21 June 2017
Revised 30 November 2017;
Revised 26 April 2018

Ms. Jerrica Harding
T&B Planning, Inc.
17542 East 17th Street, Suite 100
Tustin, California 92780

Subject: Paleontological Resource and Monitoring Assessment, Nichols Ranch Specific Plan Project, City of Lake Elsinore, Riverside County, California

Dear Ms. Harding:

Location: A paleontological resource and monitoring assessment has been completed for the site of the Nichols Ranch Specific Plan (Nichols Ranch) project, located in the northwestern part of Warm Springs Valley near the mouth of Walker Canyon and adjacent to (south of) Nichols Road and east of Interstate 15 in the city of Lake Elsinore, Riverside County, California (Attachments 1 and 2). On the U. S. Geological Survey 7.5-minute Lake Elsinore, California topographic quadrangle map, the 72.5-acre project area comprises much of the central part of the eastern half of Section 25 in Township 5 South, Range 5 West, San Bernardino Base and Meridian (Attachment 2).

Geology: The geology of the eastern Lake Elsinore area is shown on the geologic map of D. M. Morton and F. H. Weber (2003, Preliminary geologic map of the Lake Elsinore 7.5' quadrangle, Riverside County, California: U. S. Geological Survey Open-File Report 03-281). As mapped, the subject property is underlain mainly by young Quaternary (Holocene and late Pleistocene) sandy alluvial fan sediments (Qyf_a, shown in pale yellow on Attachment 3). Protruding through the young sediments are two hills, one of which is composed of Mesozoic phyllite (Mzp, a metamorphic rock) at the west end of the property, and the second, which is composed of undifferentiated Mesozoic low- to high-grade metasedimentary rocks (Mzu) near Nichols Road in the northeast part of the property (Attachment 3, after Morton and Weber, 2003).

Paleontological Sensitivity: A paleontological sensitivity map and report generated by the Riverside County Land Information System in mid-February of 2017 (Attachment 4), ranks the entire project area as having a Low Potential/Sensitivity to contain significant nonrenewable paleontological resources (*i.e.*, fossils). All of the exposed geologic units within the bounds of the Nichols Ranch property are assigned a Low paleontological sensitivity and are regarded as unlikely to yield fossiliferous materials on the basis of their lithology or geologic field relationships. As such, implementation of a paleontological Mitigation Monitoring and Reporting

Program (MMRP) would typically not be required for any earth-disturbing (grading, trenching, or excavation) activities in areas that are so mapped.

Paleontological Collections and Records Search Reports: Two museum collections and records searches have been utilized in this evaluation. The first, for a previous project one mile east of the Nichols Ranch property, did not reveal any fossil localities within it, nor any within the one-mile radius that extended to the eastern edge of the current property (E. G. Scott, 2011, unpublished report by the Division of Geological Sciences at the San Bernardino County Museum [SBCM], attached). The second report, by the Section of Vertebrate Paleontology at the Natural History Museum of Los Angeles County (LACM) (S. A. McLeod, 2017, attached) identified two fossil localities (LACM locs. 6059 and 5168) that, based on their described locations, are several miles distant from the project site, the first located just east of the southern end of Lake Elsinore, and the second in Railroad Canyon, also several miles east of the Nichols Ranch property. Based on these reports, there are no previously reported fossil localities or recorded fossiliferous sediments within several miles of the Nichols Ranch project site.

Conclusions: Based on the published geologic map units within the bounds of the Nichols Ranch project area (Attachment 3), the lack of any known fossil localities or fossiliferous deposits in these units or within several miles of the site (museum collections and records searches by the LACM and the SBCM, attached), and the assignment of a Low potential to contain significant nonrenewable paleontological resources (*i.e.,* fossils) in the Mesozoic metamorphic and late Quaternary young alluvial fan sediments (Attachment 4), this report concludes that the likelihood of finding fossiliferous materials within this property during any mass grading, excavation, or trenching activities is very low to nonexistent. ***We therefore recommend that a paleontological mitigation and/or monitoring program (MMRP) not be required for this project area during the course of further development of the property.***

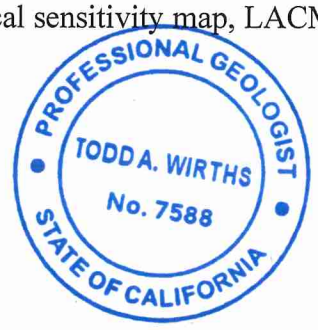
If there are any questions concerning this investigation, please feel free to contact us directly. Thank you for the opportunity to have provided paleontological services on this project.

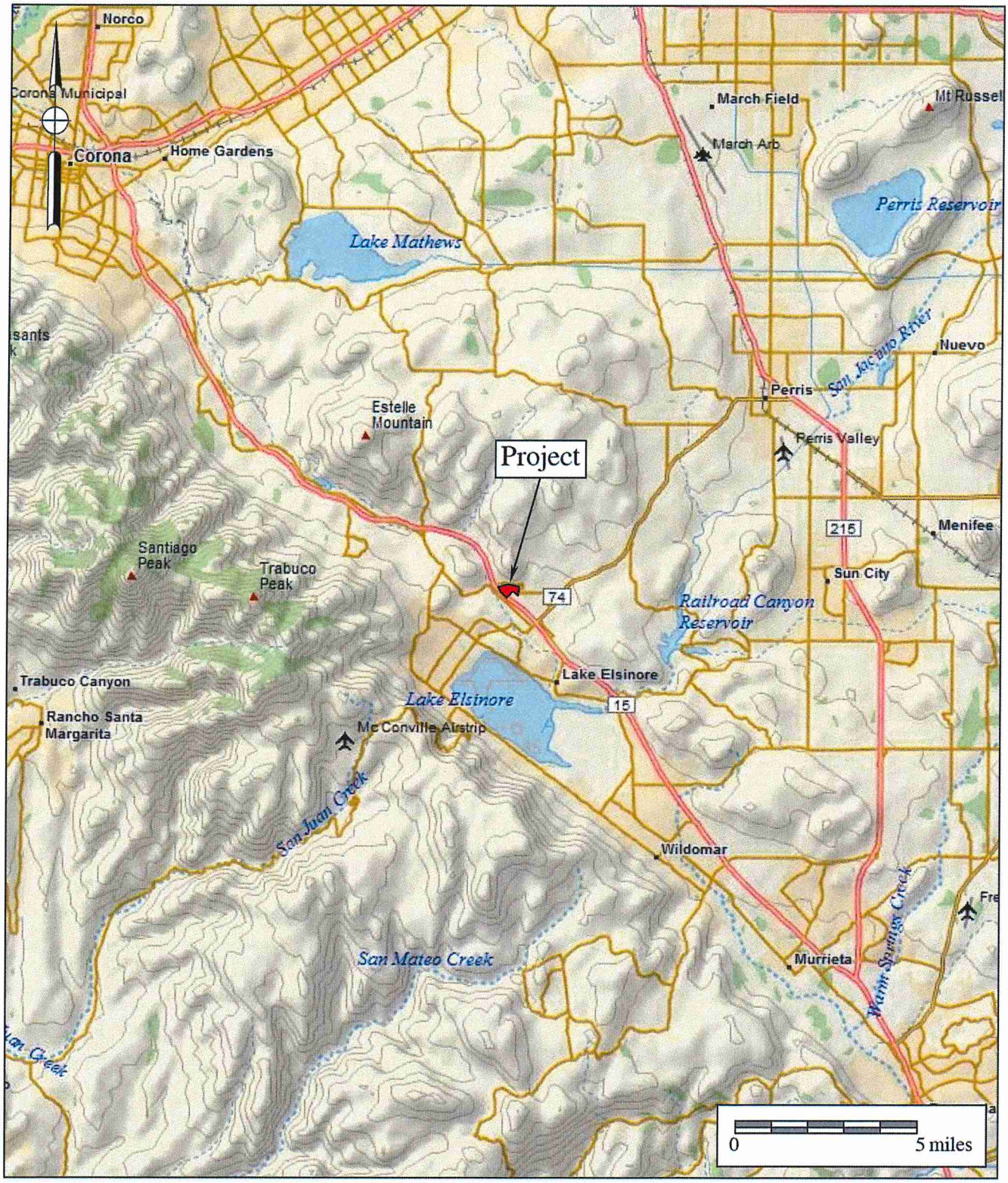
Sincerely,

George L. Kennedy, Ph.D.
Senior Paleontologist

Todd A. Wirths, M.S.
California Professional Geologist No. 7588

Attachments: Index maps, geologic map, paleontological sensitivity map, LACM and SBCM records search reports



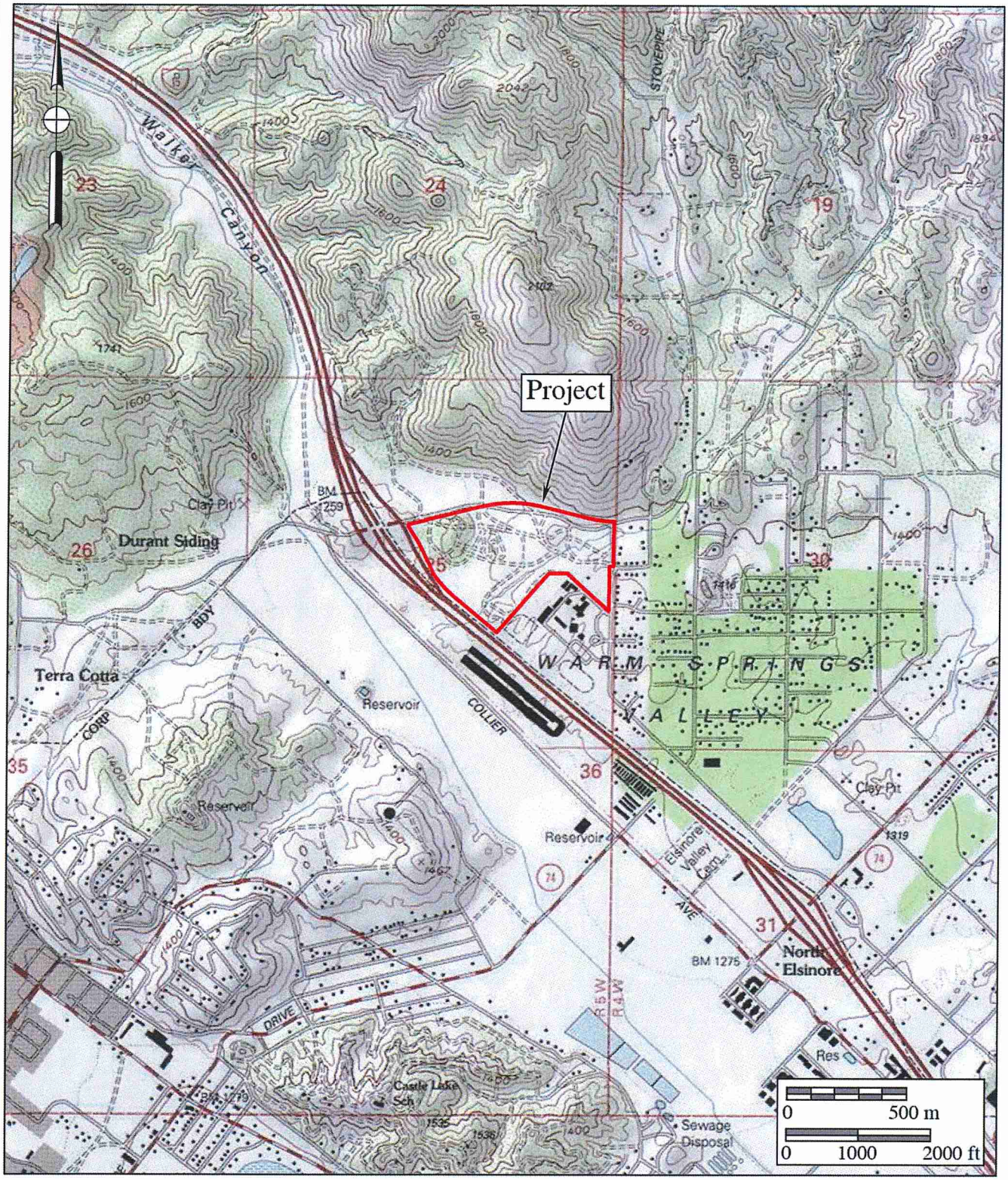


Attachment 1

General Location Map

The Nichols Ranch Specific Plan Project

DeLorme (1:250,000)

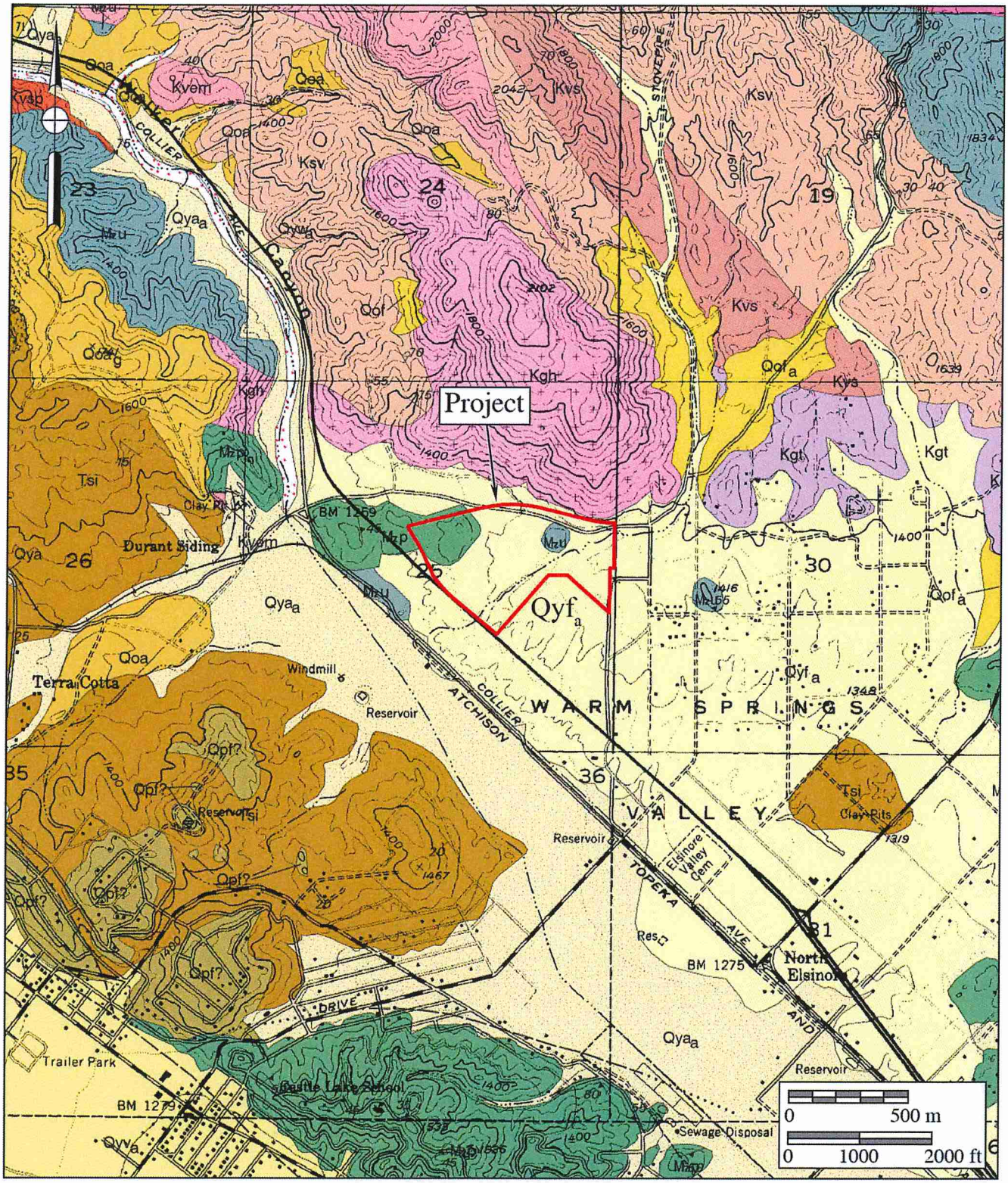


Attachment 2

Project Location Map

The Nichols Ranch Specific Plan Project

USGS *Lake Elsinore* Quadrangle (7.5-minute series)

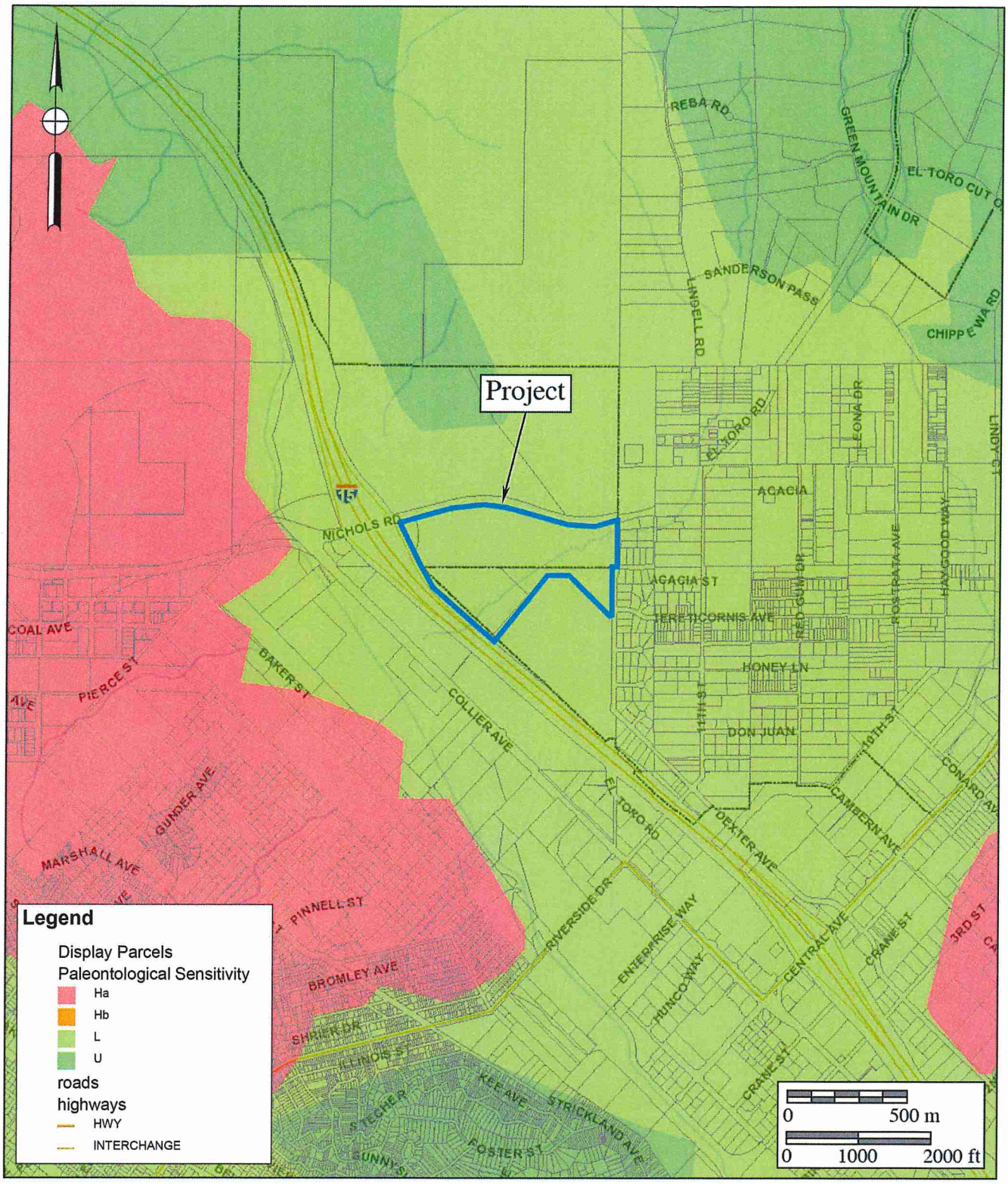


Attachment 3

Geologic Map

The Nichols Ranch Specific Plan Project

Geology after Morton and Weber (2003)



Attachment 4

Paleontological Sensitivity Map

The Nichols Ranch Specific Plan Project

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

2 March 2017

Brian F. Smith & Associates, Inc.
14010 Poway Road, Suite A
Poway, CA 92064

Attn: George L. Kennedy, Ph.D., Senior Paleontologist

re: Paleontological Resources Records Search for the proposed Nichols Road South Project, BFSA Project No. 17-023, in Warm Springs Valley, Riverside County, project area

Dear Dr. Kennedy:

I have thoroughly searched our paleontology collection records for the locality and specimen data for the proposed Nichols Road South Project, BFSA Project No. 17-023, in Warm Springs Valley, Riverside County, project area as outlined on the portion of the Lake Elsinore USGS topographic quadrangle map that you sent to me via e-mail on 13 February 2017. We do not have any vertebrate fossil localities that lie directly within the proposed project area, but we do have localities farther afield from sedimentary deposits similar to those that may occur subsurface in the proposed project area.

In the slightly elevated terrain in the proposed project area there are apparently exposures of metamorphic rocks that will not contain recognizable fossils. If the proposed project area extends into the elevated terrain in the very northeastern portion then it would cover exposures of plutonic igneous rocks that likewise will not contain recognizable fossils. Otherwise, surface deposits in the proposed project area consist of older Quaternary Alluvium, derived primarily as alluvial fan deposits from the elevated terrain immediately to the north and east. These older Quaternary alluvial fan deposits, close or adjacent to the plutonic igneous source rock immediately to the north, are unlikely to contain significant fossil vertebrates least in the uppermost layers. Deeper and finer-grained older Quaternary deposits possibly underlie the surficial Quaternary Alluvium, however, especially in the eastern portion of the proposed project

area where a drainage runs through it. Our closest fossil vertebrate localities from these older Quaternary deposits are LACM 6059, south-southeast of the proposed project area just east of the current Lake Elsinore, and LACM 5168, east-southeast of the proposed project area around Railroad Canyon Reservoir, that produced fossil specimens of horse, *Equus*, and camel, *Camelops hesternus*, respectively.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

28 June 2011

Brian F. Smith and Associates
attn: George Kennedy, Ph.D.
14010 Poway Road, Suite "A"
Poway, CA 92064

re: **PALEONTOLOGY LITERATURE AND RECORDS REVIEW, BFSA PROJECT NO. 11-053, ELSINORE REGION, RIVERSIDE COUNTY, CALIFORNIA**

Dear George,

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) has completed a literature review and records search for the above development property northeast of Lake Elsinore in Riverside County. The proposed study area is located in the western half of section 29, Township 5 South, Range 4 West, San Bernardino Base and Meridian, as seen on the Lake Elsinore, California 7.5' United States Geological Survey topographic quadrangle map (1953 edition).

Previous geologic mapping (Rogers, 1965; Morton and Weber, 2003) indicates that the proposed project property is situated entirely on surface exposures of Mesozoic quartzite and quartz-rich metasediments (= unit **Mzq**). These rocks lack potential to contain significant nonrenewable paleontologic resources, and so are assigned low paleontologic sensitivity.

For this review, I conducted a search of the Regional Paleontologic Locality Inventory (RPLI) at the SBCM. The results of this records search indicated that no previously-known paleontologic resource localities are recorded by the SBCM from within the boundaries of the proposed study area, nor from at least one mile in any direction.

Recommendations

The results of the literature review and the check of the RPLI at the SBCM demonstrate that excavation in conjunction with development has low potential to adversely impact significant nonrenewable paleontologic resources present within the boundaries of the proposed development in the Lake Elsinore region of Riverside County. Rocks present within the boundaries of the study area have low paleontologic sensitivity. *No paleontologic resource mitigation program is recommended for excavation within the boundaries of the proposed study area at this time.*

References

Morton, D.M. and F.H. Weber, Jr., 2003. Preliminary digital geologic map of the Elsinore 7.5' quadrangle, Riverside County, California, version 1.0. United States Geological Survey Open-File Report 03-281. Digital preparation by R.M. Alvarez and D. Burns.

Rogers, T.H., 1965. Geologic map of California, Santa Ana sheet, scale 1:250,000. California Division of Mines and Geology Regional Geologic Map Series.

Please do not hesitate to contact us with any further questions you may have.

Sincerely,

Eric Scott, Curator of Paleontology
Division of Geological Sciences
San Bernardino County Museum