# GEOLOGIC MAP OF THE TREFETHEN HILLSPRING, DARMS LANE AND SHIFFLETT ESTATE VINEYARDS NAPA COUNTY, CALIFORNIA

**2013**

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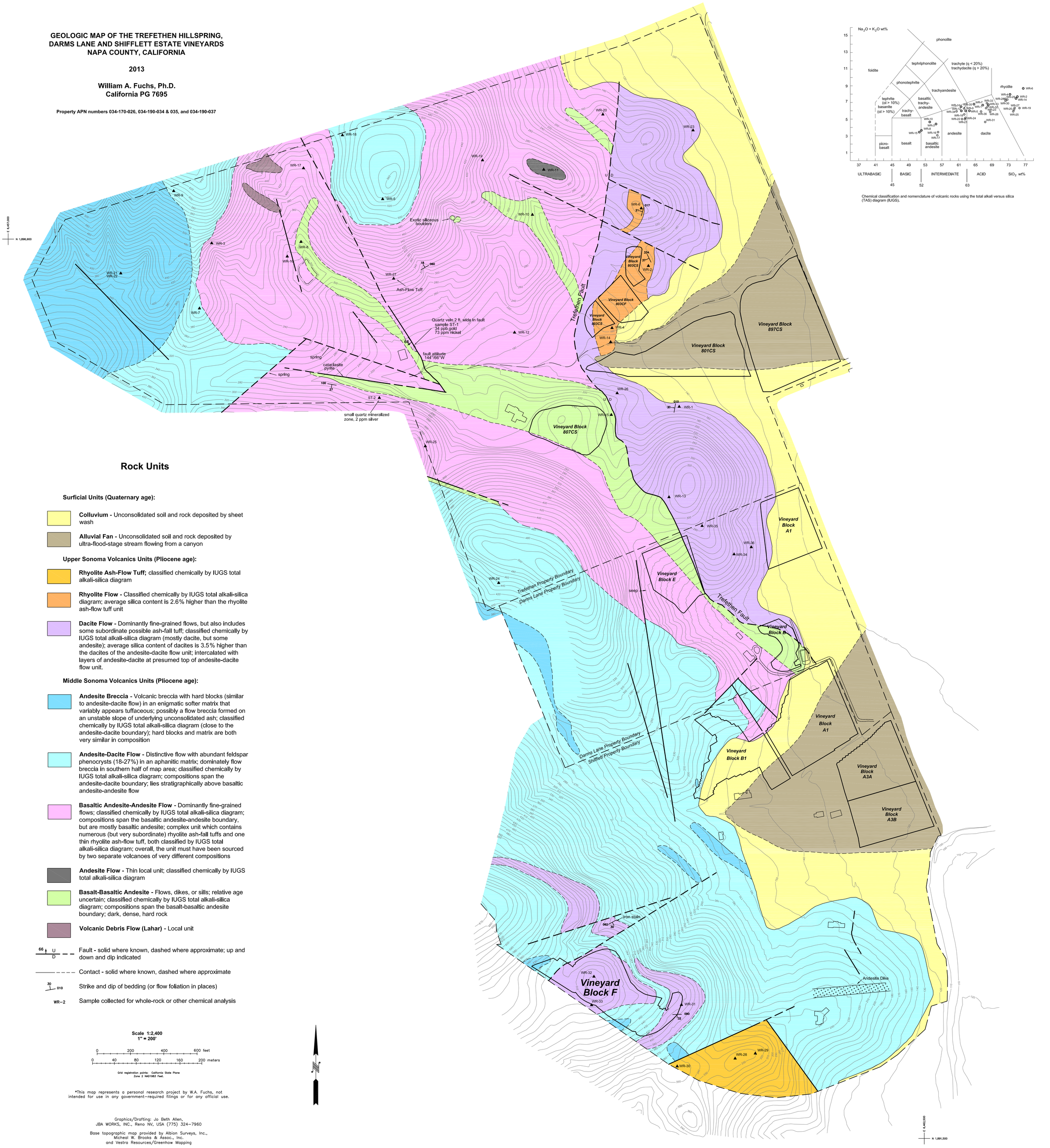
**California PG 7695**

**Property APN numbers 034-170-026, 034-190-034 & 035, and 034-190-037**







Chemical classification and nomenclature of volcanic rocks using the total alkali versus silica (TAS) diagram (IUGS).

## Rock Units

**Surficial Units (Quaternary age):**

**Colluvium -** Unconsolidated soil and rock deposited by sheet wash

**Alluvial Fan -** Unconsolidated soil and rock deposited by ultra-flood-stage stream flowing from a canyon

**Upper Sonoma Volcanics Units (Pliocene age):**

**Rhyolite Ash-Flow Tuff;** classified chemically by IUGS total alkali-silica diagram

**Rhyolite Flow -** Classified chemically by IUGS total alkali-silica diagram; average silica content is 2.6% higher than the rhyolite ash-flow tuff unit

**Dacite Flow -** Dominantly fine-grained flows, but also includes some subordinate possible ash-fall tuff; classified chemically by IUGS total alkali-silica diagram (mostly dacite, but some andesite); average silica content of dacites is 3.5% higher than the dacites of the andesite-dacite flow unit; intercalated with layers of andesite-dacite at presumed top of andesite-dacite flow unit.

**Middle Sonoma Volcanics Units (Pliocene age):**

**Andesite Breccia -** Volcanic breccia with hard blocks (similar to andesite-dacite flow) in an enigmatic softer matrix that variably appears tuffaceous; possibly a flow breccia formed on an unstable slope of underlying unconsolidated ash; classified chemically by IUGS total alkali-silica diagram (close to the andesite-dacite boundary); hard blocks and matrix are both very similar in composition

**Andesite-Dacite Flow -** Distinctive flow with abundant feldspar phenocrysts (18-27%) in an aphanitic matrix; dominately flow breccia in southern half of map area; classified chemically by IUGS total alkali-silica diagram; compositions span the andesite-dacite boundary; lies stratigraphically above basaltic andesite-andesite flow

**Basaltic Andesite-Andesite Flow -** Dominantly fine-grained flows; classified chemically by IUGS total alkali-silica diagram; compositions span the basaltic andesite-andesite boundary, but are mostly basaltic andesite; complex unit which contains numerous (but very subordinate) rhyolite ash-fall tuffs and one thin rhyolite ash-flow tuff, both classified by IUGS total alkali-silica diagram; overall, the unit must have been sourced by two separate volcanoes of very different compositions

**Andesite Flow -** Thin local unit; classified chemically by IUGS total alkali-silica diagram

**Basalt-Basaltic Andesite -** Flows, dikes, or sills; relative age uncertain; classified chemically by IUGS total alkali-silica diagram; compositions span the basalt-basaltic andesite boundary; dark, dense, hard rock

**Volcanic Debris Flow (Lahar) -** Local unit

66 U D — Fault - solid where known, dashed where approximate; up and down and dip indicated

Contact - solid where known, dashed where approximate

30 / 010 — Strike and dip of bedding (or flow foliation in places)

WR-2 — Sample collected for whole-rock or other chemical analysis

**Scale 1:2,400**
**1" = 200'**

0 200 400 600 feet
0 40 80 120 160 200 meters

Grid registration points: California State Plane Zone 2 NAD1983 Feet.

*This map represents a personal research project by W.A. Fuchs, not intended for use in any government-required filings or for any official use.

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