

ILLUSTRATIONS



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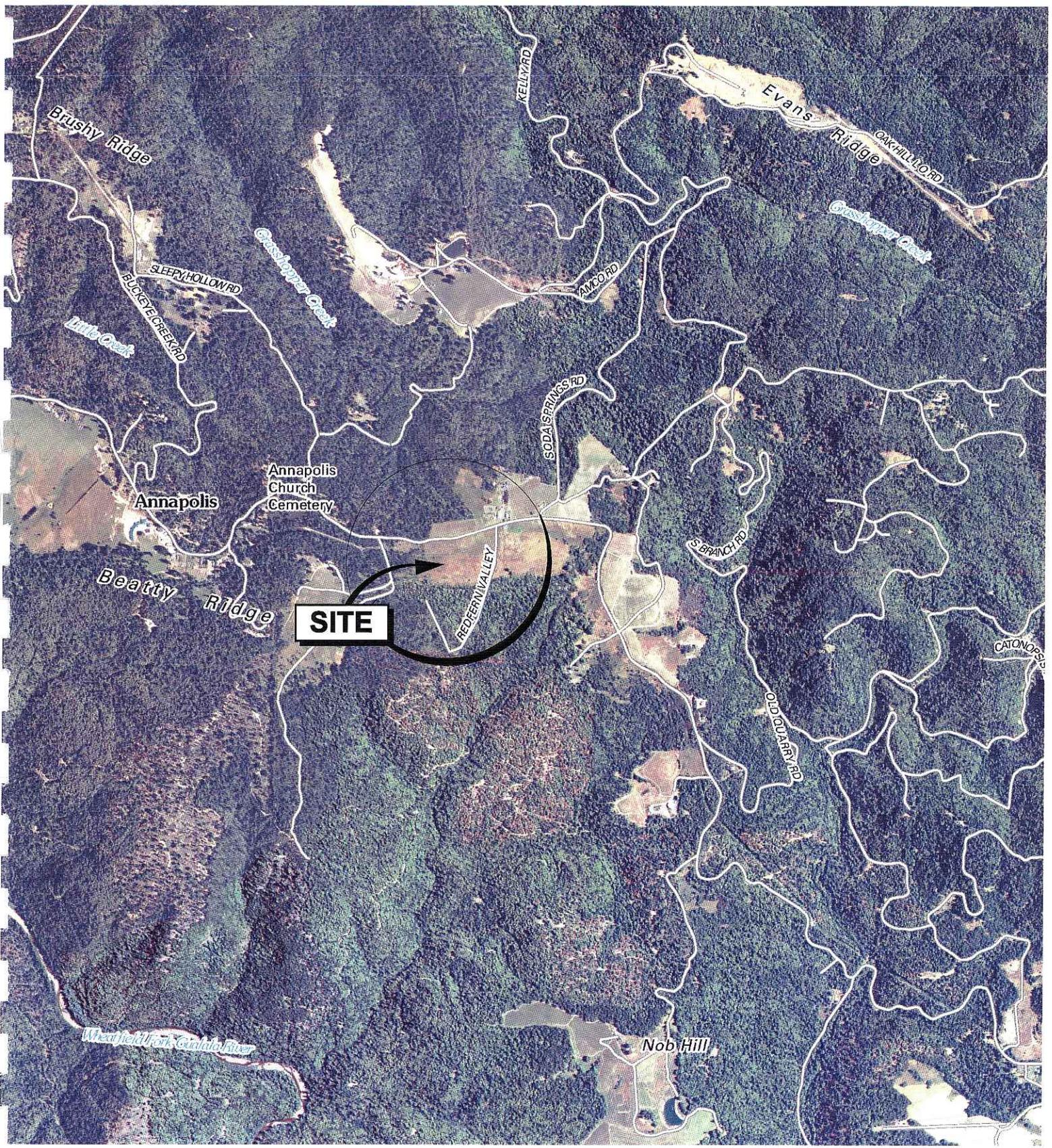
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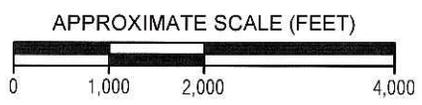
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David Gilbreth
1022 Ross Circle
Napa, CA 94558





REFERENCE:
 Annapolis Quadrangle, 2009,
 7.5 Minute Series, USGS



	<p>BACE Geotechnical a division of Brunsing Associates, Inc. (707) 528-6108</p>	<p>Job No.: 11673.2 Appr.: <i>KAC</i> Date: 10/29/09</p>	<p>VICINITY MAP FAIRFAX VINEYARDS RESERVOIR AND SUMP POND 35147 Annapolis Road Annapolis, California</p>	<p>PLATE 1</p>
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SITE PHOTOGRAPH A

Looking southwest at the planned reservoir area, 10/9/2001.



SITE PHOTOGRAPH B

Looking southeast toward the planned sump area, 10/9/2001.



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(707) 528-6108

Job No.: 11673.2
Appr.: *KAC*
Date: 10/29/09

SITE PHOTOGRAPHS A and B
FAIRFAX VINEYARDS
RESERVOIR AND SUMP POND
35147 Annapolis Road
Annapolis, California

PLATE
3

SITE PHOTOGRAPH C

Looking southeast at the planned sump area, 9/29/2009.



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SITE PHOTOGRAPH C
FAIRFAX VINEYARDS
RESERVOIR AND SUMP POND
35147 Annapolis Road
Annapolis, California

PLATE
4

Log of Test Pit TP- 1

Equipment: CAT Backhoe; 24" bucket
Date: 12/11/01
Logged By: KAC **Elevation:** 811.5 feet *

Laboratory Tests

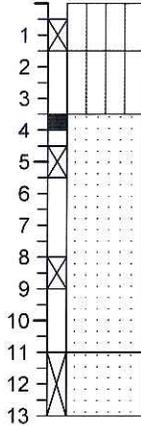
Moisture Content (%)
 Dry Density (pcf)

20.0 103

24% Passing #200

39% Passing #200
98% Passing #4

Depth (ft.)
Sample



1 BROWN SANDY SILT (ML)
 soft to medium stiff, moist to wet
 2 OLIVE TO ORANGE-BROWN CLAYEY SILT (ML)
 medium stiff, wet
 3
 4 OLIVE TO ORANGE-BROWN SILTY SANDSTONE
 occasional fracturing, friable, little weathering, saturated
 5
 6
 7
 8
 9
 10
 11 ORANGE TO OLIVE SILTY SANDSTONE
 occasional fracturing, low hardness, little weathering, saturated
 12
 13

NOTES:
 (1) Minor Caving at 2 feet
 (2) Moderate Seepage at 2 feet

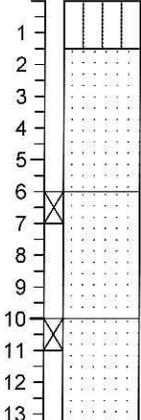
Log of Test Pit TP- 2

Equipment: CAT Backhoe; 24" bucket
Date: 12/11/01
Logged By: KAC **Elevation:** 802.0 feet *

Laboratory Tests

39% Passing #200
99% Passing #4

Depth (ft.)
Sample



1 BROWN SANDY SILT (ML)
 soft, wet
 2 OLIVE TO ORANGE-BROWN SILTY SANDSTONE
 occasional fracturing, soft to friable, moderate weathering, saturated
 3
 4
 5
 6
 7 ORANGE TO OLIVE SILTY SANDSTONE
 occasional fracturing, friable, little weathering, saturated
 8
 9
 10 BLUE-GRAY SILTY SANDSTONE
 occasional fracturing, low hardness, little weathering, saturated
 11
 12
 13

NOTES:
 (1) Minor Caving at 2 feet
 (2) Moderate Seepage at 2 feet

* Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

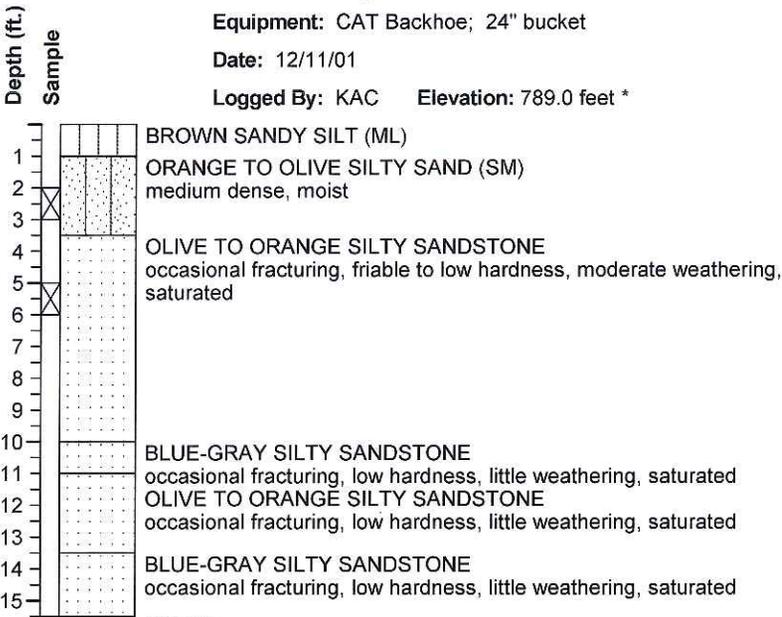
	BACE GEOTECHNICAL a division of Brunsing Associates, Inc. (707) 528-6108	Job No.: 11673.2 Appr.: <i>KAC</i> Date: 10/29/09	LOGS OF TEST PITS TP- 1 AND TP- 2 FAIRFAX VINEYARDS RESERVOIR AND SUMP POND 35147 Annapolis Road Annapolis, California	PLATE 5
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Log of Test Pit TP- 3

Equipment: CAT Backhoe; 24" bucket
 Date: 12/11/01
 Logged By: KAC Elevation: 789.0 feet *

Laboratory Tests

24% Passing #200



NOTES:
 (1) No Caving
 (2) Moderate Seepage at 3.5 feet

Log of Test Pit TP- 4

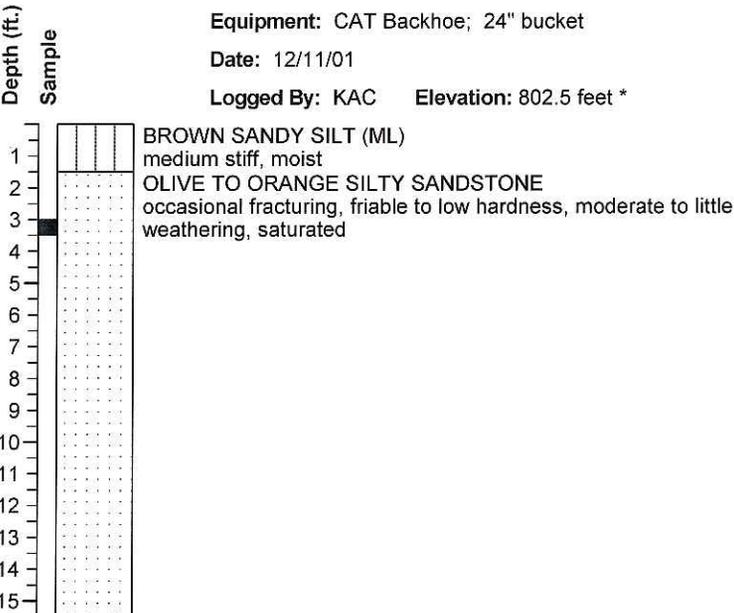
Equipment: CAT Backhoe; 24" bucket
 Date: 12/11/01
 Logged By: KAC Elevation: 802.5 feet *

Laboratory Tests

37% Passing #200

Moisture Content (%)
 Dry Density (pcf)

24.1 98



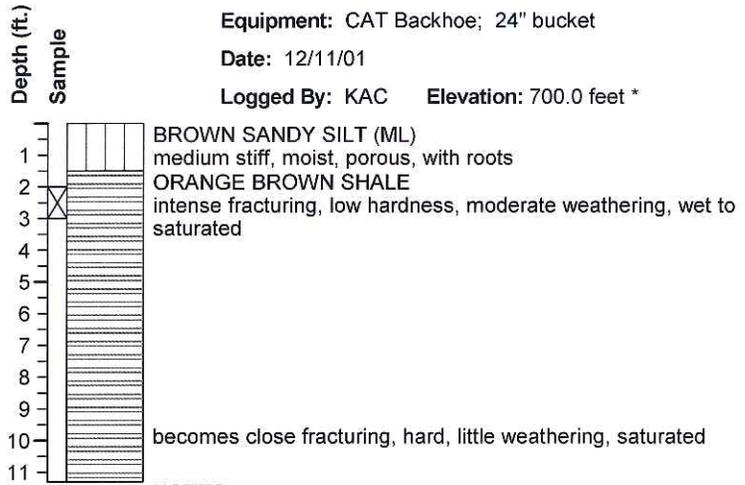
NOTES:
 (1) No Caving
 (2) Minor seepage at 2 feet

* Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

	BACE GEOTECHNICAL a division of Brunsing Associates, Inc. (707) 528-6108	Job No.: 11673.2 Appr.: <i>KAC</i> Date: 10/29/09	LOGS OF TEST PITS TP- 3 AND TP- 4 FAIRFAX VINEYARDS RESERVOIR AND SUMP POND 35147 Annapolis Road Annapolis, California	PLATE 6
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Log of Test Pit TP- 5

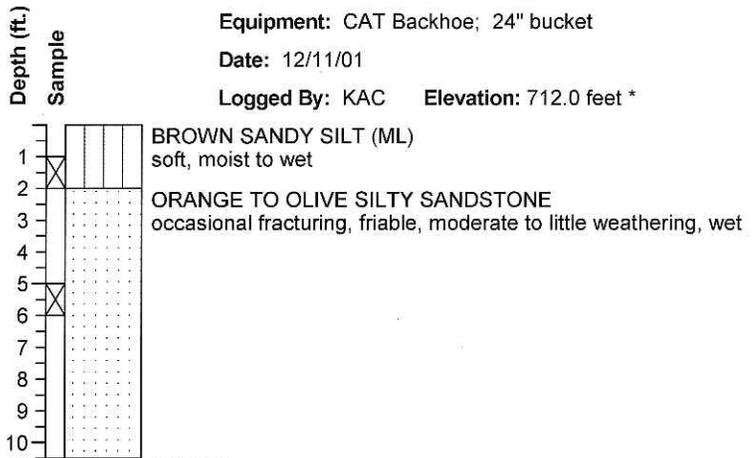
Equipment: CAT Backhoe; 24" bucket
 Date: 12/11/01
 Logged By: KAC Elevation: 700.0 feet *



NOTES:
 (1) No Caving
 (2) Moderate Seepage at 3 feet
 (3) Practical Backhoe Refusal at 11.3 feet

Log of Test Pit TP- 6

Equipment: CAT Backhoe; 24" bucket
 Date: 12/11/01
 Logged By: KAC Elevation: 712.0 feet *



NOTES:
 (1) No Caving
 (2) No Free Water Encountered

Laboratory Tests

27% Passing #200

* Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

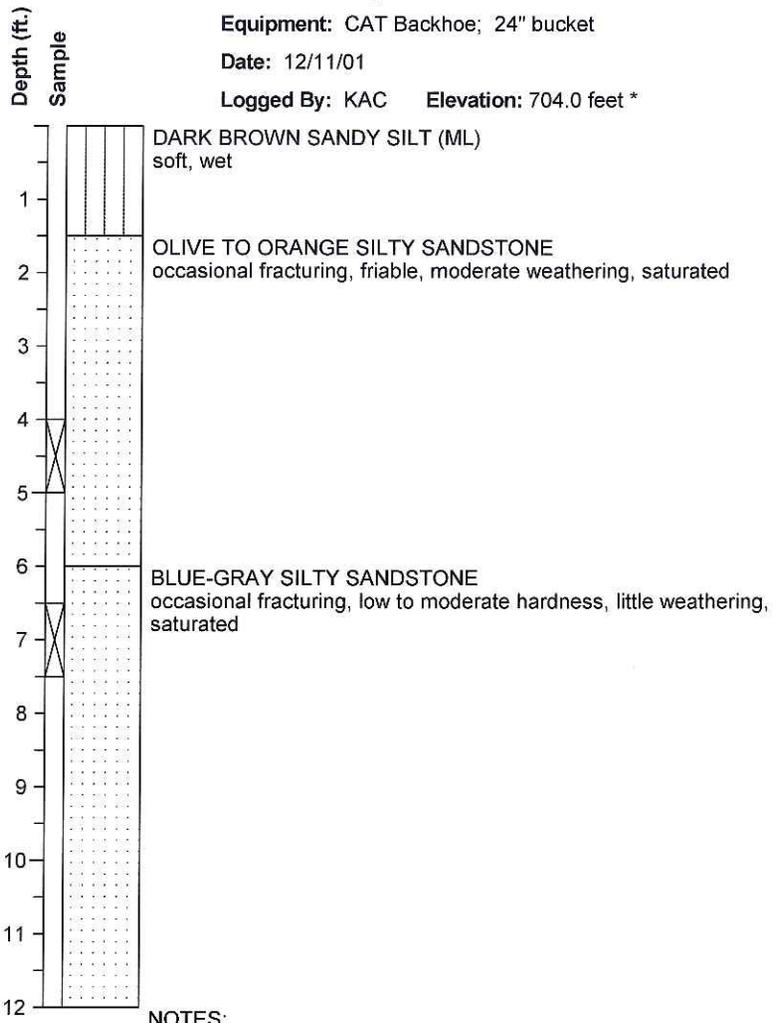
	BACE GEOTECHNICAL a division of Brunsing Associates, Inc. (707) 528-6108	Job No.: 11673.2 Appr.: <i>KAC</i> Date: 10/29/09	LOGS OF TEST PITS TP- 5 AND TP- 6 FAIRFAX VINEYARDS RESERVOIR AND SUMP POND 35147 Annapolis Road Annapolis, California	PLATE 7
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Log of Test Pit TP- 7

Equipment: CAT Backhoe; 24" bucket
Date: 12/11/01
Logged By: KAC **Elevation:** 704.0 feet *

Laboratory Tests

20% Passing #200



NOTES:
 (1) No Caving
 (2) Moderate Seepage at 2 feet

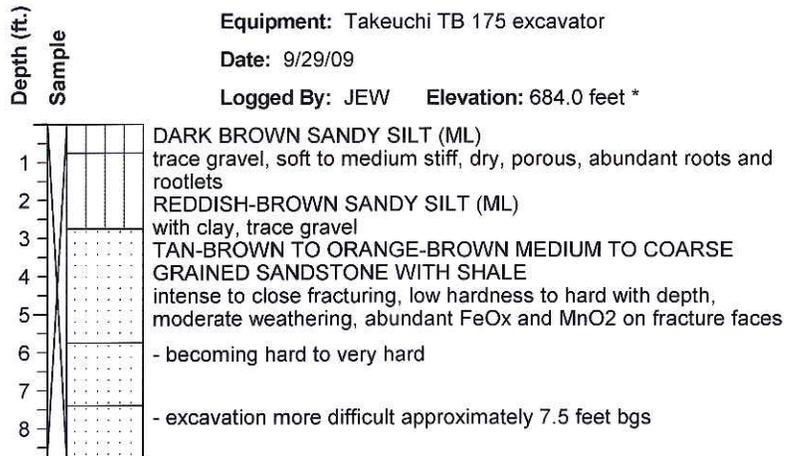
* Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

	BACE GEOTECHNICAL a division of Brunsing Associates, Inc. (707) 528-6108	Job No.: 11673.2 Appr.: <i>KAC</i> Date: 10/29/09	LOG OF TEST PIT TP- 7 FAIRFAX VINEYARDS RESERVOIR AND SUMP POND 35147 Annapolis Road Annapolis, California	PLATE 8
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Pocket Penetrometer (psf)
5000

Log of Test Pit TP- 8

Equipment: Takeuchi TB 175 excavator
Date: 9/29/09
Logged By: JEW Elevation: 684.0 feet *



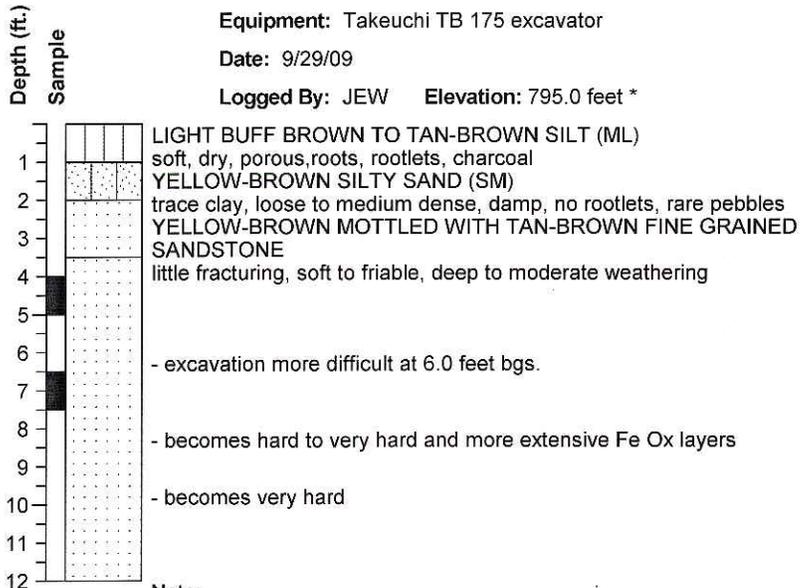
Note:
1. No free water encountered
2. No caving.

Pocket Penetrometer (psf)
5000
6000
7000
8000
8000
7000
5000

8000

Log of Test Pit TP- 9

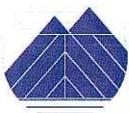
Equipment: Takeuchi TB 175 excavator
Date: 9/29/09
Logged By: JEW Elevation: 795.0 feet *



Note:
1. No free water encountered
2. No caving.

* Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

Scale: 1" = 5'



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Date: 10/29/09

LOGS OF TEST PITS TP- 8 AND TP- 9

FAIRFAX VINEYARDS
RESERVOIR AND SUMP POND
35147 Annapolis Road
Annapolis, California

PLATE

9

Log of Test Pit TP-10

Equipment: Takeuchi TB 175 excavator

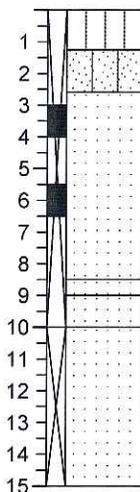
Date: 9/29/09

Logged By: JEW **Elevation:** 783.0 feet *

Laboratory Tests

	Pocket Penetrometer (psf)	Moisture Content (%)	Dry Density (pcf)
	2000		
	4000		
	7000		
Tx 1154 (864)	8000	24.7	98
	7500		

Depth (ft.)
Sample



GRAY-BROWN SANDY SILT (ML)
soft to medium stiff with depth, dry, porous, rootlets

YELLOW-BROWN-BUFF-BROWN SILTY SAND (SM)
loose to medium dense, dry to damp with depth, no rootlets

MOTTLED BUFF-BROWN-YELLOW-ORANGE-BROWN FINE GRAINED SANDSTONE
little fracturing, soft to low hardness, deep to moderate weathering

- becomes moderately hard at 7 to 8 feet

DARK GREEN-GRAY FINE TO MEDIUM GRAINED SANDSTONE
little fracturing, moderate hardness, moderate weathering, slight organic odor

- color change to ORANGE-BROWN from 9-10 feet bgs. then, back to DARK GREEN-GRAY SANDSTONE, little fracturing, hard, moderate to little weathering, slight organic odor, damp

- becomes hard to very hard with depth

Note:
1. No free water encountered
2. No caving.

Log of Test Pit TP-11

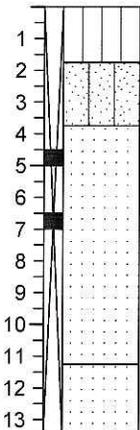
Equipment: Takeuchi TB 175 excavator

Date: 9/29/09

Logged By: JEW **Elevation:** 807.0 feet *

Pocket Penetrometer (psf)
4000
6000
8000
8000
7000
7000
8000
9000

Depth (ft.)
Sample



GRAY-BROWN SANDY SILT (ML)
soft, dry, porous, roots, rootlets, charcoal

MOTTLED BUFF-BROWN AND YELLOW-BROWN TO ORANGE-BROWN SILTY SAND (SM)
medium dense

MOTTLED BUFF-BROWN AND YELLOW-BROWN TO ORANGE-BROWN FINE TO MEDIUM GRAINED SANDSTONE
little fracturing, soft and friable, deep to moderate weathering

- becomes moderately hard at 7.5 feet bgs

becomes hard at 10.0 bgs.

DARK GRAY-GREEN FINE TO MEDIUM GRAINED SANDSTONE
little fracturing, hard, moderate to little weathering, damp

Note:
1. No free water encountered
2. No caving.
3. Test Pit excavation terminated at 13.5 feet bgs.

* Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

Scale: 1" = 6'



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Date: 10/29/09

LOGS OF TEST PITS TP-10 AND TP-11

FAIRFAX VINEYARDS
RESERVOIR AND SUMP POND
35147 Annapolis Road
Annapolis, California

PLATE

10

Log of Test Pit TP-12

Equipment: Takeuchi TB 175 excavator

Date: 9/29/09

Logged By: JEW **Elevation:** 812.0 feet *

Laboratory Tests

Pocket Penetrometer (psf)
4000
5000

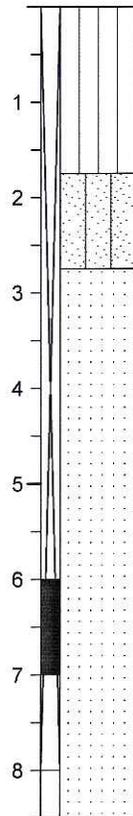
Moisture Content (%)

Dry Density (pcf)

Tx 3267 (864)

20.2 98

Depth (ft.)
Sample



DARK GRAY-BROWN SANDY SILT (ML)
trace gravel, soft, dry, porous, abundant roots and rootlets

MOTTLED BUFF-BROWN TO ORANGE-BROWN SILTY SAND (SM)
medium dense to dense with depth, dry to damp, no roots/rootlets

MOTTLED BUFF-BROWN TO ORANGE-BROWN FINE TO MEDIUM GRAINED SANDSTONE
little fracturing, hard to very hard with depth
- excavation very difficult beginning at 3.5 feet bgs.

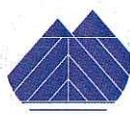
- Fe Ox layer at 4.25 feet bgs.

- same as above, becoming harder

- Note:**
1. No free water encountered.
 2. No caving.
 3. Practical excavator refusal at about 8.5 feet.

* Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

Scale: 1" = 2'



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Date: 10/29/09

LOG OF TEST PIT TP-12

FAIRFAX VINEYARDS
RESERVOIR AND SUMP POND
35147 Annapolis Road
Annapolis, California

PLATE

11

Log of Boring B-1

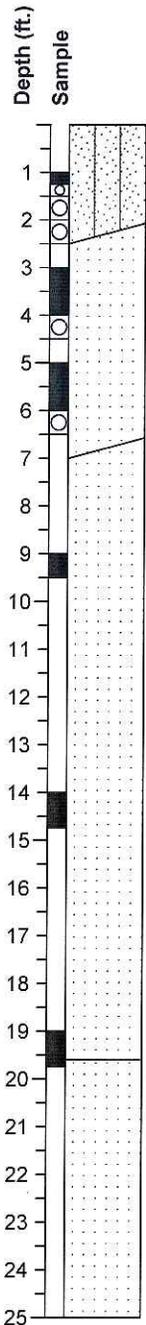
Equipment: Mobile B-40; 4-inch flight auger

Date: 1/14/02

Logged By: KAC Elevation: 812 feet ***

Laboratory Tests

	Moisture Content (%)	Dry Density (pcf)	Blows/foot**
			6
Tx 1770 (432)	22.4	103	28
37% Passing #200	21.9	103	38
			51/7"
Tx 2007 (1728)	25.4	97	60/8"
29% Passing #200	25.7	97	54/8"



BROWN-OLIVE SILTY SAND (SM)
loose, wet

LIGHT OLIVE SILTY SANDSTONE
occasional fracturing, low to moderate hardness, moderate weathering, saturated

ORANGE TO OLIVE SILTY SANDSTONE
occasional fracturing, moderate hardness, little weathering, saturated

becoming more olive in color at about 14 feet

GRAY SILTY SANDSTONE
occasional fracturing, moderate hardness, little weathering, saturated

NOTES:
 (1) Ground water encountered at about 6 feet, measured at 3 feet 2 hours later.
 (2) No Caving

** Equivalent "Standard Penetration" Blow Counts.

*** Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

Scale: 1" = 4'

	<p>BACE GEOTECHNICAL a division of Brunsing Associates, Inc. (707) 528-6108</p>	<p>Job No.: 11673.2 Appr.: <i>KAC</i> Date: 10/29/09</p>	<p>LOG OF BORING B-1 FAIRFAX VINEYARDS RESERVOIR AND SUMP POND 35147 Annapolis Road Annapolis, California</p>	<p>PLATE 12</p>
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Log of Boring B-2

Equipment: Mobile B-40; 4-inch flight auger

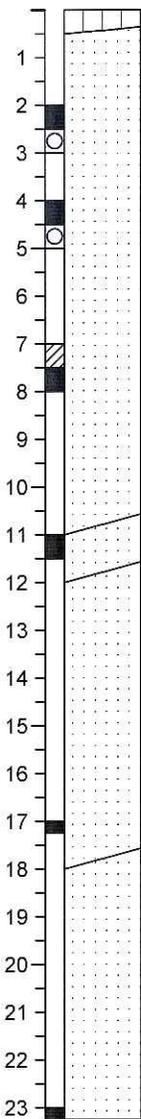
Date: 1/14/02

Logged By: KAC Elevation: 806 feet ***

Laboratory Tests

	Moisture Content (%)	Dry Density (pcf)	Blows/foot**
	19.1	105	33
			52
	21.5	108	59
Tx 3740 (1296)	26.2	98	48/7"
			32/2"
	20.4	106	48/3"

Depth (ft.)
Sample



BROWN SANDY SILT (ML)
medium stiff, wet
ORANGE TO OLIVE SILTY SANDSTONE
occasional fracturing, friable to low hardness, moderate weathering,
wet to saturated

ORANGE SILTY SANDSTONE
occasional fracturing, moderate hardness, little weathering,
saturated
OLIVE SILTY SANDSTONE
occasional fracturing, moderate hardness, little weathering,
saturated

GRAY SILTY SANDSTONE
occasional fracturing, moderate hardness, little weathering,
saturated

NOTES:
(1) No Caving
(2) No Ground Water Encountered

** Equivalent "Standard Penetration" Blow Counts.
*** Elevations Interpolated from Contours on Vineyard View by Erickson Engineering Inc., dated 02.03.2009.

Scale: 1" = 4'

 <p>BACE GEOTECHNICAL a division of Brunsing Associates, Inc. (707) 528-6108</p>	<p>Job No.: 11673.2 Appr.: <i>KAC</i> Date: 10/29/09</p>	<p>LOG OF BORING B-2 FAIRFAX VINEYARDS RESERVOIR AND SUMP POND 35147 Annapolis Road Annapolis, California</p>	<p>PLATE 13</p>
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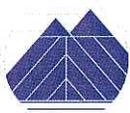
**UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)
ASTM D 2487**

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS	
			GRAPH	LETTER		
COARSE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS AND GRAVELLY SOILS CLEAN GRAVELS (Less than 5% fines)			GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
				GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
	SAND AND SANDY SOILS 50% OR MORE OF COARSE FRACTION PASSING THROUGH NO. 4 SIEVE	CLEAN SANDS (Less than 5% fines)			SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (Greater than 12% fines)			SM	SILTY SANDS, SAND-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-CLAY MIXTURES
					ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
						CL
SILTS AND CLAYS LIQUID LIMIT LESS THAN 50			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY		
			MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS		
			CH	INORGANIC CLAYS OF HIGH PLASTICITY		
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS		
HIGHLY ORGANIC SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE				PT	PEAT, HUMOUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

KEY TO TEST DATA

Consol - Consolidation	Shear Strength, psf	Confining Pressure, psf
LL - Liquid Limit	Tx 320 (2600) - Unconsolidated Undrained Triaxial	
PI - Plasticity Index	TxCU 320 (2600) - Consolidated Undrained Triaxial	
EI - Expansion Index	DS 2750 (2600) - Consolidated Drained Direct Shear	
SA - Sieve Analysis	FVS 470 - Field Vane Shear	
<input type="checkbox"/> Sample Retained	UC 2000 - Unconfined Compression	
<input checked="" type="checkbox"/> Sample Recovered, Not Retained	PP 2000 - Field Pocket Penetrometer	
<input checked="" type="checkbox"/> Bulk Sample	Sat - Sample saturated prior to test	
<input type="checkbox"/> Sample Not Recovered		



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SOIL CLASSIFICATION CHART & KEY TO TEST DATA

FAIRFAX VINEYARDS
RESERVOIR AND SUMP POND
35147 Annapolis Road
Annapolis, California

PLATE

14

RELATIVE DENSITY OF COARSE-GRAINED SOILS

Relative Density

**Standard Penetration Test Blow Count
(blows per foot)**

Very loose	4 or less
Loose	5 to 10
Medium dense	11 to 30
Dense	31 to 50
Very dense	More than 50

CONSISTENCY OF FINE-GRAINED SOILS

Consistency

Identification Procedure

**Approximate Shear
Strength (psf)**

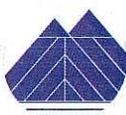
Very soft	Easily penetrated several inches with fist	Less than 250
Soft	Easily penetrated several inches with thumb	250 to 500
Medium stiff	Penetrated several inches by thumb with moderate effort	500 to 1000
Stiff	Readily indented by thumb, but penetrated only with great effort	1000 to 2000
Very stiff	Readily indented by thumb nail	2000 to 4000
Hard	indented with difficulty by thumb nail	More than 4000

NATURAL MOISTURE CONTENT

Dry	No noticeable moisture content. Requires considerable moisture to obtain optimum moisture content* for compaction.
Damp	Contains some moisture, but is on the dry side of optimum.
Moist	Near optimum moisture content for compaction.
Wet	Requires drying to obtain optimum moisture content for compaction.
Saturated	Near or below the water table, from capillarity, or from perched or ponded water. All void spaces filled with water.

* Optimum moisture content as determined in accordance with ASTM Test Method D1557, latest edition.

Where laboratory test data are not available, the above field classifications provide a general indication of material properties; the classifications may require modification based upon laboratory tests.



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SOIL DESCRIPTIVE PROPERTIES

FAIRFAX VINEYARDS
RESERVOIR AND SUMP POND
35147 Annapolis Road
Annapolis, California

PLATE

15