SOIL LOSS ANALYSIS, REVISED
REAL THOREVILOS VINEYARDS
ECOTONE NORTH AND SOUTH BLOCKS
PROPOSED NEW VINEYARD DEVELOPMENT
180 MUND ROAD
ST. HELENA, CA 95476
APN 021-320-022, 026, -028
AUGUST 25, 2021

The following analysis evaluates the proposed development of two new vineyard blocks totaling approximately 22.2 acres, on parts of three parcels totaling approximately 390 acres, located in Napa County, California, northeast of the city of St. Helena, to determine the project's potential to increase sediment delivery from the site. The analysis also compares predicted soil loss with the USDA soil loss tolerance standard ("T"). The analysis was prepared by David Steiner, CPESC, CPSWQ, at the request of and in consultation with Mike Muelrath of Applied Civil Engineering. This analysis has adapted the Universal Soil Loss Equation (USLE) protocol developed by the Napa RCD, with guidance from the NRCS (SCS) Field Office Technical Guide, to requirements of the Napa County Engineering Division. Modeled transects are drawn on the accompanying maps, provided by Applied Civil Engineering. The accompanying Excel spreadsheet[1], along with an explanatory MS Word Addendum, incorporates USLE principles and formulas, as follows:

- The **"R"** value is derived from the median of the predicted range of 2-year/6-hour storms for this site, according to NOAA Atlas 14. Printouts of the NOAA Atlas 14 tables accompany this submittal.
- The **"LS"** value is calculated per algorithms based on USDA empirical data, using plotted slope lengths and gradients, over twelve representative transects through the two proposed new vineyard blocks. The spreadsheet's formulas incorporate the effects of concave, convex and complex slopes, per USDA segmented slope protocols, which assign greater influence to downslope segments.
- The **"K"** (soil erosivity) and **"T"** (soil loss tolerance) values were taken from the Napa County Web Soil Survey. Copies of the NCWSS printouts accompany this submittal. Where Mapping Unit (soil type) boundaries cross modeled transects, the slope segment protocol is used to appropriately weight values of these factors, as well.
- Pre-project **"C"** value: To account for varying levels of vegetation and ground cover, USDA segmenting protocols—again, assigning greater influence to downslope segments--have also been applied to **"C"** factor determinations. Values assigned to each segment were selected from Table 5 of the "Special Applications for Napa County" USLE pamphlet, as interpolated in the Napa County Engineering Division's "USLE (Excel) Worksheet." These evaluations are based on examination of imagery from Google Earth

[1] *This Excel format segments modeled transects according to the most complex variable or USLE factor describing conditions along the transect. For example, a transect with five different types or levels of canopy or vegetative cover—but with uniform slope throughout—would nonetheless be assigned five separate slope entries (even though they were all the same), as the transect's segmentation (for all factors) would be based on cover, its most complex variable.*

and the "OnXHunt" GPS application, and on observations during field visit on September 4 and October 16, 2020, prior to the devastating Glass Fire. Details of these findings are in the explanatory ***Addendum*** to this narrative. C values entered for Transect ES-2 NW, Segments 3-5 and Transect ES-2 SW, Segment 3 are not from the "Special Applications" brochure; these entries are revisions required by the Napa County Engineering Division.

- Post-project **"C"** values were assigned to reflect the cover crop specifications in the Erosion Control Plan: A minimum of 80%, non-tilled cover will be established and maintained in both vineyard blocks. Adherence to these specifications will (1) avoid soil loss increase[2] and (2) comply with the USDA **"T",** soil loss tolerance. Specifications for cover maintenance on vineyard avenues are the same as those within vineyard blocks; supplementary practices such as annual applications of seed and straw mulch, per specifications in the Erosion Control Plan, may be necessary to compensate for ground disturbance related to tractor and equipment traffic.
- For the most part, pre- and post-project **"P"** (practice) factors are assigned the default maximum value (1). However, the following, appropriate reductions of this factor are assigned to transects and/or segments, as indicated by cross-slope farming on proposed (post-project) vineyard layouts.
    - North Vineyard:
        - NE Transect, Segment 2: 12-18%, cross-slope, no-till. P = .60
        - Middle Transect, Segment 1: 12-18%, cross-slope, no-till. P = .60
        - Middle Transect, Segment 2: 7-12%, cross-slope, no-till. P = .45
        - South Transect, Segment 4: 2-7%, cross-slope, no-till. P = .37
    - South Vineyard:
        - Block ES-1, Segments 2-5: 2-7%, cross-slope, no-till. P = .37
        - Block ES-2 NW, Segment 1: 7-12%, cross-slope, no-till. P = .45
        - Block ES-2, SW, Segment 3: 2-7%, cross-slope, no-till. P = .37
        - Block ES-2, E, Segment 5: 2-7%, cross-slope, no-till. P = .37

Conclusion: With the assumption that the specified cover levels will be maintained, calculations predict that soil loss levels in proposed vineyard blocks[2] will exceed neither current levels nor the USDA soil loss tolerance (**"T"**). (Please see accompanying Excel printouts, and explanatory ***Addendum***.)

_____[2]*Although a very slight, post-project soil loss increase is predicted over Transect ES-2 Mid, the net post-project soil loss for all blocks will be substantially less than pre-project predictions.*

Real Thorevilos
Ecotone Vineyard
USLE Soil Loss Analysis
Explanatory Addendum, Revised
Pre-Project "C"
August 25, 2021

SOUTH VINEYARD

- Transect ES-1:
  - Segment 1: 75% Trees; 80% Cover: 50% G, 50% W (C = .0265)
  - Segment 2: No Canopy; 80% Cover: 70% G, 30% W (C = .022)
  - Segment 3: 25% Trees: 80% Cover: 70% G, 30% W (C = .0217)

- Transect ES-2 NW:
  - Segment 1: 25% Trees; 40% Cover: 80% G, 20% W (C = .108)
  - Segment 2: No Canopy; 90% Cover: 80% G, 20% W (C = .0092)
  - Segment 3: Per Napa County Engineering Division (C = .1)*
  - Segment 4: Per Napa County Engineering Division (C = .1)*
  - Segment 5: Per Napa County Engineering Division (C = .1)*

- Transect ES-2 SW:
  - Segment 1: 25% Low Brush; 85% Cover: 50% G, 50% W (C = .0205)
  - Segment 2: No Canopy; 90% Cover: 80% G, 20% W (C = .0166)
  - Segment 3: Per Napa County Engineering Division (C = .1)*

- Transect ES-2 Mid:
  - Segment 1: No Canopy; 90% Cover: 50% G, 50% W (C = .014)
  - Segment 2: 25% Low Brush; 85% Cover: 50% G, 50% W (C = .0205)
  - Segment 3: 25% Low Brush; 40% Cover: 50% G, 50% W (C = .0515)

- Transect ES-2 E:
  - Segment 1: 50% Trees; 90% Cover: 20% G, 80% W (C = .018)
  - Segment 2: 25% Low Brush; 70% Cover: 30% G, 70% W (C = .0512)
  - Segment 3: 25% Low Brush; 70% Cover: 30% G, 70% W (C = .0512)
  - Segment 4: 25% Low Brush; 70% Cover: 30% G, 70% W (C = .0512)
  - Segment 5: 25% Low Brush; 60% Cover: 40% G, 60% W (C = .065)

- Transect ES-2 NE:
  - Segment 1: No Canopy; 90% Cover: 50% G, %0% W (C = .014)
  - Segment 2: 50% Trees; 80% Cover: 40% G, 60% W (C = .0304)

- Transect ES-2 N:
  - Segment 1: 25% Trees; 85% Cover: 50% G, 50% W (C = .021)
  - Segment 2: 25% Trees; 85% Cover: 50% G, 50% W (C = .021)
  - Segment 3: 25% Trees; 85% Cover: 50% G, 50% W (C = .021)

NORTH VINEYARD

- Northeast Transect
  - Segments 1 and 2: 75% High Brush: 70% Cover: 20% G, 80% W (C =.0546)

- North Transect
  - Segment 1: 50% High Brush; 60% Cover: 20% G, 90% W (C = .0732)
  - Segments 2-4: 50% High Brush; 50% Cover: 0 G, 100% W (C = .106)
  - Segment 5: 50% Trees; 50% Cover: 50% G, 50% W (C = .0895)

- Middle Transect
  - Segment 1: 75% Trees; 70% Cover: 0 G, 100% W (C = .063)
  - Segment 2: 50% Trees; 70% Cover: 40% G, 60% W (C = .0498)
  - Segment 3: 25% Trees; 60% Cover: 505 G, 50% W (C = .065)

- South transect
  - Segment 1: 75% Trees; 60% Cover: 0 G, 100% W (C = .084)
  - Segment 2: 50% Trees; 60% Cover: 0 G, 100% W (C = .087)
  - Segment 3: 50% Trees; 60% Cover: 50% G, 50% W (C = .0635)
  - Segment 4: 25% Trees; 60% Cover: 60% G, 40% W (C = .0594)

*Based on Appendix C-1, Guides for Erosion and Sediment Control, USDA Soil Conservation Service Davis, California.

Ecotone North
Pre-Project USLE
2-yr/6-hr storm, inches 1.93
March 18, 2021

Transect Identification		Ecotone North, Northeast Transect, pre-project					
Acres		0.5	acres				
Total Slope Length		160	feet				
Number of Segments		2	segments				
	1	2	3	4	5		
R	68.94	68.94					
Factor (F)	0.35	0.65	0.00	0.00	0.00		
Slope Length	160.00	160.00					
Slope %	25.0	16.3					
LS	5.89	3.34	0.00	0.00	0.00		
K	0.28	0.28					
C	0.055	0.055					
P	1.00	1.00	1.00	1.00	1.00		
T	3.00	3.00				3.00	
(F) (LS) (K) (C)	0.031521	0.0332	0.0000	0.0000	0.0000	0.0648	
A = (R) (F) (LS) (K) (C) (P)	2.17	2.29	0.00	0.00	0.00	4.46	tons/acre/year
						2.23	tons/year

Ecotone North
Post-Project USLE
2-yr/6-hr storm, inches 1.93
March 12, 2021

Transect Identification		Ecotone North, Northeast Transect, post-project					
Acres		0.5	acres				
Total Slope Length		160	feet				
Number of Segments		2	segments				
	1	2	3	4	5		
R	68.94	68.94					
Factor (F)	0.35	0.65	0.00	0.00	0.00		
Slope Length	160.00	160.00					
Slope %	25.0	16.3					
LS	5.89	3.34	0.00	0.00	0.00		
K	0.28	0.28					
C	0.034	0.034				75 NT	
P	1.00	0.60	1.00	1.00	1.00		
T	3.00	3.00				3.00	
(F) (LS) (K) (C)	0.019628	0.0207	0.0000	0.0000	0.0000	0.0403	
A = (R) (F) (LS) (K) (C) (P)	1.35	0.86	0.00	0.00	0.00	2.21	tons/acre/year
						1.10	tons/year

Transect Identification		Ecotone North, North Transect, pre-project					
Acres		2	acres				
Total Slope Length		435	feet				
Number of Segments		5	segments				
	1	2	3	4	5		
R	68.94	68.94	68.94	68.94	68.94		
Factor (F)	0.09	0.16	0.21	0.25	0.28		
Slope Length	435	435	435	435	435		
Slope %	17.2	4.6	6.9	5.7	5.7		
LS	5.93	1.01	1.68	1.31	1.31		
K	0.28	0.28	0.28	0.28	0.28		
C	0.073	0.106	0.106	0.106	0.090		
P	1.00	1.00	1.00	1.00	1.00		
T	3.00	3.00	3.00	3.00	3.00	2.97	
(F) (LS) (K) (C)	0.010937	0.0048	0.0105	0.0097	0.0092	0.0452	
A = (R) (F) (LS) (K) (C) (P)	0.75	0.33	0.72	0.67	0.63	3.11	tons/acre/year
						6.23	tons/year

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Transect Identification		Ecotone North, North Transect, post-project					
Acres		2	acres				
Total Slope Length		435	feet				
Number of Segments		5	segments				
	1	2	3	4	5		
R	68.94	68.94	68.94	68.94	68.94		
Factor (F)	0.09	0.16	0.21	0.25	0.28		
Slope Length	435	435	435	435	435		
Slope %	17.2	4.6	6.9	5.7	5.7		
LS	5.93	1.01	1.68	1.31	1.31		
K	0.28	0.28	0.28	0.28	0.28		
C	0.034	0.034	0.034	0.034	0.034	75 NT	
P	1.00	1.00	1.00	1.00	1.00		
T	3.00	3.00	3.00	3.00	3.00	2.97	
(F) (LS) (K) (C)	0.00508	0.0015	0.0034	0.0031	0.0035	0.0166	
A = (R) (F) (LS) (K) (C) (P)	0.35	0.11	0.23	0.22	0.24	1.14	tons/acre/year
						2.29	tons/year

Transect Identification		Ecotone North, Middle Transect, pre-project					
Acres		2	acres				3
Total Slope Length		231	feet				
Number of Segments		3	segments				
	1	2	3	4	5		
R	68.94	68.94	68.94				
Factor (F)	0.19	0.35	0.46	0.00	0.00		
Slope Length	231	231	231				
Slope %	13.0	8.7	3.9				
LS	2.95	1.69	0.54	0.00	0.00		
K	0.24	0.24	0.28				
C	0.063	0.050	0.065				
P	1.00	1.00	1.00	1.00	1.00		
T	4.00	4.00	3.00			3.54	
(F) (LS) (K) (C)	0.008487	0.0071	0.0045	0.0000	0.0000	0.0201	
A = (R) (F) (LS) (K) (C) (P)	0.59	0.49	0.31	0.00	0.00	1.39	tons/acre/year
						2.77	tons/year

Transect Identification		Ecotone North, Middle Transect, post-project					
Acres		2	acres				
Total Slope Length		231	feet				
Number of Segments		3	segments				
	1	2	3	4	5		
R	68.94	68.94	68.94				
Factor (F)	0.19	0.35	0.46	0.00	0.00		
Slope Length	231	231	231				
Slope %	13.0	8.7	3.9				
LS	2.95	1.69	0.54	0.00	0.00		
K	0.24	0.24	0.28				
C	0.034	0.034	0.034			75 NT	
P	0.60	0.45	1.00	1.00	1.00		
T	4.00	4.00	3.00			3.54	
(F) (LS) (K) (C)	0.00458	0.0048	0.0024	0.0000	0.0000	0.0118	
A = (R) (F) (LS) (K) (C) (P)	0.19	0.15	0.16	0.00	0.00	0.50	tons/acre/year
						1.01	tons/year

Transect Identification		Ecotone North, South Transect, pre-project					
Acres		4.5	acres				4
Total Slope Length		700	feet				
Number of Segments		4	segments				
	1	2	3	4	5		
R	68.94	68.94	68.94	68.94			
Factor (F)	0.12	0.23	0.30	0.35	0.00		
Slope Length	700	700	700	700			
Slope %	17.1	17.1	14.3	3.4			
LS	7.46	7.46	5.86	0.59	0.00		
K	0.24	0.24	0.24	0.28			
C	0.084	0.087	0.064	0.059			
P	1.00	1.00	1.00	1.00	1.00		
T	4.00	4.00	4.00	3.00		3.65	
(F) (LS) (K) (C)	0.018053	0.0358	0.0268	0.0034	0.0000	0.0841	
A = (R) (F) (LS) (K) (C) (P)	1.24	2.47	1.85	0.24	0.00	5.80	tons/acre/year
						26.09	tons/year

Transect Identification		Ecotone North, South Transect, post-project					
Acres		4.5	acres				
Total Slope Length		700	feet				
Number of Segments		4	segments				
	1	2	3	4	5		
R	68.94	68.94	68.94	68.94			
Factor (F)	0.12	0.23	0.30	0.35	0.00		
Slope Length	700	700	700	700			
Slope %	17.1	17.1	14.3	3.4			
LS	7.46	7.46	5.86	0.59	0.00		
K	0.24	0.24	0.24	0.28			
C	0.034	0.034	0.034	0.034		75 NT	
P	1.00	1.00	1.00	0.37	1.00		
T	4.00	4.00	4.00	3.00		3.65	
(F) (LS) (K) (C)	0.007307	0.0140	0.0143	0.0020	0.0000	0.0376	
A = (R) (F) (LS) (K) (C) (P)	0.50	0.97	0.99	0.05	0.00	2.51	tons/acre/year
						11.29	tons/year

Real Thorevilos, Ecotone South
Pre-Project USLE, revised
August 2021
2/6 storm, inches 1.90

Transect Identification		Real Thorevilos, Block ES-1, Pre-project				
Acres		0.7	acres			
Total Slope Length		110	feet			
Number of Segments		5	segments			
	1	2	3	4	5	
R	66.63	66.63	66.63	66.63	66.63	
Factor (F)	0.09	0.16	0.21	0.25	0.28	
Slope Length	110	110	110	110	110	
Slope %	13.6	4.5	4.5	4.5	4.5	
LS	2.17	0.47	0.47	0.47	0.47	
K	0.43	0.43	0.43	0.43	0.43	
C	0.027	0.022	0.022	0.022	0.022	
P	1.00	1.00	1.00	1.00	1.00	
T	3.00	3.00	3.00	3.00	3.00	2.97
(F) (LS) (K) (C)	0.002224	0.0007	0.0009	0.0011	0.0013	0.0063
A = (R) (F) (LS) (K) (C) (P)	0.15	0.05	0.06	0.07	0.08	0.42 tons/acre/year
						0.29 tons/year

Real Thorevilos
Post-Project USLE
August 2021

Transect Identification		Real Thorevilos, Block ES-1, Post-project					
Acres		0.7	acres				
Total Slope Length		110	feet				
Number of Segments		5	segments				
	1	2	3	4	5		
R	66.63	66.63	66.63	66.63	66.63		
Factor (F)	0.09	0.16	0.21	0.25	0.28		
Slope Length	110	110	110	110	110		
Slope %	13.6	4.5	4.5	4.5	4.5		
LS	2.17	0.47	0.47	0.47	0.47		
K	0.43	0.43	0.43	0.43	0.43		
C	0.034	0.034	0.034	0.034	0.034	75NT	`
P	1.00	0.37	0.37	0.37	0.37		
T	3.00	3.00	3.00	3.00	3.00	2.97	
(F) (LS) (K) (C)	0.002853	0.0011	0.0015	0.0017	0.0019	0.0091	
A = (R) (F) (LS) (K) (C) (P)	0.19	0.03	0.04	0.04	0.05	0.34 tons/acre/year	
						0.24 tons/year	

Transect Identification		Real Thorevilos, Transect ES-2 NW, Pre-project				
Acres		4	acres			
Total Slope Length		510	feet			
Number of Segments		5	segments			
	1	2	3	4	5	
R	66.63	66.63	66.63	66.63	66.63	
Factor (F)	0.09	0.16	0.21	0.25	0.28	
Slope Length	510	510	510	510	510	
Slope %	8.8	1.0	1.0	2.0	1.0	
LS	2.56	0.17	0.17	1.00	0.17	
K	0.43	0.43	0.43	0.43	0.43	
C	0.108	0.009	0.100	0.100	0.100	
P	1.00	1.00	1.00	1.00	1.00	
T	3.00	3.00	3.00	3.00	3.00	2.97
(F) (LS) (K) (C)	0.010696	0.0001	0.0016	0.0108	0.0021	0.0252
A = (R) (F) (LS) (K) (C) (P)	0.71	0.01	0.10	0.72	0.14	1.68 tons/acre/year
						6.72 tons/year

Transect Identification		Real Thorevilos, Transect ES-2 NW, Post-project					
Acres		4	acres				
Total Slope Length		510	feet				
Number of Segments		5	segments				
	1	2	3	4	5		
R	66.63	66.63	66.63	66.63	66.63		
Factor (F)	0.09	0.16	0.21	0.25	0.28		
Slope Length	510	510	510	510	510		
Slope %	8.8	1.0	1.0	2.0	1.0		
LS	2.56	0.17	0.17	0.33	0.17		
K	0.43	0.43	0.43	0.43	0.43		
C	0.034	0.034	0.034	0.034	0.034	75NT	
P	0.45	1.00	1.00	1.00	1.00		
T	3.00	3.00	3.00	3.00	3.00	2.97	
(F) (LS) (K) (C)	0.003367	0.0004	0.0005	0.0012	0.0007	0.0062	
A = (R) (F) (LS) (K) (C) (P)	0.10	0.03	0.04	0.08	0.05	0.29 tons/acre/year	
						1.16 tons/year	

Transect Identification		Real Thorevilos, Transect ES-2 SW, Pre-project					
Acres		1.5	acres				
Total Slope Length		402	feet				
Number of Segments		3	segments				
	1	2	3	4	5		
R	66.63	66.63	66.63	66.63	66.63		
Factor (F)	0.19	0.35	0.46	0.00	0.00		
Slope Length	402	402	402				
Slope %	10.4	4.5	0.7				
LS	2.87	0.80	0.14	0.00	0.00		
K	0.43	0.43	0.43	0.43	0.43		
C	0.021	0.017	0.100				
P	1.00	1.00	1.00				
T	3.00	3.00	3.00	3.00	3.00	3.00	
(F) (LS) (K) (C)	0.004803	0.0020	0.0028	0.0000	0.0000	0.0096	
A = (R) (F) (LS) (K) (C) (P)	0.32	0.13	0.19	0.00	0.00	0.64	tons/acre/year
						0.96	tons/year

Transect Identification		Real Thorevilos, Transect ES-2 SW, Post-project					
Acres		1.5	acres				
Total Slope Length		402	feet				
Number of Segments		3	segments				
	1	2	3	4	5		
R	66.63	66.63	66.63	66.63	66.63		
Factor (F)	0.19	0.35	0.46	0.00	0.00		
Slope Length	402	402	402				
Slope %	10.4	4.5	0.7				
LS	2.87	0.80	0.14	0.00	0.00		
K	0.43	0.43	0.43	0.43	0.43		
C	0.022	0.022	0.022			80NT	
P	1.00	1.00	0.37				
T	3.00	3.00	3.00	3.00	3.00	3.00	
(F) (LS) (K) (C)	0.005154	0.0026	0.0006	0.0000	0.0000	0.0084	
A = (R) (F) (LS) (K) (C) (P)	0.34	0.18	0.02	0.00	0.00	0.53	tons/acre/year
						0.80	tons/year

Transect Identification		Real Thorevilos, Transect ES 2-Mid, Pre-project					
Acres		2	acres				
Total Slope Length		339	feet				
Number of Segments		3	segments				
	1	2	3	4	5		
R	66.63	66.63	66.63	66.63	66.63		
Factor (F)	0.19	0.35	0.46	0.00	0.00		
Slope Length	339	339	339				
Slope %	15.9	4.4	2.7				
LS	4.71	0.73	0.37	0.00	0.00		
K	0.43	0.43	0.43	0.43	0.43		
C	0.014	0.021	0.052				
P	1.00	1.00	1.00				
T	3.00	3.00	3.00	3.00	3.00	3.00	
(F) (LS) (K) (C)	0.005384	0.0022	0.0038	0.0000	0.0000	0.0114	
A = (R) (F) (LS) (K) (C) (P)	0.36	0.15	0.25	0.00	0.00	0.76	tons/acre/year
						1.52	tons/year

Transect Identification		Real Thorevilos, Transect ES 2- Mid, Post-project					
Acres		2	acres				
Total Slope Length		339	feet				
Number of Segments		3	segments				
	1	2	3	4	5		
R	66.63	66.63	66.63	66.63	66.63		
Factor (F)	0.19	0.35	0.46	0.00	0.00		
Slope Length	339	339	339				
Slope %	15.9	4.4	2.7				
LS	4.71	0.73	0.37	0.00	0.00		
K	0.43	0.43	0.43	0.43	0.43		
C	0.022	0.022	0.022			80NT	
P	1.00	1.00	1.00				
T	3.00	3.00	3.00	3.00	3.00	3.00	
(F) (LS) (K) (C)	0.008461	0.0024	0.0016	0.0000	0.0000	0.0125	
A = (R) (F) (LS) (K) (C) (P)	0.56	0.16	0.11	0.00	0.00	0.83	tons/acre/year
						1.66	tons/year

Transect Identification		Real Thorevilos, Transect ES-2 E, Pre-project				
Acres		5	acres			
Total Slope Length		565	feet			
Number of Segments		5	segments			
	1	2	3	4	5	
R	66.63	66.63	66.63	66.63	66.63	
Factor (F)	0.09	0.16	0.21	0.25	0.28	
Slope Length	565	565	565	565	565	
Slope %	1.8	5.3	4.4	3.5	2.7	
LS	0.31	1.36	0.89	0.56	0.44	
K	0.43	0.43	0.43	0.43	0.43	
C	0.018	0.051	0.051	0.051	0.065	
P	1.00	1.00	1.00	1.00	1.00	
T	3.00	3.00	3.00	3.00	3.00	2.97
(F) (LS) (K) (C)	0.000217	0.0048	0.0041	0.0031	0.0034	0.0157
A = (R) (F) (LS) (K) (C) (P)	0.01	0.32	0.27	0.21	0.23	1.04 tons/acre/year
						5.22 tons/year

Transect Identification		Real Thorevilos, Transect ES-2 E, Post-project				
Acres		5	acres			
Total Slope Length		565	feet			
Number of Segments		5	segments			
	1	2	3	4	5	
R	66.63	66.63	66.63	66.63	66.63	
Factor (F)	0.09	0.16	0.21	0.25	0.28	
Slope Length	565	565	565	565	565	
Slope %	1.8	5.3	4.4	3.5	2.7	
LS	0.31	1.36	0.89	0.56	0.44	
K	0.43	0.43	0.43	0.43	0.43	
C	0.022	0.022	0.022	0.022	0.022	80NT
P	1.00	1.00	1.00	1.00	0.37	
T	3.00	3.00	3.00	3.00	3.00	2.97
(F) (LS) (K) (C)	0.000265	0.0021	0.0018	0.0013	0.0012	0.0066
A = (R) (F) (LS) (K) (C) (P)	0.02	0.14	0.12	0.09	0.03	0.39 tons/acre/year
						1.95 tons/year

Transect Identification		Real Thorevilos, Transect ES=2 NE, Pre-project				
Acres		0.8	acres			
Total Slope Length		270	feet			
Number of Segments		2	segments			
	1	2	3	4	5	
R	66.63	66.63	66.63	66.63	66.63	
Factor (F)	0.35	0.65	0.00	0.00	0.00	
Slope Length	270	270				
Slope %	8.1	10.4				
LS	1.65	2.35	0.00	0.00	0.00	
K	0.43	0.43	0.43	0.43	0.43	
C	0.014	0.030				
P	1.00	1.00				
T	3.00	3.00	3.00	3.00	3.00	3.00
(F) (LS) (K) (C)	0.003487	0.0200	0.0000	0.0000	0.0000	0.0235
A = (R) (F) (LS) (K) (C) (P)	0.23	1.33	0.00	0.00	0.00	1.56 tons/acre/year
						1.25 tons/year

Transect Identification		Real Thorevilos, Transect ES-2 NE, Post-project				
Acres		0.8	acres			
Total Slope Length		270	feet			
Number of Segments		2	segments			
	1	2	3	4	5	
R	66.63	66.63	66.63	66.63	66.63	
Factor (F)	0.35	0.65	0.00	0.00	0.00	
Slope Length	270	270				
Slope %	8.1	10.4				
LS	1.65	2.35	0.00	0.00	0.00	
K	0.43	0.43	0.43	0.43	0.43	
C	0.022	0.022				80NT
P	1.00	1.00				
T	3.00	3.00	3.00	3.00	3.00	3.00
(F) (LS) (K) (C)	0.005479	0.0145	0.0000	0.0000	0.0000	0.0199
A = (R) (F) (LS) (K) (C) (P)	0.37	0.96	0.00	0.00	0.00	1.33 tons/acre/year
						1.06 tons/year

Transect Identification		Real Thorevilos, Transect ES-2 N, Pre-project					
Acres		0.2	acres				
Total Slope Length		162	feet				
Number of Segments		3	segments				
	1	2	3	4	5		
R	66.63	66.63	66.63	66.63	66.63		
Factor (F)	0.19	0.35	0.46	0.00	0.00		
Slope Length	162	162	162				
Slope %	20.4	20.4	14.8				
LS	4.54	4.54	2.95	0.00	0.00		
K	0.43	0.43	0.43	0.43	0.43		
C	0.021	0.021	0.021				
P	1.00	1.00	1.00				
T	3.00	3.00	3.00	3.00	3.00	3.00	
(F) (LS) (K) (C)	0.007796	0.0144	0.0123	0.0000	0.0000	0.0344	
A = (R) (F) (LS) (K) (C) (P)	0.52	0.96	0.82	0.00	0.00	2.29	tons/acre/year
						0.46	tons/year

Transect Identification		Real Thorevilos, Transect ES-2 N, Post-project					
Acres		0.2	acres				
Total Slope Length		162	feet				
Number of Segments		3	segments				
	1	2	3	4	5		
R	66.63	66.63	66.63	66.63	66.63		
Factor (F)	0.19	0.35	0.46	0.00	0.00		
Slope Length	162	162	162				
Slope %	20.4	20.4	14.8				
LS	4.54	4.54	2.95	0.00	0.00		
K	0.43	0.43	0.43	0.43	0.43		
C	0.022	0.022	0.017				80, 85 NT
P	1.00	1.00	1.00				
T	3.00	3.00	3.00	3.00	3.00	3.00	
(F) (LS) (K) (C)	0.008167	0.0150	0.0099	0.0000	0.0000	0.0331	
A = (R) (F) (LS) (K) (C) (P)	0.54	1.00	0.66	0.00	0.00	2.21	tons/acre/year
						0.44	tons/year

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  - K Factor, Whole Soil

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Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff:

Tie-break Rule: Lower / Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable) / Depth Range (Weighted Average)

Top Depth:

Bottom Depth:

Inches / Centimeters

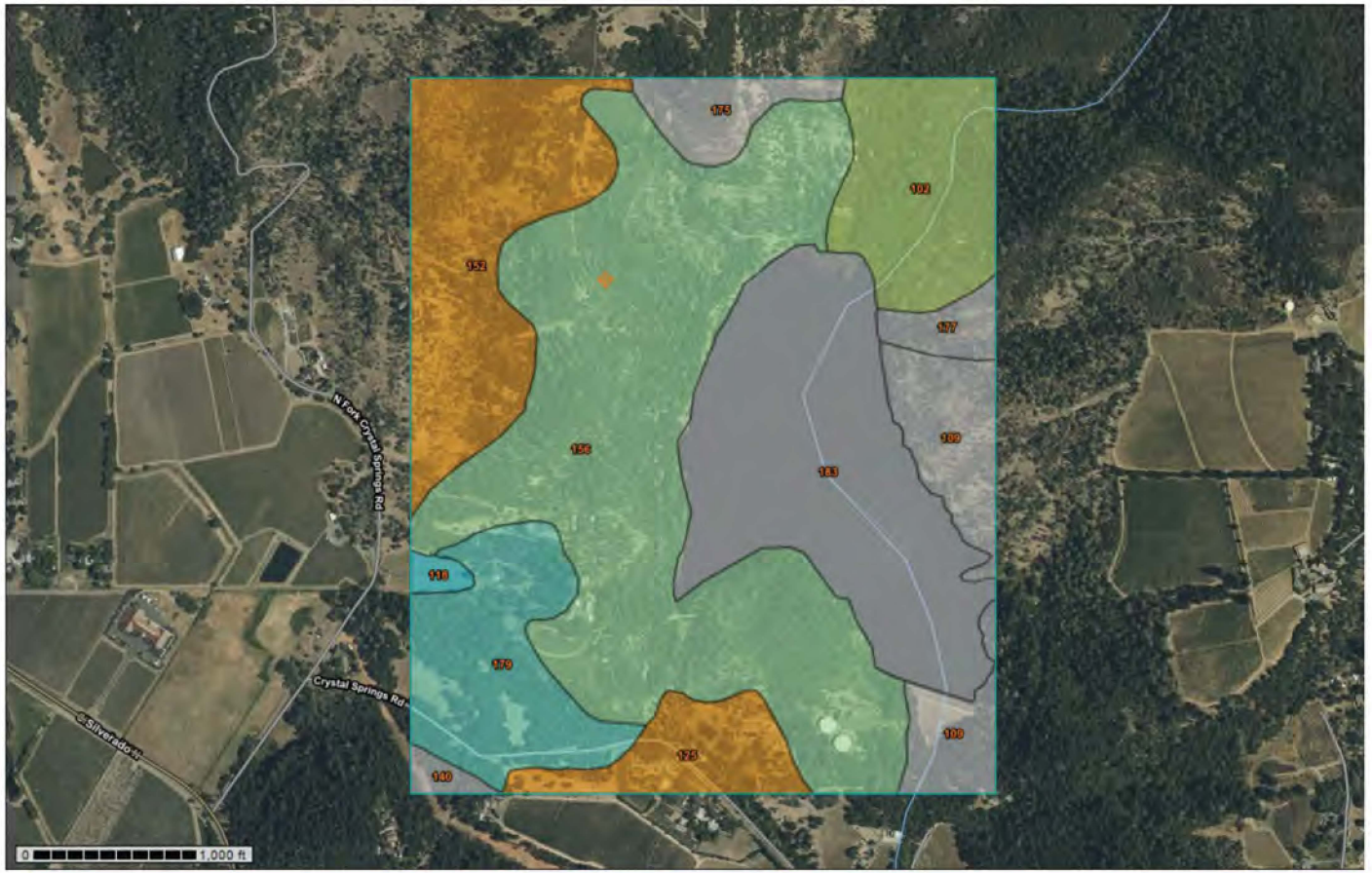
All Layers (Weighted Average)

View Description | View Rating

  - T Factor
  - Wind Erodibility Group
  - Wind Erodibility Index
- Soil Health Properties
- Soil Physical Properties
- Soil Qualities and Features

Map — K Factor, Whole Soil

Scale (not to scale)



Warning: Soil Ratings Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:24,000. The design of map units and the level of detail shown in the resulting soil map are dependent o that map scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Tables — K Factor, Whole Soil — Summary By Map Unit

Summary by Map Unit — Napa County, California (CA055)

Water Features

Summary by Map Unit — Napa County, California (CA055)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
102	Aiken loam, 30 to 50 percent slopes	.24	29.0	8.0%
109	Boomer gravelly loam, volcanic bedrock, 14 to 60 percent slopes, MLRA 15		23.0	6.3%
118	Cole silt loam, 0 to 2 percent slopes, MLRA 14	.37	1.8	0.5%
125	Cortina very stony loam, 0 to 5 percent slopes	.10	15.4	4.2%
140	Forward silt loam, 12 to 57 percent slopes, MLRA 15		2.1	0.6%
152	Hambright rock-Outcrop complex, 30 to 75 percent slopes	.10	46.4	12.7%
156	Kidd loam, 30 to 75 percent slopes	.28	132.1	36.3%
175	Rock outcrop		9.2	2.5%
177	Rock outcrop-Kidd complex, 50 to 75 percent slopes		5.2	1.4%
179	Sobrante loam, 30 to 50 percent slopes	.32	31.4	8.6%
183	Water		68.5	18.8%
Totals for Area of Interest			**364.1**	**100.0%**

Description — K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Rating Options — K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

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  - K Factor, Rock Free
  - K Factor, Whole Soil
  - T Factor

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Advanced Options

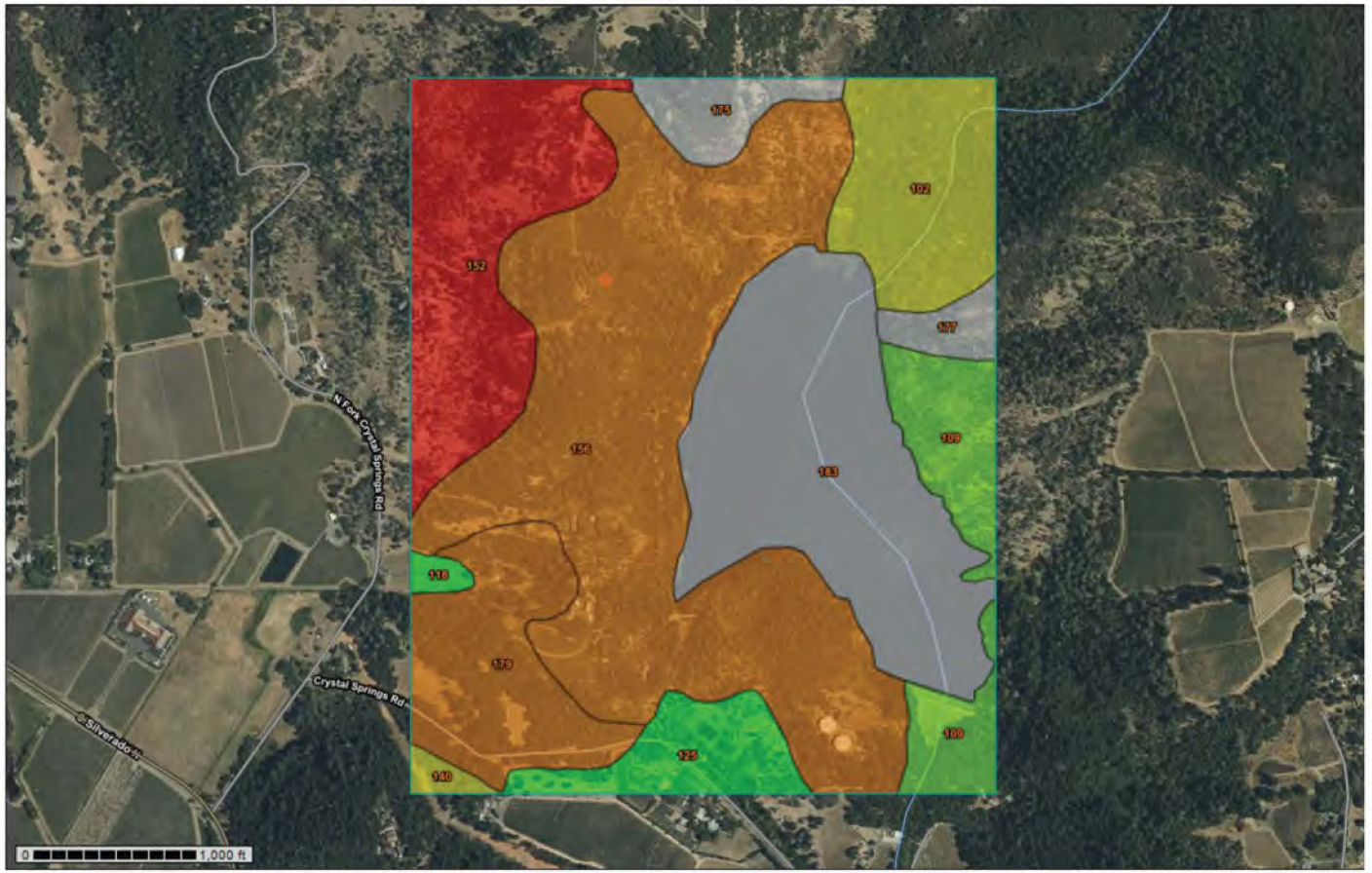
Aggregation Method: Dominant Condition
Component Percent Cutoff:
Tie-break Rule: (•) Lower ( ) Higher
Interpret Nulls as Zero: ( ) Yes (•) No

View Description | View Rating

  - Wind Erodibility Group
  - Wind Erodibility Index
- Soil Health Properties
- Soil Physical Properties
- Soil Qualities and Features
- Water Features

Map — T Factor

Scale (not to scale)



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Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Tables — T Factor — Summary By Map Unit

Summary by Map Unit — Napa County, California (CA055)

Summary by Map Unit — Napa County, California (CA055)

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
102	Aiken loam, 30 to 50 percent slopes	3	29.0	8.0%
109	Boomer gravelly loam, volcanic bedrock, 14 to 60 percent slopes, MLRA 15	4	23.0	6.3%
118	Cole silt loam, 0 to 2 percent slopes, MLRA 14	5	1.8	0.5%
125	Cortina very stony loam, 0 to 5 percent slopes	5	15.4	4.2%
140	Forward silt loam, 12 to 57 percent slopes, MLRA 15	3	2.1	0.6%
152	Hambright rock-Outcrop complex, 30 to 75 percent slopes	1	46.4	12.7%
156	Kidd loam, 30 to 75 percent slopes	2	132.1	36.3%
175	Rock outcrop		9.2	2.5%
177	Rock outcrop-Kidd complex, 50 to 75 percent slopes		5.2	1.4%
179	Sobrante loam, 30 to 50 percent slopes	2	31.4	8.6%
183	Water		68.5	18.8%
Totals for Area of Interest			**364.1**	**100.0%**

Description — T Factor

The T factor is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Rating Options — T Factor

Units of Measure: tons per acre per year
Aggregation Method: Dominant Condition
Component Percent Cutoff: *None Specified*
Tie-break Rule: Lower
Interpret Nulls as Zero: No

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Soil Chemical Properties

Soil Erosion Factors

K Factor, Rock Free

K Factor, Whole Soil

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Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff:

Tie-break Rule: ○ Lower ◉ Higher

Layer Options (Horizon Aggregation Method):
- ○ Surface Layer (Not applicable)
- ◉ Depth Range (Weighted Average)
  - Top Depth: 0
  - Bottom Depth: 36
  - ◉ Inches ○ Centimeters
- ○ All Layers (Weighted Average)

View Description | View Rating

T Factor

Wind Erodibility Group

Wind Erodibility Index

Soil Health Properties

Soil Physical Properties

Soil Qualities and Features

Map — K Factor, Whole Soil

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

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Tables — K Factor, Whole Soil — Summary By Map Unit

Summary by Map Unit — Napa County, California (CA055)

Water Features

Summary by Map Unit — Napa County, California (CA055)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
100	Aiken loam, 2 to 15 percent slopes	.28	16.7	12.5%
109	Boomer gravelly loam, volcanic bedrock, 14 to 60 percent slopes, MLRA 15	.24	76.5	57.6%
177	Rock outcrop-Kidd complex, 50 to 75 percent slopes		39.6	29.9%
Totals for Area of Interest			**132.8**	**100.0%**

Description — K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Rating Options — K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 36

Units of Measure: Inches

Search

Properties and Qualities Ratings

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Soil Chemical Properties

Soil Erosion Factors

K Factor, Rock Free

K Factor, Whole Soil

T Factor

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View Options

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Rating Options ☑

Detailed Description ☐

Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff:

Tie-break Rule: ◉ Lower ○ Higher

Interpret Nulls as Zero: ○ Yes ◉ No

View Description | View Rating

Wind Erodibility Group

Wind Erodibility Index

Soil Health Properties

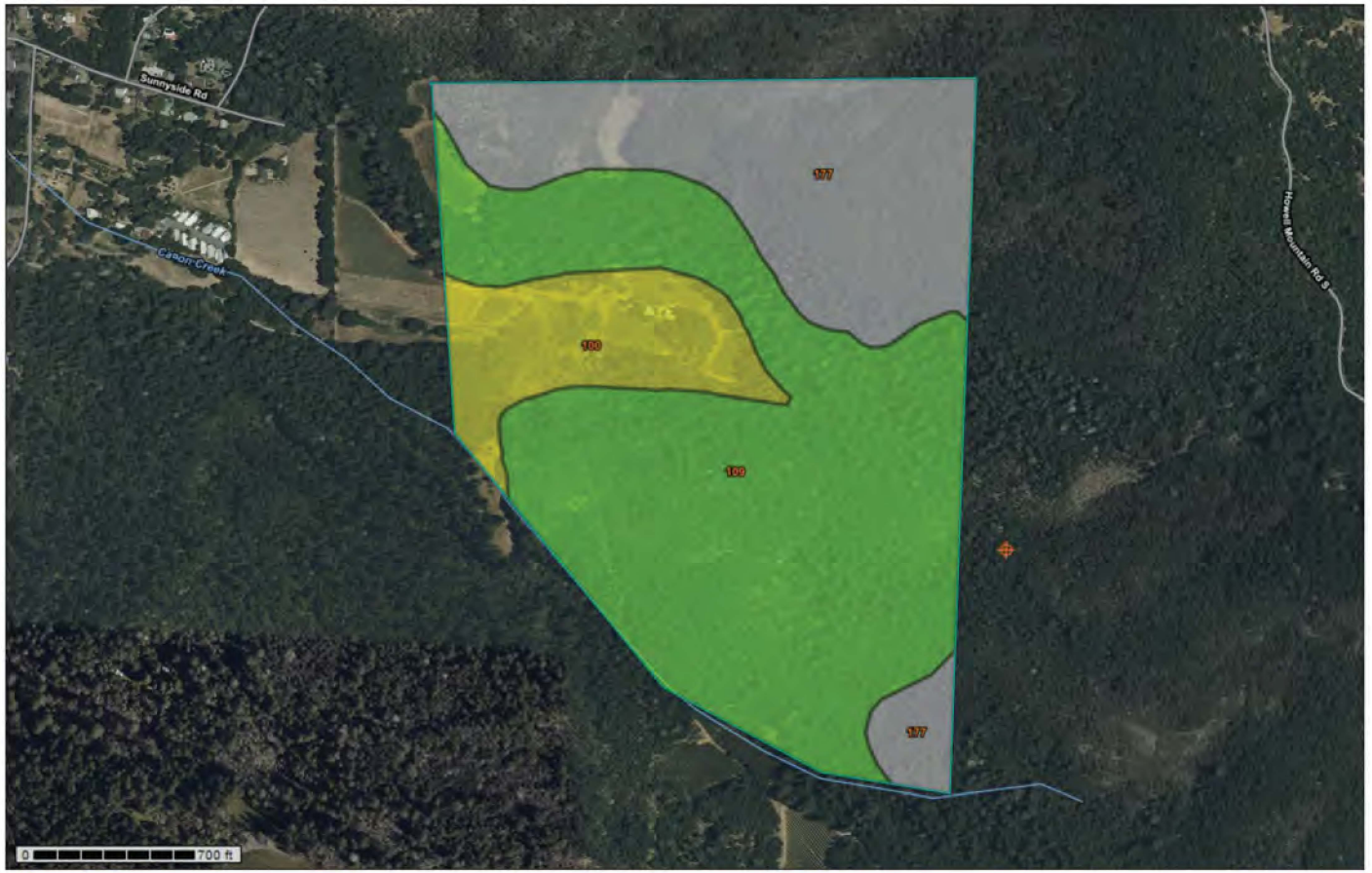
Soil Physical Properties

Soil Qualities and Features

Water Features

Map — T Factor

Scale (not to scale)



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Tables — T Factor — Summary By Map Unit

Summary by Map Unit — Napa County, California (CA055)

Summary by Map Unit — Napa County, California (CA055)

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
100	Aiken loam, 2 to 15 percent slopes	3	16.7	12.5%
109	Boomer gravelly loam, volcanic bedrock, 14 to 60 percent slopes, MLRA 15	4	76.5	57.6%
177	Rock outcrop-Kidd complex, 50 to 75 percent slopes		39.6	29.9%
Totals for Area of Interest			**132.8**	**100.0%**

Description — T Factor

The T factor is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Rating Options — T Factor

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Interpret Nulls as Zero: No

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Properties and Qualities Ratings

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Soil Chemical Properties

Soil Erosion Factors

K Factor, Rock Free

K Factor, Whole Soil

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View Options

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Description of Rating ☑

Rating Options ☑

Detailed Description ☑

Advanced Options

Aggregation Method: Dominant Component

Component Percent Cutoff:

Tie-break Rule: ○ Lower ◉ Higher

Layer Options (Horizon Aggregation Method):
○ Surface Layer (Not applicable)
◉ Depth Range (Weighted Average)
Top Depth: 0
Bottom Depth: 36
◉ Inches ○ Centimeters
○ All Layers (Weighted Average)

View Description | View Rating

T Factor

Wind Erodibility Group

Wind Erodibility Index

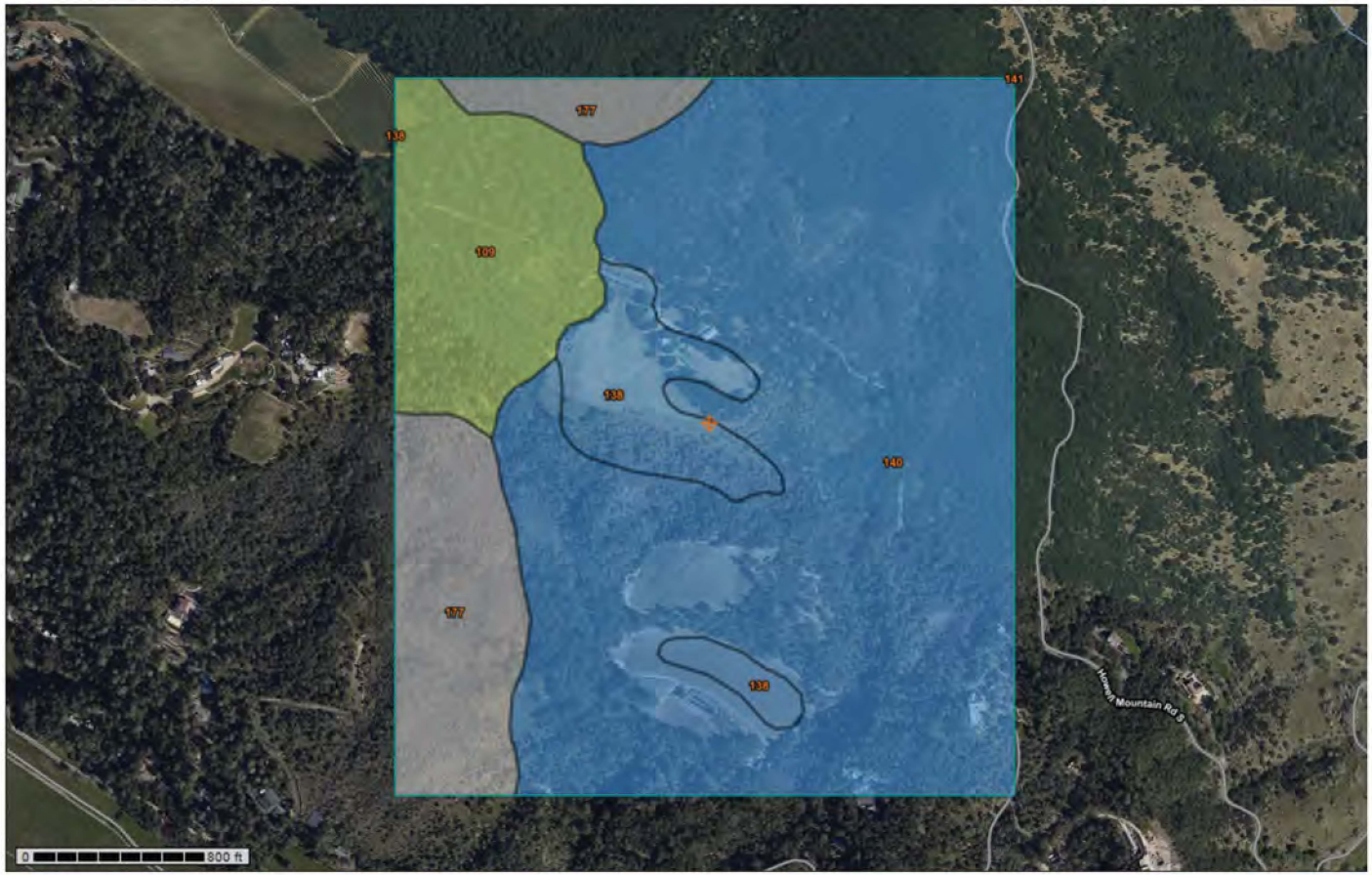
Soil Health Properties

Soil Physical Properties

Soil Qualities and Features

Map — K Factor, Whole Soil

Scale (not to scale)



Warning: Soil Ratings Map may not be valid at this scale.

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Tables — K Factor, Whole Soil — Summary By Map Unit

Summary by Map Unit — Napa County, California (CA055)

Water Features

Summary by Map Unit — Napa County, California (CA055)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
109	Boomer gravelly loam, volcanic bedrock, 14 to 60 percent slopes, MLRA 15	.24	28.6	12.7%
138	Forward silt loam, 3 to 26 percent slopes, MLRA 15	.43	17.2	7.6%
140	Forward silt loam, 12 to 57 percent slopes, MLRA 15	.43	150.5	66.9%
141	Forward-Kidd complex, 11 to 60 percent slopes, MLRA 15	.43	0.0	0.0%
177	Rock outcrop-Kidd complex, 50 to 75 percent slopes		28.8	12.8%
Totals for Area of Interest			**225.0**	**100.0%**

Description — K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Rating Options — K Factor, Whole Soil

Aggregation Method: Dominant Component

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Component" returns the attribute value associated with the component with the highest percent composition in the map unit. If more than one component shares the highest percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher attribute value should be returned in the case of a percent composition tie. The result returned by this aggregation method may or may not represent the dominant condition throughout the map unit.

Component Percent Cutoff: *None Specified*

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

For an attribute of a soil horizon, a depth qualification must be specified. In most cases it is probably most appropriate to specify a fixed depth range, either in centimeters or inches. The Bottom Depth must be greater than the Top Depth, and the Top Depth can be greater than zero. The choice of "inches" or "centimeters" only applies to the depth of soil to be evaluated. It has no influence on the units of measure the data are presented in.

When "Surface Layer" is specified as the depth qualifier, only the surface layer or horizon is considered when deriving a value for a component, but keep in mind that the thickness of the surface layer varies from component to component.

When "All Layers" is specified as the depth qualifier, all layers recorded for a component are considered when deriving the value for that component.

Whenever more than one layer or horizon is considered when deriving a value for a component, and the attribute being aggregated is a numeric attribute, a weighted average value is returned, where the weighting factor is the layer or horizon thickness.

Top Depth: 0

Bottom Depth: 36

Units of Measure: Inches

Search

Properties and Qualities Ratings

Open All | Close All

- Soil Chemical Properties
- **Soil Erosion Factors**
  - K Factor, Rock Free
  - K Factor, Whole Soil
  - T Factor

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff:

Tie-break Rule: ◉ Lower ○ Higher

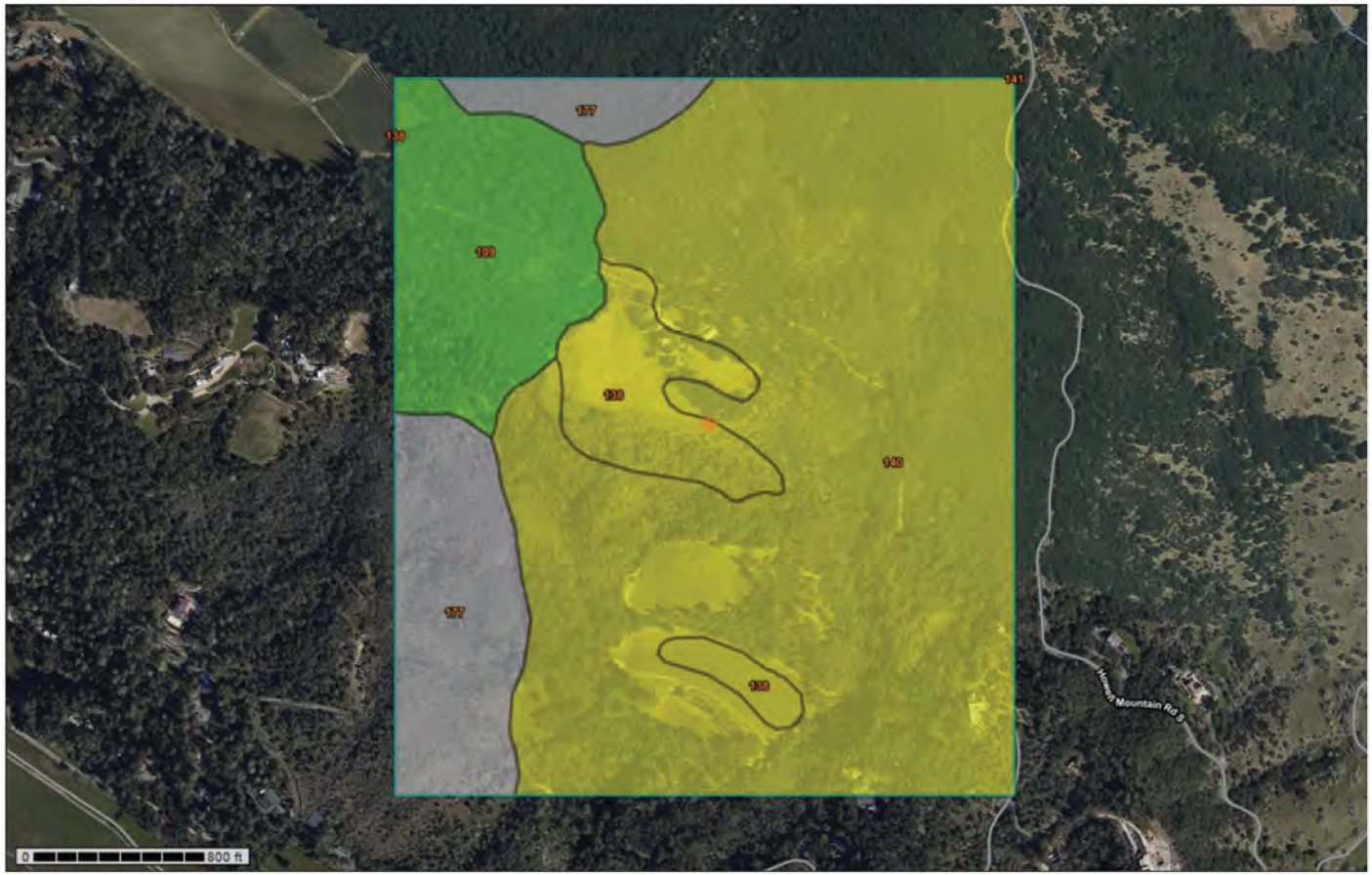
Interpret Nulls as Zero: ○ Yes ◉ No

View Description | View Rating

  - Wind Erodibility Group
  - Wind Erodibility Index
- Soil Health Properties
- Soil Physical Properties
- Soil Qualities and Features
- Water Features

Map — T Factor

Scale (not to scale)



Warning: Soil Ratings Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:24,000. The design of map units and the level of detail shown in the resulting soil map are dependent o that map scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Tables — T Factor — Summary By Map Unit

Summary by Map Unit — Napa County, California (CA055)

Summary by Map Unit — Napa County, California (CA055)

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
109	Boomer gravelly loam, volcanic bedrock, 14 to 60 percent slopes, MLRA 15	4	28.6	12.7%
138	Forward silt loam, 3 to 26 percent slopes, MLRA 15	3	17.2	7.6%
140	Forward silt loam, 12 to 57 percent slopes, MLRA 15	3	150.5	66.9%
141	Forward-Kidd complex, 11 to 60 percent slopes, MLRA 15	3	0.0	0.0%
177	Rock outcrop-Kidd complex, 50 to 75 percent slopes		28.8	12.8%
Totals for Area of Interest			**225.0**	**100.0%**

Description — T Factor

The T factor is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Rating Options — T Factor

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

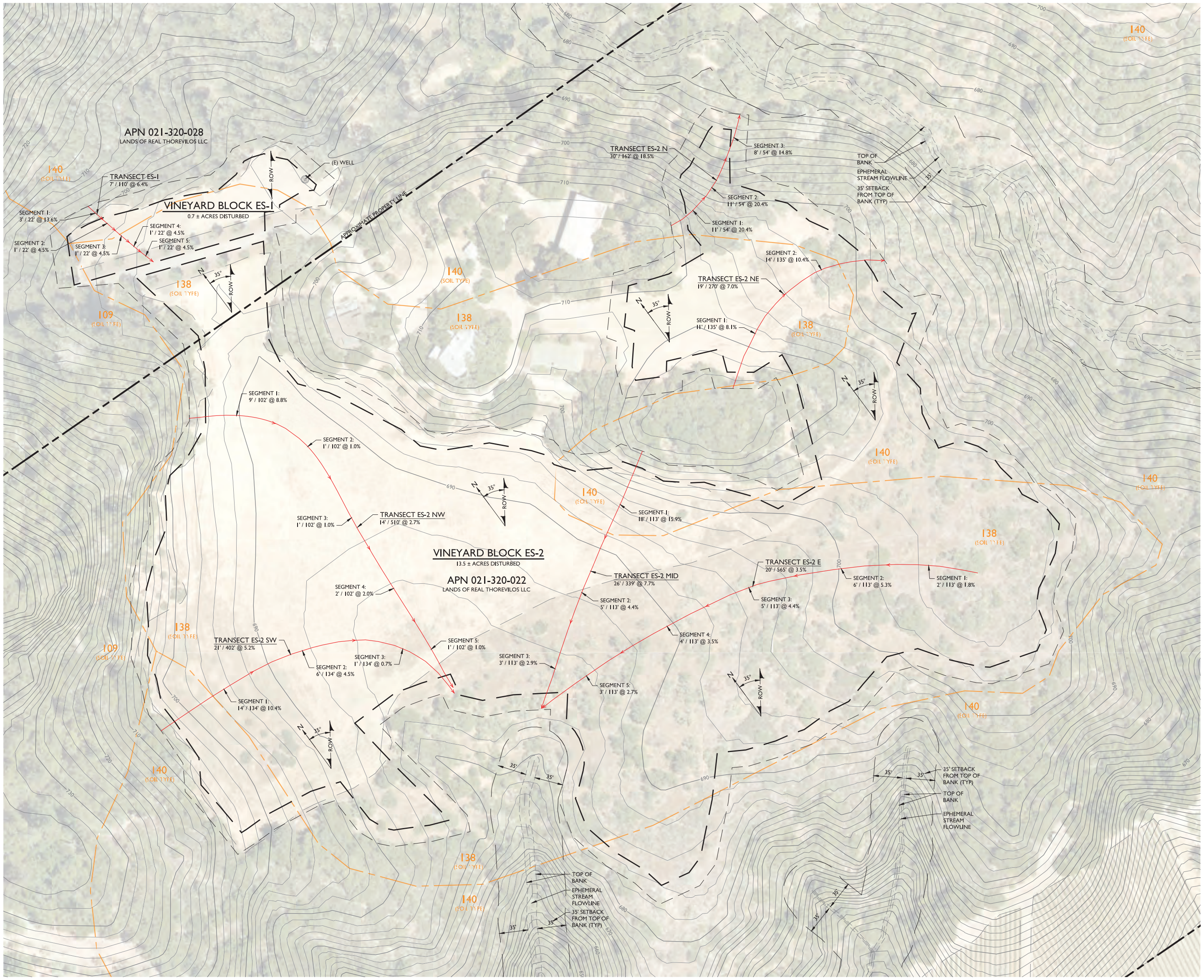
Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Interpret Nulls as Zero: No

REAL THOREVILOS LLC

UNIVERSAL SOIL LOSS EQUATION EXHIBIT



UNIVERSAL SOIL LOSS EQUATION EXHIBIT - BLOCKS ES-1 & ES-2

SCALE: 1" = 60'

PROJECT INFORMATION:

PROPERTY OWNER & APPLICANT:
REAL THOREVILOS LLC
180 MUND ROAD
SAINT HELENA, CA 94574

SITE ADDRESS:
MUND ROAD
SAINT HELENA, CA 94574

ASSESSOR'S PARCEL NUMBERS:
021-320-022, -026 & -028

PARCEL SIZES:
80 ±, 144.21 ± & 70 ± ACRES

ZONING:
AGRICULTURAL WATERSHED (AW)

SHEET INDEX:

SURVEY NOTES:

1. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC FEATURES. TOPOGRAPHIC INFORMATION WAS TAKEN FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATABASE. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR COMPLETENESS OF THE TOPOGRAPHIC INFORMATION.
2. AERIAL PHOTOGRAPHS WERE OBTAINED FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM (GIS) DATABASE, TAKEN APRIL TO JUNE 2018 AND MAY NOT REPRESENT CURRENT CONDITIONS.
3. CONTOUR INTERVAL: TWO (2) FOOT, HIGHLIGHTED EVERY TEN (10) FEET

   BENCHMARK: NAVD 88
4. THE PROPERTY LINES SHOWN ON THESE PLANS DO NOT REPRESENT A BOUNDARY SURVEY. THEY ARE APPROXIMATE AND ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

LEGEND:

- APPROXIMATE PROPERTY LINE
- EPHEMERAL STREAM FLOWLINE
- SOIL TYPE BOUNDARY
- VINEYARD AVENUE / CLEARING LIMITS
- LIMIT OF VINEYARD BLOCK
- USLE TRANSECT / SEGMENTS

SOIL TYPE LEGEND:

109	BOOMER GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES
138	FORWARD GRAVELLY LOAM, 2 TO 9 PERCENT SLOPES
140	FORWARD GRAVELLY LOAM, 30 TO 75 PERCENT SLOPES

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

APPLIED CIVIL ENGINEERING INCORPORATED
2074 West Lincoln Avenue
Napa, CA 94558
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www.appliedcivil.com

REAL THOREVILOS LLC

UNIVERSAL SOIL LOSS EQUATION EXHIBIT

UNIVERSAL SOIL LOSS EQUATION EXHIBIT - BLOCKS ES-1 & ES-2

PREPARED UNDER THE DIRECTION OF:

PRELIMINARY NOT FOR CONSTRUCTION

DRAWN BY: BT DRAFTING

CHECKED BY: MRM

DATE: MARCH 2021

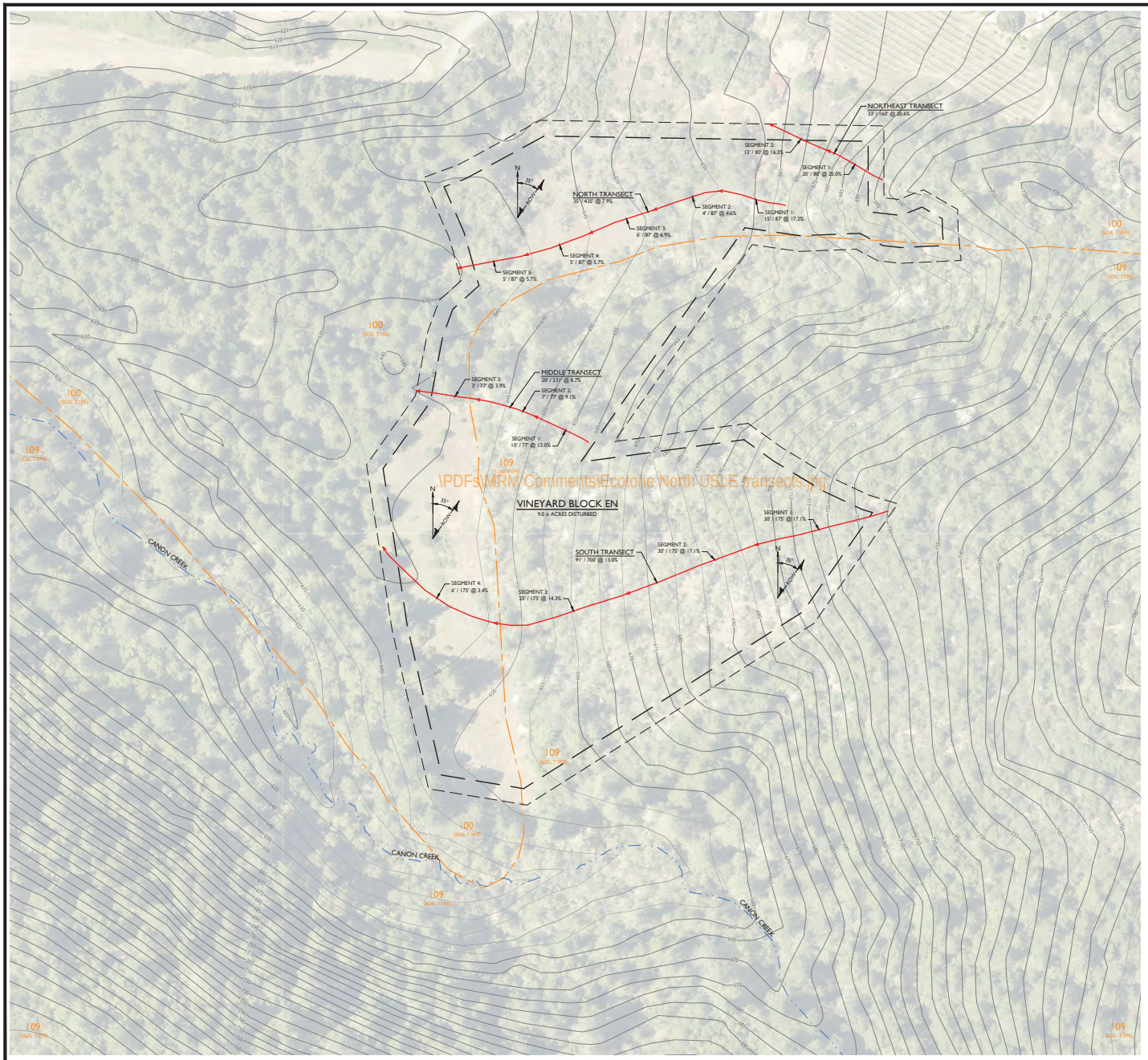
REVISIONS: BY:

JOB NUMBER: 19-133

FILE: 19-133EXH-USLE-ES.DWG

ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: 1 OF 2



UNIVERSAL SOIL LOSS EQUATION EXHIBIT - BLOCK EN

SCALE: 1" = 60'

SCALE: 1" = 60'

0 60' 120'

LEGEND:

- BLUELINE STREAM
- SOIL TYPE BOUNDARY
- VINEYARD AVENUE / CLEARING LIMITS
- LIMIT OF VINEYARD BLOCK
- USLE TRANSECT / SEGMENTS

SOIL TYPE LEGEND:

100	AIKEN LOAM, 2 TO 15 PERCENT SLOPES
109	BOOMER GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES

SOIL TYPE BOUNDARIES SHOWN ON THIS MAP ARE BASED ON THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM DATA AND SHOULD BE CONSIDERED APPROXIMATE.

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REAL THOREVILOS LLC

UNIVERSAL SOIL LOSS EQUATION EXHIBIT
UNIVERSAL SOIL LOSS EQUATION EXHIBIT - BLOCK EN

PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. MCCORMICK
No. C 58231
CIVIL
STATE OF CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

DRAWN BY: BT DRAFTING
CHECKED BY: MRM
DATE: MARCH 2021

REVISIONS:	BY:

JOB NUMBER: 19-133
FILE: 19-133EXH-USLE-EN.DWG
ORIGINAL SIZE: 24" X 36"

SHEET NUMBER: 2 OF 2