STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ok
(E)

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

April 17, 1990

RECEIVED
APR 23 1990
OIL CON. DIV.
DIST. 3

Blackwood & Nichols Co.
P.O. Box 1237
Durango, CO 81302

Attention: William F. Clark

Administrative Order NSL-2782

Dear Mr. Clark:

Reference is made to your application dated February 7, 1990 for a non-standard coal gas well location for your Northeast Blanco Unit Well No. 500 to be located 475 feet from the North line and 425 feet from the West line (Unit D) of Section 20, Township 31 North, Range 6 West, NMPM, Basin Fruitland Coal (Gas) Pool, San Juan County, New Mexico. The W/2 of said Section 20 shall be dedicated to the well forming a standard 320-acre gas spacing and proration unit for said pool.

By the authority granted me under the provisions of Rule 8 of the Special Rules and Regulations for the Basin-Fruitland Coal (Gas) Pool as promulgated by Division Order No. R-8768, the above-described unorthodox coal gas well location is hereby approved.

Sincerely,

William J. LeMay
Director

WJL/MES/ag

cc: Oil Conservation Division - Aztec
US Bureau of Land Management - Farmington
US Bureau of Reclamation - Durango

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

GARREY CARRUTHERS
GOVERNOR

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Date: 4-12-90

ATTN: Mike Stogner

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

Re: Proposed MC_____
Proposed DHC_____
Proposed NSL X
Proposed SWD_____
Proposed WFX_____
Proposed PMX_____

Gentlemen:

I have examined the application dated 3-27-90

for the Blackwood & Nichols Co. LTD N.E.B.U. # 5 Sec
Operator Lease & Well No.

D-20-31N-6W and my recommendations are as follows:
Unit, S-T-R

Approve

Yours truly,

Ernie Busch

BLACKWOOD & NICHOLS CO., LTD.
P.O. BOX 1237
DURANGO, COLORADO 81302-1237

(303) 247-0728

Mr. Michael E. Stogner
New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
P. O. Box 2088
Santa Fe, New Mexico 87501

March 26, 1990

Re: Unorthodox gas well location, NEBU Well No. 500
475' FNL - 425' FWL, Sec.20, T31N, R6W, Basin Fruitland
Coal Gas Pool, San Juan County, New Mexico.

Dear Mr. Stogner:

Upon reviewing your letter of March 5, 1990 concerning the location of the the subject well, Blackwood & Nichols enlisted the assistance of Property Management and Consulting, Inc.; Roger A. Moore, Jr., principal archeological investigator; and Al K. Kroeger, registered land surveyor to investigate the northeast quarter of section 20 to locate and stake a "less" unorthodox location than the one staked at 475' FNL - 425' FWL.

The field team first investigated the rectangular window bounded on the west by 790'FWL, the north by 790'FNL, the east by 1850'FWL and the south by 2510'FNL. Due to the steep topigraphical relief of this area, only two (2) potential well sites were located. The first location cenered 1370'FNL - 1370'FWL and the second centered 967'FNL - 1693'FWL.

As stated in Moore's Archaeological Survey, attached, both potential well sites were not recommended by the archaeologist due to the presence of three (3) Arch. sites. These archaeological sites precluded staking a location to the east or southeast of the original NEBU 500 location (945'FNL - 690'FWL).

Second, the field team investigated the area 350 feet north of the original NEBU 500 location and found it to be unsuitable, as outlined in Moore's report, due to: (1) the potential of having adverse errosional effects on site LA64838, (2) the potential of site LA64838 being burried in areas beyond those currently visible, and (3) the presence of a 20' bluff which begins 50' northeast of 595'FNL - 690'FWL.

All efforts to the contrary being exhausted, I believe that the alternate 500 location as staked (475'FNL - 425'FWL) is the "less" unorthodox well site avaliable for the NEBU 500 well.

The offset operator, Northwest Pipeline Corp., has waived objection to the subject unorthodox location.

I solicit your administrative approval of an exception to the footage and and location requirements of Rule 7, R-8768 for the subject well, located in the Basin Fruitland Coal Pool.

Your prompt reconsideration of this request is appreciated.

Sincerely,

William F. Clark
Operations Manager
Blackwood & Nichols Co.,Ltd.

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

March 5, 1990

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

Blackwood & Nichols Co.
P.O. Box 1237
Durango, CO 81302

Attention: William F. Clark

RE: Unorthodox gas well location, NEBU Well No. 500, 475' FNL - 425' FWL, D-20-T31N-R6W, Basin-Fruitland Coal Gas Pool, San Juan County, New Mexico.

Dear Mr. Clark:

Upon review of the archeological survey attached to the subject application, it is my understanding that two drill sites were surveyed, 1) being 945' FNL - and 690' FWL and 2) 475' FNL - 425' FWL. The recommendation by Rodge A. Moore, Jr., principal archeological investigator, as I understand, is to move the 1st site to the east 375 feet or to the north 350 feet. The second, more unorthodox, well site was cleared.

Inasmuch as it appears that an alternate less unorthodox well site is available (being 595' FNL - 690' FWL), your request for administrative approval for the 475' FNL - 425' FWL cannot be granted at this time. Should you wish to pursue this particular well location further, please contact me and I well set this matter for hearing before an examiner on the next available docket.

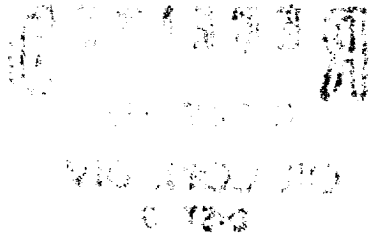
Should you have any questions or comments concerning this matter, please contact me at (505) 827-5811.

Sincerely,

Michael E. Stogner
Petroleum Engineer

MES/ag

cc: Oil Conservation Division - Aztec
US Bureau of Land Management - Farmington
US Bureau of Reclamation - Durango
William J. LeMay - OCD
Robert G. Stovall - OCD



BLACKWOOD & NICHOLS CO., LTD.
P.O. BOX 1237
DURANGO, COLORADO 81302-1237

(303) 247-0728

February 7, 1990

Mr. William LeMay
New Mexico Oil Conservation Division
P.O.Box 2088
Santa Fe, New Mexico 87501

Re:Unorthodox Gas Well Location
Northeast Blanco Unit No. 500
475'FNL - 425'FWL, Sec.20, T31N, R6W
San Juan Co., New Mexico

Dear Mr. LeMay;

Blackwood & Nichols Co., Ltd. requests administrative approval of an exception to the footage and location requirements of Rule 7, R-8768 for the subject well, located in the Basin Fruitland Coal Pool.

This request is for exception due to topography. A Vicinity Map and C-102 are attached for your reference. As evidenced by the Vicinity Map, a southwest quarter location is not feasible because of Navajo Reservoir coverage. A directionally drilled wellbore is not considered operationally feasible for the open hole completion method that has proven most successful in Fruitland coal wells. This well is proposed as an open hole completion. Blackwood & Nichols investigated the possibility of a location southeast of the proposed location but this area contained two known archeology sites and the possibility of other sites. It is probable that the the southeast trending ridgeline contains archeology sites down to the edge of Navajo Reservoir since this area has a high density of sites. This location is 2900' from the nearest Fruitland coal well proposed by Blackwood & Nichols Co., Ltd. and would be 1300'- 1400' from a standard footage location that may be proposed by the offset operator.

The west half of Section 20, T31N, R6W, will be dedicated to this well. All operators of the offset proration units have been notified of this request by certified mail.

Your prompt consideration of this request is appreciated.

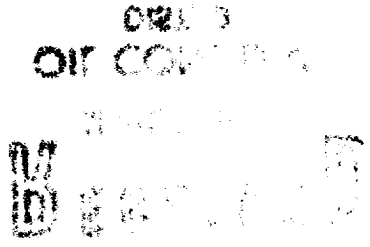
Sincerely,

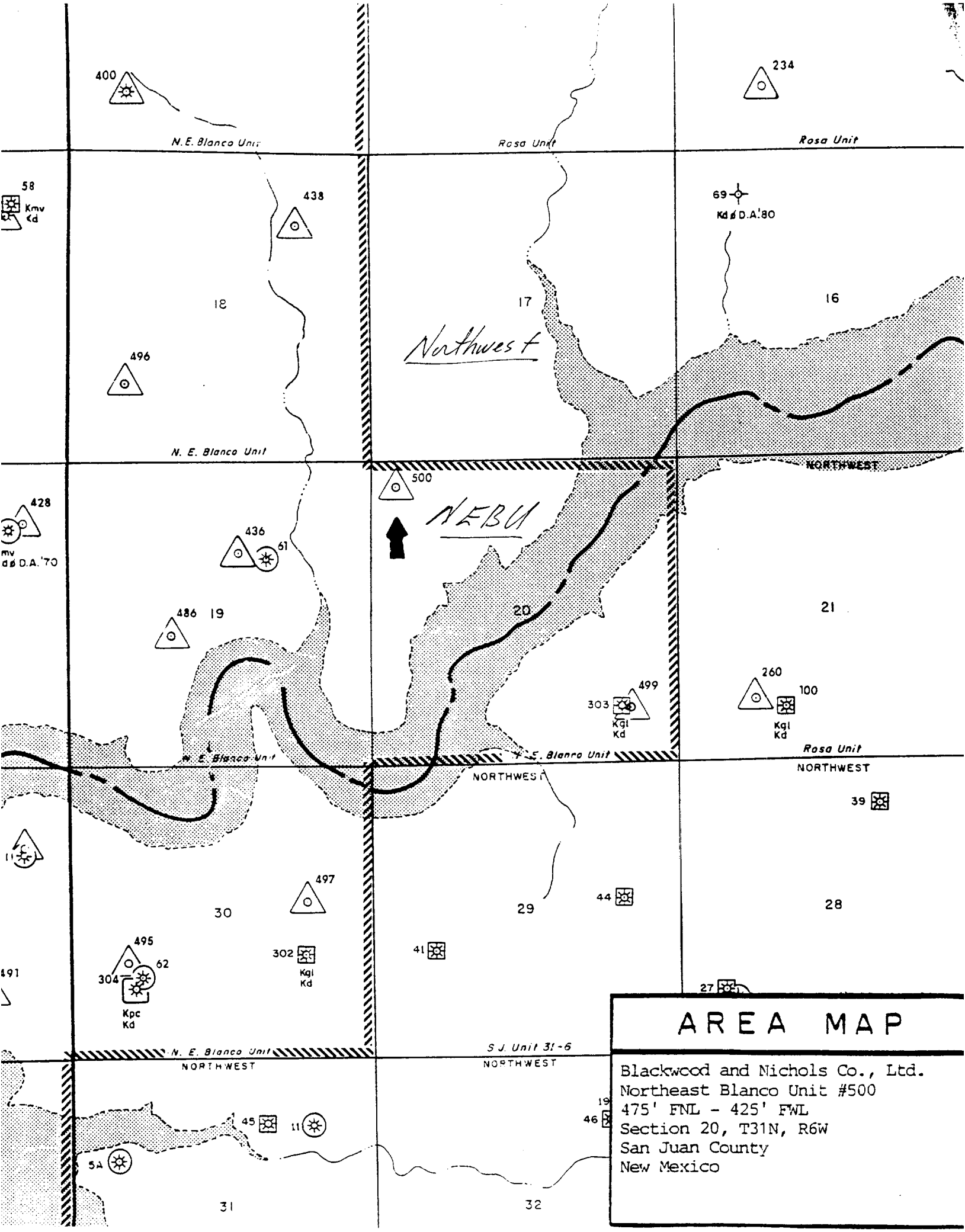
William F. Clark
Operations Manager
Blackwood & Nichols
Co., Ltd.

Waiver of Objection

Northwest Pipeline Corp. hereby waives objection to the proposed unorthodox location of the Northeast Blanco Unit No. 500.

By: Paul C. Thompson Date: 2/26/90





AREA MAP

Blackwood and Nichols Co., Ltd.
Northeast Blanco Unit #500
475' FNL - 425' FWL
Section 20, T31N, R6W
San Juan County
New Mexico

MOORE ANTHROPOLOGICAL RESEARCH

P.O. Box 1156. Aztec. New Mexico 87410 (505) 334-6675

March 22, 1990

Charles Neeley
Property Management & Consulting, Inc.
P.O. Box 2596
Farmington, New Mexico 87499-2596

Dear Mr. Neeley:

Enclosed you will find a copy of our report for the reconnaissance survey of NEBU 500 Alternate location area located on Burnt Mesa in San Juan Co., New Mexico. Three archaeological sites were discovered.

We have recommended that the NEBU 500 Alternate location be left where it is to avoid archaeological sites and topographic problems. The Bureau of Land Management and the New Mexico Oil and Gas Commission will make the final clearance determination after reviewing our report and will notify you of their decision.

An invoice for our services is enclosed. We have enjoyed working with you on this project and look forward to serving you in the future. If you have any questions concerning this report feel free to contact us.

Sincerely,

Roger A. Moore

Roger A. Moore

cc: Bureau of Land Management, Farmington Resource Area (2)

Project No. 90-07c

Cultural Resource Use Permit
No. 77-2920-89-D

An Archaeological Reconnaissance Survey of the area east and southeast of proposed Alternate NEBU 500 well on Burnt Mesa, San Juan County, New Mexico

for

Blackwood & Nichols Co., Ltd.

Submitted by

Roger A. Moore, Jr.
Principal Investigator

March 22, 1990

Moore Anthropological Research

Technical Report No. 90-07c

M.A.R., P.O. Box 1156, Aztec, New Mexico 87410

ABSTRACT

On March 16 & 19, 1990 Moore Anthropological Research conducted a Class II (reconnaissance) archaeological survey of the area east and south east of proposed gas well Alternate Northeast Blanco Unit 500 for Blackwood & Nichols Co., Ltd. of Durango, Colorado. The survey area is located on Burnt Mesa (T. 31N, R.6W, Sec. 20) in San Juan County, New Mexico and is under the jurisdiction of the Bureau of Land Management, Farmington Resource Area (minerals) and Bureau of Reclamation (surface). A total of approximately 11.90 acres (4.83 hectares) were inventoried.

Three archaeological sites were discovered during the survey. Two sites were recorded; the third site will require a Class III survey to properly define and record.

All three sites are along the same bench, which is the next lower bench below the original (now abandoned) NEBU 500 well location. While no archaeological sites were found within 150 ft. of the east side of the Alternate (preferred) NEBU 500 well location, a bluff makes the moving of the well to the east impractical.

The three sites are located in the standard spacing window defined by the New Mexico Oil Conservation Commission, and on the nearest bench area suitable for pad construction. The presence of these sites in this area, and the presence of a bluff east of the Alternate NEBU 500 location indicate it may be prudent to leave the well staked as it is.

INTRODUCTION

On March 19, 1990 Moore Anthropological Research (M.A.R.) conducted a Class II archaeological survey for Blackwood & Nichols Co., Ltd. of Durango, Colorado. Charles Neeley of Property Management & Consultants, Inc., agent for Blackwood & Nichols, requested the survey on March 2, 1990 and administered the project. Roger A. Moore administered the project for M.A.R.

Over the years the people of the United States have become more aware of the nonrenewable nature of their archaeological resources and their cultural heritage. As a result of this growing concern federal, state and local governments have passed laws and enacted ordinances designed to protect and conserve archaeological, historical, and anthropological resources. The principal legislation affecting federal lands, federally administered projects, or federally funded projects includes the Federal Antiquities Act of 1906 (P.L.52-209), the Reservoir Salvage Act of 1960 as amended (16 U.S.C. 469), the National Historic Preservation Act of 1966 (P.L.89-665) as amended in 1980 (P.L.96-515), the National Environmental Policy Act of 1969 (P.L.91-852), Executive Order No. 11593 of 1971 (36 F.R.8921, 16 U.S.C. 470), the Archaeological Resource Protection Act of 1979 (P.L.96-95; P.L.100-555), and the American Indian Religious Freedom Act of 1979 (P.L.95-341). The principal legislation affecting non-federal lands in New Mexico is the Cultural Properties Act. Work conducted in the course of this project is intended to comply with the above-mentioned laws and is governed by the stipulations of Cultural Resource Use Permit No. 77-2920-89-D.

Roger A. Moore and Randy Nathan, M.A.R. archaeologists, surveyed the project area for cultural remains. The Bureau of Land Management (B.L.M.) Farmington Resource Area was notified of the proposed survey prior to beginning fieldwork. Charles Neeley of Property Management, Al Kroeger and Jim Fuge of Kroeger & Associates (surveyor) accompanied the archaeologist during the fieldwork.

METHODS

The project area was surveyed by walking parallel to wavy transects and contour transects approximately 20 to 30m apart across the areas requested by the client. The project area was not marked beyond the existing markers already in place for the Alternate NEBU 500 well location and its road. All cultural remains were recorded relative to known points within the project area. Isolated Loci and archaeological sites were recorded according to the permitting agency guidelines. One small piece of blue flagging was left on each site to mark the mapping datum. Pertinent environmental data were also recorded. Locational information presented in this report is derived from plats or vicinity maps provided by the client. Sites and isolates are defined according to BLM Manual Handbook H-8100-1: I-14 and BLM Special Conditions for Survey Permits (2920).

RECORDS SEARCH

A records search was conducted prior to field inspection at the B.L.M., Farmington Area office on March 7, 1990 to determine if any sites had been recorded within a one mile radius of the project area. Projects in this area for which previous cultural resource inspections have been conducted include oil and gas related development projects. The records search showed ten previously recorded sites within one mile of the project (BLM Supplement Map [for BLM archaeologist only]). None of these sites are within 1000 ft. of the project area. The nearest previously recorded site (MAR-89-78) is located over 80 meters from the reconnaissance area.

PROJECT AREA

Northeast Blanco Unit No. 500 Alternate Well Location Reconnaissance

Legal Description: T.31 N. R.6 W. Section 20. CT 1/4 NW 1/4

New Mexico Prime Meridian, San Juan County, New Mexico, 6200-6250' Elevation

Map Source: U.S.G.S. 7.5' Bancos Mesa NW, New Mexico 1954 (Photorevised 1982)

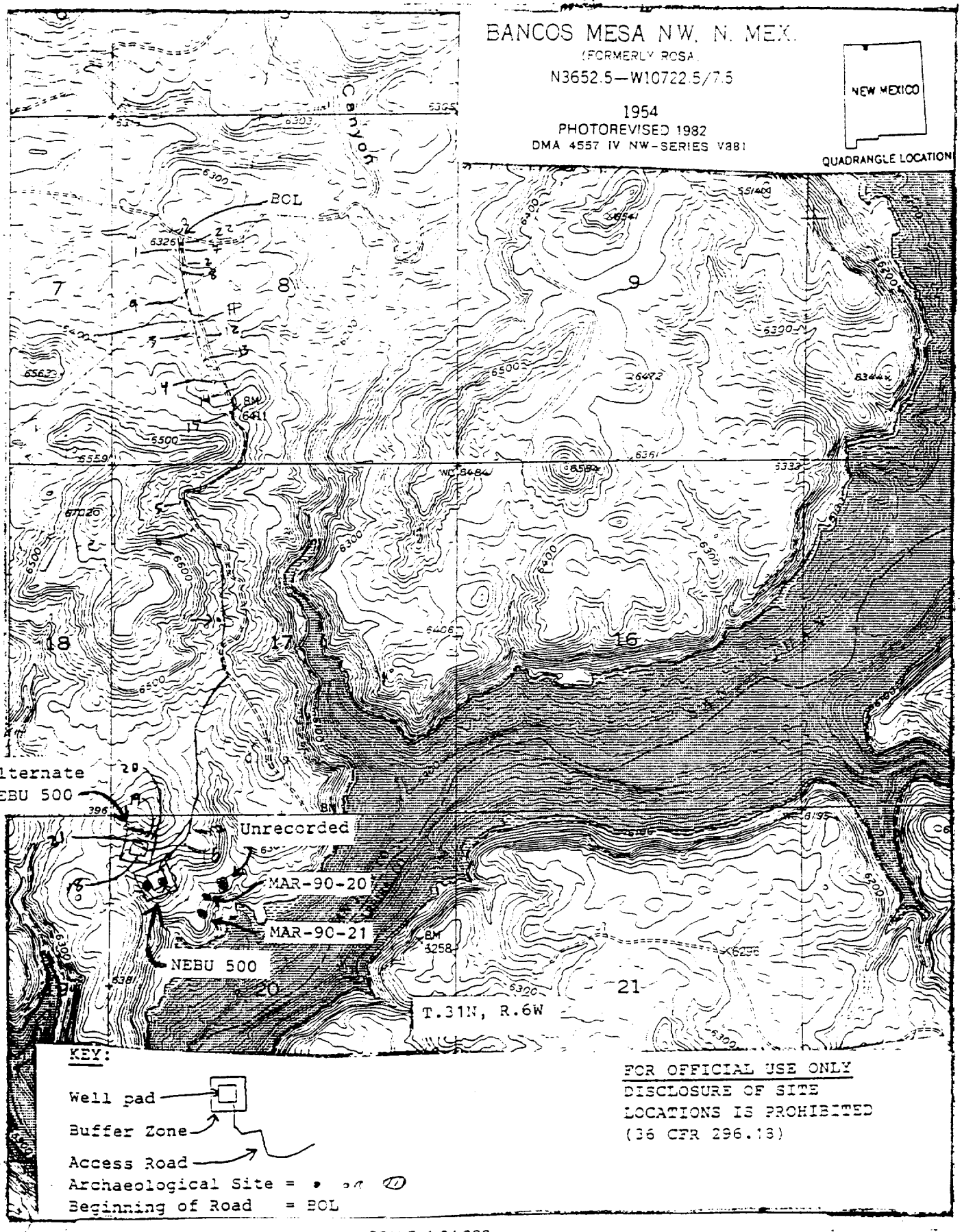
Land Jurisdiction: Bureau of Land Management, Farmington Resource Area

Surveyed Area: 1400' x 400' (bench area)
Acres: 12.90

Environment: The area is a series of broad to very narrow benches on the south side of Burnt Mesa, overlooking the San Juan River and Navajo Reservoir (Figure 1). Sandstone outcrops in numerous places on the benches and along the edges of benches. The soil is mostly sand or sandy clay derived from decomposing sandstone or shale; the soils are normally 0 to 35cm deep and usually contain sandstone clasts or pebble to cobble sized gravels. The gravels are made up of siltstones, basalt, quartzites, some cherts and occasional nodules of white chalcedony, all of which have fair to very good conchoidal fracture properties; diorite and sandstone cobbles suitable for use as manos are also present. Over 80% of the lithic artifacts seen on sites found within 1000 ft. of the project area are derived from cores from these gravels. A woodland provides a 5 to 15% cover over most of the area composed of juniper, pinyon, gambel oak, sagebrush, club cholla, grama grass, antelope brush, composites, forbs, and narrow leaf yucca. A small area on the west side of the bench surveyed has a 10-20% scrubland cover dominated by sagebrush. Animals noted included deer, rabbits, and crows. Current use of the area is for cattle grazing. The weather was cool and clear during the survey.

Project Background: The Original NEBU 500 well location (945'F/NL, 690'F/WL, Sec. 20) and the Alternate NEBU 500 well location (475'F/NL, 425'F/WL, Sec. 20) were surveyed by Moore (1990). The Original NEBU 500 had a site on its west-central edge and in its southeast quadrant and was not recommended for clearance. The well was moved to the Alternate NEBU 500 location and no archaeological sites were found to prevent its construction. While the Alternate NEBU 500 was moved a little farther north than the archaeologist suggested in the report and also a little farther west, this was deemed prudent for three reasons: 1) erosion in the area of site LA64838 between the time it was originally recorded in 1987 (Moore 1987) and this survey showed the site to be over twice as large as originally thought, therefore it is possible the site could potentially still have buried areas beyond these currently visible boundaries: 2) the greater distance between the Alternate NEBU 500 and LA64838 was seen as added protection to the archaeological site from adverse effects from changes in erosional patterns which will occur as a result of having a large unvegetated area (well pad) and significant change in slope along the south edge of the pad after it is built; 3) a 20 ft. bluff which begins about 50 ft. east of the Alternate NEBU 500 and extends to the east necessitated the moving of the pad west to its staked location.

FIGURE 1


BANCOS MESA N.W., N. MEX.
(FORMERLY ROSA)
N3652.5—W10722.5/7.5
1954
PHOTOREVISED 1982
DMA 4557 IV NW-SERIES V881
NEW MEXICO
QUADRANGLE LOCATION
BCL
Alternate
NEBU 500
Unrecorded
MAR-90-20
MAR-90-21
NEBU 500
T.31N, R.6W
KEY:
Well pad
Buffer Zone
Access Road
Archaeological Site = • or ⓐ
Beginning of Road = BCL
FOR OFFICIAL USE ONLY
DISCLOSURE OF SITE
LOCATIONS IS PROHIBITED
(36 CFR 296.18)
SCALE 1:24 000
1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER
CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

The New Mexico Oil Conservation Commission took the statements in Moore (1990) about minimum distance the well had to be moved to avoid the two sites on the Original NEBU 500 to mean that there was suitable terrain to the north or east. Moore's suggestion of distances and directions to move the well were based not on suitability of terrain in those directions, but on the directions which would require the minimum amount of distance to move to avoid the archaeological sites; the minimum distances to move the pad to avoid the sites was to the north and east, and the maximum distances were to the west and south. The client moved the well to the Alternate NEBU 500 location based on both topographic constraints and archaeological constraints.

Because the Alternate NEBU 500 well location was rejected the client requested we do a reconnaissance survey of areas to the east and southeast of the Original NEBU 500 location to determine archaeological feasibility of moving the well in that direction. The reconnaissance survey is the subject of this report.

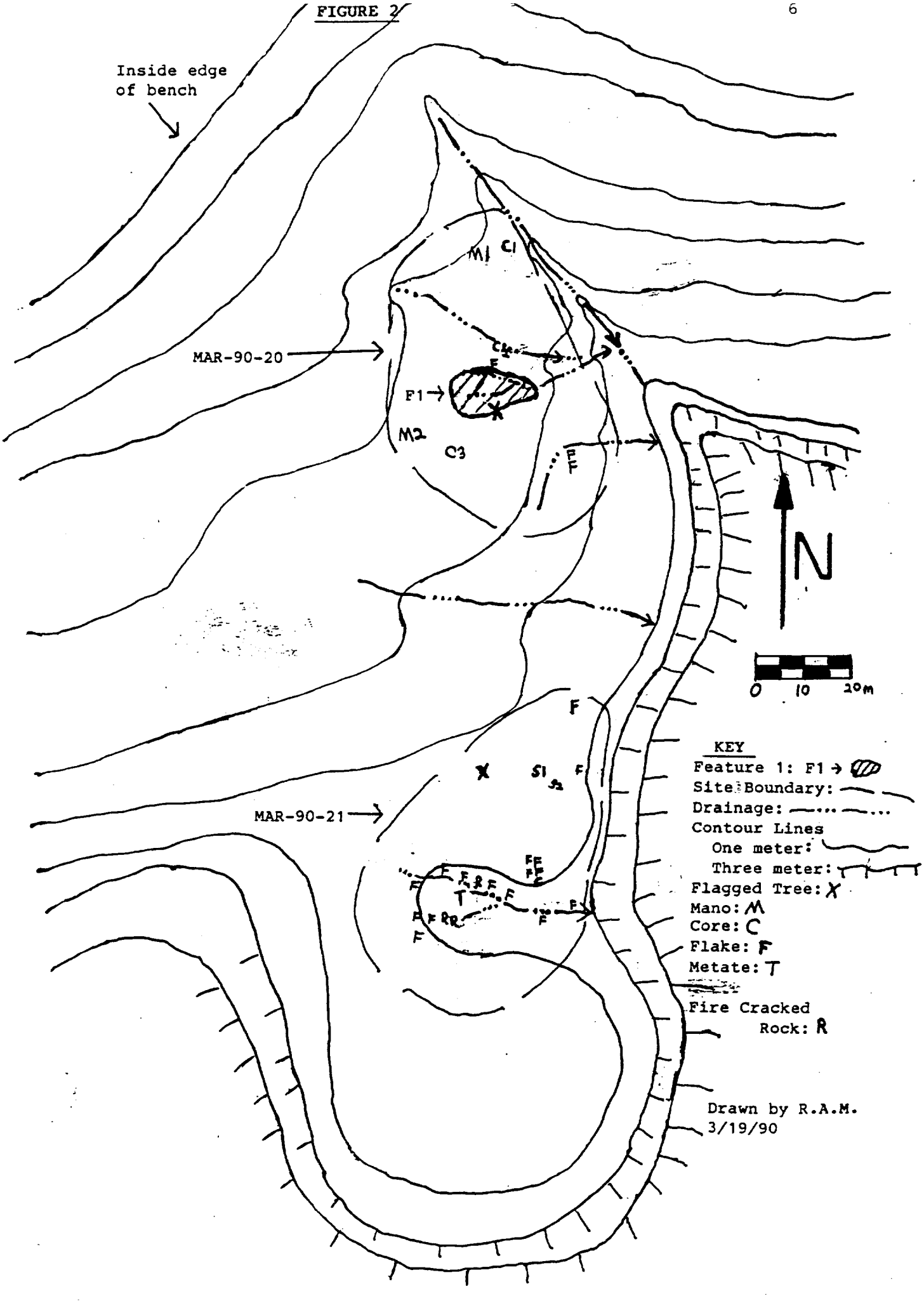
Project Description: This is a Class II (reconnaissance) survey of a potential well pad area. An area east and southeast of the proposed NEBU 500 well was examined to see of any cultural resources were present which would have an effect on placement of a possible well location on the bench southeast and below the Original NEBU 500 well location.

Cultural Resources: Three archaeological sites were found. Sites MAR-90-20 and MAR-90-21 were recorded and a third site was found but requires a Class III type survey of the bench to determine its actual extent (it is a very dispersed wide spread artifact scatter). In order to avoid sites MAR-90-20 and MAR-90-21 a well location would have to lay parallel to the length of the bench and be no more than 180 ft. wide. There would have to be a more detailed recording of the sites and probably a testing program because there would be less than 80 ft. between the edge of the pad and edge of at least one of the sites. Because the pad would make significant changes in the drainage patterns and intensity of runoff and because of the short distance between a pad boundary-site boundary it is not likely the B.L.M. will allow a pad to be built on this bench. The unrecorded third site looks like it will cover up to a third of the bench area it is on, leaving an area to the east and to the west, each less than 200 ft. long. This will not be sufficient space to build a pad and have any kind of protective buffer between the edge of the pad and edge of the site.

Site MAR-90-20 is located on a lower bench off a southerly ridge extension of Burnt Mesa. The waters of Navajo Dam are visible to the southeast. The site is on a slightly easterly slope with outcrops of sandstone bedrock common throughout the location. (Figure 2)

The site is a lithic and groundstone artifact and fire cracked rock concentration. Artifacts include at least 10 flakes, 5 tools, and about 50 fore cracked cobbles. One feature is characterized by a low density scatter of fire cracked rock and lithic debris. Feature 1 measures 20 x 7 meters and contains 80-90% of the fire cracked rock on the site, and 4 flakes which are in the east and lower portion. Cultural material is exposed in eroded shallow channels, deflated areas, and on top of sandstone outcrops.

FIGURE 2


Inside edge of bench
MAR-90-20
MAR-90-21
M1
C1
C2
F1
M2
C3
N
0 10 20m
KEY
Feature 1: F1
Site Boundary:
Drainage:
Contour Lines
One meter:
Three meter:
Flagged Tree: X
Mano: M
Core: C
Flake: F
Metate: T
Fire Cracked Rock: R
Drawn by R.A.M. 3/19/90

Tools include the following: one possible unshaped gray quartzite cobble one hand mano with one minimally used grinding surface; one medium grained gray quartzite cobble shaped one hand mano with two grinding surfaces (1 smooth polished grinding surface and one pecked grinding surface with linear stria); one reddish brown fine grained quartzite bidirectional core with prepared platforms; one light green siltstone cobble unidirectional core with a cortical platform; one dark green siltstone cobble unidirectional core with a cortical platform. Flakes are made from yellow-brown fine grained quartzite (20%), basalt (40%), dark green siltstone, black siltstone, light gray fine grained quartzite, and clear/pinkish chalcedony (10% each). Flakes are 50% primary core reduction flakes, 20% secondary core reduction flakes, and 30% tertiary core reduction flakes. The assemblage indicates this was a lithic quarry and a food processing site. The shaped mano is of Anasazi origin but of unknown phase.

Intact cultural deposits may exist in areas not yet deflated or eroded (northwest and west side of the site). Soil depths in these areas range from 15 to 25 cm thick, above the sandstone bedrock. The presence of fire cracked rock suggests that buried feature/hearth may be present. Temporal dates may be obtained from this site through thermoluminescence analysis of the fire cracked rock and through examination of possible buried deposits which may contain diagnostic material. It also holds research potential for studies of Anasazi quarry exploration; lithic technology, and land use. It may therefore be potentially eligible for nomination to the National Register under Criterion D of 35 of CFR 604

Site MAR-89-21 is found near the edge of a southeastern and lower bench of Burnt Mesa (Figure 2). The bench slopes off in all directions but west. A clear and narrow open view of the waters of the Navajo Reservoir and the San Juan Valley are possible from this location. Juniper and sagebrush are the prevalent plant species in this woodland. The soil is sandy with numerous gravels mixed in, the gravel content increases on the lower edges of the bench before the bench drops off completely on the east side where bedrock is exposed at the drop off.

The site is a lithic and groundstone artifact and fire cracked rock scatter. Cultural material is primarily exposed on the eastern and southern sides of the bench. Erosion is the main reason for exposure on the south side. This erosion indicates the possibility of buried cultural deposits in slightly higher and more stable area of the bench. Further examination of these deposits could lead to the discovery of temporally diagnostic artifacts.

Artifacts include at least 20 flakes, two scrappers, a core, and a metate, and at least 30 fire cracked cobbles. The flakes are made from gray-red orthoquartzite (30%), basalt (30%), red/green chert (15%), gray-green siltstone (10%), reddish-brown fine grained quartzite, red siltstone, and white chalcedony (5% each). Flakes are 20% primary core reduction flakes, 40% secondary core reduction flakes, 35% tertiary core reduction flakes, and 5% angular shatter.

The metate is an unshaped quartzite cobble basin metate with general grinding attrition and some possible pecking; this tool is 36 cm long, 26 cm wide, and 12 cm thick, and the basin is 4 cm deep. The core is a gray-green siltstone bidirectional core with cortical platforms. One end scraper is a uniface on a tertiary flake of clear white/pink chalcedony. The blade end is broken, but looks like it may have been tapered for hafting in a manner similar

to Paleo or early Archaic scrapers. The other scraper is made on a dome backed primary core reduction flake of black chert with red cortex; the vertical face of the flake has weathered to a brown/dark gray, indicating the flake was made into a tool long (decades or centuries) after it was removed from a core. While this is little more than retouched it shows similar workmanship to the chalcedony scraper. (Figure 3 Illustrations of Scrapers.)

The site may have buried deposits in the western area. It may also have research potential for studies of possible Archaic lithic procurement strategies, lithic technology, and land use. The site may therefore be potentially eligible for nomination to the National Register under Criterion D of 36 CFR604.

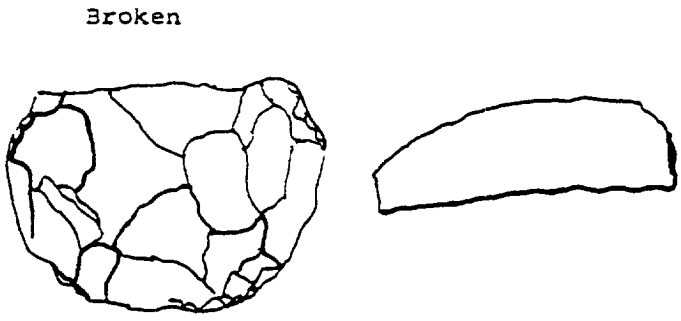
The third site is located northeast of the drainage from MAR-90-20, about 70m from the drainage. The site appears to be on two benches, one about 1.5m above the other. A woodland provides a 5% cover. The sandy soil is less than about 40cm deep in most areas and frequently interrupted by sandstone outcrops, especially near the edge of benches. This is a dispersed lithic and fire cracked rock scatter. Because of the very dispersed nature of the general site area and the nature of the reconnaissance survey it was not possible to determine the actual site area or to determine if more than one site was represented. At least a dozen flakes, two unshaped cobble monos, a core, and a biface were noted over an area about 90m by 50m. It would be necessary to conduct a Class III survey of the entire bench to properly record this cultural manifestation.

Recommendations: We do not recommend that Blackwood and Nichols stake a potential well location on the bench below the Original NEBU 500 well location to the east or southeast. The terrain is too steep within 1500 ft. east of the east buffer zone of the Original well location to build a pad. The bluff which begins about 50 ft. east of the Alternate well location will make it impractical to move the Alternate well location east. Federal restrictions concerning distance construction must stay from cultural resources will likely make it either impossible or very costly to place a well on the bench below and southeast of the Original NEBU 500 well location. Access to such a well will likely come very close to the east side of site MAR-89-78 as well, and may therefor require special resurvey or testing measures.

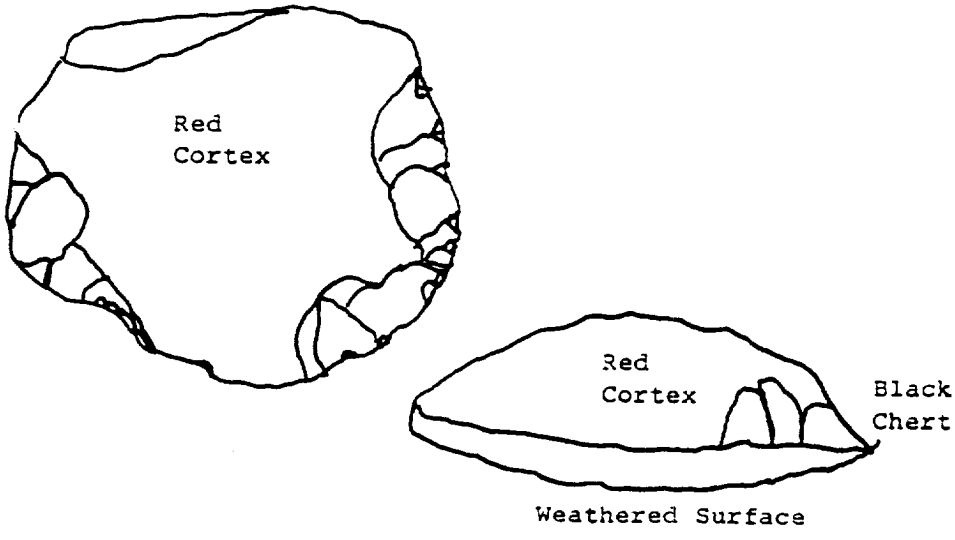
While we realize the Alternate NEBU 500 is an unorthodox location, it is not likely that an orthodox location can be found which will not have some adverse affect on one or more of the known archaeological sites in this quarter of section 20. Moving the well to the lower bench may also cause problems with the Bureau of Reclamation in relation to their tree screen regulations.

FIGURE 3

S1: End scraper is a uniface on a tertiary flake of clear white/pink chalcedony.



S2: Scraper is made on a dome backed primary core reduction flake of black chert with red cortex. The vertical face of the flake has weathered to a brown/dark gray.



Both scrapers were found at MAR-90-21.

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