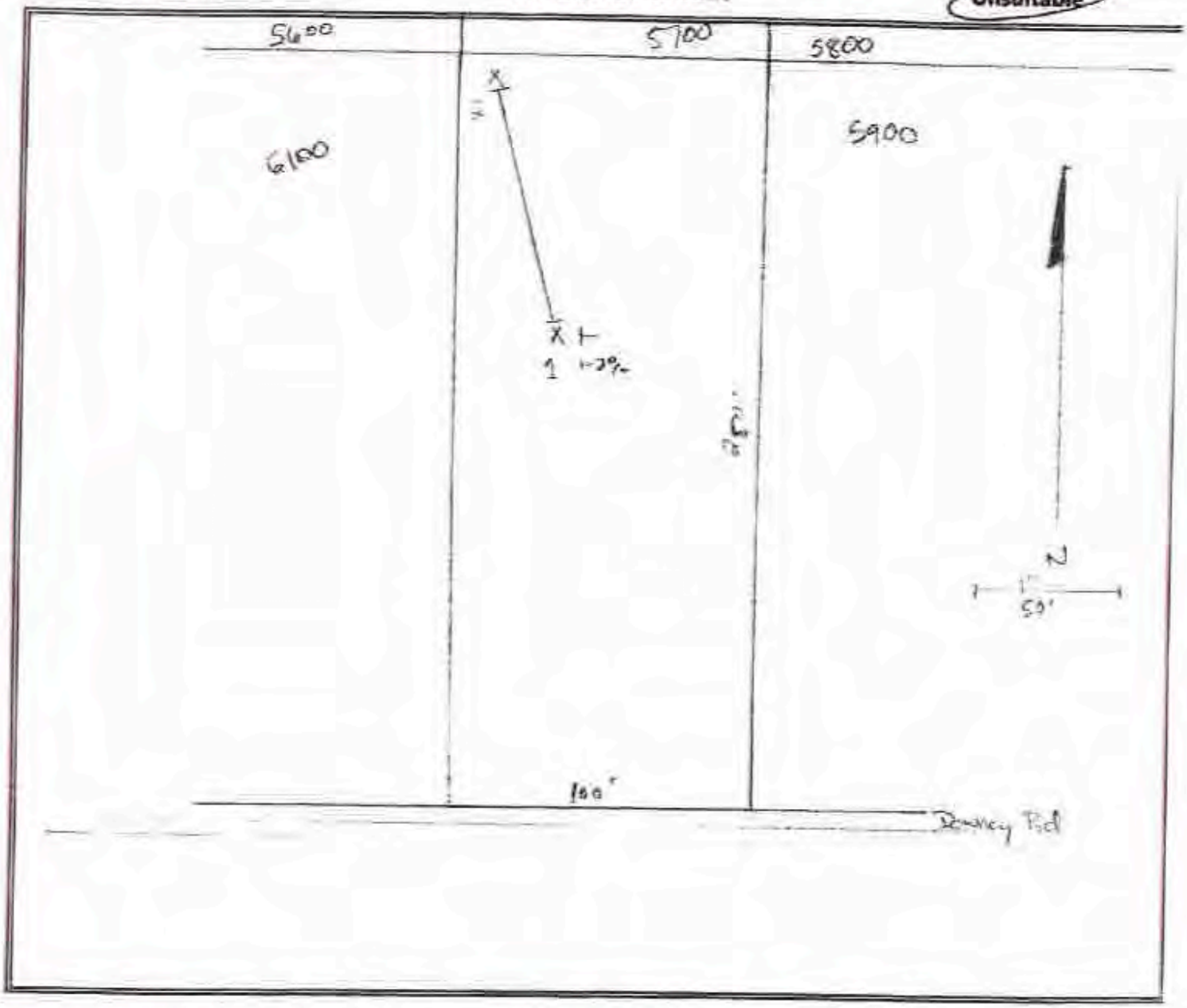
SITE EVALUATION FIELD INSPECTION FORM

Applicant: Brian Holland Site Evaluation # 247-19-001579

Evaluator: Kevin Hessen Date: 12/4/19 Parcel Size: 0.57

Subdivision: DISP-H T ___ R ___ S ___ TL ___ L ___ B ___

Suitable **Sketch/Not to Scale** **Unsuitable**



*systems approved are the **minimum** to meet current DEQ rules and are not design specifications*

System type approved: ___ Absorption facility: Deviced

Initial ___ Min. Size ___ Max. Depth ___ Min. Depth ___

Replacement ___ Min. Size ___ Max. Depth ___ Min. Depth ___

Tank Size ___ Sewage Flow ___

Special Conditions: ___

16772

SITE EVALUATION FIELD INSPECTION FORM

Applicant: Brian Holland

Evaluator: Kevin Hesson

Subdivision: DRRH

Site Evaluation # 247-19-001579

Date: 12/4/19

Parcel Size: 0.57

T ___ R ___ S ___ TL ___ L ___ B ___

	DEPTH	TEXTURE	COLOR	Notes on roots, structure, rock frag, redox, limiting layer type & depth
1	0-9	SL	10YR 2/2	Sof, fim, co, 1m sbk
	9-32	S	10YR 7/1	1co 5g (10YR 5/4) redox concentrations - depleted hue 16" - apparent depletion
	32-46	L	10YR 4/1/4/2	1f MA redox throughout
				ESD 2 40
2	0-9	SL		Like 1 w/ more distinct iron concentrations
	9-22	S		& less distinct horizons
	22-30	SL		redox @ 19"
	30-40	SL (fine)		
3				
4				
5				
6				
7				

Landscape Note: 1 Bw, 2 Bt/Bw; 2

Slope:

Aspect:

Groundwater: Permanent

Other site notes: lodgepole pine, Idaho fescue

Comments: Site was evaluated during winter. Ground was partially frozen

Reason for Unsuitability: (Include Rule Reference)

Site does not meet minimum requirements outlined in OAR 340-071-0290(2)(b)(A)

High water indicators are present as shallow as 16".

Oregon

Tina Kotek, Governor

Department of Environmental Quality
Eastern Region Bend Office
475 NE Bellevue Dr., Suite 110
Bend, OR 97701
(541) 388-6146
FAX (541) 388-8283
TTY 711

October 6, 2023

Brian Holland
Pineriver Homes LLC
PO Box 3033
Sunriver, OR 97707

Re: WQ: CAS: Variance Approval: 248-23-000255-VAR: 16980 Downey Road; T.20S; R.10E; Sec. 12B; Tax Lot 6100; Lot 51, Block 24 Deschutes River Recreation Homesites Inc Unit 5, 0.57 Acres; Deschutes County.

Dear Brian Holland,

This correspondence verifies that a variance hearing provided for under Oregon Administrative Rules 340-071-0430, was held on the site at 11:15 am on August 24, 2023, for the subject property referenced above on Downey Road in Deschutes County. The purpose of the hearing was to provide a forum for the presentation of supportive facts to show that strict compliance with certain rules regulating onsite sewage disposal are inappropriate, or that special physical conditions at the site render strict compliance unreasonable, burdensome or impractical. The proposal and associated supporting information you provided with the application was presented during the recorded hearing.

Variance Decision:
Based on review and evaluation of the variance record and observations made during the variance hearing, I am pleased to inform you that the variance from the rules cited above is hereby granted. In my opinion, it would be unreasonable to prohibit this method of wastewater treatment by strictly following the administrative rules at this location at this time. It is my judgement that the proposed system is not likely to present a health hazard risk or have any significant adverse impact to groundwater or surface water quality if properly operated and maintained. The owner of this system will be required to enter into a maintenance contract with a certified maintenance provider for the life of the system.

Justification for this decision:

- The proposed Orenco® AdvanTex AX20-RTN Mode 3B system is currently approved as a system meeting DEQ's Treatment Standard 2; OAR 340-071-0100(168) "Treatment Standard 2" means a 30-day average of less than 20 mg/L of BOD_5 and 20 mg/L of TSS, a 30-day geometric mean of less than 400 fecal coliform per 100 milliliters and a 30-day average of 30 mg/L of Total Nitrogen. A 30-day average of less than 17 mg/L of $CBOD_5$ is acceptable in lieu of the BOD_5 value.
- On average, the AX20N-Mode 3B system is one of the best available technologies for Total Nitrogen treatment that has been approved for use in Oregon and is expected to treat residential wastewater to 20mg/L Total Nitrogen, which is about two thirds of a reduction from that of a standard system and about half from a sand filter system in this climate.

DESCHUTES COUNTY

COMMUNITY DEVELOPMENT

December 12, 2019

HOLLAND, BRIAN
PO BOX 3033
BEND, OR 97707

RE: 247-19-001580-EVAL
16980 Downey Rd, Bend

A site evaluation for an onsite wastewater treatment system for a single family dwelling was recently completed at the property noted above. Test pits were evaluated on December 9, 2019. Part of the evaluation is to determine the level to which the ground water rises during the wet season of a normal weather year. Permanent water tables are present throughout the year although they may fluctuate in elevation seasonally. The soil indicators used to determine the level to which the water table rises are gray soils and mottling (discoloration of the soil).

In the test pits on the property the indicators suggest the water table may rise within 24 inches of the ground surface. Past observations and elevation in the surrounding area also verify the presence of a high water table. Extensive study and modeling of the groundwater in south Deschutes County has demonstrated that this area is sensitive to added loading from areas that do not meet separation to groundwater. This site is therefore denied due to high permanent groundwater observed and conditions associated with saturation.

You have 90 days from the initial site visit to provide additional test pits for evaluation at no additional fee. However, it appears that other areas on the property would not be suitable due to the lack of topographical changes.

DEQ rules do not allow installation of a Standard drainfield [OAR 340-071-0220 (1)(b)A], [OAR 340-071-0265(1)(c), Capping Fill drainfield, Pressurized Distribution System or Sand Filter System [OAR 340-71-290(2)(b)] in these circumstances. Installation of an Alternative Treatment Technology (ATT) requires a standard, capping fill, pressurized drainfield or sand filter system for final treatment and dispersal. Therefore, if a conventional drainfield or sand filter system cannot be installed on the property, an ATT cannot be used.

RULE REQUIREMENTS

Oregon Department of Environmental Quality Rules (DEQ) requires a minimum 4-foot separation between the bottom of a wastewater dispersal trench and the highest level a permanent water table may reach. Drainfields must be installed a minimum of 12 inches into the ground. Drainfields can only be installed therefore, where the water table does not rise closer than 5 feet from the ground surface. This allows for the 4-foot separation from the bottom of the trench to the water. [OAR 340-71-220(1)(b). DEQ rules also require 24 inches of separation between the highest level reached by the water table

and the bottom of a surface mounted sand filter system which is an alternative onsite system that provides high quality wastewater treatment [OAR 340-071-290(2)(b)].

REVIEW AVAILABLE

Pursuant to Oregon Administrative rules (OAR 340-071). You may request a site evaluation report review if you believe this report to be in violation of the rules. The Oregon DEQ conducts report reviews upon submission of the appropriate application materials including: a written request that includes all information you have received from Deschutes County, the reason the report is in error including the specific Oregon Administrative Rules that conflict with the report, and the application fee.

The DEQ will review the county's report and visit the site to determine the report's compliance with the appropriate rules.

Also pursuant to this rule, you may request a variance from these rules. The Oregon DEQ reviews variance requests upon application. This is not an automatic variance. You must provide technical justification that demonstrates your proposed system will operate over an extended period of time, will not degrade the environment, and will provide public health protection.

An application, application fee, justification and exhibits, including this report, a land use compatibility statement and detailed plans of your proposed system are required for the application. Technical advice from a knowledgeable consultant is recommended. A Variance Officer from DEQ will review your application and the property and issue a written determination following an informational hearing.

Deschutes County recognizes your right to a variance request. This property, however, has severe limitations for onsite wastewater treatment as noted above. Unless public health and environmental protection can be assured, a variance request cannot be supported by the Deschutes County Environmental Soil Division and will not likely be approved by DEQ.

For further information regarding a report review for a variance request, please contact the Oregon Department of Environmental Quality at 471 NE Bellevue Dr., #110, Bend, OR 97701, phone 541-388-6146.

If you have any questions, please do not hesitate to call this office at 541-388-6519.

Sincerely,
Environmental Soils Division

Kevin Hesson
Environmental Health Specialist Trainee

KMH/mas

1 E NW Lafayette Avenue, Bend, Oregon 97703 | P.O. Box 6005, Bend, OR 97708-6005
(541) 388-6575 @ rdd@deschutes.org www.deschutes.org/cd

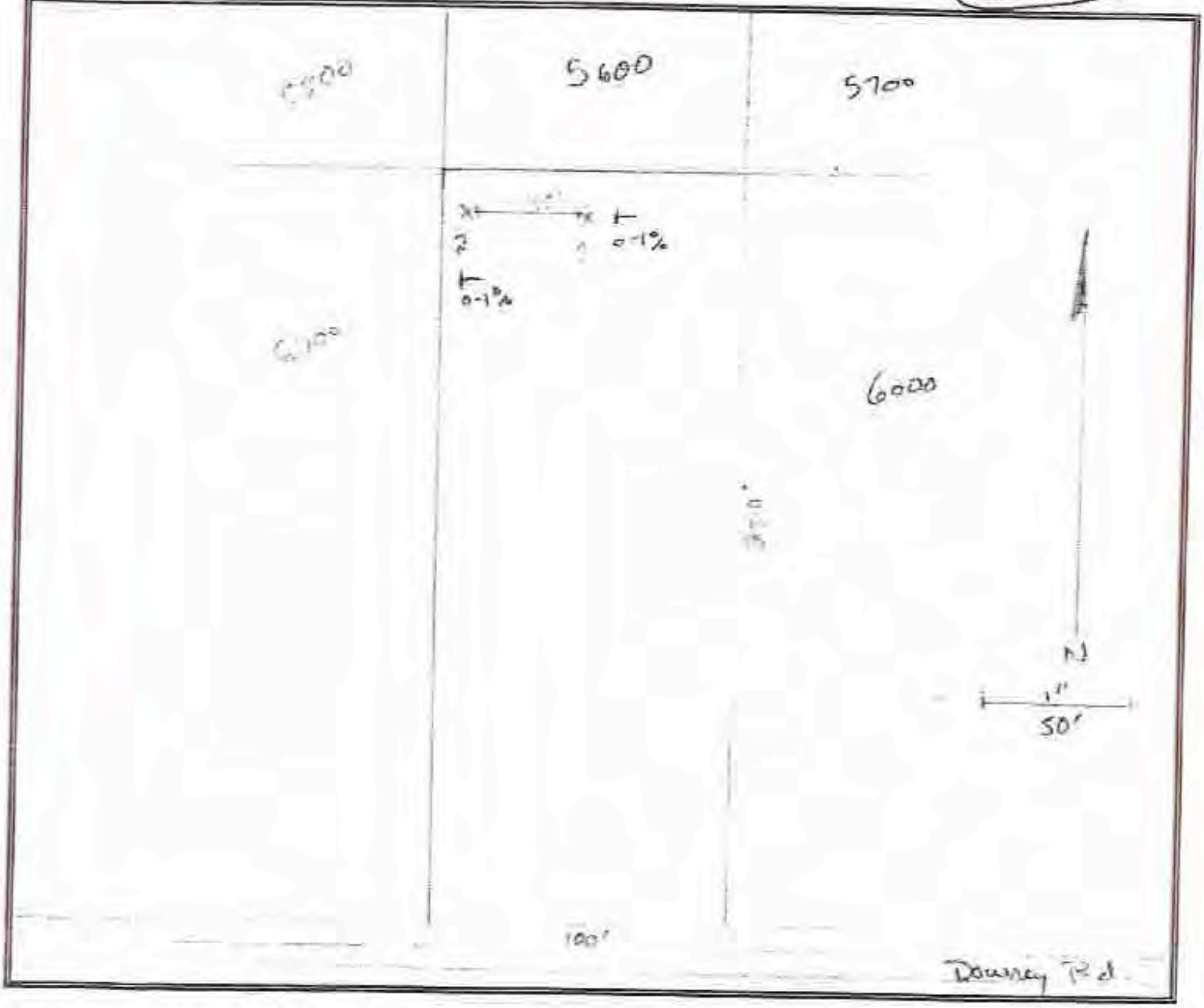
SITE EVALUATION FIELD INSPECTION FORM

Applicant: Brian Holland Site Evaluation # 247-19-001580

Evaluator: Kevin Hess Date: 4/9/19 Parcel Size: 0.57

Subdivision: DRH T ___ R ___ S ___ TL ___ L ___ B ___

Suitable **Sketch/Not to Scale** ~~**Unsuitable**~~



systems approved are the **minimum to meet current DEQ rules and are not design specifications*

System type approved: ___ Absorption facility: Level

Initial ___ Min. Size ___ Max. Depth ___ Min. Depth ___

Replacement ___ Min. Size ___ Max. Depth ___ Min. Depth ___

Tank Size ___ Sewage Flow ___

Special Conditions: ___

16980

SITE EVALUATION FIELD INSPECTION FORM

Applicant: Brian Holland
Site Evaluation #: 247-19-001580
Evaluator: Kevin Hesson
Date: 12/9/19
Parcel Size: 0.57
Subdivision: DRRH
T ___ R ___ S ___ TL ___ L ___ B ___

	DEPTH	TEXTURE	COLOR	Notes on roots, structure, rock frag, redox, limiting layer type & depth
-1½ 1	0-10	LS	10YR 3/3	2vfF, m, c, 1msbk
	10-22	S	10YR 3/4	2vfF, m, co, sg — redox @ 20 depletions
	22-35	LS	10YR 3/2	1vfF, m, 3msbk — (10YR 6/2) depletions throughout.
-1½ 2	0-10			Like 1
	10-21			redox @ 22"
	21-38			not much distinction between horizon 1 & 2 as far as matrix color
3				
4				
5				
6				
7				

Landscape Note: Lodgepole pine, ravenberry, idaho fescue, antelope bitterbrush
Slope: ___ Aspect: ___ Groundwater: permanent
Other site notes: 1 35"/2450 SW → 2

Comments:

Reason for Unsuitability: (Include Rule Reference)
340-071-0290(2)(A)(A)(i) - does not meet minimum separation requirements

DESCHUTES COUNTY

COMMUNITY DEVELOPMENT

June 6, 2022

VASQUEZ, EMMA F
6740 YOSEMITE DR
BUENA PARK, CA 90620

RE: 247-22-000636-EVAL

16989 COVINA RD, BEND, OR 97707

Deschutes County Environmental Soils Division has reviewed your site evaluation application for an onsite wastewater treatment system on the property identified above. The site was evaluated on **6/2/2022**, and was found suitable to install a "System" as defined in Oregon Administrative Rules for Onsite Wastewater Treatment Systems, Chapter 340, Division 71. The approved system for this site requires a nitrogen reducing treatment technology system discharging to reduced size surface mounted bottomless sand filter system. For more information about the different types of systems, descriptions, design criteria, important links and diagrams, contact our office or visit our website at www.deschutes.org/cd. (Click on the *Onsite Waste Water Treatment Systems* link).

Minimum System Requirements:

System type:	**Alternative Treatment Technology (ATT)**
Maximum Design flow gallons per day (gpd) :	**450 gpd**
Tank Size:	**1,000 gallon w/ 500 gallon dosing**
Sand Filter size (ft^2):	**250 ft^2**
Maximum Depth:	**10 inches**
Minimum Depth:	**0 inches**

CONDITIONS OF APPROVAL

Oregon Onsite Wastewater Treatment System Rules (OAR 340-071-0130(1)) state:

Deschutes County Environmental Soils Division *"may not authorize installation or use of a system that is likely to pollute public waters or create a public health hazard. If, in the judgment of the agent, the minimum standards in this division will not adequately protect public waters or public health on a particular site, the agent must require a system to meet requirements that are protective. This may include but is not limited to … using an alternative system."*

Data and information produced during the La Pine National Decentralized Wastewater Demonstration Project shows that traditional onsite systems (standard, pressure distribution and sand filter systems) installed on individual sites pollute the groundwater under those sites to the extent that state groundwater quality and safe drinking water standards are exceeded. Cumulative impacts of this

pollution on individual sites include regional groundwater quality degradation and increased nutrient loading to rivers and streams of the region. Additionally, extensive groundwater sampling and modeling conducted by the Oregon Department of Environmental Quality (DEQ) and the US Geological Survey has identified specific standards for onsite systems in south Deschutes County that will protect and improve groundwater quality both on individual sites and on a regional basis.

DEQ has reviewed this area and determined a conventional onsite wastewater treatment system would cause a "likely adverse groundwater quality impact" as per DEQ's groundwater quality protection rules [OAR 340-040-0030(2)]. In addition, there is risk for degrading groundwater quality or groundwater beneficial uses.

Therefore, in order to protect drinking water quality in private wells and regional groundwater and surface water resources, the onsite system on this property must meet the following specifications:

1. The system serving this site must be an alternative system that achieves the highest level of nitrogen reduction achievable at time of permit application. Nitrogen reducing systems include Alternative Treatment Technologies and Recirculating Gravel Filters designed for nitrogen reduction or an approved add-on unit designed for nitrogen reduction.
2. The system is sized for a maximum sewage flow of **450** gallons per day; the sizing for a one to four bedroom residence.
3. The area approved for the system is very specific. The land surface in the vicinity of the approved site must not be altered. **Any alteration of the approved site or placement of a well within 100 feet of the approved site may invalidate this approval.** Technical rule changes will not invalidate a favorable site evaluation, but may require use of a different kind of system.
4. A permit must be obtained from Deschutes County prior to the installation of the system. Application for a construction permit must be accompanied by an accurately drawn plan showing the layout and components of the system. The plans must also show the replacement area, proposed location of dwelling and other structures, driveways, wells, waterlines, property lines, and any other pertinent information.
5. This site evaluation approval does not guarantee that land development permits can be issued. When applicable, the applicant must obtain land use approval from the Deschutes County Planning Division before Deschutes County Environmental Soils can issue permits.
6. Additional items that are required for Alternative Treatment Technology system permit applications are:
    a. A copy of the service contract between the authorized maintenance service provider and the property owner.
    b. Information regarding the specific ATT with elevations of specific components such as the treatment unit, pump vaults, valves, floats, tanks and the soil absorption system.
    c. Profile of the proposed system in a way that shows the State DEQ approved installation method proposed.
    d. List of materials for the proposed system

    Note: Each manufacturer certifies installers for their ATT systems.
7. This system is not eligible for a Pollution Reduction Credit in accordance with Deschutes County Code 11.12, Transferable Development Credit Program.

8. **Additional requirements and/or comments:** Install within the approval area. Maintain all applicable setbacks. The sand filter may be counter-sunk no greater than 10 inches.

REVIEW AVAILABLE

Site Evaluation Report Review: Pursuant to OAR 340-071, you may request a site evaluation report review if you believe this report to be in violation of Oregon Department of Environmental Quality (DEQ) rules. The DEQ conducts report reviews upon submission of the appropriate application materials including a written request that includes all information you have received from Deschutes County, the reason the report is in error including the specific Oregon Administrative Rules that conflict with the report, and the application fee.

The DEQ will review the county's report and visit the site to determine the report's compliance with the applicable rules. A variance from the rules may also be requested through the DEQ. For further information regarding a report review or a variance to DEQ rules, please contact the Oregon Department of Environmental Quality at 475 NE Bellevue Dr., Suite 110, Bend OR 97701, phone 541-388-6146.

If you have any questions, please call this office at 541-388-6519.

Sincerely,
ENVIRONMENTAL SOILS DIVISION

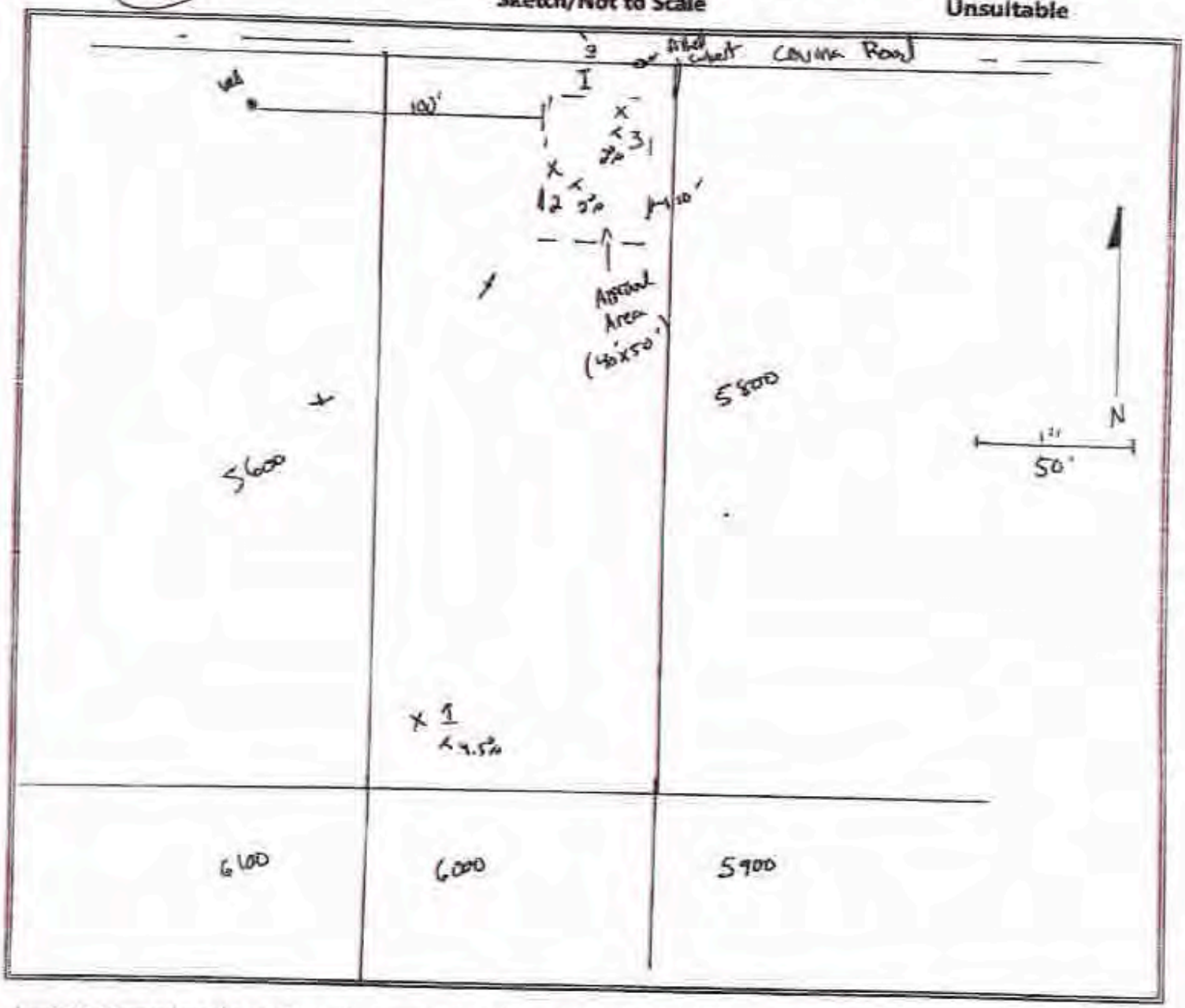
Kevin Hesson, REHS
Registered Environmental Health Specialist

RSG

SITE EVALUATION FIELD INSPECTION FORM

Applicant: Emma Vasquez
Evaluator: Kevin Hesson
Subdivision: DRRH
Site Evaluation # 247-22-000636
Date: 6/6/22
Parcel Size: 0.59
T 00 R 10 S 12 TL 05700 L ___ B ___

Suitable — Sketch/Not to Scale — Unsuitable



*systems approved are the **minimum** to meet current DEQ rules and are not design specifications

System type approved: ATT to 3SF
Initial: ATT to 3SF
Replacement: ATT to 3SF
Tank Size: 1,000 w/ 500 gallon dosing
Special Conditions: Install within the approval area. Maintain all applicable setbacks. The sand filter may be center-sank no greater than 10"

Absorption facility: Bottomless Sand Filter
Min. Size 250 sqft Max. Depth 12" Min. Depth 0"
Min. Size 250 sqft Max. Depth 10" Min. Depth 0"
Sewage Flow 450 gallons/day

Covina

SITE EVALUATION FIELD INSPECTION FORM

Applicant: Emma Vasquez
Site Evaluation # 247-22-000636
Evaluator: Kevin Hesson
Date: 6/2/22
Parcel Size: 0.59
Subdivision: PRRIt
T 20 R 10 S 12 TL 05700 L ____ B ____

		DEPTH	TEXTURE	COLOR	Notes on roots, structure, rock frag, redox, limiting layer type & depth
4.5%, S140°E	1	0 - 6	LS	10YR 3/3	3vf, 2f, m, co, 1fgr
		6 - 24	cobLS	10YR 3/3	2vf, f, m, 3co, 1m sbk, vfr / sg
		24 - 39	SL	10YR 3/2	1f, m, 2 m sbk, fc, @ 24" (7.5YR 3/4) Fe stripping
2%, S150°E	2	0 - 7			Like 1
		7 - 24			
		24 - 36			Fe stripping @ 36"
2%, S150°E	3	0 - 6			Like 1
		6 - 33			
		33 - 40			Fe stripping @ 38"
	4				
	5				
	6				
	7				

Landscape Note: bearberry, lodgepole pine, ponderosa pine, broadleaf strawberry, western yarrow, idaho
Slope: Fescue, current Aspect: ____ Groundwater: permanent
Other site notes: at 1 20' N5°E culvert, culvert has been filled

Comments:

Reason for Unsuitability: (Include Rule Reference)

Final Inspection Date
11/30/2006

DESCHUTES COUNTY
Community Development Department
Environmental Health Division

PERMIT NO.55845

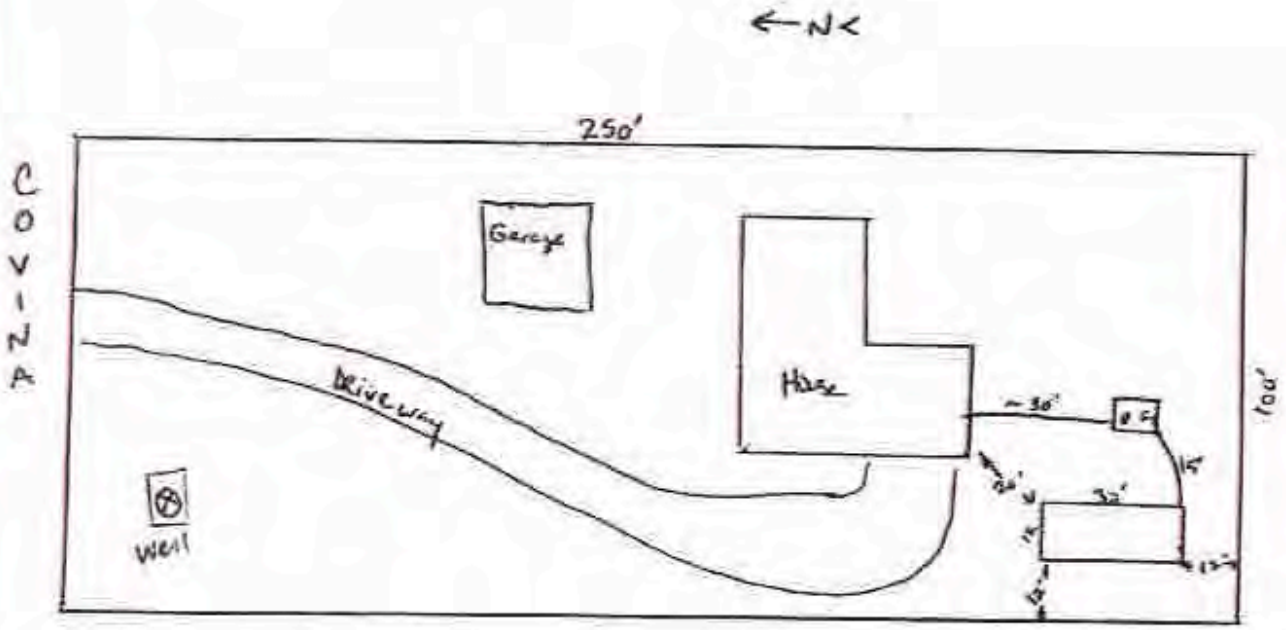
CERTIFICATE OF SATISFACTORY COMPLETION

TYPE: RN

Job Location-Address:	16981 COVINA RD	City:	BEND
TaxLot:	201012B005600	Serial:	115750
Name of Owner:	DELAUTER,JEFFREY S		
Installer:	OWNER	License#:	8888888

SEPTIC SYSTEM TYPE: SAND FILTER

Tank Material & Capacity: CONCRETE 1500-2U
Dose Volume: 30 Gal.
Dimensions: 12' x 30' Sq.Ft.
Squirt Height: 104 In.



In accordance with Oregon Revised Statute 454.66, this Certificate is issued as evidence of satisfactory completion and installation of components as described in the permit at the location identified above.

Authorized Signature X
TODD CLEVELAND

Todd Cleveland

Date: 11/30/2006

Special Notes on Construction:

DESCHUTES COUNTY

Community Development Department

Planning Division Building Safety Division Environmental Health Division

117 NW Lafayette Avenue Bend Oregon 97701-1925
(541)388-6575 FAX (541)385-1764
http://www.co.deschutes.or.us/cdd/

April 11, 2003

JOSEPH EDWARDS
39566 CALLE DE LUZ
FALLBROOK CA 92028

Dear Mr. Edwards

RE: Site Evaluation # F-21187 20-10-12B0-5800
16997 COVINA RD, BEND

A site evaluation for on site sewage disposal for a single family dwelling was recently completed at the above noted property.

Part of the evaluation is to determine the level to which the ground water rises during the wet season of a normal weather year. Permanent water tables are present throughout the year although they may fluctuate in elevation seasonally. The soil indicators used to determine the level to which the water table rises are gray soils and mottling (discoloration of the soil).

Denied due to conditions of saturation at 12" and 20".

Past observations and evaluations in this area verify the presence of a high water table.

Oregon Department of Environmental Quality Rules (DEQ) pertaining to on-site sewage disposal, require a minimum four-foot separation between the bottom of a sewage disposal trench and the highest level a permanent water table may reach in the ground. Drainfields are installed a minimum of 12" into the ground. Drainfields can only be installed, therefore, where the water table does not rise closer than 5' from the ground surface. This allows for the 4' separation from the bottom of the trench to the water. [OAR Chapter 340-71-220(Id) and (2bA), copy enclosed.] These rules also allow for a 24 inch separation between the high level of the water table and the bottom of a surface mounted sand filter system. A sand filter is an alternative sewage disposal system that treats the sewage to a better extent than a drainfield, and is considerably more expensive to install.

DEQ rules would not allow installation of a standard drainfield, capping fill drainfield, pressurized distribution system or sand filter in these circumstances. [OAR 340-71-290(b)].

This property is therefore denied for on-site sewage disposal.

You have 90 days to provide additional test pits for evaluation at no additional fee. However, it appears that other areas on this property would not be suitable due to the lack of topographical changes.

Pursuant to Oregon Administrative Rules (OAR Chap. 340), if you conclude this report to be in error of these Rules, you may request a review. The report review is through the Department of Environmental Quality. The application is a written request that includes all information you have received from Deschutes County, the reason the report is in error, citing the specific OARs that conflict with the report, and an application fee. DEQ will review the county report and visit the site to determine compliance with the appropriate rules.

Pursuant to Oregon Administrative Rules (OAR Chap. 340), you can request a variance from these Rules. The variance request is through the Department of Environmental Quality. This is not an automatic variance. You must provide technical justification that demonstrates your proposed system will operate over an extended period of time, that it will not degrade the environment and will provide public health protection. An application, justification and exhibits, including this Deschutes County report, a land use compatibility statement, and detailed plans of your proposed system will be necessary. Technical advice from a knowledgeable consultant is recommended. A variance application fee is required. A Variance Officer from DEQ will review your application and the property. A determination will be made, in writing, following an informational hearing. Deschutes County recognizes your right to a variance request. This property however, has severe limitations for on-site sewage disposal, as noted in the above report. Unless public health and environmental protection is assured, a variance request cannot be supported by the Deschutes County Environmental Health Division, and will not likely be approved by DEQ.

For further information regarding a report review for a variance request, please contact the Oregon Department of Environmental Quality at 2146 NE 4th Suite 104, Bend OR 97701, phone 541-388-6146.

If you have any questions, please do not hesitate to this office.

Sincerely,
ENVIRONMENTAL HEALTH DIVISION

Dan Haldeman R.S.

Dan Haldeman, R.S.
Sanitarian

PC Bob Baggett (Department of Environmental Quality)

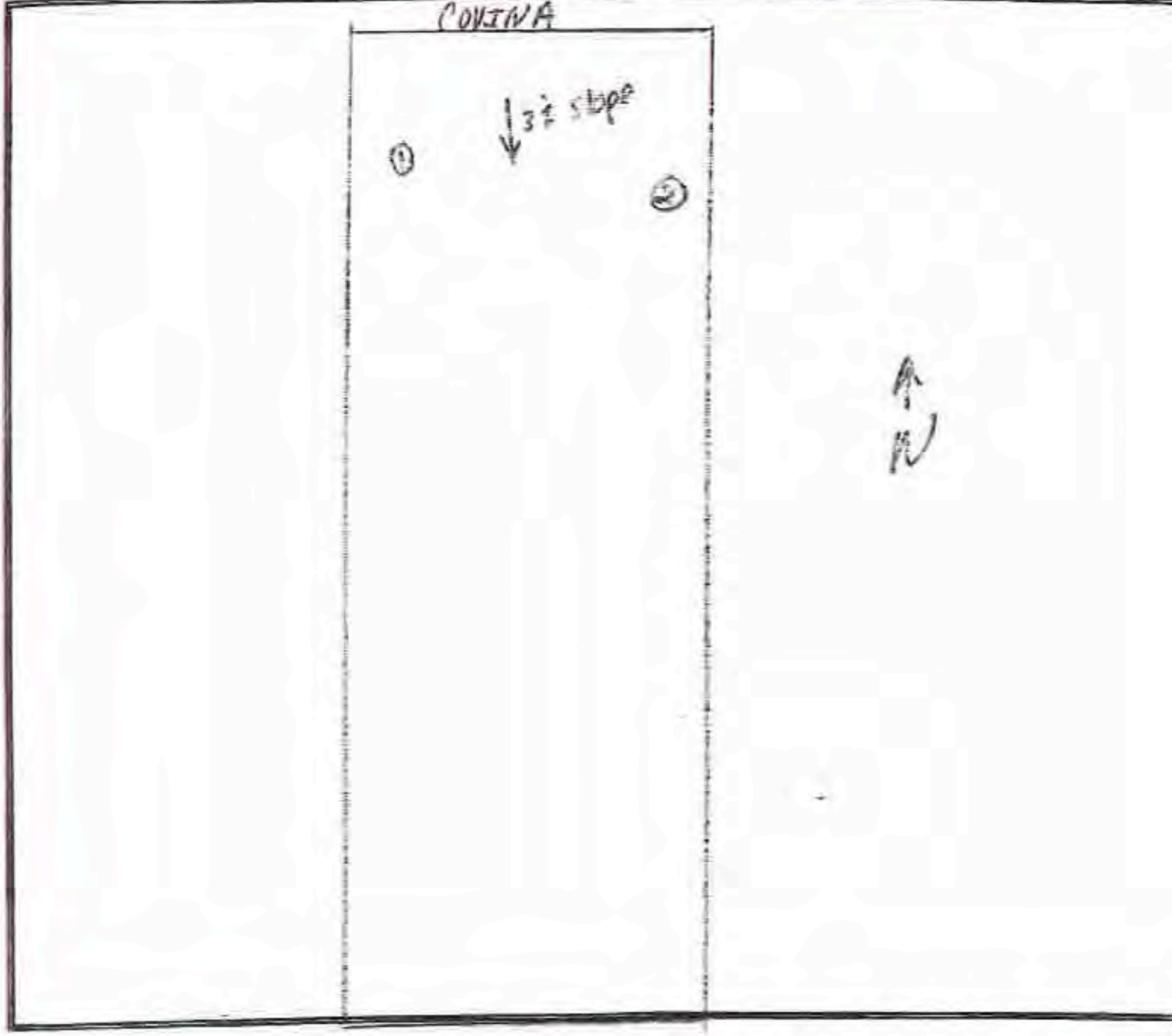
SITE EVALUATION FIELD INSPECTION FORM

Applicant: Edwards, Joseph B Site Evaluation # F21187

Date: 4/?/03 Subdivision: L ___ B ___ Parcel Size ___

Evaluator: Dan Halderman T 20 R 10 S 12B TL 5800

Suitable Sketch/Not. to Scale X Unsuitable



System type approved:

Initial ___

Replacement ___

Tank Size ___

Absorption facility:

Min. Size ___ Max. Depth ___ Min. Depth ___

Min. Size ___ Max. Depth ___ Min. Depth ___

Sewage Flow ___

Special Conditions: Denied due to Conditions of saturation at 12" and 20"

SITE EVALUATION FIELD INSPECTION FORM

Applicant: Edwards, Joseph Site Evaluation # F21187

Evaluator: DAN Haldeman Date: 4/8/03 Parcel Size: .6

Subdivision: ____ T 20 R 10 S 12B TL 5800 L ____ B ____

DEPTH	TEXTURE	COLOR	Notes on mottling, roots, structure, layer limiting effective soil depth, % loose rock, etc.
0-20	COLS	10YR 3/3	sg, fm roots
20-25	COLS	10YR 4/3	sg f roots, 1f Reductions (10YR 4/1)
25-33	CO SL	10YR 4/6	2 d reductions, 3 f d conc (10YR 6/6)
33-40	SL	10YR 4/2	3 m d concentrations
40-50	fine sand	10YR 4/1	3 m d conc.
50-bld	s & gravel	2/1	washed
		ground water at 65"	
0-12	COLS	10YR 4/3	sg
12-20	COLS	10YR 4/3	2 d reductions,
20-24	COLS	10YR 4/6	2 d concentrations (5/6)
24-45	SL	4/2 4/1	2 d conc
45-55	f sand	3/1	
55 - H_2O			
		Redox at 20" in test pit #1	
		Redox at	
		well observations this year show	
		high groundwater level 48" lower than normal	

Landscape notes sedges

Slope ____ Aspect ____ ____ Groundwater perched

Other site notes ____

Comments: ____

Reason for Unsuitability: (Include Rule Reference)

(MJZ-8/93)

APPLICATION TO

DEPARTMENT OF ENVIRONMENTAL QUALITY

FOR

EVALUATION REPORT OF SUITABILITY OF PROPOSED SEWAGE DISPOSAL

16923 Deschutes Rd

DESCRIPTION OF PARCEL (Attach a Plat or Map Showing All Sites as Exhibit A)

Section ___, Township ___, Range ___, County of _____, Oregon, Tax Lot _____

Narrative Description: Deschutes River Recreation Homesites
Lot 20, Block 25

PROPOSED USE OF PARCEL: (RESIDENTIAL) OTHER (SPECIFY)

PRESENTLY DESIGNATED LAND USE, ZONING, AND NAME OF DESIGNATING AGENCY

PROPOSED METHOD OF SEWAGE DISPOSAL (Check One and Provide Requested Information)

( ) SUBSURFACE SEWAGE DISPOSAL (Fee: $5 for one lot; $10 for two or more lots)

(1) Parcel is located within the boundaries of and can be provided sewerage service by the following entity which owns and operates a sewerage system:

Name of Entity _____

System Identification _____

Address of Entity _____

City, Zip Code _____

(2) Present status of sewers or sewer extensions to serve parcel:

(a) Plans for sewers ( ) have ( ) have not been prepared.
(b) Plans for sewers ( ) have ( ) have not been approved by DEQ.
(c) Sewers ( ) have ( ) have not been installed.

KEY PUNCHED
JAN 02 1980

(3) STATEMENT OF IDENTIFICATION OF SEWERAGE SYSTEM OWNER (Separate statement may be attached if available).

As representative of the owner of the sewerage system named in (1) above, I hereby certify that sewerage service will be provided for the above described parcel, that said sewerage system has capacity to serve the parcel, and that the above information relative to the status of such sewerage service is correct to the best of my knowledge.

Signature of Representative _____

Title _____

Date _____

( ) PROPOSED NON-SEWERAGE SYSTEM (Fee: $5 for one lot; $10 for two or more lots)

Has City approved the proposed system functionally in writing? ( ) No ( ) Yes, on _____ (Date)
Has DEQ issued a Water Pollution Permit for the proposed system? ( ) No ( ) Yes, Permit No. _____

(X) SUBSURFACE SEWAGE DISPOSAL SYSTEM (Fee: $100 per lot)

Show location of proposed subsurface system or systems on the plot plan for each site which is attached as Exhibit A. For a subdivision of four or more units, attach as Exhibit B:

1. A topographical map 2. Rates of slope data 3. Soils data 4. Water table data
5. Drainage data (surface and subsurface) 6. Water supply sources and distribution systems
Note 7. Existing subsurface sewage disposal systems location

Special Instructions:

DEQ and/or its contract agent must complete a site investigation before a report can be given. To facilitate such investigation, prepare two (2) backhoe test-holes at least 5 ft. deep and approximately 75 ft. apart (at the same approximate ground surface elevation) at the site of each proposed system.

Test holes ( ) have been prepared (X) will be prepared by L+T. Const 12/27/79

I HAVE ATTACHED THE REQUIRED EXHIBITS AND FEE SPECIFIED IN THE INSTRUCTIONS AND AS PER MY APPLICATION AND HEREBY REQUEST FROM THE DEPARTMENT OF ENVIRONMENTAL QUALITY A REPORT OF SUITABILITY OF THE ABOVE DESCRIBED METHOD OF SEWAGE DISPOSAL FOR THE ABOVE DESCRIBED PARCEL.

Name of Applicant Harry Ray Signature of Applicant Harry Ray
Address of Applicant 16923 Deschutes Road Date 12/26/79
City, State, Zip Code Bend OR 97701 Phone: 593-1585

(DEQ USE OR AGENT USE ONLY)

Comments and recommendations based on Subsurface Site Investigation by DEQ or Contract Agent:

This lot has been evaluated by a member of this department. Studies including but not limited to soil conditions, water table circumstances and topographical variations were conducted. It is the opinion of this department that it is NOT feasible to install a septic tank and subsurface drainfield on this lot. Mottling of the soil indicated that the seasonal high water table will be less than two feet.

DESCHUTES COUNTY DEPT. OF HEALTH
Department, County Sanitarian Name
Address BEND, OREGON 97701 Signature John K. Glover, R.S. Date 12-27-79

Statement of DEQ or Agent Relative to Above Application

[ ] The above described method of sewage disposal is approved subject to the following conditions:
[X] The above described method of sewage disposal is not approved for the following reasons:

Chapter 340 Section 71-030, Oregon Administrative Rules, prohibits installation of disposal trenches in an area where the highest level attained by a permanently perched water table will be within four (4) feet of the bottom point of the effective sidewall of the disposal trench.

DESCHUTES COUNTY DEPT. OF HEALTH
Department, County Sanitarian Name
Address BEND, OREGON 97701 Signature John K. Glover, R.S. Date 12-27-79
For the Department of Environmental Quality
DEQ Agent Representative

DEQ Form 4/74/74

LOCATION: T_____ R_____ S_____ T.L._____

SUBDIVISION: DRRH

LOT: 20 BLOCK: 25

OWNER'S NAME: [illegible] Ray

TEST HOLES EXAMINED

#1 [illegible]

#2 SAME

WATER TABLE: 50" WATER TABLE: 53"

MOTTLES [illegible] CHROMA 10yr 5/2 to 2.5y 4/2 MOTTLES 24" in pumice CHROMA 10yr 5/2

RESTRICTIVE LAYER: _____ RESTRICTIVE LAYER: NO

TERRACE LEVEL: A-B TERRACE LEVEL: 2A-B

SUFFICIENT AREA ON LOT FOR INSTALLATION OF SEPTIC TANK AND DRAINFIELD? YES ___ NO X

RECOMMEND: APPROVAL _____ DENIAL X

INSPECTED BY: Carol Beardsley DATE: 12/27/79

REMARKS: _____

Deschutes County Health Department

SANITATION SECTION

COURTHOUSE ANNEX BEND, OREGON 97701

December 27, 1979

Harry Roy
16973 Downey Road
Bend, Oregon 97701

Re: Deschutes River Recreation Homesites Lot 20, Block 25

Dear Mr. Roy:

Enclosed is your Feasibility Statement for the above lot. It is located in a high water table area. Current Oregon Administrative Rules require a four foot separation between the effective sidewall of the trench and the seasonal high water that occurs each spring. This means that it must be at least five feet from the original ground surface to the seasonal high water table to qualify. Mottling of the soil on your lot occurred at 2 3 inches. This indicates that the seasonal high water table can be expected to occur at that depth. Actual water table at time of evaluation was observed at 50 inches from ground surface.
Enclosed for your information is a Department of Environmental Quality memorandum regarding sites which are denied under present rules.

Please feel free to contact this office if you have further questions in regard to this matter.

Sincerely,

John K. Glover

John K. Glover, R.S.
County Saniterian

JKG:mr

Denial File
115789

192-74

16791 Downey Rd

DEPARTMENT OF ENVIRONMENTAL QUALITY

[illegible]

Section [illegible], Township [illegible], Range [illegible]; County of Deschutes, Oregon; Tax lot [illegible]
Lot 19 Block 25 - Tract [illegible] in the Deschutes River Recreation Homesites - Plat [illegible] [illegible] (Copy [illegible])

Residential

RR - Deschutes County Planning Commission

[ ] [illegible]

(1) [illegible]

(2) [illegible]

(a) [illegible] [ ] [illegible] [ ] [illegible]
(b) [illegible] [ ] [illegible] [ ] [illegible] by DEQ.
(c) [illegible] [ ] [illegible] [ ] [illegible]

(3) [illegible]

[illegible]

Signature of Representative ______
Title ______
Date ______

[ ] [illegible]

[illegible] (Date)
[illegible]

[✓] [illegible] Exact location on lots not determined at this ti[me]

[illegible]

1. [illegible] 2. [illegible] 3. [illegible] 4. [illegible]
5. [illegible] 6. [illegible]
7. [illegible]

Special Instructions:

[illegible]

[illegible]

[illegible]

Name of Applicant: Oscar E. Johnson Signature of Applicant: Oscar E. Johnson
Address of Applicant: 2555 1/2 So. 21st
City, State, Zip Code: Coos Bay, Oregon Phone: 269-0654 Date: 5-20-76

[illegible]

This lot has been evaluated by a member of this department. Studies including but not limited to soil conditions, water table circumstances and topographical variations were conducted. It is the opinion of this department that it is NOT feasible to install a septic tank and subsurface drainfield on this lot. The water table was determined to be no more than eighteen (18) inches from ground surface when examined on May 28, 1976.

[illegible]
Deschutes County Courthouse Annex
Bend, Oregon 97701

Agent/Agency: [illegible] Signature: John K. Glover, R.S.
Supervising Sanitarian Date: June 4, 1976

[illegible]

[ ] [illegible]
[X] [illegible]

Chapter 340 Section 71-030, Oregon Administrative Rules, prohibits installation of disposal trenches in an area where the highest level attained by a permanently perched water table will be within four (4) feet of the bottom point of the effective sidewall of the disposal trench.

John K. Glover
John K. Glover, R.S.

File 192.76

APPLICATION to

DEPARTMENT OF ENVIRONMENTAL QUALITY

for

EVALUATION REPORT OF SUITABILITY OF PROPOSED SEWAGE DISPOSAL [illegible]

DESCRIPTION OF PARCEL (Attach a Plat or Map showing all lines as Exhibit A)

Section 1?? Township 20 Range 10 County of Deschutes, [illegible]

[illegible] Description: Lot 19 Block 35 – Tract 4 in the Deschutes River Recreation Homesites – [illegible] (Copy of map attached)

PRESENT USE OF PARCEL [illegible]

Residential

PRESENT LAND USE, ZONING, AND NAME OF DESIGNATING AGENCY

RR-10 Deschutes County Planning Commission

PROPOSED METHOD OF SEWAGE DISPOSAL (Check one and Provide Requested Information)

[ ] [illegible] (Fee: $5 for one lot; $10 for two or more lots)

(1) Parcel is located within the boundaries of and can be provided sewerage service by the following entity which owns and operates a sewerage system:

Name of Utility ____

System Identification ____

Address of Utility ____

City, Zip Code ____

(2) Present status of sewers or sewer extensions to serve parcel:

(a) Plans for sewers [ ] have [ ] have not been prepared.
(b) Plans for sewers [ ] have [ ] have not been approved by DEQ.
(c) Sewers [ ] have [ ] have not been installed.

(3) STATEMENT OF CERTIFICATION BY SEWERAGE SERVICE ENTITY (Separate statement may be attached if available).

As representative of the owner of the sewerage system named in (1) above, I hereby certify that sewerage service will be provided for the above described parcel, that said sewerage system has capacity to serve the parcel, and that the above information relative to the status of such sewerage service is correct to the best of my knowledge.

Signature of Representative ____

Title ____

Date ____

[ ] [illegible] (Fee: $5 for one lot; $10 for two or more lots)

Has DEQ approved the proposed system previously in writing? [ ] No [ ] Yes, on ____ (date)
Has DEQ issued a [illegible] Permit for the proposed system? [ ] No [ ] Yes, permit no. ____

[✓] SUBSURFACE SEWAGE DISPOSAL SYSTEM (Fee: $25 per lot) Exact location on lots not determined at this time

Show location of proposed subsurface system or systems on the plat plan for each site which is attached as Exhibit A. For a subdivision of four or more sites, attach as Exhibit B:

1. [illegible] 2. [illegible] 3. [illegible] 4. [illegible]
5. [illegible] 6. Water supply source and distribution system data 7. Existing subsurface sewage disposal systems location

Special Instructions:

DEQ and/or its contract agent must conduct a site investigation before a report can be given. To facilitate such investigation, prepare two (2) backhoe test holes at least 4 ft. deep and approximately 75 ft. apart (at the same approximate ground surface elevation) at the site of each proposed system.

Test holes [ ] have been prepared [ ] will be prepared by ____

I HAVE ATTACHED THE REQUIRED EXHIBITS AND FEE [illegible] THIS APPLICATION FOR A [illegible] FROM THE DEPARTMENT OF ENVIRONMENTAL QUALITY [illegible] OF SUITABILITY OF THE ABOVE [illegible] FOR THE ABOVE DESCRIBED PARCEL.

Name of Applicant Oscar E. Johnson Signature of Applicant Oscar E. Johnson

Address of Applicant 2??? ?? [illegible]

City, State, Zip Code [illegible] Phone 389-0689 Date 5-2?-76

(FOR DEQ OR AGENT USE ONLY)

Comments and recommendations based on Subsurface Site Investigation by DEQ or Contract Agent.

This lot has been evaluated by a member of this department. Studies including but not limited to soil conditions, water table circumstances and topographical variations were conducted. It is the opinion of this department that it is NOT feasible to install a septic tank and subsurface drainfield on this lot. The water table was determined to be no more than eighteen (18) inches from ground surface when examined on May 28, 1976.

[illegible] Dept. of Health
Deschutes County Courthouse Annex
Bend, Oregon [illegible]

Signature John K. Glover
John K. Glover, R.S.
Supervising Sanitarian Date June 4, 1976

Statement of [illegible]

[ ] The above described method of sewage disposal is approved subject to the following conditions:

[X] The above described method of sewage disposal is not approved for the following reasons:

Chapter 340 Section 71-030, Oregon Administrative Rules, prohibits installation of disposal trenches in an area where the highest level attained by a permanently perched water table will be within four (4) feet of the bottom point of the effective sidewall of the disposal trench.

John K. Glover
John K. Glover, R.S.

Office Memorandum DESCHUTES COUNTY DEPARTMENT OF HEALTH

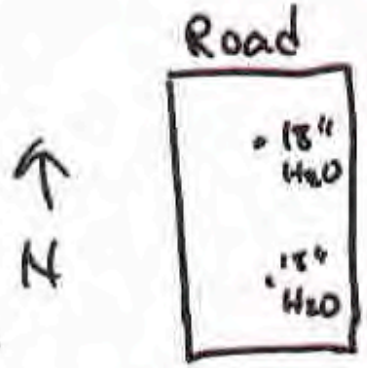
To : File

Date: 5-28-76

From : Jay

Subject: DRRH - Blk 25, Lot 19

Recommend denial



No restrictive layers to 6 ft.

Jay E. Langley

5

Water Sources

Wells

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

RECEIVED
JUN 30 1987
WATER RESOURCES DEPT.
SALEM, OREGON

DESC 5833

20s/10E-12b

Well Number

(1) OWNER:
Name Daniel McBride
Address 16981 Covina Rd.
City Bend State Or Zip 97707

(2) TYPE OF WORK:
[X] New Well [ ] Deepen [ ] Reconditioned [ ] Abandon

(3) DRILL METHOD
[ ] Rotary Air [ ] Rotary Mud [ ] Cable
[X] Other: AUGER

(4) PROPOSED USE:
[X] Domestic [ ] Community [ ] Industrial [ ] Irrigation
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes [ ] No [X] Depth of Completed Well ft.
Explosives used [ ] Yes [X] No Type Amount

BOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	18'	Cement	0	18'	5 1/2
6"	18	26'				

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[ ] Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing	6"	+1	26	160	[ ]	[X]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s)

PERFORATIONS/SCREENS:
[X] Perforations Method Sawed
[X] Screens Type Material PVC

From	To	Slot size	Number	Diameter	Telescope size	Casing	Liner
0	26	.040	750	6"		[X]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour
[X] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
11	16		1 hr.

Temperature of water Depth Artesian Flow Found
Was a water analysis done? [ ] Yes By whom
Did any strata contain water not suitable for intended use? [ ] Too little
[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Deschutes Longitude
Township 20 S N or S Range 10 E E or W WM
Section 12 SE ¼ NW ¼
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address) 16981 COVINA RD

(10) STATIC WATER LEVEL:
8 ft. below land surface Date 6-19-87
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES:
Depth at which water was first found 10'

From	To	Estimated Flow Rate	SWL

(12) WELL LOG: Ground elevation

Material	From	To	SWL
Top Soil	0	3	
Pumice	3	5	
clay	5	10	
clay & Gravel	10	19	8
Black sand/Plumy	19	23	
Black sand med	23	26	

Date started 6-14-87 Completed 6-17-87

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 630
Signed Mike Foster Date 6-29-87

WHITE COPIES - WATER RESOURCES DEPARTMENT YELLOW COPY - CONSTRUCTOR PINK COPY - CUSTOMER

6

Site Plan

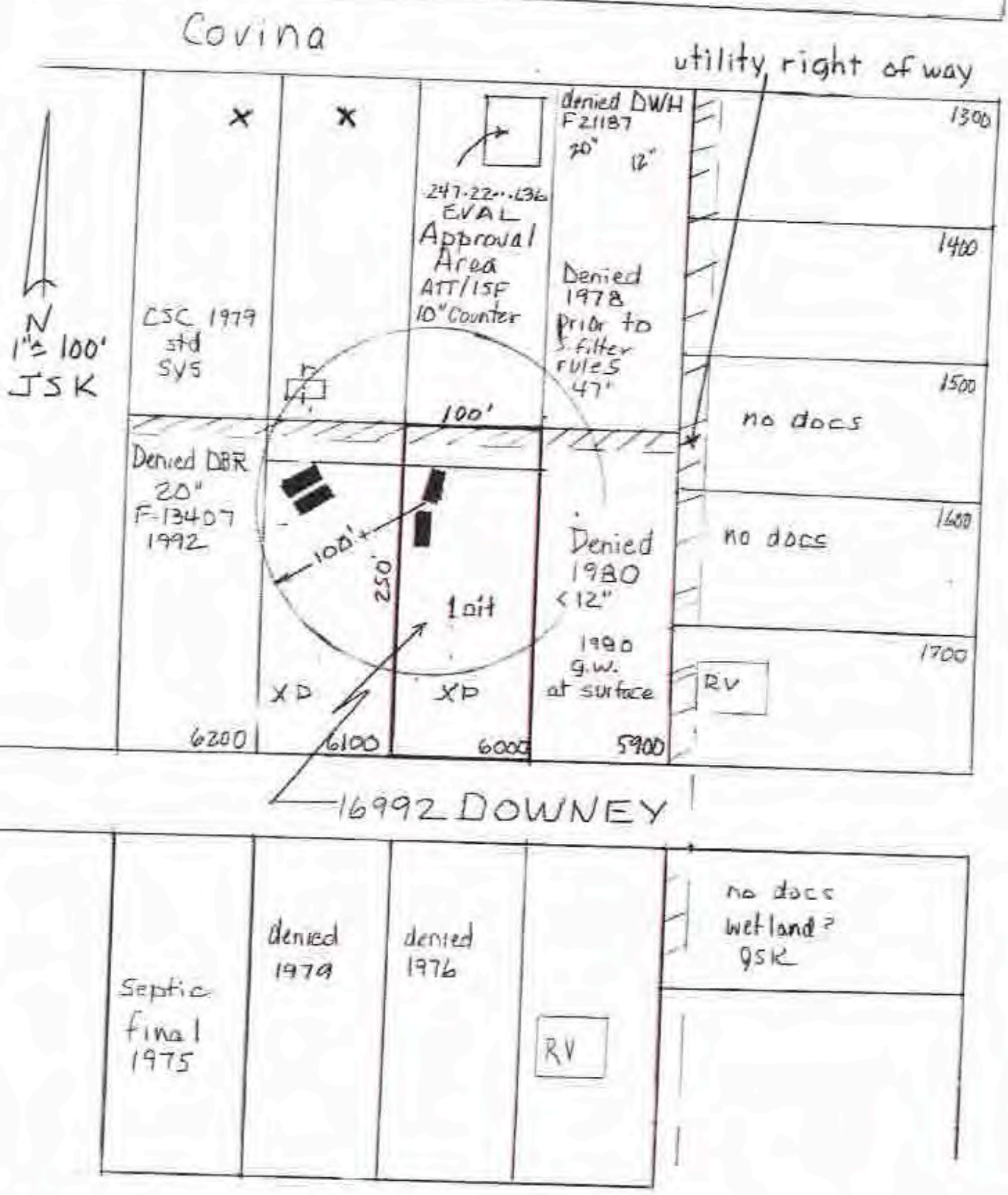
Modified Bottomless Sand Filter Detail

ATT Specifications

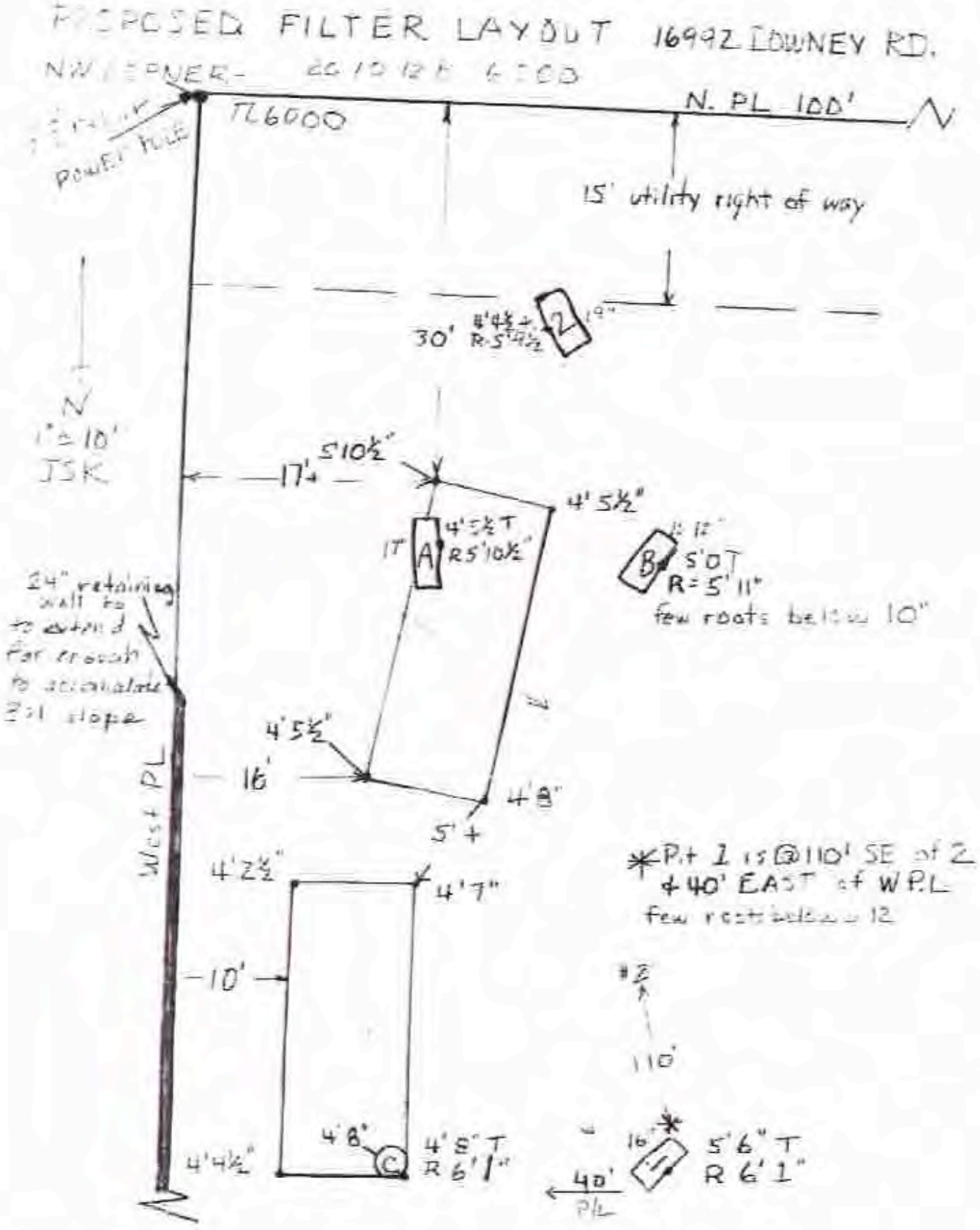
Site Photographs

20 10 12 B 6000

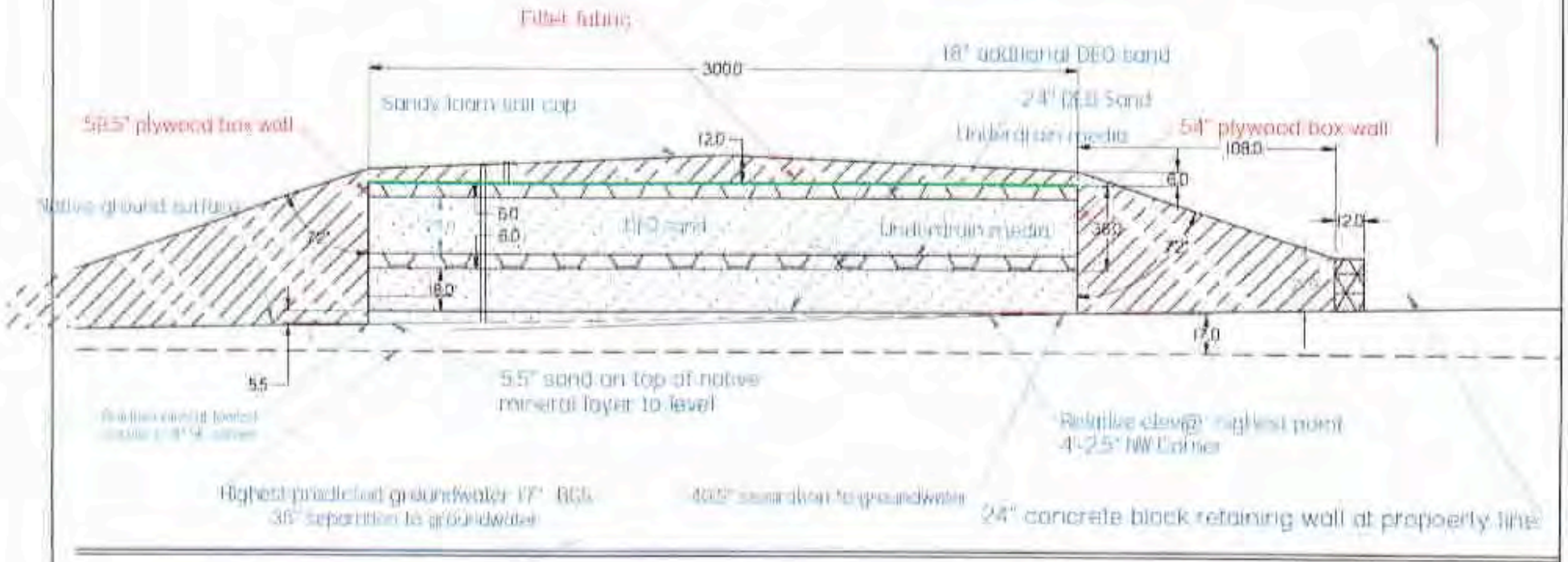
16992 DOWNEY RD. Variance proposal



= Well, XP = Possible well area, RV = RV site
= initial, r = replacement


PROPOSED FILTER LAYOUT 16992 LOWNEY RD.
NW CORNER- 26 10 12 B 6100
TL6000
N. PL 100'
power pole
15' utility right of way
30'
N
1" = 10'
ISK
17'
5 10½"
4' 5½"
4' 5½" T
R 5' 10½"
1T
A
B
5' 0" T
R = 5' 11"
few roots below 10"
24" retaining wall to be extended for encroachment to accomodate 2:1 slope
4' 5½"
16'
4' 8"
5' +
West PL
4' 2½"
4' 7"
10'
4' 8"
4' 8" T
R 6' 1"
4' 4½"
C
*Pit 1 is @ 110' SE of 2 & 40' EAST of W.P.L
few roots below 12
110'
16'
5' 6" T
R 6' 1"
40'
P/L

16992 Downey Road
Pine River Homes
South Filter



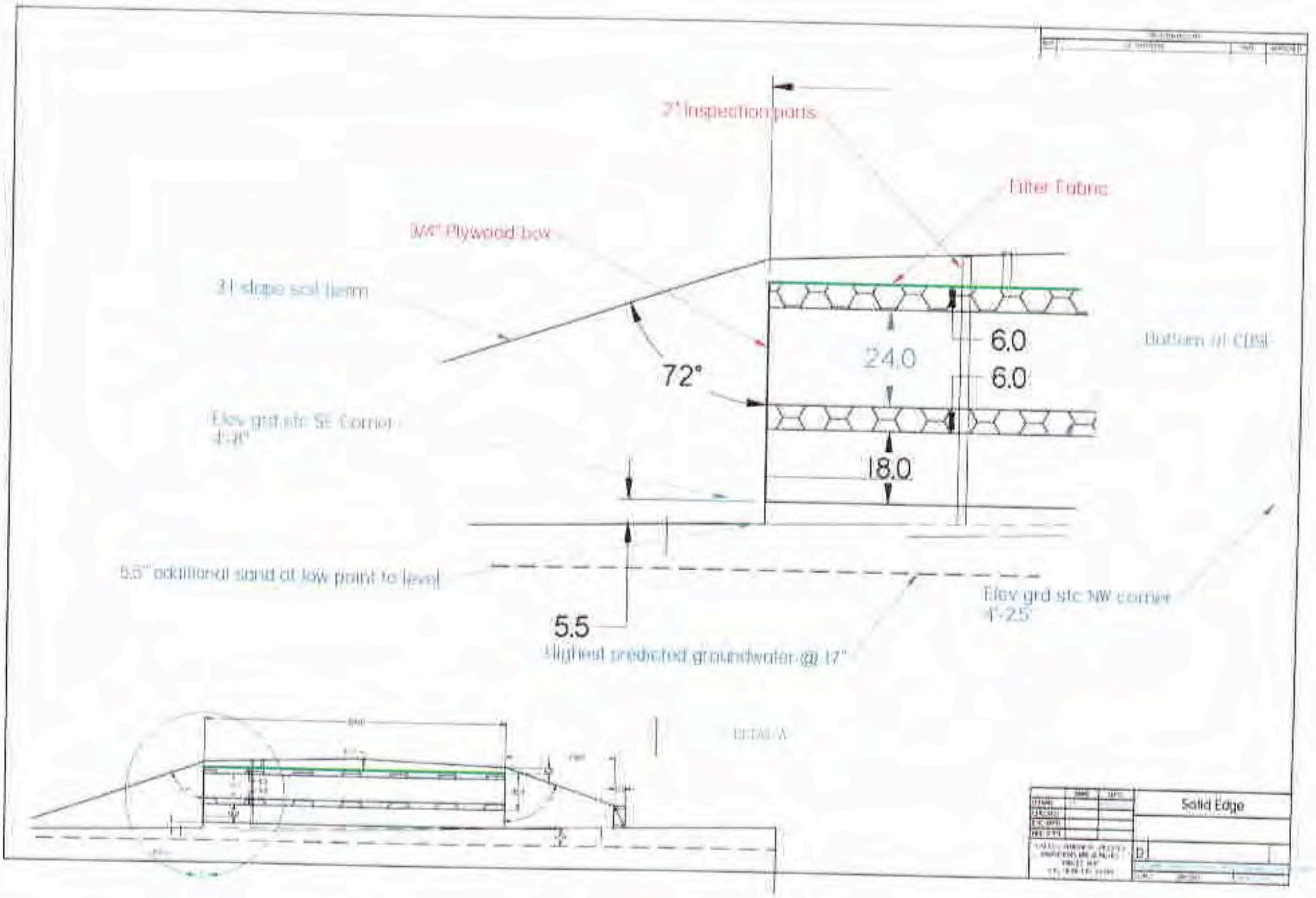
10' x 25' BSF detail

Native sandy loam

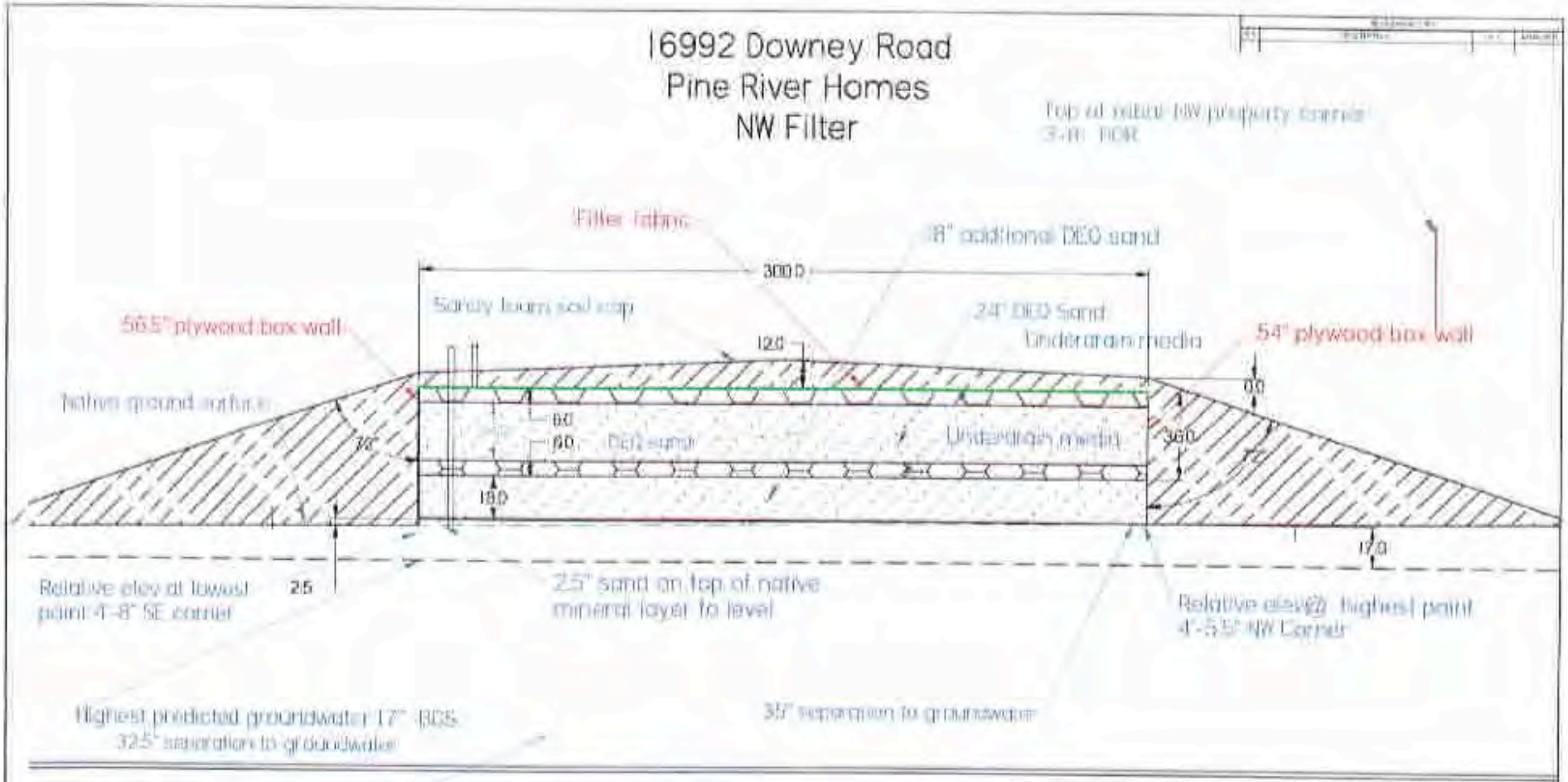
Setback 10' to PL with 24" concrete block retaining wall.

Relative Elevation Data:
POR - top of rebar NW property corner 3'-8"
Test Pit A Top of ground surface 4'-5.5" Redox @ 5'-10.5"
Test Pit C Top of ground surface 4'-8" Redox @ 8'-1"
Lowest point in MSF area - 4'-8"
Elevation difference in NW box 2.5" South box 5.5"

Solid Edge


2" Inspection ports
Filter Fabric
3/4" Plywood box
3:1 slope soil berm
72°
24.0
6.0
6.0
18.0
Bottom of CBS
Elev grd stc SE Corner
4'-8"
5.5" additional stand at low point to level
5.5
Highest predicted groundwater @ 17"
Elev grd stc NW corner
4'-2.5"
DETAIL A
Solid Edge

16992 Downey Road
Pine River Homes
NW Filter



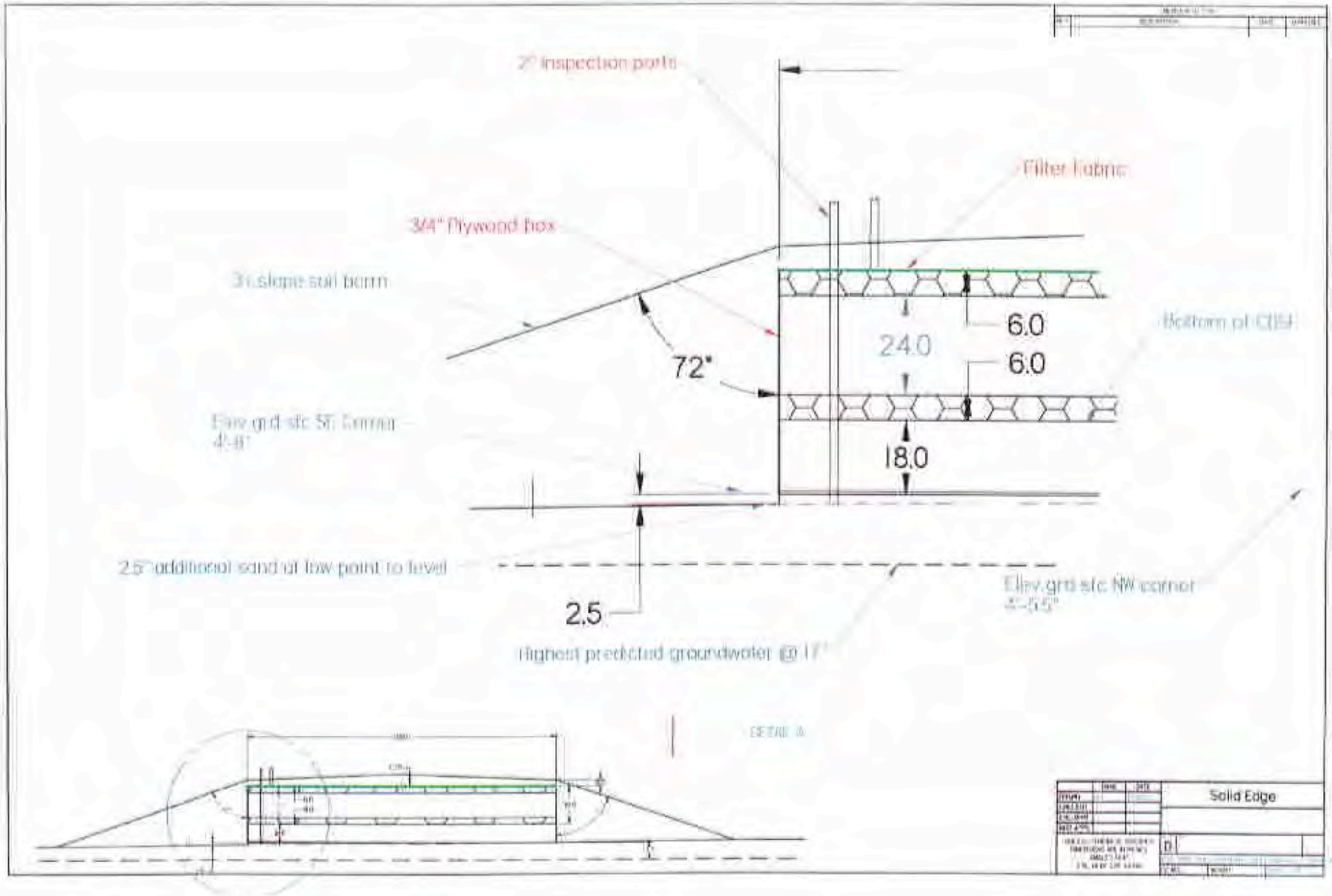
10' x 25' BSF detail

Native sandy loam

Setback Box wall to toe of berm = 15'

Relative Elevation Data
POR - top of rebar NW property corner 3'-8"
Test Pit A Top of ground surface 4'-5.5" Redox @ 5'-10.5"
Test Pit C Top of ground surface 4'-8" Redox @ 6'-1"
Lowest point in MBSF area - 4'-6"
Elevation difference in NW box 2.5" South box 5.5"

Solid Edge


2" inspection ports
Filter fabric
3/4" Plywood box
3:1 slope soil berm
72°
6.0
24.0
6.0
18.0
Bottom of CBS
Elev grd sfc SE corner
4'-8"
2.5" additional sand at low point to level
2.5
Elev grd sfc NW corner
4'-5.5"
Highest predicted groundwater @ 11"
DETAIL A
Solid Edge

Orenco *Technical Data Sheet*

AdvanTex® AX-RT Treatment Systems

Applications

Orenco's AdvanTex® AX-RT Treatment System is a single, complete, self-contained module that treats septic tank effluent to better than secondary standards with nitrogen reduction before discharging it by means of pump or gravity. It is ideal for:

- Repairs and retrofits
- Small sites and poor soils
- Sites that require shallow bury

General

Following a septic tank equipped with a Biotube® effluent filter*, the AdvanTex AX-RT unit eliminates the need for separate recirc, treatment, and discharge tanks by performing all functions within a single module. It also reduces the number of risers and lids needed in the treatment train. For sites requiring antibuoyancy measures, Orenco offers antiflotation kits with turnbuckles.

The heart of the system is the AdvanTex Recirculating Treatment Tank, a sturdy, watertight, corrosion-proof fiberglass tank that includes the same dependable, textile treatment media found in all AdvanTex products.

Model

AX 20 RT N MODE3B 30 120V MVF

- AX — AvanTex Treatment System
- 20 — nominal treatment area: 20 sq.ft.
- RT — AXRT-series treatment unit
- N — NSF-certified AdvanTex system
- MODE3B — treatment MODE 38 pump discharge
- 30 — 30 gpm pump discharge
- 120V — 120V
- MVF — non-mercury float switches

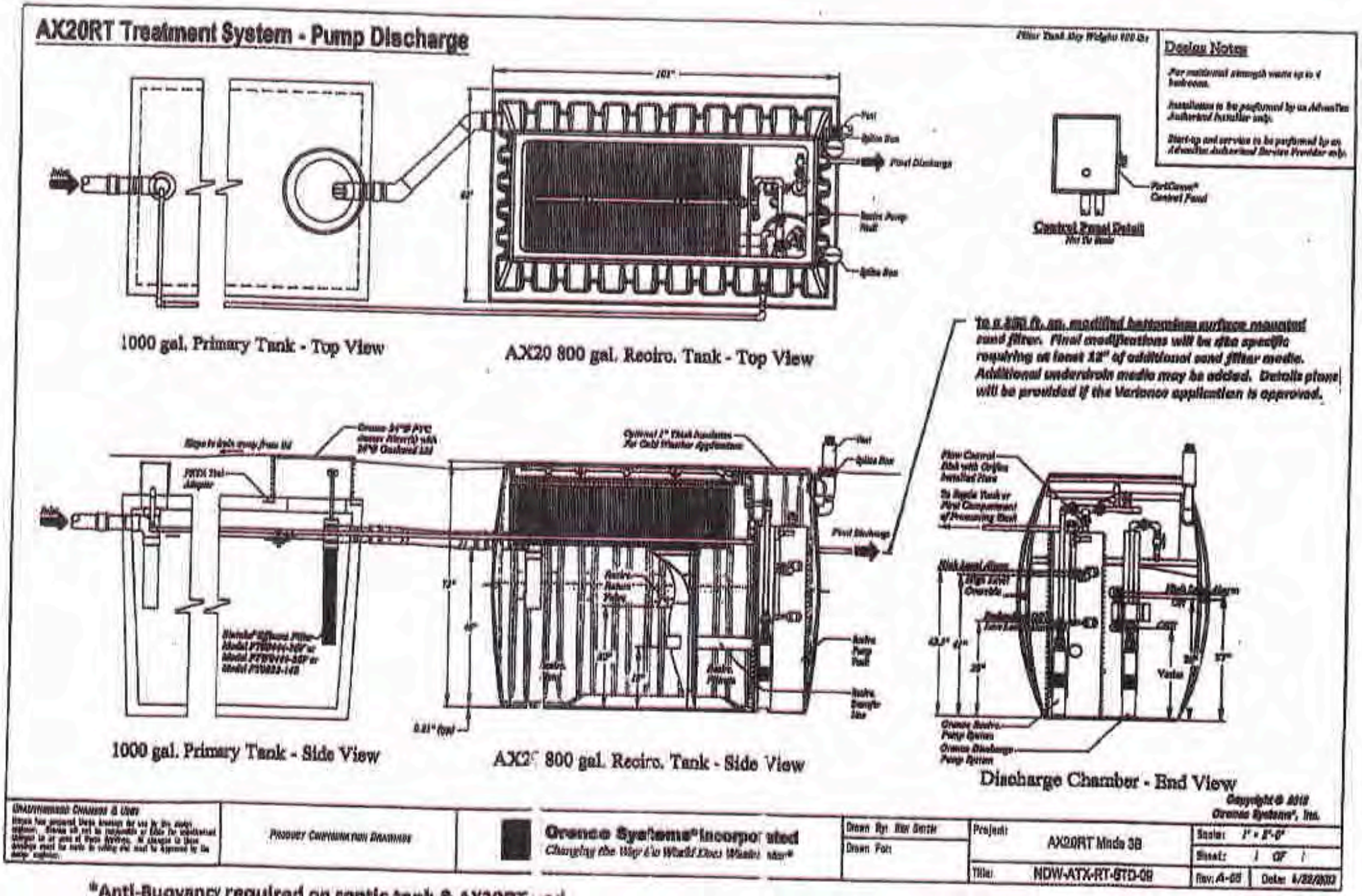
Required option:

Orenco anti-floatation kit with turnbuckles

Non required options:

1.) UCD cold weather option: ultra-cold weather option
2.) UV disinfection option: AXUV disinfection unit

AX 20 RT N MODE/3B 30 120V MVF



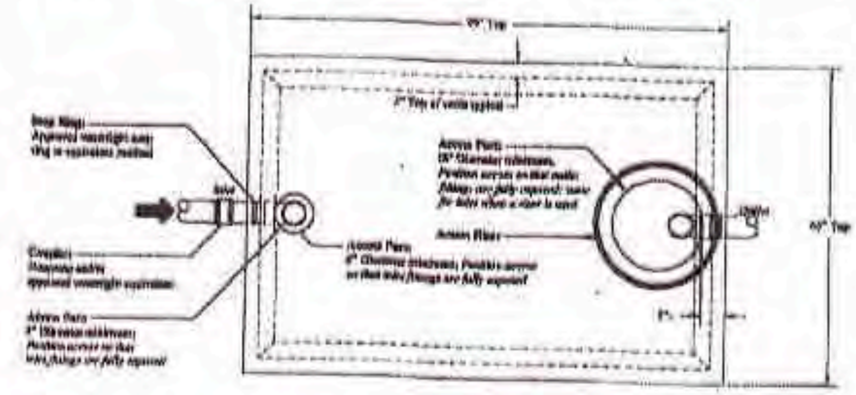
*Anti-Buoyancy required on septic tank & AX20RT | od

**Biotube effluent filter required in septic tank out et T

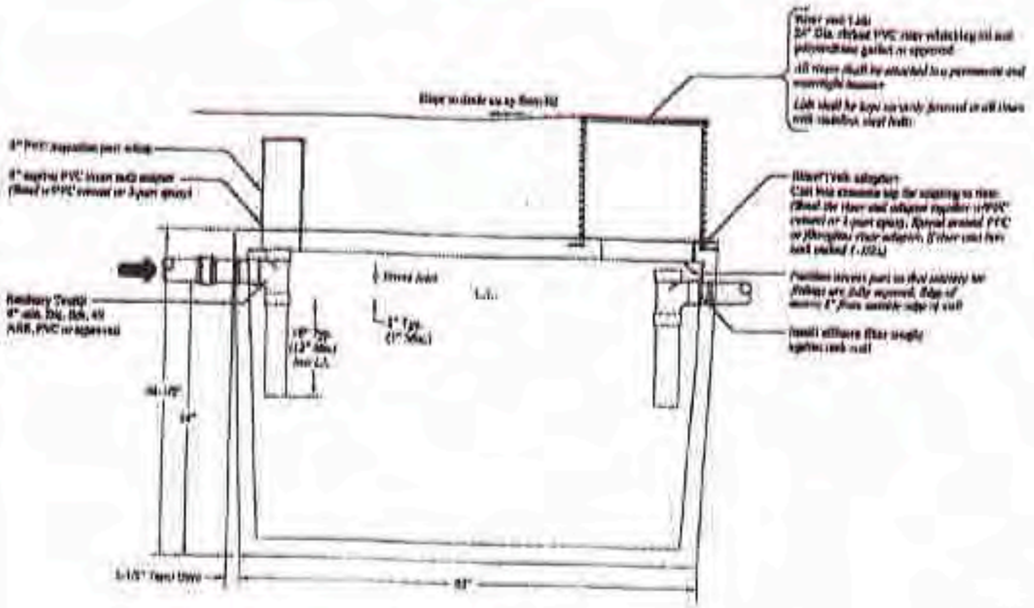
***(all components to be compatible with manufa turers products)

The 1K Willamette Tank must be fitted with an anti-buoyancy device that meets the manufacturers specifications

The tank outlet T requires an effluent filter per DEQ specs. and approved by the tank manufacturer.



Top View



Side View

General Notes:

Tank Volume:

Loads:

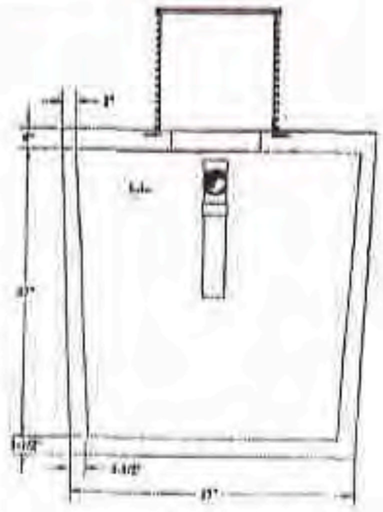
Concrete:

Installation:

Test:

Venting:

Tank Marking:



End View

WILLAMETTE GRAYSTONE INC.

P.O. Box M16
Eugene, OR 97401

Phone: 541-726-7666

Willamette Graystone Inc.
Eugene, OR
1000 Gallon Septic Tank

Approved By:	Designed By:
Drawing By: CD	Drawing #: 1
Date:	Project #:
Scale: 1" = 2'	Revision #:

La Pine National Demonstration Project

(Third-Party and First-Party)

About the Testing: This project is a cooperative effort by the Deschutes County Environmental Health Division, the Oregon Department of Environmental Quality, and the U.S. Geological Survey. The purpose of the project is to evaluate innovative denitrification technologies in an area of the state where climate and soil conditions are unfavorable for denitrification and the risk of groundwater contamination is high. As part of the project, three AX20 systems were installed at single-family residences. In addition to the samples required for the project, some samples were collected by Orenco.

Dates: January 2002-July 2004

Location: Oregon

Average Daily Flow: 108-334 gpd

System Configuration: AX20 Mode 3 recirculating into the primary compartment of a 1500-gallon processing tank

Septic Tank Effluent*

	BOD_5 (mg/L)	TSS (mg/L)	FC (col/100 mL)
Mean	261	94	$2.3 \times 10^{6*}$
Median	240	62	1.9×10^{6}
Number of Samples	428	427	429

**Average of all other sites where septic tank effluent is being sampled*

Mode 3 Systems, AdvanTex Effluent

	BOD_5 (mg/L)	TSS (mg/L)	FC (mpn/100 mL)
Mean	**9**	**6***	**9.9×10^{2}***
Median	5	3	8.6×10^{1}
Number of Samples	92	94	67

** Calculated as a geometric mean*

Green Hill Pond Watershed Demonstration Project

(Third-Party)

About the Testing: The University of Rhode Island Cooperative Extension On-Site Wastewater Training Center constructed and is testing several innovative septic systems, including five AdvanTex systems, in the Green Hill Pond Watershed. The Training Center is evaluating the systems' performance and using the installations to train installers, homeowners, designers, and regulators.

Dates: August 2003-December 2004

Location: Rhode Island

System Configuration: The project includes five AX20s at single-family homes, all configured as Mode 3, recirculating into the primary compartment of a 1500-gallon processing tank.

Mode 3 Systems, AdvanTex Effluent

	$CBOD_5$ (mg/L)	TSS (mg/L)	FC (col/100 mL)
Mean (all sites)	**8**	**5**	**$1.9 \times 10^{3*}$**
Median	4	2	1.0×10^{3}
Number of Samples	21	24	24

** Calculated as a geometric mean*

North Carolina Approval Testing Program

(Second-Party)

About the Testing: This testing, conducted under state oversight, involves more than 50 AdvanTex systems at single-family homes and vacation rentals. The data include results from both AX20 and AX100 systems.

Dates: August 2003-present

Location: North Carolina

Average Daily Flow: 75-2290 gpd

System Configuration: AX20 Mode 1 and Mode 3 and AX100. Except for one system, all were configured as Mode 1 with recirculation into a recirculation tank located after a separate primary septic tank. A single system was configured as Mode 3 with a single processing tank.

AdvanTex Effluent

	$CBOD_5$ (mg/L)	TSS (mg/L)
Mean	**7**	**6**
Median	3	4
Number of Samples	200	198

Maryland Best Available Technology Field Verification

(Third-Party)

About the Testing: As part of Maryland's "Best Available Technology" program, field verification testing was performed on AdvanTex AX20-RT treatment systems to qualify them for the "Best Available Technology" designation. Twelve single-family residences were selected for AX20-RT installations and each system was sampled on a quarterly basis for one year.

Dates: August 2010-March 2012

Location: Maryland

Average Daily Flow: 100-400 gpd

System Configuration: AX20-RT Mode 3

Mode 3 AdvanTex Effluent

	$CBOD_5$ (mg/L)	TSS (mg/L)	Turbidity (NTU)
Mean	**5**	**4**	**2**
Median	4	2	2
Number of Samples	44	39	48

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Adjacent Property Owners

Adjacent Property Owners

16992 Downey Road
Bend, OR 97707

Subject Property

PINERIVER HOMES LLC
23410 HIGHWAY 20
BEND, OR 97701

16980 Downey Road
PINERIVER HOMES LLC
23410 HIGHWAY 20
BEND, OR 97701

16998 Downey Road
PINERIVER HOMES LLC
23410 HIGHWAY 20
BEND, OR 97701

16981 Covina Road
EXCURSION LODGING LLC
7955 NW HOPE DR
CORVALLIS, OR 97330

16989 Covina Road
CASCADE LAKES PROPERTIES LLC
56646 LLOYD WAY
BEND, OR 97707

16997 Covina Road
EDWARDS,JOSEPH B
39586 CALLE DE LUZ
FALLBROOK, CA 92028

16999 Downey Road
BAUHAUS CRAFTSMAN RETIREMENT TRUST
1586 NW CUMBERLAND AVE
BEND, OR 97703

16991 Downey Road
MAHONEY, COLLEEN M
5482 LA PORTE DR
COLORADO SPRINGS, CO 80918

16983 Downey Road
ZACCARO, GILBERT A & DARLENE L
PO BOX 4189
SUNRIVER, OR 97707

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OAR References

Oregon Administrative Rules for Onsite Wastewater Treatment Systems

OAR 340-071-0150(4)(a)(B) - All criteria for approving a specific type or types of systems, as described in this division are satisfied.

OAR 340-071-0290(4)(d) - Bottomless sand filter. Sites may use a bottomless sand filter if the site meets the criteria in this section and section (3) of this rule. (d) The water table is at least 24 inches below the ground surface throughout the year, and a minimum 24-inch separation is maintained between a water table and the bottom of the sand filter.

OAR 340-071-0290(4)(a) -Saprolite; fractured bedrock; gravel; or soil textures of sand, loamy sand, or sandy loam occur in a continuous section at least 2 feet thick in contact with and below the bottom of the sand filter.

OAR 340-071-0290(2)(b)(A) - The highest level attained by a permanent water table does not exceed the minimum separation distance from the bottom of the absorption area as follows:

(i) For gravel and Soil Group A: sand, loamy sand, sandy loam — 24 inches;

OAR 340-071-0290(2)(c) - Sand filter systems installed in soils with rapid or very rapid permeability as defined in OAR 340-071-0100(148)(a) and (b) in areas with permanent water tables may not discharge more than 450 gallons of effluent per 1/2 acre per day except where:

OAR 340-071-0290(4)(b) - The agent determines the saprolite, fractured bedrock, gravel, or soil is permeable over the basal area to the extent that effluent will absorb adequately and not hinder the performance of the filter. The agent may require that an absorption test be conducted to determine the permeability of the basal area. Test methods must be acceptable to DEQ.

OAR 040-0030(2) The Department shall review and evaluate appropriate technical information and reports submitted by permitted sources to determine the potential for adverse impacts to groundwater quality. Where the above technical information and reports indicate that there is a likely adverse groundwater quality impact, the Department shall require through the permits and rules referred to in OAR 340-040-0020(12), and other appropriate statutory and administrative authorities, the following groundwater quality protection program:

OAR 340-071-0135

Approval of New or Innovative Technologies, Materials, or Designs for Onsite Systems

(1) DEQ approval.

(a) Coordination with listing of alternative treatment technologies, OAR 340-071-0345. Under OAR 340-071-0345, DEQ maintains a list of alternative treatment technologies (ATTs) that have been tested by an NSF/ANSI organization that meets the requirements of ISO/IEC 17025 – 2005. The ATT must meet the performance standards and other requirements in OAR 340-071-0345. ATTs are usually separate treatment units that are installed in onsite systems. Only listed ATTs may be installed under the siting criteria in OAR 340-071-0345. This rule provides a process for approving new or innovative technologies, materials, or designs for various components of onsite systems, such as drainfield products or appurtenances. Add-on treatment units, such as units to remove nitrogen following an ATT or sand filter, may also be approved under this rule. However, DEQ does not intend to approve alternatives to standard systems under this rule. Alternative systems will need to be listed as ATTs under OAR 340-071-0345 or approved under new rules in this division.