“G”

Wastewater Feasibility Study

Hendry Winery, Use Permit Major Modification Application No. P15-00173
Planning Commission Hearing, September 19, 2018

CMP Civil Engineering & Land Surveying
1607 Capell Valley Road
Napa, CA 94558
(707) 815-0988
Cameron@CMPEngineering.com
CMPEngineering.com

Existing Winery Wastewater Flow Calculations

for the

Hendry Winery

Located at:

3104 Redwood Road

Napa, CA 94558

Date: 4/16/2015

Rev 1: 6/21/2017

Rev 2: 11/10/2017

Project # 00067

Legend

Requires Input
Automatically Calculates
Important Value Automatically Calculate
Important Value Requires Input

Hit ctrl + alt + shift + F9 when finished to recalc all formulas

Existing Winery Waste Flow Summary

Below is the estimated existing process and domestic peak wastewater flows for the 59000 gal/yr winery based on the most recent approved use permit.

Winery Existing Process Waste Flow Calculations

Wine Production =	59000	gal/wine/yr
Crush Duration =	60.00	days (30 -60)
Peak Process Waste Flows During Crush =	1475.00	gal/day ((1.5 x production)/crush days)
Average Process Flows (non crush) =	808.22	gal/day ((5 x production)/days in yr)
Additional Process Flow =	0.00	gal/day (usually 0)
Total Design Peak Process Waste Flows =	**1475.00**	gal/day

Existing Domestic Waste Flows

Typical Crush Weekend		
Number of FT Employees =	3	#
Number of PT Employees =	2	#
Number of daily visitors =	20	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	45.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	16.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Winery Dimestic Flow =	**121.00**	**gal/day**
Typical Non Crush Weekend		
Number of FT Employees =	2	#
Number of PT Employees =	1	#
Number of daily visitors =	20	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	30.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	8.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Winery Dimestic Flow =	**98.00**	**gal/day**
Typical Weekday		
Number of FT Employees =	3	#
Number of PT Employees =	1	#
Number of daily visitors =	16	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	45.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	8.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	48.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Winery Dimestic Flow =	**101.00**	gal/day

Total Winery Waste Peak Design Flows =	**1596**	**gal/day**

Combined Existing Winery Waste Annual Volume Calculations

Existing Winery Combined Process & Domestic Waste Volumes

Winery Wasteflow Volumes					
Number of FT Employees =	3	#			
Number of PT Employees =	2	#			
Maximum number of daily visitors =	20	#			
FT employee daily domestic waste flow =	45.00	gal/day (15 g/p)			
PT employee daily domestic waste flow =	16.00	gal/day (8 g/p)			
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)			
Visitor Number of Flow Days =	52.00	gal/day			
Employee Number of Flow Days =	365.00	gal/day			
Total domestic wastewater volume =	25385	gal/year			
Total process wastewater volume =	295000	gal/year			
Combined Process and Domestic Volume =	320385	gal/year			
Special Event Visitor Volumes	visitors	days/yr	flow/day	gallons	
Large Events =	0	0	5	0	
Medium Events =	0	0	5	0	
Small =	30	2	5	300	
Very Small =	0	0	5	0	
Total Annual Event Visitor Waste Volume =	300	gal/year			
Total annual domestic wastewater volume =	**25685**	**gal/yr**	**0.08**	**af**	
Total annual process wastewater volume =	**295000**	**gal/yr**	**0.91**	**af**	
Total Winery Wastewater Annual Vol =	**320685**	**gal/yr**	**0.99**	**af**	

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Proposed Winery Wastewater Flow Calculations

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Proposed Winery Waste Flow Summary

Below are the estimated proposed process and domestic peak wastewater flows from the 59000 gal/yr winery.

Winery Proposed Process Waste Flow Calculations

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Crush Duration =	60.00	days (30 -60)
Peak Process Waste Flows During Crush =	1475.00	gal/day ((1.5 x production)/crush days)
Average Process Flows (non crush) =	808.22	gal/day ((5 x production)/days in yr)
Additional Process Flow =	0.00	gal/day (usually 0)
Total Design Peak Process Waste Flows =	**1475.00**	gal/day

Proposed Domestic Waste Flows

Peak Crush Weekend		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	20	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	60.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Winery Dimestic Flow =	**120.00**	**gal/day**
Peak Non Crush Weekend		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	20	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	60.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Winery Dimestic Flow =	**120.00**	**gal/day**
Peak Weekday		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	20	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	60.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Winery Dimestic Flow =	**120.00**	gal/day
Total Winery Waste Peak Design Flows =	**1595**	**gal/day**

Proposed Combined Winery Waste Annual Volume Calculations

Proposed Winery Combined Process & Domestic Waste Volumes

Peak Crush Domestic Volumes		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	20	#
FT employee daily domestic waste flow =	60.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)
Number of Flow Days =	60.00	gal/day
Total domestic wastewater volume =	7200	gal/year
Total process wastewater volume =	48493	gal/year
Combined Process and Domestic Volume =	55693	gal/year

Peak Non Crush Weekend Domstic Volumes		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	20	#
FT employee daily domestic waste flow =	60.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)
Number of Flow Days =	86.00	gal/day
Total domestic wastewater volume =	10320	gal/year
Total process wastewater volume =	69507	gal/year
Combined Process and Domestic Volume =	79827	gal/year

Peak Weekday Domestic Volumes		
Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	20	#
FT employee daily domestic waste flow =	60.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	60.00	gal/day (3 g/p)
Number of Flow Days =	219.00	gal/day
Total domestic wastewater volume =	26280	gal/year
Total process wastewater volume =	177000	gal/year
Combined Process and Domestic Volume =	203280	gal/year

Special Event Visitor Volumes	visitors	days/yr	flow/day	gallons
Large Events =	150	1	5	750
Medium Events =	50	12	5	3000
Small =	0	0	5	0
Very Small =	0	0	5	0
Total Annual Event Visitor Waste Volume =	3750	gal/year		

Peak annual domestic wastewater volume =	**47550**	**gal/yr**	**0.15**	**af**
Peak annual process wastewater volume =	**295000**	**gal/yr**	**0.91**	**af**
Peak Winery Wastewater Annual Vol =	**342550**	**gal/yr**	**1.06**	**af**

PEGGY

NAPA COUNTY DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
REQUEST FOR SITE EVALUATION INSPECTION

#92-1602

ENVIRONMENTAL HEALTH DEPT. USE ONLY

FEE: #289.00

DATE: 3-17-98

RECEIPT: 4912

BY: RS

PARCEL NUMBER: 35-120-31

JOB ADDRESS: 3104 REDWOOD RD

OWNER: GEORGE HENDRY.

TEST CONDUCTED BY: BOB COVEY

TYPE OF TEST: **FIELD ANALYSIS** ____

To be run on 3/18 at 11:30 am/pm

PERCOLATION TEST X

To be run on 3-18-98 from 10 AM am/pm to 10:30 pm

PURPOSE OF TEST: **HOUSE:** ____ **WINERY:** X **OTHER:** ____

PROJECTED WASTEWATER FLOWS: 1475 **gpd**

****

PERCOLATION TEST INSPECTION RESULTS

Pre-soak checked? yes ____ no ____ Length of pre-soak: ____

Checked by: ____ Date: ____

Rate at time of inspection: ____ Stabilized perc rate: ____

Gravel and Pipe Used? yes ____ no ____ If so, take the perc rate ____ x .6 = ____ in/hr

****

TYPE OF SYSTEM APPROVED

STANDARD SYSTEM

Acceptable soil to: 72" / Assigned perc range: (1-3) / 3-6 / 6-12

Depth of trenches: 30/36 / Rock under pipe: 12/18 / Cover over rock: 12" min (36" trench) / 18" max (36" trench)

Lineal feet of leachline required: 1967/1475 / Plot plan received: 3-18-98 - PCarr

Slope: <5% / Surface drainage problems: may require V-ditch

Additional information: ____

SPECIAL DESIGN SYSTEM DUE TO THE FOLLOWING - Size constraints: ____

Perc rate too slow: ____ /Perc rate too fast: ____ /Steep slope: ____

Insufficient soil depth: ____ /High seasonal groundwater: ____

Acceptable soil for special design: ____ /Other problems: ____

E.H. Specialist Peggy P. Carr **Date** 3-18-98

FIELD ANALYSIS

TEXTURE (In the proposed treuch zone)

CLAY CONTENT

Core Hole	1	2	3	4	5	6
Low (<12)	X	X				
Mod (12-27)						
High (27-40)						
High (>40)						

SAND CONTENT

Core Hole	1	2	3	4	5	6
High (>50)						
Mod (20-50)						
Low (<20)	X	X				

GRAVEL, COBBLE, STONE CONTENT

Core Hole	1	2	3	4	5	6
Very High (>60)						
High(35-60)						
Mod (15-35)						
Low (<15)	X	✓				

* *

STRUCTURE

SOIL DENSITY WHEN PICKED **(Circle whether wet or dry)**

Core Hole	1	2	3	4	5	6
pick sluffs or caves soil in	X	X				
pick bites and soil sluffs						
pick bites/ little or no soil sluffs						

CONSISTENCE **(Circle (w) or d)**

Core Hole	1	2	3	4	5	6
Easy						
Moderate	X	✓				
Hard						

STRUCTURE

Core Hole	1	2	3	4	5	6
Granular						
Blocky	X	X				
Prism						
Platy						
Massive						
Cemented						

MODIFIER CHARACTERISTICS

1) Soil Survey Name: ______

2) Horizon Boundaries: Diffuse ____ Gradual X Abrupt ____

E12F

3) Topography: Concave ____ Convex ____ / Aspect: ____

4) Vegetation: Type grass Condition: good

* *

CORE HOLE RECORD

HOLE #1

		EST. PERC
0 to	~~Cl~~ 38" Clay loam	1-3 →
38" to	72" tighter Clay	1-3 ←
72" to	very tight clay/bedrock	

Roots: 36"
Color: (bright) / dull
Water Table: none
Dug: (easy) / hard / dusty / smear
Acceptable Soil To: 72"

HOLE #2

		EST. PERC
____ to		
____ to	SAME	
____ to	AS #1	

Roots:
Color: bright / dull
Water Table:
Dug: easy / hard / dusty / smear
Acceptable Soil To: 72"

HOLE #3

		EST. PERC
____ to		
____ to		
____ to		

Roots:
Color: bright / dull
Water Table:
Dug: easy / hard / dusty / smear
Acceptable Soil To:

CORE HOLE RECORD

HOLE #4

		EST. PERC
0 to		
____ to		
____ to		

Roots:
Color: bright / dull
Water Table:
Dug: easy / hard / dusty / smear
Acceptable Soil To:

HOLE #5

		EST. PERC
____ to		
____ to		
____ to		

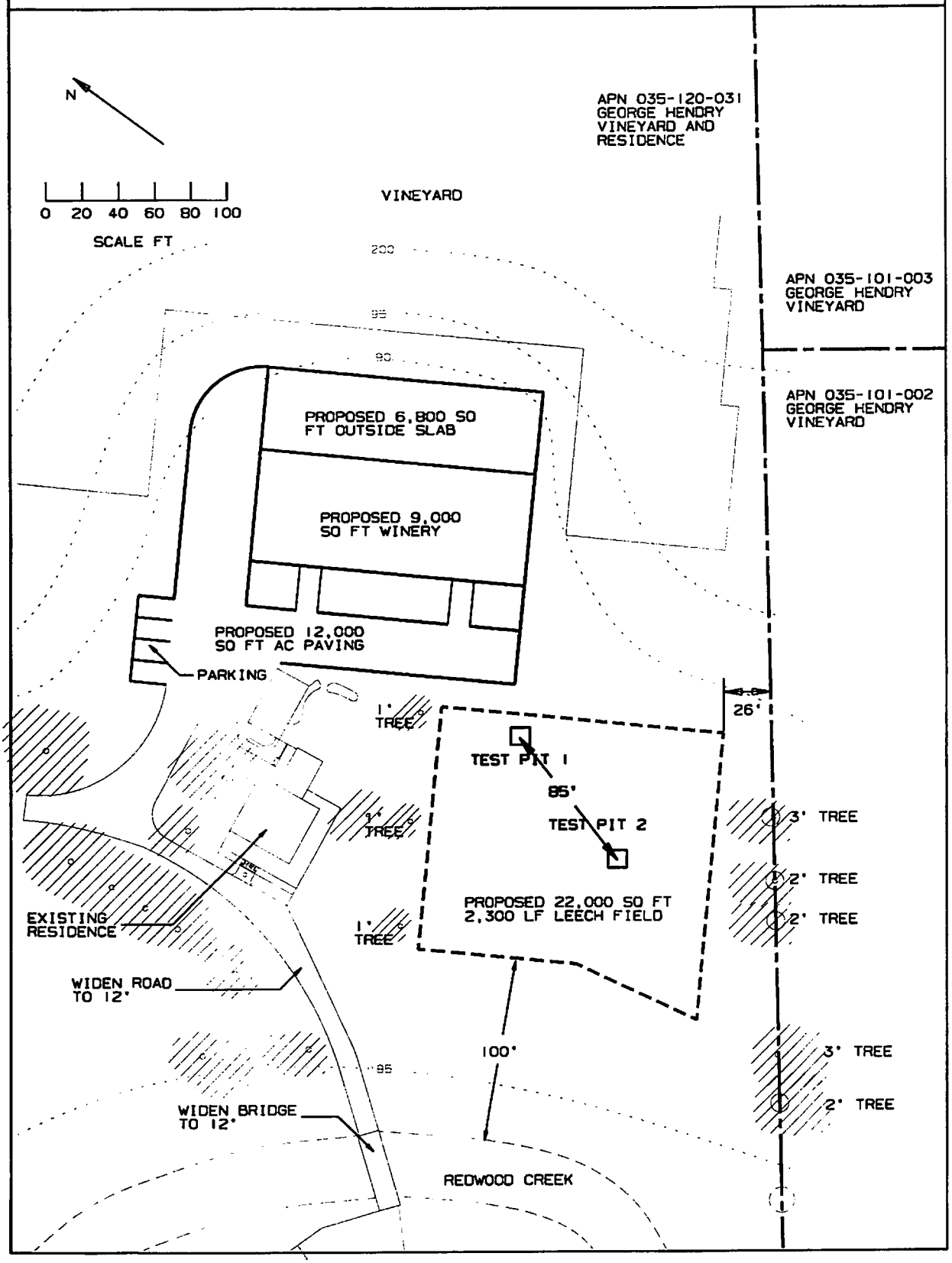
Roots:
Color: bright / dull
Water Table:
Dug: easy / hard / dusty / smear
Acceptable Soil To:

HOLE #6

		EST. PERC
____ to		
____ to		
____ to		

Roots:
Color: bright / dull
Water Table:
Dug: easy / hard / dusty / smear
Acceptable Soil To:

HENDRY RANCH WINERY - GEORGE O. HENDRY
PLOT PLAN B
APN 035-120-031 DATE OF DRAWING 3/18/98



RECEIVED
MAR 19 1998
DEPT. OF
ENVIRONMENTAL MANAGEMENT

Napa County Department of Environmental Management

SITE EVALUATION REPORT

Please attach an 8.5" x 11" plot map showing the locations of all test pits triangulated from permanent landmarks or known property corners. The map must be drawn to scale and include a North arrow, surrounding geographic and topographic features, direction and % slope, distance to drainages, water bodies, potential areas for flooding, unstable landforms, existing or proposed roads, structures, utilities, domestic water supplies, wells, ponds, existing wastewater treatment systems and facilities.

Permit #:
APN: 035-120-031
(County Use Only) Reviewed by: Date:

PLEASE PRINT OR TYPE ALL INFORMATION

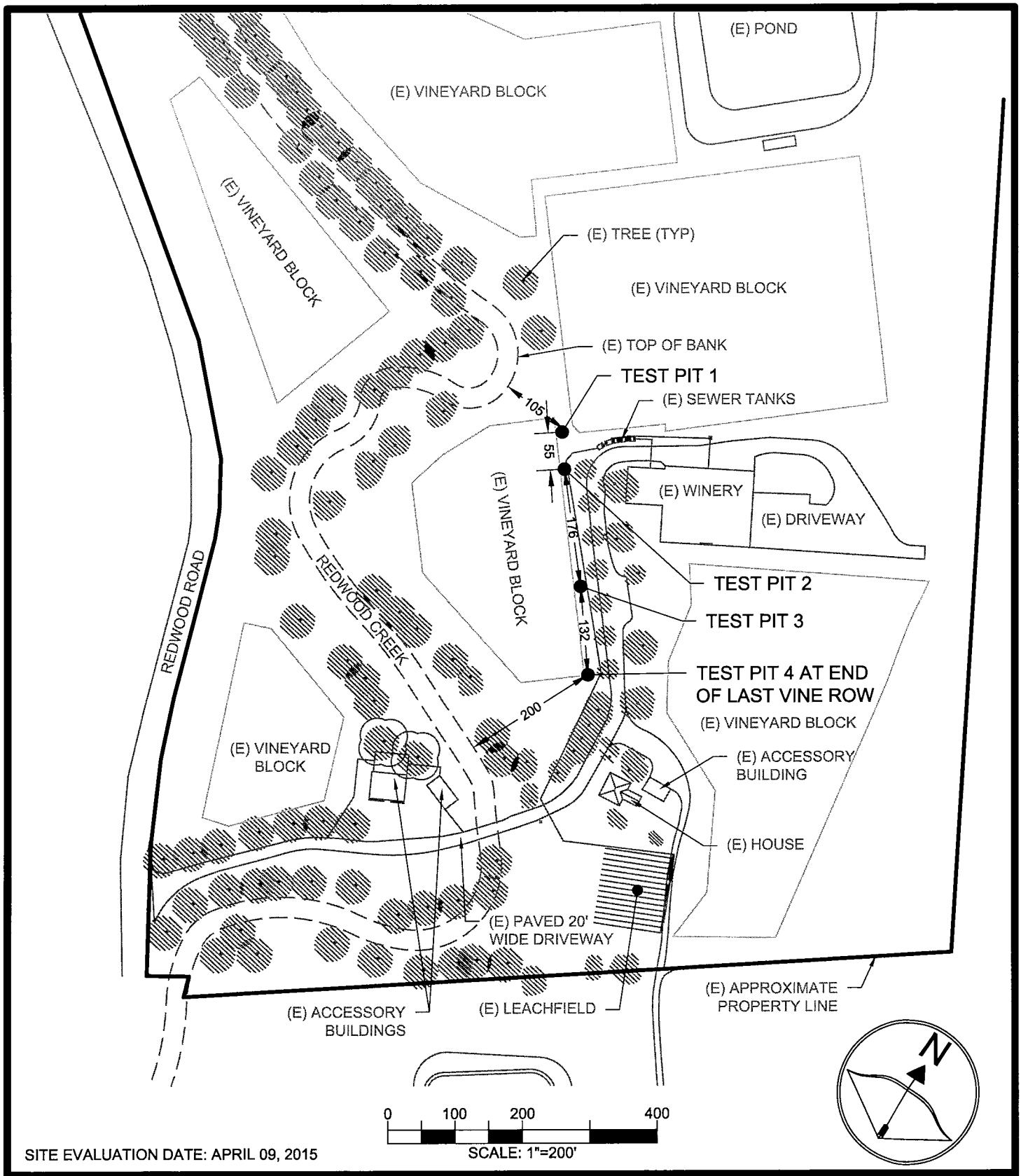
Property Owner Hendry Winery	☐ New Construction ☐ Addition ☐ Remodel ☐ Relocation ■ Other: Winery Domestic Waste
Property Owner Mailing Address SAME AS SITE ADDRESS	☐ Residential - # of Bedrooms: Design Flow :
City State Zip Napa CA 94558	■ Commercial – Type: Sanitary Waste: 270 gpd Process Waste: gpd
Site Address/Location 3104 Redwood Road	☐ Other: Sanitary Waste: gpd Process Waste: gpd

Evaluation Conducted By:

Company Name CMP CIVIL ENGINEERING & LAND SURVEYING	Evaluator's Name Cameron Pridmore	Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist)
Mailing Address: 1607 Capell Valley Road		Telephone Number (707) 815-0988
City State Zip Napa CA 94558		Date Evaluation Conducted April, 9th, 2015

Primary Area	Expansion Area
Acceptable Soil Depth: 66 in. Test pit #'s: 1 & 2	Acceptable Soil Depth: 60 in. Test pit #'s 3 & 4
Soil Application Rate (gal. /sq. ft. /day): 0.33 (with recommended system)	Soil Application Rate (gal. /sq. ft. /day): 0.33 (with recommended system)
System Type(s) Recommended: Infiltrator Chambers	System Type(s) Recommended: Infiltrator Chambers
Slope: < 5% Distance to nearest water source: > 100' ft.	Slope: <5 %. Distance to nearest water source: > 100 ft.
Hydrometer test performed? No ■ Yes ☐ (attach results)	Hydrometer test performed? No ■ Yes ☐ (attach results)
Bulk Density test performed? No ■ Yes ☐ (attach results)	Bulk Density test performed? No ■ Yes ☐ (attach results)
Groundwater Monitoring Performed? No ■ Yes ☐ (attach results)	Groundwater Monitoring Performed? No ■ Yes ☐ (attach results)

Site constraints/Recommendations:



SITE EVALUATION DATE: APRIL 09, 2015

TEST PIT MAP

SHEET: 3 OF 3

PROJECT INFO:

HENDRY WINERY
3104 REDWOOD ROAD
NAPA, CA 94558
APN: 035-120-031

PREPARED BY:

CAMERON PRIDMORE PE, PLS
1607 CAPELL VALLEY ROAD
NAPA, CA 94558
(707) 815-0988

P #: 00067 DATE: 04/20/15

CMP
CIVIL & LAND
ENGINEERING & SURVEYING

Test Pit # 1

PLEASE PRINT OR TYPE ALL INFORMATION

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-66		10	SCL	SG	S	VFRB	SS	MF	MF	NO

Test Pit # 2

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-66		10	SCL	SG	S	VFRB	SS	MF	MF	NO

Test Pit # 3

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-60		10-20	SCL	SG	S	VFRB	SS	CF	MF	NO

Test Pit # 4

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-48	G	25	SCL	SG	S	VFRB	SS	MF	MF	NO
48-60		60	SL	MAB	S	L	NS	FC	FC	NO