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June 17, 2005

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U.S. Nuclear Regulatory Commission
Office of the Secretary
Attn: Rulemaking and Adjudications Staff
Mail Stop: OWFN-16C1
Washington, DC 20555

Re: In the Matter of: Hydro Resources, Inc.
Docket No: 40-8968-ML

Dear Sir or Madam:

Please find attached for filing Hydro Resources, Inc.'s Response in Opposition to Intervenor's Written Presentation Regarding Historic and Cultural Resource Preservation in the above-captioned matter. Copies of the enclosed have been served on the parties indicated on the enclosed certificate of service. Additionally, please return a file-stamped copy in the self-addressed, postage prepaid envelope attached herewith.

If you have any questions, please feel free to contact me at (202) 496-0780.
Thank you for your time and consideration in this matter.

Sincerely,



Anthony J. Thompson, Esq.
Christopher S. Pugsley, Esq.
Thompson & Simmons, PLLC.
Counsel of Record to HRI

Enclosures

(hydro resourcesCOVERLETTER 6-17-05.doc)

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**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

ATOMIC SAFETY AND LICENSING BOARD

**Before Administrative Judges:
E. Roy Hawkens, Presiding Officer
Dr. Richard F. Cole, Special Assistant
Dr. Robin Brett, Special Assistant**

In the Matter of:

Hydro Resources, Inc.
P.O. Box 777
Crownpoint, NM 87313

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)
) Docket No.: 40-8968-ML
)
) Date: June 17, 2005
)
)

**HYDRO RESOURCES, INC.'S RESPONSE IN OPPOSITION TO
INTERVENORS' WRITTEN PRESENTATION REGARDING HISTORIC AND
CULTURAL RESOURCE PRESERVATION**

I. INTRODUCTION

Hydro Resources, Inc. (HRI), by its undersigned counsel of record, hereby submits this Response in Opposition to Intervenor's Written Presentation Regarding Historic and Cultural Resource Preservation with respect to HRI's Nuclear Regulatory Commission (NRC) source material license to operate an *in situ leach* (ISL) uranium recovery facility at Church Rock and Crownpoint, New Mexico. For the reasons discussed below, HRI respectfully requests that the Presiding Officer reject each of Intervenor's arguments regarding historic and cultural resource preservation.

II. BACKGROUND AND PROCEDURAL HISTORY

HRI applied for an NRC source material license to operate an ISL uranium recovery facility at the Crownpoint Uranium Project (CUP) consisting of the Church Rock Sections 8 and 17, Unit One, and Crownpoint uranium recovery sites. On November 14, 1994, NRC Staff prepared a draft environmental impact statement (DEIS)

and published a notice in the Federal Register detailing its availability. *See* 59 Fed. Reg. 56,557 (November 14, 1994). This Federal Register notice provided potentially affected parties with an opportunity to request a hearing in accordance with 10 CFR § 2.1205. On December 21, 1994, several parties filed hearing requests with NRC, and a Presiding Officer was designated by the Atomic Safety and Licensing Board. *See* 59 Fed. Reg. 66,979 (January 8, 1995). However, the Presiding Officer held all aspects of this proceeding, including final determinations of standing for a hearing, in abeyance until NRC Staff completed its review of HRI's license application and issued its final environmental impact statement (FEIS). On February 29, 1997, NRC Staff issued its FEIS and, on January 5, 1998, NRC Staff approved HRI's license application and granted HRI License No. SUA-1508.

On May 13, 1998, the Presiding Officer permitted several parties, including the Eastern Navajo Dine Against Uranium Mining (ENDAUM), the Southwest Research Information Center (SRIC), and Grace and Marilyn Sam (hereinafter the "Intervenors"), to intervene to challenge HRI's license under NRC's 10 CFR Part 2, Subpart L provisions for "informal hearings." *See In the Matter of Hydro Resources, Inc.* (Crownpoint Uranium Project), LBP-98-9, 47 NRC 261 (May 13, 1998). Additionally, in September of 1997, NRC Staff requested leave to participate as a party in the hearing process in accordance with 10 CFR §§ 2.1213 & 2.1237. During the hearing, the Presiding Officer bifurcated the proceeding to address HRI's four proposed uranium mining sites separately: (1) Church Rock Section 8; (2) Church Rock Section 17; (3) Unit One; and (4) Crownpoint.

A. Historic and Cultural Resource Preservation Area of Concern

As part of the Subpart L hearing process, Intervenorors were required to submit a list of contentions to the Presiding Officer to determine which areas of concern, if any, were germane to this proceeding. The Presiding Officer admitted the following historic and cultural resource preservation issues as germane: (1) violation of the National Historic Preservation Act (NHPA) by not identifying historic properties or consulting with the Navajo Nation Historic Preservation Department, (2) violation of the Native American Graves Protection and Repatriation Act (NAGPRA) by failing to comply with the consultation and concurrence requirements,¹ and (3) the FEIS and HRI's environmental reports do not adequately examine the impacts of the CUP on historic and cultural resources.

On December 7, 1998, Intervenorors submitted their written presentation in opposition to HRI's license application regarding historic and cultural resource preservation issues for the Church Rock Section 8 site. *See In the Matter of Hydro Resources, Inc.* (Crownpoint Uranium Project), *Intervenorors' Written Presentation in Opposition to Hydro Resources, Inc.'s Application for a Materials License With Respect to Compliance With The National Historic Preservation Act, Native American Graves Protection and Repatriation Act and Related Cultural Issues* (December 7, 1998) (ACN 9812110027). In response to Intervenorors' written presentation, on January 11, 1999, HRI submitted its response in support of its license application. *See In the Matter of Hydro Resources, Inc.* (Crownpoint Uranium Project), *Hydro Resources, Inc.'s Response to*

¹ In their April 28, 2005 written presentation, Intervenorors did not avail themselves of any arguments regarding NAGPRA. Therefore, HRI asserts that any contentions regarding NAGPRA compliance should be deemed as waived.

Eastern Navajo Dine Against Uranium Mining's and Southwest Research and Information Center's December 7, 1998 Brief in Opposition to Hydro Resources, Inc.'s Application for a Materials License With Respect to Compliance with the National Historic Preservation Act, Native American Graves Protection and Repatriation Act and Related Cultural Resource Issues, (January 11, 1999) (ACN 9901200052). Then, on January 19, 1999, NRC Staff submitted its response to Intervenors' written presentation. *See In the Matter of Hydro Resources, Inc. (Crownpoint Uranium Project), NRC Staff's Response to ENDAUM and SRIC Presentation on NHPA and NAGPRA Issues*, (January 19, 1999) (ACN 9901200080).

On February 19, 1999, the Presiding Officer issued a Partial Initial Decision regarding historic and cultural resource preservation issues. The Presiding Officer determined that HRI's NRC-approved NHPA Section 106 process was adequate to ensure compliance with the all relevant statutes and to ensure adequate protection of historic and cultural resources and properties. *See In the Matter of Hydro Resources, Inc. (Crownpoint Uranium Project)*, LBP-99-9, 49 NRC 136 (February 19, 1999). Further, the Presiding Officer specifically noted that the use of "phased compliance" with the NHPA was permissible for the CUP. *Id.* Intervenors appealed LBP-99-9 and, in CLI-99-22, the Commission rejected Intervenors' appeal by finding that the Presiding Officer's endorsement of "phased compliance" was adequate. *See In the Matter of Hydro Resources, Inc., (Crownpoint Uranium Project)*, CLI-99-22, 50 NRC 3 (July 23, 1999). Additional aspects of the Church Rock Section 8 decisions regarding this issue are discussed in Section III below.

On November 5, 2004, the Presiding Officer issued a scheduling order requiring HRI and Intervenor to proceed with litigation of all germane areas of concern regarding the three remaining CUP sites in the CUP: (1) Church Rock Section 17; (2) Unit One; and (3) Crownpoint. On January 19, 2005, the Presiding Officer approved a joint motion filed by Intervenor and HRI to amend the briefing schedule as set forth in the Presiding Officer's November 5, 2004 Order. After approving the parties' requested amendments to the briefing schedule, on February 3, 2005, the Presiding Officer issued a new scheduling order reflecting such amendments. More specifically, as agreed by the parties, the new scheduling order eliminated three germane areas of concern from the litigation (i.e., environmental justice, financial and technical qualifications, and liquid waste disposal and surface water protection) and limited one additional area of concern (i.e., air emissions) to the Church Rock Section 17 site.

On April 28, 2005, Intervenor submitted their written presentation regarding historic and cultural resource preservation issues. In response, HRI hereby submits this written presentation and respectfully requests that the Presiding Officer reject each of Intervenor's arguments regarding historic and cultural resource preservation.

III. HISTORIC AND CULTURAL RESOURCE PRESERVATION DECISIONS REGARDING CHURCH ROCK SECTION 8 URANIUM RECOVERY SITE

A. LBP-98-3, 47 NRC 7 (January 23, 1998)

Intervenor filed a Motion for a Stay of the effectiveness of HRI's NRC license alleging that historic surveys required under the NHPA had not yet been completed. Further, Intervenor's Motion also requested the imposition of a temporary stay without answers filed by HRI or NRC Staff to preserve the "status quo." Intervenor alleged that

the failure to complete the NHPA Section 106 process and alleged violations of the NAGPRA presented "extraordinary circumstances" under which a temporary stay would be justified.

After reviewing Intervenor's Motion, the Presiding Officer determined that the grant of a temporary stay was warranted. However, the Presiding Officer noted that this temporary stay was granted "until such time as the Presiding Officer has ruled on the Petitioners' [Intervenor's] Stay Motion or if, in the Presiding Officer's judgement, intervening circumstances warrant lifting the temporary stay." 47 NRC at *6.

B. LBP-98-5, 47 NRC 119 (April 2, 1998)

This Licensing Board Order considered multiple filings on behalf of Intervenor's, the most relevant of which is Intervenor's Motion for a Stay of the effectiveness of HRI's NRC license. As stated above, in LBP-98-3, the Presiding Officer imposed a temporary stay of HRI's license pending review of Intervenor's Motion for a Stay. In this decision, the Presiding Officer evaluated Intervenor's Motion for a Stay using the four required factors for the grant of a stay: (1) whether Intervenor's are likely to succeed on the merits of their contentions, (2) whether or not HRI's license would result in irreparable injury, (3) whether there is harm to other parties, and (4) whether the grant of a stay is in the public interest. See 10 CFR § 2.788.

Upon considering the first factor, a likelihood of success on the merits, the Presiding Officer determined that Intervenor's allegations failed to demonstrate that HRI and NRC Staff failed to comply with the NHPA's or NAGPRA's requirements. The Presiding Officer noted that HRI and NRC Staff "adequately address[ed] the appropriateness of the phased approach to compliance with section 106 of the NHPA

with regard to cultural resources.” 47 NRC at *15. Further, the Presiding Officer noted that “there appears...to be no disagreement that the only parcel of land that Applicant [HRI] may develop under the conditions of its NRC license *has been satisfactorily inventoried and is in compliance with the NHPA.*” *Id.* at *16 (emphasis added).²

C. LBP-99-9, 49 NRC 136 (1999)

In LBP-99-9, the Presiding Officer issued a Partial Initial Decision regarding historic and cultural resource preservation issues for the Church Rock Section 8 uranium recovery site. After reviewing all submitted written presentations, the Presiding Officer determined that Intervenor’s arguments contained “serious flaws.” More specifically, the Presiding Officer determined that:

“Intervenor’s cite [sic] a portion of a regulation and inexplicably omit to mention that a part of the regulation differs from their position....Intervenor’s witness criticizes the difference in research methods among the studies relied on by HRI but does not provide a legal standard against which the adequacy of these studies may be found wanting. In still another instance, which is typical of other criticisms that they level, Intervenor’s criticize HRI and the Staff for not following ‘the standard practice for compliance with federal and tribal cultural resources laws’ but they do not cite a regulation requiring that kind of compliance.”

49 NRC at *7-8.

The Presiding Officer noted that Intervenor’s “ignore the regulatory authority for phased compliance” and fail to address the specific license condition requiring cultural resource inventory when engaging in activities not yet assessed by NRC Staff. *Id.* at *9 & 13.

Further, the Presiding Officer also determined that Intervenor’s arguments regarding violations of the NAGPRA and the National Environmental Policy Act (NEPA) were

² The Presiding Officer did not include a specific discussion of irreparable harm with respect to historic and cultural resource preservation issues. The Presiding Officer’s analysis of the remaining two (2) factors, potential harm to other parties and the public interest, were found to justify denial of Intervenor’s stay request.

without merit. *Id.* at *15-17. In summary, the Presiding Officer stated that "Intervenors merely refuse to accept the 'phased review' of the project which is permitted by law." *Id.* at *17.

D. CLI-98-4, 47 NRC 111 (April 16, 1998)

In CLI-98-4, the Commission considered Intervenors' Petition for Review of LBP-98-5, including a renewed Motion for a Temporary Stay and a Stay of the effectiveness of HRI's NRC license. The Commission determined that the issuance of a temporary stay preserving the "status quo" was warranted pending consideration of Intervenors' Petition for Review and Motion for Stay.

E. CLI-98-8, 47 NRC 314 (1998)

In CLI-98-8, the Commission considered the merits of Intervenors' Petition for Review of LBP-98-5 and Motion for a Stay of the Effectiveness of HRI's NRC license. After reviewing their arguments, the Commission denied Intervenors' Petition for Review and dismissed their Motion for a Stay. The Commission determined that Intervenors' arguments on irreparable harm were flawed and that mere violation of a statute (i.e., the NHPA or NAGPRA) was insufficient to constitute such harm. Based on this, the Commission denied Intervenors' Petition for Review.

F. CLI-99-22, 50 NRC 3 (1999)

In CLI-99-22, the Commission considered Intervenors' various Petitions for Review regarding, *inter alia*, historic and cultural resource preservation issues. In their Petition for Review of LBP-99-9, Intervenors renewed their argument that HRI and NRC Staff failed to comply with the NHPA by utilizing a "phased identification" compliance process. The Commission determined that there was no reason to overturn the Presiding

Officer's, as well as the Commission's, previous findings that "phased" compliance was permissible under the NHPA and reiterated that "phased" compliance is permitted under the NHPA. 50 NRC at *24, fn. 37. The Commission also rejected Intervenor's argument regarding preparation of a supplemental environmental impact statement (EIS) based on the completion of NHPA actions.

IV. SUMMARY OF HRI EVIDENCE FOR CHURCH ROCK SECTION 8 REGARDING HISTORIC AND CULTURAL RESOURCE PRESERVATION ISSUES

- A. *Hydro Resources, Inc.'s Response to Eastern Navajo Dine Against Uranium Mining's and Southwest Research and Information Center's December 7, 1998 Brief in Opposition to Hydro Resources, Inc.'s Application for a Materials License With Respect to Compliance with the National Historic Preservation Act, Native American Graves Protection and Repatriation Act and Related Cultural Resource Issues, (January 11, 1999) (ACN 9901200052)*

HRI's January 11, 1999, written presentation with respect to historic and cultural resource preservation issues was composed of the legal brief and one (1) expert affidavit addressing multiple issues. Initially, HRI's legal brief summarized each of the arguments presented in opposition to Intervenor's written presentation regarding historic and cultural resource preservation issues, including arguments refuting the written testimony offered by Intervenor.

- B. *Affidavit of Dr. Eric Blinman (January 11, 1999) (ACN 9901200061)*

The Affidavit of Dr. Eric Blinman addressed several procedural and regulatory issues associated with the assessment of historic and cultural properties at the Church Rock Section 8 site, including the use of a "phased identification" process. Dr. Blinman specifically refuted Intervenor's testimony that the alleged "uneven treatment" of historic and cultural properties over the entirety of the CUP due to the "phased identification"

process was improper. In this refutation, Dr. Blinman emphasized that NHPA Section 106 ensures a "process" and not a specific "outcome." According to Dr. Blinman, this "process" did not involve the discussion of traditional cultural properties in concurrence documents since no such properties were found within or adjacent to the "first partition" (i.e., Church Rock Sections 8 and 17).

When addressing the credibility and reporting of Mr. Earnest Becenti, Dr. Blinman offered several statements supporting Mr. Becenti's credibility by noting that Intervenors selectively omitted references to parts of his report and by noting that other facts such as the failure to demonstrate that no traditional properties were within the parameters of the "first partition." Dr. Blinman concluded that Mr. Becenti's actions were proper and that there were no threats to traditional cultural properties due to uranium recovery operations at Church Rock Section 8.

Further, Dr. Blinman stated that, when conducting investigations for traditional cultural properties on Navajo land, the Museum of New Mexico (MNM) always uses questionnaires and that such questionnaires are usually not included in final reports as they may contain confidential information. Further, Dr. Blinman directly addresses Intervenors' allegations that the review of traditional cultural properties was inadequate by stating that the processes used for the MNM report were proper and that the "phased identification" approach rendered most of Intervenors concerns moot.

Dr. Blinman also stated that HRI's and NRC Staff's procedures to address NAGPRA issues were proper. Dr. Blinman's testimony reflected the premise that there is no legal or regulatory link between NHPA Section 106 and NAGPRA and that NAGPRA did not apply to Church Rock Section 8 unless remains were found on the

Bureau of Land Management (BLM) portion of that parcel. Given that there were no development plans for that portion of the site, there was no expectation that NAGPRA's provisions would be invoked.

V. STANDARD OF REVIEW

A. Scope of Licensing Board Review

Normally, the Licensing Board is charged with compiling a factual record in a proceeding, analyzing the record, and making a determination based upon the record. The Licensing Board performs the important task of judging factual and legal disputes between parties and has the responsibility for appraising *ab initio* the record developed before it and for formulating the agency's initial decision based on that appraisal. *See Wisconsin Electric Power Co. (Point Beach Nuclear Plant, Unit 2)*, ALAB-78, 5 AEC 319, 322 (1972). A Licensing Board is not required to do independent research or conduct *de novo* review of an application in a contested proceeding, but may rely upon uncontradicted Staff and applicant evidence. *See Consumers Power Co. (Midland Plant, Units 1 & 2)*, ALAB-123, 6 AEC 331, 334-35 (1973).

With respect to the jurisdiction of the Licensing Board, a Licensing Board has only the jurisdiction and power which the Commission delegates to it. *See e.g., Public Service Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 & 2)*, ALAB-316, 3 NRC 167 (1976). While the Licensing Board possesses the power to provide initial reviews of license applications in contested proceedings, it does not possess the power to overrule Commission holdings. Where a matter has been considered by the Commission, it may not be reconsidered by a Board. *Virginia Electric & Power Co. (North Anna Nuclear Power Station, Units 1 & 2)*, ALAB-584, 11 NRC 451, 463-65

(1980). A Licensing Board for an operating license proceeding is also limited to resolving matters that are raised therein as *legitimate* contentions by the parties or by the Board *sua sponte*. See e.g., *Dairyland Power Cooperative* (LaCrosse Boiling Water Reactor), LBP-88-15, 27 NRC 576, 579 (1988) (emphasis added).

B. Collateral Estoppel

Principles of *collateral estoppel*, like those of *res judicata*, may be applied in administrative adjudicatory proceedings. *U.S. v. Utah Construction and Mining Co.*, 384 U.S. 394, 421-422 (1966). Collateral estoppel precludes re-litigation of issues of law or fact which have been finally adjudicated by a tribunal of competent jurisdiction. *Toledo Edison Co.* (Davis-Besse Nuclear Power Station, Units 1, 2, and 3), ALAB-378, 5 NRC 557 (1977). The application of collateral estoppel does not hinge on the correctness of the decision or interlocutory ruling of the first tribunal. *Id.* It is enough that the tribunal had jurisdiction to render the decision, that the prior judgment was rendered on the merits, that the cause of action was the same, and that the party against whom the doctrine is asserted was a party to the earlier litigation or in privity with such a party. *Id.* Collateral estoppel requires the presence of at least four elements in order to be given effect: (1) the issue sought to be precluded must be the same as that involved in the prior action, (2) the issue must have been actually litigated, (3) the issue must have been determined by a valid and final judgment, and (4) the determination must have been essential to the prior judgment. See e.g., *Houston Lighting & Power Co.* (South Texas Project, Units 1 & 2), LBP-79-27, 10 NRC 563, 566 (1979).

VI. ARGUMENT

In addressing Intervenor's April 28, 2005 written presentation and attachments, to promote better organization, HRI has prepared Section VI of this written presentation to encompass all three remaining HRI uranium recovery sites. Should any argument require HRI to differentiate between uranium recovery sites, HRI will provide separate subheadings in accordance with the Presiding Officer's Order of November 5, 2004. As many of Intervenor's site-specific arguments are addressed in HRI's expert affidavits, specific references to such affidavits will be provided where relevant. In addition, some arguments raised by Intervenor's affiants were not directly raised in their written presentation. As a result, HRI will address such arguments in their expert affidavits only.

A. Phased Identification is Necessary For ISL Uranium Recovery Projects

As was the case in their written presentation on groundwater and financial assurance issues, Intervenor's continue to ignore the fact that, as a typical ISL project, the CUP is a "phased" project. HRI's license covers a proposed ISL uranium recovery project that, as discussed in NRC's NUREG-1569 entitled *Standard Review Plan for In Situ Extraction License Applications* ("ISL SRP"),³ consists of a "phased" implementation of multiple activities prior to, and after, the commencement of actual uranium recovery operations. In other words, due to the nature of ISL uranium recovery projects, implementation of project activities is "phased" from pre-operational characterization through uranium recovery operations, groundwater restoration, and license termination.

³ See United States Nuclear Regulatory Commission, NUREG-1569, *Standard Review Plan for In Situ Extraction License Applications*, (2003).

For example, as discussed in previous filings, NRC's ISL SRP discusses two different phases of ISL uranium recovery licensing: (1) site characterization and (2) operations, as they pertain to historic and cultural issues as follows. The *Site Characterization* phase involves a *general* NRC Staff review of geographic and topographic maps and drawings that identify the proposed uranium recovery site and its relationship to, *inter alia*, historical and archaeological features. See ISL SRP at 2-1. However, the ISL SRP specifically notes that "[r]eviewers should keep in mind that the development and initial licensing of an *in situ* leach facility is *not based on comprehensive information....reviewers should not expect that information needed to fully describe each aspect of all the operations will be available in the initial application.*" ISL SRP at 2-1 & 2-2 (emphasis added). The *Site Characterization* phase of ISL uranium recovery projects is designed to provide general information demonstrating the location of an ore body and the techniques or procedures to be used when recovering uranium and when monitoring health and safety or other relevant parameters (e.g., historic and cultural resource inventories). This phase is not, however, designed to provide detailed site-specific, including subsurface, information and, as such, NRC license conditions, an EIS or other licensee commitments generally require extensive future action as the project proceeds forward.

On the other hand, the *Operations* phase of ISL uranium recovery projects, which HRI's CUP has not yet reached, requires detailed site-specific, including subsurface, activities, such as the design of wellfields, the drilling of injection and monitoring wells, and the assessment of whether such wells, piping or other equipment or processes will impact identified or otherwise undetected historic or cultural properties. In addition,

HRI's *Operations* phase requires, by license condition, the cessation of any site activities and the conduct of a cultural resources inventory if previously undetected historic or cultural properties are discovered during the development and construction of wellfields. See SUA-1508, License Condition 9.12. Thus, "phasing" is an essential and integral component of *all aspects* of ISL uranium recovery projects.

Further, in his current expert affidavit, Dr. Blinman (hereinafter "Exhibit A") agrees that ISL uranium recovery projects, such as the CUP, require multiple steps and are, indeed, complex undertakings:

"What was clear to me...was that there were sequential steps in the design and implementation process, and that elements of specific installation designs could not be finalized until certain work on prior activities was complete....Under these circumstances, there was no ambiguity in my responsibility to design and carry out cultural resource investigations on a parcel-by-parcel basis...."

Exhibit A at ¶ 20(b).

In addition, as discussed by Dr. Blinman, "[t]he design of in situ solution mining installations is remarkably flexible due to the drilling technology." Exhibit A at ¶ 11(a). This "flexibility" provides that "[o]nce the physical boundaries of historic properties are defined, engineers can design mining facilities to avoid physical effects to those properties." *Id.* In the case of HRI's CUP, "the area of maximum potential effect in Phase 1 is defined by the physical limits of the historic properties plus a buffer around each...." *Id.* So that no "completely buried" or "otherwise undetected" historic properties would be disturbed, "plans for monitoring of all ground disturbing construction within Phase 1 were part of the compliance proposal." *Id.* This proposal, Dr. Blinman notes, "was accepted by the New Mexico State Historic Preservation Officer [SHPO] and the Navajo Nation [Tribal Historic Preservation Officer] THPO." Exhibit A at ¶ 11(a).

Further, the scope of NHPA Section 106 assessments prior to, and after, the commencement of *Operations* activities must reflect certain realities (i.e., the “phased” nature of ISL projects). As stated by Dr. Blinman, “[n]o cultural resource identification effort, for archaeological resources or traditional cultural properties, can guarantee that no significant resources have been missed.” *Id.* at ¶ 18 (emphasis omitted). Further, Dr. Blinman states:

“[r]egardless of the amount of effort expended in investigations, there is always a chance that an archaeological site may be so thoroughly buried that its existence only comes to light during subsurface construction as part of the undertaking.”

Id.

Based on this inevitable uncertainty, Dr. Blinman asserts that, similar to HRI’s license condition, “[a]ny responsible undertaking will include provisions for these discoveries.”

Id. Thus, given that licensed activities for ISL uranium recovery are “phased,” NHPA Section 106 processes for uranium recovery, by implication, are “phased” as well.⁴

B. Retroactive Application of NHPA 2001 Regulation Amendments to HRI’s License Should Not Be Permitted

Initially, Intervenor’s allege that amendments to regulations promulgated by the Advisory Council on Historic Preservation (ACHP) effective January 11, 2001 and August 5, 2004 (hereinafter “2001/2004 amendments”) should be applied retroactively to NRC Staff’s decision to issue HRI’s license. *See* Intervenor’s Written Presentation at 11-18. Specifically, Intervenor’s allege that the new regulations at 36 CFR § 800.4(b)(2) significantly narrow the applicability of “phased identification” so that NRC Staff’s use

⁴ Inherent in the “phased” nature of the CUP is the requirement that unknown or previously undetected historic or cultural properties or resources must be addressed pursuant to HRI’s NRC license. *See* SUA-1508, License Condition 9.12.

of “phased identification” was improper. *Id.* at 12-13. Intervenor also allege that retroactive application of such regulations should be effectuated since NRC Staff violated NHPA prior to the promulgation of the “2001/2004 amendments.” *Id.* at 17-18.

The 2001/2004 amendments should not be applied retroactively to HRI’s NRC license for the following reasons. First, NRC Staff issued HRI’s license for the CUP in 1998, *prior to the effective dates of the 2001/2004 amendments*, finding that HRI’s Consolidated Operations Plan Rev. 2.0 (COP), NRC Staff’s FEIS, and specific license conditions were sufficient to satisfy NHPA and its implementing regulations *at that time*. Further, both the Licensing Board and the Commission considered and, eventually, rejected Intervenor’s arguments on this issue in their previously submitted Motion for a Stay of HRI’s NRC license and written presentation calling for the revocation of such license. This series of decisions effectively demonstrated that a NHPA Section 106 process incorporating a “phased identification” approach, which is *procedurally identical* for all four proposed uranium recovery sites, was appropriate to fulfill NHPA requirements *in effect at the time* HRI’s license was issued.

Next, as stated in the Affidavit of Dr. Wildesen (hereinafter “Exhibit C”), Intervenor’s assertion that the 2001/2004 amendments require re-evaluation of the NRC-approved NHPA Section 106 process is “illogical on its face.” Exhibit A at ¶ 46. Dr. Wildesen bases this conclusion on Intervenor’s complete mischaracterization of the 2001/2004 amendments and their effect on NHPA Section 106 processes by stating that contrary to Intervenor’s assertions, “language in the 2000 revisions was added in Section 800.4(b)(2) to specifically *authorize* what federal agencies had routinely been doing for years...” *Id.* at ¶ 51. This “routine” practice included “phasing their cultural resources

studies in a way that makes sense in agency project planning processes and their related NEPA compliance actions.”⁵ *Id.*

Further, Dr. Wildesen states that re-evaluation of HRI’s NRC license is not required because, “[w]hen an agency has completed a Final EIS and signed a Record of Decision incorporating compliance with Section 106 (including concurrence by the appropriate State Historic Preservation Officer(SHPO)), the project may proceed.” *Id.* at ¶ 46. Given the completion of the FEIS, the incorporation of NHPA Section 106 procedures from the COP, and the imposition of specific license conditions, Dr. Wildesen concludes:

“NRC proceeded to issue a source material license to HRI effective January 5, 1998, and *included stipulations to ensure future protection for cultural resources as work progresses under the license.*”

Id. (emphasis added).

Moreover, Dr. Wildesen concludes that the actions engaged in by NRC Staff when preparing NHPA Section 106 procedures are compliant with the express language of the 2001/2004 amendments. Dr. Wildesen notes that an ACHP briefing package regarding “phased identification” in accordance with 36 CFR § 800.4(b)(2) specifically “includes a slide titled ‘Phased Identification and Evaluation of Historic Properties,’ and the text ‘New authorization of phased efforts for: corridors, *large land areas*, [and] *where access to properties is restricted.*” *Id.* at ¶ 51 This same slide also states that, “[d]eferral of final identification and evaluation is allowed if authorized in...NEPA documents.” *Id.* Based on these statements, Dr. Wildesen determined that, “[p]hasing of

⁵ This characterization of NHPA Section 106 processes comports with the “phased” nature of ISL uranium recovery projects as discussed in NUREG-1569 and Section III(A) of this written presentation.

activities under the subject [HRI] license is clearly 'authorized in...NEPA documents,' as the license stipulation is contained in the [F]EIS for this project." *Id.* Thus, based on her analysis, Dr. Wildesen concludes that, "the *phased process* engaged in by HRI in support of NRC's compliance responsibilities is explicitly allowed under the revised 36 CFR § 800 regulations, and should proceed as previously planned." Exhibit C at ¶ 53.

Further, Intervenor's reliance on the *Preservation Coalition of Erie County* case to demonstrate that NRC Staff effectively has subjected themselves to retroactive application of the 2001 amendments is without merit. This case involves the application of NHPA Section 106 to the Federal Transit Administration (FTA), a different federal agency regulating different activities. Further, in *Preservation Coalition of Erie County*, the party requesting injunctive relief argued that the FEIS for the project was inadequate because "it self-evidently failed to account for the subsequently discovered historic Commercial Slip Wall in May, 1999." 356 F.3d 444, 448 (January 26, 2004). Unlike the FEIS in *Preservation Coalition of Erie County*, the FEIS and license conditions in HRI's NRC license specifically account and prescribe procedures for newly discovered or otherwise undetected historic or cultural properties, including the cessation of all *Operations* phase work until such properties are addressed. In addition, HRI's ISL uranium recovery project is a "phased" project unlike the waterfront construction project in *Preservation Coalition of Erie County*. Compare 356 F.3d at 447-448. Moreover, Intervenor's *Preservation Coalition of Erie County* argument presumes a violation of the NHPA and NEPA which, as discussed below, is improbable given that their arguments on Church Rock Section 17, Unit One, and Crownpoint are the same as those unfavorably ruled upon by the Licensing Board and the Commission for Church Rock Section 8. See

HRI June 17, 2005 Written Presentation, Section V(C)(1). Therefore, Intervenor's *Preservation Coalition of Erie County* argument should be rejected.

C. Intervenor's Arguments Regarding NHPA Section 106 Should Be Collaterally Estopped

As noted previously by Judge Bloch in LBP-99-9, the adequacy of NRC's NHPA Section 106 *process* involves a *legal* issue and not a factual one. As stated above, the *process* devised by HRI and NRC Staff, as reflected in several portions of the record (i.e., FEIS, COP, and license conditions), is uniform and consistent for all CUP ISL uranium recovery sites. As such, given that both the Licensing Board and the Commission have endorsed the NHPA Section 106 *process* for Church Rock Section 8, HRI asserts that Intervenor should be collaterally estopped from raising the same arguments against the approved NHPA Section 106 *process* for the three remaining uranium recovery sites.

1. Intervenor Are Attempting to Re-Litigate the Same Issue

First, Intervenor seek to re-litigate the issue of whether the NHPA Section 106 process proffered and engaged in by HRI and NRC Staff is adequate. As a general proposition, the NHPA Section 106 *process* merely prescribes procedures that must be followed so that a given licensed activity is *legally* compliant with NHPA requirements. This *process* was created by HRI and NRC Staff and reflected in various portions of the record such as the FEIS, the COP, and NRC license conditions and is an explicit requirement for each CUP uranium recovery site.

Previously, Intervenor challenged the "phased identification" *process* for the CUP in the context of Church Rock Section 8 on the grounds that it did not fulfill NHPA requirements. This challenge was rejected by both the Licensing Board and the Commission and NRC Staff's "phased" NHPA Section 106 *process* was upheld.

In light of these decisions, Intervenor presumably would have to show that the NHPA Section 106 *process* is somehow different for the remaining CUP sites as compared to Church Rock Section 8. However, Intervenor's written presentation specifically incorporates by reference its Church Rock Section 17 arguments for the Unit One and Crownpoint sites. Further, had this proceeding not been bifurcated, Intervenor likely would have incorporated its Church Rock Section 8 arguments by reference for the three uranium sites currently under scrutiny. As stated by Dr. Blinman, "[t]he issues raised by the Intervenor appear to be restatements of issues previously brought before the Licensing Board....[r]aising these issues again has relevance only if phasing can be said to have been inappropriate for this undertaking [CUP] and if the standards formally adopted in 2000 [effective 2001] are applied to work completed in 1997." Exhibit A at ¶

7. Dr. Heartfield concurs on this point:

"the issue of 'phased compliance' within Section 106 and NEPA as addressed by the Intervenor in 1998 and 2005 are issues of *process not of substance*. The Intervenor's arguments in 2005 for Section 17, Unit 1 and Crownpoint are based on the same *process* that was addressed in the PARTIAL INITIAL DECISION [LBP-99-9] in 1999 for Section 8."

Exhibit B at ¶ 10 (emphasis added).

Therefore, outside of the issue of the applicability of the 2001/2004 amendments, "the issues are the same and the propriety of the *process* has already been addressed." *Id.* (emphasis added).

2. The Historic and Cultural Resource Preservation Area of Concern Has Been Litigated

Second, Intervenor already have been given an opportunity to litigate the historic and cultural resource preservation area of concern. As discussed above, on December 7, 1998, Intervenor submitted a written presentation challenging HRI's and NRC Staff's

NHPA Section 106 process. *See In the Matter of Hydro Resources, Inc.* (Crownpoint Uranium Project), *Intervenors' Written Presentation in Opposition to Hydro Resources, Inc.'s Application for a Materials License With Respect to Compliance With The National Historic Preservation Act, Native American Graves Protection and Repatriation Act and Related Cultural Issues* (December 7, 1998) (ACN 9812110027). HRI and NRC Staff availed themselves of the opportunity to respond to Intervenors' written presentation on January 11, 1999 and January 19, 1999 respectively. In these written presentations, arguments were presented regarding the NHPA Section 106 *process* proffered by HRI and NRC Staff and whether or not that *process* was, indeed, compliant with NHPA requirements. These written presentations were reviewed by both the Licensing Board and the Commission on appeal and all administrative remedies were exhausted by the aggrieved party (i.e., the Intervenors). Given that the 2001/2004 amendments do not alter the "phased" *process* evaluated by the Licensing Board and the Commission and that Intervenors' current arguments raise the same concerns as those raised previously for Church Rock Section 8, this area of concern has been fully litigated.

3. The Historic and Cultural Resource Preservation Area of Concern Has Been Determined by a Valid and Final Judgment

Third, the historic and cultural resource preservation issues have been determined by a valid and final judgment. As stated above, historic and cultural resource preservation written presentations were submitted by all parties to this proceeding. Initially, the Licensing Board reviewed these written presentations and determined that Intervenors' allegations were without merit. As a result, the Licensing Board endorsed the NHPA Section 106 *process* proffered by HRI and NRC Staff. *See generally* LBP-99-9. Intervenors submitted a Petition for Review to the Commission and requested that the

Licensing Board's decision be overturned and that the proffered NHPA Section 106 *process* be substantially revised or re-created. This Petition and the arguments therein were rejected by the Commission and the Licensing Board's decision was upheld. *See generally* CLI-99-22.⁶ Therefore, the final decision of the Commission upholding the Licensing Board's decision represents a valid and final judgment on this area of concern.⁷

4. The Historic and Cultural Resource Preservation Determination Was Essential to the Prior Judgment

Finally, the Licensing Board's and the Commission's determination on the historic and cultural resource preservation area of concern was essential to the prior judgment that HRI's Church Rock Section 8 uranium recovery license was properly issued. Historic and cultural resource preservation was one of several areas of concern admitted by the Presiding Officer for consideration. Given NRC's administrative licensing process, the evaluation of Intervenor's arguments on this issue was necessary to reach a final decision on the viability of HRI's NRC license for Church Rock Section 8. Thus, based on the discussion above, the historic and cultural resource preservation area of concern meets the relevant test for collateral estoppel, and Intervenor's should be barred from presenting argument on this area of concern.

⁶ Intervenor's have not been able to avail themselves of appeals to the United States Court of Appeals for the District of Columbia due to "ripeness" issues. Since this proceeding was bifurcated, all CUP issues have not been finally adjudicated by a Licensing Board and the Commission. However, this does not detract from the finality of the judgments previously rendered in this proceeding.

⁷ It is worth noting that the substance of Intervenor's arguments was also evaluated in their request for a stay of the effectiveness of HRI's NRC license at both the Licensing Board and Commission levels. In each instance, after a temporary stay was granted by both tribunals, their final decisions resulted in rejection of Intervenor's requests.

D. HRI's and NRC Staff's Current NHPA Section 106 Process is Compliant with the NHPA

Next, Intervenor's allege that HRI and NRC Staff have failed to complete the Section 106 process, in violation of NHPA requirements, and, as such, NRC Staff was in error to issue HRI's license. *See* Intervenor's Written Presentation at 20-26. Further, Intervenor's allege that HRI's compliance actions to date have been "limited actions" and that the alleged lack of consultation does not fulfill Section 106 requirements. *Id.* at 23. These allegations culminate in Intervenor's final conclusion that "[t]o issue the license prior to the completion of the section 106 process is a clear violation of the NHPA...." *Id.* at 24.

1. Phased Identification is Permissible for the CUP

First, even under the 2001 regulation amendments, the use of "phased identification" remains an appropriate methodology for ISL uranium recovery projects and is compliant with NHPA requirements. 36 CFR § 800(b)(2) specifically authorizes the use of "phased identification" for projects that involve "large land areas" or where "access to properties are restricted." Indeed, the Federal Register discussion of the amendments specifically states, "[p]hased identification acknowledges the reality of large projects." *See* Exhibit B at ¶ 27. This authorization also allows agencies to use "phased identification" when such process is specifically "provided for in...the documents used by an agency official to comply with the National Environmental Policy Act..." (i.e., the FEIS) 36 CFR § 800.4(b)(2) (2005). However, while "phased identification" is permitted in these circumstances, "an agency official shall proceed with the identification and evaluation of historic properties" when the any remaining aspects of the propose undertaking are refined. *Id.*

In the instant case, HRI's CUP involves proposed project areas consisting of large parcels of land. Indeed, the land area of the CUP uranium recovery sites can be seen in the following table (Table 1):

TABLE 1

Site	Gross Ac. (Approx)	Fully Developed Ac. (Approx)	Mine Unit Phase Ac. (Approx)
Church Rock Sec. 8	175	30	8 - 16
Church Rock Sec. 17	200	30	8 - 16
Crownpoint	720	125	8 - 16
Unit 1	1440	250	8 - 16

Further, the CUP uranium recovery sites contain subsurface areas to which access is restricted, at this time, by NRC license requirements and licensee commitments. Thus, accessing subsurface areas of these uranium recovery sites, at this time, would constitute a violation of its license. Given this information and the above-discussed "phased" implementation process of ISL uranium recovery projects, HRI's CUP satisfies the 36 CFR § 800.4(b)(2) requirements for "phased identification." In addition, NRC Staff already has prepared a FEIS for the CUP that specifically includes "phased identification." The FEIS included all relevant recommendations for conduct of the NHPA Section 106 process, including "phased compliance," and HRI committed to those recommendations. Indeed, Dr. Heartfield states that, "[w]ith respect to 'NEPA documents developed in accordance with Section 800.8,' the FEIS for the CUP is just such a document." Exhibit B at ¶ 26. Thus, even under the 2001/2004 regulation amendments, the NHPA Section 106 process need not be fully completed prior to the issuance of HRI's license.

Further, Intervenor's allegations that HRI did not satisfy the requirements of 36 CFR § 800.4(b)(2) for "phased identification" are incorrect. Intervenor's allege that NHPA Section 800.4(b)(2) provisions for "large land areas" or restricted access areas do not apply to HRI's CUP. However, Dr. Heartfield states:

"This is a misstatement by Dr. King....36 CFR 800.4(2) was written explicitly for projects like HRI's CUP (i.e., those that encompass alternative parcels of extensive acreage."

Id. at ¶ 25.

In addition, Dr. Blinman also disputes Intervenor's allegations that "phased identification" does not apply, because the CUP is a "potential '20 year plan' for mining operations." Exhibit A at ¶ 7. As Dr. Blinman states:

"Dr. King appears to be undermining his own arguments against phasing in the sequence of points he makes [when]...he states that 'on large and complex projects...some sort of phased approach to compliance is often necessary.' Dr. King's points that the NRC could not specify all areas of potential effects...and could only generally characterize the scope of potential effects as scaled within 5 and 20 years development areas...all reaffirm that the proposed mining undertaking is 'large and complex.'"

Id. at ¶ 21.

Based on this and Dr. Blinman's assertion that they use "selective omission and misstatement" to support their arguments against "phased" compliance, Intervenor's allegations on this issue should be rejected.

Intervenor's also contend that "phased identification" cannot occur unless a programmatic agreement or a Memorandum of Agreement (MOA) has been executed. However, Dr. Heartfield states regarding the Section 800.4(b)(2) requirements: "[a] programmatic agreement is necessary only if a determination of *adverse effects* has been made....[and] an MOA is called for if the agency official and the SHPO/THPO agree on

how the adverse effect will be resolved....” Exhibit B at ¶ 26 (emphasis added). Further, the Federal Register discussion of the amendments states, “[a] programmatic agreement may be an alternative, but this provision expands the flexibility of the rule...’The rule does not require or compel execution of an MOA.’”⁸ *Id.* Further, as stated above, Dr. Heartfield acknowledges that the FEIS for the CUP represents a NEPA document in compliance with NHPA requirements for “phased identification.” *See id.*

Dr. Blinman also asserts that Intervenor’s thoroughly mischaracterize Section 800.4(b)(2)’s general applicability to the CUP:

“Dr. King’s insertion of his own phrase ‘but only if’ misrepresents the intent of the regulations, incorrectly implying that a memorandum of understanding is a necessary element to the pursuit of a phased approach to cultural resource identification and evaluation.”

Exhibit A at ¶ 22(c).

Based on this and a careful review of Section 800.4(b)(2) and the Federal Register’s supporting discussion, Dr. Blinman concludes that, “the [2001]/2004 regulations allow cultural resource identification and evaluation to be phased, both generically and in this case, without a mandatory requirement for programmatic agreements.” *Id.* at ¶ 22(d).

Finally, Intervenor’s reliance on the *Mid States Coalition for Progress* case is misguided. Intervenor specifically reference a provision of the Eighth Circuit’s opinion in which the court stated that ACHP regulations permit the use of “phased identification” when the agency adopts specific measures to avoid or mitigate any adverse effects until after the license had been approved. *See* 345 F.3d 520, 554 (October 2, 2003). In the

⁸ Given that the NHPA Section 106 regulations *do not require* the preparation of a programmatic agreement or MOA, Intervenor’s reliance on the *Walsh v. United States Corps of Engineers* case is misguided. Further, the *Walsh* case was decided prior to the promulgation of the 1992 amendments to the NHPA regulations. Thus, the *Walsh* case has no bearing on the issue of whether a programmatic agreement or MOA.

instant case, NRC has imposed FEIS provisions and License Condition 9.12 to ensure that HRI cease all *Operations* activities and assess any newly discovered or otherwise undetected historic or cultural properties. Further, the *Mid States Coalition for Progress* undertaking also recognized that "phased identification" is available for projects where such identification is specifically provided for in a NEPA document (i.e., the FEIS). Thus, Intervenor's allegations regarding the use of "phased identification" are without merit.

2. Consultation and Public Participation Allegations

Next, Intervenor's allegations regarding the inadequacy of HRI's and NRC Staff's efforts on consultation and public participation should be rejected. Dr. Blinman outlines the process engaged in by HRI to ensure meaningful consultation and public participation:

"[c]onsistent with the practice and regulations in 1996 and 1997, letters were sent to the All Indian Pueblo Council and to tribes whose territories are adjacent to the proposed project area (Laguna, Acoma, Zuni, and Hopi). Communication with the Navajo Nation was carried out through the consultation process with the Navajo Nation Tribal Historic Preservation Officer...In 1997, I participated in two public meetings...Other meetings were held at which I was not present."

Exhibit A at ¶ 9-10.

As stated by Dr. Blinman, Intervenor and their affiant, Dr. King's, opinion "reflects a pattern of partial-information dissemination that pervades the Intervenor's filings on this issue." *Id.* at ¶10.

Intervenor's testimony regarding written consultation (i.e., letters) is also misguided. Intervenor's allege that the use of "form letters" is insufficient to satisfy NHPA Section 106 consultation requirements. However, Dr. Blinman categorically disagrees:

“Dr. King’s characterization of the letters as ‘form letters’ is intended to be a pejorative characterization, but the letters all have the same purpose and the same content.”⁹

Exhibit A at ¶ 9.

Given that the issues to be addressed by each Tribe are the same, Dr. Blinman asserts that, “[i]t would be irresponsible to provide different information to each tribe, or to simply make cosmetic changes so that the letters would appear ‘different.’” *Id.*

Therefore, Dr. Blinman concludes that, “[u]nder the circumstances, the reference to ‘form letters’ here and elsewhere is irrelevant.” *Id.*

Further, as discussed by Dr. Wildesen, Intervenor’s allegation that the NHPA Section 106 process is faulty because the ACHP was not consulted during the consultation process leading to the SHPO’s concurrence with NRC Staff finding of “no adverse impacts” is incorrect. Dr. Wildesen specifically states that:

“[n]o such [consultation] requirement exists either in the revised regulations or in the regulations in effect in 1998, for situations in which an agency and the appropriate SHPO agree no adverse effect will occur to cultural resources....”

Exhibit C at ¶ 47.

⁹ Intervenor’s cite to the case of *Pueblo of Sandia v. U.S.* as support for the conclusion that the “form” letters used in the NHPA Section 106 consultation process were inadequate. Intervenor’s Written Presentation at 22. Sending letters to various Tribes was not the only action engaged in by HRI and NRC Staff. As stated above, public meetings were held and information was exchanged. Indeed, Intervenor’s have provided no evidence that the information exchanged in the CUP’s NHPA Section 106 process was not the type of information requested. In addition, Intervenor’s again fail to note that NRC license conditions mandate the cessation of design and construction activities at *any* uranium recovery site if newly discovered or otherwise undetected historic or cultural properties are identified so that the proper measures may be taken. See SUA-1508, License Condition 9.12. Intervenor’s also concede that the *Pueblo of Sandia* case does not foreclose the use of “form” letters. Thus, the *Pueblo of Sandia* case does not invalidate HRI’s and NRC Staff’s actions to date.

Indeed, Dr. Wildesen notes:

“[t]he revised [2001] regulations explicitly state, ‘[u]nless the Council is reviewing the finding pursuant to paragraph (c)(3)... [which deals with *adverse effect determinations*], the agency official may proceed after the close of the 30 day review period if the SHPO/THPO has agreed with the finding...and no consulting party has objected.’”

Id.

By following this process, Dr. Wildesen notes, “(36 CFR 800.5(d)(i)...explicitly states, ‘[i]mplementation of the undertaking in accordance with the finding [of no adverse effect] as documented fulfills the agency official’s responsibilities under section 106 of this part.” *Id.* Thus Intervenor’s allegations on consultation are without merit and should be rejected.

Finally, based on the discussions in Section III(A) above, Intervenor’s refusal to accept the “phased” nature of ISL uranium mining demonstrates that their allegation that the NHPA Section 106 process is incomplete for Unit One and Crownpoint is without merit. While Intervenor alleges that no cultural resource inventory or other actions have been completed for these two uranium recovery sites, Dr. Blinman disputes such allegation when he states, “[n]o other phases of the mining development have been defined for the purposes of cultural resources evaluation.” Exhibit A at ¶ 8. Given that all approved procedures for the CUP (i.e., FEIS conclusions, COP requirements, and NRC license conditions) reflect a “phased” approach for mining each site, including the *sequential and not simultaneous* mining of these sites, Dr. Blinman concludes, “[w]hen future phases are defined, the phases will be subject to cultural resource investigations.”

Id.

E. Intervenor's Arguments Regarding Environmental Impact Statement Deficiencies Should Be Stricken As Outside the Scope of This Written Presentation

In Section III(A-C) of their written presentation, Intervenor's present arguments for all three remaining uranium recovery sites regarding alleged deficiencies in the FEIS regarding historic and cultural resource preservation issues. *See* Intervenor's Written Presentation at 28-29. These arguments specifically reference alleged violations of judicial precedent and regulations pertaining to environmental analyses. *Id.*

Prior to the commencement of briefing from the three remaining HRI uranium recovery sites, Intervenor's and HRI agreed to a briefing schedule that included elimination of specific areas of concern and narrowing of the scope of others. One aspect of this agreement involved Intervenor's reservation of their rights to argue FEIS adequacy issues in a separate written presentation and to raise only the FEIS adequacy issues previously argued with respect to Church Rock Section 8. This agreement does not, however, give Intervenor's the option of raising FEIS adequacy issues in the context of other written presentations such as their April 28, 2005 written presentation on cultural and historic resource preservation issues. Given the limited scope of this agreement and the concessions given by HRI to effectuate such an agreement, it would be prejudicial to both HRI and NRC Staff to allow Intervenor's the option of raising substantive arguments on FEIS adequacy in the context of the instant written presentation. Therefore, HRI respectfully requests that the Presiding Officer strike each of Intervenor's arguments raised in Section III(A-C) of their April 28, 2005 written presentation.

However, even if these arguments are considered, given that the NHPA Section 106 process was specifically addressed in the FEIS, the COP, and NRC license

conditions has been approved by the Licensing Board and the Commission and that revisions to NHPA regulations reaffirm the propriety of "phased identification," Dr.

Wildesen concludes:

"All eleven Supreme Court decisions regarding NEPA interpret its requirements as procedural, rather than substantive, and point out that so long as an agency has complied with the required *processes*, it is in compliance with the requirements of NEPA. The processes required in this case are those of Section 106 of the NHPA, which is specifically referenced in 40 CFR § 1502.25. Because the NRC is in compliance with Section 106, it is also in compliance with NEPA for cultural resource issues."

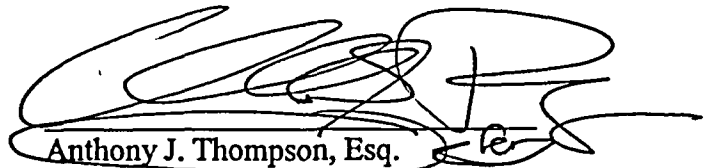
Exhibit C at ¶ 50.

Therefore, Intervenor's argument regarding EIS adequacy are without merit.

VII. CONCLUSION

For the reasons discussed above, HRI respectfully requests that the Presiding Officer reject each of Intervenors' arguments regarding historic and cultural resource preservation issues.

Respectfully Submitted,

A large, stylized handwritten signature in black ink, appearing to read 'AJT', is written over the printed name of Anthony J. Thompson.

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**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:
E. Roy Hawkins, Presiding Officer
Dr. Richard F. Cole, Special Assistant
Dr. Robin Brett, Special Assistant**

In the Matter of:)
Hydro Resources, Inc.) Docket No.: 40-8968-ML
P.O. Box 777)
Crownpoint, NM 87313) Date: June 17, 2005
)

CERTIFICATE OF SERVICE

THIS IS TO CERTIFY that a copy of the foregoing Hydro Resources, Inc.'s Response in Opposition to Intervenor's Written Presentation Regarding Historic and Cultural Resource Preservation in the above-captioned matter has been served upon the following via electronic mail and U.S. First Class Mail or "expedited service" as indicated by an asterisk on this 17th day of June, 2005.

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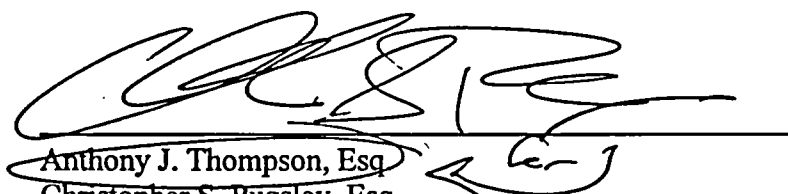
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A large, stylized handwritten signature in black ink, likely belonging to Christopher S. Pugsley, is positioned above the contact information. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

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**HYDRO RESOURCES, INC.'S RESPONSE IN OPPOSITION TO
INTERVENORS' WRITTEN PRESENTATION REGARDING HISTORIC AND
CULTURAL RESOURCE PRESERVATION**

INDEX OF EXHIBITS AND ATTACHMENTS

Exhibit A: **AFFIDAVIT OF DR. ERIC BLINMAN (June 17, 2005)**

Attachment A: **Curriculum Vitae for Dr. Eric Blinman**

Attachment A to Exhibit A presents the *curriculum vitae* for Dr. Eric Blinman whose affidavit is offered by HRI in support of the National Historic Preservation Act (NHPA) process and actions performed for the CUP. Attachment A is offered to support the statements regarding Dr. Blinman's professional credentials referenced in ¶ 2 of Exhibit A.

Attachment B: **Affidavit of Dr. Eric Blinman (January 11, 1999)**

Attachment B to Exhibit A presents the expert affidavit previously submitted by Dr. Eric Blinman as support for HRI's *Response to Eastern Navajo Dine Against Uranium Mining's and Southwest Research and Information Center's December 7, 1998 Brief in Opposition to Hydro Resources, Inc.'s Application for a Materials License With Respect to Compliance with the National Historic Preservation Act, Native American Graves Protection and Repatriation Act and Related Cultural Resource Issues*, (January 11, 1999) (ACN 99012000052). Dr. Blinman's 2005 expert affidavit cites to his 1999 affidavit and, as such, his 1999 affidavit is submitted as a reference.

Attachment C: **Miscellaneous Citations from Exhibit A**

Attachment C to Exhibit A present several pages of documents referred to by Dr. Eric Blinman in Exhibit A. The following document is included as Attachment C: (1) a 1997 Museum of New Mexico, Office of Archaeological Studies report regarding cultural resource inventory for the Church Rock sites.

Exhibit B: **AFFIDAVIT OF DR. LORRAINE HEARTFIELD (June 17, 2005)**

Attachment A: **Curriculum Vitae for Dr. Lorraine Heartfield**

Attachment A to Exhibit B presents the *curriculum vitae* for Dr. Lorraine Heartfield whose affidavit is offered by HRI in support of the NHPA process and actions performed for the CUP. Attachment A is offered to support the statements regarding Dr. Blinman's professional credentials referenced in ¶ 2-5 of Exhibit B.

Exhibit C: **AFFIDAVIT OF LESLIE WILDENSEN (June 17, 2005)**

Attachment A: **Curriculum Vitae for Dr. Leslie Wildesen**

Attachment A to Exhibit C presents the *curriculum vitae* for Dr. Leslie Wildesen whose affidavit is offered by HRI in support of the NHPA process and actions performed for the CUP. Attachment A is offered to support the statements regarding Dr. Wildensen's professional credentials referenced in ¶¶ 3-42 of Exhibit C.

EXHIBIT A

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
E. Roy Hawkens, Presiding Officer
Richard F. Cole, Special Assistant
Robin Brett, Special Assistant

In the Matter of:)

HYDRO RESOURCES, INC.)

P.O. Box 777)

Crownpoint, New Mexico 87313)

) Docket No. 40-8968-ML

) ASLBP No. 95-706-01-ML

DECLARATION OF ERIC BLINMAN, PH.D
(EXHIBIT A)

I, Eric Blinman, do hereby swear that the following is true to the best of my knowledge. I am qualified and competent to give this Declaration, and the factual statements herein are true and correct to the best of my knowledge, information, and belief. The opinions expressed herein are based on my best professional judgment and experience.

Name and Purpose of Declaration

1. My name is Eric Blinman. My mailing address is Office of Archaeological Studies, PO Box 2087, Santa Fe, New Mexico, 87504-2087. I am submitting this Declaration on behalf of Hydro Resources, Inc. (HRI), in regard to the licensing of HRI's Crownpoint Uranium Project (CUP). Specifically, I am testifying on whether the Nuclear Regulatory Commission (NRC) complied with applicable federal cultural resources laws and regulations in their granting of a materials license for the CUP.

Professional Qualifications

2. My qualifications are detailed in my curriculum vita, attached as Attachment A. I hold a Ph.D. in Anthropology from Washington State University, and I have been employed as an archaeologist and anthropologist in various capacities since 1974. Most of that employment has been as a specialist in helping clients comply with provisions of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA), as well as provisions of tribal, state, and municipal

statutes and regulations that relate to cultural resources protection. Since 1979 I have been working within the Southwestern United States, and since 1988 I have been employed full time as an archaeologist and administrator within the Museum of New Mexico's Office of Archaeological Studies. In my position, currently Deputy Director of the Office of Archaeological Studies, I design and carry out cultural resources investigations in advance of development projects. The investigations allow clients to satisfy their regulatory requirements while preserving the integrity of both the ancestral and contemporary cultural resources of the State of New Mexico.

Preparation for this Affidavit

3. In preparation for this affidavit, I have reviewed the Intervenor's written presentation in opposition to HRI's application for a material license with respect to cultural resources issues. I have also reviewed the new declarations by Thomas F. King and Thomas Morris, Jr. I have previously reviewed and responded in detail to testimony by William F. Dodge. A copy of my testimony in that instance is attached as Attachment B. I have reviewed the Partial Initial Decision of Peter Bloch and Thomas D. Murphy, ASLBP No. 95-706-01-ML, issued on February 19, 1999. I have reviewed regulations implementing the NHPA, 36 CFR Part 800, which were in effect in 1992, in 1999, in 2000, and 2004. Finally, I have reviewed my 1997 report on the cultural resources investigations of HRI Phase 1 parcels, *Cultural Resource Inventory of Proposed Uranium Solution Extraction and Monitoring Facilities at the Church Rock Site and of Proposed Surface Irrigation Facilities North of the Crownpoint Site*, McKinley County, New Mexico. Excerpts from the 1997 report that are relevant to traditional cultural properties or recommendations associated with the SHPO and THPO concurrences of "no effect" are included as Attachment C.

Professional Opinion and Analysis

Synopsis of Intervenor's Argument

4. The Intervenor's assert that the Nuclear Regulatory Commission (NRC) has not complied with Section 106 of the NHPA and its implementing regulations (36 CFR Part 800) and that it has not complied with the requirements of the NEPA and its implementing regulations (40 CFR §§ 1500-1508) as they pertain to cultural resources. The argument presented in the Intervenor's brief is that:

a) The cultural resources investigations prior to the issuing of a license were inadequate because they relied on a "phased compliance" approach to the definition of the area of potential effect. In this portion of the argument, the Intervenor's assert that the definition of a phased undertaking in itself renders the consideration of cultural resources inadequate for compliance with the NHPA.

b) The documentation of traditional cultural properties was inadequate and under-inclusive based on the NHPA as amended in 1992, as proposed in 1999 and formally adopted in 2000, and as reissued with minor amendments in 2004. Since the NRC's consideration of environmental effects of the proposed Phase 1 of mining activity was conducted under the NHPA prior to the formal adoption of replacement

implementing regulations in 2000, the Intervenor's argue that the inappropriateness of "phased compliance" in the original consideration of cultural resources voids the prior traditional cultural properties evaluation and results in the application of post-2000 regulations and standards to the question of adequacy of the pre-1998 traditional cultural property investigations.

c) Possibly more important than points a and b, is the *implicit* assertion that because a license has been granted by the NRC, HRI is somehow exempt from complying with the NHPA for future phases of the proposed mining development.

5. The declaration of Dr. Thomas F. King is presented as expert testimony of the inadequacy of the Phase 1 cultural resources investigations and the inappropriateness of "phasing" in assessing the environmental impacts on cultural resources for a federally licensed undertaking. He describes his perception of changes over time in both the NHPA and its implementing regulations, and he provides his view of the evolution of tribal consultation and traditional cultural property consultations within the framework of the NHPA.

6. The declaration of Thomas Morris, Jr., is presented as expert testimony of the inadequacy of the traditional cultural property inventory conducted as part of the first phase of cultural resources investigations.

Response Overview

7. The issues raised by the Intervenor's appear to be restatements of issues previously brought before the Licensing Board. They hinge on whether: 1) phased compliance with Section 106 of the NHPA is appropriate for this undertaking; and 2) whether HRI's cultural resource investigations were adequate to satisfy the requirements of the NHPA. Both the propriety of phased compliance with Section 106 of NHPA and adequacy of prior cultural resources investigations for the first phase of HRI's proposed mining activity have already been heard and dismissed. Raising these issues again has relevance only if phasing can be said to have been inappropriate for this undertaking and if the standards formally adopted in 2000 are to be applied to work completed in 1997. Otherwise, the process of NHPA compliance has already been validated for the Phase 1 parcels, and there are no grounds for challenge. Testimonies of Dr. King and Mr. Morris will be responded to in detail in the sections that follow. My overall response to the issues will be summarized at the end of this declaration.

Response to the Declaration of Thomas F. King

8. Dr. King states (§8) that the NRC and HRI have not complied with NEPA and the NHPA as they apply to cultural resources. This position is incorrect because both the NRC and HRI have complied with applicable regulations, and the license has been granted. This has been upheld in litigation over proposed mining operations in Section 8 of Phase 1. The same cultural resources investigations and contexts apply to both Section 17 and Section 12 of Phase 1. No other phases of the mining development have been defined for the purposes of cultural resources evaluation. When future phases are defined, the phases will be subject to cultural resources investigations.

9. Dr. King's characterization of consultation (§12) is inaccurate. Consistent with practice and regulations in 1996 and 1997, letters were sent to the All Indian Pueblo Council and to tribes whose territories are adjacent to the proposed project area (Laguna, Acoma, Zuni, and Hopi). Communication with the Navajo Nation was carried out through the consultation process with the Navajo Nation Tribal Historic Preservation Officer (THPO). The letters were followed up with telephone calls, and no tribal representative responded with an affirmative statement that traditional cultural properties existed within the listed areas. Dr. King's characterization of the letters as "form letters" is intended to be a pejorative characterization, but the letters all have the same purpose and the same content. It would be irresponsible to provide different information to each tribe, or to simply make cosmetic changes so that the letters would appear "different." Under the circumstances, the reference to "form letters" here and elsewhere is irrelevant. Dr. King's final comment (§12) is gratuitous and unprofessional.

10. Dr. King's statement about his lack of perception of public participation (§13) reflects his incomplete knowledge of the history of consultation with the public that preceded issuance of the license. In 1997 I participated in two public meetings, one in Crownpoint, New Mexico, and one with the Navajo Nation Natural Resources Committee in Phoenix, Arizona. Other meetings were held by HRI at which I was not present. Dr. King's "perception" reflects a pattern of partial-information dissemination that pervades the Intervenor's filings on this issue.

11. Dr. King's comments concerning areas of effect and identification of historic properties (§14-16) are internally contradictory and seem to at once accept and reject the concept of phasing that he later dismisses as unsupportable.

a) The design of in-situ solution mining installations is remarkably flexible due to the drilling technology. Once the physical boundaries of historic properties are defined, engineers can design mining facilities to avoid physical effects to those properties. That is true in most cases, and in particular it is true in the cases of Section 8, Section 17, and Section 12. Unlike many other types of development projects, the area of maximum potential effect in Phase 1 is defined by the physical limits of the historic properties plus a buffer around each (see recommendations in Blinman 1997). In order to safeguard against effects on completely buried or otherwise undetected historic properties, plans for monitoring of all ground disturbing construction within Phase 1 were part of the compliance proposal (Blinman 1997:159-161). That proposal was accepted by the New Mexico State Historic Preservation Officer (SHPO) and the Navajo Nation THPO. Off-site or indirect effects on historic properties were also dealt with in the compliance proposal, and visual impacts were part of the NEPA meetings and consultations.

b) The only way that Dr. King's assertions in §14 and §15 can be correct is if he is referring to portions of the mining project other than Phase 1, and yet his statement in §16 implies that he is addressing the Phase 1 elements of the project only. Also, at this point in his declaration, he has not yet argued that "phasing" is inconsistent with the NHPA.

12. Dr. King addresses several issues concerning traditional cultural properties (§17-18). His initial definition is accurate and germane: "places significant for the role they play in the *continuing, tradition-based life of communities*" (emphasis added).

a) Under the practices and philosophy prevalent under the pre-2000 regulations for the NHPA, there was a primary emphasis on the cultural importance of properties to contemporary communities, with an intent to avoid inadvertent disruption of traditional activities or practices. Examples would be places where important historical or supernatural events occurred, where plants were gathered for curing ceremonies, or where ceremonies were conducted. The Phase 1 properties were adjacent to contemporary Navajo Nation families and communities, and regional evidence indicates that Native American residential occupation of the region has been exclusively by the Navajo people since at least the 18th century. Under these circumstances, it is absolutely appropriate that the contemporary Navajo communities be emphasized in traditional cultural property investigations. The interviews with the contemporary Navajo communities revealed no traditional cultural properties (other than burials or possible burials) within either the Phase 1 Section 8, Section 17, or Section 12 parcels. Also, no traditional cultural properties were identified adjacent to any of the sites, so questions of potential ambient effects on traditional cultural properties (§18) are moot.

b) Consistent with prevailing practice, both the burial or potential burial locations are protected as archaeological sites or within archaeological site limits, and the burial plot within the Bureau of Land Management (BLM) portion of Section 8, Church Rock Site, is protected within the Special Use policies of the BLM.

c) The focus on Navajo community traditional uses was not exclusive, and following the practice of the time, 1996 and 1997, the Puebloan tribes that may have descendant ties to the pre-18th century occupants of the area were contacted for input. No definitive input was received, and there was no suggestion that any of the locations are the settings for "continuing tradition-based activities" by Puebloan groups. Given the time lapse since Puebloan residential use of the region (at least 250 years by archaeological measures), no continuing activities were expected.

d) Dr. King is correct that the NHPA regulations that were proposed in 1999 and adopted in 2000 would require that additional effort be expended to absolutely rule out the presence of non-Navajo traditional cultural properties in the Phase 1 project area. However, my professional experience suggests that the more exhaustive process under the current regulations would not change the outcome that there are no active traditional uses of the area by Puebloan peoples. Although the traditional cultural property investigations that were conducted in 1996-1997 fall short of the 2000 standards, Dr. King does not acknowledge or is not aware of Dr. Heartfield's full telephone (oral) and letter (written) correspondence with the consulted tribes.

13. Dr. King raises a contested and only partially resolved issue of traditional cultural properties in §19. He is correct that both Hopi and Zuni tribal officials have asserted that traditional cultural significance is attached to all archaeological sites that they believe may be ancestral. In the case of other federally regulated undertakings, tribal officials have proposed that because of this cultural significance, all archaeological sites

qualify as traditional cultural properties under the NHPA. This argument has been rejected by the New Mexico SHPO, since traditional cultural properties were intended to preserve "continuing tradition-based activities." Even granting cultural significance to locations that are archaeological sites, evaluation based on archaeological factors will result in preservation of the archaeological qualities of the sites that allow their characterization as culturally significant by the tribes. The tribes disagree, and to my knowledge the impasse remains unresolved.

14. Dr. King questions the finding of "no effect" in the 1999 Partial Initial Decision in ¶20. He characterizes the identification of cultural resources as "incomplete," and he suggests that physical avoidance is insufficient to achieve "no effect" for traditional cultural properties, archaeological sites, or the traditional significance that is attributed to archaeological sites. The identification of cultural resources within Phase 1 is incomplete only if the National Historic Preservation Act regulations that were adopted in 2000 are applied to the identification of traditional cultural properties. However, lack of completeness is likely only technical in nature, since the Puebloan cultural significance attributed to archaeological sites has not yet been accepted as the basis for a traditional cultural property definition within the framework of even the 2000 regulations.

15. The final sentence of ¶20 changes the geographical frame of reference for his discussion from the Phase 1 component of the project to the total area of possible mining efforts. In doing so, Dr. King applies the NHPA regulations that were formalized in 2000 to the consideration of adverse effects on cultural resources. Application of these regulations will be appropriate for all post-Phase 1 mining development stages of the project. By granting the license the NRC only found that there was no adverse effect on cultural resources within the Phase 1 area of project development, based on the regulations in force at the time. The next and each subsequent phase of mining will be subject to the cultural resources identification and evaluation criteria *as defined by the regulatory framework in force when those phases are proposed and implemented*. There is no expectation on the part of either the NRC or HRI that the finding of no effect for Phase 1 applies to any of the subsequent phases.

16. Dr. King is shifting time and space referents in ¶21. The discussion is based entirely on the NHPA regulations as finalized in 2000. As such, his description of process and criteria are applicable only to phases of the mining after Phase 1. Yet in the final sentence, Dr. King applies the discussion to the Phase 1 determinations of "no effect" by the NRC and the concurrence by both the New Mexico SHPO and the Navajo Nation THPO. These determinations and concurrences apply only to Phase 1 and were carried out under the previous regulatory regime. The "puzzling" qualities of NRC's determinations and historic preservation officer's concurrences are an artifact of Dr. King's attempts to apply an inappropriate standard to the Phase 1 process.

17. Similar confusion is apparent in the points presented in ¶22 and ¶23. There was no need to contact the Advisory Council on Historic Preservation concerning Phase 1 because there was a determination of no effect by the NRC, with concurrence by both the New Mexico SHPO and the Navajo Nation THPO. Dr. King's discussions of both adverse effects and memoranda of agreement may be relevant to future phases of the mining development, but they are not relevant to Phase 1.

18. Dr. King's discussion in ¶24 is one of the most disturbing in his declaration in terms of my understanding of the intent of the NHPA. Dr. King implies that unless all contingencies are accounted for before an undertaking is allowed to proceed, then it cannot be allowed to proceed. No cultural resource identification effort, for archaeological resources or traditional cultural properties, can *guarantee* that no significant resources have been missed. Archaeological survey is limited in its effectiveness to what is visible, either on the ground surface or in some cases through limited subsurface testing. Traditional cultural properties investigations are limited to the network of consultants and referrals that are developed during the course of the investigation. Regardless of the amount of effort expended in investigations, there is always a chance that an archaeological site may be so thoroughly buried that its existence only comes to light during subsurface construction as part of the undertaking. Similarly, if a potential consultant is inadvertently omitted from a traditional cultural property investigation, important traditional uses of significant places may be overlooked. Any responsible undertaking will include provisions for these discoveries, and it is cynical to deride those who prepare for such contingencies as practicing as "post-hoc" compliance. Dr. King would use the NHPA procedures to stop projects rather than to ensure that important cultural resources are considered in the planning of projects and their ultimate execution.

19. Summary statements provided by Dr. King (¶25-29) are not accurate as argued above.

20. Dr. King changes his focus at this point in the declaration (¶30) to an argument that phased compliance with the NHPA has been improperly applied to the potential effects of this proposed mining development. This appears to be an attempt to reopen an issue that was considered in pages 5 and 6 of the Partial Initial Decision. Dr. King asserts that pursuing a phased approach to compliance "made it impossible for NRC to consider the full effects of the licensed project." He attempts to maintain this position while acknowledging that the New Mexico SHPO concurred with the phased approach, and while failing to acknowledge that the Navajo Nation THPO also concurred with the phased approach.

a) Phasing of complex development projects is commonplace. Whether highway improvements, shopping malls, or housing developments, a project can take years if not decades to design and implement. Incremental funding or cumulative design considerations can force phasing on such developments, often with considerable ambiguity in land alteration implications for future phases. These realities of development have been and continue to be accommodated by the Section 106 process of the NHPA. The 1992 regulations included phased compliance as an option (36 CFR §800.3(c)), as do the 2000 regulations (36 CFR § 800.4(b)(2)). No development phase can go forward unless the Section 106 process has been completed for that phase, regardless of the compliance status of previous phases.

b) I do not have knowledge or standing to discuss the detailed logic of incremental mining facility development. What was clear to me in 1996 and 1997 when discussing the mining project development with engineers for HRI, was that there were

sequential steps in the design and implementation process, and that elements of specific installation designs could not be finalized until certain work on prior activities was complete. Also, and more relevant to the Intervenor's concerns, each uranium ore body or mining site has to be characterized, tested, mined, and reclaimed independently of other ore bodies. Under these circumstances, there was no ambiguity in my responsibility to design and carry out cultural resource investigations on a parcel-by-parcel basis, anticipating the phasing needs of the undertaking by designing and carrying out cultural resource investigations for the defined areas of the first phase.

c) The first phase of HRI, proposed mining effort was defined as the Church Rock Site (portions of Section 8 and Section 17, T16N, R16W), and Section 12 (T17N, R13W). The cultural resources investigations were designed and carried out in 1996-1997, under the prevailing regulations of the NHPA (36 CFR 800) that had been established in 1992. Based on those investigations and the associated recommendations, the NRC determined that the proposed first phase developments would have no effect on cultural resources (archaeological or traditional cultural properties). The New Mexico SHPO and the Navajo Nation THPO both concurred with the determination of no effect.

21. Dr. King appears to be undermining his own arguments against phasing in the sequence of points he makes in ¶31-34. In ¶34, he states that "on large and complex projects, where there are many uncertainties about long-term effects, some sort of phased approach to compliance is often necessary." Dr. King's points that the NRC could not specify all areas of potential effects (¶31) and could only generally characterize the scope of potential effects as scaled within 5 and 20 years development areas (¶32, 33) all reaffirm that the proposed mining undertaking is "large and complex." The only logical or legitimate approach to complying with the NHPA under these circumstances is to pursue a phased compliance approach.

22. In ¶35, Dr. King formally introduces his rebuttal to the acceptance of phasing in the implementation of the NHPA that was put forward in the Partial Initial Decision (LBP-99-9, February 19, 1999). He presents that rebuttal in ¶36-42.

a) Dr. King states that the regulations governing the implementation of the NHPA were amended in 1999 just four months after the Partial Initial Decision (¶36). Those regulations were formally adopted in 2000 and were subsequently subjected to minor changes in 2001 and 2004. He implies that the 1999 Partial Initial Decision should be reconsidered in light of the current (2004) regulations. A position which common sense and the need for finality in licensing decisions make unsupportable.

b) Dr. King's description (¶37) of phased compliance (36 CFR 800.4(b)(2), as amended in 2004) is only partially accurate, and he uses selective omission and misstatement to support his position that the NRC's process of phasing in this case would not be valid under the new regulations. Section 4(b)(2) does allow phased compliance where actions "consist of corridors or large land areas," a definition that encompasses the totality of the Hydro Resources, Inc., potential "20 year plan" for mining operations. The phrase "or where access to properties is restricted" portion of the regulation is not relevant at this point in the HRI development plans. The final clause of this first sentence

is "the agency official may use a phased process to conduct identification and evaluation efforts."

c) Dr. King attempts to link the concepts of this first sentence of the regulation with the second sentence, which he only quotes discontinuously (§37). The full text of the beginning of the second sentence of 36 CFR 800.4(b)(2) is "The agency official may also defer final identification and evaluation of historic properties if it is specifically provided for in a memorandum of agreement" By dropping "also" from his first quote from this sentence, Dr. King attempts to imply that the second sentence is conceptually connected to the first. To the contrary, the "also" was included in the regulation language to specify an acceptable alternative to the deferral of identification and evaluation of historic properties that was already legitimized as part of the phased approach that is authorized by the first sentence. Dr. King's insertion of his own phrase "but only if" misrepresents the intent of the regulations, incorrectly implying that a memorandum of understanding is a necessary element to the pursuit of a phased approach to cultural resource identification and evaluation. I have no objection to Dr. King's last two sentences in §37. They are accurate, and they describe the process that will need to be carried out for subsequent phases of Hydro Resources, Inc.'s proposed mining project.

d) In other words, the 2004 regulations allow cultural resource identification and evaluation to be phased, both generically and in this case, without a mandatory requirement for programmatic agreements.

23. Phased compliance does not constitute a "mere promise," as stated in §38. The Intervenor and Dr. King consistently misconstrue the phased approach to compliance with the NHPA. There are no effects on historic properties within the land parcels that constitute Phase 1 of this undertaking. Cultural resources will be investigated as subsequent phases are defined, and merely granting a license does not omit this step or authorize future phases of an undertaking to proceed without concurrence of "no effect" or "no adverse effect" by the New Mexico SHPO, the Navajo Nation HPO, or the Advisory Council on Historic Preservation. Similarly, nothing in a phased approach limits "consideration of alternatives" (§39).

24. A major change in the National Historic Preservation Act regulations from 2000 forward has been an elaboration of the role of Indian tribes as consulting parties. Dr. King is correct (§40) in anticipating that more intensive consultation will be carried out with tribes as cultural resource identification and evaluation proceeds with subsequent phases. This does not reflect on either the grant of the license by the NRC or the concurrence of "no effect" for Phase 1 by both the New Mexico SHPO and the Navajo Nation THPO.

25. Although this section of the 2004 regulations is potentially useful for expediting compliance in future phases, this discussion (§41) is irrelevant to the issue of the Intervenor's presentation.

26. Dr. King summarizes his position on phasing in ¶42. He does not believe that the phased approach used by NRC meets the standards of the 2004 regulations of the NHPA. Specifically, he believes that "more identification and consideration of effects on historic properties" are required than were "regarded as sufficient under the 1986 regulations." (His 1986 regulations are equivalent to my 1992 regulations except that the earlier regulations he cites do not include treatment of traditional cultural properties.)

a) First, the grant of a license and the finding of no effect for Phase 1 are covered by the pre-2000 regulations that implemented the NHPA. Phasing was appropriate under those regulations, and the concurrence of the New Mexico SHPO and the Navajo Nation THPO are valid and appropriate.

b) Second, Dr. King's rejection of phasing in this paragraph is confusing since he seems to initially reject the "phased approach" (¶42, sentence 1), while later he seems to reject the results because phasing involves "a good deal more identification and consideration of effects on historic properties than HRI and NRC regarded as sufficient under the 1986 regulations." As I have discussed above (Blinman ¶22), nothing in the 2004 regulations would prevent an agency from implementing a phased approach to compliance with the NHPA.

c) The only effective difference in the 2004 regulations is that there will be a more extensive effort to identify, or confirm the non-existence of, traditional cultural property concerns for subsequent phases of the mining development.

27. Dr. King's opinions expressed in ¶43 inappropriately impugn the professionalism and credibility of the staff of the New Mexico SHPO and the Navajo Nation THPO. There is no question that archaeological problems and solutions have dominated concurrence documents both prior to and since the 2000 revision of the NHPA regulations. In New Mexico, most cultural resources have been archaeological sites. However, this emphasis on archaeology has not been to the exclusion of explicit considerations of traditional cultural properties and issues of cultural significance, when they have been present. In my experience, specifically with New Mexico Department of Transportation projects since my employment by the Museum of New Mexico in 1998, there is perhaps a greater risk of routine treatment of archaeological concerns because of their ubiquity, while issues raised about traditional cultural properties are given special attention because of their relative scarcity. Also, in my experience with literally hundreds of projects in New Mexico since 1988, "identify and avoid" has been effectively incorporated into the vast majority of compliance strategies for all types of cultural resources, including traditional cultural properties. The question of whether all archaeological sites should be considered traditional cultural properties, as has been argued recently by the Hopi and Zuni are still being debated within the Native American and historic preservation communities.

28. In ¶44-51, Dr. King outlines the steps that he feels are necessary to achieve compliance with the NHPA under the 2004 regulations. I do not agree that prior (Phase 1) compliance efforts were flawed, but I do agree with his recommendations as they will apply to future phases. Because the need for a phased approach for compliance has already been decided by the NRC and concurred with by the New Mexico SHPO and the Navajo Nation THPO, the sentiment in ¶51 is moot.

29. In ¶52-59, Dr. King concludes his declaration with a summary of how he would recommend integrating cultural resources concerns into NRC's compliance with the NEPA. Dr. King stresses that he interprets NEPA analysis as going beyond the technical considerations of the NHPA, and its implementing regulations. That position is accurate, but it is relevant only to future phases of the development project.

Response to the Declaration of Thomas Morris, Jr.

30. Given the ambiguities in the Intervenor's geographic referents for phasing proposed mining efforts, I have no way of knowing what location was visited when Mr. Morris refers to having visited "the proposed site in Crownpoint, New Mexico" The only Phase 1 parcel in the vicinity of Crownpoint is known as Section 12, but Mr. Morris may be referring to any of a number of parcels that are not yet scheduled for cultural resource investigations as part of future potential phases.

31. Mr. Morris also appears not to have had access to the Phase 1 cultural resource inventory report, Blinman 1997, in which Mr. Becenti's traditional cultural property investigations were confirmed and augmented by a Museum of New Mexico ethnohistorian (See Attachment C).

32. Mr. Morris' declaration reflects the complicated social concerns that have been raised around the issue of uranium mining (¶10-16). Many of those concerns are deeply rooted in the processes of acculturation and culture change that are affecting Navajo Nation communities, and uranium mining is simply a touchstone for underlying frustrations that have little to do with mining of any sort (¶13, 14). Other concerns are rooted in the historical experience of Navajo communities with hard rock uranium mining and its personal and environmental consequences (¶11, 15, 16). The latter experience is unfortunate, both for the very real health issues caused by the hard rock mining and for the inappropriate extension of the hard rock mining experiences to the solution mining technology that is proposed by HRI. All of Mr. Morris' concerns are valid in the social context of contemporary Navajo communities, but only some are relevant to cultural resource identifications and evaluations that have been questioned by the Intervenor's presentation.

33. One of Mr. Morris' statements (¶16) agrees with findings in Mr. Becenti's and the Museum of New Mexico's investigations of traditional cultural properties within the Phase 1 parcels. One reason for the absence of traditional cultural properties within Section 8, Section 17, and Section 12 is that prior hard rock mining and mining processing activities within those areas has raised the fear that herbs and the landscape in general might be contaminated. This helps explain why, despite nearly a decade of work,

neither HRI nor the Intevenors has encountered any specific traditional cultural uses within the land parcels in question.

34. Mr. Morris' concerns in ¶17 are relevant to cultural resource investigations in advance of future mining phases, but they are not relevant to the current issue of the license or the adequacy of NHPA compliance for Phase 1.

35. Mr. Morris provides only general reflections on Navajo world view and his perceptions of uranium mining. Despite his qualifications as a Traditional Practitioner, he identifies no specific traditional cultural properties within any of the Phase 1 parcels: Section 8, Section 17, or Section 12. He provides no evidence that the traditional cultural property investigations of Mr. Becenti or of the Museum of New Mexico were incomplete or under-inclusive.

Additional Observations

36. The Intervenors' presentation and Dr. King's declaration either cite or make reference to reports by Michael Marshall on cultural resource overviews of potential mining lease locations within the greater Crownpoint area. The 1991 Marshall report is provided by the Intervenors as Exhibit G, and the 1992 Marshall report is provided as Exhibit E. Although both reports refer to lease areas for possible future mining, the reports are not complete cultural resource inventories for the purposes of compliance with the NHPA. The geographic areas of the reports do not overlap with the Phase 1 mining parcels, and the cultural resources issues raised by the content of the reports are not relevant in the context of Section 8, Section 17, or Section 12. If future mining development phases are designed that overlap the areas of the Marshall reports, complete archaeological and traditional cultural property identifications and evaluations will have to be carried out for those areas. Those identifications and evaluations will comply with the requirements of the 2004 or later regulations under the NHPA, ensuring that the potential issues raised by the Intervenors will be addressed prior to any agency decisions.

Concluding Summary

37. The Intervenors claim that HRI's license should be revoked or amended because of a failure to satisfy federal laws and regulations protecting cultural resources. The Intervenors rely on the expert testimony of Dr. King and Mr. Morris to argue that the "phased compliance" incorporated by the NRC into the license granted to HRI was inappropriate, and that the cultural resources inventory, particularly the inventory of traditional cultural properties, was incomplete.

38. Dr. King is in error in his interpretation of "phased compliance." Both the pre-2000 and post-2000 regulations for implementation of the National Historic Preservation Act include explicit provisions for "phased compliance" (36 CFR § 800.3(c) and 36 CFR § 800.4(b)(2), respectively). Dr. King does not argue that any particular qualities of HRI's undertaking render it ineligible for a phased approach under the pre-2000 regulations. Instead, he seems to accept that it qualified for a phased approach, but that the traditional cultural properties investigations were inadequate and therefore all cultural resource issues can be reopened using post-2000 regulatory requirements.

39. Dr. King then shifts his argument to the propriety of phasing under the post-2000 regulations. Again, he does not argue the merit of applying phasing to this particular undertaking. Instead he misrepresents the text of the regulation to make it appear that phasing is inappropriate and that technical requirements of phasing were not met (see Blinman ¶22 and subparagraphs). Even under the 2004 amended regulations, "the agency official may use a phased process to conduct identification and evaluation efforts" (36 CFR 800.4(b)(2)). Dr. King tries to make it appear that a memorandum of agreement is a necessary element of a phased approach under the post-2000 regulations, but there is no necessary linkage. Instead, a memorandum of agreement can be used as an additional means of deferring final identification and evaluation of cultural resources for complex undertakings, whether or not a phased approach is recommended by the agency, and in the event of a finding of "adverse effects."

40. Dr. King questions the adequacy of the traditional cultural property investigations that were completed in 1997 and that were used to warrant the granting of a materials license by NRC in 1998. His standard for the measure of adequacy is the revised NHPA regulations that were formally adopted in 2000. These amended regulations would require more thorough investigation of the possible presence of traditional cultural properties that are important to non-resident Indian tribes. However, no evidence has been offered by Dr. King or Mr. Morris that any additional traditional cultural properties would have been discovered by these additional investigations, and the objection is based solely on the assertion that the investigation process was inadequate by post-2000 standards. In fact, Mr. Morris' declaration provides support for an explanation of the lack of traditional cultural properties within Phase 1 parcels: all of the parcels have been previously affected by hard rock uranium mining or processing, and all are viewed as inappropriate places for traditional activities, such as to gather "healing herbs."

41. The assertion that the traditional cultural property investigations were deficient has already been dismissed by the Partial Initial Decision. The traditional cultural properties investigation for Phase 1 was carried out under the pre-2000 regulations. The results of that investigation affirmed that there were no traditional cultural properties within the Phase 1 project parcels. The New Mexico SHPO and the Navajo Nation THPO concurred with that determination. Traditional cultural property investigations for future phases of the mining development will comply with the regulations that are in force at the time (currently 2004, as amended), but identifications and evaluations for the Phase 1 parcel are complete.

42. In my opinion, NRC acted properly in assessing the potential impacts of HRI's planned activities on cultural resources as required by the NHPA and its implementing regulations.

a) The decision to divide the project into phases for the purposes of compliance with the NHPA is consistent with the implementing regulations, both those in place at the time the license was granted and those that are currently in place. The phasing is justified by the slow development of mining operations and by the independent and geographically discrete parcels that will be subject to mining activities.

b) The cultural resource identifications and evaluations for each phase have been and will be carried out to the requirements of the implementing regulations in force at the time the NRC conducts its compliance review for each individual phase. For Phase 1, the regulations were those in place prior to 2000. For subsequent phases, the implementing regulations are those formally adopted in 2000, with the latest amendments in place as of 2004. If additional changes in the regulations take place, subsequent phases will comply with those regulations, as amended.

c) Compliance with NHPA is a process-driven effort. The process carried out for Phase 1 of the mining effort (Sections 8, 17, and 12, see Blinman 1997) was identical for all parcels of Phase 1. This process was validated by New Mexico SHPO, the Navajo Nation THPO, and the Partial Initial Decision in 1999. No new substantive issues have been raised by Dr. King or Mr. Morris to question the process as validated.

43. This concludes my declaration

Pursuant to U.S.C. § 1746, I declare under penalty of perjury, that the foregoing is true and correct to the best of my knowledge and belief.

I declare on this 7th day of June, 2005, at Santa Fe, New Mexico, under penalty of perjury that the foregoing is true and correct.


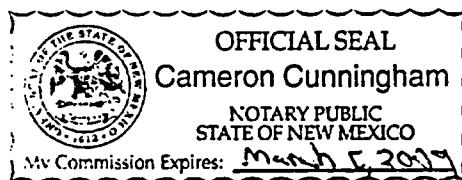


Eric Blinman, Ph.D

ACKNOWLEDGMENT

SUBSCRIBED and SWORN TO before me, the undersigned authority, on June 7, 2005 by Eric Blinman.

[Seal]


[Signature of Notary]

Cameron Cunningham
Printed/typed name of Notary

Notary public for the State of New Mexico. My commission expires _____, 200 ____.

ATTACHMENT A

VITA

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BORN: 25 September 1953, San Diego, California

EDUCATION:

Ph.D. 1988, Department of Anthropology, Washington State University. Dissertation title: *The Interpretation of Ceramic Variability: A Case Study from the Dolores Anasazi*.

M.A. 1978, Department of Anthropology, Washington State University. Thesis title: *Pollen Analysis of Glacier Peak and Mazama Volcanic Ashes*.

A.B. 1975, Department of Anthropology, University of California, Berkeley. Degree conferred with high honors in anthropology and distinction in general scholarship.

GRANTS, AWARDS, HONORS, AND OFFICES:

2001-present Outside faculty member, Ph.D. candidate committees (2), Department of Anthropology, University of New Mexico.

2001-present Editorial Board, *El Palacio*.

1996-present Manuscript and proposal reviewer: *American Antiquity*, *Fieldiana*, *Kiva*, *Journal of Anthropological Research*, *Journal of Archaeological Method and Theory*, *Journal of Archaeological Research*, *Journal of Archaeological Science*; Educational Foundation of America, National Science Foundation.

2005 Excellence in Public Education Award conferred on the Office of Archaeological Studies by the Society for American Archaeology.

2004 Yucca Climbing Rope Replication Project. National Geographic Explorations Grant.

2002 Photo: Glaze Ware Firing Platforms, San Lazaro Pueblo. Honorable Mention. Photo Fieldwork: From Petroglyphs to Plazas, Juried Exhibition, Governor's Gallery, Santa Fe State Capitol.

2002 Nuevos Dolores Corrugated; pottery jar exhibited in *85th Anniversary Exhibition*; Museum of Fine Arts, Santa Fe, New Mexico.

2000 Nuevos Dolores Corrugated; pottery jar exhibited in *Term Limits*; Museum of Fine Arts, Santa Fe, New Mexico.

1994-1998 Contributing editor, *New Mexico Archaeology: Newsletter of the Friends of Archaeology*.

1997 Nuevos Dolores Corrugated; pottery jar exhibited in *O'Keeffe's New Mexico: 80th Anniversary Exhibition*; Museum of Fine Arts, Santa Fe, New Mexico.

1992-1995 Editor, *Pottery Southwest*.

1994 Society for American Archaeology; poster session award for excellence.

1990 Museum of New Mexico Foundation; grant awarded in support of NSF proposal research.

1982 Colorado State Historical Society; grant awarded in support of the Red Ware Project (funds administered by the Mesa Verde Museum Association and Dr. David A. Breternitz).

1972 Kraft Prize, University of California, Berkeley.

1971-1975 Regents Scholarship, University of California, Berkeley.

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Blinman, Eric, and John A. Ware

1999 Questioning Pueblo Political Autonomy: Ritual Exchange and Political Integration on the Rio Grande. Paper presented at the 64th Annual Meeting of the Society for American Archaeology, Chicago, Illinois.

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Blinman, Eric

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1998 Turning Anasazi Pottery Outside-In: Construction Techniques and Immigration in the Rio Grande Valley. Paper presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle, Washington.
- Blinman, Eric, and John A. Ware
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1996 Archaeology, Historical Ethnography, and Pueblo Social History. Paper presented at the School of American Research, Santa Fe, New Mexico.
1996 "Creative Destruction," Reorganization, and Ritual Syncretism: The Development and Spread of Pueblo Ritual Organizations. Paper presented as part of Cultural Modeling Month, Santa Fe Institute, Santa Fe, New Mexico.
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1995 A Ceremonial Assemblage from San Lazaro Pueblo: Precontact Medicine Societies in the Northern Rio Grande. Paper presented to the Department of Anthropology, University of California, Los Angeles.
1995 Moderator, White Ware Session. Chambers-Sanders Trust Lands Ceramic Conference, Flagstaff, Arizona.
1995 Symposium Discussant. Craft Specialization in the Protohistoric American Southwest. 60th Annual Meeting of the Society for American Archaeology, Minneapolis, Minnesota.
1994 Anasazi Firing Experiments: 1991-1994. Paper presented at the 1994 Kiln Conference at Crow Canyon, Cortez, Colorado.
1994 Issues in the Study of Ceramic Production and Exchange in the American Southwest. Introductory remarks at the Southwestern Pottery Workshop. Crow Canyon Archaeological Center, Cortez, Colorado.
1994 Laboratory Perspectives on Anasazi Firing. Paper presented at the 67th Pecos Conference, Mesa Verde National Park.
- Blinman, Eric, Clint Swink, Lawrence R. Sitney, David S. Phillips, and Joel M. Brisbin
1994 The Firing of Anasazi Pottery. Poster presented at the 59th Annual Meeting of the Society for American Archaeology, Anaheim.

Blinman, Eric

1993 Conservators and Archaeologists: Understanding Points of Tension. Paper presented as part of a panel discussion: Strengthening Ties: A Dialogue Between New World Archaeologists and Conservators. 21st Annual Meeting of the American Institute for Conservation of Historic and Artistic Works, Denver, Colorado.

1993 Introduction and Overview of Kiln Replication Experiments. Paper presented at the 1993 Kiln Conference at Crow Canyon, Cortez, Colorado.

1993 Introduction: Breadbasket, Backwater, or Burgeoning center? The Totah in Regional and Temporal Context. Paper presented at the Anasazi Symposium, Farmington, New Mexico.

Skibo, James M., Michael B. Schiffer, Eric Blinman, and Dean Wilson

1992 The Designing of Anasazi Pottery: A Technological and Experimental Study. Paper presented at the Third Southwest Symposium, Tucson, Arizona.

Blinman, Eric

1991 Adjusting the Pueblo I Chronology: Implications for Culture Change at Dolores and in the Mesa Verde Region at Large. Paper presented at the Anasazi Symposium 1991, Mesa Verde National Park, Colorado.

1991 Hot Stuff in the Old Town Tonight: Pueblo I Villages of the Northern San Juan Region. Paper presented at the Anthropology Department Colloquium, University of Arizona, Tucson.

Blinman, Eric, and C. Dean Wilson

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Wilson, C. Dean, and Eric Blinman

1991 Early Anasazi Ceramics and the Basketmaker Transition. Paper presented at the Anasazi Symposium 1991, Mesa Verde National Park, Colorado.

Blinman, Eric

1990 Ceramics and Anasazi Culture Change: From the Complex to the Complicated, ... or, Half-a-Million Sherds Can't Be Wrong All the Time. Paper presented at the School of American Research Anthropology Colloquium, Santa Fe.

1990 The La Plata Highway Project. Paper presented at the Annual Meeting of the Archaeological Society of New Mexico, Santa Fe.

Toll, H. Wolcott, III, and Eric Blinman

1990 Chaco in the Context of Ceramic Regional Systems. Paper presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas.

Blinman, Eric, and C. Dean Wilson

1989 Mesa Verde Region Ceramic Types. Paper presented at the New Mexico Archaeological Council Ceramic Workshop, Red Rock State Park, New Mexico.

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1988 An Overview of Dolores Area Prehistory. Paper presented at the Dolores Archaeological Program Symposium, Grand Opening of the Anasazi Heritage Center, Dolores, Colorado.

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1988 Explanations of Population Aggregation in the Mesa Verde Region Prior to A.D. 900. Paper presented at the Southwest Symposium, Arizona State University, Tempe, Arizona.

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1985 Technological Change in the Dolores Area, A.D. 600-980. Paper presented at the 50th Annual Meeting of the Society for American Archaeology, Denver.

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CONTRACT OR RESEARCH REPORTS:

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1977 *Subsurface Archaeological Survey Within the Proposed Route of SR 151, Beebe Orchard*. Washington Archaeological Research Center, Project Report 45.

MANUSCRIPTS ON FILE:

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2002 Casas Grandes Pottery Firing Experiments and Analyses: 2002. Report prepared for the New Mexico Office of Cultural Affairs, International Projects and the Office of Archaeological Studies in cooperation with the Instituto Nacional de Arqueología y Historia, Casas Grandes, Chihuahua, Mexico.

2002 Preliminary Results of Pottery Analyses: 2001 Field Season. Paper prepared for the Mission San Marcos Archaeological Project, American Museum of Natural History, New York.

Blinman, Eric, and Jeffrey Royce Cox

2002 A Context for the Interpretation of Archaeomagnetic Dating Results from the Pajarito Plateau. Draft report prepared for the Cultural Resource Management Team, Ecology Group, Risk Reduction and Environmental Stewardship Division, Los Alamos National Laboratory. Los Alamos, New Mexico.

Blinman, Eric

2001 Mill Creek Archaeological Project Ceramic Report. Report prepared for the Bureau of Land Management, Salt Lake City Office.

2001 Preliminary Results of Pottery Analyses: 1999-2000 Field Seasons. Paper prepared for the Mission San Marcos Archaeological Project, American Museum of Natural History, New York.

1998 Pottery Geography of the Northern Southwest: Style, Technology, Exchange, and Ethnicity. Paper prepared for the National Park Service Affiliation Conference on Ancestral Peoples of the Four Corners Region. Fort Lewis College, Durango, Colorado.

Blinman, Eric, and Mollie S. Toll

1998 Textile Description -- LA 113406, Frances Mesa, New Mexico. La Plata Archaeological Consultants. Dolores, Colorado.

Blinman, Eric, and C. Dean Wilson

1989 Mesa Verde Region Ceramic Types. Manual prepared for the New Mexico Archaeological Council Ceramic Workshop, Red Rock State Park, New Mexico.

Orcutt, Janet D., and Eric Blinman

1987 Leadership and the Development of Social Complexity: a Case Study From the Dolores Area of the American Southwest. Manuscript in possession of authors.

Blinman, Eric, C. Dean Wilson, Robert M. R. Waterworth, Mary P. Errickson, and Linda P. Hart

1984 Additive Technologies Group Laboratory Manual. *Dolores Archaeological Program Technical Reports* DAP-149. Final report submitted to the Bureau of Reclamation, Upper Colo. Region, Salt Lake City, in compliance with Contract No. 8-07-40-S0562.

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1983 The Red Ware Project: Ceramic Manufacture and Exchange in the Western Mesa Verde Region. Report submitted to the Colorado Historical Society by the Mesa Verde Museum Association.

Kohler, Timothy A., Carl J. Phagan, and Eric Blinman

1983 Explaining Variability Among Artifact Collections. *Dolores Archaeological Program Technical Reports* DAP-079. Final report submitted to the Bureau of Reclamation, Upper Colo. Region, Salt Lake City, in compliance with Contract No. 8-07-40-S0562.

Blinman, Eric

1975 A Faunal Analysis in the Santa Cruz Mountains. Ms. on file, Archaeological Research Facility, University of California, Berkeley.

Blinman, Eric

1974 An Analysis of the Faunal Remains from CA-SCr-42. Ms. on file, Library, University of California, Santa Cruz.

PUBLIC LECTURES AND DEMONSTRATIONS (Most recent five years only):

2005

Archaeology as Human Ecology. Lecture. Alamogordo High School, Alamogordo.

Beautiful as well as Strong: Yucca Fiber Textiles in the Southwest. Lecture and demonstration, Ancient Sites and Ancient Stories 2005 Lecture Series. Southwest Seminars, Santa Fe.

Chaco to the Spanish Entrada. Docent training slide lecture. Museum of Indian Arts and Culture, Santa Fe.

Culture Day: Yucca Fiber Textile Demonstration. State Capitol Building, Santa Fe.

Environmental Science: Ceramic Technology (5 units) (with Bea Duran, Pueblo of Tesuque). Santa Fe Public Schools, Indian Education Program, Santa Fe.

Environmental Science: Human Ecology. Santa Fe Public Schools, Indian Education Program, Santa Fe.

Environmental Science: Insulation: Fur and Feather Blankets (with Myron Gonzales, Pueblo of San Ildefonso). Santa Fe Public Schools, Indian Education Program, Santa Fe.

Environmental Science: Introduction. Santa Fe Public Schools, Indian Education Program, Santa Fe.

Environmental Science: Textiles as Technology. Santa Fe Public Schools, Indian Education Program, Santa Fe.

Environmental Science: Tour of School of American Research and Museum of Indian Arts and Culture exhibitions and collections. Santa Fe Public Schools, Indian Education Program, Santa Fe.

Galisteo Pueblo Site Tour. Southwest Seminars and The Archaeological Conservancy, Santa Fe.

Galisteo Pueblo Site Tour. University of New Mexico, GIS Students, Santa Fe.

How Debates on Origins Affect Archaeologists and NAGPRA. Native American Origins Lecture Series, Friends of Archaeology, Santa Fe.

New Mexico Archaeology and Yucca Fiber Textiles. Earth Day Fair, Alamogordo.

Pottery Firing and Science Education. Lecture and discussion of traditional pottery technologies and elementary education curriculum, Native American teachers. Poeh Arts Center, Pojoaque.

Pottery Technology and Traditions in the Southwest. Docent training workshop, Museum of Indian Arts and Culture, Santa Fe.

Yucca Textiles and Fiber Technology. Taos Archaeological Society, Taos.

Yucca String and Fur and Feather Blankets. Coronado State Monument Heritage Preservation Week, Bernalillo.

2004

Ancestral Pottery Demonstration (with Robert Tenorio, Santo Domingo). Sun Mountain Gathering, Museum of Indian Arts and Culture, Santa Fe.

Ancestral Pottery Technologies. Slide presentation and demonstration. Tewa Pottery Class, Poeh Arts Program, Pueblo of Pojoaque.

Ancestral Pottery Technologies. Slide presentation and demonstration. Mica Pottery Class, Poeh Arts Program, Pueblo of Pojoaque.

Ancestral Pueblo Pottery Traditions: From the Beginning through the Pueblo Revolt. Slide lecture for a Master Class, Museum of Indian Arts and Culture, Santa Fe.

Ancient Lifeways and Technologies. Demonstration and discussion. Atalaya Elementary, Fourth Grade Class, Santa Fe.

Ancient Lifeways and Technologies. Demonstration and discussion. E.J. Martinez Elementary, Sixth Grade Class, Santa Fe.

Archaeological Dating Techniques (one unit). Science and Mathematics Enrichment Curriculum for Native American Students, Santa Fe Public Schools.

Basketmaker II to Chaco. Docent training slide lecture. Museum of Indian Arts and Culture, Santa Fe.

Review of Fire Effects Experiments by the Office of Archaeological Studies. Protecting the Spirits of Our Ancestors Conference, Museum of Indian Arts and Culture, Santa Fe.

The Many Uses of Yucca. Slide presentation and demonstration. Tijeras Ranger Station, Tijeras.

Pottery Technology and Culture History in the Northern Southwest. Slide lecture, Tijeras Ranger Station, Tijeras.

Pueblo Galisteo Site tour. The Archaeological Conservancy. Galisteo, New Mexico.

Pueblo Shé. Site tours (two). Friends of Archaeology. Galisteo, New Mexico.

Roads to the Past: 50 years of Highway archaeology in New Mexico. Demonstrations, Earth Day Fair, Alamogordo, New Mexico.

Science and Southwestern Pottery Traditions (five units). Science and Mathematics Enrichment Curriculum for Native American Students, Santa Fe Public Schools.

Southwestern Prehistory, the Northern Rio Grande, and the Galisteo Basin. Slide lecture, The Archaeological Conservancy. Santa Fe, New Mexico.

Surveying and Trigonometry (one unit). Science and Mathematics Enrichment Curriculum for Native American Students, Santa Fe Public Schools.

Technological and Stylistic Foundations of the Contemporary Tewa Pottery Tradition. Slide presentation and

demonstration. Tewa Pottery Class, Poeh Arts Program, Pueblo of Pojoaque.
 Trench Kiln Pottery Firing Demonstration. Santa Fe Ranger District, Site Steward Conference. Jemez Falls, New Mexico.
 Who Were These Anasazi Anyway? Santa Fe Archaeological Society, Santa Fe.
 Yucca Fiber. Demonstration. Palace of the Governors, Santa Fe.
 Yucca Fiber. Demonstration. Friends of Archaeology, Santa Fe.
 Yucca Fiber Textile Workshops (four). Youth Program, San Ildefonso Pueblo.
 Yucca Fiber Textiles. Demonstration. Culture Day, New Mexico State Capitol Building, Santa Fe.
 Yucca Fiber Textiles and Fur and Feather Blankets. Demonstration, Festival of the Cranes, Bosque del Apache Wildlife Refuge.

2003

Ancestral Keres and Middle Rio Grande Pottery Techniques. Workshop in pottery techniques for Pueblo of Santa Ana potters. Museum of Indian Arts and Culture, Santa Fe.
 Ancestral Southwestern Pottery Technology Docent Workshop. Demonstration, slide presentation, and workshop in traditional pottery materials and techniques, Museum of Indian Arts and Culture, Santa Fe.
 Galisteo Pueblo Archaeological Site Tour. Friends of Archaeology, Museum of New Mexico Foundation.
 Origin and Development of Southwestern Pottery Traditions. Demonstrations and slide presentations, Deming Art Center, Deming.
 Parts to the Whole: Pottery Vessel Design and Archaeological Interpretation. Monte del Sol Charter School, Santa Fe.
 Pottery Firing Demonstration, Museum of Indian Arts and Culture.
 Prehistory of the Northern Southwest. Docent training slide presentation, Coronado State Monument, Bernalillo.
 San Cristóbal Pueblo Archaeological Site Tour. Friends of Archaeology, Museum of New Mexico Foundation.
 San Cristóbal Pueblo Archaeological Site Tour. Science and Mathematics Enrichment Curriculum for Native American Students. Indian Education Program, Santa Fe Public Schools.
 Science and Tradition in Ceramic Technology (4 Units). Science and Mathematics Enrichment Curriculum for Native American Students.
 Time and Dating (2 Units). Science and Mathematics Enrichment Curriculum for Native American Students. Indian Education Program, Santa Fe Public Schools. Museum of Indian Arts and Culture, Santa Fe.
 Transits and Trigonometry (1 unit). Science and Mathematics Enrichment Curriculum for Native American Students. Indian Education Program, Santa Fe Public Schools. Museum of Indian Arts and Culture, Santa Fe.
 Yucca Fiber Preparation and Spinning (1 Unit). Science and Mathematics Enrichment Curriculum for Native American Students, Santa Fe Public Schools.
 Yucca Fiber Textiles and Fur and Feather Blankets. Demonstration for Santo Domingo and Bernalillo Middle School students. Coronado State Monument, Bernalillo, New Mexico.
 Yucca Fiber Textiles and Fur and Feather Blankets. Demonstration, Festival of the Cranes, Bosque del Apache Wildlife Refuge.

2002

An Exquisite Diversity: Puebloan Peoples from the Past to the Present. Presentation to the Northwestern University Alumni Association, Santa Fe.
 Ancestral Foundations of Southwestern Pottery Traditions. Presentation for Martha Streuver tour group, Santa Fe.
 Ancestral Keres and Middle Rio Grande Pottery Traditions. Workshop presented for potters from Santa Ana Pueblo, Museum of Indian Arts and Culture, Santa Fe.
 Ancestral Pottery Traditions of the Southwest. Demonstration, Sun Mountain Gathering, Museum of Indian Arts and Culture, Santa Fe.
 Ceramic Science (4 units). Science and Mathematics Enrichment Curriculum for Native American Students. Indian Education Program, Santa Fe Public Schools. Museum of Indian Arts and Culture, Santa Fe.
 Changing Pottery Traditions in the Cochiti Pueblo Area. Presentation to Cochiti Pueblo potters, Pueblo of Cochiti, New Mexico.
 Cultural History of the Southwest. Docent Training Lecture, Museum of Indian Arts and Culture, Santa Fe.
 From the Part to the Whole: Designing, Using, and Interpreting Pottery. Monte del Sol Charter School, Santa Fe.
 Galisteo Pueblo. Site tour, Friends of Archaeology, Museum of New Mexico Foundation, Santa Fe.
 Models of Climate Change and Cultural Response in Puebloan Prehistory. Presentation to the Science Writers Workshop, Santa Fe Institute, Santa Fe, New Mexico.
 Physical Anthropology and Its Contributions to Southwestern Archaeology (presented with Nancy J. Akins). Enrichment Seminar, Museum of Indian Arts and Culture, Santa Fe.
 Pottery Technology and Traditions in the Prehistoric Southwest. Elder Hostel Presentation, College of Santa Fe, Santa Fe.
 Pueblo Blanco. Site tour, Zorro Ranch, New Mexico.
 Yucca Fiber Cordage and Fur and Feather Blanket Manufacture. Demonstration at Coronado State Monument, Bernalillo, New Mexico.

- Yucca Fiber Cordage and Fur and Feather Blanket Manufacture. Demonstration at Bosque del Apache National Wildlife Refuge, San Antonio, New Mexico.
- Yucca Fiber Cordage and Fur and Feather Blanket Manufacture. Demonstration at the Sevilleta Wildlife Refuge 5th Annual Open House, Socorro County, New Mexico.

2001

- Ancestral Pottery Clay Sources and Sampling. Field trip for pottery clay collection. Native American Studies Program, University of New Mexico, Sandoval and Santa Fe Counties.
- Ancient Textiles in the Southwest. Docent training lecture, Maxwell Museum of Anthropology, University of New Mexico, Albuquerque.
- Archaeomagnetic dating technique and interpretation. New Mexico State University Archaeology Field School, Gray Ranch, New Mexico.
- Archaeomagnetic dating technique and interpretation. Southern Methodist University Archaeology Field School, Fort Burgwin, New Mexico.
- Galisteo Basin Prehistory. Friends of Archaeology Lecture Series, Museum of International Folk Art, Santa Fe.
- Material and Cultural Exchange and Interaction in the Southwest. Docent training lecture, Museum of Indian Arts and Culture, Santa Fe.
- The Pace and Measurement of Culture Change in the Southwest. Southwest Seminars, Santa Fe.
- Pottery Firing Demonstration. Museum of Indian Arts and Culture, Santa Fe.
- Pottery Firing Demonstration. Museum of Indian Arts and Culture, Santa Fe.
- Pottery Firing Demonstration. Santa Fe School for the Arts, Santa Fe.
- Pottery Technology Demonstration. Friends of Archaeology, Santa Fe.
- Prehistory of the Galisteo Basin. Santa Fe Archaeological Society, Santa Fe.
- Pueblo Blanco and Galisteo Basin Prehistory. New Mexico State Land Office, Galisteo, New Mexico.
- Yucca Fiber Cordage and Fur and Feather Blanket Manufacture. New Mexico Archaeology Fair, Santa Fe, New Mexico.
- Yucca Fiber Cordage, Feather Blankets, and Ancient Textiles. Festival of the Cranes, Socorro, New Mexico.

EMPLOYMENT:

- 1991-present Deputy Director, Office of Archaeological Studies, Museum of New Mexico, Santa Fe--assisting the Director in the administration of OAS activities; serving as principal investigator for projects in northwestern New Mexico, Colorado, Utah, and Arizona; planning and supervision of laboratory operations and artifact analyses for the La Plata Highway Project, northwestern New Mexico; providing field and laboratory conservation services to OAS projects and to outside organizations; serving as liaison with the Museum of New Mexico Foundation--Friends of Archaeology; Director, Archaeomagnetic Dating Laboratory (since 1994). Acting OAS Director (September-December 2003).
- 1996-present Ceramist, Bluff Great House Project, University of Colorado, Boulder, Colorado--ceramic analysis of collections from a Chacoan outlier in Bluff, Utah.
- 1999-present Ceramist, Mission San Marcos Project, American Museum of Natural History, New York--ceramic analysis of collections from an early Spanish Colonial Mission.
- 2004-present Ceramist, Comb Wash Project. University of Colorado and Utah Bureau of Land Management--ceramic collections from Comb Wash, Southeastern Utah.
- 2002-2004 Ceramist, Pinta Housing Cluster Project. La Plata Archaeological Consultants, Dolores, Colorado--ceramic analysis of collections from the Rio Puerco Valley, Arizona.
- 2004 Consultant and tour guide. Crow Canyon Archaeological Center--Pueblos and Peoples of the Rio Grande.
- 2003 Ceramist, Mayhan Project. Woods Canyon Archaeological Consultants, Yellowjacket, Colorado--ceramic analysis of collections from the Upper San Juan highlands, Colorado.
- 2003 Lecturer in Anthropology and Native American Studies, Santa Fe Field Studies Program, Colgate University--Southwestern Archaeology and Ethnology class.
- 2001 Ceramist, Great House Salvage Collection Evaluation. Navajo Nation Historic Preservation Department, Chaco Protection Sites Program--evaluation of specialized studies potentials for three great house pottery collections.
- 2001 Lecturer in Anthropology and Native American Studies, Santa Fe Field Studies Program, Colgate University--Southwestern Prehistory class.
- 1999-2000 Acting Director, Museum of Indian Arts and Culture, Laboratory of Anthropology, Museum of New Mexico, Santa Fe--administration of a exhibition, curation, education, and research facility; collections and activities focus on prehistoric, ethnographic, and contemporary Indian Arts collections from the Southwestern United States.
- 1999 Lecturer in Anthropology and Native American Studies, Santa Fe Field Studies Program, Colgate University--Southwestern Prehistory class.
- 1998-1999 Ceramist, N35 Road Project, P-III Associates, Inc., Salt Lake City, Utah--ceramic analysis of collections from the northwest flanks of the Carrizo Mountains, Arizona.
- 1998 Consultant, Fort Lewis College and National Park Service, Ancestral Peoples of the Colorado Plateau

- Cultural Affiliation Workshops--assisted in organization, presentation, and synthesis of three workshops.
- 1998 Instructor, Concepts in Pottery. Poeh Arts Program, Pueblo of Pojoaque. Pojoaque Pueblo, New Mexico.
- 1997 Instructor, Integrating Field Archeology, Conservation and Culturally Appropriate Treatments. Workshop sponsored by the National Park Service, Intermountain Cultural Resource Center.
- 1994-1996 Ceramist, La Plata Archaeological Consultants, Dolores, Colorado--ceramic analysis and interpretation of pottery collections from Anasazi sites in the vicinity of Navajo, Arizona.
- 1994 Manuscript reviewer, School of American Research, Santa Fe.
- 1994 Manuscript reviewer, University of Arizona Press, Tucson.
- 1994 Peer reviewer, National Park Service, Chaco Project material culture manuscripts.
- 1992-1994 Scholar, Crow Canyon Archaeological Center Field Seminars, Cortez, Colorado--field guide, archaeologist, and educator for organized public field trips.
- 1992-1993 Ceramist, Woods Canyon Archaeological Consultants, Yellow Jacket, Colorado--ceramic analysis and interpretation for Anasazi and Navajo pottery collections from sites in the Upper San Juan Region.
- 1991-1992 Adjunct Faculty. University of New Mexico Center for Graduate Studies, Santa Fe--teaching workshop classes in archaeological analysis.
- 1988-1991 Laboratory Supervisor and Conservation Officer, Office of Archaeological Studies, Museum of New Mexico, Santa Fe--planning and supervision of laboratory operations and artifact analyses for the La Plata Highway Project, northwestern New Mexico; providing field and laboratory conservation services to OAS projects and to outside organizations.
- 1988 Textile replicator for Malone Displays, Inc., Atlanta, Georgia--replication of rabbit fur and turkey feather blanket display specimens for the Anasazi Heritage Center, Dolores, Colorado.
- 1987-1988 Ceramist, Crow Canyon Archaeological Center--pilot study of vessel forms in midden collections, evaluation of archaeological clay and temper samples, clay resource study, and pilot paste characterization study.
- 1987-1988 Editor, Ak-Chin Indian Community West Side Farms Project, Soil Systems, Inc., Phoenix--content and copy editing of descriptive and interpretive report chapters prior to submission for peer review.
- 1987 Ceramist, N-16 Road Project, P-III Associates, Inc., Salt Lake City--ceramic dating studies and descriptive and interpretive report preparation from preexisting ceramic data.
- 1986 Topographic Surveyor, Chacoan Outlier Mapping Project, Office of Contract Archaeology, University of New Mexico--prepared topographic and planimetric maps of Twin Angels, Kin Nizhoni, and Lower Kin Nizhoni outliers for the Bureau of Land Management.
- 1986 Project Manager, Fort Hood Archaeological Survey 1986, Archeological Research Laboratory, Texas A&M University--supervised two field crews carrying out archaeological survey of historic and prehistoric resources; responsible for logistical organization and compliance with contract specifications.
- 1986 Ceramist, EFN Canyon Mine Site, Abajo Archaeology--typological and technological analyses of Coconino Plateau archaeological ceramics.
- 1986 Ceramist, Washington City-Green Spring Project, Abajo Archaeology--typological and technological analyses of Virgin Anasazi and Shoshonean ceramics.
- 1985-1986 Ceramist, Recapture Dam Pipeline Project, Abajo Archaeology--typological, technological, and ceramic dating analyses of Mesa Verde Anasazi ceramics.
- 1981-1985 Task Specialist, Additive Technologies Group, Dolores Archaeological Program, University of Colorado--supervised the analysis of ceramic and basketry artifacts; designed and carried out research projects relating to those materials; prepared contractual reports; edited reports for proper data usage and general content.
- 1981 Draftsman, Library Graphics Service, Washington State University--prepared maps, graphs, and charts for publications and presentations.
- 1980-1981 Crew Chief, Dolores Archaeological Program, Washington State University--carried out delegated research on temporal variation in ceramics; presented lectures on surveying techniques and stratigraphic recording to field school students.
- 1979-1980 Assistant Crew Chief, Dolores Archaeological Program, Washington State University--supervised excavations under the direction of a crew chief and field director; taught excavation technique to field school students.
- 1977-1979 Teaching Assistant, Department of Anthropology, Washington State University--prepared classroom and laboratory materials; arranged field trip logistics; corrected exams; presented selected lectures; provided individual assistance to students have difficulty with the curriculum.
- 1977-1979 Assistant Director, Hoko River Archaeological Project, Department of Anthropology and Washington Archaeological Research Center, Washington State University, and the Makah Tribal Nation--supervised "wet site" excavation and artifact curation; developed and carried out field school curriculum with the project director; prepared and edited descriptive and interpretive reports.
- 1977 Archaeological Surveyor, Washington Archaeological Research Center--conducted subsurface hydraulic-auger sampling.
- 1976 Laboratory Director, Fort Walla Walla Archaeological Project, Department of Anthropology, Washington State University--supervised laboratory processing and analysis of historic artifacts.

- 1975-1981 Draftsman and Laboratory Assistant, Paleoenvironmental Laboratory, Department of Anthropology, Washington State University--extracted pollen from reference and sediment samples; cored lake sediments; described sediment cores; prepared radiocarbon samples; analyzed volcanic ash samples; edited manuscripts; prepared figures for publication and slide presentations.
- 1974-1975 Draftsman, Electronics Research Laboratory, University of California, Berkeley--prepared figures for publication and slide presentations.
- 1974-1975 Researcher, Archaeological Research Facility, University of California, Berkeley--carried out delegated archival research projects; prepared figures for publication.

FIELD EXPERIENCE:

- 2005 Archaeomagnetic sampling: Lake Site, Farmington, New Mexico (1 day).
- 2004 Archaeomagnetic sampling: Palace of the Governors, New Mexico (6 days).
- 2003 Archaeological inventory: Santa Fe County, New Mexico (1 day).
- 2003 Archaeomagnetic sampling: Los Alamos National Laboratory, New Mexico (2 days); Cuyumungue, New Mexico (1 day).
- 2002 Archaeomagnetic sampling: Los Alamos National Laboratory, New Mexico (6 days); Glenwood, New Mexico (1 day).
- 2001 Archaeomagnetic sampling: Fort Burgwin, Rancho de Taos, New Mexico; Mission San Marcos, Cerrillos, New Mexico; Casa de Fuegos, Chihuahua, Mexico; Joyce Well Site, Gray Ranch, New Mexico (6 days).
- 2001 Monitoring. Jemez State Monument ADA Trail Construction. 17th Century Jemez Pueblo, New Mexico (1 day).
- 2000 Archaeomagnetic sampling: US 285 near Tesuque, New Mexico; prehistoric Anasazi and Territorial period components (2 days).
- 1998 Archaeological data recovery, US 666 near Twin Lakes, New Mexico; prehistoric Anasazi; excavation (20 days).
- 1998 Archaeological inventory (site relocation), US 64, La Jara Canyon, New Mexico; Anasazi and Navajo components (2 days).
- 1998 Archaeomagnetic sampling, Northern Rio Grande valley (8 days).
- 1998 Site surface pottery characterization, Mill Creek Archaeological Project, Moab, Utah; Anasazi and Fremont (5 days).
- 1998 Site surface pottery characterization, N35 Project, northeastern Arizona; Anasazi and Navajo (2 days).
- 1998 BLM Wood Sampling Workshop, Dineta Area, northern New Mexico (1 day).
- 1997 Archaeological inventory, Church Rock, New Mexico, prehistoric Anasazi and Navajo site mapping, Navajo structure tree-ring sampling (10 days, cumulative).
- 1996 Archaeological inventory, Church Rock, New Mexico (7 days); Grants, New Mexico (1 day).
- 1996 Clay resource inventory, CSTL Pottery Technology Project; southern Navajo Nation, New Mexico and Arizona.
- 1995 Archaeological and traditional cultural property inventory (4 days); Navajo and Kayenta Anasazi components; Rock Point, Arizona.
- 1990-present Field conservator, stratigrapher, in-field analysis of grave goods (10 weeks, cumulative); stabilization and retrieval of kiva murals, basketry, prehistoric plaster masks, and unusually fragile artifacts; in-field analyses of burial textiles and vessels; specialized in-field photography; various venues, New Mexico and Arizona.
- 1988-1990 Stratigrapher and replacement crew chief (6 weeks, cumulative); La Plata Highway Project excavations, New Mexico.
- 1986 Topographic surveyor (3 weeks); Chacoan outlier mapping project, New Mexico.
- 1981 Research assistant (7 weeks); Holocene Environment of the Fayum Depression, Cairo, Arab Republic of Egypt.
- 1979-1980 Assistant crew chief (5 months); Dolores Archaeological Program, Colorado.
- 1979 Excavator (1 week); Midwest Archaeological Center, Rock Creek test excavations, Utah.
- 1977-1979 Assistant director (7 months, cumulative); Hoko River Archaeological Project, Washington.
- 1977 Core rig operator (2 days); Beebe Orchard survey, Washington.
- 1976 Core rig operator (2 days); Port of Camas-Washougal survey, Washington.
- 1976 Field laboratory director (2 months); Fort Walla Walla Archaeological Project, Washington.
- 1973 Topographic surveyor (10 weeks); NV-Ly-1 and CA-Mono-8 Petroglyph Survey, California and Nevada.
- 1973 Topographic surveyor (2 weeks, cumulative); UC Berkeley Field School, California.
- 1972 Topographic surveyor (1 week); Alder Canyon Survey, California.
- 1970-1971 Excavator (3 months, cumulative); Bancroft Ranch House Archaeological Investigations, California.

ATTACHMENT B

January 4, 1999

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:
Peter B. Bloch, Presiding Officer
Thomas D. Murphy, Special Agent

In the Matter of:)
)
)

HYDRO RESOURCES, INC.)
2929 Coors Road, Suite 101)
Albuquerque, NM 87120)
_____)

Docket No. 40-8968-ML
ASLBP No. 95-706-01-ML

AFFIDAVIT OF ERIC BLINMAN, PH.D.

1. My name is Eric Blinman. I am of sound mind and body and am competent to make this declaration. The factual statements herein are true and correct to the best of my knowledge, and the opinions expressed herein are based on my best professional judgment and experience. I have a Ph.D. in Anthropology from Washington State University, and am an Assistant Director in the Museum of New Mexico (MNM), Office of Archaeological Studies, a position I have held since 1991. I have conducted and supervised cultural resources investigations in the Southwest since 1979, and my specific area of expertise is the management of cultural resources inventories and data recovery projects in the northern Southwest. Almost all of my work during the past 20 years has been directed to satisfying the requirements of the National Historic Preservation Act (NHPA). A copy of my professional vita is attached.

2. In preparation for this affidavit I reviewed assertions and issues raised in the Eastern Navajo Diné Against Uranium Mining and Southwest Research and Information Center's Brief in Opposition to Hydro Resources, Inc.'s Application for a Materials License with Respect

to: Compliance with the National Historic Preservation Act, Native American Graves Protection and Repatriation Act and Related Cultural Resource Issues dated by December 7, 1998. I have also reviewed the testimonies of Dr. Klara B. Kelley, Mr. William A. Dodge, Mr. Abie Francisco, and Mr. Mitchell W. Capitan, as well as the other exhibits attached to the brief. In addition, I have consulted by telephone (12/30/98) with Mr. Peter Noyes, formerly the head of the Navajo Nation Historic Preservation Department (NNHPD) Compliance Division; Mr. Noyes is the NNHPD staff member who has supervised NHPA compliance review for this project. Throughout December 1998, I have consulted both by telephone and in person with Dr. Lynne Sebastian, New Mexico State Historic Preservation Officer (NMSHPO).

3. The NRC has partitioned the undertaking into specific activities, each of which must be subject to independent NHPA Section 106 consultations prior to initiation of any ground disturbing activity. The only land parcels that have been included in the first partition are Sections 8 and 17 (T16N, R16W) and Section 12 (T17N, R13W). These are the only areas for which consultation under NHPA has been conducted and the only areas for which the adequacy of NHPA compliance is relevant. Any and all references to NHPA and cultural resources (both archaeological sites and traditional cultural properties) in other parcels within Crownpoint and Unit I portions of the mining project are premature and are irrelevant to the current stage of project development. This confusion concerning the partitioning process is evident in Dr. Kelley's and Dodge's assertions that cultural resources documentation is inconsistent and incomplete. They are comparing detailed cultural resources investigations that have been completed for the first partition with the far more general planning documents that provide partial coverage for parcels that may be included in future partitions.

4. Full cultural resources inventory, eligibility determination, effect determination, and planning for minimizing effects, if any, will have to be completed for the additional partitions prior to initiation of any mining operations in those areas. The failure of the brief to acknowledge the partitioning invalidates the relevance of most of the testimony from all witnesses as to the adequacy, comparability, and completeness of the cultural resources documentation. For example, the entirety of Mitchell Capitan's testimony is irrelevant at this point because it deals with parcels not included in the first partition. However, it will be relevant during future traditional cultural properties investigations concerning those parcels.

5. Compliance with NHPA Section 106 process is ongoing with respect the mining undertaking as a whole, but consultations have been completed for the first partition consisting of Sections 8, 17, and 12. This milestone is marked by the explicit concurrence of the NMSHPO and the Navajo Nation Historic Preservation Officer (NNHPO) with NRC recommendations and by the expiration of comment periods for other potentially concerned parties. The result of the recommendations and concurrences is that the specific conditions and elements of the undertakings within the first partition have been determined to have "no effect" within the regulatory framework of NHPA Section 106.

6. Dodge's representation of his conversations with Dr. Glenna Dean of the New Mexico State Historic Preservation Division (NMSHPD) and Dr. Alan Downer of the NNHPD is either incorrect or reflects serious misinterpretations. Both the NMSHPD and NNHPD responded to NRC consultation requests with letters concurring with the recommendations of the NRC (based on Blinman 1997) that there would be "no effect" on *all* cultural resources within the parcels of the partition. Both the consultation request and Blinman 1997 make it clear that no traditional cultural properties (other than traditional concerns that were coincident with

archaeological sites) were found within the bounds of the parcels. Since no traditional cultural properties were identified and since eligible archaeological sites were to be avoided, the concurrence of the two historic preservation officers (HPOs) as to "no effect" completes consultation on both archaeological and traditional cultural property resources. Dr. Downer may have been vague in his conversations with Dodge since review responsibility for this project had been delegated to Mr. Peter Noyes of the NNHPD office. Questions concerning both the substance and process of the consultations should have been directed to Mr. Noyes since Dr. Downer would not have been familiar with the details of the consultations. However, in either case, the regulatory correspondence between the NRC and the HPOs is clear: consultation has been completed for all aspects of cultural resources in Sections 8, 17, and 12.

7. The Advisory Council on Historic Preservation is informed of NHPA Section 106 consultations only when HPOs determine that there will be an adverse effect. The only context in which Alan Stanfill of the Advisory Council would have been notified of these consultations is if there had been a finding of adverse effect by either of the HPOs. This policy is standard, and the accuracy of this description of the process was reaffirmed in a conversation with Dr. Lynne Sebastian, the New Mexico State Historic Preservation Officer on 12/21/98.

8. There is a significant jurisdictional dispute between the NMSHPD and the NNHPD. Dodge's testimony implies that he has accepted the Navajo Nation position of sole responsibility for NHPA administration for the entire uranium mining project, an acceptance that is legally premature and currently inaccurate. The Navajo Nation is asserting that it has sole jurisdiction over all NHPA issues within the outermost bounds of Navajo tribal lands, including private and state land inholdings. Although the Navajo Nation is asserting responsibility over these lands, responsibility for NHPA review had been previously and formally delegated to the

NMSHPD. The NMSHPD was initially assigned responsibility for NHPA consultations for all New Mexico lands in a substitution agreement with the Advisory Council. More recently, the NNHPD has formally assumed NHPA functions on Navajo Tribal lands, an assumption that was with the concurrence of both the NMSHPO and the Advisory Council. A legal framework does exist for the future assumption by the NNHPD of NHPA responsibilities for the state and private land inholdings (dependent communities) within the greater Navajo Nation boundary. However, that legal framework has not been invoked formally and has not been accepted by all parties, so that no transfer of responsibility from the NMSHPD to the NNHPD has occurred. Until all parties are in agreement, the NRC has no choice but to consult with different HPOs for different land statuses. This decision implies no disrespect for tribal sovereignty as is suggested by the use of the word "insult" in the brief and Dodge's statements, it instead reflects the current legal framework for NHPA consultations. That framework may change in the coming months and years, at which time consultations may be carried out with the NNHPD for all lands, including state and private holdings.

9. All comments related to lands and cultural properties other than those associated with Sections 8, 17, and 12 are not relevant because of the "phased review" of the process. These include the repeated criticisms by both Kelley and Dodge of uneven treatment of cultural resources in the Crownpoint area and Unit 1, areas that are outside of the first partition of the undertaking. The Capitan testimony and the implication that the MNM traditional cultural properties investigation was inadequate by its omission are invalid because they do not relate to the parcels within the first partition of the undertaking.

10. The brief asserts based on Dr. Kelley's testimony that the "dissipated [sic] and mixed nature of the review documentation undermines the reviewer's ability to assess its

adequacy" (pg. 15). Once the irrelevant issues of Crownpoint and Unit 1 are removed from Dr. Kelley's discussions, only two potentially relevant documents remain: the summary letter and supporting forms of Mr. Becenti, and the MNM Report. The results of Mr. Becenti's traditional cultural property assessments are fully integrated into the MNM Report, and Mr. Becenti's supporting forms were distributed with his letter report. The MNM Report references to the role and substance of Mr. Becenti's report are clear and straight forward, and neither the NNHPD nor the NMSHPO has expressed any reservations or confusions concerning their ability to use these documents in their compliance reviews. The only way the documentation can be described as "mixed" is if the documentation for the partition under consideration is compared with the documentation for portions of the project that are scheduled for investigation at a future time.

11. The evaluation of the adequacy of cultural resources investigations is part of the regulatory responsibility and practice of the NMSHPD and NNHPD review process. By their concurrence, NMSHPD and NNHPD representatives found the procedures followed by MNM and Mr. Becenti to be both in good faith and adequate within the framework of NHPA Section 106 review. This may not be the outcome desired by those opposed to uranium mining, but NHPA Section 106 ensures a process not an outcome. Dodge's claim that the NHPA Section 106 review process was limited to archaeological resources is incorrect, despite his representation of conversations with Drs. Dean and Downer. Transmittal letters from the NRC make this clear, as has an interview with Dr. Lynne Sebastian, the NMSHPO (12/21/98). Traditional cultural properties are not explicitly discussed in the various concurrence documents simply because no traditional cultural properties were found to be within or adjacent to the parcels that compose the first partition.

12. Mr. Becenti's ability to conduct traditional cultural property inventories has not been questioned by the Navajo Nation. Outside support for Mr. Becenti's credibility comes from the NNHPD and from the results of MNM interviews that were independent of Mr. Becenti's work. During the course of the MNM interview process, Mr. Becenti's high standing in the community was clearly established by the deference paid to him by officials and knowledgeable individuals from both the Church Rock Chapter and other chapters. This is documented in Janet Spivey's interviews within the MNM report.

13. The brief challenges Mr. Becenti's credibility to conduct traditional cultural property inventories by characterizing his testimony at a September 25, 1998, limited appearance session as "irrational" (pg. 21). This claim is based on Mr. Becenti's testimony that was paraphrased as claiming that "he has a grandmother who is 114 years old, *and* a mother who is 110" (pg. 21, emphasis in the original). This attempt to discredit Mr. Becenti simply reflects the lack of understanding of Navajo kinship references on the part of the brief authors. Navajo usage includes both grandmother and grandmother's sisters under the English category "grandmother," and the term is also often extended to include all women of that age group of the same clan. Mr. Becenti's statement contains no inconsistency within the framework of Navajo kinship reckoning, since the grandmother term is so inclusive.

14. Dr. Kelley claims that Mr. Becenti's report and conclusions are flawed by the omission of two statements of perceived negative effects of the project and by the discounting of effects of the project on outside traditional cultural properties. The two statements omitted from Mr. Becenti's report are documented in the interview forms that he appended to the report. The statements were elicited by a question that followed a long list of specific types of potentially important traditional or sacred places that may or may not be present in any given area. The

question was "Does the interviewee consider the proposed development a threat to any of the above types of places?", and the two responses are as follows:

- (a) Wilheminna Yazzie: "It would destroy the land."
- (b) Dorothy Livingston: "It would destroy the sites named within this questionnaire."

Importantly, none of the few types of places identified by the respondents were within the Section 8 and 17 parcels, and most were in the distant hills to the north and west.

15. A follow-up question concerns modification or redesign recommendations that would constitute avoidance, or it requests suggestions for relocations of the development activity. This question elicited the following responses:

- (a) Wilheminna Yazzie: Avoidance: "About 1 mile from residence."
- (b) Dorothy Livingston: Avoidance: "Would allow no projects."

Both of these responses pose difficult problems that are common in controversial development projects. On a general level, both respondents clearly believe that uranium mining poses a serious threat to land and resources, despite the scientific evidence to the contrary that has been subjected to both independent technical evaluation and public review during the EIS process. Also, both respondents live in proximity to the decommissioned Church Rock Mine facilities, yet they do not perceive the past risks (the relatively greater risks associated with hard rock mining) as being an impediment to their established and continuing traditional cultural and sacred uses of the landscape. In the Wilheminna Yazzie instance, her statement of threat applies to her residence rather than to the specific traditional cultural properties that are of importance to her. In the Dorothy Livingston case, the threat is simply all-pervasive, therefore encompassing all of the traditional cultural properties. These disjunctions between technically demonstrable

and personally realized threats to traditional cultural properties may be insoluble, as are the perceptions of relative risk (past and present). In both cases, Mr. Becenti appears to have made the reasonable conclusion that the perceived threats to the traditional cultural properties were not specific, and therefore were not significant within the broader community standard that is the intended focus of traditional cultural property protections.

16. The brief relies on quotes from Mr. Francisco's testimony that all qualities of the landscape are sacred. The purpose of traditional cultural property inventories is to consider the effects of development projects on traditional cultural practice, not on potential practice. Although all plants may be sacred, only some plants from some specific locations are traditionally used for ceremonies. Mr. Francisco does not assert that important gathering locations or important places are within the parcels under consideration, he only asserts that all places may be important. Therefore, Mr. Becenti's statement that "no significant sacred and traditional site(s) were found" remains accurate.

17. Mr. Becenti is deemed by Dodge and the brief to be unqualified to assert that there are no known traditional uses of the area by other Indian tribes. If any places within the project area had been actively visited by Pueblo peoples for traditional practices (such as shrines), their visits would have been known to the local Navajo community (an observation echoed by Michael Marshall as cited by Dodge). On that basis, Mr. Becenti's assertion of the lack of non-Navajo traditional cultural properties is perfectly consistent with his investigation results. Claims of traditional interest in cultural resources that are unrelated to active use would only be known to the participant Indian groups. Within the context of NHPA Section 106 review, and in past experience, inactive concerns by Pueblo peoples are based on traditional beliefs about connections to archaeological sites (including shrines). The focus on

archaeological sites is so strong that on other projects MNM has been asked repeatedly to provide complete documentation of sites prior to eliciting comments. The complete report of the archaeological and traditional cultural property inventory results from this project was provided to all concerned Indian Tribes concurrent with the NMSHPD and NNHPD review in compliance with the NHPA Section 106 process. No comments, requests for more information, or requests for more time were received either within the comment period or since. This is not unusual in my experience since the archaeological sites were recommended for avoidance and therefore they were subject to "no effect."

18. The Museum of New Mexico always uses Navajo Nation questionnaires during traditional cultural property investigations on Navajo Nation lands. The completed questionnaires are not included in MNM reports because they may contain confidential information that should not be distributed, but originals of the questionnaires were included in the package of consultation documents that were provided to NRC for transmittal to the NNHPD.

19. Although the focus of MNM's investigation was explicitly on Sections 8, 17, and 12, MNM did elicit comments regarding respondents' concerns with indirect effects of the undertaking and did ask about effects outside of the specific parcels, and all of the responses are reported. The vast majority of comments regarded concerns about the safety of transporting nuclear materials on the roads and highways, with less apparent concern about contamination than about the physical consequences of wrecks.

20. Mr. Becenti was not the Church Rock Chapter president at the time of the MNM study. MNM consulted with then Chapter President, Mr. Herbert Benally.

21. Dr. Kelley asserts, and the brief repeats, that efforts to identify knowledgeable individuals and traditional practitioners were inadequate. The example of Mr. Capitan is

irrelevant because of the partitioning of the undertaking (Mr. Capitan's experience will be relevant in future traditional cultural property investigations). Mr. Francisco was not contacted concerning the Church Rock area because none of the inclusive or adjacent chapter officials provided his name as an individual who would be knowledgeable and who should be contacted. If he had been interviewed, we presume that his statements concerning specific traditional uses in the Section 8 and 17 area would be similar to the content of his testimony attached to the brief. In other words, although the landscape as a whole is sacred, he has no specific knowledge of significant traditional cultural properties within this partition of the project area.

22. Kelley criticizes the MNM report for not citing a series of general works on ethnography in the *Handbook of North American Indians* that provide background information on both Navajo and Pueblo cultures. These chapters do not contain any specific information that is relevant to any of the parcels. MNM researchers have access to these and many other references on Southwestern ethnography, but if there is no relevant information, citations to these references would be gratuitous. Dr. Kelley also characterizes the MNM report as including serious errors, but none are described or identified. Despite her extensive knowledge of Navajo culture and ethnography, Dr. Kelley has not identified any specific traditional cultural properties that were missed, either within or adjacent to the lands of Sections 8, 17, or 12.

23. The homesite is the domestic expression of Navajo worldview, and it does encompass places that are and that become sacred through the life cycle of the resident family. This sacredness has roots in Navajo culture, but its specific expression is usually known to the family alone or even to individuals within the family alone. As time passes and memories of specific places fade or are lost, the sacredness of the specific place fades, although the sacredness of the underlying act is timeless. Since traditional cultural properties are tied to specific places,

only the family or individual can express the presence and degree of importance of specific homesite places. The land parcels in question, Sections 8, 17, and 12 either do not have traceable resident Navajo families or there has been no resident family for a generation or more. None of the descendant families or interviewed families expressed any knowledge or interest in specific homesite places within the parcels. Mr. Becenti was told of homesite places that were important to families living outside of the project area, but those places were also outside of the project area. Since such homesite locations are sacred to families and individuals rather than to the community, to assert that the sacredness of domestic acts defines residential landscapes as sacred in perpetuity (without any expression of current interest) is an overinterpretation of the intent of traditional cultural properties protections.

24. The brief asserts that MNM failed to identify Navajo sites and failed to state how people were chosen for interviews. The archaeological survey treated all cultural resources according to Navajo Nation requirements, that includes the documentation of in-use resources (Navajo sites) if any had been present. None were present in Sections 8, 17, or 12. Mr. Becenti had interviewed residents concerning the project area parcels, and the MNM traditional cultural properties research focussed on investigations that started at the chapter and followed chapter referrals. The methodology is clearly stated in the MNM report, and Mr. Dodge's comment is invalid.

25. Mr. Becenti brought the authority and knowledge of a local resident and a respected traditional practitioner to the process of his interviews and conclusions. The MNM study was complementary and followed all established practices for traditional cultural property inventories as laid out by the Navajo Nation. This study was pursued using the same approaches that MNM applies to all such investigations, regardless of the nature of the undertaking. The

results of this study were accepted as adequate by both the NNHPD and the NMSHPD (and the BLM), and Mr. Noyes of the NNHPD specifically characterized the effort as qualifying as "good faith" in my telephone conversation with him (12/30/98). None of the subsequent testimony has identified any specific traditional cultural properties that were missed by the MNM researchers within the lands included in the first NHPA Section 106 consultation. By these measures, the traditional cultural property investigations were both adequate and in good faith.

26. Finally, the brief and testimony apply an extreme concept of cultural landscape as a criterion for defining and interpreting traditional cultural properties and the effects of undertakings on those properties. Cultural landscapes are viable concepts in the NHPA Section 106 review process, but Dr. Kelley's invocation of the concept in this case is an extremely over-broad interpretation of what constitutes a traditional cultural property. A strict application would exclude the entire landscape of the Church Rock and Crownpoint areas from any development. Her interpretation is not shared by a significant portion of the Navajo community, including traditional practitioners as represented by Mr. Becenti. Such broad concepts of landscapes are not implemented during the routine evaluation of cultural resource information by the NNHPD as part of the NHPA Section 106 review process for other less controversial development projects (such as highway improvements, homesite locations, or utility installations). If the standards advocated in her testimony were applied, economic and social development would be curtailed to such a degree that the Navajo people would not have the opportunity to enjoy the dynamism that has characterized their culture for the past five centuries. A shopping mall, a housing development, and community college facilities have all been recently constructed within the "cultural landscape" of the Crownpoint community. Noise, dust, traffic, and other elements

of visual pollution from these developments are comparable to or more extreme than any of these effects that may derive from the uranium mining facilities.

27. The interpretation of NAGPRA responsibilities presented in the brief is incorrect. Notably the position taken in the brief is not supported by any of the appended expert witness testimony, and there is no justification for the position taken in any body of cultural resources regulation or practice. NAGPRA is intended to place control of the disposition of human remains and culturally important objects in the hands of the descendants of the individuals involved. One portion of the law and regulations applies to consultations concerning the treatment and disposition of human remains and material goods that are already in museums and repositories. The other portion of the law requires consultation concerning the disposition of human remains and important cultural materials that are intentionally encountered during undertakings on federal or tribal lands. The latter portion of the law applies primarily to burials, is reactive rather than proactive, and does not apply until burials are known to be present and subject to intentional disturbance. The risk that burials might be present is insufficient to activate the provisions of NAGPRA, and the explicit position of the National Park Service (charged with developing and implementing NAGPRA regulations) is that there is no legislative or regulatory support for any a priori consultations about burial treatment or disposition under NAGPRA. (A linkage between NAGPRA and NHPA Section 106 had been proposed, but that proposal has been withdrawn and is not in effect.)

28. Under these circumstances there is neither a requirement nor a mechanism for conducting consultations under NAGPRA concerning human remains in connection with the first partition of the uranium mining project. More specifically, the presence of a historic Navajo burial within Section 12 is uncertain due to directly conflicting statements by members of the

Crownpoint community, including descendants of the deceased individual who claim that burial was in the Crownpoint cemetery. Even if a burial were present, its location is within the defined boundaries of an eligible archaeological site, and therefore it is protected from any risk of intentional disturbance. More importantly, Section 12 is private land subject to New Mexico laws and regulations concerning burials, and NAGPRA simply does not apply. On Section 8, there is a distinct probability that prehistoric burials are associated with the archaeological sites (some of these sites are adjacent to Section 17). However, burials are usually placed within the structures or midden areas of such sites, and there is no expectation that burials will be found outside of site boundaries. By avoiding the sites during the design of mining facilities and by protecting the sites with fencing, there is no reasonable expectation that burials will be intentionally disturbed. If burials were encountered, however, the portion of Section 8 that is private land is subject to provisions of the New Mexico statutes and regulations concerning unmarked burials, not NAGPRA. On Section 17, Navajo Nation land, any unexpected discoveries of human remains would fall under the jurisdiction of Navajo Nation laws and regulations. The Navajo Nation interprets its laws as superseding NAGPRA, deactivating NAGPRA's consultation provisions, so that there would be no consultation with any tribes other than the Navajo Nation. Under these circumstances, the only requirement or context for invoking NAGPRA consultations during the development of mining facilities in the first phase would be if unexpected human remains were encountered on the BLM portion of Section 8. There are no current development plans for the BLM portion of Section 8, so there are no proposed activities that would encounter unexpected remains. If that eventuality were to come to pass, or if development ever impinges on an archaeological site (triggering the intentional excavation clause of NAGPRA), then NAGPRA consultations would be appropriate.

FURTHER AFFIANT SAYETH NOT.

I swear under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Dated this 4th day of January, 1999.

A handwritten signature in dark ink, appearing to read "Eric Blinman", written over a horizontal line.

Eric Blinman, Ph.D.
Assistant Director
Museum of New Mexico, Office of Archeological Studies

VITA

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Ph.D. 1988, Department of Anthropology, Washington State University. Dissertation title: The Interpretation of Ceramic Variability: A Case Study from the Dolores Anasazi.

M.A. 1978, Department of Anthropology, Washington State University. Thesis title: Pollen Analysis of Glacier Peak and Mazama Volcanic Ashes.

A.B. 1975, Department of Anthropology, University of California, Berkeley. Degree conferred with high honors in anthropology and distinction in general scholarship.

GRANTS, AWARDS, HONORS, AND OFFICES:

1996-present Manuscript and proposal reviewer: *American Antiquity*, *Kiva*, *Journal of Anthropological Research*, *Journal of Archaeological Science*, National Science Foundation.

1992-present Editor, *Pottery Southwest*.

1994-1998 Contributing editor, *New Mexico Archaeology: Newsletter of the Friends of Archaeology*.

1997 Nuevos Dolores Corrugated; pottery jar exhibited in *O'Keeffe's New Mexico: 80th Anniversary Exhibition*; Museum of Fine Arts, Santa Fe, New Mexico.

1994 Society for American Archaeology; poster session award for excellence.

1990 Museum of New Mexico Foundation; grant awarded in support of NSF proposal research.

1982 Colorado State Historical Society; grant awarded in support of the Red Ware Project (funds administered by the Mesa Verde Museum Association and Dr. David A. Breternitz).

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1971-1975 Regents Scholarship, University of California, Berkeley.

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Blinman, Eric, and Jeffrey Royce Cox, organizers

1998 Archaeomagnetic Dating Workshop. Workshop presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle, Washington.

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1998 Turning Anasazi Pottery Outside-In: Construction Techniques and Immigration in the Rio Grande Valley. Paper presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle, Washington.

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- 1995 A Ceremonial Assemblage from San Lazaro Pueblo: Precontact Medicine Societies in the Northern Rio Grande. Paper presented to the Department of Anthropology, University of California, Los Angeles.
- 1995 Moderator, White Ware Session. Chambers-Sanders Trust Lands Ceramic Conference, Flagstaff, Arizona.
- 1995 Symposium Discussant. Craft Specialization in the Protohistoric American Southwest. 60th Annual Meeting of the Society for American Archaeology, Minneapolis, Minnesota.
- 1994 Anasazi Firing Experiments: 1991-1994. Paper presented at the 1994 Kiln Conference at Crow Canyon, Cortez, Colorado.
- 1994 Issues in the Study of Ceramic Production and Exchange in the American Southwest. Introductory remarks at the Southwestern Pottery Workshop. Crow Canyon Archaeological Center, Cortez, Colorado.
- 1994 Laboratory Perspectives on Anasazi Firing. Paper presented at the 67th Pecos Conference, Mesa Verde National Park.

Blinman, Eric, Clint Swink, Lawrence R. Sitney, David S. Phillips, and Joel M. Brisbin

- 1994 The Firing of Anasazi Pottery. Poster presented at the 59th Annual Meeting of the Society for American Archaeology, Anaheim.

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- 1993 Conservators and Archaeologists: Understanding Points of Tension. Paper presented as part of a panel discussion: Strengthening Ties: A Dialogue Between New World Archaeologists and Conservators. 21st Annual Meeting of the American Institute for Conservation of Historic and Artistic Works, Denver, Colorado.
- 1993 Introduction and Overview of Kiln Replication Experiments. Paper presented at the 1993 Kiln Conference at Crow Canyon, Cortez, Colorado.
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- 1991 Hot Stuff in the Old Town Tonight: Pueblo I Villages of the Northern San Juan Region. Paper presented at the Anthropology Department Colloquium, University of Arizona, Tucson.

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CONTRACT OR RESEARCH REPORTS:

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1977 *Subsurface Archaeological Survey Within the Proposed Route of SR 151, Beebe Orchard*. Washington Archaeological Research Center, Project Report 45.

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Blinman, Eric

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1998 Pottery Geography of the Northern Southwest: Style, Technology, Exchange, and Ethnicity. Paper prepared for the National Park Service Affiliation Conference on Ancestral Peoples of the Four Corners Region. Fort Lewis College, Durango, Colorado.

Blinman, Eric, and Mollie S. Toll

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1989 Mesa Verde Region Ceramic Types. Manual prepared for the New Mexico Archaeological Council Ceramic Workshop, Red Rock State Park, New Mexico.

Orcutt, Janet D., and Eric Blinman

1987 Leadership and the Development of Social Complexity: a Case Study From the Dolores Area of the American Southwest. Manuscript in possession of authors.

Blinman, Eric, C. Dean Wilson, Robert M. R. Waterworth, Mary P. Errickson, and Linda P. Hart

1984 Additive Technologies Group Laboratory Manual. *Dolores Archaeological Program Technical Reports* DAP-149. Final report submitted to the Bureau of Reclamation, Upper Colo. Region, Salt Lake City, in compliance with Contract No. 8-07-40-S0562.

Blinman, Eric

1983 Exchange. In *Modeling Prehistoric Cultural Change in the Dolores Valley, Southwestern Colorado. Phase III: Results of the Dolores Archaeological Program Modeling Seminar, Mesa Verde National Park, Colorado, 1-5 November 1982*. Compiled by W.D. Lipe, A.E. Kane, and C.K. Robinson. Prepared for Cultural Resources Mitigation Program: Dolores Project. Bureau of Reclamation, Upper Colo. Region, Salt Lake City, in compliance with Contract No. 807-40-S0562.

1983 The Red Ware Project: Ceramic Manufacture and Exchange in the Western Mesa Verde Region. Report submitted to the Colorado Historical Society by the Mesa Verde Museum Association.

Kohler, Timothy A., Carl J. Phagan, and Eric Blinman

1983 Explaining Variability Among Artifact Collections. *Dolores Archaeological Program Technical Reports* DAP-079. Final report submitted to the Bureau of Reclamation, Upper Colo. Region, Salt Lake City, in compliance with Contract No. 8-07-40-S0562.

Blinman, Eric

1975 A Faunal Analysis in the Santa Cruz Mountains. Ms. on file, Archaeological Research Facility, University of California, Berkeley.

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1974 An Analysis of the Faunal Remains from CA-SCr-42. Ms. on file, Library, University of California, Santa Cruz.

PUBLIC LECTURES AND DEMONSTRATIONS (Most recent five years only):

1998

Ancient Technologies of the Southwest. Docent Training Lecture, Museum of Indian Arts and Culture, Santa Fe.

- Anthropology, Ethnology, and Culture History of the Southwest. Docent Training Lecture, Museum of Indian Arts and Culture, Santa Fe.
- Archaic Plant Fiber Techniques: Demonstrations of Yucca Cordage, Turkey Blanket Weaving, and Coiled Basketry. Maxwell Museum of Anthropology, University of New Mexico, Albuquerque.
- Before Oñate: The Edges of the Pueblo World: Perspectives on Athapaskan and Ute Prehistory. Honoring the Multicultural Heritage of New Mexico: New Mexico's Four Hundredth Anniversary. City of Santa Fe Lecture Series, Santa Fe.
- Before Oñate: Pueblo Cultures of the Southwest: From Agriculture to Village: Basketmaker to Chaco. Honoring the Multicultural Heritage of New Mexico: New Mexico's Four Hundredth Anniversary. City of Santa Fe Lecture Series, Santa Fe.
- Before Oñate: Pueblo Cultures of the Southwest: From Agriculture to Village: Basketmaker to Chaco. Honoring the Multicultural Heritage of New Mexico: New Mexico's Four Hundredth Anniversary. City of Santa Fe Lecture Series, Santa Fe.
- Dolores Archaeological Program Ceramic Database: Historical Development, Content, and File Organization. Graduate Seminar, Department of Anthropology, University of Colorado, Boulder.
- Egypt through Modern Eyes. 6th Grade, Gonzales Elementary School, Santa Fe.
- Glaze Ware Firing Demonstration (with Tom Dickerson). Pecos Conference. Pecos National Historic Park, Pecos.
- Glaze Ware Firing Techniques and Demonstration. Kiln Conference. Pecos National Historic Park, Pecos.
- Origins and Development of Southwestern Pottery Traditions: Slide Lecture and Demonstration. Coronado State Monument, Bernalillo.
- Pots and Peoples of Mill Creek and the Greater Moab Area. Slide presentation as part of the Mill Creek Science Symposium, Moab, Utah.
- Pottery Identification Workshop: Northern Rio Grande. Friends of Archaeology, Santa Fe.
- Prehistoric Yucca Textile Demonstration. Continuing Education Lecture, Museum of New Mexico Docents, Santa Fe.
- Southwestern Pottery: Ancient Art and Archaeological Classification. Museum of Indian Arts and Culture, Santa Fe.
- Southwestern Technology and Culture History. Guest Lecture, Southwestern Archaeology Class, Department of Anthropology, University of Colorado.
- Windshield Archaeology: Contributions of Highway Archaeology to Northern Rio Grande Prehistory. New Mexico State Highway and Transportation Department Bag Lunch Series, Santa Fe.
- Yucca Textiles and Turkey Feather Blanket Manufacture Demonstration. Festival of the Cranes. Bosque del Apache, New Mexico.
- 1997**
- Anasazi Prehistory from the Archaic to the Abandonment of the Colorado Plateau: Docent Training Lecture, Maxwell Museum of Anthropology, University of New Mexico. Albuquerque.
- Anasazi to Pueblo: Prehistory and History in New Mexico. Los Alamos Neutron Science Center Second Annual User Group Meeting, Banquet. Santa Fe.
- Background and Context for the Chaco Phenomenon. Friends of Archaeology Chaco Lecture Series. Santa Fe.
- Coiled Basketry Demonstration. Anasazi Heritage Center, Dolores, Colorado.
- Corrugated Cooking Jar Fabrication Demonstration. Museum of Mankind, London, England.
- Foundations of Anasazi Culture. Smithsonian Associates, Smithsonian Institution, Washington, D.C.
- The Foundations and Development of Pueblo Religion. Raton Historical Museum, Raton.
- Glaze Ware Pottery Technology. The 1997 Kiln Conference, Pojoaque Pueblo Cultural Center, Pojoaque.
- Kiva Mural Recovery Techniques and the Status of Archaeological Field Conservation in the Southwestern United States. Institute of Archaeology, University College, London, England.
- Pajarito Plateau Archaeology Workshop, Puye Cliff Dwellings. Santa Clara Indian Pueblo, Española.
- Pottery Demonstration. Coronado State Monument, Bernalillo.
- Pottery Firing Demonstration. Pecos Conference, Chaco Canyon, New Mexico.
- Pottery Technology: Discussion and Demonstration. University of New Mexico Field School, Dixon, Cochiti Lake.

Prehistoric New Mexico. Docent Training Lecture, Palace of the Governors, Santa Fe.
 Southwestern Archaeology: Collapse and Reorganization through the Protohistoric Period. Elderhostel Course, College of Santa Fe, Santa Fe.
 Survey Ahead of Mining Development: Anasazi and Navajo Archaeology Near Church Rock and Crownpoint. MNM Office of Archaeological Studies Bag Lunch, Santa Fe.
 Southwestern Archaeology: Village Life and the Development of Social Complexity. Elderhostel Course, College of Santa Fe, Santa Fe.
 Turkey Feather Blanket Manufacture Demonstration. Festival of the Cranes. Bosque del Apache, New Mexico.

1996

Archaeology, Preservation, and Native Americans. Middle School Workshop, Santa Fe Indian School, Santa Fe.
 Development of Prehistoric Southwestern Pottery Traditions. Southwest Pottery Seminar. Albuquerque, New Mexico.
 Foundations of Southwestern Pottery Traditions. Inn of the Anasazi, Indian Market Lectures. Santa Fe, New Mexico.
 Late Archaic and Early Agricultural Plant Utilization in the Southwest: Foodstuffs and Textiles. Maxwell Museum Docent Training Lecture and Demonstration. University of New Mexico, Albuquerque, New Mexico.
 Mystery of the Anasazi. Inn of the Anasazi, Fireside Chats. Santa Fe, New Mexico.
 New Mexico Archaeology Education Programs, Pottery Demonstration. State Capitol Building. Santa Fe, New Mexico.
 Origins and Development of Anasazi Pottery Technology. American Society for Materials, Los Alamos Chapter. Los Alamos, New Mexico.
 Origins and Development of Anasazi Pottery Technology. Taos Archaeological Society, Taos, New Mexico.
 Origins and Development of Southwestern Pottery Traditions. Santa Fe Public Library Lecture Series. Santa Fe, New Mexico.
 Pottery Clay Resources in the Northern Rio Grande. Micaceous Pottery Masters' Class, Pojoaque Cultural Center, Pojoaque.
 Prehistoric Pottery Traditions [presented with Paul Ermigiotti]. Pueblo Pottery Arts: A Celebration of Continuance. A Symposium for Pueblo Potters and the General Public. Indian Pueblo Cultural Center, Albuquerque.
 Prehistoric Southwestern Pottery Traditions [presented with C. Dean Wilson]. Inn of the Anasazi, Fireside Chats, Santa Fe, New Mexico.
 Recovering the Ram Mesa Kiva Mural. Office of Archaeological Studies Bag Lunch Series, Santa Fe, New Mexico.
 San Lazaro: Reconstructing the History of a Galisteo Basin Pueblo [presented with John Ware]. Museum of Indian Arts and Culture, Santa Fe, New Mexico.
 Southwestern Pottery Demonstration and Slide Presentations on Origins of Anasazi Pottery and Anasazi Pottery Firing Techniques. New Mexico Archaeology Fair, Farmington.
 Turkey Feather Blanket Manufacture Demonstration. Festival of the Cranes. Bosque del Apache, New Mexico.
 Warmth Before Wool: Cordage and Fur and Feather Blanket Manufacture. Friends of the Wheelwright Museum, Monthly Meeting. Nambe, New Mexico.

1995

Anasazi Pottery of the Northern Rio Grande Valley. Enrichment lecture. Interpretive staff of Bandelier National Monument. Bandelier National Monument.
 Anasazi Prehistory and Pottery: Lecture and Demonstration. Raton Historical Museum, Raton.
 Anasazi Prehistory of the Colorado Plateau. Eldorado Residents Association, Santa Fe.
 Experimental Firing of An Anasazi Trench Kiln. Museum of Indian Arts and Culture, Santa Fe.
 Origins and Development of Anasazi Pottery Traditions. Pojoaque Pueblo Cultural Center, Española.
 Overview of New Mexico Prehistory. Eldorado Residents Association, Santa Fe.

Upper Rio Grande Pottery Typology (with C. Dean Wilson). Training session for Bandelier National Monument Archaeologists. Bandelier National Monument.

Yucca and the Domestic Arts of the Anasazi. Enrichment lecture. Interpretive staff of Bandelier National Monument. Bandelier National Monument.

Yucca Fiber Cordage and Fur and Feature Blanket Manufacture. Historic Preservation Week Archaeology Fair, Albuquerque.

1994

Albuquerque Archaeology Fair. Historic Preservation Week mock site design and fabrication.

Anasazi Firing Experiments. Demonstration, Museum of Indian Art and Culture, Santa Fe.

Art and Technology: 1000 Years of Anasazi Pottery. Eldorado Arts and Crafts Association, Santa Fe.

Ceramic Technology and the Anasazi and Early Navajo Pottery Traditions of the Four Corners Area. Crow Canyon Art and Archaeology Seminar: Ancient and Contemporary Arts of the American Southwest. Santa Fe.

The Development of Ancient Pueblo Architecture. Northern New Mexico Community College, Española.

The Evolution of Southwestern Pottery. Seasonal staff training, Bandelier National Monument.

Firing of a Anasazi Trench Kiln Replica. 67th Annual Pecos Conference, Mesa Verde National Park.

Ceramic Perspective on the People of the Mimbres. Gallery talk presented with C. Dean Wilson, Museum of Indian Arts and Culture, Santa Fe.

Introduction to Anasazi Prehistory. Docent training lecture, Museum of Indian Arts and Culture, Santa Fe.

Kiva Mural Recovery Techniques. Taos Archaeological Society, Taos.

New Mexico Prehistory. Banquet lecture, American Vacuum Institute Conference, Santa Fe.

New Mexico Prehistory. Docent training lecture, presented with John Ware, Palace of the Governors, Santa Fe.

Prehistoric Pottery Kilns in the Santa Fe Area. Museum of New Mexico, Friends of Archaeology.

San Lazaro Ceremonial Assemblage Project. Lecture and site tour, presented with John Ware, Museum of New Mexico Foundation, Santa Fe.

San Lazaro Ceremonial Assemblage Project. Lecture and site tour, presented with John Ware, Santa Fe Archaeological Society, Santa Fe.

Southwestern Pottery Demonstration and Lecture. Permanent staff and volunteer training, Bandelier National Monument.

Yucca Fiber Cordage and Fur and Feather Blanket Manufacture. Public demonstration, Anasazi Heritage Center, Dolores, Colorado.

Yucca Fiber Cordage and Fur and Feather Blanket Manufacture. Seasonal staff training, Bandelier National Monument.

Yucca Fiber Cordage and Fur and Feather Blanket Manufacture. Docent training lecture, Tijeras Pueblo, US Forest Service.

EMPLOYMENT:

1991-present Assistant Director, Office of Archaeological Studies, Museum of New Mexico, Santa Fe--assisting the Director in the administration of OAS activities; serving as principal investigator for projects in northwestern New Mexico, Colorado, Utah, and Arizona; planning and supervision of laboratory operations and artifact analyses for the La Plata Highway Project, northwestern New Mexico; providing field and laboratory conservation services to OAS projects and to outside organizations; serving as liaison with the Museum of New Mexico Foundation--Friends of Archaeology; Interim Director, Archaeomagnetic Dating Laboratory (since 1994).

1996-present Ceramist, Bluff Great House Project, University of Colorado, Boulder, Colorado--ceramic analysis of collections from a Chacoan outlier in Bluff, Utah.

1998 Instructor, Concepts in Pottery. Poeh Arts Program, Pueblo of Pojoaque. Pojoaque Pueblo, New Mexico.

1997 Instructor, Integrating Field Archeology, Conservation and Culturally Appropriate Treatments. Workshop

- sponsored by the National Park Service, Intermountain Cultural Resource Center.
- 1994-1996 Ceramist, La Plata Archaeological Consultants, Dolores, Colorado--ceramic analysis and interpretation of pottery collections from Anasazi sites in the vicinity of Navajo, Arizona.
- 1994 Manuscript reviewer, School of American Research, Santa Fe.
- 1994 Manuscript reviewer, University of Arizona Press, Tucson.
- 1994 Peer reviewer, National Park Service, Chaco Project material culture manuscripts.
- 1992-1994 Scholar, Crow Canyon Archaeological Center Field Seminars, Cortez, Colorado--field guide, archaeologist, and educator for organized public field trips.
- 1992-1993 Ceramist, Woods Canyon Archaeological Consultants, Yellow Jacket, Colorado--ceramic analysis and interpretation for Anasazi and Navajo pottery collections from sites in the Upper San Juan Region.
- 1991-1992 Adjunct Faculty. University of New Mexico Center for Graduate Studies, Santa Fe--teaching workshop classes in archaeological analysis.
- 1988-1991 Laboratory Supervisor and Conservation Officer, Office of Archaeological Studies, Museum of New Mexico, Santa Fe--planning and supervision of laboratory operations and artifact analyses for the La Plata Highway Project, northwestern New Mexico; providing field and laboratory conservation services to OAS projects and to outside organizations.
- 1988 Textile replicator for Malone Displays, Inc., Atlanta, Georgia--replication of rabbit fur and turkey feather blanket display specimens for the Anasazi Heritage Center, Dolores, Colorado.
- 1987-1988 Ceramist, Crow Canyon Archaeological Center--pilot study of vessel forms in midden collections, evaluation of archaeological clay and temper samples, clay resource study, and pilot paste characterization study.
- 1987-1988 Editor, Ak-Chin Indian Community West Side Farms Project, Soil Systems, Inc., Phoenix--content and copy editing of descriptive and interpretive report chapters prior to submission for peer review.
- 1987 Ceramist, N-16 Road Project, P-III Associates, Inc., Salt Lake City--ceramic dating studies and descriptive and interpretive report preparation from preexisting ceramic data.
- 1986 Topographic Surveyor, Chacoan Outlier Mapping Project, Office of Contract Archaeology, University of New Mexico--prepared topographic and planimetric maps of Twin Angels, Kin Nizhoni, and Lower Kin Nizhoni outliers for the Bureau of Land Management.
- 1986 Project Manager, Fort Hood Archaeological Survey 1986, Archeological Research Laboratory, Texas A&M University--supervised two field crews carrying out archaeological survey of historic and prehistoric resources; responsible for logistical organization and compliance with contract specifications.
- 1986 Ceramist, EFN Canyon Mine Site, Abajo Archaeology--typological and technological analyses of Coconino Plateau archaeological ceramics.
- 1986 Ceramist, Washington City-Green Spring Project, Abajo Archaeology--typological and technological analyses of Virgin Anasazi and Shoshonean ceramics.
- 1985-1986 Ceramist, Recapture Dam Pipeline Project, Abajo Archaeology--typological, technological, and ceramic dating analyses of Mesa Verde Anasazi ceramics.
- 1981-1985 Task Specialist, Additive Technologies Group, Dolores Archaeological Program, University of Colorado--supervised the analysis of ceramic and basketry artifacts; designed and carried out research projects relating to those materials; prepared contractual reports; edited reports for proper data usage and general content.
- 1981 Draftsman, Library Graphics Service, Washington State University--prepared maps, graphs, and charts for publications and presentations.
- 1980-1981 Crew Chief, Dolores Archaeological Program, Washington State University--carried out delegated research on temporal variation in ceramics; presented lectures on surveying techniques and stratigraphic recording to field school students.
- 1979-1980 Assistant Crew Chief, Dolores Archaeological Program, Washington State University--supervised excavations under the direction of a crew chief and field director; taught excavation technique to field school students.
- 1977-1979 Teaching Assistant, Department of Anthropology, Washington State University--prepared classroom and laboratory materials; arranged field trip logistics; corrected exams; presented selected lectures; provided individual assistance to students have difficulty with the curriculum.

- 1977-1979 Assistant Director, Hoko River Archaeological Project, Department of Anthropology and Washington Archaeological Research Center, Washington State University, and the Makah Tribal Nation--supervised "wet site" excavation and artifact curation; developed and carried out field school curriculum with the project director; prepared and edited descriptive and interpretive reports.
- 1977 Archaeological Surveyor, Washington Archaeological Research Center--conducted subsurface hydraulic-auger sampling.
- 1976 Laboratory Director, Fort Walla Walla Archaeological Project, Department of Anthropology, Washington State University--supervised laboratory processing and analysis of historic artifacts.
- 1975-1981 Draftsman and Laboratory Assistant, Paleoenvironmental Laboratory, Department of Anthropology, Washington State University--extracted pollen from reference and sediment samples; cored lake sediments; described sediment cores; prepared radiocarbon samples; analyzed volcanic ash samples; edited manuscripts; prepared figures for publication and slide presentations.
- 1974-1975 Draftsman, Electronics Research Laboratory, University of California, Berkeley--prepared figures for publication and slide presentations.
- 1974-1975 Researcher, Archaeological Research Facility, University of California, Berkeley--carried out delegated archival research projects; prepared figures for publication.

FIELD EXPERIENCE:

- 1998 Archaeological data recovery, US 666 near Twin Lakes, New Mexico; prehistoric Anasazi; excavation (20 days).
- 1998 Archaeological inventory (site relocation), US 64, La Jara Canyon, New Mexico; Anasazi and Navajo components (2 days).
- 1998 Archaeomagnetic sampling, Northern Rio Grande valley (8 days).
- 1998 Site surface pottery characterization, Mill Creek Archaeological Project, Moab, Utah; Anasazi and Fremont (5 days).
- 1998 Site surface pottery characterization, N35 Project, northeastern Arizona; Anasazi and Navajo (2 days).
- 1998 BLM Wood Sampling Workshop, Dineta Area, northern New Mexico (1 day).
- 1997 Archaeological inventory, Church Rock, New Mexico, prehistoric Anasazi and Navajo site mapping, Navajo structure tree-ring sampling (10 days, cumulative).
- 1996 Archaeological inventory, Church Rock, New Mexico (7 days); Grants, New Mexico (1 day).
- 1996 Clay resource inventory, CSTL Pottery Technology Project; southern Navajo Nation, New Mexico and Arizona.
- 1995 Archaeological and traditional cultural property inventory (4 days); Navajo and Kayenta Anasazi components; Rock Point, Arizona.
- 1990-present Field conservator, stratigrapher, in-field analysis of grave goods (10 weeks, cumulative); stabilization and retrieval of kiva murals, basketry, prehistoric plaster masks, and unusually fragile artifacts; in-field analyses of burial textiles and vessels; specialized in-field photography; various venues, New Mexico and Arizona.
- 1988-1990 Stratigrapher and replacement crew chief (6 weeks, cumulative); La Plata Highway Project excavations, New Mexico.
- 1986 Topographic surveyor (3 weeks); Chacoan outlier mapping project, New Mexico.
- 1981 Research assistant (7 weeks); Holocene Environment of the Fayum Depression, Cairo, Arab Republic of Egypt.
- 1979-1980 Assistant crew chief (5 months); Dolores Archaeological Program, Colorado.
- 1979 Excavator (1 week); Midwest Archaeological Center, Rock Creek test excavations, Utah.
- 1977-1979 Assistant director (7 months, cumulative); Hoko River Archaeological Project, Washington.
- 1977 Core rig operator (2 days); Beebe Orchard survey, Washington.
- 1976 Core rig operator (2 days); Port of Camas-Washougal survey, Washington.
- 1976 Field laboratory director (2 months); Fort Walla Walla Archaeological Project, Washington.
- 1973 Topographic surveyor (10 weeks); NV-Ly-1 and CA-Mono-8 Petroglyph Survey, California and Nevada.
- 1973 Topographic surveyor (2 weeks, cumulative); UC Berkeley Field School, California.

1972 Topographic surveyor (1 week); Alder Canyon Survey, California.

1970-1971 Excavator (3 months, cumulative); Bancroft Ranch House Archaeological Investigations, California.

ATTACHMENT C

MUSEUM OF NEW MEXICO

OFFICE OF ARCHAEOLOGICAL STUDIES

**CULTURAL RESOURCES INVENTORY OF PROPOSED URANIUM SOLUTION
EXTRACTION AND MONITORING FACILITIES AT THE CHURCH ROCK SITE
AND OF PROPOSED SURFACE IRRIGATION FACILITIES NORTH OF THE
CROWNPOINT SITE, MCKINLEY COUNTY, NEW MEXICO**

Eric Blinman

with contributions by

**Steven A. Lakatos
Macy Mensel
Janet E. Spivey
C. Dean Wilson**

ARCHAEOLOGY NOTES 214

SANTA FE 1997 NEW MEXICO

ADMINISTRATIVE SUMMARY

At the request of Hydro Resources, Inc., the Office of Archaeological Studies, Museum of New Mexico, conducted archaeological and traditional cultural property inventories of proposed facility locations for solution uranium mining near the communities of Church Rock and Crownpoint, New Mexico. The inventories are in advance of well-field development and construction of satellite processing facilities at the Church Rock Site (portions of Sections 8 and 17, T16N, R16W), and for the planning of irrigation facilities and drilling-mud disposal areas north of Crownpoint Unit 1 (Section 12, T17N, R13W). Surveyed portions of Section 8 included both private land (approximately 173 acres) and land controlled by the Bureau of Land Management (BLM) (approximately 335 acres). The BLM land falls under the jurisdiction of the Farmington District Office. Surveyed portions of Section 17 (approximately 200 acres) are Navajo Nation Tribal Trust land. Section 12 is private land (640 acres).

Fieldwork was conducted between October 21, 1996, and March 15, 1996. Archaeological survey activity on private land was supervised by Nancy J. Akins, C. Dean Wilson, or Eric Blinman; activity on Navajo Nation land was supervised by C. Dean Wilson; and inventory activities on Bureau of Land Management land were supervised by Nancy J. Akins or H. Wolcott Toll. All ethnohistoric investigations were conducted by Janet E. Spivey. Eric Blinman served as principal investigator and participated in some survey and site recording.

At the Church Rock Site, archaeological survey of private land defined 27 isolated occurrences of artifacts or features (IOs). Eight previously recorded sites were relocated, and four new sites were identified. One of the new sites extends onto adjacent BLM land within the Church Rock Site, and one new site extends onto adjacent Navajo Nation land (Section 9) that is not within the proposed project area. One previously recorded site that had been originally located within Section 8 was found to be within Section 9 instead. Archaeological survey of BLM land defined 57 IOs. Six previously recorded sites were relocated, and fourteen new sites were defined. A modern burial plot was also encountered. Archaeological survey of Navajo Nation land within Section 17 defined 5 IOs, and no archaeological sites were identified.

At Section 12, the proposed irrigation and drilling-mud disposal facility north of Crownpoint Unit 1, archaeological survey of private land defined 73 IOs. One previously defined site was relocated and recorded, five previously noted but not formally recorded sites were relocated and recorded, and four new sites were identified.

Ethnohistoric research and interviews were conducted to determine if there were any traditional uses of the areas of the two proposed mining facility sites. No traditional uses of the landscape at either site were known to any Navajo chapter officials, local residents, or traditional practitioners. However, there are three modern burials on BLM land in Section 8, and there may be as many as two burials in Section 12 (accounts are contradictory). The Section 8 burials are within a single fenced and well-marked plot, away from any planned mining activity. Both possible burial locations in Section 12 are within the boundary of an archaeological site and can be protected in that context.

The proposed well-field development on private land within Section 8 could potentially overlap with 12 archaeological sites. All are eligible for inclusion in the *National Register of Historic Places* based on potential contributions to the understanding of regional history or prehistory. Each

of these sites will be fenced to avoid impacts. If portions of any of the sites cannot be avoided by construction activities, mitigation plans will be developed and implemented for these cultural resources. All construction activity within the vicinity of site boundaries will be monitored by a qualified archaeologist due to the potential presence of subsurface cultural features.

No construction or well-field development is currently planned on BLM land within Section 8. Before future development plans for mining, monitoring wells, irrigation facilities, or restoration activity on this area of BLM land are implemented, potentially effected sites will be evaluated, and appropriate protective measures or mitigation plans will be developed and followed. The modern burial plot will be avoided.

The proposed well-field development on Navajo Nation land within Section 17 does not overlap with any cultural resources, and no protective measures or mitigation plans are recommended. However, monitoring of construction on some areas of Navajo Nation land by a qualified archaeologist will be required due to the proximity of cultural resources on adjacent lands.

Cultural resources within Section 12 are limited to discrete areas and topographic settings, with large areas of the section free of potentially eligible archaeological resources. Protective measures for the identified sites may be required depending on final plans for the delivery and distribution of irrigation water and for the spreading of drilling mud. Where appropriate, sites will be fenced to avoid impacts, and ground-disturbing activities in the vicinity of cultural resources will be monitored by a qualified archaeologist.

In addition to specific treatments of cultural resources, measures will be taken to prevent indirect impacts to cultural resources both within and adjacent to the development sites. All on-site construction and mining personnel will be given formal orientations concerning the preservation of cultural resources. These orientations will include a review of laws and regulations protecting cultural resources, as well as explanations of the scientific importance of seemingly inconsequential materials such as surface artifacts and ancient construction timbers.

Museum of New Mexico Project 41.631
New Mexico Cultural Records Information System Activity 54707
Bureau of Land Management 21-2920-96-T
Navajo Nation Cultural Resources Investigation Permit B96167

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to be associated with each possible component were selected for field analysis. At larger sites, areas associated with each roomblock or midden were sampled. Study areas were usually defined by a 1 m radius dog leash that was marked by placing pinflags around the perimeter. In cases where the number of artifacts within a selected area was not large enough for confident interpretation, the sampling area was extended to a larger radius. Unusual ceramic types or formal flaked lithic tools found outside the sampling area were recorded.

Field analysis of ceramics consisted of recording ceramic type and vessel form. Sherds were not collected during analysis but left where they were found. Small clips were taken from a very small number of sherds and placed in bags with a slip recording type and vessel form. Descriptions of the pottery types and interpretations of the ceramic data are provided in Appendix 1 of this report. Field analysis of flaked lithic artifacts included observations of material type, artifact form, and technological characteristics. Flaked lithic artifacts were extremely rare both at the sites and as IOs.

BLM Farmington District requirements include the collection of tree-ring specimens from Navajo sites during Class III archaeological inventories. Tree-ring samples were not collected during the initial phase of this inventory, but a separate tree-ring sampling phase is planned for the spring of 1997. This wood sampling plan will be extended to all Navajo sites on both private and BLM land within the Church Rock Site, and the plan is described in Appendix 2.

Ethnohistory and Traditional Cultural Properties

Janet E. Spivey

Several modern peoples are accepted as having potential cultural interests in the landscape of the project areas: Navajo, Hopi, Zuni, Acoma, and Laguna. These interests fall into two categories: present uses, and concern with remains of past uses. HRI initiated contacts with the Hopi, Zuni, Acoma, and Laguna tribes concerning the project areas in February 1996. Only the Navajos have demonstrated current traditional uses of the project vicinities, while all of the groups are expected to be concerned with the treatment of resources that reflect past uses. If any archaeological sites cannot be avoided or if cultural resources are encountered during monitoring, specific consultations must be initiated with the concerned Native American groups.

Prior to the traditional cultural properties consultations, NMCRIS and NNHPD files were consulted for previously recorded resources in the vicinity of the project areas. Ethnohistoric survey work was carried out in accordance with the Navajo Nation Historic Preservation Department Traditional Cultural Properties Policy and the National Park Service National Register Bulletin 38.

The project areas lie within or adjacent to the borders of the Church Rock, Pinedale, Mariano Lake, Smith Lake, Little Water, Crownpoint, Becenti, and Nahodishgish (Dalton Pass) Chapters of the Navajo Nation. All these chapters are within the jurisdiction of the Eastern Navajo Agency. Published references on Navajo culture, traditional cultural properties, and general history were consulted for this report (Bailey and Bailey 1986; Brugge 1968, 1977, 1983; Kelley 1984; Kluckhohn and Leighton 1962; Van Valkenburgh 1941). These sources present some cultural and historical information relating to the general project areas, but no information on the specific project areas. Regional summaries are also available (Kelley 1982; Nelson and Cordell 1982;

Scheick 1983; Kaufman 1985).

Prior to OAS involvement with the project, a traditional cultural properties inventory had been conducted for both the Church Rock and Section 12 development sites by Ernest C. Becenti, Sr., a traditional practitioner and former Church Rock Chapter president. This inventory was prepared for the Environmental Impact Statement of the HRI mining project. The OAS ethnohistorian used this document as a resource, confirming its substance and augmenting the previous investigations with additional material and interviews.

Mr. Becenti's inventory of traditional cultural properties was conducted during July, August, and September of 1995, with supplemental site visits and discussions in August 1996. Mr. Becenti has been a traditional practitioner for over 30 years and was the Church Rock Chapter president in 1995. The traditional uses inventory was conducted by a walking tour of the private lands, Navajo Nation Trust lands, Navajo allotment lands, and Bureau of Land Management lands within the project areas of Church Rock and Crownpoint. The lands discussed in Mr. Becenti's report include areas outside of the two project development sites that are the concern of this report.

Mr. Becenti's report stated that "no significant sacred and traditional sites were found." The individuals that were interviewed stated that most of the sacred sites and herb gathering places were up in the mountains or along the mountain ridges, outside of the proposed project areas. The sacred shrines were altogether unknown and no longer used by the Navajo people. Mr. Becenti recommended that the mining project proceed as proposed, but that if a discovery were made, all project activities in that area should cease.

The OAS traditional cultural properties inventory was conducted by Janet E. Spivey, OAS ethnohistorian, with the assistance of Ben House from Smith Lake during the fall and winter of 1996. Detail concerning the entire inventory process is presented here, and summaries appropriate to the individual land jurisdictions are presented in the results section of this report.

On October 30, 1996, the ethnohistorian mailed letters containing a description of the proposed project and a project vicinity map to the chapter presidents of the Church Rock, Pinedale, Mariano Lake, Smith Lake, Little Water, Crownpoint, Becenti, and Dalton Pass Chapters. These letters were followed by telephone contacts and personal interviews during the months of November and December 1996. The ethnohistorian, with the assistance of Mr. House, contacted and visited knowledgeable Navajo traditional practitioners and chapter officials representing all the involved communities.

On November 7, 1996, the ethnohistorian and Mr. House visited with Jean Mariano, an elderly traditional practitioner who lives within the Mariano Lake Chapter boundaries. Ms. Mariano was born three miles northeast of her present house, which lies in the NE ¼ of Section 30. She has lived in that area all her life. She is now 77 years old and began traditional practice at age 34. She was taught by her uncle, Chee Johnson. Ms. Mariano does not know of any traditional uses within Sections 8 or 17 of the Church Rock Site. The hills and mountains are the places to gather plants and herbs. These are gathered in the high places away from grazing animals or where people are not active on a daily basis. Plants and herbs need to be gathered where there is no contamination. She adds that the Navajos do not conduct ceremonies near housing developments or where there would be noise and lights. She does not know of any sacred or plant gathering areas on the Church Rock Site. She would accept Mr. Becenti's judgment and report about traditional uses in the vicinity of Sections 8 and 17.

Ms. Mariano stated she has concerns about how the uranium will be transported. It should be well protected and secured. There should be an immediate way of containing any spillage due to an accident. However, she noted that there are trucks travelling the roads all the time. Local residents don't know what is in them, she said, and uranium has been hauled over the roads in the past.

Later on November 7, 1996, the ethnohistorian and Mr. House met with Nelson J. Largo, Sr., Smith Lake Chapter president. Mr. Largo stated that he had received the letter about the project and was glad we were visiting him. He had no concerns about traditional uses in the project area. He stated that uranium trucks had travelled through the Smith Lake area before and that many trucks use the route hauling all kinds of things. He feels that as long as the HRI trucks stay on the paved roads and take safety precautions there should be no problems. He was glad we had consulted with Jean Mariano and would accept her judgment about traditional uses.

On November 8, 1996, the ethnohistorian and Mr. House visited with Bennie Y. Begay, a traditional practitioner and former vice president of the Pinedale Chapter. Mr. Begay is 75 years old and was born in the area. He has lived there all his life. He is very knowledgeable about traditional uses. The chapter boundaries of Church Rock and Pinedale are between three and four miles west of Mr. Begay's house. Mr. Begay stated that there are mesas in the Pinedale area that are used for ceremonial purposes but are isolated and not in the project areas or along the highway. There is a hill about 2,000 feet southwest of his house that is still considered a sacred place. This is because it is used by eagles during migration as a place to settle for a few days. This hill is not in the project areas or within the highway right-of-way. It would not be a place of concern as long as the trucks hauling uranium take safety precautions and stay within the right-of-way.

On the first mesa, just past the Pinedale Trading Post, there is a sacred location called the "Trail of Rainbows" because when it rains there is usually a rainbow there. A Squaw Dance ceremony has been held near the highway, about ¼ mile from his house, or four miles west of the Pinedale Trading Post. The Squaw Dance is conducted with the normal flow of traffic and noise along the highway. There would be no concerns as long as any trucks hauling the uranium stay within the right-of-way.

Mr. Begay expressed safety concerns only about the trucks. They should slow down, he said, because the highway is used by livestock and elderly people. He has no knowledge of traditional uses within Sections 8 and 17. He would accept Mr. Becenti's judgment about traditional uses within the project areas.

Mr. Begay appreciated that we were consulting with knowledgeable people about the traditional uses. Many companies had come into the area and would not consult with the local residents.

The Church Rock Chapter House was visited on November 8, 1996, to determine if the project letter had been received. Mr. Benally, chapter president, was not there, but the chapter clerk stated that the letter had been received and the chapter was familiar with the HRI project, especially regarding Sections 8 and 17 within their chapter boundaries. The Church Rock Chapter had signed a resolution supporting the uranium project after a vote was taken during the July 7, 1993, chapter meeting. It was suggested that we contact Mr. Benally on another day.

On November 11, 1996, Mr. House met with Jim Charley, a traditional practitioner, from the

Smith Lake Chapter. Mr. Charley had no concerns about traditional uses of either the Church Rock Site (Sections 8 and 17) or Section 12 near Crownpoint.

On November 21, 1996, the ethnohistorian, and Mr. House met with Tom Shorty of the Becenti Chapter and Lincoln Perry of Crownpoint. Both are knowledgeable traditional practitioners and are familiar with the project areas, especially Section 12.

Mr. Shorty is 67 years old and has been a traditional practitioner for 25 years. He is more familiar with Section 12 than with the vicinity of the Church Rock Site. About 60 years ago, the Kin Yaah Yazzie family lived in a house on Section 12. At that time plants and herbs were gathered for medicinal purposes. This is what people used when there were no western doctors or hospitals. If you were sick or hurt yourself you would pick a certain plant to use on the wound or make into a tea to drink. The "bee weed" plant is used for dying wool, medicine, and seasoning food. The yucca plant is used for shampoo and cleaning for ceremonies. Shrines, prayers, and ceremonies are placed or performed in very isolated places. Today most plants are gathered on mesa tops and ridges, away from grazing animals and use by people. The plants on the hills and mesas tend to reseed themselves, so there is no concern about their dying out. Section 12 is not used as a traditional use area today. It has been used by people too much and for grazing.

Mr. Shorty does not have any knowledge about traditional uses on the Church Rock Site. However, a place outside the Church Rock project area is considered sacred ground. It is on highway NM 371 between Becenti and Crownpoint. It is called Dragon Monster, and people do not travel through the area during ceremonial times. This area is similar to Snake Rock at Narbona Pass.

Mr. Perry is 67 years old and learned traditional practice from his grandmother. Like Mr. Shorty, he has no knowledge of traditional uses within the Church Rock Site area. Further west from Sections 8 and 17 is an area known as Nose Rock, which is used as a shrine. Nose Rock Point is slightly more than three miles west-southwest of the Church Rock Site. There used to be more game like deer and elk in the area, but since people have moved in, there is less wildlife.

Both Mr. Shorty and Mr. Perry agree that they have no concerns or knowledge of traditional uses within Sections 8 or 17. As far as transportation of the uranium, they feel as long as the trucks stay on the paved roads and are as safe as possible, they have no concerns.

On November 21, 1996, the ethnohistorian and Mr. House visited William E. Raymond, an elderly traditional practitioner and former chapter secretary from the Little Water community. Mr. Raymond is an 84-year-old traditional practitioner. Mr. Raymond stated that shrines and prayer offerings take place away from populated areas, usually up in the high places. Prayers are for rain, safety, and protection. Personal prayers are offered at home or near home.

There is a mesa about ½ mile from his house where there used to be a shrine, but the young people have desecrated it. At one time there was clay pottery for water offerings, but it has been destroyed. Some of the sacred places are Hosta Butte, Little Hosta Butte, Mount Powell, and White Face (Spot) Mesa, which is southwest of Pinedale. There are some Anasazi sites near Mr. Raymond's house. Pottery remains are present, and he thinks the Anasazi farmed in the low places near his house.

Mr. Raymond has no knowledge of traditional uses within the Church Rock Site area. He feels

Mr. Becenti should be the most knowledgeable person about that area.

The Little Water Chapter boundary comes up to NM 371, and Mr. Raymond has no concerns about traditional uses along the transportation route as long as the trucks stay on the paved roads. He has safety concerns about older people and livestock on the road. The truck drivers should be careful so as not to constitute a danger to people or livestock. Mr. Raymond has livestock that he sells and also uses for food. The transportation must be done safely, so livestock and vegetation will not be contaminated.

On November 22, 1996, the ethnohistorian and Mr. House visited Manuel Shirleson, Crownpoint Chapter community services coordinator. Mr. Shirleson confirmed that the project letter had been received and suggested we contact the chapter president, Charles Long, in the near future. Mr. Shirleson stated that the chapter is familiar with the HRI project. The Crownpoint Chapter had signed a resolution supporting the HRI project in general. Mr. Shirleson thought that the traditional practitioners who had been consulted would accept the project areas. A time was arranged to talk to Mr. Shirleson on December 4, 1996, to determine when Mr. Long would be available. The ethnohistorian contacted Mr. Shirleson on December 4, 1996, and scheduled a meeting with Mr. Long on December 11, 1996.

On December 11, 1996, the ethnohistorian and Mr. House met with Charles Long, Crownpoint chapter president, at the Crownpoint Chapter House. Mr. Long was familiar with the project areas and had helped with Mr. Becenti's report. He also felt that Lincoln Perry and the other traditional practitioners would accept what they said about traditional uses. He stated that as far as he knew, the Church Rock Site area was never considered a traditional use area. People go into the high places, like Hosta Butte, to gather plants or perform ceremonies.

Mr. Long stated that the Crownpoint Chapter had signed a resolution in support of the HRI project, and he knew of no traditional uses in the project areas.

Also on December 11, 1996, the ethnohistorian and Mr. House met with a traditional practitioner from the Dalton Pass Chapter who prefers not to be named in this report. This practitioner is familiar with the Dalton Pass and Crownpoint areas. However, he felt other practitioners closer to the Church Rock Site would be more knowledgeable about that area. He did mention the presence of a spring on top of a mesa about 2.5 miles southwest of the HRI Crownpoint offices. It is called Rock House. There are ruins on top of the mesa. This mesa is not within the project areas. This practitioner also mentioned the four sacred places used for ceremonies and shrines (Hosta Butte, Little Hosta Butte, White Spot Rock or Mesa Butte, and Mount Powell). He has no knowledge of any traditional uses within the project areas. His only concerns involve the safety of the people and livestock when transporting the uranium.

Later on December 11, 1996, visits were made to the Dalton Pass Chapter to confirm that the project letter had been received and to the Becenti Chapter House with Juliette Largo, Becenti community services coordinator.

On December 12, 1996, the ethnohistorian visited Herbert Benally, Church Rock Chapter President, to inquire about any concerns the Church Rock Chapter might have about traditional uses within the project areas. Mr. Benally will accept Mr. Becenti's findings and report on the Church Rock Site. Mr. Benally will go along with the previous administration's and chapter's position on uranium mining. He had no concerns about the project.

The Pinedale Chapter was also visited on December 12, 1996. Nelson Zuni, vice president, discussed the project. He is knowledgeable about the Church Rock Site and does not know of any traditional uses in the project area. He will accept Mr. Becenti's and Bennie Begay's judgments about traditional uses in the project area as well as the other local traditional practitioners. He has safety concerns about transporting the uranium.

Also on December 12, 1996, the ethnohistorian and Mr. House visited the Little Water Chapter House and met with George Tolth (council delegate), Bennie Enrico (chapter president), Thomas Barbone Sr. (chapter vice president), Paul Jones (chapter secretary and treasurer), and Ken Tapaha (chapter manager). Mr. Enrico stated he would accept the judgment of the local traditional practitioners concerning the project areas. Mr. Barbone stated that the medicine men or traditional practitioners should know about traditional uses, and he would accept whatever they said. He had concerns about the safety of the highways, especially during bad weather. He thought the highways should be upgraded to be able to carry the weight of the trucks.

Mr. Tolth stated that traditional practitioners use isolated high places to gather plants and herbs and to conduct ceremonies. He did not know of any concerns about traditional uses in the project areas. He has safety concerns about road conditions. There is a need to watch out for the elderly and livestock.

Mr. Tapaha had no concerns about traditional uses in the project areas. He had concerns about transporting the uranium. The roads can be slick and dangerous, especially through the canyon on highway NM 371. He would like to see the highway department widen the road through the canyon area.

On December 17, 1996, the ethnohistorian talked with Raquel Warner of the Mariano Lake Chapter and Juliette Largo, community services coordinator for Becenti Chapter. Ms. Warner said that Henry Tom, chapter president, would call back. Ms. Largo said she would talk to Mr. Hubbard, chapter president, about the project and suggested calling back on Friday, December 20. A call was made to Harrison Morgan, Dalton Pass chapter president, and Harry Jim, chapter vice president; neither was available.

On December 20, 1996, the ethnohistorian spoke with Raquel Warner, Mariano Lake community services coordinator. Ms. Warner had discussed the project with Henry Tom, chapter president. Mr. Tom stated that he had no concerns about the HRI project and would accept the judgment of the traditional practitioners.

On January 10, 1997, the ethnohistorian spoke with Juliette Largo, community services coordinator for the Becenti Chapter. Ms. Largo had discussed the project with Harry Hubbard, Becenti Chapter president. Mr. Hubbard stated that he had no concerns about the HRI project and would accept the judgment of the local traditional practitioners. If any concerns or traditional use areas were discovered after the project began, Mr. Hubbard wanted to be notified.

On February 5, 1997, Mr. House spoke with Harrison Morgan of Dalton Pass Chapter. Mr. Morgan had no concerns regarding Section 12, as long as measures are taken to ensure safety and prevent contamination of the environment.

examined for extensions of the artifact scatter. None of the other sandstone distributions noted by Marshall could be confidently interpreted as wall remnants, and no artifacts were found across the road in the vicinity of the possible room or elsewhere. Although the area of the lower room is included in the site map (see Fig. 15), the current site boundary is retracted to include only the one confidently defined room and the associated artifact scatter.

Traditional Cultural Properties

Interviews concerning traditional cultural properties and the results of documentary research about traditional sites in the region are presented in detail in the "Background for the Cultural Resources Inventory" and "Methods" sections of this report. Substantive results regarding traditional uses of the Church Rock Site (including the private land portion of Section 8) are summarized in Table 29.

Table 29. Summary of Traditional Cultural Property Results, Church Rock Site, Section 8, Private Land

Consultant	Affiliation	Concerns
Ernest C. Becenti, Sr.	Church Rock Chapter; former chapter president; traditional practitioner	No known traditional uses
Ms. Jean Mariano	Mariano Lake Chapter; traditional practitioner	No known traditional uses
Nelson J. Largo, Sr.	Smith Lake Chapter president	No known traditional uses
Bennie Y. Begay	Pinedale Chapter; former chapter vice president; traditional practitioner	No known traditional uses
Jim Charley	Smith Lake Chapter; traditional practitioner	No known traditional uses
Tom Shorty ¹	Becenti Chapter; traditional practitioner	No known traditional uses
Lincoln Perry ¹	Crownpoint Chapter; traditional practitioner	No known traditional uses
William E. Raymond	Little Water Chapter; former chapter secretary; traditional practitioner	No known traditional uses
Charles Long	Crownpoint Chapter president	No known traditional uses
Confidential ¹	Dalton Pass Chapter; traditional practitioner	No known traditional uses
Herbert Benally	Church Rock Chapter president	No known traditional uses
Nelson Zuni	Pinedale Chapter vice president	No known traditional uses
George Tolth	Little Water Chapter; council delegate	No known traditional uses
Bennie Enrico ²	Little Water Chapter president	No known traditional uses
Thomas Barbone ²	Little Water Chapter vice president	No known traditional uses
Ken Tapaha	Little Water Chapter manager	No known traditional uses
Henry Tom ²	Mariano Lake Chapter president	No known traditional uses

¹Less familiar with the Church Rock Site than with Section 12.

²Defers to the traditional practitioners who have been consulted.

Table 30. *National Register Eligibility Summary, Church Rock Site, Section 8,
Private Land*

Site Number	Description	Eligibility	Comments
LA 26159	Anasazi, multiple component habitation	Eligible, criterion d	Substantial site; good condition
LA 26160	Anasazi, Pueblo II habitation; Navajo, recent petroglyphs	Eligible, criterion d	Substantial site; about 10 percent of site surface affected by prior construction, but otherwise in good condition
LA 26163	Anasazi, Pueblo II habitation	Eligible, criterion d	Substantial site; about 30 percent of site surface affected by prior construction, but some subsurface integrity remains in disturbed areas, otherwise in good condition
LA 26164	Anasazi, Pueblo II habitation	Eligible, criterion d	Substantial site; about 90 percent of site surface affected by prior construction, subsurface integrity remains in limited areas
LA 88871	Navajo, Gobernador phase habitation	Eligible, criterion d	Small site; good condition
LA 88872	Anasazi, Pueblo II field camp	Eligible, criterion d	Small site; good condition
LA 88875	Navajo, Gobernador phase habitation	Eligible, criterion d	Small site; good condition
LA 88876	Navajo, Gobernador phase habitation	Eligible, criterion d	Small site; less than 40 percent affected by prior construction, otherwise in good condition
LA 116111	Anasazi, Basketmaker III field habitation	Eligible, criterion d	Small site; good condition
LA 116112	Anasazi, Pueblo II artifact scatter with architecture	Eligible, criterion d	Small site; about 20 percent of surface affected by prior construction, otherwise in good condition
LA 116114	Anasazi, multiple component habitation	Eligible, criterion d	Substantial site; 100 percent of site surface affected by prior construction, subsurface integrity remains in limited areas
LA 116120	Anasazi, Pueblo II limited activity with architecture	Eligible, criterion d	Small site; good condition

None of the chapter officials or traditional practitioners identified any traditional cultural properties within the private land portion of Section 8. Expressed concerns with the project related to general questions of safety, especially during the transport of mining products along the highways in the region.

Facility Plans and Recommendations

The private land of Section 8 is slated to be the location of the most intense construction activity of the first phase of mining development at the Church Rock Site. All developments will involve ground-disturbing activities, and only limited areas of the section margin are unlikely to see development either in this phase of mining or in future phases.

All of the sites identified within the private land are eligible for inclusion in the *National Register of Historic Places* on the basis of their potential to contribute important information to the understanding of regional prehistory or history (Table 30). Two of the Anasazi sites (LA 26264 and LA 116114) have been subject to extreme levels of prior construction disturbance, but intact deposits remain at both sites. Although the potential information contributions of these sites are limited in comparison to the potential of undisturbed sites, potential contributions to chronology and intercommunity and interregional relationships have not been adequately addressed through survey-level recording. Also, both of these sites include Anasazi residential components, with suggestions of multiple households and with sufficient material culture to infer multiple generations of site use. Under these circumstances, human burials are probably present within the site boundaries. For these reasons, the two disturbed sites will be given the same categorical considerations as the relatively undisturbed sites.

We recommend that the archaeological sites be avoided during the development of mining facilities within the private land of Section 8. If sites or portions of sites cannot be avoided, we recommend that data recovery be conducted. Any data recovery will require negotiations with concerned Native American groups in compliance with the Native American Graves Protection and Repatriation Act (NAGPRA). These negotiations will cover the treatment of archaeological resources, including potentially sacred materials and human remains.

Because of the overlap between many of the sites and the extent of the proposed construction activities, fencing or barrier construction will be necessary as a protective measure. The nature of this protection will depend on specific construction plans, only some of which can be anticipated at this time. Preferred fencing would consist of hog wire supported by T-posts and topped with barbed wire. This would serve as a mechanical equipment barrier and would discourage casual foot traffic trespass across site boundaries. Fencing would remain in place through construction and mining phases, and it would not be removed until after reclamation processes had been completed following the cessation of mining.

Within the lowland area of the section, site boundaries were defined and staked using both surface observations and auger test results. We recommend that protective fencing or barriers be placed at the staked site boundaries of LA 26163, LA 26164, LA 116112, and LA 116114. Protective measures should also be taken at LA 26159 and LA 26160, but we recommend that the two sites be enclosed with a single protective barrier. We also recommend that construction activity adjacent to all of these site boundaries incorporate erosion-control plans so that site conditions remain stable.

LA 88875 and LA 88876 are adjacent to an existing road that provides the only access to this margin of the proposed well field. In addition to the need for protective fencing, site conditions will be affected by any road improvements and by routine road maintenance. Road construction plans should incorporate erosion-control features that will either maintain or improve the stability of the sites.

LA 116111 is at the margin of the proposed well field development. We recommend that protective fencing be installed if any construction features (including roads) are planned within 100 feet of the site boundary. Due to its topographic position and susceptibility to erosion, the protective fencing should be placed outside of the site boundaries at the toe of the landform and outside of the drainages that lie to the north and the south of the site. The eastern portion of the site lies on Navajo Nation land in Section 9. This is outside of the HRI Church Rock Site project boundaries, and no development will affect that portion of the site.

LA 88871 and LA 88872 lie at the extreme corner of the private land portion of Section 8, at the margin of proposed well field development. We recommend that protective fencing be installed if any construction features (including roads) are planned within 100 feet of the site boundaries. Because of their susceptibility to changes in erosion patterns, we recommend that fencing be placed outside of the site boundaries at a sufficient distance to minimize the risk of ground disturbance that would accelerate erosion of the site surfaces.

LA 116120 straddles private and BLM land on the topographic bench in the northwest corner of the private land, about 400 feet above the location of most well field development. Although no construction is currently planned for this area, we recommend that protective fencing be installed if any future construction features (including roads) are planned within 100 feet of the site boundaries. Because of its susceptibility to changes in erosion patterns, we recommend that fencing be placed outside of the site boundaries at a sufficient distance to minimize ground disturbance that would accelerate local erosion.

In addition to protection through the installation of physical barriers, all on-site construction and mining personnel will be given formal orientations concerning the protection of cultural resources within the Church Rock Site. This policy will include prohibition of collection, excavation, and defacement of cultural resources, as well as a prohibition of non-work related access to adjacent lands within the Church Rock Site. Employees, contractors, and visitors violating the policy of nondisturbance and noncollection will be disciplined.

Despite confidence in the site boundaries established during this survey, there is a distinct possibility of the presence of undetected subsurface cultural resources given the intensity of human occupation at the margins of the lowland area. We recommend that all ground-disturbing construction activities within the vicinity of the sites be monitored by an archaeologist. Based on observations of the site locations, the stratigraphic exposures of the Puerco River floodplain and its tributary, and the experience of the Transwestern Pipeline construction data recovery and monitoring in the vicinity (Sullivan 1994), we recommend that monitoring take place whenever ground disturbance occurs within the area identified in Figure 16. The development of treatment protocols for the unexpected discovery of human remains will be initiated within the framework of NAGPRA and existing New Mexico state regulations concerning the treatment of unmarked burials.

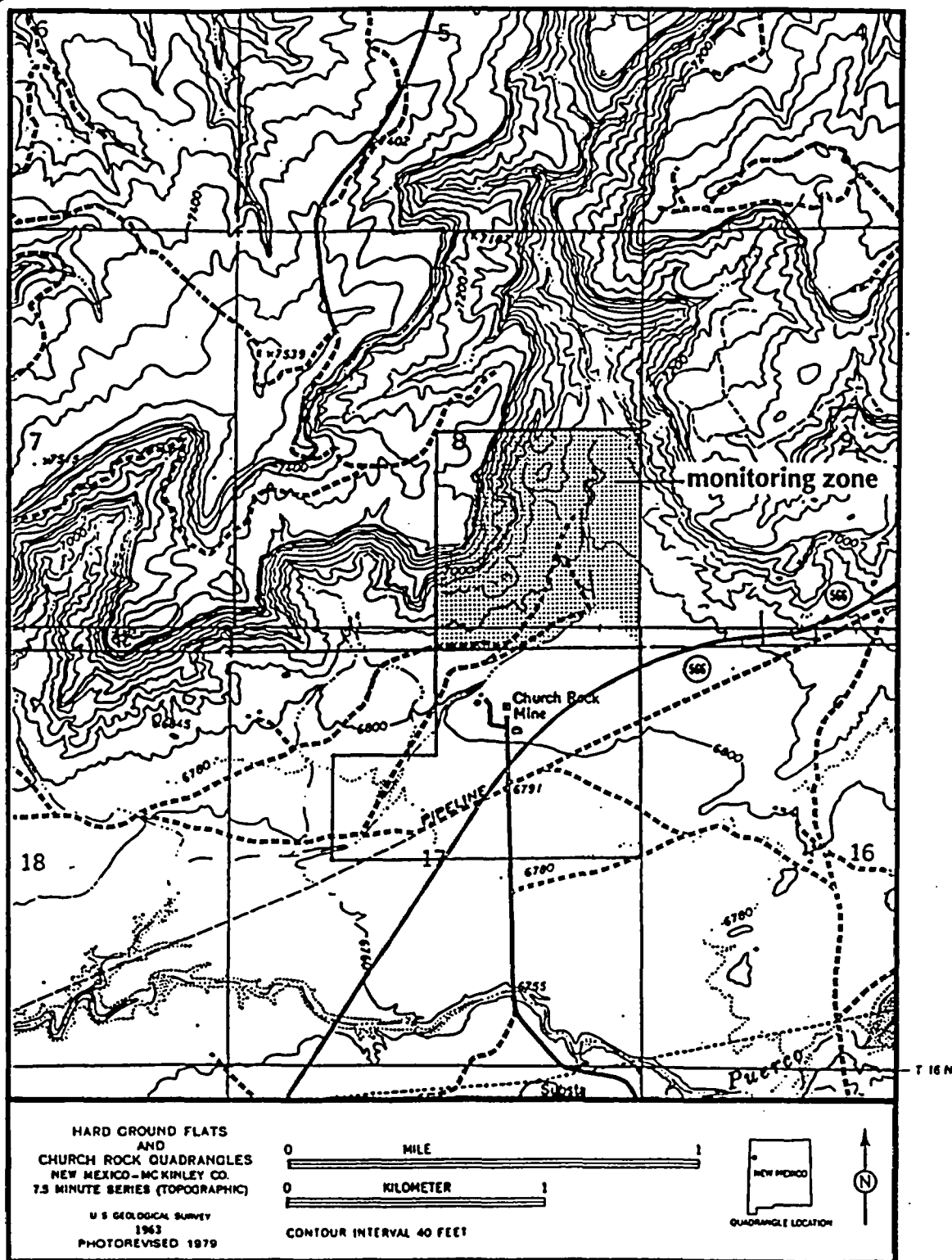


Figure 16. Proposed monitoring zone for construction activities within the Church Rock Site, private land.

Content of the panel includes Anasazi, possible Archaic, and historic glyphs (Fig. 35). The sandstone does not patinate, so that superposition, distinctness, and style are the only bases for interpreting motif age. The rock art is confined within a portion of the rock face that is slightly less than 5 m long. The lowest images are about 50 cm above the present ground surface, while the tallest images are slightly more than 2 m above the ground.

Probable Anasazi images occur sparsely on the panel. These include one large and several small pecked concentric or spiral elements. The relative position of a small stick figure and the largest spiral at the upper left of the panel suggest that the stick figure may also be Anasazi in age. Incised "bird tracks" are prehistoric based on superimposed historic images, and they also are probably Anasazi in age. More problematic images include indistinct and abstract pecked lines that are present in several areas of the panel. These are less distinct than the spiral motifs, and they may be Archaic or Anasazi in age. One area toward the lower right of the panel is covered with a series of straight but unaligned grooves. These intersecting lines are reminiscent of awl-sharpening grooves, but they tend to have acute triangular cross sections, as if made by a sharp implement such as a flake or nail. These lines are more distinct than adjacent probable prehistoric glyphs, and they may be Anasazi or historic in age.

The vast majority of discernable motifs are historic graffiti and inscriptions. The one complete date is 1959, and an incomplete date appears to be in the 1990s. Various initials are scattered across the panel, and there are at least two attempts to commemorate the rock music group Kiss. The only clearly historic representational rendering is of a nude female torso.

Traditional Cultural Properties

Interviews concerning traditional cultural properties and the results of documentary research about traditional sites in the region are presented in detail in the "Background for the Cultural Resources Inventory" and "Methods" sections of this report. Substantive results regarding traditional uses of the Church Rock Site are summarized in Table 52. The results apply to the entire Church Rock Site, and they are the same as the those presented for the private land portions of Section 8. None of the chapter officials or traditional practitioners identified any traditional cultural properties within the BLM land portion of Section 8. Expressed concerns with the project relate to general questions of safety, especially during the transport of mining products along the highways in the region.

Modern Burials

Although there are no traditional concerns for Section 8, Mr. Becenti's sacred and traditional places documentation forms contain references to grave sites in the vicinity of the Church Rock Site. The grave sites were not specifically located as part of Mr. Becenti's ethnohistoric documentation, but a modern grave site was located on BLM land during the OAS archaeological survey. The three graves are recent and well-marked within a fenced plot. They are marked with plaques from Cope Memorial Funeral Home, Gallup, New Mexico. One grave is that of Jones James with the date of 1974-1993; the second of Alpert James, July 1, 1992; the third of Elsie James, 1923-1992. There are plastic flowers and crosses at the graves. The location of the burial plot is noted with the site location information in Appendix 4. Modern burial plots fall within the policy and regulatory framework of BLM land use rather than within the framework of traditional cultural properties (Jim Copeland, BLM archaeologist, Farmington District, personal communication, 1997).

Table 52. Summary of Traditional Cultural Property Results, Church Rock Site, Section 8, BLM Land

Consultant	Affiliation	Concerns
Ernest C. Becenti, Sr.	Church Rock Chapter; former chapter president; traditional practitioner	No known traditional uses
Jean Mariano	Mariano Lake Chapter; traditional practitioner	No known traditional uses
Nelson J. Largo, Sr.	Smith Lake Chapter president	No known traditional uses
Bennie Y. Begay	Pinedale Chapter; former chapter vice president; traditional practitioner	No known traditional uses
Jim Charley	Smith Lake Chapter; traditional practitioner	No known traditional uses
Tom Shorty ¹	Becenti Chapter; traditional practitioner	No known traditional uses
Lincoln Perry ¹	Crownpoint Chapter; traditional practitioner	No known traditional uses
William E. Raymond	Little Water Chapter; former chapter secretary; traditional practitioner	No known traditional uses
Charles Long	Crownpoint Chapter president	No known traditional uses
Confidential ¹	Dalton Pass Chapter; traditional practitioner	No known traditional uses
Herbert Benally	Church Rock Chapter president	No known traditional uses
Nelson Zuni	Pinedale Chapter vice president	No known traditional uses
George Tolth	Little Water Chapter; council delegate	No known traditional uses
Bennie Enrico ²	Little Water Chapter president	No known traditional uses
Thomas Barbone ²	Little Water Chapter vice president	No known traditional uses
Ken Tapaha	Little Water Chapter manager	No known traditional uses
Henry Tom ²	Mariano Lake Chapter president	No known traditional uses

¹Less familiar with the Church Rock Site than with Section 12.

²Defers to the traditional practitioners who have been consulted.

Facility Plans and Recommendations

The BLM land of Section 8 is not currently slated to be the location of any specific construction activity during the first phase of mining development at the Church Rock Site. Future developments may involve ground-disturbing activities, and cultural resources information is provided here as a basis for planning and future consultation.

Most of the 20 sites identified within the BLM portion of Section 8 are eligible for inclusion in the *National Register of Historic Places* on the basis of their potential to contribute important information to the understanding of regional prehistory or history (Table 53). Twelve sites are eligible based on survey observations of their information potential and their integrity. In five cases, survey observations are inadequate to determine eligibility, due primarily to the unconfirmed possibility of subsurface deposits.

Table 53. National Register Eligibility Summary, Church Rock Site, Section 8, BLM Land

Site Number	Description	Eligibility recommendation	Comments
LA 26158	Anasazi Late Pueblo II habitation; historic livestock features	Eligible, criterion d	Substantial site; good condition
LA 26162	Navajo, Gobernador phase (?), sweat lodge	Eligible, criterion d	Small site; about 50 percent of site surface affected by prior construction; remaining features in good condition
LA 88873	Anasazi, Late Pueblo II limited activity or seasonal residence	Eligible, criterion d	Moderate-sized site; portions of the site surface have been affected by erosion, but subsurface integrity remains in good condition
LA 88874	Anasazi, Late Pueblo II short term residential	Eligible, criterion d	Small site; subsurface deposits are substantially intact
LA 88877	Navajo, Gobernador phase habitation	Eligible, criterion d	Small site; good condition
LA 88878	Anasazi, Late Pueblo I to Pueblo II	Eligible, criterion d	Large but sparse site; good condition
LA 116113	Navajo, historic trail	Not eligible	Trail features are unlikely to yield additional information important to local or regional history
LA 116115	Navajo, Gobernador phase (?) habitation	Eligible, criterion d	Small site; good condition
LA 116116	Anasazi, Late Pueblo II artifact scatter; Navajo, historic cairns	Potentially eligible	Small site; good condition; extent of subsurface materials is unknown but is not likely
LA 116117	Anasazi, Pueblo II artifact scatter	Potentially eligible	Small site; minor road disturbance but otherwise in good condition; extent of subsurface materials is unknown
LA 116118	Anasazi, Basketmaker III-Early Pueblo I, field facility; Navajo, Gobernador phase, sweat lodge	Eligible, criterion d	Small site; substantially good condition
LA 116119	Anasazi, Pueblo II artifact scatter; Historic artifact scatter	Potentially eligible	Small site; good condition; extent of subsurface materials is unknown
LA 116120 ¹	Anasazi, Pueblo II, limited activity with architecture	Eligible, criterion d	Small site; good condition
LA 116121	Anasazi, Basketmaker III-Early Pueblo I, artifact scatter	Potentially eligible	Small site; good condition; extent of subsurface materials is unknown
HRI-12	Late Archaic residential; Anasazi limited activity; Navajo limited activity	Eligible, criterion d	Moderate-sized site; portions of the site surface have been affected by erosion, but subsurface integrity remains in good condition
HRI-13	Navajo, historic, tent camp	Not eligible	Small site; good condition; no subsurface extent; adequately documented by survey recording
HRI-15	Anasazi, petroglyphs	Eligible, criterion d	Small isolated panel; representation of hunter and deer
HRI-16	Navajo, historic (1970s-1990s) livestock feature	Not eligible	Small site; good condition; no subsurface extent; adequately documented by survey recording
HRI-17	Unknown prehistoric, petroglyph	Potentially eligible	Small isolated panel; abstract pattern of lines without recognizable motifs

Table 53. National Register Eligibility Summary, Church Rock Site, Section 8, BLM Land

Site Number	Description	Eligibility recommendation	Comments
HRI-18	Unknown prehistoric and modern (1950s-1990s) petroglyphs and graffiti	Eligible, criterion d	Large single panel; modern graffiti has obscured some faint prehistoric images; information content not adequately documented by survey recording

In three cases, we do not believe that the cultural resources are eligible for inclusion in the *National Register of Historic Places*. LA 116113 is the historic trail from the valley floor to the rim of the bench. The trail is currently in use and has been subject to periodic collapse and reconstruction, so that its current path and many of its features are less than 50 years old. One possible trail shrine will be documented and sampled for tree-ring dating as part of the wood sampling project for Gobernador phase sites, and that documentation coupled with the existing survey documentation will exhaust its information potential.

LA 117315 is a historic tent camp on the valley floor near the unnamed tributary to the Puerco River. There is limited material culture on the site, and although its dating is uncertain (1920s-1950s), all indications are that the site falls at the more recent end of the range. Although the fireplace and milled lumber suggest an initial investment in the construction of site facilities, the lack of historic artifacts suggests that the duration or intensity of site occupation was limited. There are no indications of any significant subsurface extent to the site, and survey observations have documented the majority of the information potential of the cultural resource.

LA 117318 is a historic livestock pen near the edge of the bench, 400 feet above the valley floor. The site does not appear on aerial photos taken in the mid-1970s, and it was not noted in the prior survey of this area by San Juan College. None of the hardware or historic artifacts are incompatible with a date in the late 1970s or 1980s. This site is too recent for inclusion in the *National Register of Historic Places*, and the survey documentation is adequate to document its potential contribution to regional history.

We recommend that the eligible and potentially eligible cultural resources be avoided should planning and development of mining facilities take place within the BLM lands of Section 8. BLM policy includes a preference for 100 foot buffers between undertakings and site boundaries. If eligible or potentially eligible sites cannot be avoided, we recommend that data recovery be conducted for the eligible sites. All data recovery will require compliance with NAGPRA, other federal laws and regulations, and BLM policies on the treatment of cultural resources.

Even in cases where sites can be avoided, the ground-disturbing nature of many of the potential construction activities suggests that fencing or barrier construction will be necessary as a protective measure. Appropriate types of fencing or barrier construction will depend on specific construction plans, duration and type of land use, and possible alternative land uses that could be concurrent with mining operations. Fencing would remain in place through active construction and mining phases, and it would not be removed until after reclamation processes had been completed following the cessation of mining. Any such decisions must be made in consultation with the BLM.

BLM policies normally require monitoring of all ground-disturbing activities within 100 feet of eligible cultural resources. Despite confidence in the site boundaries established during this survey, there is a distinct possibility of the presence of undetected subsurface cultural resources

given the intensity of human occupation at the margins of the lowland area of Section 8. We recommend that all ground-disturbing construction activities within 100 feet of sites on BLM land be monitored by a qualified archaeologist. Based on observations of the site locations and the local geomorphology, we recommend that monitoring take place in a more extensive area in the lowland portion of Section 8 (Fig. 36). Treatment of any cultural resource discoveries during monitoring will conform to the requirements of NAGPRA, other federal laws and regulations, and BLM policies.

Whether or not future construction is extended to BLM lands, the presence of mining operations on the adjacent private land of Section 8 poses a risk of indirect impacts to cultural resources. All construction and mining personnel will be given formal orientations concerning the protection of cultural resources within the Church Rock Site. These orientations will include a review of federal laws and regulations regarding the protection of cultural resources on BLM land. Part of this orientation will include a policy of restricted access from HRI property to adjacent BLM land.

Navajo Nation Land, Section 17

In preparation for the development of mining facilities at the Church Rock Site, the NRC has called for archaeological survey and traditional cultural property inventory of all lands that may be involved in the five-year development plan. These plans include well field development of mining leases on approximately 200 acres of Navajo Nation lands in Section 17, T16N, R16W. This area is indicated in Figure 3 and consists of the NE¼ of Section 17 and the SE¼ of the NW¼ of the section. These lands have been included in the archaeological survey of Church Rock Site and have been the subject of traditional cultural property investigations. The inventories have been carried out under Navajo Nation Cultural Resources Investigation Permit B96167.

The surveyed portion of Section 17 is totally within the Puerco River floodplain, and it includes a segment of the lower course of the unnamed tributary arroyo that passes through the eastern side of Section 8. There is little relief in the survey area, and much of the land surface has been affected by the prior construction and then demolition of facilities for the now defunct Church Rock Mine.

Several prior archaeological inventories have been conducted within the portion of Section 17 included in the Church Rock Site. In 1977, San Juan College conducted a survey for United Nuclear Corporation that included three other sections in addition to Section 17 (Ford and DeHoff 1977). Two sites were identified in Section 17, along with isolated occurrences of two low-density sherd scatters, a historic inscription, a modern field marker, and a trash scatter and tire sculpture. Of these, only the field marker and the trash sculpture were within the Church Rock Site survey area. Powerline and pipeline corridors have also been surveyed for cultural resources within Section 17 (Amsden 1992; Copeland 1987; Hudgens 1979). Only one other archaeological site has been reported within Section 17, but it is outside of the Church Rock Site survey area.

Prior surveys within 0.5 miles of the Section 17 survey have located 15 sites as of 1996 (Table 54). Most of these sites have Pueblo II Anasazi components. Historic or Navajo components were present at a minority of sites. This appears to accurately reflect site composition associated with the floodplain and its immediate margins. However, a significant number of Gobernador phase Navajo sites are just outside the 0.5 mile radius, within the canyons that border the river valley.

Archaeological survey within the Section 17 portion of the Church Rock Site was supervised

R 17 W. R. 16 W.

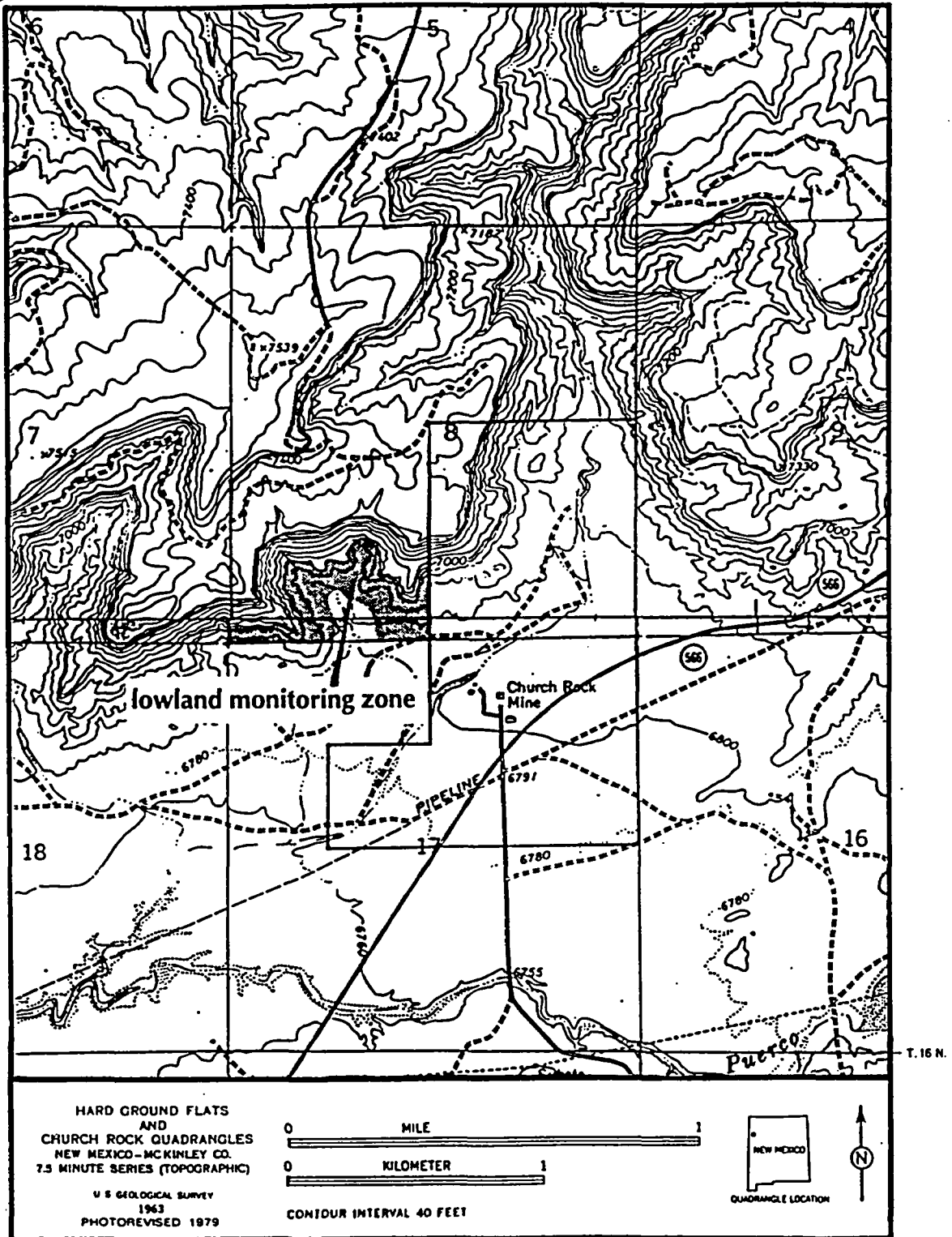


Figure 36. Proposed monitoring zone for construction activities within the Church Rock Site, BLM land.

by C. Dean Wilson under permit B96167. Descriptions of survey procedures are provided in the "Methods" section of this report. The traditional cultural property inventory of Section 17 was conducted by Janet E. Spivey as part of the investigation of the Church Rock Site as a whole.

IO Descriptions

The six IOs encountered during the survey of the portion of the Church Rock Site within Section 17 are listed in Table 55. All of the IOs are individual Anasazi sherds, and the range to types is consistent with the generalized Pueblo II occupation of the region. No isolated features were noted, either on the ground surface or in subsurface exposures created by past construction disturbance.

Traditional Cultural Properties

Interviews concerning traditional cultural properties and the results of documentary research about traditional sites in the region are presented in detail in the "Background for the Cultural Resources Inventory" and "Methods" sections of this report. Substantive results regarding traditional uses of the Church Rock Site are summarized in Table 56. The results apply to the entire Church Rock Site, and they are the same as those presented for the private land and BLM portions of Section 8. None of the chapter officials or traditional practitioners identified any traditional cultural properties within Section 17. Expressed concerns with the project relate to general questions of safety, especially during the transport of mining products along the highways in the region.

Table 54. Previously Recorded Sites within 0.5 miles (0.8 km) of the Inventory Portion of Section 17, T16N, R16W

Site number	Setting	Cultural Affiliation	Time Period	Site Type	Reference
LA 26158	Slope, grassland	Anasazi	Pueblo II-III	Masonry roomblock, kiva	Ford and DeHoff 1977
LA 26159	Bench, grassland	Anasazi	Unknown	Masonry roomblock, kiva	Ford and DeHoff 1977
LA 26160	Bench, grassland	Anasazi, unknown	Unknown, historic	Masonry roomblock, kivas, petroglyphs	Ford and DeHoff 1977
LA 26161	Ridge, grassland	Unknown	Unknown	Stone ring	Ford and DeHoff 1977
LA 26163	Bench, grassland	Anasazi	Unknown	Masonry roomblock, kivas, possible water control feature	Ford and DeHoff 1977
LA 26164	Slope, grassland	Anasazi	Unknown	Masonry roomblocks	Ford and DeHoff 1977
LA 26170	Bench, grassland	Anasazi	Pueblo II-III	Masonry roomblock	Ford and DeHoff 1977
LA 26171	Knoll, juniper grassland	Anasazi	Pueblo II-III	Masonry roomblock	Ford and DeHoff 1977
LA 47103	Bench, grassland	Navajo	1930s and later	Structures, trash mounds, hearths	Hudgens 1979
LA 67374	Hill, grassland	Anasazi	Pueblo I-II	Masonry roomblock, pithouse depression	Copeland 1987
LA 83495	Ridge, grassland	Anasazi	Pueblo II	Ceramic and lithic scatter	Amsden 1992

LA 88518	Flood plain	Anasazi	Unknown	Hearth, storage pit	ARMS file
LA 89483	Bench, unknown	Anasazi	Pueblo II	Masonry roomblock	Amsden 1992
LA 89484	Plain, unknown	Anasazi	Pueblo II	L-shaped masonry roomblock, (Bonito style great house), great kiva	Amsden 1992
LA 89485	Plain, unknown	Anasazi	Pueblo I	Masonry roomblock, pithouse depression	Amsden 1992

Table 55. Isolated Occurrences for the Surveyed Portion of Section 17, Navajo Nation Tribal Trust Land

IO Number	Location ¹	Context	Cultural Affiliation	Description
1	UTM: E721280 N3944075 Legal: SE¼ SE¼ NW¼ Elevation: 6,780 ft	Scrubland; valley floor; ground disturbed by prior construction.	Anasazi (pottery technology)	1 late mineral-painted white ware sherd; jar body
2	UTM: E721200 N3944790 Legal: NW¼ NW¼ NE¼ Elevation: 6,820 ft	Scrubland; in trench; ground disturbed by prior construction.	Anasazi (pottery technology)	1 Corrugated Gray sherd; jar body
3	UTM: E722120 N3944430 Legal: SE¼ NE¼ NE¼ Elevation: 6,807 ft	Scrubland; valley floor; ground disturbed by prior construction.	Anasazi (pottery technology)	1 Plain Gray sherd; jar body
4	UTM: E721510 N3944230 Legal: NE¼ SE¼ NE¼ Elevation: 6,797 ft	Scrubland; valley floor.	Anasazi (pottery technology)	1 Gallup Black-on-white sherd; jar body
5	UTM: E721720 N3944210 Legal: NE¼ SW¼ NE¼ Elevation: 6,805 ft	Scrubland; valley floor; ground disturbed by prior construction.	Anasazi (pottery technology)	1 Corrugated Gray sherd; jar body
6	UTM: E722010 N3944410 Legal: NE¼ SE¼ NE¼ Elevation: 6,807 ft	Scrubland; valley floor.	Anasazi (pottery technology)	1 Polished White Ware sherd; bowl body

¹UTM coordinates are within Zone 12. Quarter sections are within Section 17, T16N, R16W, on the USGS Church Rock 7.5 minute quadrangle.

Table 56. Summary of Traditional Cultural Property Results, Church Rock Site, Section 17, Navajo Nation Land

Consultant	Affiliation	Concerns
Ernest C. Becenti, Sr.	Church Rock Chapter; former chapter president; traditional practitioner	No known traditional uses
Ms. Jean Mariano	Mariano Lake Chapter; traditional practitioner	No known traditional uses
Nelson J. Largo, Sr.	Smith Lake Chapter president	No known traditional uses
Bennie Y. Begay	Pinedale Chapter; former chapter vice president; traditional practitioner	No known traditional uses
Jim Charley	Smith Lake Chapter; traditional practitioner	No known traditional uses
Tom Shorty ¹	Becenti Chapter; traditional practitioner	No known traditional uses
Lincoln Perry ¹	Crownpoint Chapter; traditional practitioner	No known traditional uses

Table 56. Summary of Traditional Cultural Property Results, Church Rock Site, Section 17, Navajo Nation Land

Consultant	Affiliation	Concerns
William E. Raymond	Little Water Chapter; former chapter secretary; traditional practitioner	No known traditional uses
Charles Long	Crownpoint Chapter president	No known traditional uses
Confidential ¹	Dalton Pass Chapter; traditional practitioner	No known traditional uses
Herbert Benally	Church Rock Chapter president	No known traditional uses
Nelson Zuni	Pinedale Chapter vice president	No known traditional uses
George Tolth	Little Water Chapter; council delegate	No known traditional uses
Bennie Enrico ²	Little Water Chapter president	No known traditional uses
Thomas Barbone ²	Little Water Chapter vice president	No known traditional uses
Ken Tapaha	Little Water Chapter manager	No known traditional uses
Henry Tom ²	Mariano Lake Chapter president	No known traditional uses

¹Less familiar with the Church Rock Site than with Section 12.

²Defers to the traditional practitioners who have been consulted.

Other Navajo Nation Lands

Although no survey was conducted on Navajo Nation lands other than the designated portions of Section 17, two sites were recorded within the Navajo Nation land of Section 9. This land is to the east of the private land portion of Section 8 and to the northeast of Section 17. It is not included within the development plans for the Church Rock Site. One of these sites (LA 26161) had originally been recorded by Ford and DeHoff (1977) and located within Section 8. Since 1977, survey monuments have been installed that identify the boundary between Sections 8 and 9, and LA 26161 has now been located within the western margin of Section 9. The site is outside of the Church Rock Site and is not included in the body of this report, but an updated site form and locational information are included in Appendix 5. The second site straddles the boundary between the private and Navajo Nation land (Sections 8 and 9). This site has been described within the private land portion of Section 8, and a copy of the site documentation is provided in Appendix 5.

Facility Plans and Recommendations

Construction plans for the surveyed portion of Section 17 call for well field development (U.S. Nuclear Regulatory Commission et al. 1997). Production wells, monitoring wells, pipelines, and roads are all ground-disturbing activities. The only cultural resources identified in the survey are isolated artifact occurrences consisting of single potsherds. These isolated occurrences are unlikely to yield important information concerning local or regional prehistory beyond that already documented during the survey, and therefore they are not eligible for inclusion in the *National Register of Historic Places*.

Although no eligible cultural properties are present on the Navajo Nation land of the Church Rock Site, eligible properties are present on adjacent private and BLM land. The alluvial setting of the Puerco River Valley makes the presence of buried cultural resources possible, but the likelihood is low in some areas. The Transwestern Pipeline Expansion Project traversed the Section 17 portion of the Church Rock Site and encountered no buried cultural resources. Also, the prior ground disturbance of Section 17 for the construction and demolition of prior mining facilities increased the likelihood that shallowly buried cultural resources would have been detected by the OAS survey. Given this information, we believe that construction activities on Navajo Nation land should be monitored by a qualified archaeologist along the northern margin of the lease area (Fig. 37). Discoveries during monitoring will be handled in conformance with NAGRA, other applicable federal laws and regulations, and Navajo Nation regulations and policies concerning the treatment of cultural resources.

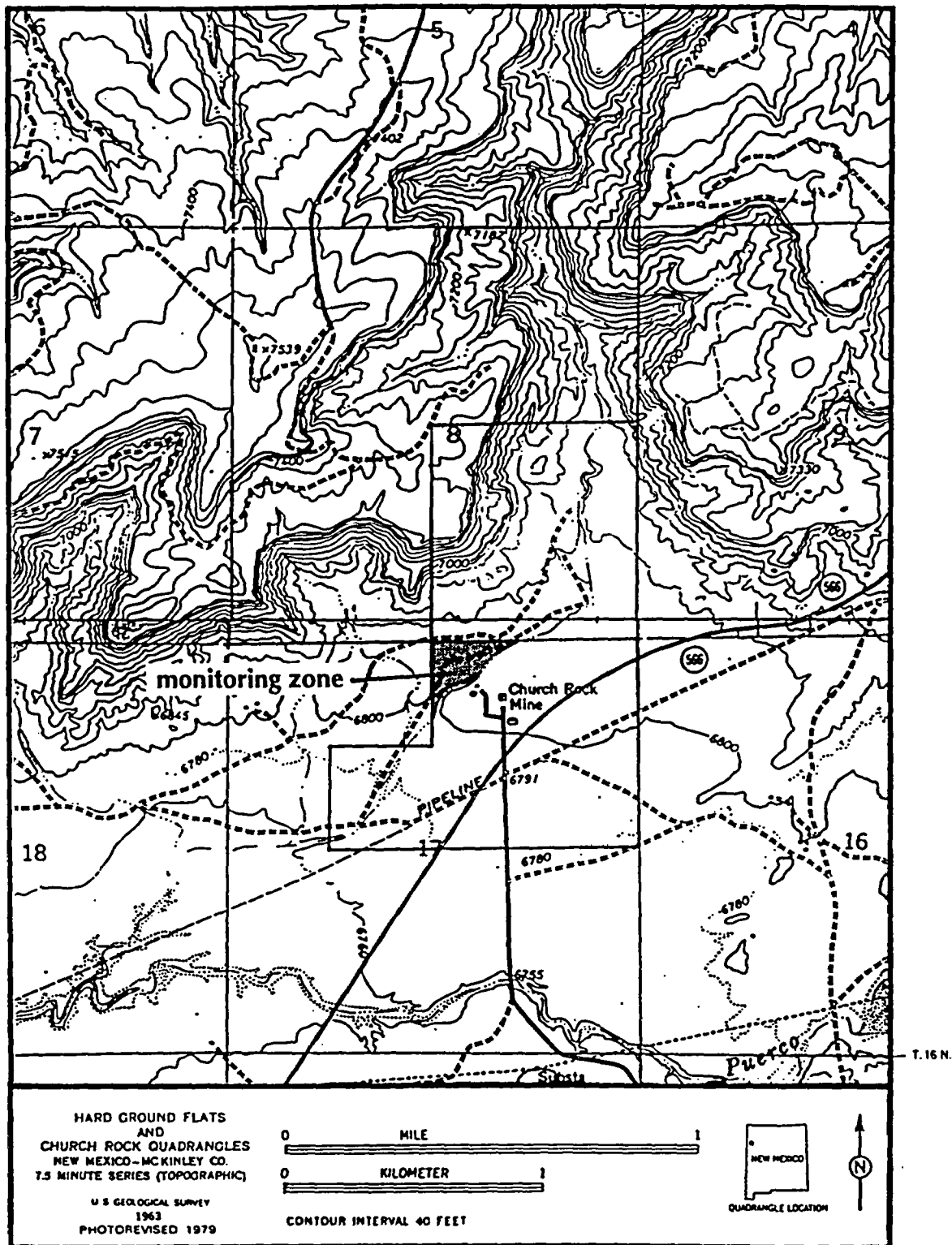


Figure 37. Proposed monitoring zone for construction activities within the Church Rock Site, Navajo Nation land.

Traditional Cultural Properties

Janet E. Spivey and Eric Blinman

The early Navajo use of Section 12 is unknown (Brooks n.d.), but around the turn of the century, Section 12 became the residence of the Kin Yaah Yazzie family. Later, Paul Yazzie owned the land, and then Ollie Charley. Brooks reports that Mr. Charley sold Section 12 to the Burnham trading post family, who subsequently sold it to the Mobile Oil Corporation.

Interviews concerning traditional cultural properties and the results of documentary research about traditional sites in the region are presented in detail in the Background for the Cultural Resources Inventory and Methods sections of this report. Substantive results regarding traditional uses of the Section 12 Crownpoint Irrigation Site are summarized in Table 75.

None of the chapter officials or traditional practitioners identified any traditional cultural properties within the private land of Section 12. However, the possible presence of burials is an issue within the section. Expressed concerns with the project as a whole related to general questions of safety, especially during the transport of mining products along the highways in the region.

Specific information on historic Navajo burials within Section 12 is provided by Brooks (n.d.) and Mr. Becenti. Brooks described Feature 24 (AS 12) within LA 70610 as a low mound, and her burial description form notes that juniper and piñon branches are loosely piled on the feature. The OAS survey could not detect a mound at the location, but the branch scatter was relocated. A thin layer of gray sediment has been washed down over the feature area from the Mobil Oil drilling-mud disposal area to the southeast. Brooks's unnamed consultants identified the feature as the burial site of Kinya'aani Yahzi, who died about 1910. Mr. Yahzi is said to have been a prosperous stockman who had political influence as a *na'taani nez*, or "peace chief." During a visit to Section 12 with OAS archaeologist Eric Blinman, Mr. Becenti was not able to identify the location of the burial, but he referred to stories of its presence in the vicinity.

Brooks also mentions Feature 12 (AS 8) as another possible burial site within LA 70610. Feature 12 is the remains of a rectangular stone house. Brooks speculates that the unfinished or incomplete appearance of the surviving masonry and the collapsed appearance of one wall segment may have resulted from intentional destruction over a burial within the house. During Mr. Becenti's visit to Section 12 and following and examination of the house, he concurred with Brooks's interpretation.

These possible burials were investigated as part of the OAS ethnohistoric research. The circumstances surrounding Feature 24 are contradictory. Traditional practitioners from Dalton Pass, Becenti, and Crownpoint stated in the OAS consultations that Kinya'aani Yahzi (Yazzie) died in 1936 or 1938 and was buried in a cemetery. Paul Yazzie, grandson of Kinya'aani Yazzie, stated in a February 1997 interview with Ben House that his grandfather was buried in the Crownpoint Cemetery. Paul Yazzie was 10 years old when his grandfather died in 1935. His grandfather had become very sick and may have died of pneumonia. Kinya'aani Yazzie lived about two miles southwest of Crownpoint at that time. The Public Health Service provided a wooden coffin, and Kinya'aani Yazzie was buried in the Crownpoint Cemetery.

Accounts of a burial in the stone house (Feature 12) are also contradictory. Traditional practitioners from the Becenti, Dalton Pass, and Crownpoint Chapters who were interviewed by

Table 75. Summary of Traditional Cultural Property Results, Crownpoint Irrigation Site, Section 12, Private Land

Consultant	Affiliation	Concerns
Ernest C. Becenti, Sr.	Church Rock Chapter; former chapter president; traditional practitioner	No known traditional uses; one or more historic burials are be present within LA 70610
Jean Mariano	Mariano Lake Chapter; traditional practitioner	No known traditional uses
Bennie Y. Begay	Pinedale Chapter; former chapter vice president; traditional practitioner	No known traditional uses
Jim Charley	Smith Lake Chapter; traditional practitioner	No known traditional uses
Tom Shorty	Becenti Chapter; traditional practitioner	No known traditional uses
Lincoln Perry	Crownpoint Chapter; traditional practitioner	No known traditional uses
William E. Raymond	Little Water Chapter; former chapter secretary; traditional practitioner	No known traditional uses
Charles Long	Crownpoint Chapter president	No known traditional uses
Confidential	Dalton Pass Chapter; traditional practitioner	No known traditional uses
George Tolth	Little Water Chapter; council delegate	No known traditional uses
Bennie Enrico ¹	Little Water Chapter president	No known traditional uses
Thomas Barbone ¹	Little Water Chapter vice president	No known traditional uses
Ken Tapaha	Little Water Chapter manager	No known traditional uses
Henry Tom ¹	Mariano Lake Chapter president	No known traditional uses
Harry Hubbard ¹	Becenti Chapter president	No known traditional uses
Harrison Morgan	Dalton Pass Chapter president	No known traditional uses

¹Defers to the traditional practitioners who have been consulted.

Table 76. National Register Eligibility Summary, Crownpoint Irrigation Site, Section 12,
Private Land

Site Number	Description	Eligibility recommendation	Comments
LA 70610	Historic Navajo residences and livestock features, ranging in age from the turn-of-the-century through the 1950s; two possible burial locations	Eligible, criterion d	Substantial site; excellent condition
LA 116122	Anasazi, Pueblo II small habitation site	Eligible, criterion d	Small site; some erosion but otherwise in good condition
LA 116123	Anasazi, Basketmaker III or Early Pueblo I habitation site	Eligible, criterion d	Moderate-sized site; portions of the site surface have been affected by mechanical scraping but subsurface deposits remain intact; subsurface materials may be present outside of the site area to the east
LA 116124	Anasazi, Pueblo I temporary camp or limited activity site	Eligible, criterion d	Small site; subsurface deposits are substantially intact
LA 116125	Anasazi, Pueblo II seasonal residence or field station	Eligible, criterion d	Small site; some livestock damage and erosion but otherwise in good condition
LA 116126	Anasazi, Basketmaker III or Early Pueblo I camp site	Eligible, criterion d	Small site; some surface erosion but in good condition
LA 116127	Anasazi, Late Pueblo I or Early Pueblo II camp site	Eligible, criterion d	Small site; minor surface erosion and one bladed drainage ditch, but otherwise in good condition
LA 116128	Anasazi, Basketmaker III or Early Pueblo I habitation, Pueblo II limited activity	Eligible, criterion d	Moderate-sized site; good condition
LA 116129	Anasazi, Pueblo II artifact scatter	Potentially eligible	Small site; surface is bladed; presence of subsurface materials is unknown
LA 116130	Anasazi, Pueblo II field house	Eligible, criterion d	Small site; some surface erosion; structures and features in moderate condition

the OAS ethnohistorian stated that a neighbor had removed some of the stones and lumber for personal use and that this would not have happened if a death had occurred in the house. The neighbor's use of materials from the house may explain its unfinished appearance.

The various sources of information cannot confirm the presence of burials within the two features of LA 70610. However, there is insufficient reason to assume that they do not include burials, and they should be treated as if burials are present.

Facility Plans and Recommendations

No specific facility plans have been developed for the private land of Section 12, but the categorical uses have been identified as irrigation and drilling-mud disposal. Irrigation would entail construction of buried pipelines, water-spreading devices, and access and maintenance roads. Drilling-mud disposal would entail access roads and a broad area for spreading the mud. Irrigation is intended to spread water at rates that do not generate runoff or erosion, and the risk of ground disturbance is small outside the immediate area of the irrigation device. Roads, pipelines, sprinkler systems, and spreading areas will entail ground disturbance within delimited areas.

Cultural resources within the section consist of 72 IOs and 10 archaeological sites. Two possible historic Navajo burial locations are the only traditional cultural properties within the section, and they are within one of the archaeological sites. We believe that survey level description exhausts the majority of the information potential of all but possibly one of the IOs. The possible exception is IO 36, the building stone quarry. The quarry is an isolated feature, and no artifacts are associated with it, but it may provide a unique record of activity associated with the historic Navajo use of the section.

Nine of the ten archaeological sites are eligible for inclusion in the *National Register of Historic Places* on the basis of their potential to contribute information to our understanding of regional or local history or prehistory (Table 76). These eligible sites include the only traditional cultural properties that would be eligible for inclusion in the *National Register*. One site, LA 116129, is potentially eligible. The site surface has been bladed, apparently as a result of past drilling-mud disposal activity, but intact subsurface deposits may be present. IO 36, the historic building stone quarry, is potentially eligible for inclusion in the *National Register*, but more detailed recording would exhaust its information potential.

We recommend that all of the archaeological sites be avoided during the planning and construction of irrigation and drilling-mud disposal facilities. If avoidance is not possible, testing may be required to determine the eligibility of LA 116129, and data recovery plans would have to be prepared and executed for the other sites within the section. IO 34 is in a geomorphic location that is not suitable for any of the currently identified uses of Section 12. However, if proposed facility construction includes this location, we recommend that additional descriptions of this IO be completed. All testing and data recovery will require compliance with the provisions of NAGPRA and state laws and regulations concerning the treatment of cultural properties and human remains.

Although we have confidence in the site boundaries as defined by the OAS survey, there is the potential for undetected subsurface cultural resources outside of these boundaries. We recommend that any ground-disturbing activities with Section 12 be monitored by a qualified archaeologist in the vicinities of the archaeological sites. This monitoring zone is defined by proximity to known

archaeological sites (both within Section 12 and within adjacent sections) and by local geomorphic settings within which archaeological sites might be expected (Fig. 49). Considerable areas of Section 12 are free of eligible cultural resources (also indicated in Fig. 49), and we recommend that these areas be given first consideration during facility planning and design. We also recommend that the irrigation facility be monitored annually by a qualified archaeologist to determine whether unanticipated erosion poses any threat to eligible cultural resources outside of the developed irrigation facility.

In addition to monitoring, protective measures should be taken prior to the start of facility construction. Regardless of specific construction plans, protective fencing (hog wire topped with barbed wire) should be installed at the boundary of LA 70610. This historic Navajo site is in excellent condition. It includes two possible burial locations, and it would be susceptible to indirect impacts once the section was opened to regular access by construction and maintenance personnel. If construction or facility development approaches within 100 feet of any of the other archaeological sites, we recommend that protective fences be placed at or outside of site boundaries. Protective fencing should remain in place through the construction, operation, and restoration phases of mine operations within the section.

The construction and operation of irrigation and drilling-mud disposal facilities within Section 12 poses a risk of indirect impacts to cultural resources. In addition to the fencing of LA 70610, all construction and mining personnel will be given formal orientations concerning the protection of cultural resources within Section 12. These orientations will include a review of federal and state laws and regulations and HRI policy regarding the protection of cultural resources. HRI policy will include prohibition of collection, excavation, and defacement of cultural resources, as well as a prohibition of non-work-related access to adjacent lands. Employees, contractors, and visitors violating the policy of nondisturbance and noncollection will be disciplined.

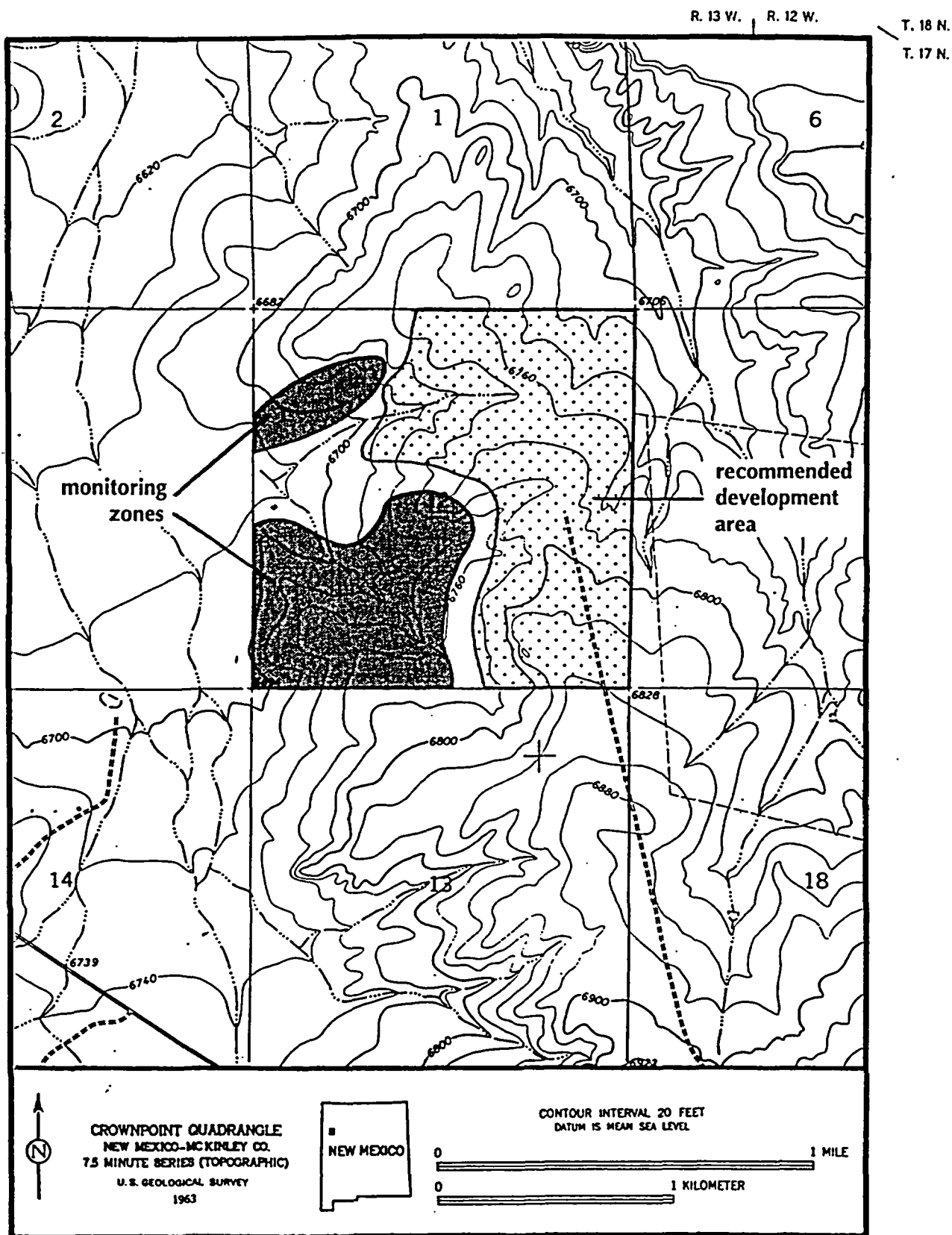


Figure 49. Potential development areas within Section 12.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The Nuclear Regulatory Commission has called for cultural resources inventories of mining and support facilities that are included in HRI's first five-year development plan. These facilities include the Church Rock Site, the location of a proposed well field and satellite processing facility; and the Crownpoint Irrigation Site (Section 12), the location of water-spreading and drilling-mud disposal facilities. Inventory at the Church Rock Site included archaeological survey of approximately 173 acres of private land, 335 acres of BLM land, and 200 acres of Navajo Nation land. All of the Church Rock Site was included in the OAS survey, although some portions had been exempted due to recent prior survey. Inventory at the Crownpoint Irrigation Site included archaeological survey of approximately 640 acres of private land. Both development sites were the subject of ethnohistoric research to identify any traditional cultural properties within the proposed development areas.

The Church Rock Site

The archaeological inventory at the Church Rock Site encountered 14 previously recorded and 18 newly recorded sites. One site that had been previously recorded within the Church Rock Site was found to be mislocated, lying outside of the project area to the east. Twelve sites are on private land, twenty sites are on BLM land, and no sites are on Navajo Nation land. A single Late Archaic component was identified, and two sites include petroglyphs of unknown prehistoric affiliation. Most sites (23 of 32) have Anasazi components, and most of these (18 of 22) have Middle or Late Pueblo II components. Only five early Anasazi components (Basketmaker III or Early Pueblo I) were detected, although the relocated site just outside of the Church Rock Site also dates to this period. Only one Early Pueblo II component was identified, but others may be masked by the later Pueblo II components at some of the more substantial Anasazi sites. Navajo components are present at 14 of the 32 sites, and four historic components are probably related to Navajo occupation of the area. Six of the Navajo components are Gobernador phase occupations, and the remainder range from the turn of the century through the 1990s.

No traditional cultural properties were identified within the Church Rock Site by chapter officials, traditional practitioners, or local residents. A modern Navajo burial plot is present on BLM land within the project area, but according to BLM policies, its management falls within the context of land-use regulations rather than traditional cultural properties.

Private Land Cultural Resources

Well field and satellite processing facilities are planned for the private land portion of the Church Rock Site. The proposed construction zone overlaps with 11 of the 12 sites, all of which are eligible for inclusion in the *National Register of Historic Places* based on their potential contributions to knowledge of local and regional history and prehistory. We recommend avoidance of these cultural resources, with the installation of protective fencing whenever construction plans call for ground disturbance within 100 feet of site boundaries. If avoidance of cultural resources is not possible, data recovery plans will be developed and implemented, consistent with the requirements of NAGPRA and state laws and regulations that cover the treatment of cultural resources and human remains. Because of the possibility of undetected subsurface cultural resources in some portions of the construction zone (see Fig. 16), ground-disturbing activities within those portions will be monitored by a qualified archaeologist.

BLM Land Cultural Resources

No specific construction plans have been proposed for the BLM portion of the Church Rock Site, and the cultural resources information is intended for use in planning future development. Of the 20 archaeological sites that were identified on BLM land, three are historic and not eligible for inclusion in *National Register of Historic Places*. Five sites are potentially eligible, and 12 sites are eligible for inclusion. The potentially eligible and eligible cultural resources should be avoided during the development of future mining facilities. The modern Navajo burial plot also should be avoided. Protective barriers should be installed if any proposed construction features are placed within 100 feet of eligible or potentially eligible cultural resources. If any of these resources cannot be avoided, potentially eligible sites will require limited testing and reevaluation, while data recovery plans will be prepared and executed for any of the eligible resources. All testing and data recovery will be carried out in compliance with NAGPRA and federal laws, regulations, and policies concerning the treatment of cultural resources and human remains. Because of the possibility of undetected subsurface cultural resources in some portions of BLM land (see Fig. 36), ground-disturbing activities within those portions should be monitored by a qualified archaeologist.

Navajo Nation Cultural Resources

Well field construction is planned for Navajo Nation land within the Church Rock Site. No cultural resources that are eligible for the *National Register of Historic Places* are present within the proposed construction zone. There are eligible cultural resources adjacent to some portions of Navajo Nation land, and because of the possibility of undetected cultural resources in those areas, construction activities within those portions (see Fig. 37) should be monitored by a qualified archaeologist. If any cultural resources are discovered during monitoring, they will be treated in compliance with NAGPRA, federal laws and regulations, and Navajo Nation regulations and policies concerning the treatment of cultural resources and human remains.

Crownpoint Irrigation Site, Section 12

The archaeological inventory of the private land of Section 12 encountered six previously recorded and four newly identified cultural resources. No resources date before the Anasazi period, and most sites (9 of 10) have Anasazi components. Of these, Basketmaker III or Early Pueblo I components are present at four sites, there is one Late Pueblo I component, and Pueblo II components are present at five sites. One site has an extensive historic Navajo component, with elements dating from the turn of the century through the 1950s. The surface of one site has been affected by mechanical disturbance, and its eligibility for inclusion in the *National Register of Historic Places* is uncertain since we do not know whether subsurface cultural deposits are present and intact. All of the other sites are eligible for inclusion based on their potential to contribute information to the understanding of local and regional history and prehistory.

No traditional cultural properties were identified within Section 12 by chapter officials, traditional practitioners, or local residents. Two historic Navajo burials may be present within the section, but accounts are somewhat contradictory. If the burials are present, they are within the boundaries of the large Navajo site, and their locations will be protected in that context.

No specific construction plans have been proposed for Section 12, but the intended use of this area is for the spreading of drilling mud and for irrigation with reclaimed water. Application rates

for irrigation water are intended to be below the volume that would cause a significant threat of erosion outside of the area of application. The cultural resources information is intended for use in planning project developments. We recommend avoidance of the cultural resources during development planning. Eligible resources are absent in large areas of the section (see Fig. 49), and these areas are recommended as preferred development locations. If avoidance is not possible, testing of the one potentially eligible site would be required, and data recovery plans and treatments will be required for all eligible sites, consistent with the requirements of NAGPRA and state laws and regulations that cover the treatment of cultural resources and human remains. Because of the possibility of undetected subsurface cultural resources in some portions of the section (see Fig. 49), ground-disturbing activities within those portions should be monitored by a qualified archaeologist. Protective fencing is recommended for the large Navajo site (LA 70610) to minimize the risk of inadvertent direct or indirect impacts. Protective fencing will be installed around the other eligible sites if facility construction is planned within 100 feet of their boundaries. In addition, annual monitoring is recommended to evaluate whether unanticipated erosion from the irrigation facility poses a risk to the integrity of any eligible cultural resources.

Indirect Impacts

Construction and mining operations pose a risk of indirect impacts to cultural resources within and adjacent to both the Church Rock and Crownpoint Sites. All on-site construction and mining personnel will be given formal orientations concerning the protection of cultural resources. These orientations will include a review of federal, state, and Navajo tribal laws and regulations regarding the protection of cultural resources. HRI policy will include prohibition of collection, excavation, and defacement of cultural resources, as well as a prohibition of non-work-related access to adjacent lands within the development sites. Employees, contractors, and visitors violating the policy of nondisturbance and noncollection will be disciplined.

EXHIBIT B

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
E. Roy Hawken, Presiding Officer
Richard F. Cole, Special Assistant
Robin Brett, Special Assistant

In the Matter of:

HYDRO RESOURCES, INC.
P.O. Box 777
Crownpoint, New Mexico 87313

Docket No. 40-8968-ML
ASLBP No. 95-706-01-ML

DECLARATION OF LORRAINE HEARTFIELD
(EXHIBIT B)

I, Lorraine Heartfield, do hereby swear that the following is true to the best of my knowledge. I am qualified and competent to give this Declaration, and the factual statements herein are true and correct to the best of my knowledge, information and belief. The opinions expressed herein are based on my best professional judgment and experience.

Name and Purpose of Declaration

1. My name is Lorraine Heartfield. My mailing address is 18 Cibola Circle, Santa Fe, New Mexico, 87505. I am submitting this declaration on behalf of Hydro Resources, Inc., in regard to the licensing of Hydro Resources, Inc.'s (HRI's) Crownpoint Uranium Project (CUP). Specifically, I am testifying on whether the Nuclear Regulatory Commission (NRC) complied with applicable federal cultural resources laws and regulations in their granting of a materials license for the CUP.

Professional Qualifications

2. My qualifications are detailed in my curriculum vita. A copy is attached as Attachment A. I hold a B. S. in Biology with a minor in chemistry from Lamar State College of Technology (now University), an M.A. in Anthropology from the University of Texas at Austin and a Ph.D. in Anthropology from Washington State University.
3. I have been involved in cultural resources projects for more than thirty years and have conducted projects for Federal agencies, private clients working with Federal agency contracts and with private companies. Although primarily a cultural resources and environmental regulatory specialist, I have had extensive prehistoric and historic archeological field experience. As a cultural resources regulatory specialist, I work with private companies to implement large construction projects while guiding them through the regulatory process to:
 - a. Insure, maintain, or regain regulatory compliance
 - b. Resolve compliance issues, particularly delayed or interrupted projects
 - c. Represent the client to Federal, state, and local agencies
 - d. Turnkey project management from initial stages of project planning through completion.
4. Project planning and management experience includes:
 - a. Identification of regulatory issues, time and cost constraints and design for implementation.
 - b. Memoranda of Agreement and other regulatory documents
 - c. Native American issues and coordination
 - d. Selection of subcontractors, subcontractor oversight, and quality control
 - e. Continuous regulatory oversight
 - f. Direct management of field operations and report preparation.
5. My experience includes a broad array of both linear projects and on-site facilities. Selected examples of linear projects are oil & gas and coal slurry pipelines, highways, and fiber optic systems. On-site plant facilities include lignite and uranium projects, and a strategic petroleum preserve.

Preparation for this Affidavit

6. In preparation for this affidavit, I reviewed:

CULTURAL RESOURCES INVENTORY OF THE PROPOSED URANIUM SOLUTION EXTRACTION AND MONITORING FACILITIES AT THE CHURCH ROCK SITE AND OF PROPOSED SURFACE IRRIGATION FACILITIES NORTH OF THE CROWNPOINT SITE, MCKINLEY COUNTY, NEW MEXICO, Eric Blinman and others for the Museum of New Mexico, Office of Archaeological Studies.1997.

EASTERN NAVAJO DINE AGAINST URANIUM MINING'S AND SOUTHWEST RESEARCH AND INFORMATION CENTER'S BRIEF IN OPPOSITION TO HYDRO RESOURCES, INC.'S APPLICATION FOR A MATERIAL LISCENSE WITH RESPECT TO: COMPLIANCE WITH THE NATIONAL HISTORIC PRESERVATION ACT, NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT AND RELATED CULTURAL RESOURCES ISSUES. December 7, 1998.

HRI'S RESPONSE TO EASTERN NAVAJO DINE AGAINST URANIUM MINING'S AND SOUTHWEST RESEARCH AND INFORMATION CENTER'S DECEMBER 7, 1998 BRIEF IN OPPOSITION TO HRI'S APPLICATION FOR A MATERIALS LICENSE WITH RESPECT TO COMPLIANCE WITH THE NATIONAL HISTORIC PRESERVATION ACT, NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT AND RELATED CULTURAL RESOURCE ISSUES, January 11, 1999.

PARTIAL INITIAL DECISION (Issues Related to the National Historic Preservation Act (NHPA) and the Native American Graves Protection and Repatriation Act (NAGPRA) and Cultural Resources). February 19, 1999.

INTERVENORS GRACE SAM'S, MARILYN MORRIS', EASTERN NAVAJO DINE AGAINST URANIUM MINING'S, SOUTHWEST RESEARCH AND INFORMATION CENTER'S WRITTEN PRESENTATION IN OPPOSITION TO HYDRO RESOURCES, INC.'S APPLICATION FOR A MATERIAL LICENSE WITH RESPECT TO: CULTURAL RESOURCES ISSUES. April 28, 2005.

I also reviewed pertinent attachments to that document and will comment on:

HRI Materials License (ACN 980116066, NB 11),

DECLARATION OF THOMAS F. KING

DECLARATION OF THOMAS MORRIS, JR.

36 CFR Part 800: PROTECTION OF HISTORIC AND CULTURAL PROPERTIES, as amended in 1992

36 CFR Part 800: PROTECTION OF HISTORIC PROPERTIES, final rule June, 1999

36 CFR Part 800: PROTECTION OF HISTORIC PROPERTIES final rule published Dec. 12, 2000

36 CFR Part 800: PROTECTION OF HISTORIC PROPERTIES final rule adopted January 11, 2001

36 CFR Part 800: PROTECTION OF HISTORIC PROPERTIES, incorporating amendments effective August 5, 2004

Synopsis of the Intervenor's Arguments and Judges Decision 1998 -1999

7. While acknowledging in the December, 1998 brief that HRI was granted a license for the CUP, (i.e., in-situ leach uranium mining in Sections 8 and 17 in Church Rock and Unit 1 and Crownpoint in the area of the Crownpoint community) the Intervenor's argued that the license should be revoked. They contended that "phased compliance" violates Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, and that the Final Environmental Impact Statement (FEIS) failed to adequately address the impacts of the project on cultural resources.

8. The Intervenor's based their arguments on the NHPA (36 CFR Part 800), as amended in 1992, the National Environmental Policy Act (NEPA) (40 CFR § 1500-1508), and the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. § 3001.

9. On February 19, 1999, Administrative Judges Peter B. Bloch and Thomas D. Murphy issued the PARTIAL INITIAL DECISION denying the relief requested. In this document the judges concluded that the law permits phased compliance. They commented on the adequacy of the FEIS and noted that License Condition 9.12 provides for continuing compliance with the Section 106 process. The judges determined that the Section 106 process was complete for Section 8 and supported the State Historic Preservation Officer's (SHPO's) and Navajo Tribal Historic Preservation Officer's (THPO's) determination that no traditional cultural properties were identified at or near Sections 8, 17 and 12. The judges stated that the NAGPRA is not applicable to the Intervenor's case.

Synopsis of the Intervenor's Arguments 2005

10. Despite the judges' ruling of 1999 denying the Intervenor's relief on the issues raised in their 1998 brief, the brief filed on April 28, 2005 is based on the same issues raised in the 1998 document. Furthermore, the issue of "phased compliance" within Section 106 and NEPA as addressed by the Intervenor's in 1998 and 2005 are issues of process not of substance. The Intervenor's arguments in 2005 for Section 17, Unit 1 and Crownpoint are based on the same process that was addressed in the PARTIAL INITIAL DECISION in 1999 for Section 8. The issues are the same and the propriety of the process has already been addressed.

11. The Intervenor's contend that HRI's material license should be revoked or amended with respect to Section 17, Unit 1 and Crownpoint because: (1) The license fails to comply with 36 CFR Part 800, Section 106 of the NHPA and (2) the FEIS fails to address cultural resources as required by the NEPA.

12. Intervenor's claim that a phased approach to NHPA Section 106 compliance is invalid even though the judges clearly ruled against them on that claim in 1999.

13. The Intervenor argue that because the phased approach was invalid at the time the license was issued, 36 CFR Part 800, as amended in 2000 and adopted in 2001, should apply. Based on that premise Intervenor claim that phased investigations for Section 17, Unit 1 and Crownpoint are inappropriate. The Intervenor assert that because the revised regulations of 2001 provide additional guidance on the subject of phased compliance not available to the judges in 1999, the traditional cultural properties studies completed in 1997 are also inadequate.

14. Intervenor imply that the license as granted exempts HRI from further compliance with NHPA Section 106 claiming that the FEIS and Section 9.12 of the license provide inadequate safeguards.

15. In support of their arguments the declarations of Thomas F. King and Thomas Morris are attached.

16. Fifty-one issues are discussed in the King declaration. Most pertain to three broad issues: 1) The cultural resources investigations completed before the license was granted are inadequate. 2) Phased investigations as implemented are inappropriate. 3) The identifications of traditional cultural properties are limited in scope and inadequate. These issues are based in part on his opinion that not only should the June 1999 revisions to 36 CFR Part 800 be applied retroactively to the cultural resources investigations ruled upon in the Partial Initial Decision by Judge Bloch in February, 1999, but also, by extension, the final regulations adopted in 2001 and the latest changes to 36 CFR § 800 in 2004, should be applied retroactively.

17. Thomas Morris, Jr. comments on the inadequacy of the traditional cultural properties inventory. In particular he finds Earnest Biscenti's report "disturbing" and implies that Mr. Biscenti does not respect all sacred sites. He makes statements about varying opinions among Navajo citizens pertaining to uranium mining and the effects, risks, and dangers to the Navajo way of life resulting from uranium mining.

Response to the Intervenor's Arguments 1998-2005

18. The judges' decision of 1999 denying the relief sought by the Intervenor:

- a) Resolved the issue of phased compliance stating that it is allowed by law,
- b) Accepted the determination that no traditional cultural properties were identified in Sections 8, 17, and 12,
- c) Declared that the section 106 process is complete for Church Rock Section 8, and
- d) Confirmed that the phased approach, the FEIS, and License Condition 9.12 provide adequate protection for subsequent phases of the CUP.

19. I conclude: (1) the NHPA and NEPA have not been violated; (2) HRI's NRC license, as granted in January of 1998, is valid; and (3) the Intervenor's arguments as presented in April 28, 2005 are without merit.

20. Because the judges ruling was made in February of 1999, before the 1999 amendments to 36 CFR Part 800 were finalized in June, revisions to 36 CFR Part 800 adopted in 2001 do not apply to the ruling of no adverse effects for section 8 and the traditional cultural property determinations for Church Rock Sections 8, 17, Unit 1 and Crownpoint.

21. Of course, subsequent phases of the cultural resources investigations will be subject to 36 CFR Part 800, as amended on August 5, 2004.

Response to Thomas F. King

22. Dr. King makes a curious argument to support his contentions. He acknowledges that changes to 36 CFR § 800 in 1992 were not published until June of 1999, four months after the PARTIAL INITIAL DECISION of Judge Bloch on February 19, 1999. But nevertheless he asserts that the 1999 revisions should be applicable to the CUP. This is in erroneous. The PARTIAL INITIAL DECISION is a valid document and was decided prior to the effective date of 36 CFR Part 800's amendments. 36 CFR Part 800, *as amended in 1992*, is the only version applicable to all of the supporting cultural resources documentation ruled upon by Judge Bloch.

23. King further states that 36 CFR Part 800 (incorporating amendments effective August 5, 2004) differs in "some key ways from those in force" at the time of the Partial Initial Finding. This is true, but because the June 17, 1999 changes to 36 CFR § 800 that led to the rule of January 11, 2001 was not in effect at the time of the judges ruling, they are not applicable.

24. King remarks that the pre-1999 revised regulations left "phased compliance open to interpretation." This remark is important, because King acknowledges that the pre-1999 regulations provided for phased compliance; the Partial Initial Decision upholds the veracity of the phased approach. The 1999 changes to 36 CFR Part 800 as well as the final rule of 2001 were designed to clarify issues in the pre-1999 documentation and did so. Importantly, 36 CFR Part 800 (incorporating the amendments effective August 5, 2004) validates phased compliance.

25. Although Dr. King recognizes that 36 CFR Part 800 (incorporating amendments effective August 5, 2004) provides for phased identification and evaluation for corridors, large land areas, or where access to properties is restricted, he maintains that this is not applicable to the HRI project. This is a misstatement by Dr. King. 36 CFR § 800.4(b)(2) as adopted in 2001 and amended in 2004 could not be more clear. "Where alternatives under consideration consist of corridors or large land areas...the agency official may use a phased process to conduct identification and evaluation. 36 CFR § 800.4 (2) was

written explicitly for projects like HRI's CUP (i.e., those that encompass alternative parcels of extensive acreage). Phased investigations were appropriate for the project under 36 CFR Part 800, as amended in 1992 and ruled upon in the PARTIAL INITIAL DECISION in 1999, and are even more so under the 2004 regulations.

26. He asserts that deferment of evaluation can occur only if an MOA, programmatic agreement or NEPA documents have been developed in accordance with Section 800.8 . A programmatic agreement is necessary only if a determination of adverse effects has been made (36 CFR § 800.6(a, 1, i, C)). An MOA is called for if the agency official and the SHPO/THPO agree on how the adverse effect will be resolved (36 CFR § 800.6 (b, 1, iv). With respect to "NEPA documents developed in accordance with Section 800.8", the FEIS for the CUP is just such a document.

27. Finally, the Advisory Council on Historic Preservation published its final rule in the Federal Register Vol. 65, No. 239 on December 12, 2000. In this document changes in the final rule are discussed. Referring to Section 800.4 (b), "[p]hased identification acknowledges the reality of large projects. A programmatic agreement may be an alternative, but this provision expands the flexibility of the rule." Referring to Section 800.6 (b) it says that "The rule does not require or compel execution of an MOA" but section 110(1) of the NHPA endorses the MOA consultation concept.

Response to Thomas Morris, Jr.

28. Mr. Morris did not review CULTURAL RESOURCES INVENTORY OF THE PROPOSED URANIUM SOLUTION EXTRACTION AND MONITORING FACILITIES AT THE CHURCH ROCK SITE AND OF PROPOSED SURFACE IRRIGATION FACILITIES NORTH OF THE CROWNPOINT SITE, MCKINLEY COUNTY, NEW MEXICO. Dr. Eric Blinman and others for the Museum of New Mexico, Office of Archaeological Studies.1997. By not acknowledging the Ethnohistory and Traditional Cultural Properties study prepared by Janet E. Spivey included in that document, Mr. Morris ignored: the scope of the effort made to identify Traditional Cultural Properties, interviews with local traditional practitioners, and interviews with Navajo citizens to determine their views and concerns about uranium mining.

Concluding Summary

29. It is my professional judgment regarding to the HRI In Situ Leach Uranium Project at Crownpoint, New Mexico that:

- a. The Intervenor's arguments of 2005 are arguments about process and not substance and are the same arguments made about process in 1998 and ruled upon in THE PARTIAL DECISION of 1999;
- b. The license issued by the NRC is valid;

- c. The determinations made by the New Mexico SHPO and the Navajo THPO on archeological and traditional cultural properties are valid;
- d. Phased investigations are appropriate for cultural resources issues;
- e. The NRC is in compliance with both the Section 106 process of the NHPA and the NEPA; and
- f. Adequate safeguards are in place to provide cultural resources compliance throughout the development, implementation, and operation of HRI's CUP.

Conclusion of the Declaration

30. I have read the declarations of Eric Blinman and Leslie E. Wildesen and agree with the contents.

31. This concludes my declaration. Pursuant to U.S.C. 1746, I declare under penalty of perjury, that the forgoing is true and correct to the best of my knowledge and belief.

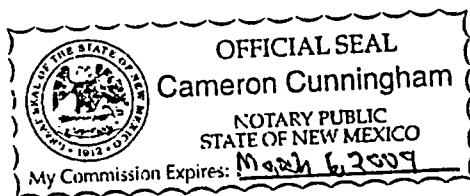
I declare on this 7th day of June, 2005, at Santa Fe, New Mexico, under penalty of perjury that the foregoing is true and correct.

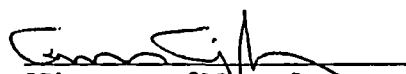

Lorraine Heartfield, Ph.D

ACKNOWLEDGMENT

SUBSCRIBED and SWORN TO before me, the undersigned authority, on June 7, 2005 by Lorraine Heartfield.

[Seal]




[Signature of Notary]

Cameron Cunningham
Printed/typed name of Notary

Notary public for the State of New Mexico. My commission expires _____, 200__.

ATTACHMENT A

**Lorraine Heartfield
18 Cibola Circle
Santa Fe, New Mexico
87505
505-982-7418
lheartfield@yahoo.com**

Education

**Ph. D. Anthropology, Washington State University, Pullman,
Washington.**

**M.A. University of Texas at Austin, Anthropology, minor
Environmental Sciences**

B.S. Lamar State College of Technology, Biology, minor Chemistry

Professional Skills

**Environmental and Cultural Resources Management: compliance,
agency interface, planning, permitting and field implementation.**

**Identification of regulatory issues, time and cost constraints and design
for implementation Memoranda of Agreement**

Native American issues and coordination.

Selection of sub-contractors.

Provide subcontractor oversight and quality control.

Continuous regulatory oversight

Direct management of field operations and report preparation.

Selected Professional Experience

- 2002-2004 Human Systems Research Inc. Las Cruces, New Mexico Project
Director, Historic Archeological Sites for the Valley Fiber Optic
Project in southwestern New Mexico.**
- 2001-2002 William Self and Associates Orinda, CA. Cultural Resources
Specialist, High Desert Power Plant Project, Victorville, CA.
Addressed regulatory issues, conducted environmental trainings
and excavated two prehistoric archeological sites. Prepared report
on soils, stratigraphy and geologic setting for the archeological
report.**
- 1999-2000. BHE, Inc. Implemented cultural resources and environmental
program for construction of the "city build" portions of the Level
3 Fiber Optics project in San Francisco, San Jose, Los Angeles and**

suburbs and San Diego CA. for Fluor Global Services. Identified status of project and needs and prepared cost estimates, wrote RFP's and aided in selection of subcontractors for cultural resources, environmental and Native American portions of the project. Continued with oversight and management of project during construction.

- 1996-1999** **Hydro Resources Inc., Dallas and Albuquerque. Managed the cultural resources for the proposed in-situ leachfield mine project Crown Point/Church Rock, New Mexico, Selected contractor to perform archeological and ethnographic field work, oversight of field, analysis and report preparation. Managed cultural resources regulatory and management issues with both Federal and State agencies; most particularly Nuclear Regulatory Commission, Bureau of Land management, All Pueblo Council and potentially affected Native American Tribes and Organizations.**
- 1996-2001** **Santa Fe National Forest, Special Use Permit Heritage Resources Survey and Site Inventory, New Mexico; Conducted three cultural resources surveys in the upper Pecos River Valley, New Mexico. These included 20th century historic components associated with early farming efforts, mining and recreational cabin use.**
- 1994-1999** **William Self and Associates, Orinda, CA. Managed Cultural Resources program for the Santa Fe Pacific Pipeline; Concord to Colton Project. The proposed project line extended from Fresno to San Bernardino. Managed all cultural resources phases of the project including coordination of studies and field investigations and coordination Federal and State agencies, Bechtel Corporation and Santa Fe Pacific. I prepared most of the background study and then was in the field coordinating and participating in the field survey on a daily basis. Most of the sites found were historic, many associated with early agricultural, railroad and highway construction in Central California.**
- 1992-1993** **Bechtel Corp., San Francisco, CA and Bend, Oregon. Cultural Resources Supervisor of PGT- PG&E Pipeline Expansion Project. Joined project after construction underway, shut downs by FERC in response to cultural resources problems threatened continuation of project. Immediate task was to place construction on schedule and within compliance relative to cultural resources**

issues. Project Responsibilities: 1) Managed archeological and Native American subcontractors. 2) Managed construction monitoring program as part of Bechtel's compliance process. 3) Cost and budget responsibilities. 4) Interfaced with owner (PGT-PG&E) and Federal and State agencies including FERC, Advisory Council, BLM, NFS, SHPO for California, Idaho, Oregon and Washington.

- 1991-1993 President, B and H Environmental Services, Inc.
- 1987-1991 All American Pipeline Company, Cultural Resources Consultant. Managed two cultural resources projects: 1) managed contract for all cultural resources work conducted by the University of Texas at Austin on the Northern Alternative. 2) Directed curation of all archeological materials recovered from the Original Route, California to Midland, Texas; California, Arizona, New Mexico and Texas. Opened staffed and operated temporary laboratory facility in Austin, Texas to accomplish this task. "Hands on tasks" for the Northern Alternative included field oversight with Dr. Solveig Turpin of Texas Archeological Research Laboratory at the University of Texas at Austin. The materials that had been recovered along the Original Route had only been partially processed. I was, on a daily basis, overseeing and participating in the processing of the archeological materials and records recovered from the four states. I was responsible for making archival arrangements and delivering the materials to the proper repositories.
- 1986 Techstaff Inc for All American Pipeline Company; Environmental Consultant. Developed environmental compliance program for the All American Pipeline in Santa Barbara California. Monitored environmental compliance during construction. No cultural resources involvement.
- 1986 Heartfield Price and Greene, Inc. sold to Techstaff Inc., of Houston, Texas. Jan 3, 1986.
- 1978-1986 President, Heartfield Price and Greene, Inc. (HPG). Directed numerous environmental and cultural resources projects throughout the United States.
- 1985 HPG. Directed archeological assessment of the IBM Poughkeeps North 100 Location, Poughkeeps, NY for Envirosciences of New Jersey.

- 1985** HPG. Directed preparation of archeological overviews and management summaries for eight DARCOM military installations in Texas, Oklahoma, Arkansas and Tennessee for Woodward-Clyde Consultants and the National Park Service.
- 1979-1980** HPG. Directed preparation of a BLM Class I Cultural Resources study of the proposed ETSI Coal Slurry Pipeline: Gillette, Wyoming to Penton, Mississippi and Lake Charles, Louisiana. Proposed line crossed Wyoming, Colorado, Kansas, Oklahoma, Arkansas and Louisiana.
- 1979** HPG. Developed environmental program and verified permits and easements needed for proposed Pilot Knob Strategic Petroleum Reserve Project, Ironton, Missouri. Conducted with Techstaff, Inc. (Houston) for Fennix and Sisson (Tulsa).
- 1979-1985** HPG. Directed cultural resources project along the Ozark Pipeline System, Arkansas and Oklahoma. Texas Oil and Gas Corporation.
- 1976-early 1980's** Consultant for Gulf Interstate Engineering Company of Houston, Texas. Consulted with the firm about environmental responsibilities along a proposed gas pipeline route in Alaska, Washington and Oregon. Contacted environmental specialists and archeologists in the three states, solicited their aid in preparation of a draft environmental report and prepared written testimony.
- Continued with the project as manager for the cultural resources program for Northwest Alaskan Pipeline Company and Fluor Engineers and Consultants. Archeological field work was done by the University of Alaska Fairbanks. I had oversight responsibility through out these investigations with Federal and state compliance responsibilities. Accompanied Dr. Jean Aigner and her crews during survey tasks from the North Slope to south of Delta Junction, Alaska.
- 1974-1986** NLU and HPG. Directed cultural resources investigations for proposed lignite projects in Louisiana, Arkansas, Mississippi and Texas. Principal clients were Phillips Coal Company and SWEPCO. I conducted field surveys, excavation and testing. Studies emphasized land use and settlement patterns. Sites and

materials included prehistoric and historic. Among the historic components were French, Spanish and American to modern.

- 1974-1985** NLU and HPG. Directed cultural resources investigations along the proposed Louisiana North-South Expressway for Howard Needles Tammen and Bergendoff, Baton Rouge. The corridor extended through central Louisiana from Opelousas to Alexandria and west along the Red River. I managed this project but also conducted field surveys and testing and mitigation of threatened sites. These included prehistoric and historic sites. We augmented our historic investigations with extensive archival research and interviews with local inhabitants. Other archeological survey, testing and mitigation as well as extensive archival research followed for numerous projects in Louisiana, Mississippi and Texas.
- 1974-1978** Archeologist, Research Institute, Northeast Louisiana University, Monroe, Louisiana (NLU). Directed contract archeological research. As an example, for the first project in 1974 I was in the field for one year with one other archeologist conducting surveys along USDA Soil Conservation Survey drainages in nine watersheds in northeastern Louisiana. Both prehistoric and historic sites were located and materials analyzed in the context of changing settlement patterns.
- 1973-1974** Staff Archeologist for Gulf South Research Institute, Baton Rouge, Louisiana. Conducted archeological survey and excavations throughout Louisiana. Both prehistoric and historic sites were found, tested, and the materials analyzed and reports prepared. Historic materials included French, English, early American to modern.
- 1971-1973** Soils Technician, Washington State University, Pullman, Washington. Field collection of soil samples and laboratory preparation of samples. Principal areas of collection were Washington, Montana, Oregon and British Columbia, Canada.
- 1970** Research Assistant, Washington State University, Pullman, Washington. Archeological Excavation, Carriguela, Spain. Stratigraphic excavation of Paleolithic cave deposits. Approximately 3 months were spent in the field.

- 1968-1969** Registrar for the Arkansas Archeological Survey, Fayetteville, Arkansas. I was the first registrar and my task was to organize field records and collections from WPA surveys and excavations to those being implemented by the newly formed Survey Stations. This was a "hands-on job" and I processed both prehistoric and historic collections and records. I was field laboratory director for excavations at the Dumond Site, a prehistoric site in eastern Arkansas. For this task and with the help of two employees, I sorted and labeled the materials recovered.
- 1966-1967** Research Assistant, University of Texas at Austin. Archeological survey, testing and excavation in Southwestern Coahuila, Mexico and one short survey in Northern Coahuila, Mexico. Both Prehistoric and historic sites were investigated. Historic materials spanned Colonial to modern. The project spanned 12 months. Seven and one half months in the field and the remainder, one-quarter time. The data gathered comprised my Masters and Doctoral thesis and dissertation.
- 1966** Research Assistant, University of Texas at Austin. Laboratory analysis (identification) of a large faunal collection from a Central Texas prehistoric archeological site. Job duration, 15-20 hours a week for 3 months.

EXHIBIT C

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
E. Roy Hawken, Presiding Officer
Richard F. Cole, Special Assistant
Robin Brett, Special Assistant

In the Matter of:

HYDRO RESOURCES, INC.
P.O. Box 777
Crownpoint, New Mexico 87313

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DECLARATION OF LESLIE E. WILDESEN, PH.D.
(EXHIBIT C)

I, Leslie E. Wildesen, do hereby swear that the following is true to the best of my knowledge. I am qualified and competent to give this Declaration, and the factual statements herein are true and correct to the best of my knowledge, information, and belief. The opinions expressed herein are based on my best professional judgment and experience.

NAME AND PURPOSE OF DECLARATION

1. My name is Leslie E. Wildesen. My mailing address is 1970 NW Overton St., Portland, Oregon, 97209. I make the following statement based on my nearly 4 decades of experience in archaeology, cultural resources management, and environmental impact assessment. I am submitting this Declaration on behalf of Hydro Resources, Inc., in regard to the licensing of Hydro Resources, Inc.'s Crownpoint Uranium Project. Specifically, I am testifying on whether the Nuclear Regulatory Commission complied with applicable federal cultural resources laws and regulations in their granting of a materials license for the Crownpoint Uranium Project.
2. I currently serve as President of Environmental Training & Consulting International, Inc., an international environmental consulting firm headquartered in Portland,

Oregon. Our US clients are primarily federal agencies, their applicants and contractors. We hold several nationwide federal environmental services-related contracts, including a General Services Administration Federal Supply Services contract under classification 899-3 (Environmental Services).

PROFESSIONAL QUALIFICATIONS

3. I have a BA from Stanford University (1966), an MA from San Francisco State College (now University; 1970), and a Ph.D. from Washington State University (1973). During graduate school I served as a field worker, field foreman, and project director on archaeological projects in California, Nevada, and Washington. Since receiving my Ph.D. I have served as archaeological, cultural resources and/or environmental project leader, program director, educator and senior consultant in the following capacities:
4. Chief Archaeologist of the Archaeological Research Unit of the Dry Lands Research Institute, University of California (Riverside);
5. Regional Archaeologist, USDA – Forest Service, Pacific Northwest and Rocky Mountain Regions;
6. Staff member, US House of Representatives, Public Lands and National Parks Subcommittee of the House Interior Committee;
7. Deputy State Historic Preservation Officer and State Archaeologist, State of Colorado;
8. Special Assistant to the Deputy Assistant Director, Office of Surface Mining, Reclamation and Enforcement;
9. Principal, Environmental Training & Consulting International, Inc.
10. Since receiving my Ph.D. in 1973, my professional career has been devoted to assisting federal and state agencies, including their management, staff, applicants and contractors in complying with laws, regulations and Executive Orders on historic preservation, archaeology, and environmental impact assessment. These efforts have focused on the National Historic Preservation Act and the National Environmental Policy Act, and especially their integration. My work has been by nature hands-on, emphasizing practical, reasonable and cost-effective means of compliance with these laws, rather than academic or theoretical approaches.
11. I have worked as a staff specialist and/or a program manager inside the USDA – Forest Service (two different tours of duty); the Bureau of Land Management; the Office of Surface Mining, Reclamation and Enforcement; and the State of Colorado. I have served as an environmental consultant to the Bureau of Indian Affairs, the Smithsonian Institution, the Tennessee Valley Authority, the US Air Force, US Army, US Army Corps of Engineers, US Bureau of Land Management, US Bureau of Reclamation, US Coast Guard, US Department of Energy, US Environmental

Protection Agency, US Federal Aviation Administration, Federal Bureau of Prisons, US Fish and Wildlife Service, US General Services Administration, US Minerals Management Service, National Marine Fisheries Service, National Park Service, USDA-APHIS-Wildlife Services, and the State of North Carolina.

12. I have worked under every version of the 36 CFR Part 800 (NHPA) regulations from the first version in 1974 to the most recent version as revised in 2004, and both the 1978 and 1986 versions of the 40 CFR §§ 1501-1508 (NEPA) regulations.
13. I have received numerous awards and appointments based on others' assessment of my expertise:
14. Congressional Fellowship, American Anthropological Association (the first archaeologist recipient)
15. Three consecutive appointments by President Ronald Reagan to the Cultural Property Advisory Committee, which advises the Departments of State and Commerce on issues related to the international trafficking in antiquities under the United Nations Resolution prohibiting same
16. Appointment by two Secretaries of the Interior (Bruce Babbitt and Gale Norton) to the Colorado Front Range Resource Advisory Council, which advises the Bureau of Land Management on issues relating to management of the public lands
17. Appointment by two Governors (Victor Atiyeh of Oregon and Bill Owens of Colorado) to their respective State Historic Preservation Review Boards, which review nominations to the National Register of Historic Places and advise State Historic Preservation Offices on programs and policies
18. Listing in 6 different versions of "*Who's Who*," including the *International Who's Who of Professional and Business Women* and *Who's Who in Science and Engineering*
19. I have also been elected or appointed to numerous offices and committees in various professional societies, including:
20. Society for California Archaeology (committee chairs, Annual Conference Chair)
21. Society for American Archaeology (committee member and chairs, Secretary)
22. Association of Oregon Archaeologists (President)
23. Historic Preservation League of Oregon (committee chair, Vice-President)
24. National Association of Environmental Professionals (NEPA Training Committee Chair)
25. I have over 150 published papers and presentations on topics ranging from new technology for archaeological site investigations to international environmental

sustainability frameworks, prepared for archaeologists, anthropologists, historic preservationists, lawyers, planners, environmental specialists, line managers and politicians.

26. I have worked on project types including timber management, water development, nuclear power plants, recreation planning, oil and gas development, electrical transmission lines, highway planning and construction, land exchanges. All of these projects required both compliance with the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA).
27. As Chief Archaeologist of the Archaeological Research Unit of the Dry Lands Research Institute, University of California (Riverside), I was responsible for conducting archaeological projects in support of various private and public sector university clients, to help them meet their compliance requirements under NHPA, NEPA, and the California Environmental Quality Act (CEQA). For example, I directed the archaeological portion of the environmental impact statement compliance work for the proposed Vidal Nuclear Power Plant on behalf of Southern California Edison and the Bureau of Land Management, and numerous smaller-scale projects for the California State Department of Transportation.
28. As Regional Archaeologist, USDA – Forest Service, Pacific Northwest and Rocky Mountain Regions, I was responsible for designing region-wide federal agency programs to comply with the NHPA, integrate such compliance with NEPA, and develop internal guidance and staff training programs to ensure all legal requirements were met.
29. In 1975, I prepared the first federal agency internal cultural resources management guidebook to provide a desk reference for Forest Service staff in the Pacific Northwest Region on how to comply with these requirements, and revised it for nationwide distribution in 1977. I also designed, developed and delivered the first federal agency integrated internal cultural resource management training program for Forest Service staff at three levels: field workers, coordinator level, and line officer management level, beginning in 1976.
30. When holding a similar position in the Rocky Mountain Region in the late 1980s, I was selected as one of the first 30 staff members nationwide to teach the Forest Service's internal NEPA training workshop, *Forest Plan Implementation Course 1900-1*. This week-long course was given at the Forest and District level service-wide.
31. As recipient of an American Anthropological Association Congressional Fellowship (the first archaeologist ever to do so), I served as a Staff member for the US House of Representatives, Public Lands and National Parks Subcommittee of the House Interior Committee. My responsibilities were to prepare briefings for Rep. John Seiberling (D-OH), Subcommittee Chairman, on the effect of various proposed legislation and budgets on Federal agencies for which the subcommittee had oversight, including the Bureau of Land Management and the National Park Service.

32. I worked on specific projects to analyze proposed legislation to protect paleontological resources on public lands and to preserve the Apollo 11 launch tower in place at Cape Canaveral, as well as the Presidential budget request for Interior and related agencies.
33. In 1984, I moved to Colorado to become Deputy State Historic Preservation Officer and State Archaeologist, State of Colorado. In this capacity I was responsible for the day to day activities of the Colorado State Historic Preservation Office, including federal agency NHPA compliance review, the Certified Local Government program, statewide data base development (the agency was computerized on my watch), and a statewide training program run in conjunction with the Colorado Archaeological Society. We also started the Centennial Farms program, to honor farms and ranches in Colorado that had been continuously owned and managed by pioneer families for 100 years or more.
34. As Special Assistant to the Deputy Assistant Director, Office of Surface Mining, Reclamation and Enforcement, I was responsible for assisting coal-producing states east of the Mississippi in their compliance with the National Historic Preservation Act for state-level programs assumed under the Surface Mining Control and Reclamation Act (SMCRA). Several states had been sued or were threatened with lawsuits under NHPA for failure to comply appropriately. I reviewed state programs, assisted in developing Memoranda of Agreement (and Programmatic MOAs) under NHPA, and conducted training for agency and state staff to improve their compliance performance.
35. As a Principal at Environmental Training & Consulting International, Inc., I have directed and served as principal author of EISs and EAs under NEPA, and designed, developed and delivered training programs for federal agencies, their applicants and contractors on NHPA, NEPA, and their integration.
36. Although several EISs on which I personally worked have been the subject of subsequent lawsuits, the portions for which I was responsible withstood attack successfully. An EIS for which ETCI, Inc. was prime contractor and for which I was personally responsible as project director and principal author was neither appealed or sued, in spite of the controversial topic and location (*Loveland Ski Areas Master Development Plan EIS, 1995, prepared for USDA-Forest Service*).
37. I am a principal designer of ETCI's nationally acclaimed NEPA-related training curriculum, which includes the following core courses: *Essentials for the NEPA Practitioner*; *EAs with FOCUS™*; *Assessing Cumulative Effects*; *Integrating NEPA and Section 106 of the National Historic Preservation Act*; *Positive Public Involvement*; and *Facilitating the NEPA Process*. The first two are available in a Distance Learning Format; all are offered only to client agencies in a custom-designed content format, developed in conjunction with agency subject-matter experts and training staff. ETCI does not conduct public workshops.

38. In addition, I am responsible for the design and development of numerous agency-specific NEPA workshops, intended to improve and maintain compliance with NEPA and its regulations and agency guidance. For example:
39. I currently train ETCI's cultural resource management workshop developed in conjunction with staff of the US Bureau of Reclamation. This 2-day course has been taught at least 35 times for Reclamation staff since 1994, at the Regional and Headquarters level. It is updated annually to account for revisions to the cultural resources regulations and Reclamation policy.
40. I also currently train ETCI's NEPA workshops developed for the Bureau of Land Management and the US Coast Guard under the terms of a nationwide GSA Federal Supply Service contract. These 3-day compliance workshops are custom designed with agency staff, and are given at BLM District and Field Offices and Coast Guard offices nationwide.
41. In addition, I train ETCI's NEPA workshop developed for the Hanford Site of the US Department of Energy. This course has been offered continuously since 1993, and so far has been revised 8 times to comport with the evolution of site-wide NEPA practice and changes in DOE policies and regulations.
42. I have worked with the Colorado Native American Heritage Council and several tribes in Oregon to develop and pass legislation protecting Native American burials in Colorado and Oregon, respectively.

PREPARATION FOR THIS AFFIDAVIT

43. In preparation for this affidavit, I have reviewed the Intervenor's written presentation in opposition to Hydro Resources, Inc.'s application for a material license with respect to cultural resources issues. I have also reviewed the new declarations by Thomas F. King and Thomas Morris, Jr. I have reviewed the Partial Initial Decision of Peter Bloch and Thomas D. Murphy, ASLBP No. 95-706-01-ML, issued on February 19, 1999. I have reviewed regulations implementing the National Historic Preservation Act, 36 CFR Part 800, which were in effect in 1992, in 1999, in 2000, and 2004. I have also reviewed the PowerPoint slides and notes from a briefing presented by the Advisory Council on Historic Preservation which I attended in Denver, Colorado in Spring, 2000, as they were rolling out the changes recently made to the 36 CFR Part 800 implementing regulations, and prior to their taking effect on May 18, 2000. I have reviewed the license # SUA-1508 issued by the Nuclear Regulatory Commission to Hydro Resources, Inc., including Section 9.12, the stipulation to protect as-yet-unidentified cultural resources.

RESPONSE TO INTERVENORS' 2005 ARGUMENTS

44. It is my professional opinion that Hydro Resources, Inc. has fulfilled its cultural resources responsibility to the Nuclear Regulatory Commission as of January 5, 1998, and also that the NRC is in compliance with Section 106 of NHPA and the requirements of the NEPA as of that date.

45. This means that if license SUA-1508 is still valid, no further work is necessary to comply with Section 106 of the NHPA or the NEPA in support of HRI's license application or NRC's issuance of the license. Stipulations contained in the license for the protection of cultural resources are, of course, still in effect and must be complied with during implementation of the authorized project under license SUA-1508.
46. Intervenor's raise several issues about compliance with Section 106 of the NHPA and with the NEPA. They suggest that because the regulations implementing Section 106 contained at 36 CFR Part 800 were revised in 2000 and again in 2004, the NRC and its licensee must redo the cultural resources work conducted and approved under the regulations in effect in 1998 and 1999 to comport with the requirements of the revised regulations. This is illogical on its face. When an agency has completed a Final EIS and signed a Record of Decision incorporating compliance with Section 106 (including concurrence by the appropriate State Historic Preservation Officer (SHPO)), the project may proceed. NRC proceeded to issue a source material license to HRI effective January 5, 1998, and included stipulations to ensure future protection for cultural resources as work progresses under the license.
47. Intervenor's suggest that Section 106 compliance failed because the Advisory Council on Historic Preservation (ACHP) was not consulted directly during the consultation process leading to the SHPO's concurrence that there would be "no adverse effect" on cultural resources in the project area. No such requirement exists either in the revised regulations or in the regulations in effect in 1998, for situations in which an agency and the appropriate SHPO agree no adverse effect will occur to cultural resources that meet the National Register of Historic Places criteria. The revised regulations explicitly state, "Unless the Council is reviewing the finding pursuant to paragraph (c)(3) of this section [which deals with *adverse* effect determinations], the agency official may proceed after the close of the 30 day review period if the SHPO/THPO has agreed with the finding or has not provided a response, and no consulting party has objected. The agency official shall then carry out the undertaking in accordance with paragraph (d)(1) of this section," which requires the agency to keep a record and provide information to the public on request, consistent with confidentiality requirements (36 CFR § 800.5 (c)(i)). Later in the regulations (36 CFR § 800.5 (d)(i)) the text explicitly states, "Implementation of the undertaking in accordance with the finding [of no adverse effect] as documented fulfills the agency official's responsibilities under section 106 and this part."
48. In fact, the Advisory Council's own slides prepared for their nationwide series of briefing sessions on the 2000 revisions to the 36 CFR Part 800 regulations includes the statement "Agreement between Agency and SHPO can now, in many cases, conclude process" (ACHP PowerPoint briefing, dated 11/3/99). Even in situations where adverse effect may exist, the Advisory Council may choose to, but does not have to, become involved under the new regulations. In fact the Council has not sought to become involved in such situations, either in 1998 or today.

49. Intervenor also suggest that if the license issued in 1998 should be determined to be invalid for some reason, that any new license must be predicated on a new EIS with new cultural resources work conducted under the new (2004) 36 CFR Part 800 regulations. While that is one possible outcome, it is also possible that any new EIS would simply tier to the existing EIS, incorporate the existing cultural resources work (and approvals) by reference, and proceed to a new Record of Decision without substantially changing anything related to cultural resources. So long as a "binding commitment" (such as license stipulations) is included in the Record of Decision, even under the new regulations, the agency's responsibilities are fulfilled (36 CFR § 800.8 (4)(i)(a)).
50. Intervenor suggest that the regulations implementing NEPA go beyond those implementing the NHPA, and present additional requirements that must be satisfied before the project can move forward. All eleven Supreme Court decisions regarding NEPA interpret its requirements as procedural, rather than substantive, and point out that so long as an agency has complied with the required *processes*, it is in compliance with the requirements of NEPA. The processes required in this case are those of Section 106 of the NHPA, which is specifically referenced in 40 CFR § 1502.25. Because the NRC is in compliance with Section 106, it is also in compliance with NEPA for cultural resource issues.
51. Intervenor suggest that whatever the status of the license and the EIS, that NRC and HRI are prohibited from conducting phased studies in the past or the future by the revised 36 CFR Part 800 regulations. They also claim that the language added to those regulations in 2000 specifically limited the circumstances under which phasing was allowed. On the contrary, language in the 2000 revisions was added in Section 800.4(b)(2) to specifically *authorize* what federal agencies had routinely been doing for years: phasing their cultural resources studies in a way that makes sense in agency project planning processes and their related NEPA compliance actions. The Advisory Council briefing referenced in Para. 48, above, includes a slide titled "Phased Identification and Evaluation of Historic Properties," and the text "New authorization of phased efforts for: corridors, large land areas, [and] where access to properties is restricted" and "Deferral of final identification and evaluation allowed if authorized in MOAs, PAs, or NEPA documents." Phasing of activities under the subject license is clearly "authorized in ... NEPA documents," as the license stipulation is contained in the EIS for this project.
52. The next slide in the ACHP briefing is titled "Conduct of Phasing," and contains these bullet points: (1) "Agency should first establish the likely presence of historic properties," and (2) "As alternative is refined or access gained, final identification must proceed." Clearly the process followed by NRC and HRI meets this description. See also the regulatory text at 36 CFR § 800.4 (b)(2), which describes circumstances and procedures for phased studies of the sort conducted for this project.
53. Therefore, if the license issued by NRC is determined to be invalid for some other reason, the *phased process* engaged in by HRI in support of NRC's compliance responsibilities is explicitly allowed under the revised 36 CFR Part 800 regulations,

and should proceed as previously planned. There is no reason for invalidating the existing license based on the NHPA compliance efforts to date.

CONCLUSION OF DECLARATION

I have read the declarations prepared by Dr. Lorraine Heartfield and Dr. Eric Blinman, and agree with their contents.

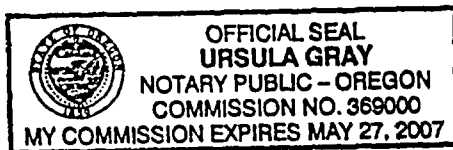
I declare on this 6th of June, 2005, at Portland, Oregon under penalty of perjury that the foregoing is true and correct.

Leslie E. Wildesen
Leslie E. Wildesen, Ph.D

ACKNOWLEDGEMENT

SUBSCRIBED and SWORN TO before me, the undersigned authority, on June 6, 2005 by Leslie E. Wildesen.

[Seal]



Ursula Gray
[Signature of Notary]

Ursula Gray
Printed/typed name of Notary

Notary public for the State of Oregon. My commission expires May 27, 2007.

ATTACHMENT A

Leslie E. Wildesen, Ph.D.

Resume

President

Environmental Training & Consulting International, Inc.
1970 NW Overton, Suite 100
Portland, Oregon 97209
USA

Outstanding Environmental Credentials and Experience

Dr. Wildesen has over 30 years' experience in all aspects of environmental planning, including internal experience in federal and state agencies and the US Congress. She is an internationally recognized expert in resource management policy and programs, environmental impact assessment (EIA) and environmental management systems (EMS).

Beginning in 1967, Dr. Wildesen has participated as a field scientist, project leader, document preparer, and program manager for environmental inventories and evaluations under the National Historic Preservation Act, NEPA and related environmental laws.

Projects have ranged from nuclear power plant siting to ski area planning to water management to transportation development to federal facility environmental management reviews, and have included controversial EIS and EA-level projects for the US Army Corps of Engineers, Bureau of Land Management, US Forest Service, Minerals Management Service, US Department of Energy and others.

Dr. Wildesen has written over 150 professional papers and presentations, and developed ETCI's nationally-known *Big Book of NEPA Checklists and Protocols*, now in its third edition.

She holds a BA from Stanford University, MA from San Francisco State College, and Ph.D. from Washington State University. In addition, she has post-graduate training in Administrative Law, Public Administration, and Geographic Information Systems (GIS), and is certified at the Practitioner, Master Practitioner, and Trainer levels in Neuro-Linguistic Programming.

She served as chair of the NEPA training committee for National Association of Environmental Professionals 1996-1999, sponsoring and developing continuing education workshops for environmental professionals nationwide.

She has been a member of the US TAG to TC 207, the international committee that continues to develop the ISO 14000 family of environmental management system standards.

Outstanding Environmental Training Experience

Internal Federal Agency Experience

While she was still inside the federal government, Dr. Wildesen was one of the first 30 professionals selected to form a national trainer cadre to train the internal Forest Service week-long course,

NEPA and Forest Planning. This course, sponsored by the USFS Washington Office, integrated National Forest Management Act and National Environmental Policy Act processes, documents, and analyses, and was presented nationwide at USFS offices.

Developer of ETCI's NEPA Toolbox™ Curriculum

Since co-founding ETCI in 1993, she is the principal developer of ETCI's nationally known "NEPA Toolbox™" series of workshops (*Essentials for the NEPA Practitioner, Facilitating the NEPA Process, EAs with FOCUS™, Cumulative Effects Analysis, Integrating NEPA and Section 106, Positive Public Involvement™*).

With Professor Dan Mandelker (Washington University, St. Louis, School of Law) she has developed and presented a seminar called *Bulletproofing Your NEPA Document* as an addition to the core NEPA Toolbox™ series. This seminar presents specific legal tools that reduce vulnerabilities to appeals and lawsuits.

Developer of Courses for Executive Enterprises and The Smithsonian Institution

Also with Professor Mandelker, she has developed and presented a seminar series for Executive Enterprises, Inc. called *Working with NEPA: Strategies to Improve the Effectiveness of NEPA Planning* which focuses on legal implications of certain NEPA practices.

Dr. Wildesen designed and developed *The Smithsonian Environmental Leadership Course*, taught annually at the Smithsonian Institution's Conservation Research Center in Virginia. She co-trains this 2-week residential course for environmental leaders from around the world each year with ETCI co-founder Jeanne C. Crouch and Dr. Francisco Dallmeier, Director of the Smithsonian's Monitoring and Biodiversity (formerly Man and the Biosphere) program.

Presenter at Continuing Legal Education Seminars

Dr. Wildesen is a frequent invited presenter at seminars for environmental attorneys and their private and public sector clients sponsored by Continuing Legal Education, Inc. of Denver, Colorado. Recent topics have included public involvement and cumulative impact assessment.

Outstanding Government Heritage Management Experience

Dr. Wildesen developed one of the first internal federal agency cultural resource (heritage) environmental management programs under the National Historic Preservation Act in the US, for the US Forest Service beginning in 1974.

She was responsible for 19 National Forests in Oregon and Washington, including conduct of initial inventories, consultations with Tribal representatives (and those of non-recognized Tribes), National Register of Historic Places and other resources evaluations, mitigation plans, incorporation of cultural resource issues into National Environmental Policy Act documents (EAs and EISs), funding, training, and hiring and supervising program staff.

Her comprehensive *Guidebook of Procedures and Techniques for Managing Historical and Archaeological Resources*, published by the USDA Forest Service in 1977, was the first internal "how-to" heritage resource guidance manual for federal agencies, and many copies are still in use today. Based on all

the federal heritage management laws in effect at the time, it provided step-by-step approaches for overall program development and compliance, as well as strategies for dealing with the principal project types and issues faced by the USDA Forest Service.

After leaving the federal government, she wrote the cultural resources (heritage) management plan for the River of No Return-Frank Church Wilderness (Idaho). This was the first such plan to be developed, and was published as *The Farthest Frontier of All* by the USDA Forest Service in 1984.

As a member of the Public History program faculty at Portland State University in the early 1980s, she successfully lobbied for the passage of statewide Indian burial protection legislation in Oregon; after moving to Colorado in 1984, she succeeded in getting similar legislation passed there.

From 1984 to 1989 Dr. Wildesen served as Colorado's Deputy State Historic Preservation Officer and State Archaeologist, and was a member of the Program Administration Committee of the National Conference of State Historic Preservation Officers.

Dr. Wildesen has worked with over 25 different Native American tribes throughout the US. Projects have included developing archaeological studies in California; passing legislation in Oregon and Colorado; conducting training in National Environmental Policy Act and related laws (including the National Historic Preservation Act) in Montana, Maryland, Arizona, and California; coordinating consultations and Indian reburials with the Colorado Native American Heritage Commission; and assisting with heritage management issues in Alaska.

Honors and Appointments

Dr. Wildesen has received numerous honors, appointments, and commendations during her outstanding scientific and training career. Dr. Wildesen is listed in numerous editions of *Who's Who*, and has been profiled in books, journals, and magazine articles.

Congressional Fellowship

In 1982-83, Dr. Wildesen was awarded a Congressional Fellowship by the American Anthropological Association. She served as a staff member of the US House of Representatives Subcommittee on Public Lands and National Parks, overseeing the Bureau of Land Management and the National Park Service, and dealing with wilderness and historic preservation issues.

Presidential Appointments

President Ronald Reagan appointed her to three consecutive terms as an expert member of the Cultural Property Advisory Committee, which oversees US involvement in the UNESCO Convention on International Trafficking in Cultural Property through the US Departments of State and Commerce.

Gubernatorial Appointments

Dr. Wildesen served on behalf of Governor Victor Atiyeh of Oregon as a member of the State Historic Review Board, created to review Oregon's statewide Historic Preservation Program, and to facilitate nominations of important heritage resources to the National Register of Historic Places.

In 2002, she was appointed to a similar position in Colorado by Governor Bill Owens, and reappointed to another term in 2004.

Secretarial Appointments

In 1998 Dr. Wildesen was appointed by Secretary of Interior H. Bruce Babbitt to serve on the Front Range (Colorado) Resource Advisory Council (RAC), a board that advises the Bureau of Land Management on issues related to public land and resource management.

In 2002, she was reappointed to the RAC by Secretary of the Interior Gale Norton.

Professional Offices Held

During her career Dr. Wildesen has served as an officer, board member and/or committee chair for the following professional organizations:

- National Association of Environmental Professionals
- National Conference of State Historic Preservation Officers
- Preservation Action!
- National Academy of Sciences, National Research Council
- Society for American Archaeology
- American Society for Conservation Archaeology
- Colorado Association of Professional Archaeologists
- Association of Oregon Archaeologists
- Historic Preservation League of Oregon
- Society for California Archaeology