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**Comments: West Tavaputs Plateau Natural Gas Full Field Development Plan Draft
Environmental Impact Statement (UT-070-05-055)**

Introduction

Please accept and fully consider these comments on behalf of Jerry D. Spangler, a registered professional archaeologist and executive director of the Colorado Plateau Archaeological Alliance (CPAA). Founded in 2005, CPAA works to protect archaeological and historical properties on public lands throughout the West through sound scientific research into the causes of adverse effects, through public outreach and education, and through collaborative projects with conservation and governmental entities. Our goal is to ensure that cultural resources are protected for future generations, for their scientific as well as aesthetic qualities. We appreciate this opportunity to comment on the West Tavaputs Plateau Natural Gas Full Field Development Plan Draft Environmental Impact Statement (UT-070-05-055), hereafter referred to as DEIS.

A CPAA analysis of the DEIS has identified significant and fundamental problems with all action alternatives that warrant greater consideration and analysis, and that Alternative B (no action) may be appropriate until such time the BLM fully considers the issues addressed below. Given the BLM is likely to choose an alternative that facilitates full-field development, or some combination of action alternatives, we believe the federal actions articulated in Alternative D are a preferable, although Alternatives C and E are acknowledged as significant improvements over the industry-preferred alternative (Alternative A). However, it is emphasized that impacts to cultural resources are only marginally different from one alternative to another, and that regardless of which alternative is chosen the impacts will be substantial.

FLPMA obligates the Bureau of Land Management (BLM) to protect cultural, geologic and paleontological resource values (43 U.S.C. §§ 1701(a)(8) 1702(c)), whereas the National Historic Preservation Act of 1966 (“NHPA”) (16 U.S.C. § 470 et seq.) provides for enhanced consideration of potential impacts to these resources through a cooperative federal-state program

for the protection of historic and cultural resources. In particular, Section 106 (16 U.S.C. § 470f) obligates the BLM to consider the effects of management actions on historic and cultural resources listed or eligible for listing to the National Register of Historic Places, as provided under NHPA. Section 110 of the NHPA requires the BLM to assume responsibility for the preservation of historic properties it owns or controls (16 U.S.C. § 470h-2(a)(1)), and to manage and maintain those resources in a way that gives “special consideration” to preserving their historic, archaeological and cultural values. Section 110 also requires the BLM to ensure that all historic properties under the jurisdiction or control of the agency are identified, evaluated, and nominated to the National Register of Historic Places. *Id.* § 470h-2(a)(2)(A).



As discussed throughout the DEIS, many other federal laws, regulations and executive orders have articulated the BLM’s responsibility to protect properties of cultural and religious significance. This responsibility was reaffirmed by President Bush’s “Preserve America” initiative (See Exec. Order 13287, March 3, 2003) that requires the BLM to advance the protection, enhancement,



and contemporary use of its historic properties. It states the BLM must ensure that “the management of historic properties in its ownership is conducted in a manner that promotes the long-term preservation and use of those properties as Federal assets.” It is within that context that the BLM must carefully consider federal management actions designed to facilitate full-field development

of the West Tavaputs Plateau and the consequent effects of such decisions on archaeological and historic resources of significance to all Americans.

As a professional archaeologist, I have conducted a major portion of my archaeological research in or near the project area, and I am intimately familiar with the cultural resources of northeastern Utah. My research in this region over most of the past 20 years, much of it conducted on behalf of the BLM, has been widely published in peer-reviewed monographs, journal articles and popular media (cf. Spangler 1993a; 1993b; 1995; 2000a; 2000b; 2001; 2002; 2003; 2004; 2006, 2007; Spangler, Barlow and Metcalfe 2004; Spangler and Spangler 2003, 2007). Ongoing CPAA research in the Desolation Canyon, Range Creek Canyon and Nine Mile Canyon drainages has been specifically focused on the direct, indirect and cumulative impacts of large-scale developments, road access and unmanaged recreation on cultural resources in a region renowned for its archaeological and historic sites (cf. Spangler, Arnold and Boomgarden 2006; Spangler, Aton and Spangler 2007; Spangler and Yentsch 2008; Spangler et al. 2007a, 2007b, 2008). The following comments are related to the cultural resources, both archaeological and historic, in the West Tavaputs Plateau (WTP) region, and are not intended to address other environmental concerns or issues raised by the DEIS.

Inadequate Surveys

As defined in the DEIS (ES-1), the project area is bounded on the west by Sheep Canyon, on the north by Nine Mile Canyon and the east by the Green River, with the southern boundary defined by subsurface features, but which includes portions of several high mesas, as well as Jack Canyon and Desolation Canyon. As such, the project area encompasses three areas (Jack Canyon, Nine Mile Canyon and Desolation Canyon) known to have an exceptionally high density of National Register or National Register-eligible archaeological sites with spectacular visual qualities that draw visitors from throughout the world. This project area also encompasses intermediate mesas and high plateaus where very little problem-oriented archaeological research has been conducted and little is known about Archaic, Formative and post-Formative foraging behavior and how those adaptations may be related to more-robust and more-sedentary adaptations in the canyon bottoms.

Although archaeological insights and understandings of prehistoric adaptations in the region have benefited greatly from the Section 106 clearances, mostly conducted by Montgomery Archaeological Consultants on behalf of BBC, it is emphasized that this research has been driven predominantly by the *location* of Section 106 compliance activities in a particular area, and these surveys probably do not reflect the actual nature, diversity or density of archaeological sites in the project area. A review of archaeological site data on file with the Antiquities Section of the Utah Division of State History reveals remarkably few archaeological block surveys within the project area that would contribute to a better understanding of potential site densities or to the distribution of archaeological sites across an entire landscape.

The DEIS offers no encouragement that existing data gaps will be ameliorated through problem-oriented research. Rather, the DEIS offers unimaginative and minimalist approaches to Section 106 compliance that includes hundreds of small-scale Section 106 clearance surveys, each of which has minimal potential to contribute meaningful insights into prehistoric human

behavior in the region. In fact, Appendix N (Preconstruction Cultural Resource Identification Plan) calls for 10-acre surveys of each well pad, 5 to 10 acres around other facilities, and a 300-foot corridor along new roads and pipelines. There is no stated intent anywhere in the DEIS that statistically valid random sample surveys (Class II) or a larger block surveys (Class III) would be requested by the BLM or initiated by BBC or other operators. Rather, despite the massive area to be impacted by full-field development, the BLM plan defines the Area of Potential Effect (APE) as small individual well pads, individual access roads and pipelines, and spatially limited areas around other surface facilities. Consequently, the scattering of small-scale clearance surveys based on the location of extraction activities is unlikely to result in a scientifically meaningful sample that is representative of the actual nature, distribution and density of sites in the project area.

Also problematic are the survey parameters defined in Appendix N that call for 10-acre surveys of each well pad, 5 to 10 acres around other facilities, and a 300-foot corridor along new roads and pipelines. As noted in the DEIS, these parameters are more stringent than in many other Utah areas managed by the BLM. However, whether or not the standards are more stringent is irrelevant if the standard is inadequate, as appears to be the case with survey requirements for transportation corridors. CPAA research efforts in the West Tavaputs Plateau region have demonstrated a direct relationship between vehicle access and frequency of vandalized sites. These studies indicate that archaeological sites within 200 meters of an existing vehicle route were more likely to have been vandalized, as were sites visible from a vehicle route regardless of distance (Spangler, Arnold and Boomgarden 2006; see also Spangler and Boomgarden 2007, and Spangler and Yentsch 2008).

These findings are consistent with other vandalism studies in the Southwest. Nickens et al. (1981) found that archaeological sites within 100 meters of an existing dirt road that were more than 20 miles from a town were more likely to have been vandalized; these findings were supported by interviews with known artifact collectors. Simms (1986) also observed a correlation between vandalism and visibility from the road, distance from the road and ease of access; all alcoves and rockshelters in that sample had been vandalized. Ahlstrom et al. (1992) found site type to be a major factor in vandalism. Ongoing CPAA studies reify the findings of a largely forgotten BLM study conducted more than 30 years ago that found transportation networks and accessibility were determining factors in site vandalism, and that “pothunters are an inherently lazy lot” who require access whereby they can conduct their “illegal and destructive purposes with the least possible physical exertion” (Scott 1977:13).

These findings are particularly relevant to the action alternatives that provide for new road construction into any areas that have been protected from looting and vandalism by their roadless qualities. As articulated in Appendix N, the transportation corridor that would be surveyed would be about 50 meters on each side of center line, or about half of the area of potential effect identified by Nickens et al. (1981) and 25 percent of the area identified by Spangler, Arnold and Boomgarden (2006). Appendix N makes no provision for surveys or site documentations outside the designated corridor even if cultural sites are visible from the actual corridor. This omission creates a distinct probability that archaeological sites visible from a transportation corridor (e.g., rockshelters, rock art, architectural sites) will be directly or indirectly impacted during the course of corridor development *or at some point in the future*, as

demonstrated in studies by Simms (1986), Ahlstrom et al. (1992) and Spangler, Arnold and Boomgarden (2006). As such, subsequent damage to such properties, whether or not caused by individuals associated with the development, must be considered “reasonably foreseeable effects caused by an undertaking that may occur later in time” (36CFR800.5(1), and must therefore be addressed through Section 106 compliance as an adverse effect.

All action alternatives call for reclamation of access roads upon abandonment of individual wells (as well as reclamation of the well pad itself), but it is not clear in the DEIS whether these reclamation efforts include reclamation of *all* roads constructed as part of the WTP project, or just access spurs to individual well sites. This could present significant potential that in 30 to 40 years, upon complete abandonment of the project area, roads constructed by the operators will be utilized by off-road vehicles to gain access to archaeologically sensitive areas that otherwise would have been protected by their topographic setting or geographic isolation. The DEIS also does not address the potential that upon abandonment, primary access routes (Cottonwood Canyon, Prickly Pear, Harmon, Horse Bench, etc.) will subsequently facilitate easy public access into remote areas of the West Tavaputs Plateau now protected by their isolation. In effect, major transportation corridors constructed and maintained to facilitate full-field development will inevitably result in easy public access to the project area after future abandonment, and that greater public access could result in subsequent damage to cultural resources. Likewise, these future impacts to sites in remote areas made accessible by full-field development must also be considered “reasonably foreseeable effects caused by an undertaking that may occur later in time” (36CFR800.5(1)).

Especially disconcerting is that the small-scale-survey approach articulated in Appendix N fails to adequately consider the cumulative effects on eligible historic properties within the project area that may not be directly impacted by surface-disturbing activities, but which are impacted due to activities that “may alter, *directly or indirectly*, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling or association” (36CFR800.5(a)(1)). Although cumulative effects are acknowledged in the DEIS, none of the alternatives offer substantial discussions as to how cumulative impacts will be avoided, minimized or mitigated. In fact, there is an inherent but flawed assumption in all action alternatives that avoidance of historic properties results in no adverse effects.

Avoidance of cultural sites evident on the ground surface *may* avoid direct damage to the surface evidence. However, there is a potential for damage to archaeological sites not clearly evident on the site surface, as well as adverse effects to sites outside the area of surface disturbance. Particularly relevant is 36 CFR 800.5(1) that states “an adverse effect is found when an undertaking may alter, directly or *indirectly*, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling or association. Consideration shall be given to *all* qualifying characteristics of a historic property ...” (emphasis added; See also 65 Fed. Reg. 77698, 77720 (Dec. 12, 2000) discussing indirect effects). This section of the Federal Code clearly states that federal agencies shall consider the indirect effects of undertakings on eligible properties. It can also be concluded that re-routing or relocating ground-disturbing activities to avoid direct impacts to known historic properties

visible on the surface may not avoid, minimize or mitigate the indirect effects of such undertakings.

Also relevant to this discussion are provisions in the Alternatives A, B, C and E for temporary worker housing at strategic locations on the mesa tops, with each location capable of accommodating up to 15 sleeping trailers, kitchen and recreation facilities, and ancillary toilets, trash containers, water tanks and other support equipment (DEIS 2-29). CPAA supports the concept of consolidated worker housing to reduce traffic in those locations where dust accumulation is a serious concern (see discussion below). However, stipulations for surveys of 5 to 10 acres around these facilities is clearly inadequate and fails to recognize that individuals during off-work hours will explore well beyond the 10 acres defined in Appendix N.



Although preliminary, in Range Creek Canyon and Canyon is attempting to address between vandalism of sites and the location of overnight campsites. Initial data (to be additional Desolation Canyon GIS suggest archaeological sites within of an established camp are vulnerable to looting, vandalism, malicious activities that denigrate the historic properties. In effect, some individuals to engage in



CPAA research Desolation the relationship archaeological or extended-stay augmented by studies in 2008) 300 to 400 meters especially graffiti and other the integrity of boredom drives destructive

actives, and the area of potential effect may be considerably greater than the 5 to 10 acres identified under Appendix N.

Any allowance for temporary worker housing creates significant cultural resource management challenges not articulated or analyzed in the Draft EIS. Sullivan et al. (2002:42) in a study of recreational use of public lands clearly recognized that individuals may not know or understand what constitutes heritage resources, and that cultural resources are being damaged by “people who are unaware that they are behaving destructively in an archaeologically rich landscape.” They also found inadvertent vandalism to heritage resources could result from camping on or around archaeological sites, construction of hearths within cultural deposits, harvesting of prehistoric wood construction beams for fire pits, removal of culturally rich soils to extinguish fires, burying of modern human trash and waste in archaeologically rich soils, and removal of surface vegetation for fires, thereby enhancing erosion of archaeological sites (see also Hartley and Vasser 2004; Uphus et al. 2006). These findings are relevant to any longer-term residency on the mesa tops where workers have not been thoroughly educated as to proper behavior expected in archaeologically rich landscapes.

In light of these concerns, CPAA recommends:

- BLM planning and cultural resource preconstruction survey requirements that currently articulate scattered Section 106 clearance surveys should be modified and augmented to include additional Class II and/or Class III block surveys of poorly understood areas within the larger project area, and that these surveys should be designed to address valid scientific research questions with a potential to make significant contributions to an understanding of prehistoric lifeways in the region. Through the course of proper consultation, Class II and/or Class III block surveys could contribute toward the mitigation of cumulative adverse effects.
- The survey standards articulated in Appendix N should be modified to include provisions for spatially broader areas of potential effect, including the documentation of all sites visible from a vehicle access route regardless of distance, as well as wider corridors that are consistent with the findings of Nickens et al. (1991) and Spangler, Arnold and Boomgarden (2006). Regardless of which alternative is chosen, all cultural sites visible from an access corridor should be thoroughly documented and monitored for future adverse impacts.
- The survey standards articulated in Appendix N should be modified for temporary housing localities to reflect the probability that off-duty workers will explore and wander far from the actual housing facilities. CPAA recommends a minimum 500 meter buffer around temporary worker housing, as well as any other areas visible from the facilities with a likelihood of containing significant cultural resources regardless of distance (e.g., rockshelters and cliff faces).
- The EIS should be clarified and augmented to indicate that reclamation upon abandonment will include the recovery of *all* roads constructed as part of the development. The final EIS must also fully consider the future impacts to cultural resources (and other resources) of unrestricted and uninhibited public access into the West Tavaputs project area due to operator improvements to major access roads.

- Regardless of which alternative or combination of alternatives is chosen, the BLM should clearly articulate prohibitions on harvesting of fuel wood that could increase erosion, prohibitions on worker camping or campfires outside of the boundaries of temporary worker housing, and prohibitions on any ground disturbance regardless of how minimal for disposal of human waste. Concurrently, the BLM should require operators implement a program to educate all workers on proper behavior and etiquette expected in archaeologically rich environments.

Predictive Modeling

As acknowledged and summarized in Table ES-2, certain assumptions are common to all alternatives, in particular that activities associated with the project could potentially “conflict with” known and unknown cultural resources. The numbers of sites impacted varies by alternative, but are generally the same under industry preferred Alternative A and agency-preferred Alternative E in that new surface disturbance would potentially conflict with 37 known sites, 21 of which are eligible for listing on the National Register; road maintenance and upgrades will conflict with 43 known sites, of which 26 are eligible; and that surface-disturbing activities “would potentially conflict directly with between 94 and 219 unknown cultural resources” (DEIS ES-24).

Although these statements clearly acknowledge that cultural resources will be impacted, the DEIS offers little information as to the type, nature and distribution of resources to be impacted, and how the BLM arrived at those numbers. To make an assumption of numbers of unknown sites that would be impacted implies the BLM used a predictive model to arrive at those numbers. However, no information is clearly articulated as to the type of predictive model that was employed, whether it incorporates statistically valid and professionally accepted approaches to predictive modeling, whether the model is capable of predicting actual site types, site locations and site significance, or whether it is only capable of predicting relative site density; and whether the model is even valid for the entire West Tavaputs Plateau or only small environmental zones within the greater plateau.



Rather, it appears that BLM planners utilized Class I data from Whitfield et al. (2006) and a single block survey (Landt 2006) on the upper plateau to estimate ranges of site numbers based on site densities within the WTP project area. Site densities were calculated by dividing the known number of sites per period by the total acres in the project area. Such an approach is problematic on several important points, including the absence of a stratified random sample that considers different environmental zones or ecological ranges in both

upland and canyon corridor settings, and the absence of a consistent and statistically valid sample of surveyed areas. At best, the BLM analysis must be considered a “rough estimate” of potential site densities, but with a probability that site density could actually be much higher or lower.

As accurately noted in the DEIS, surveys in the 1980s and 1990s rarely had comprehensive or inclusive inventory areas and must be considered to be intuitive, at best (see Spangler 1993b). But the DEIS erroneously states that the high density of sites identified at that time is “inflated” when in fact the sites-per-acre-surveyed by Brigham Young University (Spangler 1993b) and Carbon County volunteers (see Spangler 2002 for an overview of these surveys) actually reflects a lower threshold of site density. Likewise, if more thorough Class III investigations had been conducted, actual site density would have been significantly greater than reported in those studies.

In fact, not all acres within those project areas were subjected to Class III inventories, and those areas subjected to intuitive surveys were certainly not to currently not investigated to current standards (cf. Banning 2002). For example, Carbon County volunteers rarely ventured above the first bench area, and most of the canyon above the first bench area remains uninvestigated. The BYU surveys in lower Nine Mile Canyon avoided exceptionally steep or precarious terrain, and the mesa tops were not investigated even though some mesa localities outside the project area were known to contain large and impressive architectural and rock art sites. Hence, the high site densities demonstrated by those largely intuitive surveys of easily accessible cliff faces and bench areas are actually an under-representation of actual site densities had the entire area been comprehensively surveyed.

Also problematic are the statements in the DEIS to the effect that some sites have been determined eligible for National Register listing and others have not (DEIS ES 24). No indication is offered in the DEIS as to where these sites are located (upland areas or canyon bottoms) and whether or not these “not eligible” sites are included within the boundaries of the Nine Mile Canyon Archaeological District and would therefore be part of the National Register district currently under review by the SHPO and BLM. In fact, there is minimal discussion throughout the DEIS action alternatives as to how proposed development would directly, indirectly or cumulatively impact cultural resources within the proposed National Register district (BLM planners have had access to the National Register documents and proposed boundaries for more than a year).

The theoretical approach to predictive modeling articulated in Chapter 4 demonstrates the immense difficulty planners face when utilizing incomplete data, much of it gathered two or three decades ago by volunteers or inexperienced field crews. In effect, the current database reflects an extremely diverse mix of research of varying quality. Consequently, current data offer minimal broad-scale perspectives other than site density is higher in the canyon bottom and it is lower on the higher plateaus. This discussion (DES 4-217) also highlights the tremendous need to conduct Class II surveys that encompass a full range of environmental variables on the West Tavaputs Plateau.

It is therefore recommended:

- The EIS should be modified to include more thorough discussions of BLM efforts to test the validity of any predictive model used as part of the planning process.
- The EIS should be modified to more clearly explain where impacted sites would be located (canyon corridors versus mesa tops), including the relationship of impacted sites to the proposed National Register district for Nine Mile Canyon.
- Given the BLM's application in Chapter 4 of an "indirect" impact standard to impacts that are clearly direct impacts (e.g., dust accumulation) the DEIS should more thoroughly examine, articulate and tabulate the impacts, conflicts and other factors related to all sites within the project area that would be directly and *indirectly* impacted by the various action alternatives. This would require a more thorough consideration of impacts to sites outside of areas of direct surface disturbance, but within the range of dust accumulation, increased erosion and vibration, and that are more susceptible to vandalism and looting.

Consulting Parties

Despite the voluminous nature of the document, the DEIS reflects a remarkable paucity of creative thinking in terms of how cultural resources are addressed and considered under all five alternatives. In effect, the impacts to cultural resources under Alternative A (industry preferred) are largely identical to impacts articulated for Alternative E (agency preferred) and only marginally different from Alternative C (transportation reduction alternative). The no-surface-occupancy stipulations specified under Alternative D (conservation alternative) offer some potential that cultural resources in some localities would be impacted less than under the other action alternatives, but the impacts under this alternative are nonetheless substantial. There is no indication that any of the alternatives proposed in the DEIS have considered a full range of alternatives to avoid, minimize or mitigate potential adverse effects to historic properties, nor does the document reflect efforts among consulting parties to reach agreement on measures to achieve those ends.

Especially disingenuous are statements to the effect that the BLM seeks a collaborative approach to problem solving. As stated in Chapter 1, any amendments necessary to the Price River Management Framework Plan to accommodate full-field development would be developed by the BLM through "a collaborative and multi-jurisdictional approach, where possible, to jointly determine the desired future condition of public lands" (DEIS 1-7). In actuality, the Price Field Office has demonstrated repeated opposition, if not hostility, to a collaborative approach to resolving conflicts over cultural resources by categorically denying consulting party status to the National Trust for Historic Preservation, the Southern Utah Wilderness Alliance, the Nine Mile Canyon Coalition and CPAA – all "organizations with a demonstrated interest in the undertaking" that are legally entitled to "participate as consulting parties due to the nature of their legal or economic relation to the undertaking or affected properties, or their concern with the undertaking's effects on historic properties" (36CFR800.2(5)(d)(1); see also 2006 letter from Patrick Gubbins to CPAA denying consulting party status).

CPAA believes the utter absence of creative approaches to avoid, minimize or mitigate impacts to cultural resources articulated in the DEIS is a direct consequence of the agency's

refusal to allow public participation in the Section 106 process in the past whereby BLM planners, state and tribal historic preservation officers, industry *and* organizations with demonstrated interests in the project area could attempt to reach agreement on avoidance, impact minimization and/or mitigation measures. Consequently, the DEIS alternatives are predominantly a reflection of BLM approaches (Alternative E) and industry approaches (Alternative A), with other action alternatives largely reflecting combinations of the two approaches.

By deferring all public participation to the public comment process allowed under NEPA, the Price Field Office has failed to recognize a fundamental and important difference between public participation under the National Historic Preservation Act and that allowed under NEPA: NEPA allows for public *comment* whereas NHPA allows for public *participation* in the resolution of conflicts arising from federal undertakings. Furthermore, BLM managers have not recognized that NHPA clearly draws a distinction between “organizations with a demonstrated interest in the undertaking” to be sought out as consulting parties (36CFR800.2(c)(5)) and the federal agency’s mandate to “seek public comment and input” (36CFR800.2(d)(2)).

As stated in 36CFR800.2(5)(d)(1), “The views of the public are essential to informed Federal decision making in the Section 106 process. The agency official *shall* seek and consider the views of the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties” (emphasis added). As mentioned above, “certain individuals and organizations with a demonstrated interest in the undertaking may participate as consulting parties due to ... their concern with the undertaking’s effects on historic properties.” By deferring all public participation to “comments” allowed under NEPA, the BLM has willingly and intentionally violated the underlying spirit and intent of NHPA. In effect, the agency *plan* to involve the public in the Section 106 process (36CFR800.3(e)) is to not allow public participation in the Section 106 process at all.

Furthermore, 36CFR800.6(4) states “the agency official shall provide an opportunity for members of the public to express their views on *resolving adverse effects* of the undertaking” (emphasis added). This section is unequivocally referring to the public’s opportunity to comment on those efforts among consulting parties to resolve adverse effects, not on the public’s ability to comment on the undertaking itself through the NEPA process. The DEIS articulates no efforts whatsoever on the part of the Price BLM to solicit comments from the public specific to the resolution of adverse effects. In fact, the BLM has not revealed to the public what if any efforts have been initiated to resolve conflicts over cultural resources.

CPAA strongly recommends:

- The BLM embrace the spirit and intent of the NHPA by *seeking out* all willing consulting parties to participate in the resolution of adverse effects arising from full-field development, and that future collaboration will reflect a willingness on the part of the BLM to engage alternative viewpoints of all interested parties.
- The BLM more proactively communicate with the public on its efforts to resolve adverse effects to cultural resources, and that it provide additional opportunities to the public to express their views on efforts to resolve adverse effects. This could and

should include a transparent process of regular public meetings whereby consulting parties could explain efforts to reach agreement and the federal agency could account for its actions under NHPA.

Dust Concerns

The DEIS clearly acknowledges that dust is a problem, particularly along the Nine Mile Canyon corridor where rock art panels are abundant and dust has significant potential to obscure clarity. However, the DEIS discussion repeatedly appears to deemphasize the seriousness of the problems related to impacts from road dust precipitated by industrial traffic. These include statements to the effect that “anticipated *indirect* impacts to cultural resources include the accumulation of dust and its impact on rock art, (and) the impact of vibration and project-related erosion on cultural resources” (DEIS ES 24-25), when in fact the accumulation of road dust resulting from project traffic, impacts from vibration due to project-related traffic and increased erosion of cultural resources from project-related activities are all *direct* impacts to cultural resources resulting from project activities, and that these impacts are *cumulative* over the 30 to 40-year life of the project.

As such, these impacts constitute adverse effects under one or more criteria that must be thoroughly addressed within the context of Section 106 compliance, regardless of whether the impacts are direct or indirect. As clearly stated in 36CFR800.5(a)(1), “an adverse effect is found when an undertaking may alter, *directly or indirectly*, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling or association” and that “adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative” (emphasis added).

Particularly troubling is DEIS Appendix G, an October 2007 revised study of particulate dust conducted by Constance Silver of Preservar Inc., included in its entirety. This study cites preliminary lab results from EMSL Analytical of Westmont, N.J., to suggest that 17 dust samples were inconclusive for magnesium chloride, that “thus far it has been impossible to isolate and identify magnesium chloride in the laboratory,” and that magnesium chloride used in Nine Mile Canyon may have been chemically altered so that “magnesium chloride may not be present in Nine Mile Canyon because there is no magnesium chloride present” (Appendix G:6).

However, these statements are completely and unequivocally in opposition to test data from EMSL Analytical dated Oct. 22, 2007, that indicate that 15 (not 17) samples were analyzed, and that magnesium chloride was specifically identified in five samples, and that magnesium and/or chloride were identified in all remaining samples, although these could not be isolated to show magnesium chloride specifically (see EMSL Case No. 360700946). The contrary statements in Silver’s report suggest that either (1) the BLM mistakenly attached a preliminary report to the DEIS that inaccurately reflected the actual laboratory results and these do not represent Silver’s subsequent findings or final report; (2) that Silver never submitted a final report and that the DEIS is therefore based on incomplete and erroneous data; or (3) the inclusion of preliminary lab results rather than final results is an intentional and deceptive effort on the part

of the BLM to manipulate scientific data by minimizing the prevalence of magnesium chloride on rock art panels in Nine Mile Canyon.

Given the presence of magnesium chloride, magnesium and/or chloride in all samples tested, Silver's conclusions about the equivocal nature of the data should be rejected. Also suspect is her statement that "there is no proof at present that magnesium chloride used for dust abatement in Nine Mile Canyon has – or will – become a vector of deterioration for the canyon's resources" (Appendix G:33) in light of her statements that magnesium chloride is a "documented agent of deterioration of concrete and works of art" (Appendix G:1) and that agencies, organizations and scientists are raising concerns about magnesium chloride (Appendix G:32). CPAA concurs with Silver's recommendations that additional studies into dust abatement technologies are warranted, and that impacted sites need to be identified and evaluated (Appendix G:34).



CPAA also concurs with the DEIS (Section 4.12.1.2) that additional efforts are needed to identify, develop and implement acceptable dust-abatement treatments, that additional research needs to be initiated to develop treatments for removal of existing dust, that analytical systems should be implemented to quantitatively examine the success of dust-abatement treatments, and that all impacted rock art panels should be evaluated to determine the extent of the dust accumulation problem and thereby devise dust-abatement strategies (4-219). However, the DEIS identifies few strategies whereby these laudable goals will be achieved, nor does it specify a timetable wherein the research would be conducted, reported and recommendations implemented. Also disconcerting is the absence of interim strategies to protect rock art panels while scientific studies are underway, a *de facto* acknowledgment by the BLM that current dust-abatement methods are sufficient until such time that future research demonstrates otherwise.

Ongoing site condition assessments in the Cottonwood Canyon confluence area (CPAA report in preparation) suggest the number of sites impacted by significant dust accumulation could be substantial, particularly in those areas where the road abuts the canyon wall. Preliminary data suggest that rock art sites within 30 meters horizontal and 30 meters vertical of an existing road have been severely impacted by dust accumulation, often to a point where images are no longer visible or are barely discernible. Dust accumulation was observed at many sites up to 50 meters from an existing road, but not all sites. Evidence of dust accumulation at sites located beyond 50 meters from a road is more equivocal. The problem is particularly evident at those site locations where the rock art is located below and within overhangs that block rising dust plumes and redirects the rising plumes downward, coating the panels a second time. Also particularly vulnerable are rock art sites on sloping surfaces of less than 90 degrees. This study, which compares original site photographs to current site condition, examines only issues surrounding visual clarity and does not address the merits of different approaches to dust abatement.

In light of these concerns, CPAA recommends:

- The EIS should more accurately reflect that dust accumulation is a direct impact to cultural resources, primarily rock art sites and historic signatures, and that these impacts will be thoroughly mitigated through Section 106 compliance.
- Dust abatement studies recommended by Silver, including the corrosive nature of magnesium chloride and related technologies, should be required and completed *prior* to implementing any dust abatement measures with materials other than purified water. Regardless of what alternative is chosen, the final EIS should clearly require dust abatement measures and operators will be accountable for compliance with these measures.
- Baseline site condition assessments should be conducted to identify and evaluate those sites impacted by dust accumulation, and to determine the spatial extent of the dust problem.
- The EIS should articulate a requirement that periodic and consistent audits of site conditions will be conducted at those localities where National Register-eligible cultural resources are vulnerable to dust accumulation to monitor site degradation over the life of the project.
- The EIS should be augmented to include a more thorough and thoughtful analysis by transportation engineers of potential options wherein dust impacts to cultural sites could be avoided entirely. This analysis should include an examination of potential re-routing of the existing road away from vulnerable and high-density cultural resources, an examination of new access routes through side canyons without a significant density of significant sites, and upgrades to existing routes that bypass Nine Mile Canyon.
- In light of (a) public concerns over dust in Nine Mile Canyon, both from cultural resource protection and public safety perspectives, (b) the BLM's stated preference to utilize the Nine Mile Canyon corridor, and (c) the likelihood that scientific studies on dust abatement issues will not generate consensus for many years, CPAA recommends that *all* portions of the Nine Mile Canyon Road and project roads in

major tributary canyons be paved in those areas where rock art panels and historic inscriptions are located within 50 meters horizontal distance from of outer edge of the road right-of-way.

Public Access

CPAA has long advocated that access routes created for energy development should, where possible, be gated and maintained as administrative routes to deter access into archaeologically sensitive areas by individuals who would vandalize or destroy cultural resources. CPAA has reported to the Price Field Office recent instances on the West Tavaputs Plateau where off-road vehicles (ORVs) have used existing roads constructed for oil and gas development to gain access to lower Nine Mile Canyon where significant sites were directly impacted by vehicles traveling cross-country. Likewise, individuals using ORVs used an energy access road into Jack Canyon to travel cross-country into the roadless portion of that drainage where at least one alcove site was looted (Spangler, Boomgarden et al. 2007). CPAA supports limiting to administrative use the Horse Bench Road, Jack Canyon Road and other access routes into archaeologically sensitive areas as a mechanism to protect critical and vulnerable sites.

It should also be noted that areas with critical and vulnerable sites would include undocumented sites in the lower Horse Bench area where BLM river rangers recently discovered a series of very large and aesthetically impressive surface architectural complexes that have not yet been documented but appear to be among the most important surface architectural sites anywhere in the region. CPAA, in cooperation with the Antiquities Section of the Utah Division of State History, intends to document these sites as part of joint Desolation Canyon studies later in 2008.

Although CPAA supports road closures in many instances, the DEIS should clearly state that all routes whether closed or open to public access are BLM routes under the management of BLM and are not the property of those holding leases to develop subsurface rights, and that BLM has jurisdiction and ultimate authority to determine who will have administrative access. This has not been the case in the past with BBC, which has denied public access to some side canyons. For example, on or about July 15, 2007, BBC contractors refused to allow three archaeologists working with CPAA, the Range Creek Research Project and the Tree-Ring Laboratory at the University of Arizona to travel up the Harmon Canyon Road to acquire tree-ring samples needed for a regional tree-ring index. The archaeologists were told that Harmon Canyon was an administrative route for approved industrial traffic only, even though this was not and never has been the case. Private landowners in Nine Mile Canyon have reported similar encounters with BBC contractors who have expressed proprietary rights over the road networks.

In light of these concerns, CPAA recommends that:

- Access route closures to all but administrative purposes be accompanied by BLM public outreach, including appropriate signage that would ameliorate conflicts between the public and operators.
- Given the isolated nature of the broad geographic areas that would be closed to public access and the consequent opportunities for oil and gas workers to engage in activities

that denigrate or diminish the integrity of archaeological sites here, independent audits of site conditions by qualified archaeologists should be periodically implemented during the life of the project to assess any human-caused changes to site conditions. Such audits would deter inappropriate and illegal behavior, and could therefore be considered within the context of “minimizing” adverse effects, as defined in 36CFR800.



Desolation Canyon

CPAA is fundamentally concerned that full-field development as articulated under the industry alternative and the agency alternative would have visual and auditory impacts to the Desolation Canyon National Historic Landmark. As indicated in the Executive Summary, the eastern boundary of the project area is the Green River (DEIS ES-1), which is the centerline of the NHL. This is a *de facto* acknowledgement that the full-field development includes the Desolation Canyon NHL, even though, as summarized in Table ES-2 under Alternative A and Alternative E, “No surface disturbance would occur within 1 mile of the Green River,” or within the NHL boundary. However, Alternative A indicates that approximately three well pads are proposed within the (NHL) viewshed and there is potential for auditory impacts,” whereas Alternative E indicates the impacts would be the same but there would be mitigation of visual and auditory impacts (DEIS ES-29). The DEIS acknowledges that noise from development could diminish recreational experiences within Desolation Canyon.

CPAA believes that visual and auditory impacts are clearly an adverse effect as defined in 36CFR800.5(2)(v) that states “Adverse effects on historic properties include ... introduction of visual, atmospheric or audible elements that diminish the integrity of the property’s significant

historic features.” The significant historical features of the Desolation Canyon NHL, designated by Secretary of Interior Stewart Udall in 1969 to commemorate the John Wesley Powell expedition of 1869, included scenic and wilderness qualities of “mountains, rapids and other natural landmarks,” and because the NHL was “almost unchanged from its appearance in 1869” (Sarles 1968:206). As such, the introduction of visual or auditory elements would clearly diminish the unchanged appearance for which the Desolation Canyon NHL was initially created, constituting a diminishment of the historic integrity. Full-field development without complete mitigation could result in adverse effects to a NHL that would require the BLM to notify the Advisory Council on Historic Preservation and invite the council to participate in consultation, as articulated in 36CFR800.6(i)(B).

In light of these concerns, CPAA recommends:

- That full-field development should include stipulations of no surface occupancy of any areas of Desolation Canyon that are visible from the river corridor, and where visual effects will adversely impact the historic integrity of Desolation Canyon and/or the recreational experience of visitors seeking to enjoy the historical context of the Powell expeditions in 1869 and 1871, regardless of distance from the center of the Green River.
- That full-field development should include mitigation of all auditory impacts that may intrude on the NHL, and that mitigation be implemented at all phases of development from construction to operations and reclamation. Mitigation should be effective enough that auditory impacts are indiscernible along the Green River and the river camps at all times of day.

Jack Canyon

Management of cultural resources in WSA areas of Jack Canyon is problematic given the existing road has been in place for more than 30 years and that this route has precipitated vehicular access by individuals who have looted and vandalized sites. This vandalism appears to have been episodic, occurring during the time the original well pads were developed in the 1970s and again within the past five to six years. Vandalism is most prevalent in proximity to existing roads and facilities in that portion of the canyon with a demonstrated high density of significant archaeological sites, both along the canyon bottom and on the canyon rims.

Recent investigations in Jack Canyon (Allison 2004; Patterson 2004; Spangler, Boomgarden et al. 2007) have demonstrated a high density of significant residential, rock art and storage sites in the *middle* portion of the canyon, beginning about 3 miles west of the confluence in an area of the canyon where they would not be expected. There is currently a road leading from the plateau into the bottom of the canyon to a well head about 3 miles west of the confluence. As discussed in Spangler, Boomgarden et al. (2007), many of those sites located in proximity to the existing road have been vandalized, whereas most sites not located near the road remain in good to excellent condition. BLM documentation indicates that individuals associated with gas drilling in the 1970s were responsible for the vandalism, and that inscribed names at vandalized sites correspond to oil and gas workers (BLM 2004).



It should also be noted that the well-head access road was used by ORVs in 2004 to subsequently pioneer an illegal trail from the well head to the Green River, a distance of about 3 miles. In about 2001, individuals also transported sifting screens and other equipment to 42Cb2642, a large vandalized alcove about 2 miles below the end of the access road. Given the amount of equipment left behind it is suspected that vehicles were used to transport the items. This site had been previously protected by its isolation from vehicular access. It also appears the remoteness of Jack Canyon has allowed vandalism to continue with little risk that perpetrators will be observed or apprehended (Spangler, Boomgarden et al. 2007).

Jack Canyon has considerable potential to contribute important new insights to prehistoric land use patterns and settlement patterns in the broader Tavaputs Plateau region, specifically how Desolation Canyon and its tributary canyons were incorporated into the complex settlement and subsistence strategies evident in Nine Mile Canyon and Range Creek Canyon. As such, the significance of these sites cannot be understated, and therefore any alternative implemented by the BLM for full-field development should include a more holistic approach to mitigation measures. In light of these concerns, CPAA recommends:

- Given the industry and agency preferred alternatives call for 20 to 43 wells in the spatially restricted Jack Canyon area, it must be acknowledged that both alternatives will have significant impacts to the roadless qualities that have protected many, if not most, of the archaeological sites in the drainage. As such, CPAA concurs that access routes into Jack Canyon should be gated and access limited to development and administrative purposes.

- A complete assessment all previously recorded sites and any additional sites identified through additional Section 106 compliance surveys should be initiated to establish a thorough baseline database of site conditions evident at the time Jack Canyon was restricted to industry traffic.
- Given the isolated nature of Jack Canyon and the consequent opportunities for oil and gas workers to engage in activities that denigrate or diminish the integrity of archaeological sites here, independent audits of site conditions by qualified archaeologists should be periodically implemented to assess any human-caused changes to site conditions. Such audits would deter inappropriate and illegal behavior, and could therefore be considered within the context of “minimizing” adverse effects, as defined in 36CFR800.
- Jack Canyon would be an appropriate and discrete environmental universe to initiate broader mitigation measures, including Class II stratified random sample surveys and/or Class III block surveys. These surveys could contribute important new insights into the relationship between seasonal water sources and human land-use patterns on the West Tavaputs Plateau. These insights could assist and augment BLM management of cultural resources elsewhere on the plateau by identifying those environmental niches where significant cultural resources are likely to occur.

Agency Preferred Alternative

As discussed in Table 2.7-1, the agency’s preferred alternative articulates a “unique component” that would *require* BBC and other operators to construct turnouts and/or designated parking locations at appropriate intervals to reduce transportation-related safety concerns, and that BLM would invite BBC and other operators to cooperate in a partnership to develop visitor interpretation and enhancement to improve the recreational experience in Nine Mile Canyon (DEIS 2-97). Any enhancement of the Nine Mile Canyon recreational experience that is consistent with the 1995 BLM Recreation and Cultural Area Management Plan for Nine Mile Canyon is long overdue, and CPAA enthusiastically supports implementation of public outreach and educational measures hinted at in the agency preferred alternative.

However, the effort as articulated in the agency preferred alternative (Alternative E) is, at best tepid and reflects a paucity of innovative approaches on the part of the BLM. There is also an inherent assumption that pullouts and parking areas will ameliorate dust accumulation and conflicts between recreational canyon visitors and industrial traffic, and that this will facilitate a safer visitor experience. Yet there is no acknowledgment that this assumption would be valid only at those localities with pullouts and parking areas, but that the recreation public commonly observes dozens if not hundreds of additional sites visible from the existing roadway where vehicle congestion, road dust and visitor safety would continue to be a serious problem. The designation of parking areas or pullouts is in fact meaningless if not accompanied by an aggressive transportation plan that considers and accommodates public visitation in the canyon corridor as a whole.



Furthermore, there is a near-absence of public education and outreach as part of the agency-preferred alternative. The mere statement that BBC and other operators would be “invited” to cooperate in a partnership is itself meaningless in light of the BLM’s refusal to engage willing participants as consulting parties in the resolution of adverse impacts prior to full-field development. The BLM’s denial of public participation has clearly resulted in an adversarial climate between BBC/BLM and resource preservation advocates wherein any future partnerships will undoubtedly be hampered by a paucity of mutual trust or relationships. The absence of trust, if not outright hostility, makes it unlikely that BBC or other operators would willingly engage in public education and outreach initiatives without appropriate incentives.

There is also considerable doubt among resource protection advocates that public education and outreach will receive any priority whatsoever within the Price Field Office, either in terms of budget or at the policy level. They point to the fact that few measures articulated in the Nine Mile Canyon management plan have actually been implemented over the past 13 years of the plan. This mistrust of the federal agency is also a reflection of the BLM’s failure to fully embrace interested groups as consulting parties in the past and the perception that decisions impacting cultural resources (and other environmental and private property values) have been decided without their participation.

In general, the agency-preferred alternative tangentially acknowledges there is a need for public outreach and education, but it is vacuous in terms of how to accomplish those ends, offering piece-meal approaches with no stated benchmarks or goals. The statement that BBC and other operators would be “invited” to participate is in fact an abrogation of the BLM’s responsibility to fully consider the direct, indirect and cumulative impacts of its decision-making on historic properties in the short-term or long-term, in effect shifting all responsibility for public education and outreach to the willingness of the operators to engage a public that is already distrustful of the BLM and BBC. And the preferred alternative offers no assurances that anything other than parking areas and pullouts will be the ultimate legacy of full-field development.

A number of more innovative approaches could be included in the agency-preferred alternative. Among the most fundamental would be a commitment from the BLM to engage all parties, including resource protection advocates and operators, in a transparent planning process over the life of the project that will establish and monitor short-term and long-range objectives for resource protection in the canyon, and that operator participation in that process will be mandatory. This process could, if properly implemented, provide the basis for prioritizing all public education, outreach and enhanced recreational and law enforcement initiatives.

Among the related strategies that should be considered:

- Requiring operator participation in a cultural resource mitigation fund wherein annual commitments would be required to pay for ongoing studies of adverse effects (e.g., dust studies), stabilization or recovery of sites impacted by development activities, development of recreational facilities that ameliorates conflicts with industrial uses, and other projects that could mitigate the cumulative impacts of industrial development.
- The nature and extent of the annual commitments to a mitigation fund *could* be based on a percentage of annual revenues from the project area with an established minimal threshold of participation. Mitigation funds could be dispersed through a non-lapsing grant pool to independent researchers/applicants with appropriate research designs (see similar mitigation grant pool programs established for the Central Utah Project and for the federal lands disposal program in Las Vegas, Nevada).
- The mitigation fund should be adequate to prioritize research projects that will contribute to the long-term preservation of cultural resources through avoiding and minimizing impacts to cultural resources in the West Tavaputs area, and they should not be applied toward the operators' Section 106 survey mandates. Such funds could become important matching revenue that would assist the BLM in the fulfillment of Section 110 responsibilities in the region (e.g., Challenge Cost Share Program funding) including Class II or Class III block surveys, or completion of the canyon corridor surveys initiated almost 20 years ago by Carbon County volunteers. Operator participation in such mitigation projects could become a fundamental component of mitigating the direct, indirect and cumulative impacts of the project to the integrity of the National Register district's location, design, setting, materials, workmanship, feeling or association.
- The mitigation fund should be adequate to implement a monitoring and auditing program wherein those sites at risk from increased degradation from air-borne pollutants, increased vulnerability to vandalism, and increased susceptibility to erosion and vibration could be consistently examined to determine the nature and extent of ongoing impacts. This would also include establishing a baseline from which future impacts could be measured.
- The mitigation fund should be established at a level adequate to implement the Nine Mile Canyon special management plan in its entirety, including hiring a full-time law enforcement officer and/or rangers trained in cultural resource protection and authorized to enforce state and federal cultural resource protection laws and investigate violations of those laws. Funding of a law enforcement officer dedicated to Nine Mile Canyon should be a fundamental component of the EIS regardless of which alternative is chosen.
- The agency-preferred alternative should require operator participation in a long-term public outreach and education initiative that extends beyond Nine Mile Canyon. Such initiatives are increasingly a common components of major development projects throughout the West to (a) educate the public as to the nature of the cultural resources that were encountered and impacted through the course of development, (b) explain the scientific contributions resulting from Section 106 compliance, (c) foster a better understanding of cultural resource protection laws and how operators complied with those laws, and (d) promulgate an appreciation for cultural resources as part of the

local, regional and national heritage. Good examples of such outreach initiatives in Utah include *From Hunters to Homesteaders* (Stettler and Seddon 2005) produced as part of the Kern River pipeline project, and *Treasures of the Tavaputs* (Spangler and Spangler 2007), produced collaboratively by CPAA and Questar coincident to pipeline construction on the West Tavaputs Plateau. Public outreach should also be considered as one component of mitigation of adverse effects to cultural resources, whether those impacts are direct, indirect or cumulative.

- The BLM should encourage all operators on the West Tavaputs Plateau to engage in those practices, projects and initiatives that go above and beyond what the letter of federal law requires, and that operators who engage in a broad range of proactive initiatives as part of their corporate citizenship be appropriately acknowledged by the BLM. Such initiatives could include partnerships to preserve and protect cultural resources, as well as efforts to enhance other environmental values. Likewise, there should be no special acknowledgment or recognition for any compliance with “the letter of the law” that is required of all citizens.

Miscellaneous Recommendations:

The CPAA analysis of the DEIS identified a number of minor concerns and errors that should be corrected in the final EIS:

- The Draft EIS repeatedly makes reference to Bill Barrett Corporation (BBC) and other oil and gas operators. CPAA recommends that all “other operators” be clearly identified, as well as their proportional financial and legal interests in the WTP leases.
- CPAA concurs with Section 1.7.1.3 that (1) proposed development could have direct, indirect and cumulative impacts to petroglyphs, prehistoric habitation and historic resources due to increased traffic, noise and infrastructure, (2) that development could impact the proposed Nine Mile Canyon Historic District, (3) that the accumulation of dust and/or dust suppressants could change rock art clarity, and that (4) increased access to the WTP project area could facilitate increases in vandalism, looting and unauthorized ORV use. However, these statements should be clarified to reflect that (1) proposed development could have direct, indirect and cumulative impacts to petroglyphs *and pictographs*, to prehistoric *architectural and habitation sites*, and to historic resources; (2) that development could impact sites that are part of the Nine Mile Canyon *Archaeological District* (historic resources are not part of the nomination); (3) the accumulation of dust and/or dust suppressants could change the clarity of prehistoric *petroglyphs and pictographs, as well as historic signatures*; (4) and increased access to *and longer-term residency of the WTP by project workers* could result in an increase in vandalism, looting and improper vehicle use.
- The DEIS should be modified throughout to better reflect the BLM’s commitment under FLPMA to protect cultural resource values, and under the Energy Policy Act that commercial development shall “be conducted in an environmentally sound manner using management practices that will minimize potential impacts” to other resources.
- Table 2.2-6 indicates that operators would “inform” their personnel, contractors and subcontractors about relevant federal regulations intended to protect archaeological

and cultural resources, whereas the next section indicates operators would be “required” to ensure those personnel abide by hunting laws. This appears to deemphasize the significance of cultural resource protection. This section should be modified to reflect that operators would be *required* to ensure their personnel, contractors, and subcontractors abide by relevant federal laws and regulations intended to protect archaeological and historic resources. Furthermore, operators should be required to report to appropriate law enforcement officials any violation of these laws and regulations, and that they will assist authorities in the prosecution of violators under the Archaeological Resources Protection Act and other relevant state and federal laws. It is also recommended that the EIS specify that operators have a personnel policy that requires immediate dismissal of individuals who violate laws and regulations intended to protect cultural resources.

- Section 3.12.2 Cultural Overview contains a minor error in that it states “Gunnerson (1969) reported a skeleton with cranial deformation” at Rasmussen Cave. The skeleton had no cranial deformation.

Summary

As discussed above, the draft EIS contains many deficiencies related to cultural resources, as well as factual inaccuracies. These concerns range from serious omissions or misrepresentations of scientific data related to magnesium chloride to a failure of the BLM to consider a full range of management alternatives commensurate with the size and scope of such a massive undertaking lasting 30 to 40 years. Indeed, the Draft EIS is remarkably uninventive, offering no new approaches or insights to management of impacts to cultural resources in an area of the northern Colorado Plateau renowned the world over for its cultural resources. As reflected by the minimal differences between the action alternatives in the DEIS, there would seem to be a serious deficiency in thoughtful consideration of alternatives that would avoid and minimize impacts to cultural resources, with an implied preference of mitigation of impacts but only to those sites within the spatially restricted area of potential effect.

To this end, CPAA is concerned about the general tone of the DEIS that repeatedly cites FLPMA and the Energy Policy Act to emphasize the valid rights of lease holders to exercise those leases with statements to the effect that “operators must fulfill their obligations and responsibilities under Federal leases to explore, develop and produce commercial quantities of hydrocarbons” (DEIS ES-2), while at the same time the DEIS appears to deemphasize provisions in those same federal laws mandating balanced multiple uses of federal lands and preservation of environmental values. Likewise, there is near-absence of discussion or consideration of the long-term cumulative impacts to cultural resources that would result from three or four decades of development in the region (a single page of discussion in a document more than 1,000 pages long).

As articulated repeatedly throughout the DEIS, the development of oil and gas resources is consistent with the mission of the BLM and with various federal laws, primarily the Mineral Leasing Act of 1920, FLPMA and the Energy Policy Act of 2005 (see Executive Summary ES-1 to ES-9). CPAA concurs that BBC and other operators have valid lease rights, and that the purpose and need of the West Tavaputs Plateau (WTP) full-field development is to provide a

mechanism whereby those operators can exercise those leases and extract natural gas from the subsurface, and that development of those leases is within their legal rights. However, CPAA is concerned about how those leases will be developed over the next 30 to 40 years, and how development will avoid, minimize or mitigate the direct, indirect and cumulative impacts to known and unknown cultural resources throughout the West Tavaputs Plateau.

An overriding concern is the paucity of baseline data on the canyon generally (an exception is the growing corpus of data from the upper plateau) whereby informed management decisions could be made. Because of the small areas subjected to Section 106 clearances in the past, the BLM simply does not know the quantity, diversity or density of cultural resources under its jurisdiction, and hence management decisions have been predicated on incomplete or inadequate information. Indeed, there has been little recent survey work done in the Nine Mile Canyon corridor where site density is the highest and where entire sections of the canyon bottom have never been surveyed. These sites remain most vulnerable to anticipated increases in vehicular traffic. Based on CPAA analysis of existing data, we believe that less than 10 percent of the canyon corridor has been even cursorily investigated, and that the number of sites along the corridor (exclusive of the upper bench areas, mesas and plateaus) is conservatively estimated at about 10,000 sites. Most of these would be located within the boundaries of the proposed Nine Mile Canyon Archaeological District.

Given the nature of the undertaking and the sheer number of known and unknown sites that are or will be directly and indirectly impacted by the full-field development, it is imperative that the DEIS more fully consider management strategies that will foster the preservation and protection of these resources. Yet the DEIS offers no strategy to identify the cultural resources that could be impacted, nor does it articulate under the action alternatives any intent to ameliorate these data gaps through fulfillment of its own Section 110 responsibilities. CPAA is fundamentally concerned that BLM decision-making has been predicated on insufficient data related to the nature, diversity and distribution of archaeological resources within the project area, and the Draft EIS articulates few proactive measures whereby these data gaps will be ameliorated. Quite simply, the BLM cannot manage resources it does not know exist, and management decisions made without baseline data will inevitably result in adverse and unanticipated consequences to the integrity of historic properties. At the current time approximately 90 percent of archaeological sites in the canyon bottom remain undocumented. Furthermore, the vast majority of the roughly 1,000 sites documented in the canyon corridor have not been documented to currently accepted standards, nor is there an adequate baseline from which future site degradation can be monitored.

CPAA appreciates the opportunity to comment on the Draft EIS, and as an organization we look forward to working collaboratively with the Price Field Office on future projects that will preserve and protect historic properties for future generations. These efforts could include assisting the BLM in the preparation of National Register nominations, the development and dissemination of “best practices” materials for recreation users, the development of baseline data to facilitate future monitoring of adverse effects, the development of public outreach materials and site interpretation, and data recovery. We are optimistic BLM managers will prioritize funding for proactive management strategies, and we strongly encourage and support the BLM in

any effort to more aggressively embrace its Section 110 responsibilities. Please feel free to contact me if you have questions or need additional clarification.

Best Regards,

Jerry D. Spangler, MA RPA
Executive Director

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