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ONSITE WASTEWATER TREATMENT SYSTEM FEASIBLITY ASSESSMENT

555 Sadie Road

Topanga, CA 90290

Report Prepared for:

Andrey Perfilyev
C/O Alexandra Logan
(424) 388-8511

May 13, 2022

Presented in this report are the results of the feasibility assessment for the installation of an Onsite Wastewater Treatment System (OWTS). Because the project site does not have a readily available public sewer system, a new OWTS will be installed. There is no existing public sewer within 200 feet of the premises. The study or percolation test was conducted in accordance to requirements prescribed by Los Angeles County Environmental Health. The proposed OWTS study consists of testing for a seepage pit type system. The testing was conducted by Stephen Layne, owner of A.V. Environmental Technologies.

The property, located at 555 Sadie Road, Topanga, CA is an undeveloped lot. A five bedroom single family dwelling is proposed for the premises. The lot size of the property is approximately 2.87 acres. The lot is not relatively level. It has slight to steep slopes, but the seepage pit locations are relatively level. There are native grasses and other trees on the lot, including oak trees. No seepage pit will be located within 5 feet of the dripline of an oak tree. There was no evidence of springs or high ground water on the property. Rock outcroppings were visible on the lot and in the vicinity. The property's water supply will be provided by a public water system. There were no wells located within 250 feet of the proposed septic system. There were no drainage courses located within 150 feet of the proposed OWTS.

On March 29, 2022 one test hole (TH1/GW1) was drilled to a depth of 45 feet below ground surface (bgs). Three additional test holes were drilled to depths of 35 feet. The presence or absence of groundwater was determined by a Registered Geologist (RG) (see attached). No groundwater was observed in the test holes and the holes were monitored for at least 6 days. The last observation was done on May 4, 2022. All the test holes were still dry. Prior to testing, TH1/GW1 was backfilled to 35 feet and the bottom sealed with bentonite.

The test holes were drilled using a 2 foot wide truck mounted bucket rig as well as a Low-drill track mounted auger rig. The test holes were logged by the Registered Geologist (see attached). On May 4, 2022 the test holes were presoaked. The test holes were presoaked using a nearby fire hydrant, a calibrated water meter, and 1.5 inch water hoses. The test results are recorded in the following table.

TEST HOLE (TH1/GW1) – Started 03/29/2022				
TOTAL DEPTH OF TEST HOLE	35'	CAP DEPTH		5' below grade
EFFECTIVE DEPTH	30'	Water volume (23.5 x h)		705 gallons
Effective depth square footage = 3.14xdxh (20') + 3.14x1x1				128.74 square feet
FIRST DAY – PRESOAK - 05/04/22				
9:40 a.m.	Meter start = 145940 Meter end = 146915			Gallons used -975
SECOND DAY – 05/05/22				
TIME	WATER LEVEL DROP *(Below 5' and before fill up)*	METER READING *(gallons)*		GALLONS USED (gals)
		Start	End	
9:30 a.m.	22'	149465	150175	710
10:30 a.m.	8'	151705	151965	260
11:30 a.m.	5'	152495	152665	170
12:30 p.m.	5'	153075	153235	160
1:30 p.m.	5'	153560	153720	160
2:30 p.m.	4'	154035	154170	135
3:30 p.m.	4'	154480	154605	125
4:30 p.m.	4'	154895	154995	100
5:30 p.m.	3'	155250	155330	80
THIRD DAY – 05/06/22				
9:00 a.m.	20'	**TOTAL WATER USED**		1900 gallons
Water Drop from start of test (5' below cap depth) 22'-20' = 2'				47 gallons
FINAL PERCOLATED WATER VOLUME				1853 gallons
PERCOLATION CAPACITY – 5' diameter seepage pit (x2.5)				gallons
PERCOLATION CAPACITY – 6' diameter seepage pit (x 3.0)				5559 gallons
PERCOLATION RATE (Water loss / Eff.depth sq. footage)				14.39 gals/sq.ft./day

TEST HOLE (TH2) – Started 03/29/2022				
TOTAL DEPTH OF TEST HOLE	35'	CAP DEPTH		5' below grade
EFFECTIVE DEPTH	30'	Water volume (23.5 x h)		705 gallons
Effective depth square footage = 3.14xdxh (28') + 3.14x1x1				179.0 square feet
FIRST DAY – PRESOAK - 05/04/22				
10:10 a.m.	Meter start = 146915 Meter end = 147810			Gallons used -895
SECOND DAY – 05/05/22				
TIME	WATER LEVEL DROP *(Below 5' and before fill up)*	METER READING *(gallons)*		GALLONS USED (gals)
		Start	End	
9:30 a.m.	28'	150175	151005	830
10:30 a.m.	10'	151965	152315	350
11:30 a.m.	7'	152665	152930	265
12:30 p.m.	7'	153235	153485	250
1:30 p.m.	7'	153720	153960	240
2:30 p.m.	7'	154170	154410	240
3:30 p.m.	7'	154605	154835	230
4:30 p.m.	6'	154995	155200	205
5:30 p.m.	6'	155330	155510	180
THIRD DAY – 05/06/22				
9:00 a.m.	28'	**TOTAL WATER USED**		2790 gallons
Water Drop from start of test (5' below cap depth) 28'-28' = 0				0 gallons
FINAL PERCOLATED WATER VOLUME				2790 gallons
PERCOLATION CAPACITY – 5' diameter seepage pit (x2.5)				gallons
PERCOLATION CAPACITY – 6' diameter seepage pit (x 3.0)				8370 gallons
PERCOLATION RATE (Water loss / Eff.depth sq. footage)				15.59 gals/sq.ft./day

TEST HOLE (TH3) – Started 03/29/2022				
TOTAL DEPTH OF TEST HOLE	35'	CAP DEPTH		5' below grade
EFFECTIVE DEPTH	30'	Water volume (23.5 x h)		705 gallons
Effective depth square footage = 3.14xdxh (11') + 3.14x1x1				72.22 square feet
FIRST DAY – PRESOAK - 05/04/22				
10:36 a.m.	Meter start = 147810 Meter end = 148655			Gallons used -845
SECOND DAY – 05/05/22				
TIME	WATER LEVEL DROP *(Below 5' and before fill up)*	METER READING *(gallons)*		GALLONS USED (gals)
		Start	End	
9:30 a.m.	13'	151005	151380	375
10:30 a.m.	4'	152315	152435	120
11:30 a.m.	4'	152930	153025	95
12:30 p.m.	3'	153485	153560	75
1:30 p.m.	3'	153960	154035	75
2:30 p.m.	3'	154410	154480	70
3:30 p.m.	3'	154835	154895	60
4:30 p.m.	2'	155200	155250	50
5:30 p.m.	2'	155510	155560	50
THIRD DAY – 05/06/22				
9:00 a.m.	11'	**TOTAL WATER USED**		970 gallons
Water Drop from start of test (5' below cap depth) 13'-11' = 2'				47 gallons
FINAL PERCOLATED WATER VOLUME				923 gallons
PERCOLATION CAPACITY – 5' diameter seepage pit (x2.5)				gallons
PERCOLATION CAPACITY – 6' diameter seepage pit (x 3.0)				2769 gallons
PERCOLATION RATE (Water loss / Eff.depth sq. footage)				12.78 gals/sq.ft./day

TEST HOLE (TH4) – Started 03/29/2022				
TOTAL DEPTH OF TEST HOLE	35'	CAP DEPTH		5' below grade
EFFECTIVE DEPTH	30'	Water volume (23.5 x h)		705 gallons
Effective depth square footage = 3.14xdxh (28') + 3.14x1x1				179.0 square feet
FIRST DAY – PRESOAK - 05/04/22				
10:59 a.m.	Meter start = 148655 Meter end = 149465			Gallons used -810
SECOND DAY – 05/05/22				
TIME	WATER LEVEL DROP *(Below 5' and before fill up)*	METER READING *(gallons)*		GALLONS USED (gals)
		Start	End	
9:30 a.m.	12'	151380	151705	325
10:30 a.m.	3'	152435	152495	60
11:30 a.m.	2'	153025	153075	50
12:30 p.m.	0'	153560	153560	0/Fail
1:30 p.m.		154035	154035	0/Fail
2:30 p.m.		154480	154480	0/Fail
3:30 p.m.		154895	154895	0/Fail
4:30 p.m.		155250	155250	0/Fail
5:30 p.m.		155560	155560	0/Fail
THIRD DAY – 05/06/22				
9:00 a.m.		**TOTAL WATER USED**		gallons
Water Drop from start of test (5' below cap depth) 0'-0' = 0				0 gallons
FINAL PERCOLATED WATER VOLUME				gallons
PERCOLATION CAPACITY – 5' diameter seepage pit (x2.5)				gallons
PERCOLATION CAPACITY – 6' diameter seepage pit (x 3.0)				gallons
PERCOLATION RATE (Water loss / Eff.depth sq. footage)				gals/sq.ft./day

PERCOLATION TEST RESULTS SUMMARY

A. Septic Tank Size 5 bedrooms (1500 gallons required)	Advanced Treatment New Jet Inc. J-1000 with a 1000 Gallon Trash Tank
B. Required Gallons Loss	7,500 gallons – 24 hour period
C. Proposed Seepage Pit Diameter	6 feet
D. Test Hole Dimensions	TH1/GW1- 2'x 35' (30' effective depth) TH2 - 2'x 35' (30' effective depth) TH3 - 2'x 35' (30' effective depth) TH4 - 2' x 35' (30'effective depth)
E. Total Water Loss (2' diameter pit)	TH1/GW1 1853 gallons TH2 2790 gallons TH3 923 gallons TH4 Fail
F. Percolated Gallons (6' diameter pit)	TH1/GW1 5559 gallons TH2 8370 gallons TH3 2769 gallons
G. Square foot area (effective depth)	TH1/GW1 128.74 sq. ft. TH2 179 sq. ft. TH3 72.22 sq. ft.
H. Percolation Rate (Total Water Loss//Square foot area)	TH1 14.39 gals/sq.ft./day TH2 15.59 gals/sq.ft./day TH3 12.78 gals/sq.ft./day
I. Number of Proposed Pits	Present TH2 – (1) 6' x 35' (30' effective depth) Future TH1GW1 – (1) 6' x 35' (30' effective depth) and

	TH3 – (1) 6' x 35' (30' effective depth)

CONCLUSION

Based on the computed water loss by the test holes, and in accordance to Los Angeles County Environmental requirements for OWTS designs, the site is capable of supporting an OWTS system that will consists of one (1) seepage pit for the present and two (2) seepage pits for the future.

The percolations rate of the test hole exceeded 5.12 gallons per square foot per day, therefore, an advanced onsite wastewater system is being proposed at the direction of Los Angeles County Environmental Health. The requested advanced OWTS system is a Jet Inc. J-1000 system that is the suitable model for a 5 bedroom home. The Jet Inc. system is a NSF International approved system under Standard 240 and Standard 245.

The test holes were monitored for remaining water on May 7 and 11. On May 7, test holes TH1/GW1 and TH3 had 3 and 6 feet of water at the bottom, respectively. TH 2 was dry. On May 11, TH1/GW1 and TH3 each had 2 feet of water at the bottom. Evidence of mounding was not present in any of the test holes.

This submittal is intended to represent a complete feasibility report that conforms with the applicable provisions of the Los Angeles County Code – Title 28 Plumbing Code and the feasibility report requirements of the Department of Public Health – Environmental Health.

The report and study was prepared and conducted by:

Stephen Layne, REHS # 6470
Expiration 12/31/2023
AV Environmental Technologies

A.V. ENVIRONMENTAL TECHNOLOGIES
P.O. BOX 771
ACTON, CA 93510

Stephen Layne
REHS # 6470
Exp. 12/31/23

Elevation

SIGN DATE:		
DATE:	10.12.2021	
SCALE:		
DRAWN BY:	LS	
CKD BY:	LS	
PROJECT#	006	
FLOOR PLANS		

REV	DATE	REMARKS

ARCHITECTURAL
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TOPANGA, CA 90290

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April 30, 2022

Mr. Stephen Layne
AV Environmental Technologies
P.O. Box 771
Acton, CA 93510

Subject: Groundwater observation borehole, 555 Sadie Rd., Topanga Canyon, CA

Dear Mr. Layne,

On March 29, 2022, a borehole was drilled at the property referenced above to observe for evidence of groundwater (TH-1 on the site plan). The drilling exposed sandstone with mudstone interbeds to the bottom of the borehole at 45 feet below grade. The formation did not exhibit staining, mottling, redox horizons, or coatings such as to indicate static groundwater was a characteristic of the drilled interval. No groundwater or seeps were observed. Hydrophillic plants were not observed at the property.

Based on these observations and knowledge of the hydrogeology of the area, I am reasonably confident that static groundwater at the site is not present within 10 feet of the bottom of the proposed septic system pits (35 feet or less below site grade) and will not be present within 10 feet of pit bottom during future seasonal variations of groundwater depth. Nothing was observed in the drilled interval to indicate static groundwater levels have been present historically, that that downward migration of the septic system effluent might be impeded, or that mounding might occur.

Sincerely,

Don Indermill, P.G.

REGISTERED GEOLOGIST
DONALD C. INDERMILL
No. 5102
31 May 2024
STATE OF CALIFORNIA

BORING I.D. NO. TH-1/GW-1

CLIENT:
PROJECT NO:
DRILL CONTRACTOR:
DATE: 29 Mar 22
DRILL RIG TYPE: Auger
AUGER DIAMETER: 2 ft
SAMPLE METHOD: Grab - no borehole entry
DRILL METHOD:
GEOLOGIST: Don Indermill
LOCATION: 555 Sadie Road, Topanga Canyon, CA

DEPTH, ft	BLOW COUNT		SAMPLE	COLUMN	USCS	GEOLOGIC DESCRIPTION
					Ss Mdst	0-45': Sandstone, yellow (2.5Y 7/6), with minor mudstone interbeds, olive brown (2.5Y 4/4), fine to coarse grained, poorly cemented, moderately indurated, thickly bedded. Correlated with the Fernwood Mbr of the Lower Topanga Fm*
10						
20						
30						
40						
						Bottom of Borehole: 45 feet. No groundwater observed on the day of drilling or 6 days later.
50						
60						
70						
80						

* Geologic Map of the Malibu Beach Quadrangle, Los Angeles County, California, Dibblee, T.W. 1993, edited by Minch, J. A., 2009.

BORING I.D. NO. TH-2

CLIENT:
PROJECT NO:
DRILL CONTRACTOR:
DATE: 29 Mar 22
DRILL RIG TYPE: Auger
AUGER DIAMETER: 2 ft
SAMPLE METHOD: Grab - no borehole entry
DRILL METHOD:
GEOLOGIST: Don Indermill
LOCATION: 555 Sadle Road, Topanga Canyon, CA

DEPTH, ft	BLOW COUNT		SAMPLE	COLUMN	USCS	GEOLOGIC DESCRIPTION
					Ss Most	0-35': Sandstone, yellow (2.5Y 7/6), with minor mudstone interbeds, olive brown (2.5Y 4/4), fine to coarse grained, poorly cemented, moderately indurated, thickly bedded.
10						Correlated with the Fernwood Mbr of the Lower Topanga Fm*
20						
30						Bottom of Borehole: 35 feet. No groundwater observed on the day of drilling or 6 days later.
40						
50						
60						
70						
80						

* Geologic Map of the Malibu Beach Quadrangle, Los Angeles County, California, Dibblee, T.W, 1993, edited by Minch, J. A., 2009.

BORING I.D. NO. TH-3

CLIENT:
PROJECT NO:
DRILL CONTRACTOR:
DATE: 29 Mar 22
DRILL RIG TYPE: Auger
AUGER DIAMETER: 2 ft
SAMPLE METHOD: Grab - no borehole entry
DRILL METHOD:
GEOLOGIST: Don Indermill
LOCATION: 555 Sadie Road, Topanga Canyon, CA

DEPTH, ft	BLOW COUNT		SAMPLE	COLUMN	USCS	GEOLOGIC DESCRIPTION
					Ss Mdst	0-35': Sandstone, yellow (2.5Y 7/6), with minor mudstone interbeds, olive brown (2.5Y 4/4), fine to coarse grained, poorly cemented, moderately indurated, thickly bedded.
10						Correlated with the Fernwood Mbr of the Lower Topanga Fm*
20						
30						Bottom of Borehole: 35 feet. No groundwater observed on the day of drilling or 6 days later.
40						
50						
60						
70						
80						

* Geologic Map of the Malibu Beach Quadrangle, Los Angeles County, California, Dibblee, T.W. 1993, edited by Minch, J. A., 2009

BORING I.D. NO. TH-4

CLIENT:
PROJECT NO:
DRILL CONTRACTOR:
DATE: 29 Mar 22
DRILL RIG TYPE: Auger
AUGER DIAMETER: 2 ft
SAMPLE METHOD: Grab - no borehole entry
DRILL METHOD:
GEOLOGIST: Don Indermill
LOCATION: 555 Sadie Road, Topanga Canyon, CA

DEPTH, ft	BLOW COUNT		SAMPLE	COLUMN	USCS	GEOLOGIC DESCRIPTION
					Ss Mdst	0-35': Sandstone, yellow (2.5Y 7/6), with minor mudstone interbeds, olive brown (2.5Y 4/4), fine to coarse grained, poorly cemented, moderately indurated, thickly bedded. Correlated with the Fernwood Mbr of the Lower Topanga Fm*
10						
20						
30						Bottom of Borehole: 35 feet. No groundwater observed on the day of drilling or 6 days later.
40						
50						
60						
70						
80						

* Geologic Map of the Malibu Beach Quadrangle, Los Angeles County, California. Dibblee, T.W. 1993, edited by Minch, J. A., 2009.