

APPENDIX 6.7-1: PART 3

ADDENDUM TO ARCHEOLOGICAL SURVEY OF THE AVENAL ENERGY
TRANSMISSION LINE CORRIDOR, OCTOBER 22, 2007



Central Coast Division/Administration
1525 Seabright Ave.
Santa Cruz, California 95062

Phone: 831.423.0588
Fax: 831.423.0587
www.pacificlegacy.com

October 22, 2007

Joe Stenger, Project Director
TRC Companies Inc.
2666 Rodman Drive
Los Osos, California 93402

Re: Addendum to Archaeological Survey of the Avenal Energy Transmission Line Corridor, Kings County. (TRC Project No. 29031701; PL. No. 1856-01)

Dear Mr. Stenger:

This letter addendum to the initial survey letter dated September 17, 2006 reports on the results of the pedestrian archaeological survey undertaken on two previously unsurveyed locations within the proposed Avenal Energy transmission line corridor in Fresno County, California (Figures 1 and 2). Neither areas were inspected during field work in September 2006 due to crop dusting activities taking place at these locations. In August 2007, Pacific Legacy personnel surveyed both locations to complete the inventory of all project areas listed in the initial letter report.

Project Description and Archaeological Survey Area

Proposed activities include the installation of an electrical transmission line approximately six miles long between the Gates electrical substation north of Jayne Avenue in southwest Fresno County to the Pueblo Avenue access road in Kings County to the south and thence eastward and then northward to the Avenal Energy Site. For much of its length, the proposed transmission line would parallel the eastern side of existing transmission lines. It has been estimated by TRC Companies that an easement approximately 100 feet in width will be obtained by the proposed project along the east side of the existing transmission line corridor. A 200 foot wide buffer was established for the present study as the archaeological survey area (corridor).

All investigations conducted within the archaeological survey corridor were completed in compliance with the California Energy Commission (CEC) guidelines, California Code of Regulations, Title 20, Chapter 5, Article 6, Appendix B: Information Requirements for an Application (Section (g) (2) Cultural Resources). There are no federally administered public lands in the project area and there are no federal actions anticipated that would require compliance with federal historic preservation law or regulation.

Archival Research

Prior to conducting initial field research in 2006 a records search was conducted at the Southern San Joaquin Valley Information Center of the California Historical Resources Inventory System at California State University, Bakersfield (Record Search #06-236) for known archaeological sites within the vicinity of the project area. Sources consulted included:

Bay Area Division	900 Modoc St.	Berkeley, CA 94707	510-524-3991	510-524-4419 Fax
Pacific Basin Division	332 Uluniu St.	Kailua, HI 96734	808-263-4800	808-263-4300 Fax
Sierra and Central Valley Division	3081 Alhambra Dr., Suite 208	Cameron Park, CA 95682	530-677-9713	530-677-9762 Fax

- Southern San Joaquin Valley Information Center site and study base maps;
- National Register of Historic Places (*Directory of Determinations of Eligibility*, California Office of Historic Preservation, Volumes I and II, 1990);
- Office of Historic Preservation Computer Listing 1990 and updates);
- *California Historic Resources Inventory* (State of California 1976);
- *California Historical Landmarks* (State of California 1990);
- *California Points of Historical Interest* listing (May 1992).

According to the record search, no prehistoric or historic archaeological sites or Native American cultural resources had been recorded within the project area, nor are any recorded within a ¼-mile radius of the proposed transmission line. No previous cultural resources studies are known to have been carried out within the archaeological study corridor or within a ¼-mile of the project area apart from those already completed for the Avenal Energy project by Pacific Legacy in 2001 and 2006.

A request was submitted to the California Native American Heritage Commission to consult their Sacred Lands Files in order to identify any culturally significant properties. In a letter dated September 6, 2006, the Commission reported that no sacred lands were known to the Commission within the project area (see Attachments to the September 17, 2006 report).

Field Methods

The Avenal Energy transmission line corridor was initially surveyed in September 2006. The entire length of the proposed transmission line corridor was surveyed with the exception of two segments (see Figure 2) designated 'off-limits' due to crop-dusting activities. In August 2007 personnel from Pacific Legacy surveyed both of these outstanding locations to complete the cultural resource inventory.

The survey corridor was inspected by pedestrian survey with each person examining 10-to-15 meter wide transects. All of survey area consisted of agricultural land that was either freshly tilled or planted in almond groves. Soil visibility was consistently good throughout the project area.

All fieldwork was conducted by personnel who meet the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. Their roles and credentials are as follows:

Thomas Jackson, Ph.D., Principal Investigator - over 35 years experience in California cultural resources management and archaeology;

Mary O'Neill, B.A. Supervisor - over 7 years experience in California cultural resources management and archaeology;

Kelly Larsen, M.A., Supervisor - 2 years experience in California cultural resources management and archaeology;

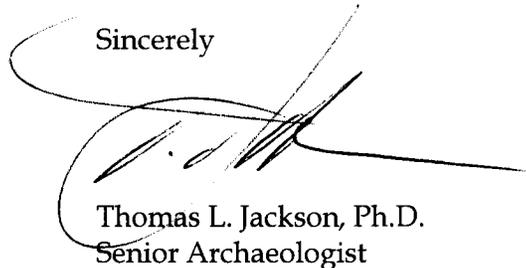
Resumes for key personnel are provided in Attachment A.

Results and Conclusions

No cultural resources were located during the transmission line corridor survey in 2006 or during the 2007 survey. There appears to be little likelihood that obscured or buried archaeological resources occur within the proposed Avenal Energy transmission line corridor. Agricultural activities have been ongoing within the project area for more than 60 years. Those activities have reportedly resulted in ground disturbance to a depth of five feet due to ripping and deep plowing of the fields and orchards throughout this area. Such disturbance would likely have brought to light any subsurface artifacts or cultural materials, even as it acted to destroy the integrity of potential buried contexts. While buried archaeological sites have been reported in the Coalinga Fan (Atwater et al. 1990) these have been found adjacent to stream courses. The topographic setting of the project area and the lack of any neighboring natural drainages would suggest that the probability of finding comparable buried archaeological resources is minimal.

Despite the fact that no potentially significant cultural resources are known or anticipated in the project area, it is recommended that workers involved in ground-disturbing activities be trained in the recognition of archaeological resources typical of the area, that procedures be implemented to report the discovery of such resources, and that protocols be established to ensure that construction activities avoid or minimize impacts to potentially significant cultural resources.

Sincerely

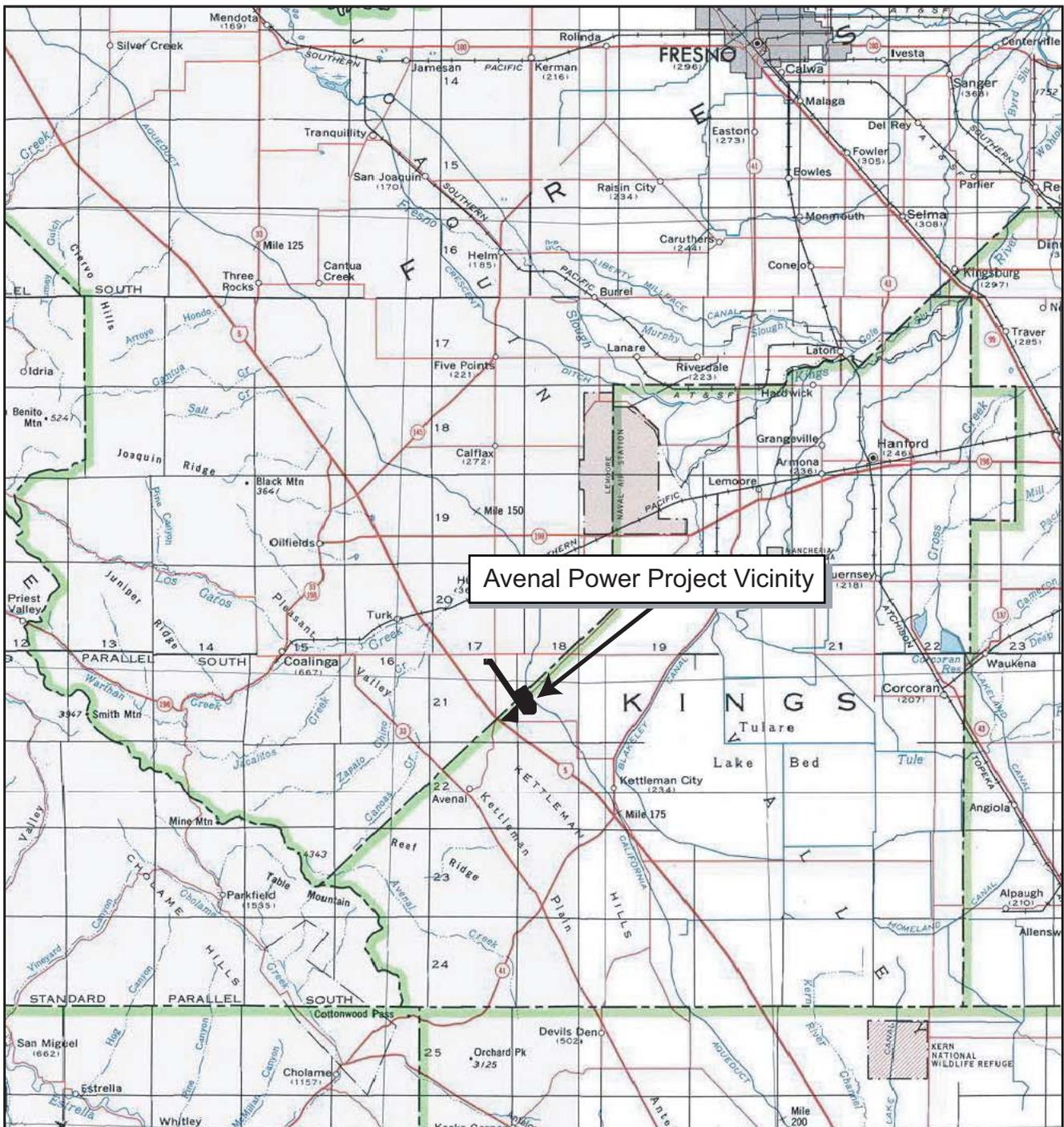
A handwritten signature in black ink, appearing to read 'Thomas L. Jackson', with a large, sweeping flourish extending to the left.

Thomas L. Jackson, Ph.D.
Senior Archaeologist

Attachments: Figure 1. Project Vicinity Map
Figure 2. Newly Surveyed Study Areas, Fresno County
Attachment A. Resumes of Key Personnel

Cited Reference:

Atwater, B. F., D. A. Trumm, J. C. I. Tinsley, R. S. Stein, A. B. Tucker, D. J. Donahue and L. A. Payen
1990 Alluvial Plains and Earthquake Recurrence at the Coalinga Anticline In *The Coalinga, California, Earthquake of May 2, 1983* edited by M. J. Rymer and W. Ellsworth. U.S. Geological Survey Professional Paper 1487.



SOURCE: TOPO! National Geographic Holdings, California CD-ROM, USGS 7.5' Huron and La Cima, CA 1971.

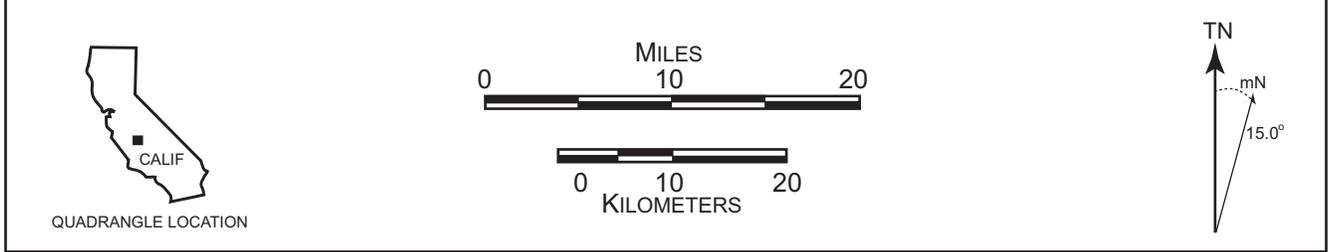


Figure 1. Avenal Power Project Vicinity Map.

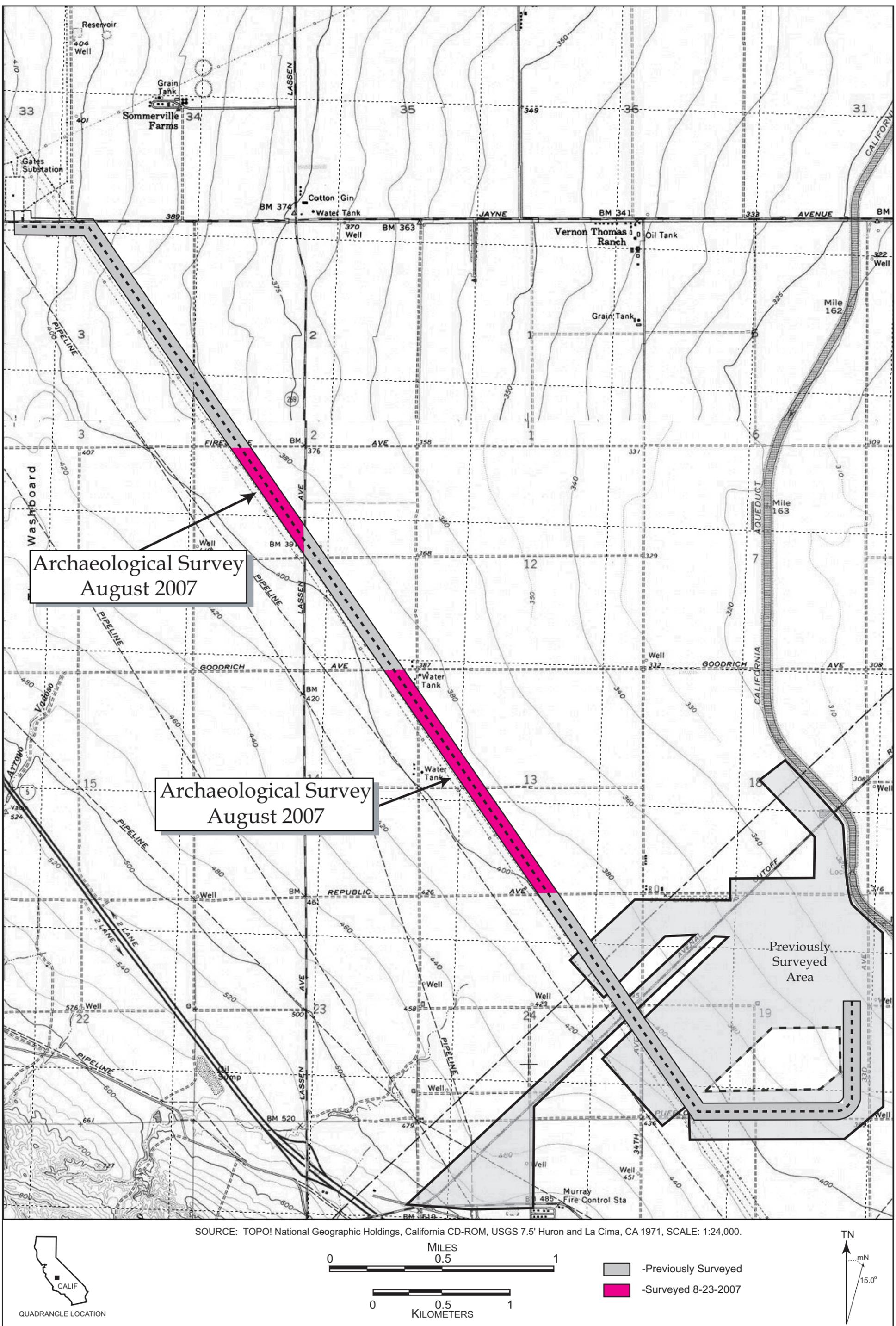


Figure 2. 2007 Archaeological Survey, Avenal Power Transmission Line Corridor.

**Attachment A:
Project Personnel Résumés.**

Thomas L. Jackson Ph.D.

Principal Investigator

Summary of Qualifications

Dr. Jackson has 35 years of experience in cultural resource management and has been involved in archeology for more than 33 years. He has extensive experience (since 1971) conducting archaeological studies throughout California for local, state and federal government and private clients. Projects completed under these contracts have included archeological survey, test excavations, data recovery excavations, National Register of Historic Places evaluations, Native American Graves Protection and Repatriation Act inventories, preparation of Cultural Resource Management Plans, Historic Preservation Plans, Programmatic Agreements, State Historic Preservation Officer and Advisory Council on Historic Preservation consultation. Dr. Jackson is a Principal of Pacific Legacy, Inc. (since 1994). He is certified for the courses *Federal Projects and Historic Preservation Law (GSA/ACHP)* and *Native American Graves Protection and Repatriation Act* (Univ. of Nevada, Reno) and meets the Secretary of Interior's standards as an archeological Principal investigator.

Dr. Jackson's areas of expertise include:

- Cultural resources project scoping and management for hydroelectric, transportation, water storage, and linear facilities projects involving multiple local, state and federal agencies
- Compliance with Federal and State historic preservation laws and policies including the National Historic Preservation Act (Section 106, 110), Archeological Resource Protection Act, Native American Graves Protection and Repatriation Act, and American Indian Religious Freedom Act
- Development of archeological Research Designs, Historic Contexts and Property Types
- Archeological survey, resource documentation, National Register of Historic Places evaluations, data recovery and other treatment studies
- Historic Property Treatment Plans, Historic Preservation Plans and programs
- Obsidian hydration dating and geochemical sourcing of volcanic tool stone

Dr. Jackson's geographical experience in archeology includes California, the Hawaiian Islands (O`ahu and Maui), Wake Island, Isla de Pascua (Easter Island) and Mongolia; and technical research on archeological collections from Canada, Guatemala, Mexico and Peru. He has taught anthropology courses at San Jose State University and the University of California at Santa Cruz, as well as Cultural Resources Management at the University of California at Berkeley.

Education

Ph.D., Anthropology, Stanford University, Stanford, California, 1986

M.A., Anthropology, San Francisco State University, California, 1974

B.A., Anthropology (major), Geology (minor), San Francisco State University, California, 1971

Recent Key
Projects

- 1998-2004 Principal Investigator for on-call cultural resources studies for the University of California at Santa Cruz.
- 2002 Principal Investigator for cultural resources studies for 250 square-mile Monument 3D Seismic prospect near Los Banos, Merced County: cultural resources inventory, Native American consultation, US Army Corps of Engineers, US Fish and Wildlife Service, California Fish and Game consultation. Client: Black Coral, LLC.
- 2000-2004 Principal Investigator for cultural resources studies and historic preservation compliance for licensing the Southern California Edison Big Creek System (FERC Projects 67, 120, 2085, 2086, 2174 and 2175). Client: Southern California Edison.
- 2001-2002 Principal Investigator, Designated Cultural Resource Specialist (by California Energy Commission) for the Elk Hills Power Project, Kern County. Construction and operation of Elk Hills Power Plant and transmission line Elk Hills to Midway Substation. Client: Elk Hills Power.
- 1999-2002 Principal Investigator for archaeological studies for the Pajaro Valley Water Management Agency Local Water Supply Project. Client: Montgomery Watson and Pajaro Valley Water Management Agency.
- 1999-2001 Principal Investigator for cultural resources studies for the Monterey Peninsula Water Management District New Los Padres (Carmel River) Dam and Reservoir Project. Client: Monterey Peninsula Water Management District.
- 1999-2001 Principal Investigator for the cultural resources inventory for the Sunrise Power Project; preparation of the cultural resources element of the Application for Certification; testimony given before the California Energy Commission (CEC); designated project Cultural Resource Specialist approved by CEC. Client: Sunrise Power Company.
- 1998-2001 Principal Investigator/Contract Manager for California Department of Transportation multi-year, on-call cultural resources services contract (\$1.3 M) for Districts 5, 6, 9, and 10. Work involved Phase 1, Phase 1.5, Phase 2 archaeological studies, ethnographic, historical and ethnohistoric research, data analysis, National Register of Historic Places evaluations and reporting. Client: Caltrans.

	<p>1997-1999 Principal Investigator for prehistoric cultural resources management for Department of Energy (DOE) divestiture of Naval Petroleum Reserve No. 1, Kern County, CA., the most valuable (\$3.65 billion) single divestiture of federal property in U.S. history. Dr. Jackson designed and implemented the Cultural Resource Management Plan covering all historic property types at NPR-1; prepared National Register of Historic Places eligibility assessments; directed archeological survey, test excavations, laboratory analyses and reporting for 91 prehistoric sites; drafted and assisted the DOE in successfully negotiating a Programmatic Agreement with the California State Historic Preservation Officer and the Advisory Council on Historic Preservation and continues to assist the DOE in implementing the PA. Client: ICF Resources, Inc.</p> <p>1997-1999 Principal Investigator for archaeological data recovery excavations at 10 sites in the Rush Meadow Archeological District, Rush Creek Hydroelectric Project (FERC 1389) Inyo National Forest. Client: Southern California Edison Company.</p>
Professional Experience	<p>1974-1985 Principal/Senior Archaeologist. Archaeological Consulting and Research Services, Inc. Managed all phases and aspects of prehistoric and historic archaeological CRM projects throughout California. Geochemical sourcing and obsidian hydration specialist. Regulatory compliance specialist.</p> <p>1985-1988 Senior Archeologist. Theodoratus Cultural Research. Directed prehistoric archaeological programs throughout California.</p> <p>1988-1994 Senior Archaeologist/Cultural Resources Division Director/Principal. BioSystems Analysis, Inc. Directed all cultural resources management programs for three offices in California and one Hawaii office; Director of obsidian hydration dating and geochemical sourcing programs.</p>
Selected Publications & Accomplishments	<p>(M. Davis, T. Jackson, M. Shackley, T. Teague and J. Hampel) Factors Affecting the Energy-Dispersive X-Ray Fluorescence (EDXRF) Analysis of Archaeological Obsidian. In <i>Archaeological Obsidian Studies: Method and Theory</i>, edited by M.S. Shackley, pp. 159-180. Plenum Press, New York.</p> <p>1994 (T. Jackson and J. Ericson) Prehistoric Exchange Systems in California. In <i>Prehistoric Exchange Systems in North America</i>, edited by T.G. Baugh and J.E. Ericson, pp.385-415. Plenum Press, New York.</p> <p>1994 Estimation of [Obsidian] Hydration Rates from Chemical Composition: A Case Example from Xaltocan, Mexico (with C. M. Stevenson). Paper presented at the Annual Meeting of the Society for American</p>

Archaeology, Anaheim, California.

- 1993 Archaeological Monitoring, Reconnaissance and Test Excavations at Nu`upia Fishpond, Kane`ohe, O`ahu. Submitted to U.S. Army Corps of Engineers-Honolulu District.
- 1993 Archaeological Research Design for Bellows Air force Station and Windward Settings in the Hawaiian Islands (64 pages). In *Cultural Resources Management Plan for Native Hawaiian Archaeological Resources, Bellows Air Force Station*, prepared by J. Eidsness. Submitted to U.S. Army Corps of Engineers-Honolulu District.
- 1992 Small Scale World Systems in Prehistoric North America. Symposium organizer and presenter. with C. Chase-Dunn. Annual Meeting of the Society for American Archaeology, Pittsburgh.
- 1991 Pounding Acorn: Women's Production as Social and Economic Focus. In *Engendering Archaeology*, edited by M. Conkey and J. Gero, pp. 301-328. Basil Blackwell, Inc., Cambridge, England.
- 1991 A funny thing happened on the way from the quarry . . . Analysis of the Great Blades Cache of Northern California. In *Stone Tool Procurement, Production, and Distribution in California Prehistory* (with J. W. Rick). Edited by J. E. Arnold, pp. 5-66. Perspectives in California Archaeology, Volume 2, Institute of Archaeology, University of California, Los Angeles.

Additional
Publications

Author, co-author, editor or contributor to more than 300 cultural resource reports, environmental impact statements, environmental impact assessments, California Environmental Quality Act documents, archaeological research designs, book reviews, professional presentations and obsidian hydration dating and source determination technical reports

Professional
Affiliations &
Memberships

Society for California Archaeology
Society for American Archaeology

Professional
References

Thomas T. Taylor Manager, Biological and Cultural Resources,
Environment, Health & Safety Division, Southern
California Edison Company, P.O. Box 800, Rosemead,
CA 91770. ☎ (626) 302-9540.

Patti Johnson Environmental Division, US Army Corps of Engineers -
Sacramento District, 1325 J Street, Sacramento, CA
95814-2922. ☎ (916) 557-6611.

Mary M. O'Neill

Supervisor

Summary of Qualifications

Ms. O'Neill has 9 years of experience in California cultural resource management, which includes: survey, archaeological testing and data recovery of prehistoric/historic sites, report writing and production, construction monitoring, and laboratory preparation.

Education

B.A. in Anthropology, University of California at Santa Cruz, 2000
Certificate, Cabrillo College Archaeology Technology Program, Aptos, California, 1998

Recent Key Projects

- 2005 - Present Big Creek, California. Pacific Legacy, Inc. Project Supervisor for cultural resources inventory and recordation of ~150 sites for 19 Southern California Edison (SCE) Distribution Line Circuits in the Shaver Lake District, Fresno and Madera counties.

- 2004 Sierra National Forest, John Muir and Ansel Adams Wilderness Areas, Fresno and Madera counties. Pacific Legacy, Inc. Crew Chief for cultural resources inventory of trails, camp spots, and grazing areas. Conducted site recordation and evaluation of pack stock impacts to trail systems in the Sierra National Forest (August - October 2004).

- 2003 - 2004 Carlsbad, New Mexico. Pacific Legacy, Inc. Project Director for cultural resources inventory of 9,090 acres and recordation of 117 sites, Eddy County (October 2003- March 2004).

- 2003 Elk Hills, California. Pacific Legacy, Inc. Crew Chief for data recovery at eight National Register Eligible prehistoric sites on the former Naval Petroleum Reserve No.1 at Elk Hills, Kern County (January - June and September 2003

Camp Nelson, California. Pacific Legacy Inc., Crew Chief for inventory and recordation of three prehistoric sites for SCE power pole replacement project of the Camp Nelson Circuit, Sequoia National Forest, Tulare County

- 2002 Elk Hills, California. Pacific Legacy, Inc. CE C Approved Cultural Resources Sensitivity Trainer and Monitor for construction of Elk Hills Power Project at Elk Hills, Kern County

Prather, California. Pacific Legacy, Inc. Crew Member for inventory and recordation of prehistoric sites for the Big Creek Alternative Licensing Process, Big Creek, Fresno County (September-October).

Los Banos, California. Pacific Legacy Inc., Crew Member for Cultural Resource Inventory and site recordation for Monument 3D Seismic Project, Merced County (July-August).

Springville, California. Pacific Legacy, Inc. Crew Chief for inventory and recordation of eight prehistoric sites for the SCE power pole replacement project of the Elster Circuit, Tulare County (April-May 2002).

Springville, California. Pacific Legacy, Inc. Coordinator and Monitor for SCE power pole replacement, Soda Springs Phase 4, Tulare County (January-March 2002).

Prather, California. Pacific Legacy, Inc. Crew Member for inventory and recordation of prehistoric sites for the Big Creek Alternative Licensing Process, Big Creek, Fresno County (January 2002).

2001

Red Bluff, California. Pacific Legacy, Inc. Crew Member for data recovery at two prehistoric sites along Highway 99 at Dye Creek, Tehama County (November-December 2001).

Elk Hills, California. Pacific Legacy, Inc. Crew member for test excavations for CRHR evaluation of prehistoric sites at CA-KER-3397 and CA-KER-5955 for the Elk Hills Power Project at Elk Hills, Kern County .

Susanville, California. Pacific Legacy, Inc. Crew Member for test excavations at four prehistoric sites along Highway 44 near Poison Lake, Shasta County (September 2001).

Fallon, Nevada. Pacific Legacy, Inc. Crew Member for testing at Fallon Naval Air Station, Churchill County (May 2001).

Palo Alto, California. Pacific Legacy, Inc. Crew Member for data recovery at CA-SCL-237, Santa Clara County (April 2001).

Gonzales, California. Pacific Legacy, Inc. Crew Member for test excavations at CA-MNT-2049, Monterey County (April 2001).

Clearlake, California. Pacific Legacy, Inc. Crew Member for data recovery excavations at seven prehistoric sites along Highway 20 near Clear Lake, Lake County (March-April 2001).

Moss Landing, California. Pacific Legacy, Inc. Crew member for data recovery excavations at CA-MNT-229, Monterey County.

2000 Springville, Springville, California. Pacific Legacy, Inc. Crew Chief for survey and recordation of seven prehistoric sites for SCE power pole replacement project, Tulare County (December 2000).

Huntington Lake, California. Pacific Legacy, Inc. Crew Chief for survey and recordation/updates of eighteen prehistoric sites and one prehistoric/historic site for the Big Creek Alternative Licensing Process, Huntington Lake, Fresno County, (October 2000).

Portal Forebay, California. Pacific Legacy, Inc. Crew Member for survey and recordation of four prehistoric sites and updates on eight sites for the Big Creek Alternative Licensing Process, Portal Forebay, Fresno County, (September-October 2000).

Lost Hills, California. Pacific Legacy, Inc. Crew Member for mapping at three prehistoric sites along Highway 46 near Lost Hills, Kern County (August 2000).

1999 Laramie, Wyoming, University of Wyoming, Laramie. Crew Member for data recovery excavations of Upper Republican prehistoric sites in Colorado and Wyoming (June-July 1999)

1998 Carmel, California. Julia Costello. Crew Member for surveying and mapping of historic roads at Rancho San Carlos, Monterey County (June 1998).

Santa Cruz, California. Paul Hampson. Crew Member for testing at Holy Cross Catholic Church, Santa Cruz County (March 1998).

Professional Experience

2005-Present	Supervisor, Pacific Legacy, Inc., Santa Cruz, CA
2000-2005	Staff Archaeologist, Pacific Legacy, Inc., Santa Cruz, CA
2000	Crew Chief, Cabrillo College Field School, Aptos, CA

1999-2000 Project Coordinator, UCSC Archaeology Archives, Santa Cruz, CA

Selected
Publications &
Accomplishments

- 2004 *Frontier Hills 3D Seismic Project. Archaeological Survey of 9,090 Acres of a Portion of Tier 1, Eddy County, New Mexico.* On file, Bureau of Land Management, Carlsbad Field Office, Carlsbad, New Mexico (with Mark C. Slaughter [Principal Investigator], Thomas L. Jackson, Mary M. O'Neill, Stephen Tabor, Daron Duke, and Stephen Mbutu). [Report prepared for the Bureau of Land Management, Carlsbad Field Office, Carlsbad New Mexico].
- 2003 *Reconnaissance Report for the Camp Nelson Circuit Infrastructure Pole Replacement Project Tulare County, California.* On file, Pacific Legacy, Inc., Santa Cruz, California (with Thomas L. Jackson Principal Investigator). [Report prepared for the Sequoia National Forest, Porterville, California].
- 2001 *Cultural Resources Inventory, Evaluation, and Mitigation Plan for the Water Supply Line (Route 2), Elk Hills Power Project (99-AFC-1): Addendum to the Elk Hills Power Project Cultural Resources Monitoring and Mitigation Plan.* Report on file at, Southern San Joaquin Valley Information Center, California State University, Bakersfield (with Thomas L. Jackson [Principal Investigator], Brendan Culleton, Sarah Brewer, and Denise De Joseph). [Report prepared for Elk Hills Power, LLC. Tupman, California].
- 2000 *Sunrise Power Project (98-AFC-4) Supplemental Cultural Resources Inventory – Natural Gas Line.* On file, Pacific Legacy, Inc., Santa Cruz, California (with Thomas L. Jackson [Principal Investigator], Brendan Culleton and Michael Elliott). [Report prepared for the Sunrise Power Company, Bakersfield, California].

Professional
Affiliations &
Memberships

Society for California Archaeology
Santa Cruz Archaeological Society