

NAVO & SONS, INC.

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"Your Septic System Specialist"

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October 28, 2019

Rise Grass Valley Inc.
Atten: Tessa Brinkman
PO Box 271
Grass Valley, CA 95945

Reference: 12791 Brunswick Rd.

APN: 006-441-005

Dear Tessa,

We have completed our site evaluation for the referenced parcel. This work was performed to create a sewage disposal area for this commercial project. 8 soil test pits were excavated by others on October 17, 2019 and witnessed by the Nevada County Environmental Health Department. This site is suited for a Pressure Dose sewage disposal system around soil test pits 1, 2, 3, 4, 5, 6, 7 & 8. Enclosed are copies of the soil test pit log, percolation sheet, and site drawing.

The average percolation rate around the soil test pits 1 through 8 is 26 mpi.

Average perc rate = 26 mpi

The gallonage is for calculations is based upon (2) 12 hr shifts with 67 people per shift and UPC code 67 people/shift x 35 gals/person (showers) = 2345 gallons / 12 hrs shift x 2 shifts = 4690 gals per day

Also 40 people during the day shift without showers are at 15 gals/person = 600 gals per day

Commercial washing machines @ 23 gals per 8 coveralls per use.
8 loads per shift x 2 shifts = 400 gals per day

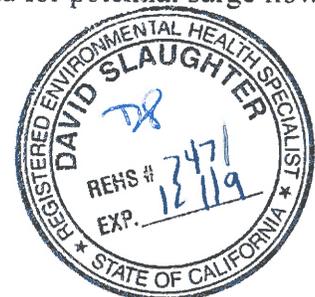
Total gallons calculated 5690 gals per day

Application rate = $5 / \sqrt{26} = .98 \text{ gal / ft}^2 / \text{day}$

$5690 \text{ gal / day} / .98 \text{ gal / ft}^2 / \text{day} = 5806 \text{ ft}^2$

$5806 \text{ ft}^2 / 3 \text{ ft} / \text{L.F.} = 1935 \text{ L.F.}$ of Pressure Dose leach line for this commercial system and it will require the same amount (1935 lineal feet) will need to be reserved for 100% repair area. The available area is over 35,000 sq ft based upon the perc and mantle results.

Therefore a minimum of 1935 lineal feet of Pressure Dose sewage disposal leach line is required for this 4 zone commercial system. Leach lines shall be installed 36" wide by 24" deep, with 12" of drain rock and 7-foot separation on center per line, installed level on contour. Also a minimum 10,000-gallon septic tank with watertight risers over each lid and outlet effluent filter is required for this pressure dose system with a 10,000 gallon pump tank. The pump tank is oversized to accommodate for power loss and for potential surge flow in the future.



Based upon the above calculated gallonage, the size of the septic would be 8,000 gals. To mitigate potential backups, overflows, ect (from power outages), we are recommending 10,000 gal septic tank and 10,000 gallon pump tank. This will create a 12 hr buffer in which operation and flows can continue without power before high water alarms are triggered.

I recommend pumping these large tanks at this commercial facility a minimum of annually. I would highly recommend the tanks be checked every six months to monitor solids in the septic and pumping when the reach 25% of the tank.

Because this septic system is a commercial system and pressure dose the following will be required:

- 1) The leach will be pressure dosed leach lines consisting of a minimum of 4 zones (most likely 6) This rotation of zones not only allows these zone to rest in between doses. It also prevent over saturation of any one zone. Also if one zone has a problem, it could be isolated and repairs while the other zones are working. This will not only result in less to no downtime, but greatly reduce the possibility of sewage spills (surfacing). Also duplex (2) pumps will be used in the pump tank. If one fails, there is a backup. These pumps will alternate to extent their life, unless one fails.
- 2) The distance from the future shower and laundry area to the leach field is between 1800 to 2000 feet with approximately a 130' rise in elevation to the leach field. This pump line (2") will be running through a low area up gradient from potentially sensitive areas. Although the area are well over 500-1000 feet downhill, this pump line shall be sleeved in this low area to mitigate potential issues if this line were to rupture.
- 3) During installation, it is our recommendation and practice to leave as many trees as possible for a number of reasons.
 1. Removing trees means creating large holes in the leach area, and this is not preferred
 2. Trees help stabilize soil but too many tree roots can clog a leach field.
 3. Vegetation can help absorb leaching effluent (natures water filter)
- 4) All Setbacks shall be maintained
 1. 10' setback from developed property lines
 2. 50' setback from undeveloped property lines
 3. 50' setback from seasonal drainages
 4. 25' from enter line of swales (no established drainage channel)
 5. 100' from any perennial stream or domestic wells.
- 5) This Pressure Dose septic system requires annual maintenance for the life of the system.
- 6) This septic system should be installed by a licensed contractor (A, C-34, or C-42). Preferably familiar with installation of this system. This report in not a construction permit. A permit to install this system must be obtained from the Department of Environmental Health.
- 7) The pump screen should be removed and rinsed off every year. Also the pump, pump float, alarm float, and alarm should be checked for proper operation yearly.

- 8) The primary and 100% repair area must be protected from vehicular traffic, corrals, animal enclosures, stables, structures, below or above ground pools, or any other activity that causes alterations such as grading, cuts/fills, etc. Failure to do so may void this report.
- 9) Please note that all drainage should be diverted away from the septic tank, pump tank, and leach field. Irrigation in the area of the leach trenches should be kept to a minimum to avoid saturating the soil. Drip irrigation should be used.
- 10) Also we recommend water conservation should be enlisted for water use to maximize the life expectancy of the absorption trenches. Also take care of any leaks immediately to avoid unnecessary saturating of the leach trenches.

If any additional area for sewage disposal is requires in the future, the surrounding area to the North, South, East and West looks contiguous to the sewage disposal area. More testing may or may not be required should the need arise. Every mantle but mantle 7 were almost identical in depth, color, texture, and percs. #7 has slightly higher rock content but still met minimum standards.

If any other pertinent information is required, please feel free to contact me at the office 530-273-2964. Thank you for this opportunity to work with you.

Sincerely,



Dave Slaughter,

REHS #7471

Enclosed

<i>Percolation Data Sheet</i>	4	<i>Soil Test Pit Logs</i>	7	<i>Site Drawing</i>	9
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Percolation Data Sheet

Job Address: 12791 Brunswick Rd.

APN: 006-441-005

	Perc Hole #1			Perc Hole #2			Perc Hole #3		
	Time	Depth: 30 "		Time	Depth: 30 "		Time	Depth: 30 "	
1	7:35AM	36.00	Drop	7:35AM	36.00	Drop	7:35AM	36.00	Drop
2	7:45AM	33.00	3.00	7:45AM	34.50	1.50	7:45AM	34.00	2.00
3	7:55AM	31.50	1.50	7:55AM	33.50	1.00	7:55AM	33.00	1.00
5	8:05AM	30.75 R 36.00	0.75	8:05AM	32.75	0.75	8:05AM	32.25	0.75
6	8:35AM	34.50	1.50	8:35AM	30.50	2.25	8:35AM	30.25 R 36.00	2.00
7	9:05AM	33.00	1.50				9:05AM	34.00	2.00
8									
9									
	Perc Rate (MPI)		20	Perc Rate (MPI)		13.3	Perc Rate (MPI)		15
Average Perc Rate using correction factor 1.59 = 26.0 MPI									

(r) = Percolation test holes are refilled between each reading

Test Date: October 18, 2019
Test Conducted By: Dave Slaughter

These percolation tests were performed under the guidelines set forth in Nevada County Sewage Disposal Technical Regulations. The statements made above are true and testing was conducted under the supervision of an Environmental Health Specialist.

NEVADA COUNTY SOIL TEST-PIT LOG

Test Date: 10-17-19

Page 1 of 4

Parent Rock Type: V (G) MS A Other Consultant: D. Stauffer ES Fauder Farm

SOIL PIT# 1 1st HORIZON Depth: 0 to 28
Slope: 16% Aspect: SW
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color: 2c 5/10 4/4
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

SOIL PIT# 2 1st HORIZON Depth: 0 to 32
Slope: % Aspect:
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #

Same as SOIL PIT # 1, Horizon # 1

2nd HORIZON Depth: 28 to 64
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color: 5YR 5/6
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

2nd HORIZON Depth: 32 to 56
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #

Same as SOIL PIT # 1, Horizon # 2

3rd HORIZON Depth: 64 to 92
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color: 7.5 YR 5/8
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

3rd HORIZON Depth: 56 to 92
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #

Same as SOIL PIT # 1, Horizon # 3

4th HORIZON Depth: to
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

4th HORIZON Depth: to
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #
Effective Soil Depth: Groundwater

Same as SOIL PIT # 7, Horizon #
Effective Soil Depth: Groundwater

Consultant Signature

APN 006-441-005 JOB # 2H19-0437

Nevada County Staff Signature

Notes:

NEVADA COUNTY SOIL TEST-PIT LOG

Test Date: 10-7-77

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Parent Rock Type: V (G) MS A Other Consultant:

ES Z. Karim

SOIL PIT# 3 1st HORIZON Depth: 0 to 27
Slope: 10% Aspect: SE
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

SOIL PIT# 4 1st HORIZON Depth: 0 to 22
Slope: 11% Aspect:
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1 Horizon # 1
2nd HORIZON Depth: 27 to 52
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1 Horizon # 2
2nd HORIZON Depth: 22 to 39
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1 Horizon # 2
3rd HORIZON Depth: 52 to 72
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1 Horizon # 2
3rd HORIZON Depth: 39 to 72
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1 Horizon # 3
4th HORIZON Depth: to
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1 Horizon # 3
4th HORIZON Depth: to
Texture: s ls sl sc scl l c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many v f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1 Horizon # 3
Effective Soil Depth: 72 Groundwater

Same as SOIL PIT # 1 Horizon # 3
Effective Soil Depth: 72 Groundwater

Consultant Signature
Nevada County Staff Signature

APN 006-41-005 JOB # E.H.19-0437
Notes:

NEVADA COUNTY SOIL TEST-PIT LOG

Test Date: 10-17-19

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Parent Rock Type: V (G) MS A Other Consultant: DS

ES 2, Karim

SOIL PIT# 5 1st HORIZON Depth: 0 to 24
Slope: 11% Aspect: SE
Texture: s ls sl sc scl l c cl sic sid sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

SOIL PIT# 6 1st HORIZON Depth: 0 to 27
Slope: 16% Aspect: SE
Texture: s ls sl sc scl l c cl sic sid sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1, Horizon # 1

Same as SOIL PIT # 1, Horizon # 1

2nd HORIZON Depth: 24 to 58
Texture: s ls sl sc scl l c cl sic sid sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

2nd HORIZON Depth: 27 to 74
Texture: s ls sl sc scl l c cl sic sid sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1, Horizon # 2

Same as SOIL PIT # 1, Horizon # 2

3rd HORIZON Depth: 58 to 72
Texture: s ls sl sc scl l c cl sic sid sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

3rd HORIZON Depth: to
Texture: s ls sl sc scl l c cl sic sid sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1, Horizon # 3

Same as SOIL PIT # 1, Horizon # 3

4th HORIZON Depth: to
Texture: s ls sl sc scl l c cl sic sid sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

4th HORIZON Depth: to
Texture: s ls sl sc scl l c cl sic sid sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # 1, Horizon #
Effective Soil Depth: 72 Groundwater

Same as SOIL PIT # 1, Horizon #
Effective Soil Depth: 72 Groundwater

Consultant Signature DS

APN 006-441-005 JOB # 2A19-0457

Nevada County Staff Signature Zandera

Notes:

Parent Rock Type: V G MS A Other Consultant:

ES 7: Karim

SOIL PIT# 7 1st HORIZON Depth: 0 to 20
Slope: 16% Aspect:
Texture: s ls sl sc scl c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #

2nd HORIZON Depth: 20 to 60
Texture: s ls sl sc scl c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES: interm. hard blocks consolidated weathered rock

Same as SOIL PIT # , Horizon #

3rd HORIZON Depth: 60 to 72
Texture: s ls sl sc scl c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES: pockets weathered rock

Same as SOIL PIT # , Horizon #

4th HORIZON Depth: to
Texture: s ls sl sc scl c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #
Effective Soil Depth: 72 Groundwater

Consultant Signature
Nevada County Staff Signature
HighForm Soil Log 1 Revised 6-25-01

SOIL PIT# 8 1st HORIZON Depth: 0 to 19
Slope: % Aspect:
Texture: s ls sl sc scl c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #

2nd HORIZON Depth: 19 to 25
Texture: s ls sl sc scl c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #

3rd HORIZON Depth: 25 to 72
Texture: s ls sl sc scl c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #

4th HORIZON Depth: to
Texture: s ls sl sc scl c cl sic sicl sil si DRX IWRX MWRX DG
Rock Fragments: gravel % cobble % stone %
Color:
Redoxymorphic Features: none few common many
RC color RD color RM color
Structure: gran platy block prism f m c single grain massive
Soil Pores: none few common many f m c inters tubular
Moist Consistence: l vfr fr f vf ef
Plasticity: np sp mp vp Stickiness: ns ss ms vs
Roots: none few common many vf f m c
Boundary: Distinctness: a c g d Topography: s w i b
Moisture: dry moist wet saturated
NOTES:

Same as SOIL PIT # , Horizon #
Effective Soil Depth: 72 Groundwater

APN 006-441-005 JOB # EN19-0137
Notes:

Nevada County, CA



used sewage disposal area (See Detail)

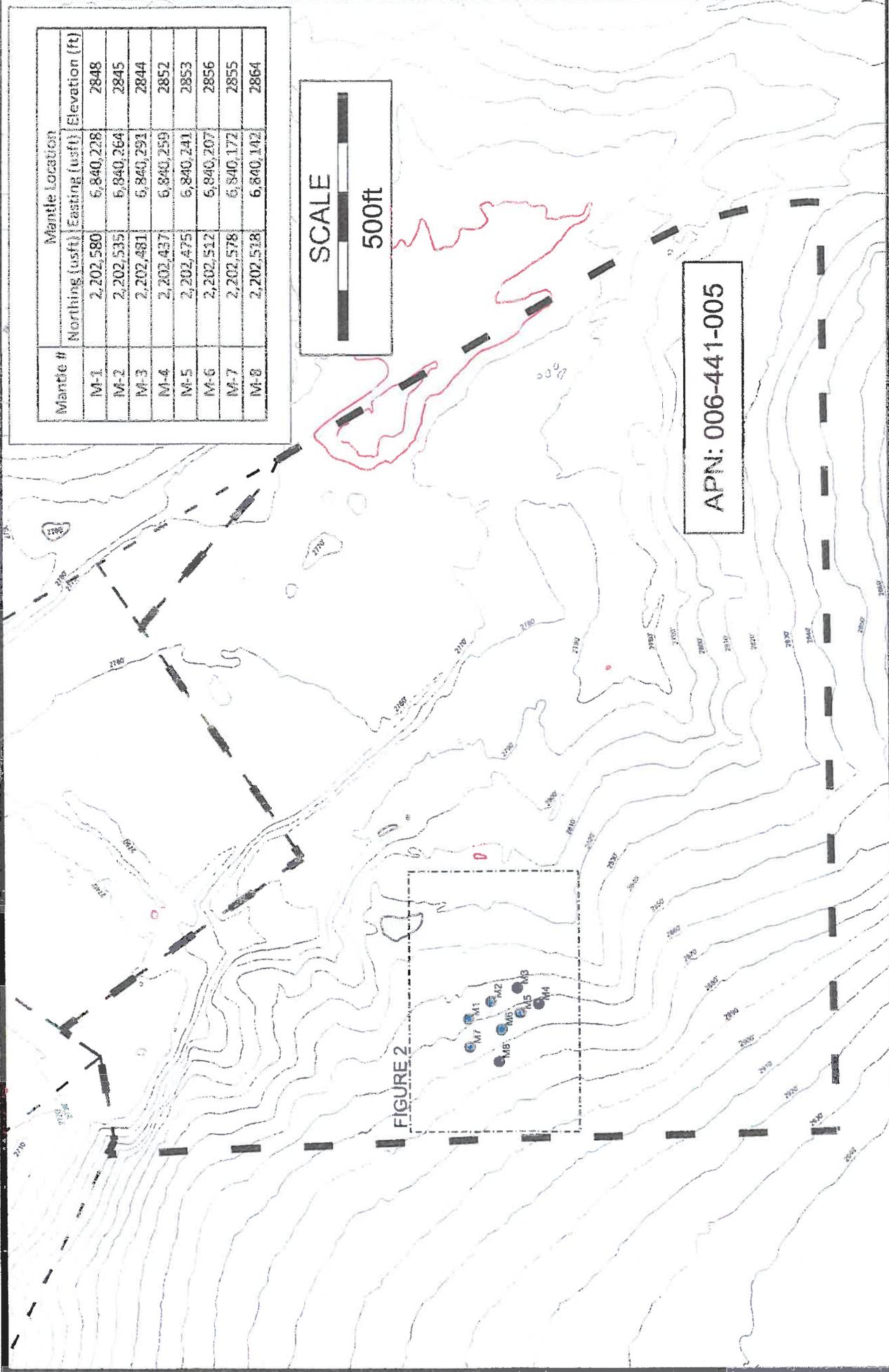
October 28, 2019

1:4,514

0 0.0375 0.075 0.15 mi

0 0.05 0.1 0.2 km

Nevada County, CA



Mantle #	Northing (usft)	Easting (usft)	Elevation (ft)
M-1	2,202,580	6,840,228	2848
M-2	2,202,535	6,840,264	2845
M-3	2,202,481	6,840,291	2844
M-4	2,202,437	6,840,259	2852
M-5	2,202,475	6,840,241	2853
M-6	2,202,512	6,840,207	2856
M-7	2,202,578	6,840,172	2855
M-8	2,202,518	6,840,142	2864

SCALE
500ft

APN: 006-441-005

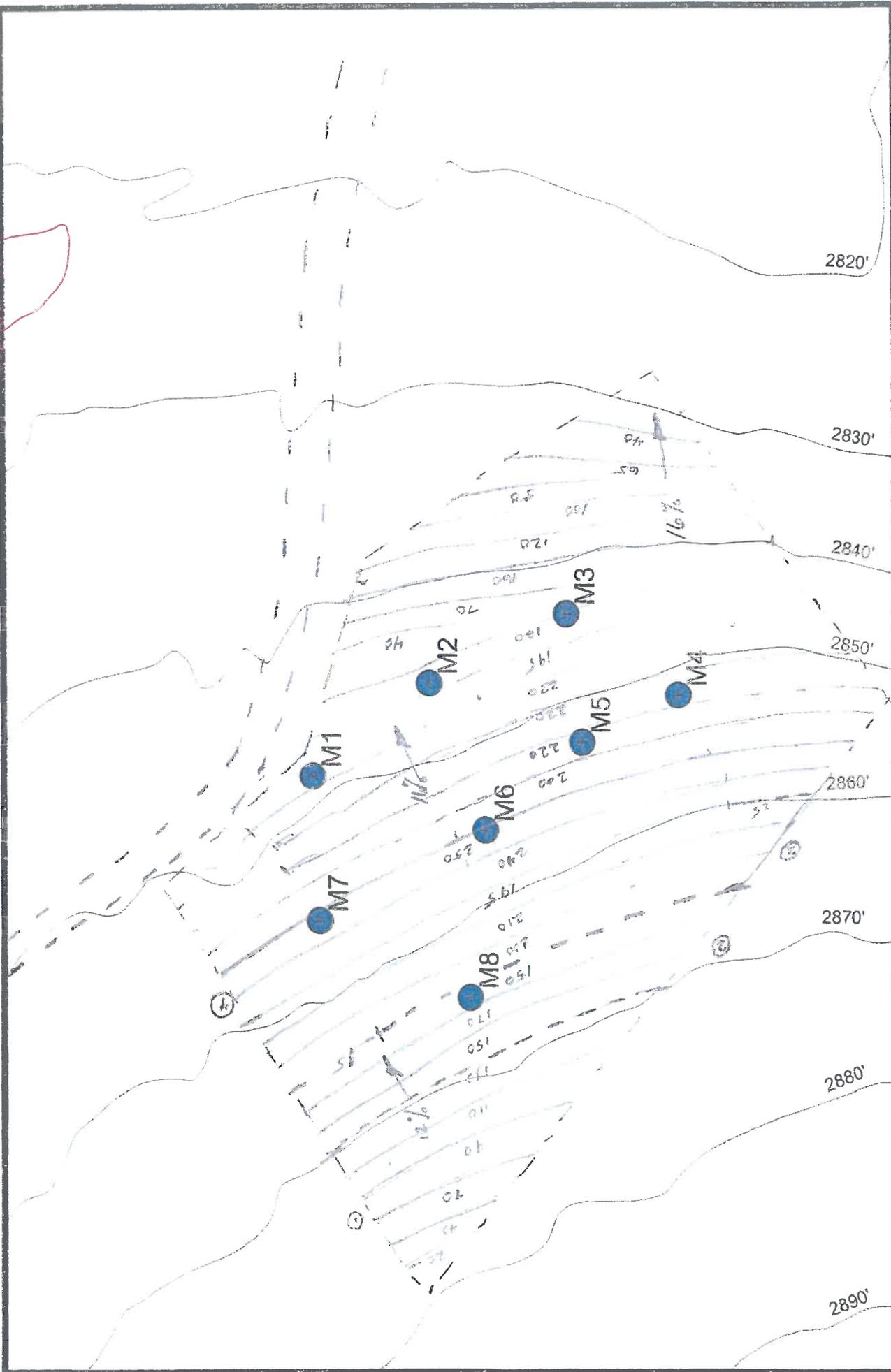
FIGURE 2

FIGURE 1: MANTLE LOCATION SITE PLAN
 PROPERTY OWNER: RISE GRASS VALLEY INC.
 APN: 006-441-005
 SITE LOCATION: 12791 Brunswick Road
 Grass Valley, CA 95945 USA

MANTLE NUMBER
 PARCEL BOUNDARY
 CONTOUR INTERVAL = 10FT

M#

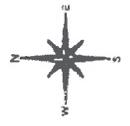




MANTLE NUMBER
PARCEL BOUNDARY
CONTOUR INTERVAL = 10FT
SCALE: 1" = 50ft

FIGURE 2: MANTLE LOCATION SITE PLAN 1"=50ft
PROPERTY OWNER: RISE GRASS VALLEY INC.
APN: 006-441-005
SITE LOCATION: 12791 Brunswick Road
Grass Valley, CA 95945 USA

M#



Approx. 38,000 Ft²

