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Docket Nos.: 50-361
and 50-362

Dr. Knox Mellon
State Historic Preservation Officer
ATTENTION: Mr. Daniel Bell
Office of Historic Preservation
California Department of Parks and Recreation
P. O. Box 2390
Sacramento, California 95811

Dear Dr. Mellon:

As you know, the Nuclear Regulatory Commission (NRC) is the licensing agency for the construction and operation of San Onofre Nuclear Generating Station, Units 2 and 3. As such, pursuant to 36 CFR 800.4(c), we are preparing for the Advisory Council on Historic Preservation (ACHP) documentation supporting a determination of no adverse effect with regard to certain archeological sites in the 230 kV transmission line corridor. These sites have recently been determined to be eligible for inclusion in the National Register of Historic Places. See the letter dated February 10, 1982 from Carol D. Shull, Acting Keeper, to Frank Miraglia, NRC. We understand that you received a copy of this letter.

As recommended by your letter of November 18, 1980 to Dino Scaletti (NRC), the NRC will, following an affirmative notification of eligibility from the Keeper on affected sites, present adequate documentation supporting a determination of no adverse effect. Specifically, we will provide documents proposing the implementation of an acceptable data recovery plan. In accordance with the July 26, 1982 telephone conversation between Louis Bykoski, NRC and Daniel Bell of your staff, the NRC is enclosing the following documents for your review:

1. "Research Proposal - Data Recovery Program . . ." prepared for Southern California Edison Company by Cultural Systems Research, Inc., October 1981. This proposal has received a preliminary review by your staff.

2. Memorandum for File, December 2, 1981, Subject: San Onofre 230 kV T/L System Archeological Recovery Program prepared by Dr. David White, Southern California Edison Company. This memorandum follows your December 18, 1980 recommendation that the plan be implemented in accordance with the ACHP's guidance for treatment of archeological properties supporting a no adverse effect determination.

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Based on the information provided by Southern California Edison Company, the NRC concludes that, subject to the implementation of the proposed data recovery plan, the operation and maintenance activities associated with the transmission line will have no adverse effect on the sites in question. We request the California State Historic Preservation Officer's concurrence in this finding.

If your staff needs additional information, please contact Dr. Louis Bykoski (301-492-4879) of our staff so that we may provide it promptly.

Sincerely,

Original signed by
Frank J. Miraglia
Frank Miraglia, Chief
Licensing Branch No. 3
Division of Licensing

Enclosures:
As stated

OFFICE	DL:LB#3	DL:LB#3	SAB				
SURNAME	HRood/lg	FJMiraglia	WRegan				
DATE	8/13/82	8/ /82	9/ /82				

RESEARCH PROPOSAL

DATA RECOVERY PROGRAM OF CULTURAL RESOURCES LOCATED WITHIN THE 230 KV TRANSMISSION LINE RIGHTS-OF-WAY FROM SAN ONOFRE NUCLEAR GENERATING STATION TO BLACK STAR CANYON AND SANTIAGO SUBSTATION AND TO ENCINA AND MISSION VALLEY SUBSTATION

Prepared For:

Southern California Edison Company
2244 Walnut Grove Avenue
P.O. Box 800
Rosemead, California 92112

Prepared By:

Cultural Systems Research, Inc.
8148 Ronson Rd., Suite H
San Diego, California 92111

October 1981

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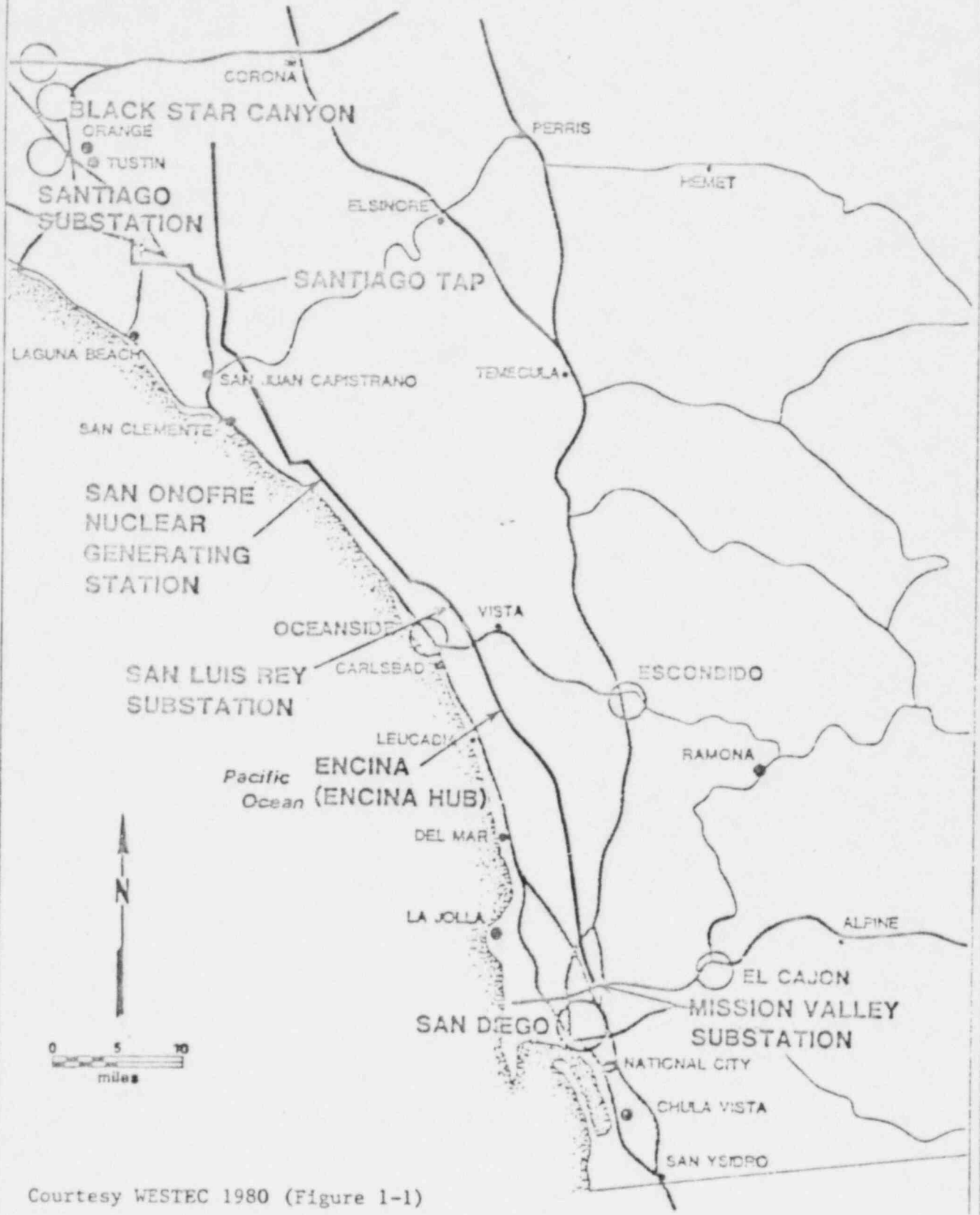
INTRODUCTION

Cultural Systems Research, Inc. (CSRI) proposes the following Data Recovery Program for certain archaeological sites located within Southern California Edison's (SCE) 230 KV transmission line rights-of-way from San Onofre Nuclear Generating Station to Black Star Canyon and Santiago Substation and to Encina and Mission Valley Substation (Figure 1). Archaeological sites that could receive potential adverse impacts (e.g., from vehicular traffic, etc.) and which have been determined eligible for inclusion on the National Register of Historic Places include the following: CA-SDi-6130, 6138, 6140, 6149, and CA-Ora-824, 438, 495, 447, 496, 499, 825, 725, 830, 831, and 498.

Pursuant to Section 106 of the National Historic Preservation Act and 36 CFR Part 800, in conjunction with the Memorandum of Agreement (SCE, San Diego Gas & Electric, California Office of Historic Preservation, and the U.S. Nuclear Regulatory Commission) and in accordance with the Advisory Council's Supplementary Guidance for Treatment of Archaeological Properties, CSRI has developed a Data Recovery Program with a research design to fully utilize the research potential inherent in the data to be gathered, as based on a previous National Register Assessment Program (McCoy and Phillips 1980). The proposed Data Recovery Program entails collection of all surface cultural material on the access roads located on or adjacent to the above mentioned sites, and the collection of subsurface cultural material present on the access road traversing archaeological site Ora-438.



Courtesy WESTEC 1980 (Figure 1-1)

Location of Project Rights-Of-Way

FIGURE 1

RESEARCH QUESTIONS

INTRODUCTION

The proposed Data Recovery Program includes two sets of research questions: one dealing with surface collection at CA-SDi-6130, 6138, 6140, 6149, Ora-498, 824, 495, 447, 496, 499, 825, 725, 830, 831, and 438; and one concerned with subsurface excavation at site Ora-438.

Surface Collection

Three research questions have been formulated to address the surface collection of the 15 sites listed above. These questions deal with site disturbance and chronology, and sourcing of lithic material. Of the three, site disturbance has the greatest potential for yielding important information for future management of cultural resources. The other two questions may provide some useful information dealing with culture history and culture process.

Site Disturbance

The destructive effects of vehicles on archaeological material are well recognized in the archaeological community and substantially documented in literature pertaining to the subject (Wilshire and Nakata 1976; Iverson 1979; Iverson, Hinkley, Webb, and Hallet 1981; and Sheridan 1978). Quantification of these destructive events has been attempted by some investigators (Weide, Lyneis and Warren 1980), but further investigation and experimentation is clearly needed to provide for rational and effective management of cultural resources in the future. Due to this expressed need, a research question has been formulated for the current project that deals on a broad level with the effects of vehicle impact on archaeological material.

A majority of the access roads found along the SCE and SDG&E rights-of-way corridors are privately owned or were previously constructed for an older existing right-of-way, and have been in use for many years. As a result, the artifacts first located on the access roads (McCoy and Phillips 1980) represent material which has sustained cumulative impacts from the time of initial construction of the roads. The major sources of impact have been from vehicle use and maintenance of the roads; however, erosion and other factors (e.g., pedestrian traffic) may have played a minor role in affecting site integrity.

During the previous archaeological assessment (McCoy and Phillips 1980), all surface artifacts on the access roads were located, identified and micro-mapped (artifacts were not collected), and subsurface testing was conducted at all the sites investigated. With the exception of Ora-438, no indication of subsurface material was found in areas of potential adverse impact. In all cases, the major portions of the sites investigated were preserved *in situ* through avoidance by the project.

Due to this initial documentation and the other factors discussed above, an experiment on surface disturbance at these sites is relevant to the proposed Data Recovery Program. By resurveying and remapping artifactual material on and adjacent to the access roads, the degree of disturbance that has occurred within the last one and a half years can be ascertained.

Through the remapping and collection of artifactual material, the following questions will be addressed:

1. How many of the same artifacts (those initially found on the access roads) are present in the impact areas?

2. How many of these artifacts display a different provenience from that originally recorded?
3. How many "new" artifacts (not originally found) are on the surface of the impact areas?
4. What is the distribution of the artifacts and how does it compare with the pattern seen from the original mapping?
5. Is there evidence of the type(s) of impact responsible for any observed disturbance of artifacts?

Chronology

Statements dealing with chronological placement of archaeological sites can be made in part from a careful analysis of the lithic material recovered. Such an analysis should focus on the technological aspects involved in the manufacture of the tools collected. As Sheets (1976) has demonstrated, this type of analysis can be rewarding in that it limits presumptive constructs on the part of the investigator and provides insight into cultural preferences through time. Technological analysis, however, depends heavily upon previous studies done in the region under investigation. As little such work has been done in southern California, the results of the current study may have suggestive but important implications for future analysis.

As referred to above, a technological analysis of lithic tools relies by necessity on data stemming from previous archaeological investigations. In the present study, existing literature on data recovery at sites reflecting adequate chronological placement will be reviewed. Once a firm typological scheme has been formulated for the cultural horizons identified in the area, expectations will

be outlined for the type of artifacts anticipated for each horizon. Using these comparative data and the data generated by laboratory analysis, each site investigated will be identified according to the number of possible components present and by the chronological period represented. Of importance to this study will be whether the sample retrieved from the site is representative of the total assemblage. By tabulating tool type frequencies, it should be possible to determine if the collected material compares favorably with the artifacts previously inventoried for the entire site. If it does, it would be safe to assume that the retrieved material is a representative sample.

Sourcing of Lithic Material

Many of the sites to be investigated contain chert and obsidian artifacts. If these materials can be accurately sourced, many questions about exchange systems could be addressed, providing fertile ground for future research dealing with socioeconomic questions pertinent to the study area. Obsidian artifacts definitely represent exotic items, and most probably were traded into the area from northern or eastern California (Davis 1974). While most cherts may be of local origin, some may have come from adjacent areas such as Santa Barbara.

Since it is now possible to source both obsidian and chert artifactual items (Peter Ainsworth 1981: personal communication), these materials will be carefully recorded and collected, and representative samples of each type will be sent to appropriate specialists for identification and sourcing.

Excavation of CA-Ora-438

Introduction

The excavation of CA-Ora-438 entails the testing of a multi-level research design

encompassing a series of questions on site disturbance, chronology, function, exchange systems, and culture ecology. Each of these research domains is discussed below.

Site Disturbance

Surface collection of all artifactual material will be conducted on the access road that traverses the site. The questions outlined above for surface disturbance on access roads also apply to this particular aspect of the Data Recovery Program. In addition, since subsurface recovery will be conducted at this site, surface and subsurface artifact distribution will be examined. As shown by experiments dealing with the lateral displacement of artifacts due to plowing (Talmadge and Chesler 1977), quantification of artifact displacement can be ascertained at sites where careful surface and subsurface collection is conducted. During the Data Recovery Program, surface artifacts on or near the excavation units will be compared with those in a subsurface context. Special attention will be given to fragmented tools on the surface, as their counterparts may exist below the surface. The amount of displacement will then be measured and observations will be made to determine the type(s) of disturbance responsible (e.g., discing, grading).

Chronology

Site CA-Ora-438 may contain cultural material from two horizons. One horizon may be suggested by the presence of numerous manos and metates and large scraping tools, while a later horizon may be reflected by the presence of obsidian and chert artifacts. One of the objectives of the excavation of the site is to identify those components present in a subsurface context. Radiocarbon dating and obsidian hydration analyses will be helpful in identifying these culture horizons.

Exchange Systems

The presence of obsidian at the site suggests that trade in this area was important at a relatively early date, (assuming that the site is no younger than Intermediate Horizon, ca. 5500 BC). Dating and sourcing of the obsidian may shed a light on early exchange systems that operated in southern and eastern California.

Function

Site CA-Ora-438 was designated by Crabtree, Cooley, and Fenenga (1973) as a possible village site. It was later interpreted as a processing/procurement site by McCoy and Phillips (1980). Given the quantity and range of artifacts present, the site may be a village with a series of specialized activity areas. If this is the case, site function and intrasite variability could be better understood by identifying, mapping and analyzing all activity areas (surface or subsurface), recovering and analyzing any ecofactual material (pollen, seeds, faural) and comprehensively reconstructing the paleoenvironment. From this data, a subsistence strategy or strategies may be identified, thus facilitating later interpretations dealing with local and/or regional adaptive processes.

Culture Ecology

Warren (1968) has proposed four cultural traditions (i.e. horizons) for the vicinity of the study area: San Dieguito (ca. 8000 BC); Encinitas (ca. 5500 BC); Campbell (ca. 3000 BC); and Shoshone/Yuman (ca. 700 AD). The traditions are based upon the occurrence of differing sets of cultural manifestations seen in archaeological assemblages through time. Although all four traditions are clearly seen in cultural materials in Santa Barbara, only three (San Dieguito, Encinitas and Shoshone/Yuman) have been definitely identified in the San Diego area. Warren feels that two factors prevented the Campbell tradition from developing in the

San Diego area: 1) the intrusive hunting culture evident in the Santa Barbara-Ventura area did not extend as far south as San Diego; 2) the silting of lagoons and estuaries in the San Diego area during this time period discouraged a subsistence strategy based on a maritime economy (as seen in the Campbell tradition). Since Orange County is in a transitional zone between the Santa Barbara-Ventura and San Diego areas, it may have followed either the chronological sequence found in the San Diego area, or the sequence found further north. If two components dating from the Encinitas and Campbell traditions can be positively identified at CA-Ora-438, then the factors which operated in the Santa Barbara-Ventura area may also have been present in Orange County. That is, if the Encinitas and Campbell traditions are found at CA-Ora-438, it can be assumed that the intrusive culture expression (as seen further north - Hunting Culture) may have extended south to encompass Orange County and/or that the ecological changes prevalent in San Diego County during this time period did not dramatically affect the local subsistence base.

DATA RECOVERY PROGRAM METHODOLOGY

INTRODUCTION

All phases of the Data Recovery Program will be completed by trained personnel and consultants under direct professional supervision. Fieldwork will be accomplished during an eight-hour workday. Daily meetings will be held prior to implementation of fieldwork at each site location with crew persons, Native American participants and consultants to explain investigative techniques and to coordinate necessary logistical matters.

Specific tasks performed for the proposed Data Recovery Program will be assigned to individual CSRI crew persons throughout the field investigation to ensure

consistency and efficiency of data recovery.

FIELDWORK PROCEDURES

CSRI proposes the following three phases for the surface collection of cultural material at the sites listed above: 1) resurvey and flagging of artifacts in areas subject to potential adverse impact; 2) micro-mapping of all flagged material, and; 3) systematic surface collection of flagged artifacts. Resurvey will be accomplished by walking close interval (two meters apart) parallel transects across areas of potential impact. Flakes, debitage, tools, and topographic features will be flagged during the survey. Photographic and field recordation of the existing environment (with particular emphasis on areas of disturbance) will also be carried out during this phase. All flagged cultural material will be micro-mapped using a standard engineer's transit. Datums will be re-established at datum points utilized during McCoy and Phillips' (1980) assessment or established by "shooting in" permanent landmarks (e.g., transmission towers) and calculating distance from the landmark to the transit. Each micro-mapped item will be given a field number which will be lettered on masking tape and placed on the item. The item will then be collected and placed in an appropriately labeled bag.

Prior to excavation of CA-Ora-438, the area being investigated will be delineated on a site map that depicts contours, natural landforms and man-made features. The designated area will then be overlain by gridded and sequentially numbered squares representing one-by-one meter units. Subsequent to resurvey of the site, excavation units will either be placed in areas of high artifact density or randomly selected if artifactual material is evenly dispersed. If a random

sample is called for, a random numbers table will be utilized to select 10 numbers for the grid squares to be excavated. Selected units will be manually excavated in arbitrary (non-stratified) 10-centimeter levels or where appropriate, in stratigraphic levels. Excavated soil will be passed through one-eighth inch mesh hardware cloth screening. Emphasis will be placed on recovery of artifacts *in situ* as well as on the delineation of any subsurface features (e.g., artifact concentrations or rock clusters) as they appear in the ground. When necessary, unit enlargement will be systematically expanded to expose the entire extent of a feature. *In situ* artifact locations will be triangulated and specifically identified on appropriate level forms. Other cultural debris not retrieved *in situ* but recovered in screening will be bagged separately by level. Pick mattocks, hand axes, shovels, trowels, and whiskbrooms will serve as excavation tools.

An excavation unit will be determined complete by the absence of cultural materials, i.e., to a depth where the soil appears sterile. To avoid site deposition "masking" by natural and non-natural overburden, a minimum of 30 centimeters of depth will be required for most units before excavation is stopped. Positive units or those yielding cultural materials either *in situ* or in the screen, will be required to have two non-cultural or sterile levels before the unit is considered complete. Each unit will be photographed upon completion; any features encountered in the units will also be documented with photographs, field drawings and measurements. All subsurface units will be backfilled upon completion of excavation.

Ancillary Studies

Two forms of dating will be utilized to investigate the chronological aspects

of site CA-Ora-438: obsidian hydration and carbon 14. If obsidian material is found in an undisturbed subsurface context, samples for hydration will be gathered. If found, the obsidian will be assigned accurate provenience, properly labeled with masking tape and placed in a dry watertight container. Samples for carbon 14 dating will be retrieved if appropriate organic material is found in an undisturbed subsurface context. All samples recovered will be assigned accurate provenience, wrapped in aluminum foil and placed in labeled glass containers. Soil and pollen samples will be taken only from excavation units exhibiting positive results (those containing cultural material). Samples will be taken at 10-centimeter levels corresponding to previously excavated unit levels. Soil samples will be removed using a trowel and will be sealed in labeled manila envelopes. Pollen samples will be taken with a trowel also, but it will be rinsed with distilled water between samples taken from the bottom of the unit upwards, to avoid possible contamination from other levels. Prior to sampling for pollens, the wall face will be scraped down to reveal a non-contaminated soil face.

LABORATORY PROCEDURES

Each artifact retrieved during subsurface test excavation will receive a consecutive catalog number (inked directly on the artifact or written on an attached tag or label). Artifacts not recovered *in situ* will be separated according to unit and level designation, and thereafter will receive consecutive catalog numbers defined by typological groups (i.e. mano, flake, debitage, etc.). *In situ* artifacts will be cataloged separately regardless of type. Data from the catalog cards will be entered on master catalog sheets in sequential order and placed in binders for safekeeping.

Lithic analysis will entail those procedures dictated by the objectives outlined earlier. As discussed previously, all lithic material recovered from the surface will be analyzed according to the technological scheme outlined by Sheets (1976).

Separate from but ancillary to this study will be the sourcing of recovered obsidian and chert artifacts. Representative samples of each type of chert, and all obsidian items will be sent to an appropriate specialist for analysis. In addition, a detailed map of each site will be drawn documenting the data gathered from the surface collection. The maps will be rendered in a scale comparable to those produced in McCoy and Phillips' (1980) study. Subsequent analyses will rely heavily on these maps, as they will serve as a primary tool for the assessment of artifact movement during the last year and a half. All cataloged artifacts, separated by site number, will be placed in appropriately labeled boxes for curation at CSRI's Cultural Resources Laboratory in San Diego. Consultation with appropriate property owners will determine the ultimate disposition of all recovered cultural material.

Upon completion of the fieldwork and laboratory analysis, a report will be prepared that meets professional and scientific standards.

ATTACHMENT I

PERSONNEL ORGANIZATION

Principal Investigator	Lesley C. McCoy
Project Archaeologist	Alex Kirkish
Assistant Archaeologist	Keith Rhodes
Laboratory Manager	Neil Rhodes
Field Aides	Neil Rhodes David Belardes Kit Kirkish
Field Mappers	Randy Franklin Bob Nagle
Native American Observer	Ray Belardes

ATTACHMENT II

TIME AND PERSONNEL SCHEDULE

TASK		HOURS
PREFIELD (40 days):		
1) Equipment organization		
2) Data preparation		
STAFF MEMBER(S):	Project Archaeologist (1)	160
	Crew Person (1)	120
FIELD - DATA RECOVERY (10 days):		
1) Resource mapping		
2) Resource collection		
3) Resource subsurface excavation		
4) Collection of material for specialized analyses		
5) Photographic documentation		
STAFF MEMBER(S):	Project Archaeologist (1)	80
	Assistant Archaeologist (1)	80
	Mappers (2)	160
	Field Aides (3)	240
	Native American Observer (1)	80
LABORATORY ANALYSIS (15 days):		
1) Completion of all forms		
2) Completion of all maps		
3) Film processing		
4) Artifact washing and cataloging		
5) Data tabulation for written report		
6) Lithic Analysis		
7) Specialized analyses specimen preparation		
STAFF MEMBER(S):	Laboratory Manager (1)	120
	Laboratory Assistant (1)	120

TIME AND PERSONNEL SCHEDULE

(Continued)

TASK		HOURS
CONSULTANT ANALYSES (14 days):		
1) Completion of specialized analyses		
2) Tabulation and submittal of specialized data		
CONSULTANTS:	Flotation Analyst (1)	
	Lithic Analyst (1)	
	Palynologist (1)	
	Carbon 14 Analyst (1)	
REPORT COMPOSITION (Draft and Final) (30 days)		
1) Detailed description of resource inventory		
2) Detailed description of resource assessment		
3) Incorporation of all analyses		
4) Input of data into Research Design (evaluation)		
STAFF MEMBER(S):	Project Archaeologist (1)	200
	Editor (1)	120
	Typist (1)	200
TASK MANAGEMENT (Overall):		
1) Coordinate field methods and data compilation		
2) Coordinate information for sponsoring and reviewing agencies		
3) Coordinate written report		
4) Coordinate laboratory methods and data compilation		
5) Coordinate Research Design input (evaluation)		
STAFF MEMBER(S):	Principal Investigator (1)	140

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1976 Off-road vehicle effects on California's Mojave Desert. *California Geology:* 123-133.

RESUMES

LESLEY C. McCOY

Education

M.A. Archaeology, University of the Americas. Puebla, Mexico, 1980.
B.S. Anthropology, University of California, Riverside, 1975.
A.A. Anthropology, Riverside City College, 1971.

Experience

August 1980 to present — Cultural Resource Manager, Research Coordinator, Cultural Systems Research, Inc., Southern Regional Office. Responsibilities include development and supervision of all archaeological surveys, excavations, National Register Assessment and Evaluation Programs, management/mitigation plans, Native American involvement in projects, cultural resource overviews, proposals, laboratory analyses, report preparation and presentation, and marketing. As such, Ms. McCoy is responsible for the management of as many as 30 staff members involved in archaeological studies. Additional duties include cultural resource management consultation for SDG&E.

Projects currently being managed by Ms. McCoy include the San Onofre Transmission Line System National Register Data Recovery Program for SDG&E and Southern California Edison Company (SCE); Eastern Interconnection Imperial Valley substation access roads survey, National Register Assessment and Data Recovery Program (SDG&E/APS); La Rosita - Imperial Valley cultural resources overview and sample transects inventory (SDG&E); and Miguel-Tijuana International Interconnect, Phase I Cultural Resources Survey (SDG&E).

1977-1980 — Assistant Cultural Resources Manager (1978-1979), Project Archaeologist, WESTEC Services, Inc., San Diego. Duties included supervision and implementation of surveys, excavations, National Register Assessment and Evaluation Programs, proposals, management/mitigation plans, Native American involvement in projects, laboratory analyses, report preparation, and marketing.

During her employment at WESTEC, Ms. McCoy served as Principal Investigator/Project Manager for over 50 archaeological and historical studies conducted for inclusion in Environmental Impact Reports, involving the supervision of as many as 20 crew personnel. Representative project experience includes Jamacha and Grossmont (San Diego County) National Register Assessment Programs for the California Division of Transportation; National Register Assessment Program of cultural resources of the 230 KV transmission line rights-of-way from San Onofre nuclear generating station to Black Star Canyon and Santiago substation and to

Encina and Mission Valley substations, for SDG&E and SCE; and Class II sample survey of the Turtle Mountains, Bristol, Cadiz Planning Units for the Bureau of Land Management.

1977 California Division of Transportation.

Archaeological Excavator, 4-SDi-4807, San Diego County. Duties included excavation, surface collection, mapping, cataloging, and report composition. (March-April)

Archaeological analyst in Sacramento, California. Duties included analysis of charcoal, historic material, sherds, shell beads, miscellaneous items for preliminary reports on sites 4-SDi-4558, 4562, 4562A, 4808, 4807, 4556 (Moosa Canyon) San Diego County. (April-May)

1976 Archaeological Assistant (Field and Laboratory), Mexican National Institute of Anthropology and History. Conducted extensive field investigations at Cacaxtla, Tlaxcala, including excavation, mapping, artifact identification, laboratory research, and report composition. (March-July)

Site Surveyor. Archaeological field investigation, Southern California Edison Company, Devers to Palo Verde Transmission Line Corridor Project, Riverside County, California. (September-December)

Excavator. Archaeological field investigation, Alicia Parkway, Orange County, California. California State University, Fullerton, Department of Anthropology. (November)

1974 Archaeological Field Class, Cholula Mexico. University of the Americas, Puebla, Mexico. Included mapping, excavation, cataloging, and report composition. Dr. Paul Schmidt. (September-December)

Site Surveyor. Archaeological field investigation, Mojave Desert, Southern California Edison Company (Kaiparowitz). Included survey, mapping, and report composition. (June-July)

Assistant Project Archaeologist, Excavator, Field Mapper, Laboratory Analyst. Archaeological Field Class, Jefferson Avenue, Riverside County, California. University of California, Riverside. Dr. Leslie Wildeson. (March-June)

1973 Survey Crew Chief. Archaeological field investigation, Vidal Valley, Riverside County, California. Southern California Edison Company, Archaeological Research Unit, University of California, Riverside. Included mapping, excavation and report composition. (August-May)

1973 Excavator, Field Mapper, Laboratory Analyst. Archaeological field investigation, 4-Riv-202, University of California, Riverside. Included surface collection, report composition, and coprolite studies. Dr. Richard Ambro. (March-June)

1972 Museum Archaeologist's Assistant, Site Surveyor, Report Author. Riverside County Museum. Mr. Larry Bowles. (September-May)

Site Surveyor. Archaeological field investigation, Palm Canyon, California. Archaeological Research Unit, University of California, Riverside. Included site mapping. (November)

Site Surveyor. Archaeological field investigation, Lucerne Valley, California. Southern California Edison Company, Archaeological Research Unit, University of California, Riverside. (October)

Site Surveyor, Excavator. Archaeological field investigation, Palm Springs, California. Archaeological Research Unit, University of California, Riverside. Dr. Philip Wilke. Included mapping, surface collection, report composition, coprolite analysis and television publicity. (July-August)

Archaeological Field Class (Perris Reservoir) Riverside County, California. University of California, Riverside. Dr. James O'Connell. Included survey, mapping, surface collection, excavation, flotation, and report composition. (March-June)

Excavator. Archaeological field investigation, sites 4 Mad-107, 117, 115, Dr. Thomas F. King. (May)

Assistant Archaeologist, Site Surveyor, Excavator, Report Preparer. Archaeological field investigations, Riverside County. Riverside County Parks Department. (June-September)

1971 Excavator. Archaeological field investigations in the Mojave Desert near Barstow, California. Archaeological Research Unit, University of California, Riverside. Included survey, mapping, and surface collection. (November)

Assistant Archivist. Bureau of Land Management, Desert District, Riverside County, California. Included cataloging, collection and organization of reported California sites under the Smithsonian numbering system.

1966 Excavator. Archaeological field investigations, Calico, Mojave Desert, California, for the San Bernardino County Museum.

Publications

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1979 Archaeological Survey of the Fairmount PRD Project. WESTEC Services, Inc.

1979 Archaeological Survey of the Barron Ranch. WESTEC Services, Inc.

1979 Archaeological Survey of the Mazzanti Property, Jacumba, California. WESTEC Services, Inc.

n.d. Archaeological Investigations at Site W-1921, Poway, California. WESTEC Services, Inc. With Sandra Day.

1979 Archaeological Survey of the Lawrence Canyon Property, Oceanside, California. WESTEC Services, Inc. With Randy L. Franklin.

1979 Archaeological Investigation of W-2247, Alpine, California. WESTEC Services, Inc. With Brian Hunter.

1979 Archaeological Excavation and Analysis of W-389-E at 9109 Kenwood Drive, Spring Valley, California. WESTEC Services, Inc. With Brian Hunter.

1979 Archaeological Reconnaissance of a 90-Acre Property, Alpine, California. WESTEC Services, Inc. With Brian Hunter.

1979 Archaeological Survey of a Village and Country Property, Poway, California. WESTEC Services, Inc. With Brian Hunter.

1979 Archaeological Survey of Bay Terraces East. WESTEC Services, Inc. With Brian Hunter.

1979 Archaeological Survey of the Greenleaf Project, Valley Center, California. WESTEC Services, Inc. With Brian Hunter.

1979 Archaeological/Historical Survey of the Proposed Green Valley Interceptor Alignment. WESTEC Services, Inc. With Jay Thesken.

1979 Archaeological Survey of the Rancho del Oro Property, Oceanside, California. WESTEC Services, Inc. With Jay Thesken.

1979 Archaeological/Historical Survey of the Hansen Ranch Property, WESTEC Services, Inc.

1978 Archaeological/Historical Survey of the Daley Business Park. WESTEC Services, Inc.

1978 Archaeological/Historical Survey of the Hobbs Mira Mesa Project. WESTEC Services, Inc.

1978 Archaeological/Historical Survey of the Huffman Property, Ranchita, California. WESTEC Services, Inc.

1978 Archaeological/Historical Survey of the Maxwell Property (TPM 13526), Ramona. WESTEC Services, Inc.

1978 Archaeological/Historical Survey of the Mission Cliffs PRD Project. WESTEC Services, Inc.

1978 Archaeological/Historical Survey of the Nelson-Sloan Project. WESTEC Services, Inc.

1978 Archaeological/Historical Survey of the San Luis Rey Highlands. WESTEC Services, Inc.

1978 Archaeological/Historical Survey, Pantovich Property, Lake Henshaw. WESTEC Services, Inc.

1978 Archaeological Investigations and Mitigation at Morning Sun and Morning Sun West, San Diego, California. WESTEC Services, Inc.

1978 Archaeological/Historical Survey, Oakana Road Lot Split, Ramona, California. WESTEC Services, Inc. With Richard Carrico.

1977 Archaeological Excavation and Analysis of W-389-D, 9142 Kenwood Drive, Spring Valley, California. WESTEC Services, Inc. With Richard Carrico.

1977 Archaeological Investigations of the Master Plan 300 Acre Project, Oceanside. WESTEC Services, Inc. With Richard Carrico.

RESUME

NAME: Alexander N. Kirkish SOCIAL SECURITY: 553-68-1657

ADDRESS: 4318 Mead Avenue #9
San Diego, California 92116
Telephone (714) 584-8597

BIRTHPLACE: San Francisco, California BIRTHDATE: 17 June 1951

EDUCATION: University of California, Santa Barbara: B.A. Anthropology 1970; Standard Secondary Credential 1972.

University of California, Riverside: M.A. Anthropology 1975.

PROFESSIONAL TEACHING EXPERIENCE:

1971-1972 Student Teacher: Archaeology and Cultural Geography
Dos Pueblos High School
Santa Barbara, California

1972 Seminar Director: Archaeology
Riverside County Parks Department

1972-1974 Substitute Teacher
Palm Springs Unified School District
Palm Springs, California

1973 Temporary Instructor: History
Montclair School
Palm Springs, California

1980 Instructor: Physical Anthropology, Archaeological Field Methods
Imperial Valley College Extension
El Centro, California

RESEARCH AND FIELD EXPERIENCE:

1969 Field worker, Burton's Mound
Santa Barbara, California
Principal Investigator: Dr. Claude Warren

1970 Investigator, archaeological survey, Santa Ynez Valley
Santa Barbara County, California
Principal Investigator: Alex Kirkish

1970 Principal Investigator, archaeological survey, Los Padres National Forest, Santa Barbara County, California
Completed through an Independent Studies course supervised by Dr. Michael Glassow

1971-1972 Co-Director, excavations at Raphael Gomez Adobe
Monterey, California
Principal Investigators: Donald Howard and Alex Kirkish

1971-1972 Co-Director, excavations, Dos Pueblos Site
Goleta, California
Principal investigator: Alex Kirkish

1972-1974 Field Director and Chief Survey Archaeologist
Riverside County Parks Department and the Archaeological Research Unit, University of California, Riverside. While working in these capacities, I participated in the following projects:

Directed field excavations at the Bovine Site, Santa Ana County Park, Riverside, California.

Directed field excavations at the Shields Site, Indio, California.

Co-Director in field excavation at the Perris Reservoir Project, Riverside County, California.

Participated in field excavations at Taquitz Canyon, Palm Springs, California.

Directed a comprehensive Archaeological Survey of most of the Riverside County Parks.

Directed an Archaeological Survey of Eagle Canyon, Palm Springs, California.

Directed an Archaeological Survey of property owned and to be developed by H&B Ranches, Inc., Riverside, California.

All the above projects were financed through Riverside County Parks, State Government, or independent land developers, and were part of Environmental Impact Reports.

1977-1979 As County Archaeologist for Ventura County, I conducted numerous surveys in partial fulfillment of Environmental Impact Reports.

1979-1981 As an Archaeologist for the Bureau of Land Management, I have participated in field surveys, compliance checks and test excavations.

1981-present In the capacity of Project Archaeologist for Cultural Systems Research, Inc., I have directed archaeological mitigation projects, participated in proposal writing and assisted in personnel management.

EMPLOYMENT

1969 Lab Assistant I, Department of Anthropology, University of California, Santa Barbara, California.

1970 Lab Assistant II, Department of Anthropology, University of California, Santa Barbara, California.

Employment

1970-1971 Museum Aide II, Pueblo Grande Museum, Phoenix, Arizona

1972 Reader: *North American Indians* given at the University of California, Santa Barbara, California.

1972-1973 Survey Archaeologist for the Archaeological Research Unit, University of California, Riverside.

1972-1974 Chief Survey Archaeologist for the Riverside County Parks Department, Riverside, California.

1977-1979 County Archaeologist for Ventura County Flood Control, Ventura, California.

1979-1981 Area Archaeologist for the Bureau of Land Management, Canon City, Colorado, and El Centro, California.

1980 Instructor, Physical Anthropology and Archaeological Field Methods, Imperial Valley College Extension, El Centro, California.

1981 to Present - Project Archaeologist for Cultural Systems Research, Inc., San Diego, California.

FORMAL PAPERS GIVEN ORALLY

1970 The Interior Region: *The Santa Barbara Region: A Review of Cultural and Temporal Sequences*. Presented at the Society for California Archaeology meeting, Long Beach, California.

1979 *A Cultural Resource Management Program at the County Level*. Presented at the Southwestern Anthropological Association and Society for California Archaeology annual meetings.

TECHNICAL SKILLS

I am competent in the following technical tools: photographic equipment, survey equipment (alidade, transit, engineer's compass), drafting material, off-road vehicles, and map interpretation (USGS topo maps, aerial photographs, and blueprint material).

Further skills include general laboratory work, museum work (displays and other curatorial skills) and administrative abilities. The projects I have directed required the ability to organize, supervise, and analyse the material and manpower associated with surveys and/or excavations.

RESUME

KEITH D. RHODES, ASSISTANT ARCHAEOLOGIST

EDUCATION:

B.A., Anthropology, University of California at San Diego, in progress
A.A., Archaeology, Certificate, Palomar College, 1977

PROFESSIONAL AFFILIATIONS:

Escondido Historical Society
San Diego Historical Society

PROFESSIONAL EXPERIENCE:

1981 CULTURAL SYSTEMS RESEARCH, INC. In his capacity as assistant archaeologist, Keith Rhodes has participated in 5 environmental impact investigations in San Diego, Imperial, and Orange counties. He has conducted archival research, field mapping, laboratory analysis, and report preparations for programs related to industrial and commercial sites.

1976-1981 WESTEC SERVICES, INC. In his capacity as associate archaeologist, Mr. Rhodes has participated in over 70 environmental impact investigations in San Diego, Riverside, and Orange counties. He has conducted survey and excavation programs related to residential, commercial and industrial project sites. Recent projects include test excavation for determination of National Register status for 41 archaeological sites (SCE/SDG&E); archaeological testing and analysis within Quarry Road Corridor (Vista Irrigation District); historic archaeological site analysis of an early California land grant adobe, private planned community (Penasquitos Properties); survey for location of water pipeline, channel conveyance trenches, spreading ground and pumping stations on local water district land (Vista Irrigation District); data collection for systematic sampling of San Diego County area overview (Comprehensive Planning Organization); systematic walkover survey of 824 acres within a private planned community (Palo Verde Ranch Lts.).

TECHNICAL REPORTS PREPARED AS PRINCIPAL AUTHOR:

1981 *Archaeological Test Excavation for Lake Henshaw Quarry Road.* Report on file at WESTEC Services, Inc.

1980 *Archaeological Survey of Theberge-Poway.* Report on file at WESTEC Services, Inc.

1980 *Archaeological Excavation of the IMED Project.* Report on file at WESTEC Services, Inc.

1980 *Archaeological Survey of Lopez Ridge.* Report on file at WESTEC Services, Inc.

1980 *Archaeological Survey of Miramar Auto Center Project.* Report on file at WESTEC Services, Inc. .

1979 *Archaeological Survey Report of the Modifications of Henshaw Dam and Warner Ranch Groundwater Program.* Report on file at WESTEC Services, Inc.

1979 *Archaeological Investigations at Site W-1768, Poway, California.* Report on file at WESTEC Services, Inc.

1979 *Archaeological Survey of Bernardo Industrial Park, Unit 17.* Report on file at WESTEC Services, Inc.

1979 *Archaeological Testing at W-192-A, Imperial Beach.* Report on file at WESTEC Services, Inc.

1979 *Archaeological Survey of the Welk Park North Property.* Report on file at WESTEC Services, Inc.

1978 *Archaeological/Historical Survey of the Lake Hodges Fishing Program.* Report on file at WESTEC Services, Inc.

1978 *Archaeological Investigations at Palo Verde Ranch, Units 1 and 2.* Report on file at WESTEC Services, Inc.

1978 *Archaeological Investigations of the University City High School Project: Archaeological Sites W-1273 and 1274.* Report on file at WESTEC Services, Inc.

1978 *Archaeological Survey/Investigation, Mechling Property, Poway, California.* Report on file at WESTEC Services, Inc.

1978 *Archaeological Survey/Investigations, Riley Lot Split, Poway, California.* Report on file at WESTEC Services, Inc.

1977 *Archaeological Survey Investigation of the Hannon Property.* Report on file at WESTEC Services, Inc.

MEMORANDUM FOR FILE

December 2, 1981

SUBJECT: San Onofre 230 kV T/L System
Archaeological Data Recovery Program

Cultural Systems Research, Inc. (CSRI), has prepared a research proposal for a data recovery program for archaeological sites potentially affected by the operation of transmission lines associated with San Onofre Nuclear Generating Station Units 2 and 3. This data recovery program, dated October 1981, was prepared specifically in response to a December 18, 1980 letter from Dr. Knox Mellon, State Historic Preservation Officer of California, to Mr. Dino Scaletti, U.S. Nuclear Regulatory Commission (NRC). This letter stated Dr. Mellon's concurrence with eligibility of various sites for inclusion in the National Register of Historic Places and further stated that there would be "No Adverse Effect" on the subject sites if a Data Recovery Plan was "implemented in accordance with the Advisory Council's Supplementary Guidance for Treatment of Archaeological Properties supporting a No Adverse Effect Determination."

This memorandum summarizes the reasons for believing that CSRI has provided a research proposal which is, in fact, in accordance with the ACHP's guidelines as stated in Part II, Section X of their 1980 Handbook. It must be emphasized that the undersigned is employed by the project applicant and cannot speak for the NRC; this memorandum is designed solely as a recommendation to the agency.

In order for an agency to conclude "that the data recovery program will negate the adverse effect, and...determine that the undertaking will have No Adverse Effect on the property" (ACHP 1980:19) the following conditions must be met:

(1) The agency and SHPO must agree that questions A(1) and A(2), and either B(1), B(2), or B(3) are answered in the affirmative.

(2) The agency must establish a data recovery program "consistent with the Council's Recommendations for Archaeological Data Recovery (Part III)."

In the professional opinion of the undersigned, both questions A(1) and A(2) are answered in the affirmative; question B(1) is also answered in the affirmative for all sites involved. Furthermore, questions B(2) and B(3) are answered in the affirmative for most of the sites (only one of the B questions must be answered affirmatively, however).

Justification: Question A(1) asks whether the "significance of the property" lies "primarily in the data it contains." The affirmative answer to this is supported by Dr. Mellon's letter of December 18, 1980, stating that the sites are eligible under criterion "d" (36 CFR 1202.6).

Justification: Question A(2) asks whether it appears that preservation in place would be more costly, or otherwise less practical than data recovery. The affirmative answer to this is supported by the fact that preservation in place would require either relocating the transmission line and associated roads (with no guarantee that other sites would not be impacted instead) or performing maintenance by helicopter rather than by wheeled vehicles. Either possibility would be both impractical and more costly than the suggested data recovery program. The affirmative answer is further supported by the fact that none of the land on which the sites are located is federally owned.

Justification: Question B(1) asks whether "the effects of the undertaking" will "be minor relative to the size and nature of the property." The affirmative answer for all sites involved derives from the fact that the undertaking in question is the operation and maintenance of project transmission lines; therefore, the impacts will be limited to vehicular use of project-related roads. Such impacts are generally restricted vis-a-vis the surface area of the sites; in most instances, the roads are located on the peripheries of the sites; and in most instances testing of the sites indicated little stratigraphic depth in the areas affected by the access roads. Site 04-Ora-438 is the only site with stratigraphic depth in the access road; this site, however, is threatened by a housing development by the property owner (for this site, note question B-2-C).

Insofar as question B(1) is answered in the affirmative, it is unnecessary to deal with questions B(2) or B(3). Nonetheless, it might be noted that all sites involved are located on non-federal, privately owned land where preservation cannot be guaranteed. In addition, none of the parts of question B(3) were referenced by Dr. Mellon in his letter of December 18, 1980, as constituting an impediment to carrying out a data recovery program; hence it is the conclusion of the undersigned that this question would also be answered in the affirmative.

With regard to the Advisory Council's Recommendations for Archaeological Data Recovery (ACHP 1980, Part III), CSRI's proposal is believed to be responsive to each of the 13 elements of these non-mandatory guidelines. To wit:

1. Identification of affected properties is based upon 100% archaeological survey, conducted in accordance with SHPO recommendations.

2. Qualified Supervision is to be provided by CSRI's project archaeologist, Alex Kirkish.

3. The State Historic Preservation Plan has not been developed for the project area and hence does not apply.

4. A Data Recovery Plan is provided in CSRI's proprosal, under the headings "Research Questions" and "Data Recovery Program Methodology" (CSRI proposal, pages 3-13). The data recovery plan:

   A. Specifies properties to be investigated (page 3).

   B., C. Develops research questions and study topics relative to site disturbance, chronology, sourcing of lithic material, site function, and cultural ecology (page 3-8).

   D. Establishes study priorities (page 3).

   E. Defines data needs (regarding the priority question of site disturbance effects, see pages 4-5).

   F. Describes fieldwork and analysis methods (pages 10-13).

   This data recovery plan has been submitted to the SHPO, NRC, and ACHP for review.

5. Staff, Facilities, Equipment, and Consultants are provided for (pages 9-10).

6. Methods are discussed in some detail (pages 10-11).

7. Public Participation included consultation with local Native Americans (see page 9).

8. Cost Minimization has been reasonably accomplished by close cooperation between the consultant and the project applicant.

9. A Report will be prepared and submitted to the SHPO, NRC, and ACHP for comments. The report will be available to the NRC for appropriate dissemination.

10. Curation will be accomplished by appropriate arrangements with approved repositories. It must be understood, however, that the sites involved are privately owned (by parties other than project applicant) and that disposition of artifacts is legally subject to the owners' approval.

11. Budgeting has been accomplished without federal funds (i.e., applicant will pay for the data recovery).

12. Non-archaeological concerns have been addressed (see page 9 regarding Native American participation).

13. Flexibility is to be ensured by close supervision by the project archaeologist.

In summary, it is the opinion of the undersigned that the proposed data recovery program should be promptly approved and implemented. To require a more detailed statement of the research design would only serve to restrict its flexibility; to delay implementation would only add to project costs.

David R. M. White, Ph.D.
Anthropologist, E&RA

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12/22/81