

Apex Septic Design, Inc.

P.O. Box 11247
Santa Rosa, CA 95406

(707) 322-5827
apexsepticdesign@gmail.com



February 3, 2022

Ben Walker
Sonoma County PRMD
2550 Ventura Avenue
Santa Rosa, CA 95403

Re: Site & soil evaluations at 11405 Skyline Road in Forestville, CA 95436
APN: 081-010-008 Permit #: WSR21-0528

Dear Mr. Walker:

You and I conducted site and soil evaluations, also known as a pre-perc, on January 18, 2022 at 11:30 a.m. the subject site. The proposed of the pre-perc is to find suitable soil to install a code compliant septic system to build a proposed 2-bedroom accessory dwelling unit. There is an existing house connected to a standard in-ground septic system. The parcel is connected to the city water, and there isn't a water well onsite. The subject parcel is sized at 20.53 acres, within a water availability zone 4 and identified as Hugo very gravelly loam soil in the USDA's soil survey map.

I explored five soil profile holes and labeled as holes A-E. Soil log and site map are attached for your review.

Area in the vicinity of soil profile holes A and B:

The area generally has friable sandy clay loam over friable clay loam and underlain for friable sandy clay loam on 20% slope. There area has a potential for an at-grade system. A soil sample was collected at hole A from 40-55 inches for a hydrometer test (lab test). I also collected a soil sample at hole B from 20-35 inches for a hydrometer test. Both soil samples are in zone 2 of the soil texture triangle chart which indicates a percolation test is not required. A wet weather groundwater test is also not required since faint mottling was observed at 62 inches in hole A and none in hole B. I would propose using a soil absorption rate of 0.6 gallon per square foot per day and a linear loading rate of 6 to 7 gallons per linear foot per day in the design.

Area in the vicinity of soil profile holes C, D and E:

The area has friable sandy clay loam over friable clay loam soil on slope of 2-4%. The proposed mound system will not need a wet weather groundwater test since the area is on the ridge and mottling was observed at or below 24 inches depth. I collected a soil sample at hole C from 20-45 inches for a hydrometer test; the soil sample is in zone 2 of the soil texture triangle chart which indicates a percolation test is not required. The mound system will need 50 feet setback to the gradebreak. I

would recommend using a soil absorption rate of 0.6 gallon per square foot per day and a linear loading rate of 5 to 6 gallons per linear foot per day in the design.

For further information or questions I can be reached at (707) 322-5827.

Respectfully,

A handwritten signature in black ink that reads "Tai Nguyen" followed by a long horizontal flourish.

Tai Nguyen, Registered Environmental Health Specialist #7177



PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA 95403 - (707) 527-1900

Pre-Perc Field Notes

Address: 11405 Skyline Road in Forestville, CA 95436	Pre-Perc date: 1-18-2022	Time: 11:30 a.m.
AP#: 081-010-008	Site Review by: Ben Walker	
Test conducted by: Tai Nguyen	Subdivision: Yes ☐ No ☒	Initial ☒ Supp. ☐
Test verified by: Tai Nguyen	Water availability zone: 4	
Special standards area:	SCS soil type: Hugo Very Gravelly Loam	
Topography: Ridge ☒ Slope ☒ Saddle ☐ Basin ☐	Convex ☐ Planar ☒ Concave ☐	
Setbacks: Cutbank/grade break ☐ Wells ☐ Springs ☐ Streams ☐ Ponds ☐ Drainage ☐		
Areas of concern: Trees ☐ Drainage ☐ Geology report ☐ Rock outcrops ☐ % Rock: GW ☐		
Hydrometer test: Yes ☒ No ☐ Depth(s): Bulk density: Yes ☐ No ☒ Depth:		
Wet-weather perc required: Yes ☐ No ☐ Wet-weather groundwater required: Yes ☐ No ☒		
Subsoil perc depth(s): Pump System: Yes ☐ No ☐ Perc depth(s):		
Type of system: Eng. Design ☐ Topographic map req. ☐ Geology report req. ☐		
Comments: Proposed new septic system for 2-bedroom ADU.		

Site Map:

See Attached Site Map

Profile: A Average Ground Slope: 20%									
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots	
0-24"	10 YR 3/4	0	Sandy Clay Loam	Strong Blocky	Friable	Damp	Many	Many Fine	
24-62"	10 YR 4/6	2%	Sandy Clay Loam/ Clay Loam	Strong Blocky	Friable	Damp	Common	Few Fine	
62-77"	10 YR 6/6	50%	Sandy Clay Loam	Strong Blocky	Friable	Damp	Common	None	
Mottling: Faint below 62" Reduction ☒ Oxidation ☒ Depth to groundwater: Perc depth:									
Other: Soil Samples collected at 40-55"									

Profile: B Average Ground Slope: 20%								
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-19"	10 YR 4/3	0	Sandy Loam	Strong Blocky	Friable	Damp	Many	Many Fine
19-39"	10 YR 4/6	0	Clay Loam	Strong Blocky	Friable	Damp	Common	Many Fine
39-53"	10 YR 6/6	2%	Sandy Clay Loam	Strong Blocky	Friable	Damp	Common	Few Fine
Mottling: None Reduction ☐ Oxidation ☐ Depth to groundwater: Perc depth:								
Other: Soil sample taken 20-35"								

Profile: C									
Average Ground Slope:					2-4%				
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots	
0-14"	10 YR 5/3	0	Sandy Clay Loam	Strong Blocky	Friable	Damp	Many	Many Fine	
14-45"	10 YR 6/6	3%	Clay Loam	Strong Blocky	Friable	Damp	Common	Few Fine	
45-54"	10 YR 6/6	50%	Clay Loam	Strong Blocky	Friable	Damp	Common	None	
Mottling: Faint below 24" Reduction ☒ Oxidation ☒ Depth to groundwater: Perc depth:									
Other: Located on a ridge soil sample was collected 20-45", represent profile holes D and E									

Profile: D									Average Ground Slope: 2-4%		
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots			
0-14"	10 YR 5/3	0	Sandy Clay Loam	Strong Blocky	Friable	Damp	Many	Many Fine			
14-25"	10 YR 6/6	2%	Clay Loam	Strong Blocky	Friable	Damp	Few	Few Fine			
25-61"	10 YR 7/6	2%	Clay Loam	Strong Blocky	Friable	Damp	Few	None			
Mottling: below 48"									Reduction ☒ Oxidation ☒ Depth to groundwater:		Perc depth:
Other: Located on a ridge											

Profile:									Average Ground Slope:		
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots			
0-26"	10 YR 5/3	0	Sandy Clay Loam	Strong Blocky	Friable	Damp	Many	Many Fine			
26-49"	10 YR 6/6	50%	Clay Loam	Strong Blocky	Friable	Damp	Few	Few Fine			
Mottling: None									Reduction ☐ Oxidation ☐ Depth to groundwater:		Perc depth:
Other: Proof soil 25 feet permeability Located on a ridge											

Hydrometer Test Data Form

Soil Data Results:

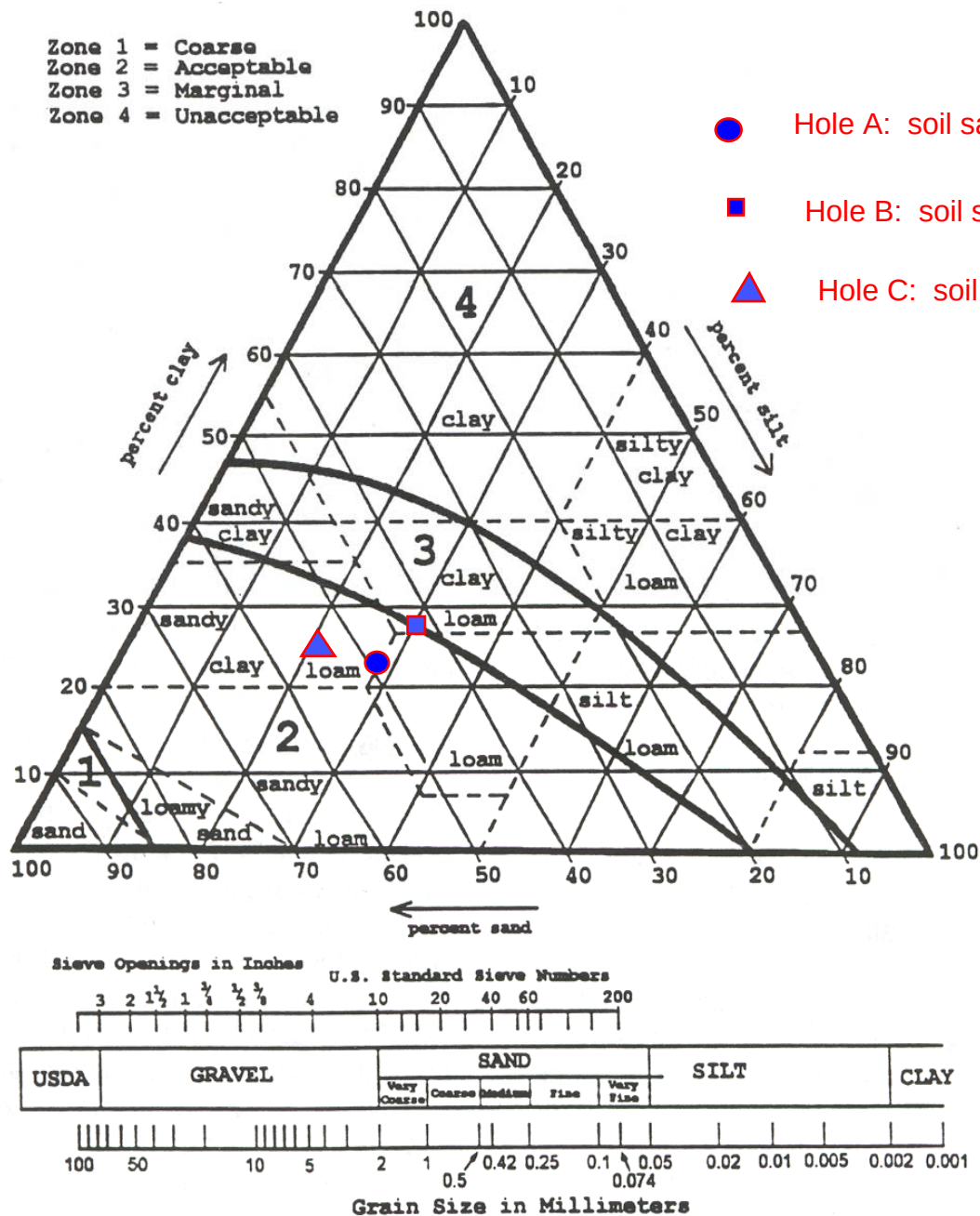
Does the soil have a Plasticity Index greater than or equal to 20? Yes ☐ No ☐

If "Yes" then wet weather percolation testing is required.

Soil Texture Triangle Chart:

Use the soil texture triangle chart below to determine soil classification.

11405 Skyline Road in
Forestville



● Hole A: soil sample 40-55"

■ Hole B: soil sample 20-35"

▲ Hole C: soil sample 20-45"

Oakley Laboratory & Field Services
1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

January 24, 2022
Job No. 22-158.82

Apex Septic Design
P.O. Box 11247
Santa Rosa, Calif. 95406

Attention: Mr. Tai Nguyen

Re: Results of Soil Texture Analysis
By Bouyoucos Hydrometry Method

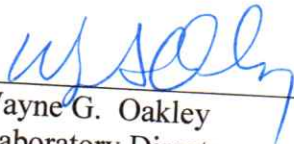
Client address: 11405 Skyline Road, Forestville

The results of the soil texture analysis for the sample received January 18, 2022 is as follows:

Sample Location	A @ 40" – 55"
% Plus No. 10 (WT)	13.4
% Sand	49.0
% Clay	23.8
% Silt	27.2
Db g/cc	---

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director

Oakley Laboratory & Field Services
1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

January 24, 2022
Job No. 22-158.82

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Attention: Mr. Tai Nguyen

Re: Results of Soil Texture Analysis
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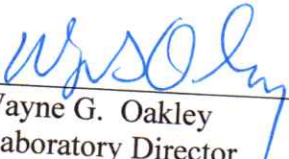
Client address: 11405 Skyline Road, Forestville

The results of the soil texture analysis for the sample received January 18, 2022 is as follows:

Sample Location	B @ 20" – 35"
% Plus No. 10 (WT)	7.4
% Sand	42.0
% Clay	27.8
% Silt	30.2
Db g/cc	---

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director

Oakley Laboratory & Field Services
1645 Chapman Way • Santa Rosa, CA 95403 • Telephone 707-575-1075

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Attention: Mr. Tai Nguyen

Re: Results of Soil Texture Analysis
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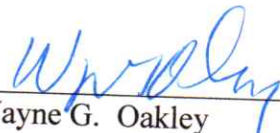
Client address: 11405 Skyline Road, Forestville

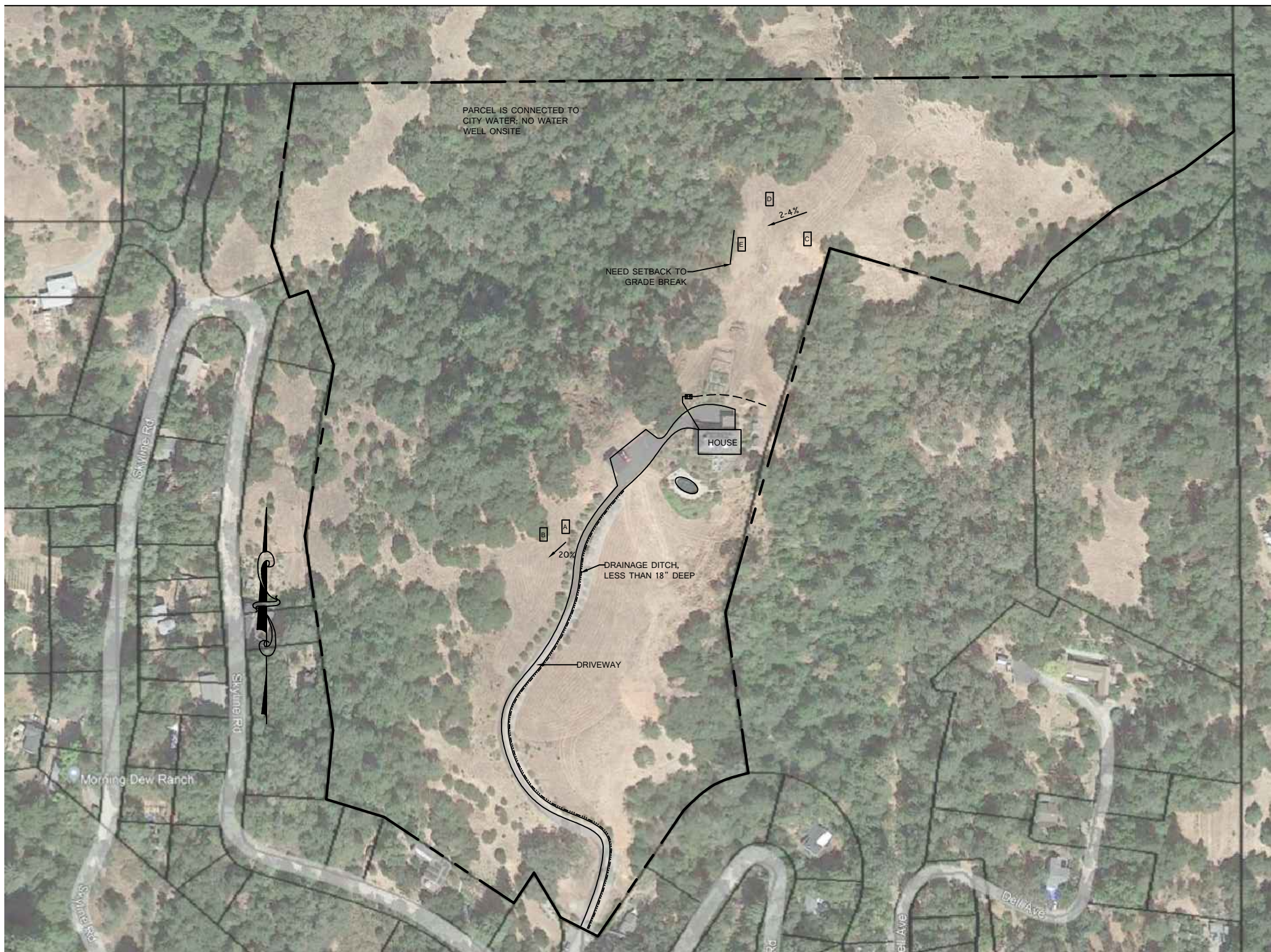
The results of the soil texture analysis for the sample received January 18, 2022 is as follows:

Sample Location	C @ 20" – 45"
% Plus No. 10 (WT)	43.7
% Sand	54.0
% Clay	23.8
% Silt	22.2
Db g/cc	---

We are pleased to provide laboratory services for you and look forward to your continued work. If you have any questions, please call.

Oakley Laboratory and Field Services

By: 
Wayne G. Oakley
Laboratory Director





Tai Nguyen <apexsepticdesign@gmail.com>

Pre-perc scheduling for 11405 Skyline Road in Forestville

Ben Walker <Ben.Walker@sonoma-county.org>
To: Tai Nguyen <apexsepticdesign@gmail.com>
Cc: Joshua Davis <joshuadaviswriter@gmail.com>

Wed, Feb 2, 2022 at 4:52 PM

Good a. ernoon Tai,

I appreciate that you made this my call. Based on the soil structure and the fact that it had many fine roots makes me think that a percola on test should not be required if I were to review the plans because I believe that it would indicate that both evapotranspira on would occur through the roots and that it would also percolate down the con nuous soil horizon.

I cannot guarantee that if someone else reviews the plans in the future that they would agree with my assessment, there are occasional debates regarding this point and it goes against policy to make those comments on the pre perc itself.

That said, you have my opinion for your records as the inspector onsite, you were also onsite so I think that should be a very strong argument in favor of not requiring a percola on test if the plans are reviewed by another inspector.

Have a good day,

Ben Walker

From: Tai Nguyen <apexsepticdesign@gmail.com>
Sent: Wednesday, February 2, 2022 4:05 PM
To: Ben Walker <Ben.Walker@sonoma-county.org>
Cc: Joshua Davis <joshuadaviswriter@gmail.com>
Subject: Re: Pre-perc scheduling for 11405 Skyline Road in Forestville

EXTERNAL

The rock content is too small to adjust.

The point that we want to think about is whether we think this soil is permeable. If it is, then we can use the soil chart to get the soil absorption rate. If it doesn't, then it will require a percolation test.

The soil layer in soil profile hole B between 19-39" showed friable clay loam soil with many fine roots. I think the soil is permeable and a soil absorption rate of . gal/sq/day can be used. I remembered we pour some water on a soil pad and it was absorption the water well.

It is your call if a percolation test is needed.

Tai Nguyen
(707) 322-5827

apexsepticdesign@gmail.com

On Wed, Feb 2, 2022 at 10:27 AM Ben Walker <Ben.Walker@sonoma-county.org> wrote:

Good morning Tai,

A couple of questions for you regarding this.

1. Have you adjusted the points for coarse fragments? This may squarely place the point into either zone 2 or zone 3 and provide a definite answer in terms of policy.
2. What are your thoughts on the matter? Can you provide a good reason to not conduct percolation testing? This is a matter of time, cost, and ensuring an adequate functioning system.

Have a good day,

Ben Walker

From: Tai Nguyen <apexsepticdesign@gmail.com>
Sent: Tuesday, February 1, 2022 12:51 PM
To: Ben Walker <Ben.Walker@sonoma-county.org>
Cc: Joshua Davis <joshuadaviswriter@gmail.com>
Subject: Re: Pre-perc scheduling for 11405 Skyline Road in Forestville

EXTERNAL

Hi Ben. The pre-perc soil lab test shows one of the soil samples to be within the curve line between zone 2 and zone 3 in the soil triangle texture chart. How do we interpret this? Zone 2 (no percolation test) or zone 3 (need percolation test)? Specifically soil sample in soil profile hole B from 20-35" depth.

Please see the attachment.

Tai Nguyen
(707) 322-5827

apexsepticdesign@gmail.com

On Wed, Jan 12, 2022 at 5:49 PM Tai Nguyen <apexsepticdesign@gmail.com> wrote:

Okay thanks.

Glad you are okay.

Tai Nguyen
(707) 322-5827

apexsepticdesign@gmail.com

On Wed, Jan 12, 2022 at 4:39 PM Ben Walker <Ben.Walker@sonoma-county.org> wrote:

Good afternoon Tai,

I am no longer quarantined. I feel fine, the symptoms were mild and were gone shortly after they appeared.

We are confirmed for the pre perc on 1/18 at 11:30 at [11405 Skyline Rd](#) in Forestville. I look forward to seeing you out there.

From: Tai Nguyen <apexsepticdesign@gmail.com>
Sent: Wednesday, January 12, 2022 3:55 PM
To: Ben Walker <Ben.Walker@sonoma-county.org>
Subject: Re: Pre-perc scheduling for [11405 Skyline Road](#) in Forestville

EXTERNAL

Hi Ben. How are you? Are we confirmed with the pre-perc on January 18 at 11:30 am at [11405 Skyline Road](#) in Forestville?

Tai Nguyen
(707) 322-5827

apexsepticdesign@gmail.com

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PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA 95403 - (707) 527-1900

Pre-Perc Field Notes

Address: <u>11405 Skyline Rd Forestville</u>		Pre-Perc date:	Time:
AP# <u>081-010-008</u>		Site Review by:	
Test conducted by: <u>Tai Nguyen</u>		Subdivision: Yes ☐ No ☒	Initial ☒ Supp. ☐
Test verified by: <u>Tai Nguyen</u>		Water availability zone: <u>4</u>	
Special standards area:		SCS soil type: <u>Hugo very gravelly Loam</u>	
Topography: Ridge ☐ Slope ☐ Saddle ☐ Basin ☐		Convex ☐ Planar ☐ Concave ☐	
Setbacks: Cutbank/grade break ☐ Wells ☐ Springs ☐ Streams ☐ Ponds ☐ Drainage ☐			
Areas of concern: Trees ☐ Drainage ☐ Geology report ☐ Rock outcrops ☐ % Rock: ☐ GW ☐			
Hydrometer test: Yes ☐ No ☐ Depth(s):		Bulk density: Yes ☐ No ☐ Depth:	
Wet-weather perc required: Yes ☐ No ☐		Wet-weather groundwater required: Yes ☐ No ☐	
Subsoil perc depth(s):		Pump System: Yes ☐ No ☐ Perc depth(s):	
Type of system:		REHS/Engineer Design ☐ Topographic map req. ☐ Geology report req. ☐	
Comments: <u>20.53 acres Proposed to build APU.</u>			

Site Map:

See Attachment

Profile: AAverage Ground Slope: 20%

LC

Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-24"	10 YR 3/4	0	SCL	strong B	Fr	Damp	many	many Fine
24-62"	10 YR 4/6	2%	SCL/CL	strong B	Fr	Damp	common	Few Fine
62-77"	10 YR 4/6	50%	SCL	strong B	Fr	Damp	common	none
Soil sample collected 40-55"								

Mottling: Faint below 62"Reduction ☒ Oxidation ☐ Depth to groundwater:

Perc depth:

Other: Mound, At-grade, shallow-sloping, fitted landProfile: BAverage Ground Slope: -

Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-19"	10 YR 4/3	0	SL	strong B	Fr	Damp	many	many Fine
19-39"	10 YR 4/6	0	CL	strong B	Fr	Damp	common	many Fine
39-53"	10 YR 4/6	2%	SCL	strong B	Fr	Damp	common	Few Fine
53-68"	10 YR 4/6	40%	SCL	strong B	Fr	Damp	common	none
		(4" diameter rock)						

Mottling: noneReduction ☐ Oxidation ☐ Depth to groundwater:

Perc depth:

Other:

Profile: CAverage Ground Slope: 2-4%

Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-14"	10 YR 5/3	0	SCL	strong B	Fr	Damp	many	many Fine
14-45"	10 YR 6/6	3%	CL	strong B	Fr	Damp	common	Few Fine
45-54"	10 YR 6/6	50%	CL	strong B	Fr	Damp	common	none

Mottling: Faint below 24"Reduction ☒ Oxidation ☒ Depth to groundwater:

Perc depth:

Other: on knoll, ridgeAt-grade 555 ft on mound 55 ft

Abbreviations:

USDA Texture: Gravel=G, Sand=S, Loamy Sand=LS, Sandy Loam=SL, Sandy Clay Loam=SCL, Sandy Clay=SC, Silt Loam=SiL, Loam=L, Clay Loam=CL, Silty Clay Loam=SiCL, Clay=C

Structure:

Granular=G, Platy=p, Blocky=B, Prismatic=Pr, Massive=M, Columnar=C

Consistency:

Loose=L, Very Friable=VFr, Friable=Fr, Firm=F, Very Firm=VF, Extremely Firm=EF, Solid (BH refusal)=S

Moisture:

Dry=Dr, Damp=D, Very Damp=VD, Saturated=S, Seepage=Se

Hydro 20"-45"
represents
D & E

Profile: <u>D</u> Average Ground Slope: <u>2-4%</u>								
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-14"	10YR 5/3	0	SCL	Strong Blocky	Fr	damp	many	many fine
14-25"	10YR 6/6	2%	CL	Strong B	Fr	Damp	few	Few fine
25-61"	10YR 7/6	2%	CL	Strong B	Fr	Damp	few	few fine

Mottling: none 48" Reduction ☒ Oxidation ☒ Depth to groundwater: Perc depth:

Other: on knoll ridge Filled-Land, At-grade

Profile: <u>E</u> Average Ground Slope: <u>2-4%</u>								
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots
0-26"	10YR 5/3	0	SCL	Strong B	Fr	Damp	many	many fine
26-49"	10YR 6/6	50%	CL	Strong B	Fr	Damp	few	Few fine

Mottling: none Reduction ☐ Oxidation ☐ Depth to groundwater: Perc depth:

Other: poor permeable soil down slope

Profile: Average Ground Slope:								
Depth	Munsell Color	% Rock	Texture	Structure	Consistency	Moist	Pores	Roots

Mottling: Reduction ☐ Oxidation ☐ Depth to groundwater: Perc depth:

Other:

Abbreviations:

USDA Texture: Gravel=G, Sand=S, Loamy Sand=LS, Sandy Loam=SL, Sandy Clay Loam=SCL, Sandy Clay=SC, Silt Loam=SiL, Loam=L, Clay Loam=CL, Silty Clay Loam=SiCL, Clay=C

Structure: Granular=G, Platy=p, Blocky=B, Prismatic=Pr, Massive=M, Columnar=C

Consistency: Loose=L, Very Friable=VFr, Friable=Fr, Firm= F, Very Firm=VF, Extremely Firm=EF, Solid (BH refusal)=S
 Moisture: Dry=Dr, Damp=D, Very Damp=VD, Saturated=S, Seepage=Se

PARCEL IS CONNECTED TO
CITY WATER, NO WATER
WELL ONSITE

PO BOX
NE

PO BOX

Show
Water lines



Working Deer Ranch