

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

October 1, 1991

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

Mitchell Energy Corporation
555 Seventeenth Street
Suite 3500
Denver, Colorado 80202

Attn: Albert Libersat

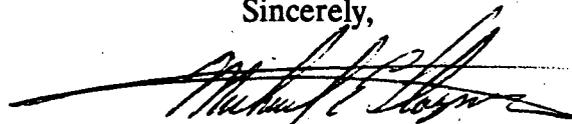
*RE: Application for Unorthodox Coal Gas Well Location,
Rosa Unit Well Nos. 341 and 342,
Section 11, Township 31 North, Range 4 West, NMPM,
Rio Arriba County, New Mexico.*

Dear Mr. Libersat:

The two subject applications received on September 20, 1991 lacked pertinent information to support your application. Please provide me with the appropriate supplemental information requested by paragraphs I, IV, V, VI, VII, and VIII of Memorandum No. 1-90, see attached.

Thank you.

Sincerely,



MICHAEL E. STOGNER
Chief Hearing Officer/Engineer

MES/jc

cc: OCD - Aztec
U.S. BLM - Farmington
U.S. Forrest Service - Blanco



ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

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

No. 1-90

MEMORANDUM

TO: All Operators

FROM: William J. LeMay, Director *WJL*

SUBJECT: Administrative Applications for Unorthodox Locations

DATE: March 21, 1990

Division Memorandum No. 3-89, dated March 24, 1989, advised the industry that the OCD would no longer automatically approve unopposed unorthodox location applications. Unorthodox locations can be approved administratively in accordance with the Rules and Regulations or applicable special pool rules if surface conditions truly prevent the use of a legal location and if directional drilling to a legal location is not feasible.

Topographic conditions which will be considered to justify an unorthodox location include such traditional factors as terrain features (steep slopes, arroyos, etc.) which make drilling impractical. In addition, approval may be given to avoid archeological sites which may not be disturbed without substantial mitigation, incompatible surface uses such as buildings, recreation areas, etc. Applications should fully document the reason an unorthodox location is required.

The attached guidelines state the minimum information which should be submitted with applications for administrative approval of unorthodox locations. Failure to provide the necessary information will probably result in processing delays.

If the surface of the proration unit or proposed drill site is controlled by a Federal Surface Management Agency, a copy of the application must be sent to the appropriate agency office.

If there are legal locations within the proration unit which are drillable, but the operator chooses not to drill those locations for geological reasons the application cannot be approved administratively and a hearing will be required.

NEW MEXICO OIL CONSERVATION DIVISION

**SUBMITTAL GUIDELINES FOR ADMINISTRATIVE APPROVAL
OF NON-STANDARD LOCATION APPLICATIONS**

- I. If the well is located on Federal or Indian Lands, the Federal Surface Management Agency must be notified and an on-site inspection conducted prior to filing the application. If an Application for Permit to drill or a Notice of Staking has been prepared, a copy must be submitted.
- II. Completed C-102 showing the well location, proration unit, leases within the unit and other required information.
- III. Land plat showing offset operators and working interest owners and any offsetting wells producing from the same pool or formation.
 - A. This information may be shown on the topo map if it does not impair the readability of the map.
 - B. The operator should certify that the information is current and correct.
- IV. Original or clear copy of topographic map, preferably 7.5 minute quad, showing contours and other mapped features impacting the location, with the following information marked thereon (In order to be able to adequately show all of the necessary surface conditions it may be necessary to enlarge the relevant portion of the topo map to provide room for detail):
 - A. The proposed well location and proration unit;
 - B. An outline of the orthodox drilling windows as provided in the applicable rules for the subject application;
 - C. The location of any wells to any formation within the area of the proration unit and a statement as to whether an existing pad can be used to drill the proposed well;
- V. An enlargement of the topo map showing the subject area with the applicable additional information:
 - A. Terrain features not shown on the map which make an orthodox location unusable;
 - B. Proposed access roads and pipelines if they affect the location selection;
 - C. The location of any surface uses which prevent use of a legal location;

- D. The location of any archeological sites identified in the archeological survey;
 - E. The location and nature of any other surface conditions which prevent the use of an orthodox location.
- VI. If archeological sites are a reason for the unorthodox location request, a copy of the archeological survey, or a summary, identifying sites which cannot be disturbed or which must have any disturbance mitigated. In addition, the location of such areas should be marked on the enlarged topo so they can be clearly identified.
- VII. A narrative report of any on-site inspection of the potential locations. If such on-site has resulted in elimination of legal locations due to surface conditions, such information should also be noted on the enlarged topo.
- VIII. A statement of why directional drilling to reach a legal bottom-hole location is not feasible.
- IX. An affidavit that notice has been sent to all parties entitled thereto, under the Divisions Rules and Regulations with return receipt cards showing date of receipt of notice.

OIL CONSERVATION DIVISION
RECEIVED

October 21, 1991

'91 OCT 23 AM 9 20

State of New Mexico
Energy, Minerals and Natural Resources Dept.
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504

Attn: Mr. Michael E. Stagner



Re: Application for an Unorthodox Location
Rosa Unit #341 & #342
Sec. 11-T31N-R4W NMPM
Basin Fruitland Coal Gas Pool
Rio Arriba County, New Mexico

Gentlemen:

Mitchell Energy Corporation respectfully submits, as per your request, the supplemental information needed to support the **Application for Unorthodox Locations** on the above referenced wells. As you can see from the attached archeological report this area has a high density of artifacts which necessitated the moving of the original locations to their present locations. The archeological problems combined with the topographical conditions necessitated the locations being placed in their current positions.

Should you require and additional information or have any questions concerning this matter, please feel free to contact me at (303) 292-4455.

Respectfully yours,

MITCHELL ENERGY CORPORATION

A handwritten signature in cursive script that reads "Albert Libersat".

Albert Libersat
District Engineer

AL/jms
Attch.

T. 31 N.



**T
31
N**

4089

4088

55'

37 MI. TO U.S. 64

4086

4085

4084

2 140 000
FEET

36°52'30"

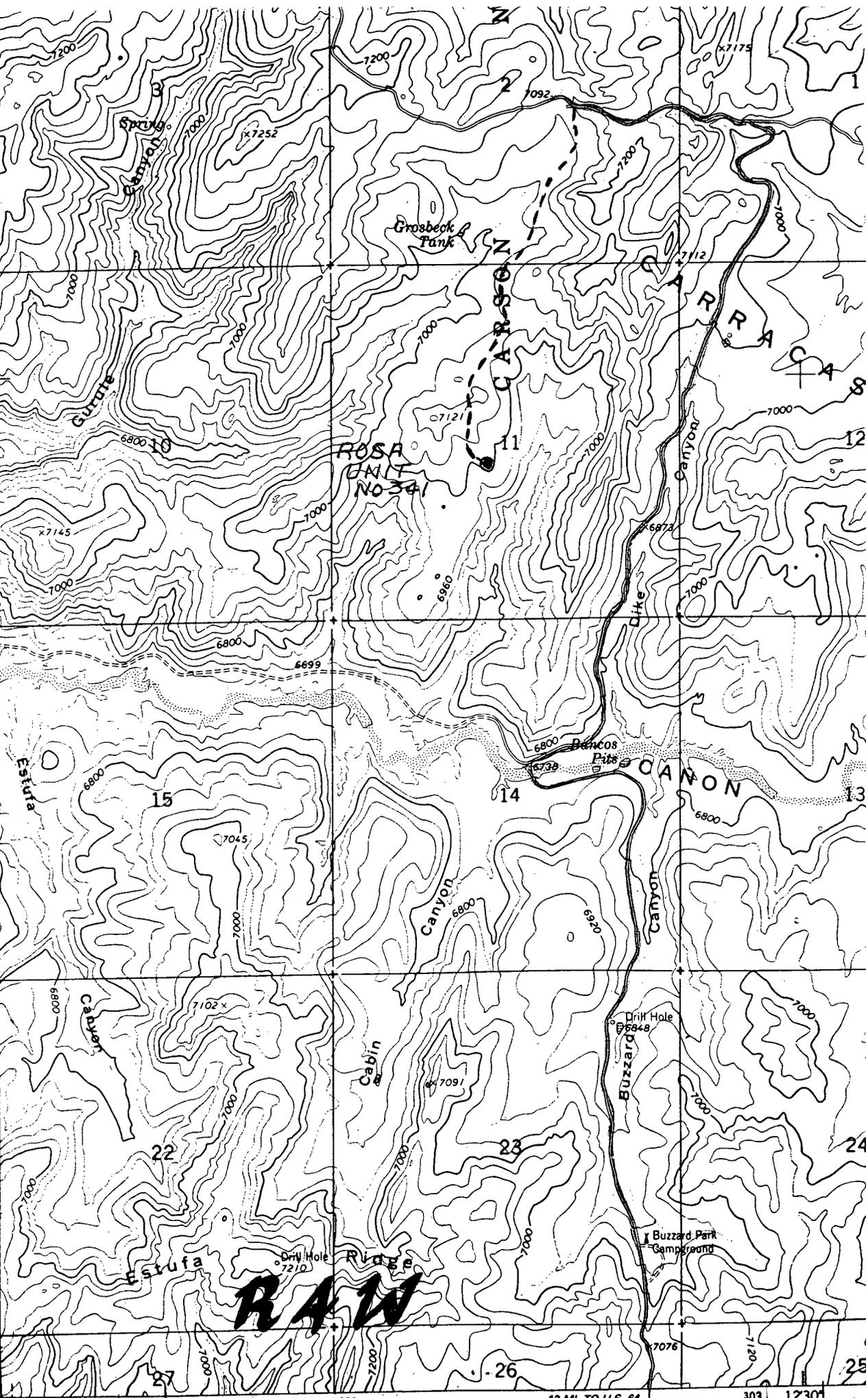
107°15'

300 210 000 FEET

301

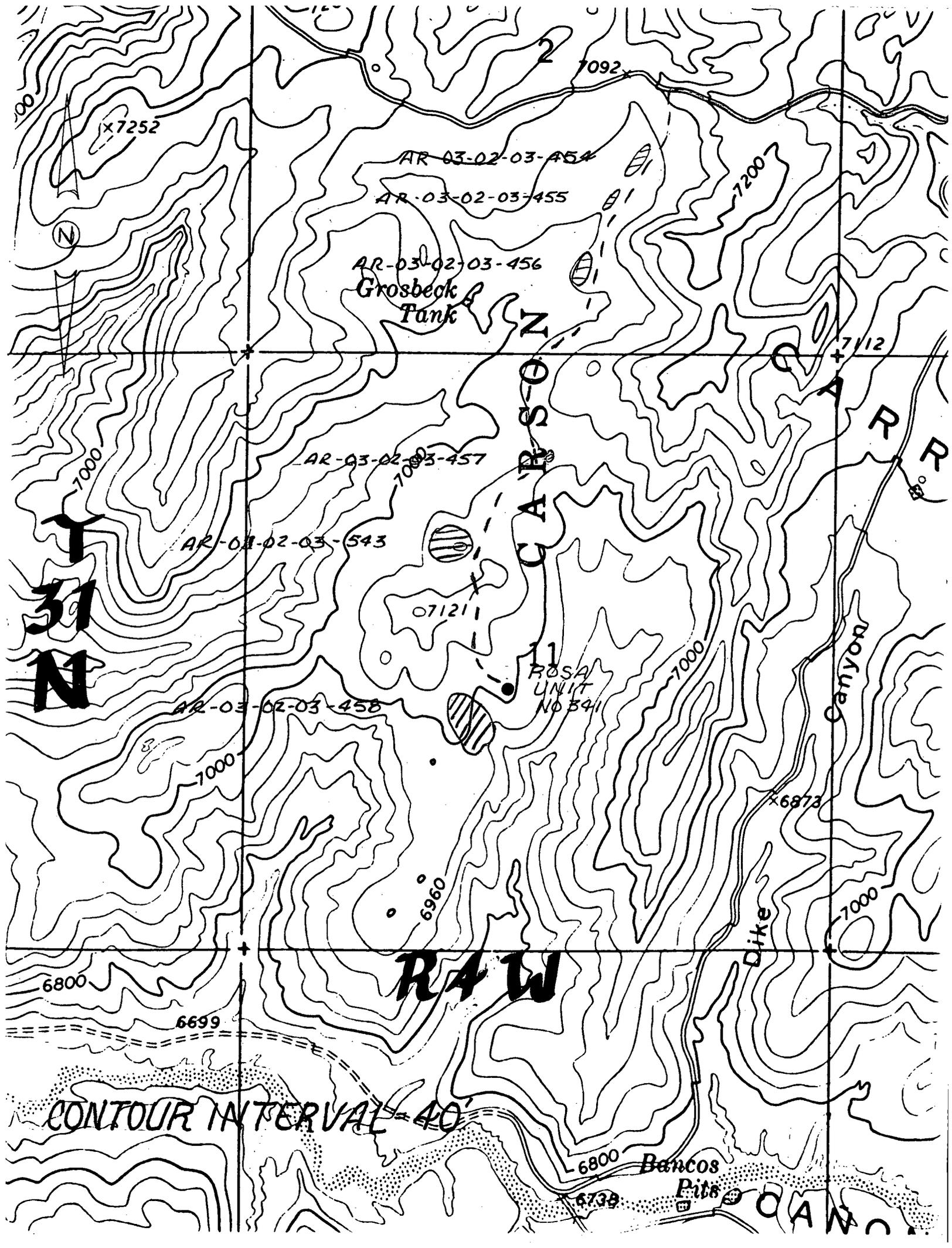
13 MI. TO U.S. 64

303 12'30"



RAW

CONTOUR INTERVAL = 40'



x7252

x7092

AR-03-02-03-454

AR-03-02-03-455

AR-03-02-03-456

Grosbeck Tank

GARSON

x7112

AR-03-02-03-457

AR-03-02-03-543

071211

11
ROSA
UNIT
NO 341

AR-03-02-03-458

x6873

6800

6699

RAW

Dike

7000

CONTOUR INTERVAL = 40'

6800

Bancos Pits

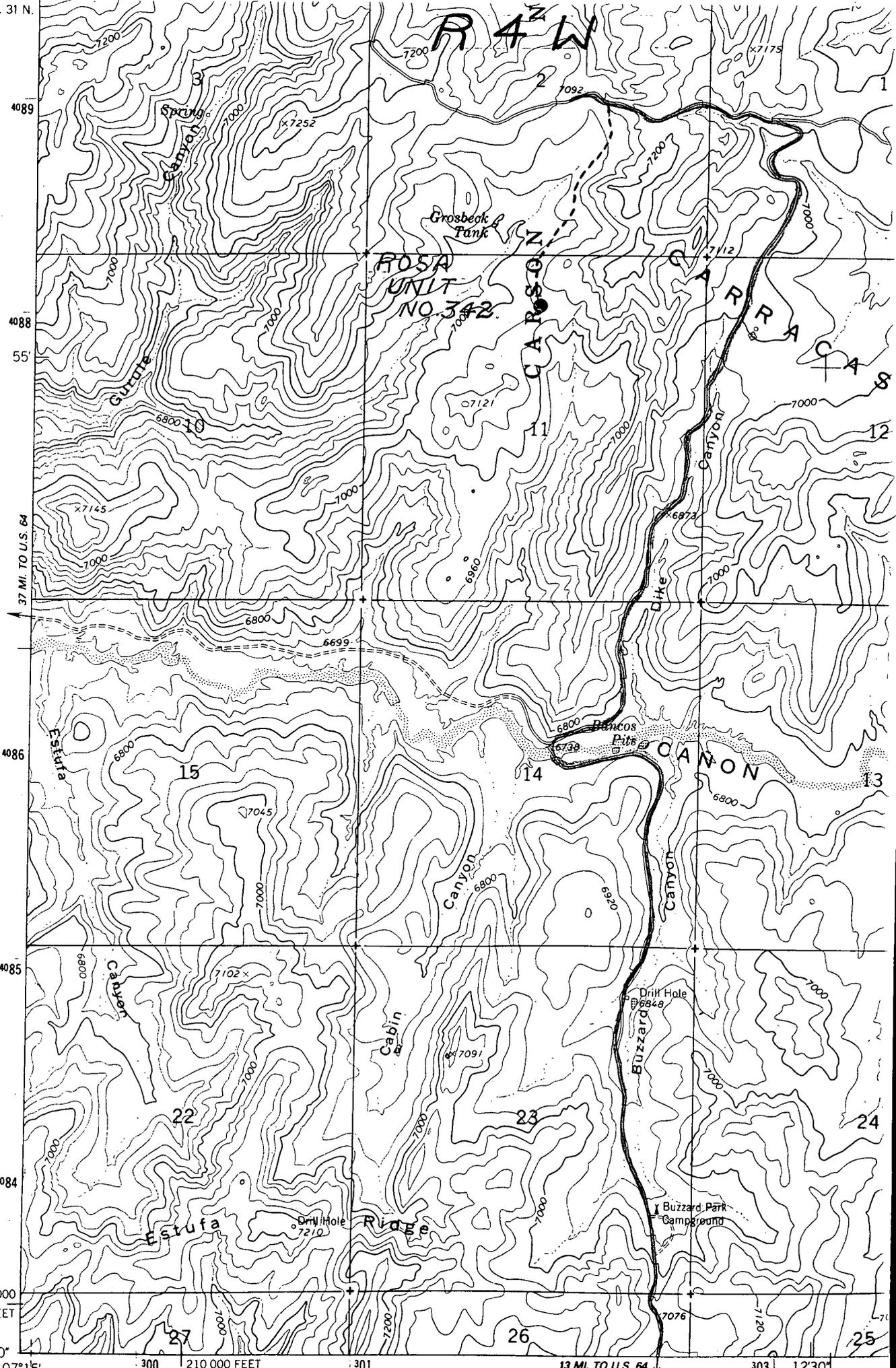
x6739

CANYON

T. 31 N.



T
31
N



2 140 000
FEET

36°52'30"

107°15'

300 210 000 FEET

301

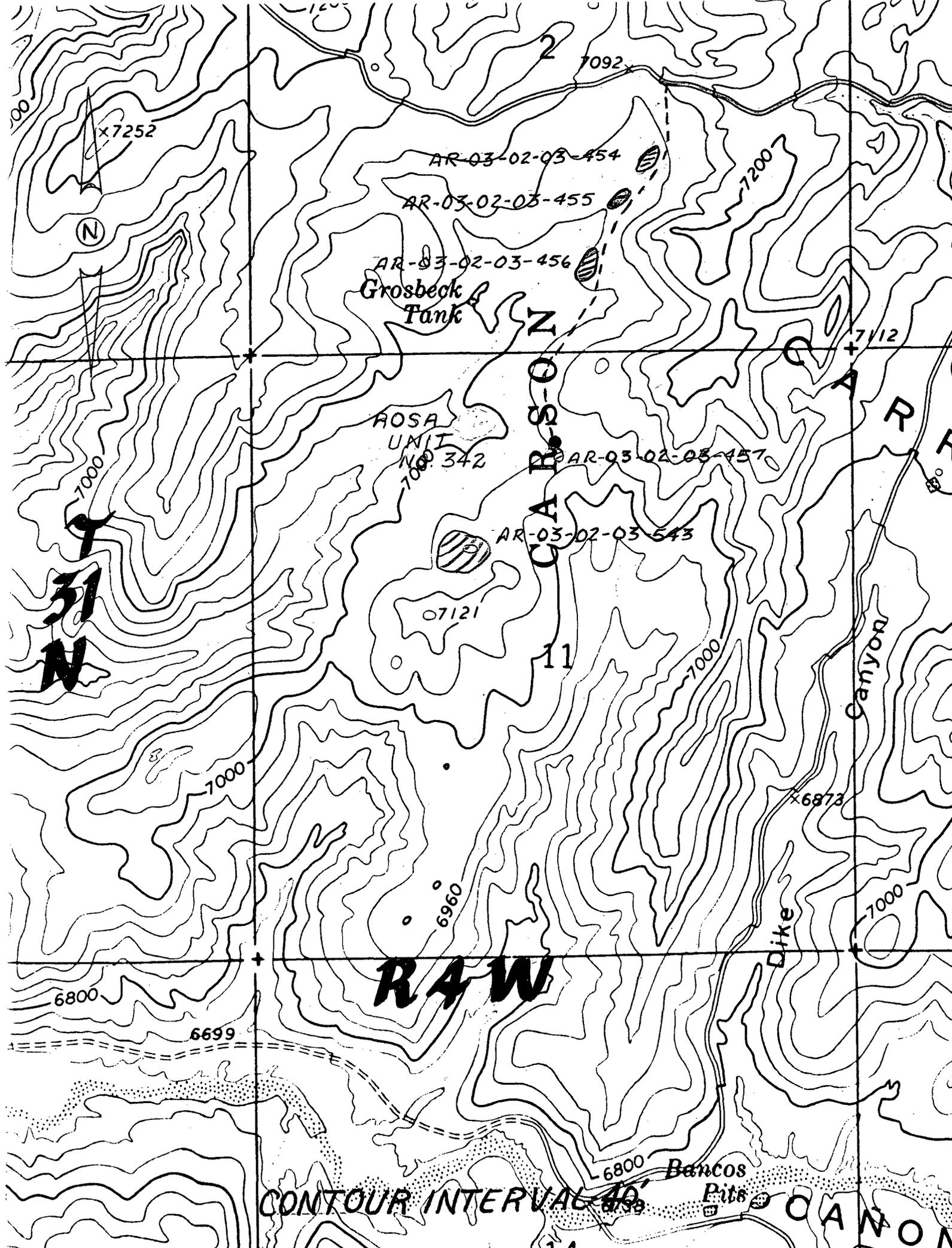
13 MI. TO U.S. 64

303 123°01'

NCHI

Mapped, edited, and published by the Geological Survey

CONTOUR INTERVAL = 40'



x7252

7092

AR-03-02-03-454

AR-03-02-03-455

AR-03-02-03-456

Grosbeck Tank

7200

7112

ROSA UNIT NO. 342

AR-03-02-03-457

AR-03-02-03-453

07121

11

7000

7000

x6873

6800

6699

6960

RAW

Dike

7000

6800

Bancos Pits

CONTOUR INTERVAL 40'

CANYON

Stephanie Sofranoff Matthews
Consulting Archaeologist

P.O. Box 1027
Bayfield, CO 81122
(303) 884-9569

June 30, 1991

Al Libersat
Mitchell Energy Corporation
555- 17th Street
Suite 3500
Denver, CO 80202

Re: Restaked Locations Rosa 341/342
Rosa 341: 2315' FSL, 2335' FWL
Rosa 342: 765' FNL, 2595' FEL

Dear Mr. Libersat:

Enclosed please find our report detailing the findings of our archaeological survey of the Rosa 341 and Rosa 342 and access/pipeline ROW.

During the survey we encountered 5 sites and 31 isolated manifestations. Four of the sites are associated with the access/pipeline ROW, and are outside of the access buffer zone. One of the sites is within the buffer zone of Rosa 342, and encroaches 20' into the construction zone.

Our recommendation is for archaeological clearance of the restaked locations and restaked access/pipeline ROW with the stipulations that all construction be monitored due to the high site density within the area, and that in Rosa 342 the construction zone should be pulled in so as to avoid the site when constructing the location.

The U.S. Forest Service has the final decision-making authority concerning your project.

Sincerely,



S. Sofranoff (Matthews)
Supervisory Archaeologist

Project 91-2

2710 (NM USFS)
Cultural Resource Report No. 1990-02-145B

An Archaeological Survey of
Restaked Well Locations
Rosa 341 and Rosa 342,
Restaked Access/Pipeline ROW
for Mitchell Energy Corporation
Jicarilla Ranger District
Carson National Forest
Rio Arriba County, New Mexico

T31N, R4W, Section 11
Rosa 341: 2315' FSL, 2335' FWL
Rosa 342: 765' FNL, 2595' FEL

Prepared and Submitted by

Stephanie Sofranoff (Matthews)
Principal Investigator

Archaeological Division
m & m Geological Consultants

Archaeological Report #94

June 30, 1991

ABSTRACT

Due to archaeological and environmental concerns, the Jicarilla Ranger District required the 2 well locations and access/pipeline ROW proposed in the original report (Moore, 1990) to be restaked and rerouted. The original report (Moore, 1990) was received and reviewed on June 4, 1991. Additional precheck was completed on June 14, 1991 at the Jicarilla Ranger District office in case more sites had been recorded since the original report. On June 6, 7, 10, 11, 13, 17, 22, 23, 1991, the Archaeological Division of m & m Geological Consultants completed the fieldwork for an archaeological survey of the restaked proposed wellpads and access/pipeline ROW restake for Mitchell Energy Corporation. The survey area is located in T31N, R4W, Sections 2 and 11. The location of the survey area is on a northeast-southwest-trending unnamed portion of Carracas Mesa north of Bancos Canyon. The rerouted access/pipeline ROW progresses south from F.R. 218 along the eastern side of the valley, upslope from the original access/pipeline ROW until they intersect and cross over in the vicinity of the proposed restaked location Rosa 342. The route then follows the eastern side of the mesatop until it reaches Rosa 341 proposed restaked location. The additional access/pipeline ROW extends for 6000'. The surveyed area is within the Jicarilla Ranger District, Carson National Forest, in Rio Arriba County, New Mexico, and is under the jurisdiction of the U.S. Forest Service. Approximately 30.40 acres were intensively surveyed.

During the survey, 5 sites and 31 isolated manifestations were encountered.

No sites were encountered within the surveyed area for restaked proposed location Rosa 341.

Two sites are within the archaeological buffer zone of restaked proposed location Rosa 342:

Site AR-03-02-03-457 (M.A.R. 90-88) was encountered during the survey of the original proposed well locations and recorded for the original report (Moore, 1990). The site consists of a low density scatter of lithic and ceramic artifacts and a possible hearth of Anasazi PI Piedra age. For further details see the original report (Moore, 1990). This site is located on the southern margin of the surveyed area, only partly within the archaeological buffer zone.

Site AR-03-02-03-541 (mmgc-91-6) was encountered during the current survey. The site consists of a small ceramic/lithic scatter of Anasazi PI Piedra age. It is probably a limited activity site which contains 2 large axes. This site may be related to the site described above.

Four sites were encountered during the survey of the access/pipeline ROW, although all of them are outside of the buffer zones.

Site AR-03-02-03-539 (mmgc-91-4) consists of a small area containing ceramics, sparse lithics, and fragments of jacal indicating the presence of a pithouse. The site is Anasazi PI-PII Piedra-Arboles in age, as there are several corrugated ware sherds present.

Site AR-03-02-03-540 (mmgc-91-5) consists of a small area containing a ceramic/lithic scatter down a wash, and a small hearth. It is probably a limited activity site of Anasazi PI Piedra age, although corrugated grayware is present.

Site AR-03-02-03-542 (mmgc-91-8) consists of a meadow among the sandstone boulders which contains a ceramic/lithic scatter of limited area. It is probably a limited activity site of Anasazi PI late Piedra age.

Site AR-03-02-03-543 (mmgc-91-9) is a large Anasazi PI Piedra pithouse habitation site, with 3 possible pithouse depressions on the top of the knoll where the site is located. There are numerous fragments of burned jacal present, numerous mano fragments, and half of a trough metate. There are 2 overlapping middens with heavy concentrations of artifacts. The jacal clusters and middens indicate there are possibly 7-8 pithouses present, although most seem to be filled in completely.

Within the surveyed area for restaked Rosa 341 location, 7 isolated manifestations were encountered, including 4 tertiary flakes of argillite, 12 sherds plain grayware, an obsidian projectile point base of PI style, and half of a white sandstone mano, unifacially ground. One of these isolated manifestations is located within the proposed wellpad, 3 are within the construction zone, and 3 are within the buffer zone.

Within the surveyed area for restaked Rosa 342 location, 7 isolated manifestations were encountered, including a secondary chalcedony flake, tertiary argillite flake, 9 sherds plain grayware, 5 sherds corrugated grayware, and a potbust of approximately 80 sherds of plain grayware from a single vessel. Three of these isolated manifestations are located within the proposed wellpad, 2 are within the construction zone, and 2 are within the buffer zone.

Seventeen isolated manifestations were encountered within the restaked 6000' of additional access/pipeline ROW. These include 22 sherds of plain grayware, 5 sherds of corrugated grayware, 1 banded grayware, a basal grayware handle fragment, 2 Piedra B/W sherds, a Piedra whiteware sherd, tertiary chert, basalt, chalcedony, argillite, and obsidian flakes.

As Sites AR-03-02-03-457 (M.A.R. 90-88) and AR-03-02-03-541 (mmgc-91-6) are both within the buffer zone of restaked location Rosa 342, and all of the other sites encountered are outside of the access buffer zones, and field documentation of the isolated manifestations has exhausted their research potential, archaeological clearance is recommended for this project of 2 restaked well locations and access/pipeline ROW with the following stipulations:

Due to the density of sites in the area involved, and the presence of 2 sites within the buffer zone of restaked location Rosa 342, monitoring of all construction by an archaeologist is recommended.

As a small portion of Site AR-03-02-03-541 (mmgc-91-6) intrudes into the corner of the construction zone, it is recommended that the construction zone

be pulled back to the west by 20' and during monitoring procedures the site shall be flagged before construction starts in order to prevent damage.

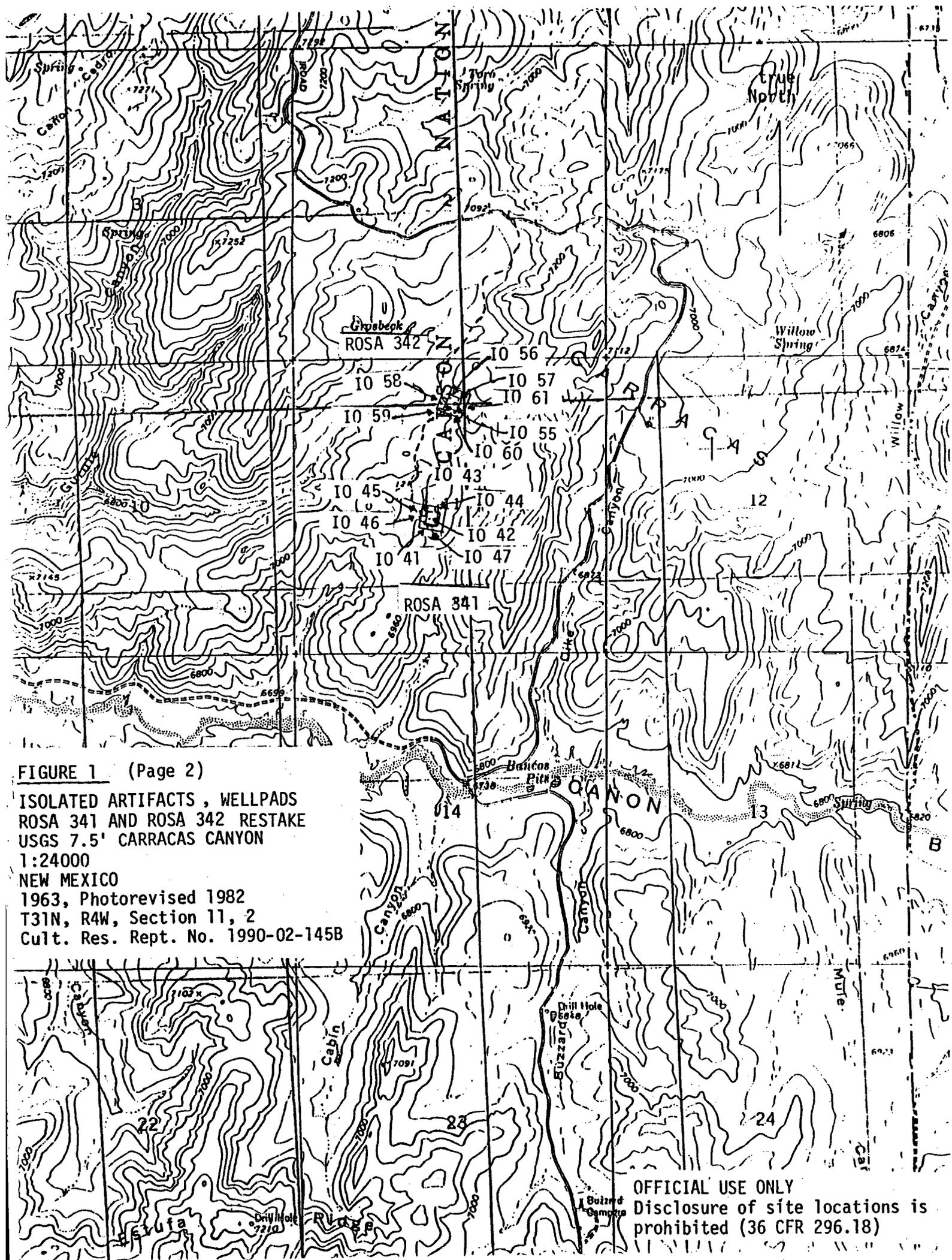


FIGURE 1 (Page 2)
ISOLATED ARTIFACTS, WELLPADS
ROSA 341 AND ROSA 342 RESTAKE
USGS 7.5' CARRACAS CANYON
1:24000
NEW MEXICO
1963, Photorevised 1982
T31N, R4W, Section 11, 2
Cult. Res. Rept. No. 1990-02-145B

OFFICIAL USE ONLY
Disclosure of site locations is
prohibited (36 CFR 296.18)

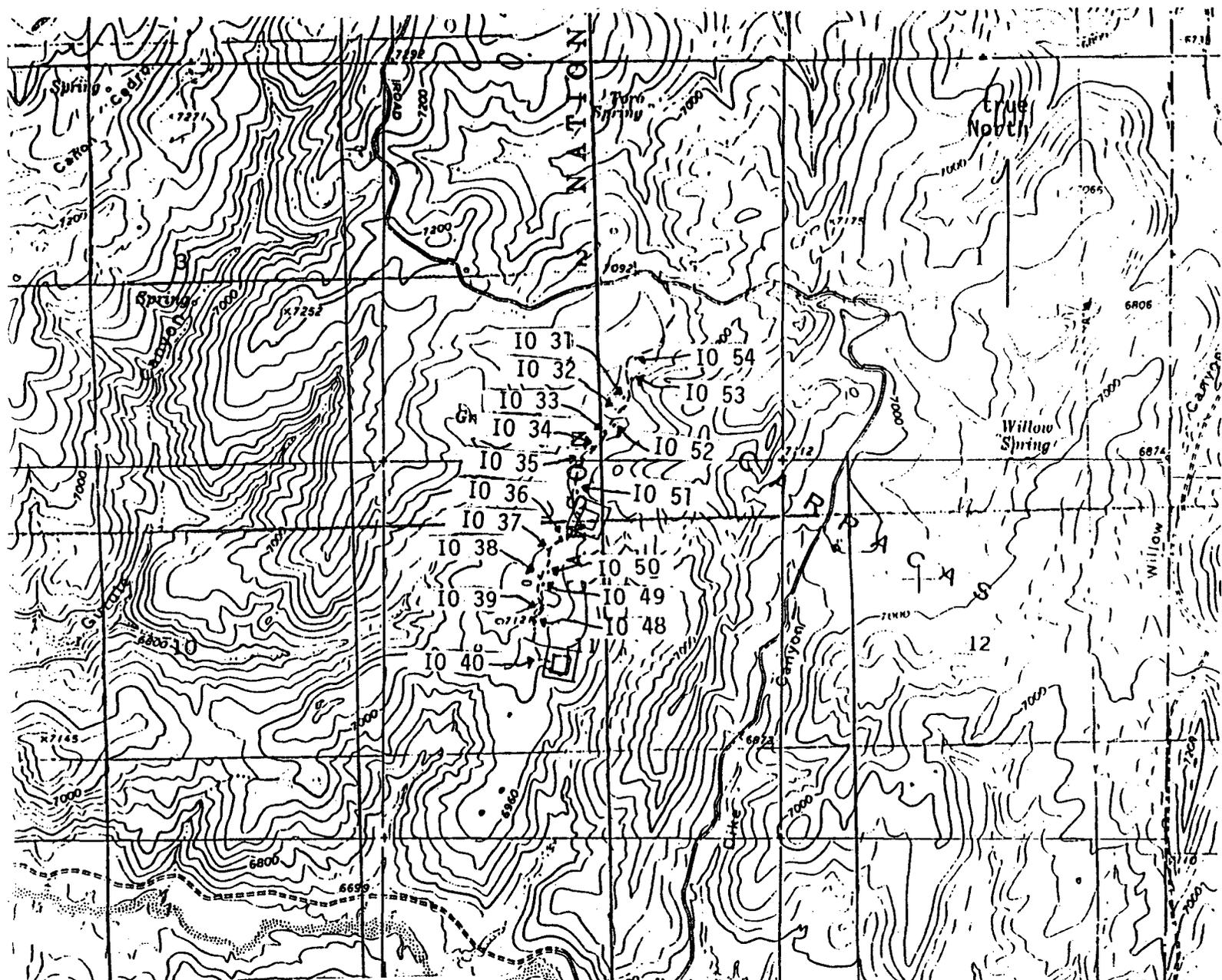
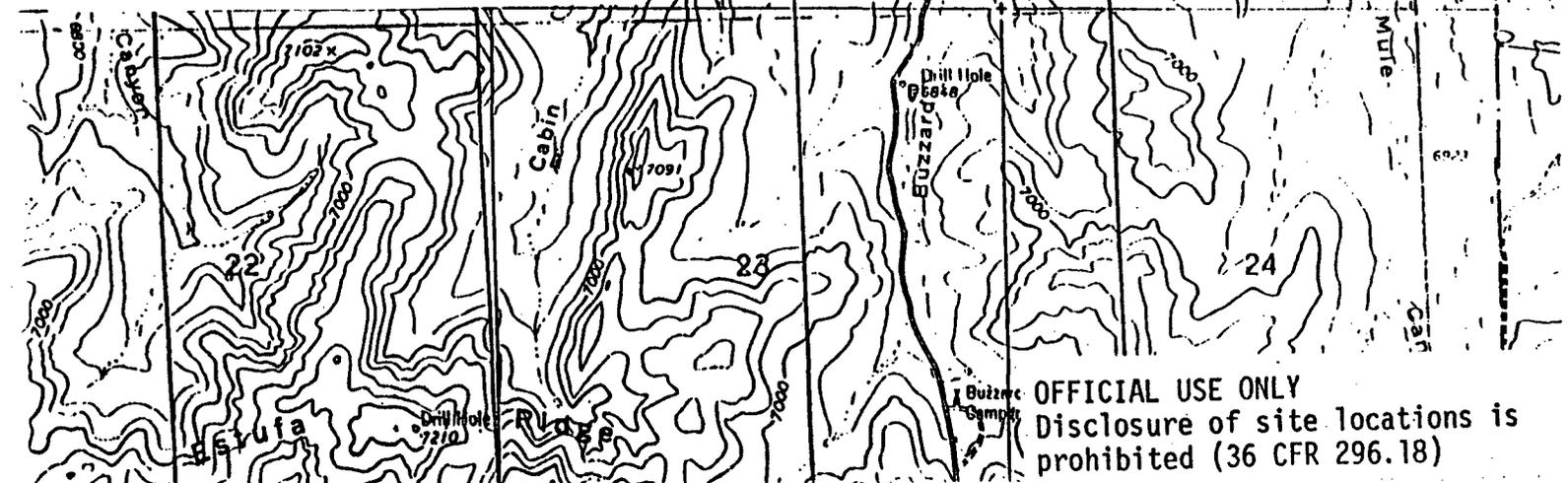


FIGURE 1 (Page 3)

ISOLATED ARTIFACTS, ACCESS/PL ROW
 ROSA 341 and ROSA 342 RESTAKE
 USGS 7.5' CARRACAS CANYON
 1:24000
 NEW MEXICO
 1963, Photorevised 1982
 T31N, R4W, Section 11, 2
 Cult. Res. Rept. No. 1990-02-145B



OFFICIAL USE ONLY
 Disclosure of site locations is
 prohibited (36 CFR 296.18)

INTRODUCTION

The project involves building 2 wellpads and additional access/pipeline ROW which will disturb the present topographical configurations. The construction zone around the wellpad will also be subject to disturbance. The original report (Moore, 1990) was received and reviewed on June 4, 1991. Additional precheck was completed on June 14, 1991 at the Jicarilla Ranger District office in case more sites had been recorded since the original report. On June 6, 7, 10, 11, 13, 17, 22, 23, 1991, the Archaeological Division of m & m Geological Consultants completed the fieldwork for an archaeological survey of the restaked proposed wellpads and access/pipeline ROW restake for Mitchell Energy Corporation of Denver, Colorado. Al Libersat of Mitchell Energy Corporation requested the survey on May 30, 1991, and administered the project. Stephanie Sofranoff (Matthews) administered the archaeological consulting for the Archaeological Division of m & m Geological Consultants. The U.S. Forest Service has jurisdiction over this project. On June 6 and 7, 1991, Jim Tensfield representing the Jicarilla Ranger District and Neale Edwards representing Mitchell Energy Corporation were present in the field in order to establish the optimum route for avoiding archaeological sites and dealing with environmental concerns.

Recognizing that archaeological remains are non-renewable in nature, the federal government has enacted legislation designed to protect and conserve these resources. The principle legislation includes the Antiquities Act of 1906 (PL 52-209), the Historic Preservation Act of 1966 (PL 89-665), and, as amended (PL 96-515), the National Environmental Policy Act 1969 (PL 91-852), the 1971 Executive Order No. 11593, the Archaeological and Historical Conservation Act of 1974 (PL 93-291), and the Archaeological Resources Protection Act of 1979 (PL 96-95). In addition, the Navajo Nation and the States of Arizona, New Mexico, Utah, and Colorado have enacted laws to ensure compliance with federal legislation, and to protect archaeological resources within their jurisdiction. Work conducted in the course of this project is intended to comply with these statutes and is governed by the stipulations of 2710 (USFS).

"Site" for this report shall be defined in accordance with the Cultural Resources Handbook (FSH 2309.24), Chapter 10, paragraph 10.5, #7. This states that a site is a location of purposeful human activity, resulting in deposit of cultural materials beyond the level of isolated artifacts.

Stephanie Sofranoff (Matthews), consulting archaeologist, surveyed the project area for cultural remains. Curtis B. Matthews was field assistant.

METHODS

The area was surveyed by walking parallel transects with a 3-4m spacing across the proposed well location, 50' construction zone, and 100' buffer zone. A project area of 240' x 240' for the proposed restaked wellpad Rosa 341 was surveyed. A project area of 220' x 220' for the proposed restaked wellpad Rosa 342 was surveyed. A survey area of 550' x 550' was examined for each of the proposed locations as required by the Taos office of the Carson National Forest. The additional access/pipeline ROW of 20' and buffers of 50'

were also surveyed. The archaeologist recorded all cultural remains, all of which were documented in USFS and LAR site survey forms and in USFS isolated artifact forms. Pertinent environmental data were also recorded. The well pads were delineated by stakes, including one at the center point, placed there by surveyors prior to the archaeological survey.

The additional access/pipeline ROW location was established using a Magellan GPS Nav 1000 Pro. The locations of most site datums and features were also established in the same manner.

In addition to field inspection, the archaeologist conducted a search at the Jicarilla Ranger District office to determine if any cultural remains had been recorded within the vicinity of each proposed well pad location besides those recorded in the original report (Moore, 1990). Site and project records required by the U.S. Forest Service and the New Mexico Historic Preservations Divisions were completed.

All directions noted in the report and on the maps are with respect to true, not magnetic North.

PREVIOUS RESEARCH

During the survey for the original proposed well locations (Moore, 1990), 6 archaeological sites were encountered, mainly within the access/pipeline ROW. The access/pipeline ROW was rerouted around 5 of these sites, but no feasible reroute was possible for the site located within the access/pipeline ROW just to the northeast of the original Rosa 341 location.

Site AR-03-02-03-454 (M.A.R. 90-85) is an Anasazi PI Piedra site containing ceramic and lithic material, including groundstone and a projectile point fragment.

Site AR-03-02-03-455 (M.A.R. 90-86) is an Anasazi PI Piedra site containing a possible prehistoric hearth and a ceramic scatter.

Site AR-03-02-03-456 (M.A.R. 90-87) is an Anasazi PI Piedra site containing a possible field house and a dense ceramic/lithic scatter, including a notched basalt axe.

Site AR-03-02-03-457 (M.A.R. 90-88) is an Anasazi PI Piedra site containing a possible hearth and a low-density scatter of lithics and ceramics.

Site AR-03-02-03-458 (M.A.R. 90-89) is an Anasazi PI-PII age multi-component site, with both masonry structure evidence and burned jacal rubble mounds, a possible midden area, and great quantities of ceramic and lithic artifacts.

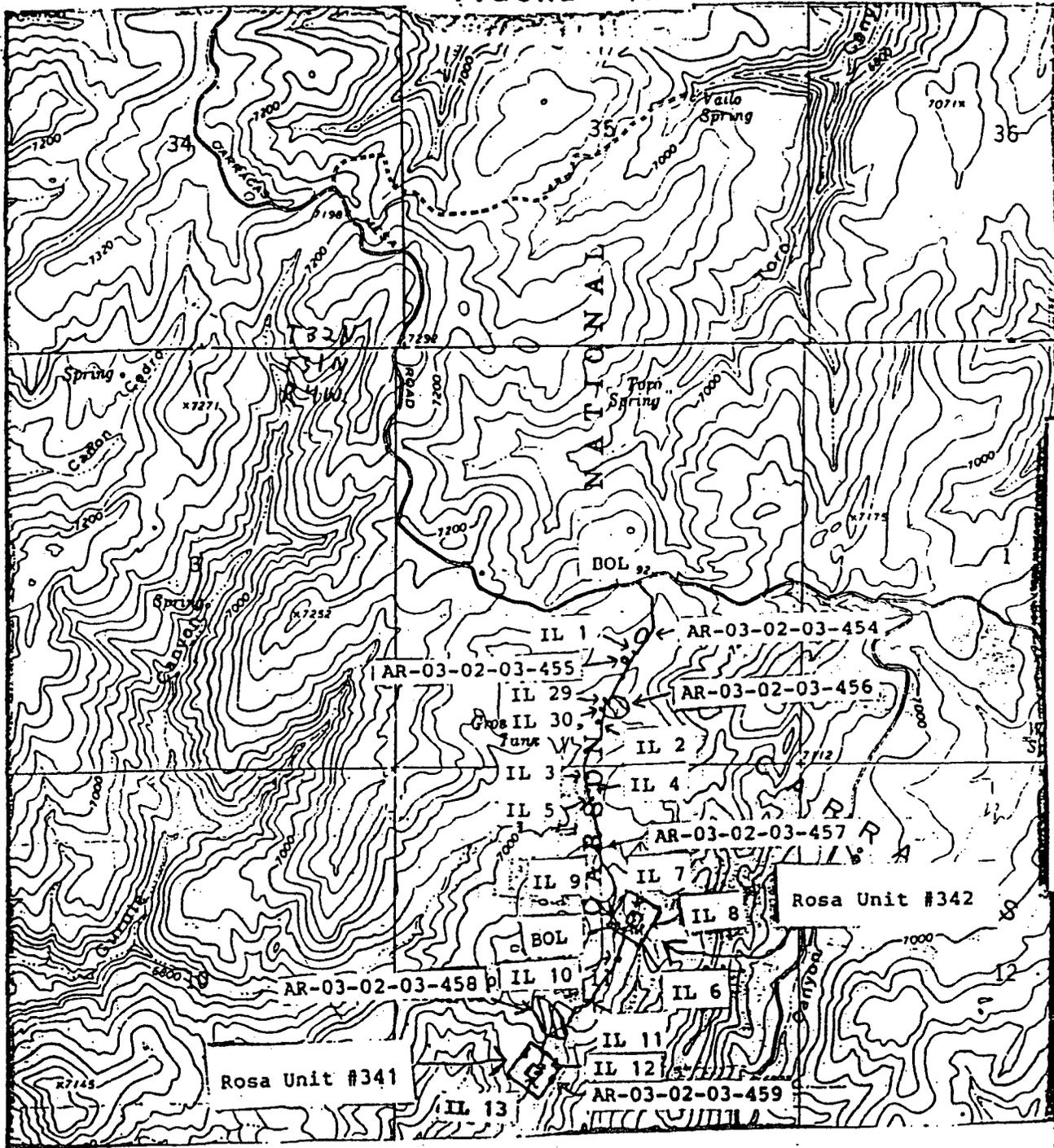
Site AR-03-02-03-459 (M.A.R. 90-90) is an Anasazi site, probably related in time to the sites discussed above. It is mainly a small lithic reduction site, with possibility of habitation.

For a detailed discussion of the above sites, refer to the original location report, CNF No. 1990-02-145 (Moore, 1990).

The sites within the vicinity of the project areas include AR-03-02-03-457 (M.A.R. 90-88), which lies partly within the archaeological buffer zone of the restaked location Rosa 342; and AR-03-02-03-458 (M.A.R. 90-89), which is just to the southwest and outside of the surveyed area for Rosa 341.

No additional sites have been recorded in the vicinity following this original locations survey and prior to the current survey. For more details concerning the record search completed for the original locations survey, refer to the original report (Moore, 1990).

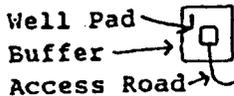
The data source for the records check are the proprietary map file and site records and report file at the Jicarilla Ranger District.



Carson National Forest Report No. 1990-02-145
 M.A.R. Technical Report No. 90-85

KEY

BOL: Beginning of Line

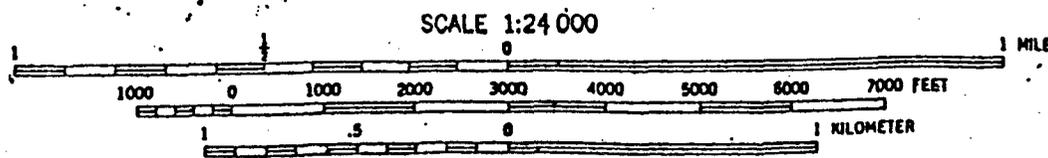


Isolated Loci: IL •

Archaeological Site: ⊗ or ● or ○

Two Well Locations and Access
 Road/Rosa Units #341 & #342
 T.31N, R.4W, Sec. 2, 11; NMPM
 Rio Arriba County, New Mexico

FOR OFFICIAL USE ONLY
DISCLOSURE OF SITE
LOCATIONS IS PROHIBITED
 (36CFR296.18)



PROJECT DESCRIPTION

Rosa 341 and Rosa 342 Restake and Restaked Access/Pipeline ROW

Legal Description: T31N, R4W, Section 11

Rosa 341	NE 1/4 NE 1/4 SW 1/4
	2315' FSL, 2335' FWL

Rosa 342	W 1/2 NW 1/4 NE 1/4
	E 1/2 NE 1/4 NW 1/4
	765' FNL, 2595' FEL

ACCESS/PIPELINE ROW	Sec 2,	E 1/2 NW 1/4 SE 1/4
		W 1/2 SW 1/4 SE 1/4
	Sec 11,	E 1/2 NE 1/4 NW 1/4
		E 1/2 SE 1/4 NW 1/4

N.M.P.M., Rio Arriba County, New Mexico

Map Source: USGS 7.5' Carracas Canyon, New Mexico, 1963, Photorevised 1982

Land Jurisdiction: U.S. FOREST SERVICE

Elevation: Rosa 341: 6992'-7012'

Rosa 342: 7035'-7056'

Project Area: Rosa 341: 240' x 240' (well pad, 1.32 ac)

Rosa 342: 220' x 220' (well pad, 1.11 ac)

6000' x 20' (access/pipeline ROW, 2.75 ac)

Surveyed Area: Rosa 341: 550' x 550' (well pad with buffers and additional footage to make 550' x 550' area, 6.94 ac)

Rosa 342: 550' x 550' (well pad with buffers and additional footage to make 550' x 550' area, 6.94 ac)

6000' x 120' (access/pipeline ROW with buffers, 16.52 ac)

Description: The project area (Figure 1) is located on a northeast-southwest-trending unnamed portion of Carracas Mesa north of Bancos Canyon, west of F.R. 310, and south of F.R. 218. Access to both restaked proposed well locations is by F.R. 310 and F.R. 218. The additional access/pipeline ROW proceeds southwards from F.R. 218 along the eastern side of the valley until it reaches the proposed restaked location Rosa 342. The restaked route then follows the eastern side of the mesatop until it reaches Rosa 341 proposed restaked location. The additional access/pipeline ROW extends for 6000'.

The topography of the project area Rosa 341 is sloping, with numerous very minor drainages throughout the surveyed area. In the southwestern portion of the surveyed area there is a minor gully system (See Figure 3). The project area is in forest, with pinon pine, juniper, oakbrush, bitterbrush, Utah cedar and sagebrush, as well as yucca, cactus, locoweed, wild onion, and low grasses. The soil is a light brown to light graybrown where shaly, and contains quantities of sandstone cobbles throughout the surveyed area.

- - - gully
- = - access/p1 ROW : center line
- original report access/p1 ROW stakes

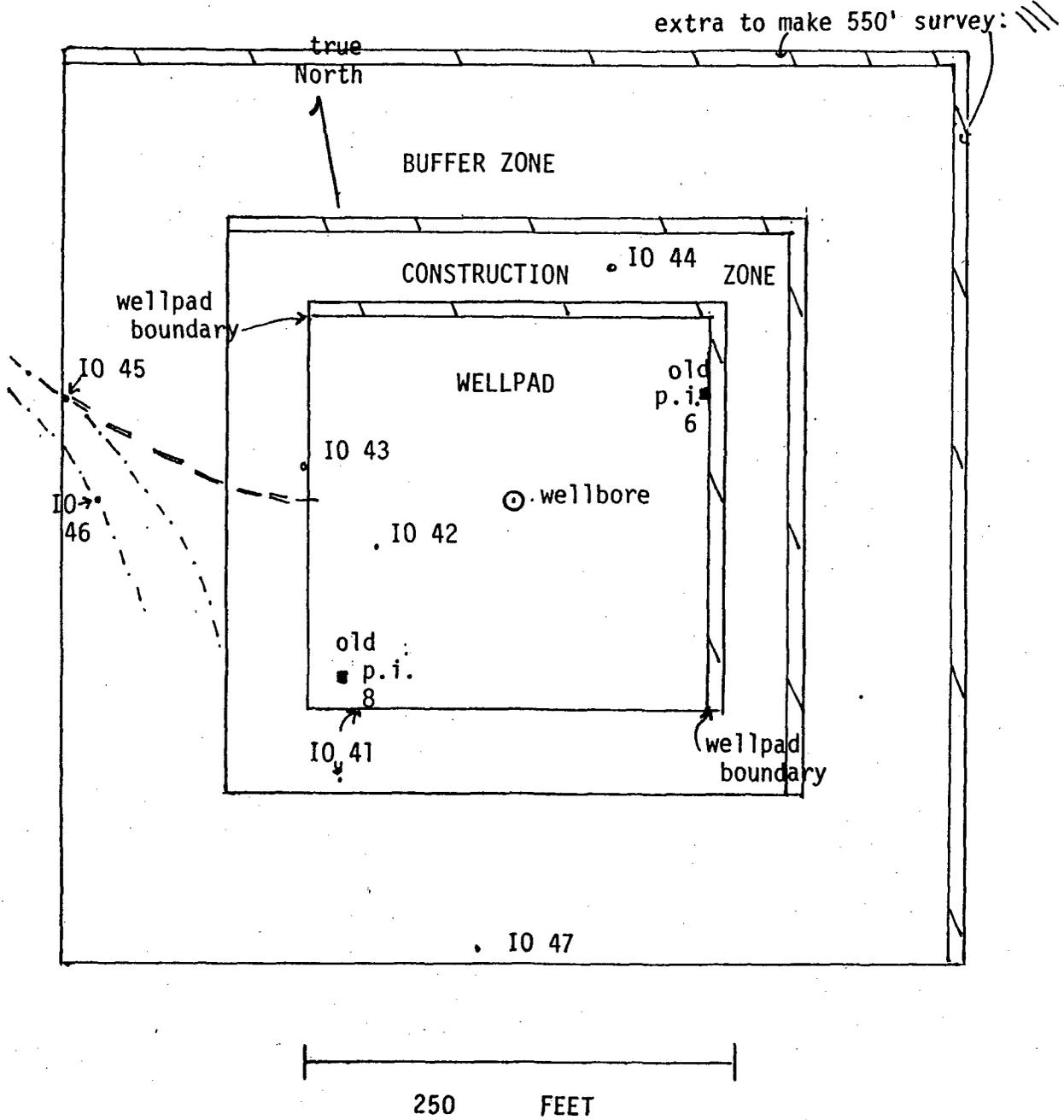


FIGURE 3. SURVEY AREA FOR ROSA 341 RESTAKE

INNER SQUARE IS PROPOSED WELLPAD
 MIDDLE SQUARE IS CONSTRUCTION ZONE
 OUTER SQUARE IS ARCHAEOLOGICAL BUFFER ZONE

Submit to Appropriate District Office
 State Lease - 4 copies
 Fee Lease - 3 copies

State of New Mexico
 Energy, Minerals and Natural Resources Department

Form C-102
 Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210

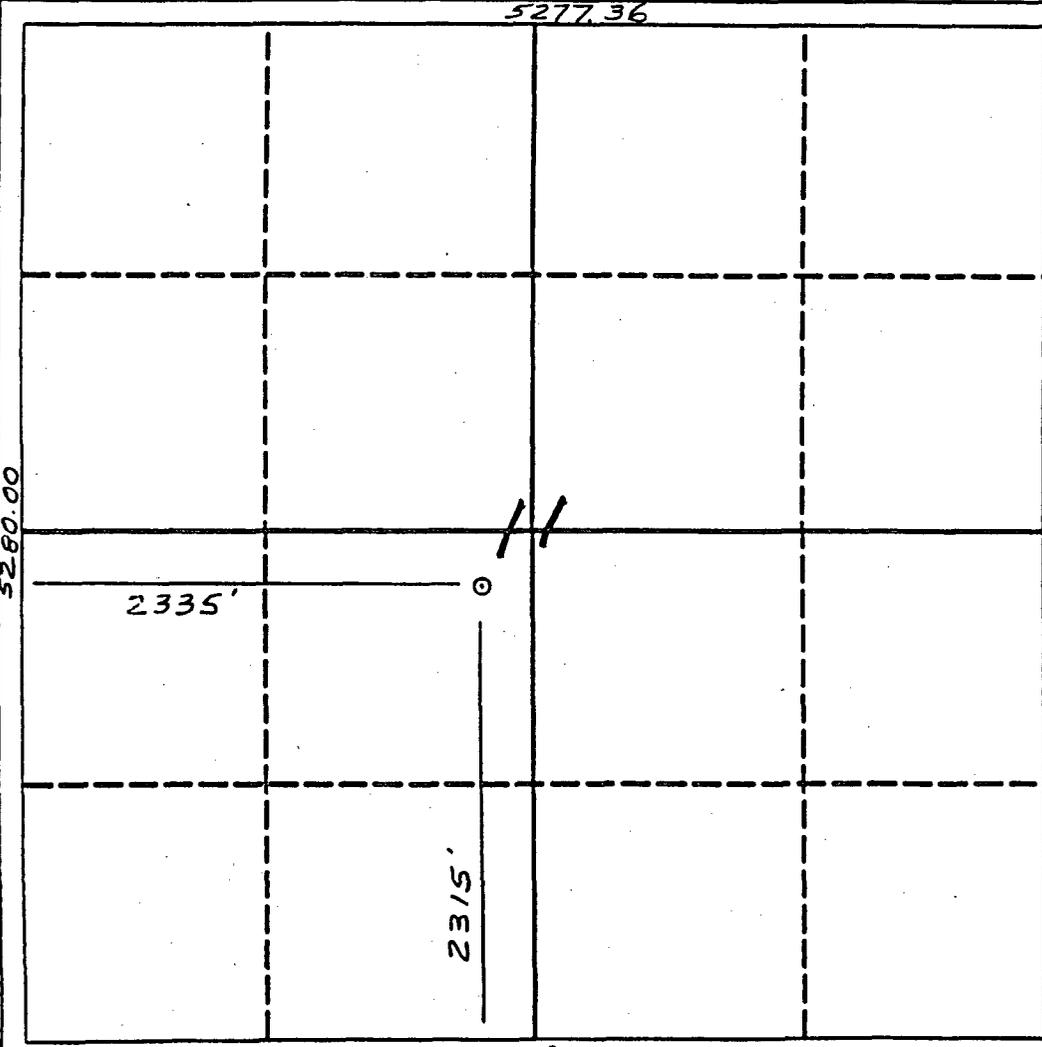
DISTRICT III
 1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Mitchell Energy Corporation			Lease Rosa Unit		Well No. 341
Unit Letter K	Section 11	Township 31 North	Range 4 West	County Rio Arriba	
Actual Footage Location of Well: 2315 feet from the South line and 2335 feet from the West line					
Ground level Elev. 7002'	Producing Formation		Pool	Dedicated Acreage: Acres	

- Outline the acreage dedicated to the subject well by colored pencil or hectare marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
 - Yes No If answer is "yes" type of consolidation _____
 If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary). _____
 No allowables will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature _____

Printed Name _____

Position _____

Company _____

Date _____

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

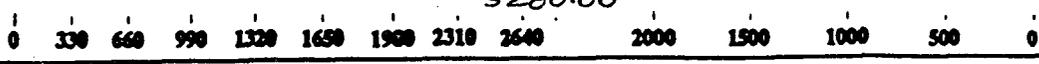
Date Surveyed 6-7-91

Signature _____

Professional Seal: NEW MEXICO REGISTERED LAND SURVEYOR 6857

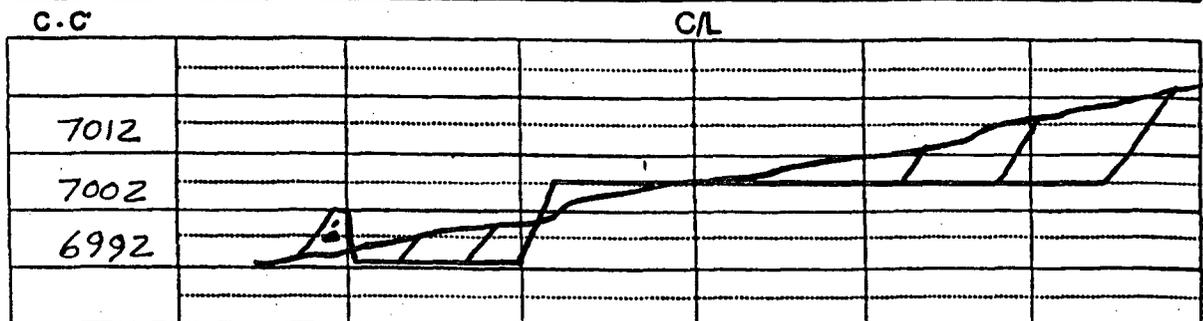
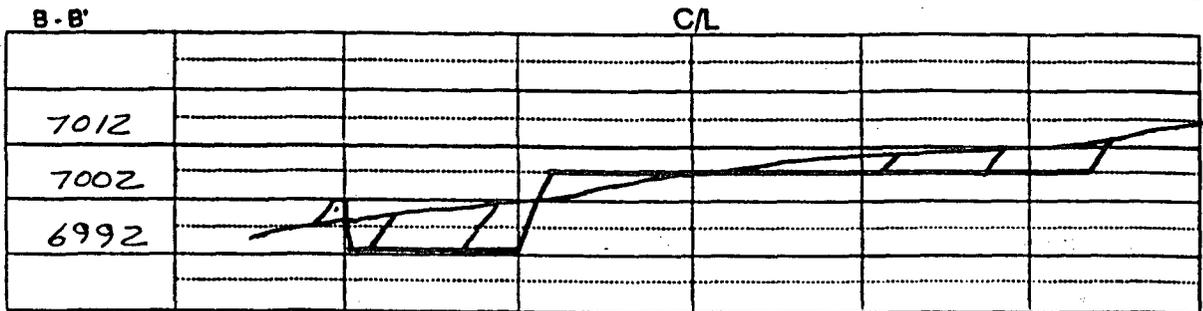
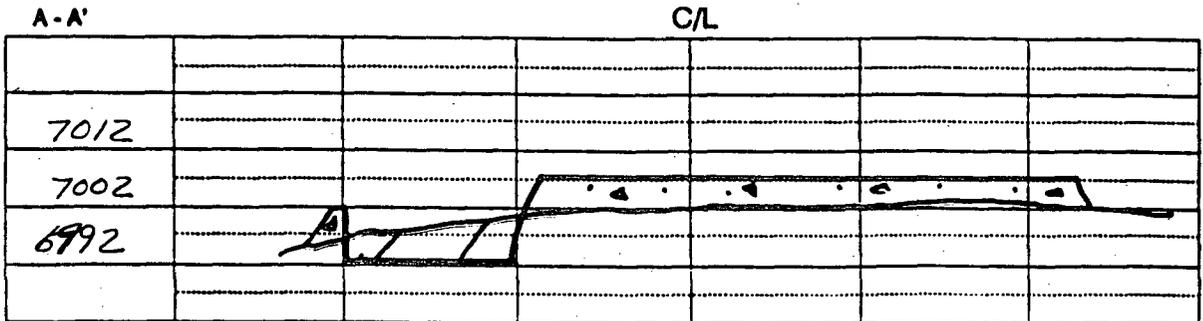
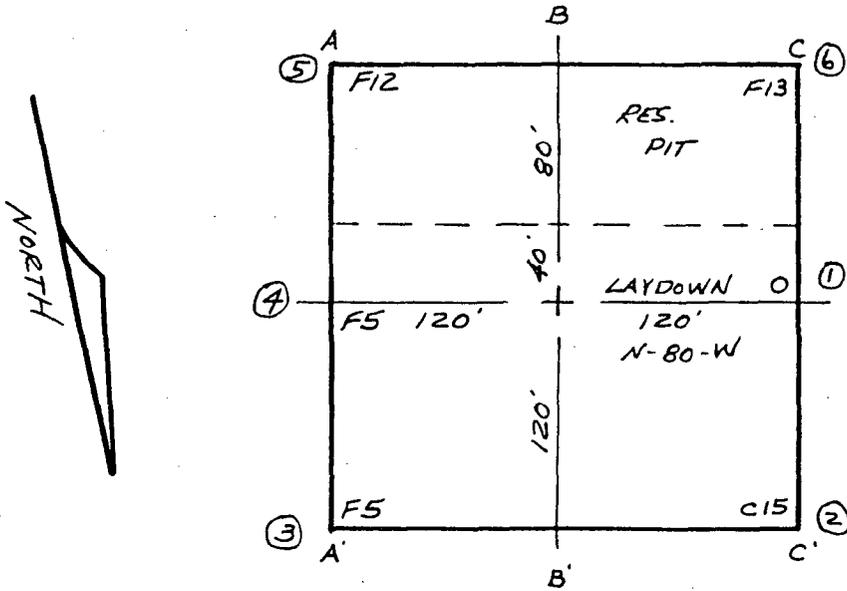
Certificate No. _____

Neale Edwards



MITCHELL ENGERY CORPORATION

Name: <u>ROSA UNIT # 341</u>	
Footage: <u>2315 FSL 2335 FWL</u>	
Sec <u>11</u> T. <u>31</u> N.R. <u>4</u> W NMPM	
Co. <u>RIO ARRIBA</u>	St. <u>NM</u>
Elevation: <u>7002</u>	Date: <u>6-7-91</u>



- - - gully
- = = = access/pl ROW : center line
- ||||| steep dropoff into canyon

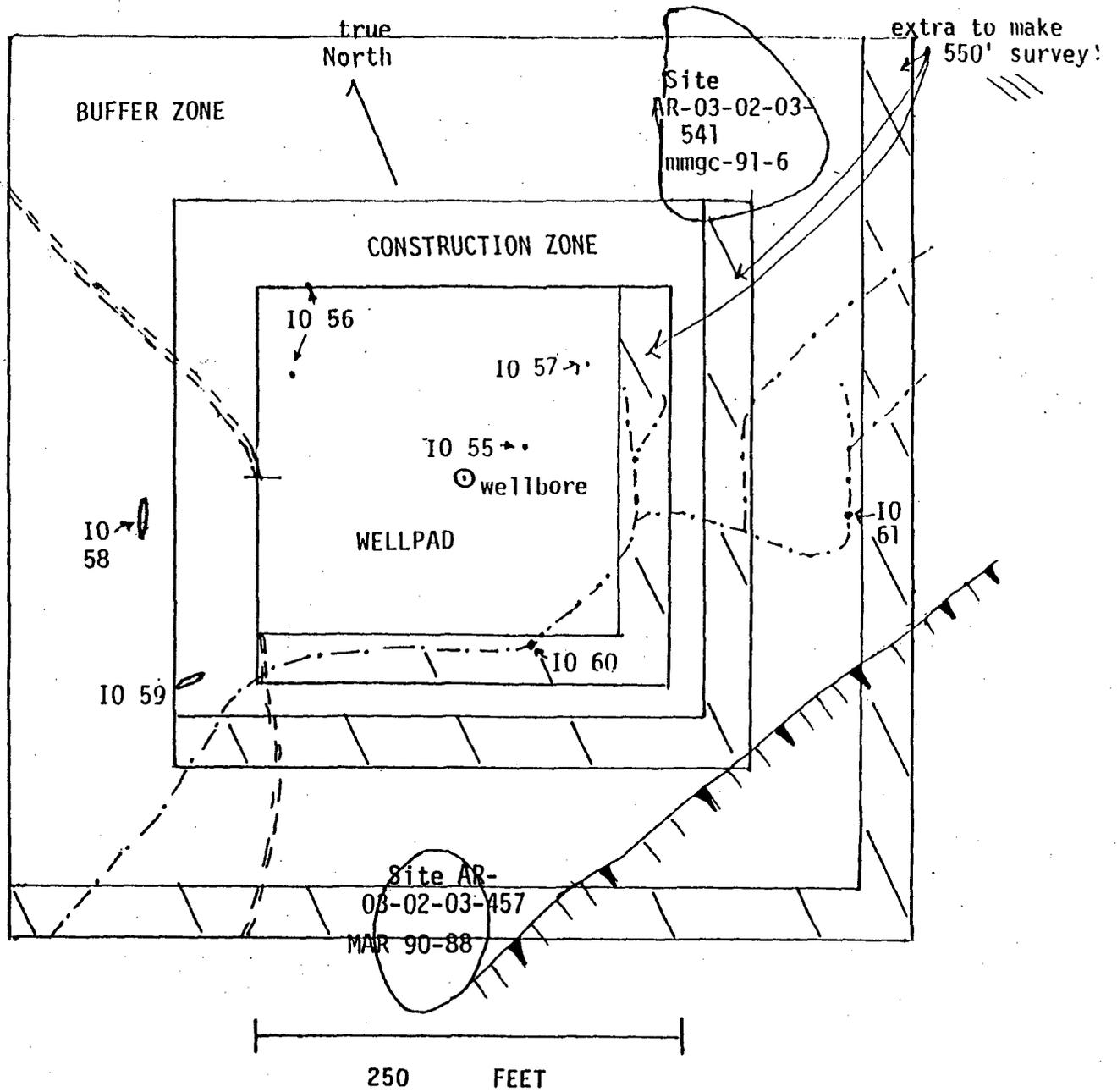


FIGURE 4.1. SURVEY AREA FOR ROSA 342 RESTAKE

INNER SQUARE IS PROPOSED WELLPAD
 MIDDLE SQUARE IS CONSTRUCTION ZONE
 OUTER SQUARE IS ARCHAEOLOGICAL BUFFER ZONE

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

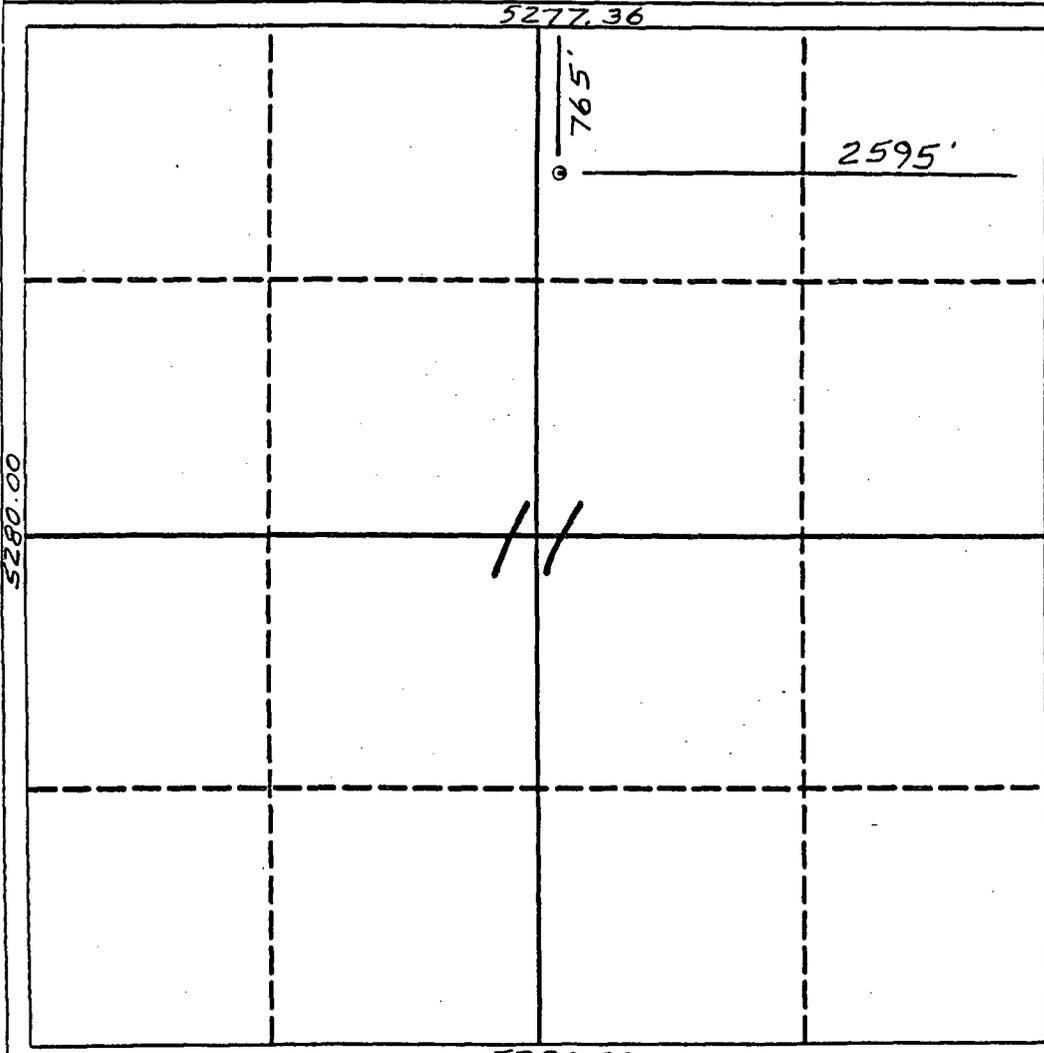
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Mitchell Energy Corporation			Lease Rosa Unit		Well No. 342
Unit Letter B	Section 11	Township 31 North	Range 4 West	County Rio Arriba	
Actual Footage Location of Well: 765 feet from the North line and 2595 feet from the East line					
Ground level Elev. 7046'	Producing Formation		Pool	Dedicated Acreage: Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hectare marks on the plat below.
 2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
 3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
 - Yes No If answer is "yes" type of consolidation _____
- If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____
- No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, encompassing such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature _____

Printed Name _____

Position _____

Company _____

Date _____

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed 6-7-91

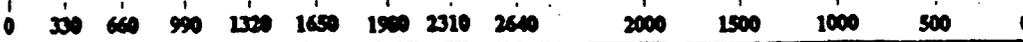
Signature _____

Professional Surveyor

NEW MEXICO
6857
REGISTERED LAND SURVEYOR

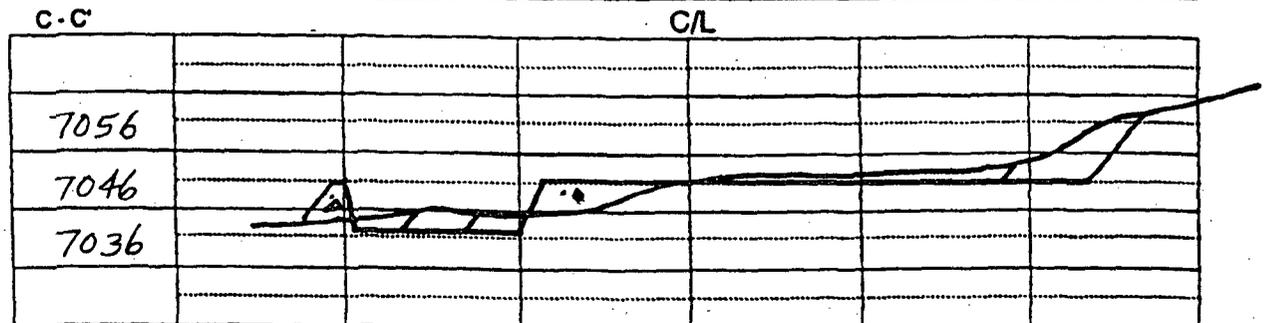
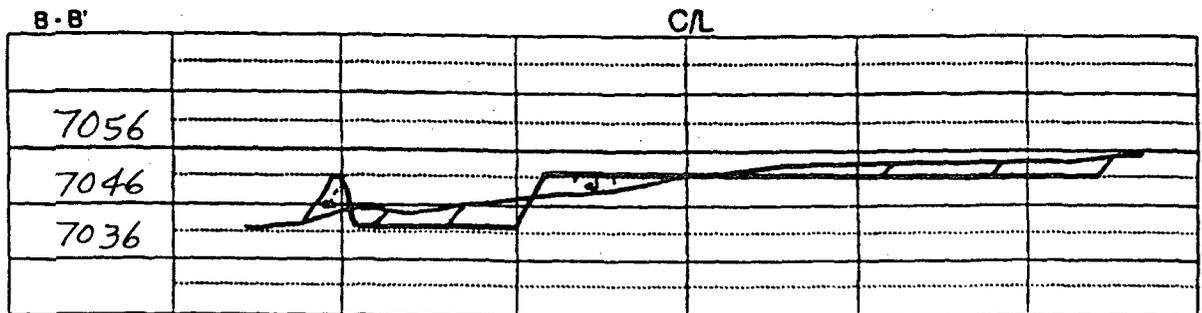
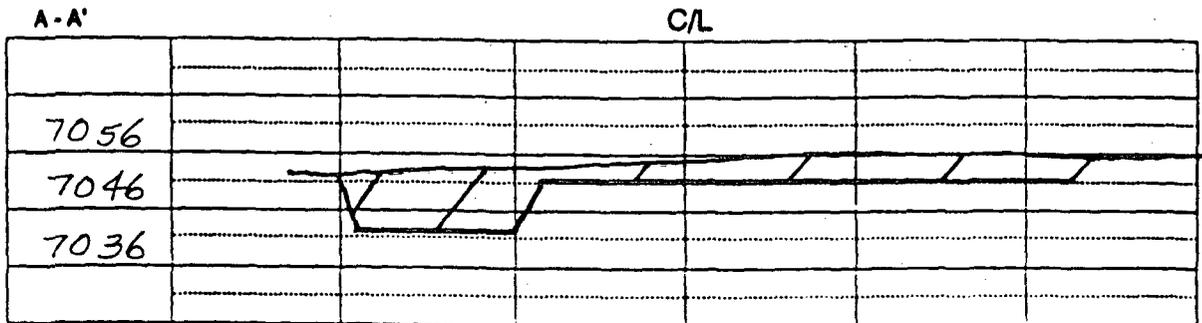
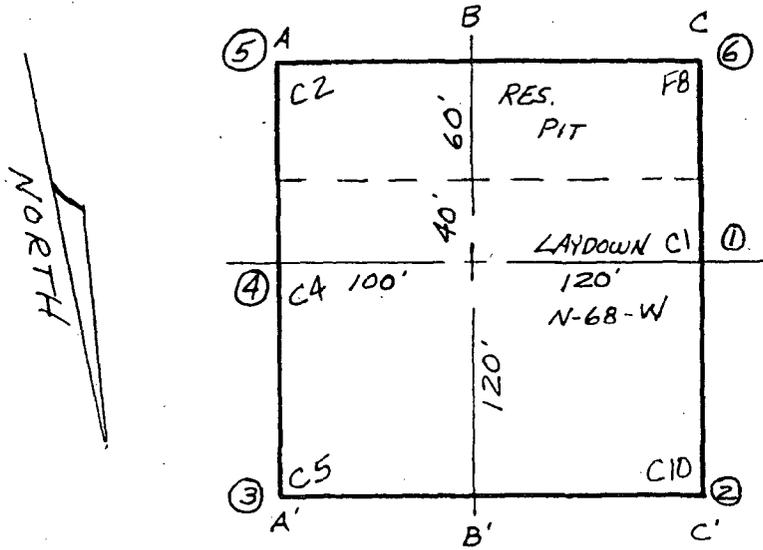
Certificate No. _____

Neale Edwards



MITCHELL ENERGY CORPORATION

Name:	ROSA UNIT # 342		
Footage:	765 FNL	2595 FEL	
Sec	11	T. 31	N.R. 4 W NMPM
Co	RIO ARRIBA		St. NM
Elevation:	7046	Date:	6-7-91



Ground cover is 40-50%. Visibility is 50-70%, as organic leaf materials conceal specific areas. The weather ranged from sunny and hot to overcast and rainy.

The topography of the project area Rosa 342 is a shale bedrock slope with caprock conglomeratic sandstone slumping down the slope in large boulders. There are numerous very minor drainages throughout the surveyed area, and a medium-sized gully system on the east (See Figure 4). There is a steep dropoff in the southeastern corner of the buffer zone. The project area is in forest, with ponderosa, pinon pine, juniper, Utah cedar, oakbrush, sagebrush, bitterbrush, locoweed, wild onion and low grasses. The soil is a light brown to a light gray-brown, and contains great quantities of conglomeratic sandstone boulders and blocks, especially on the upslope portions. Ground cover is 30-40%. Visibility is 70-80%. The weather ranged from sunny and hot to overcast and windy and rainy.

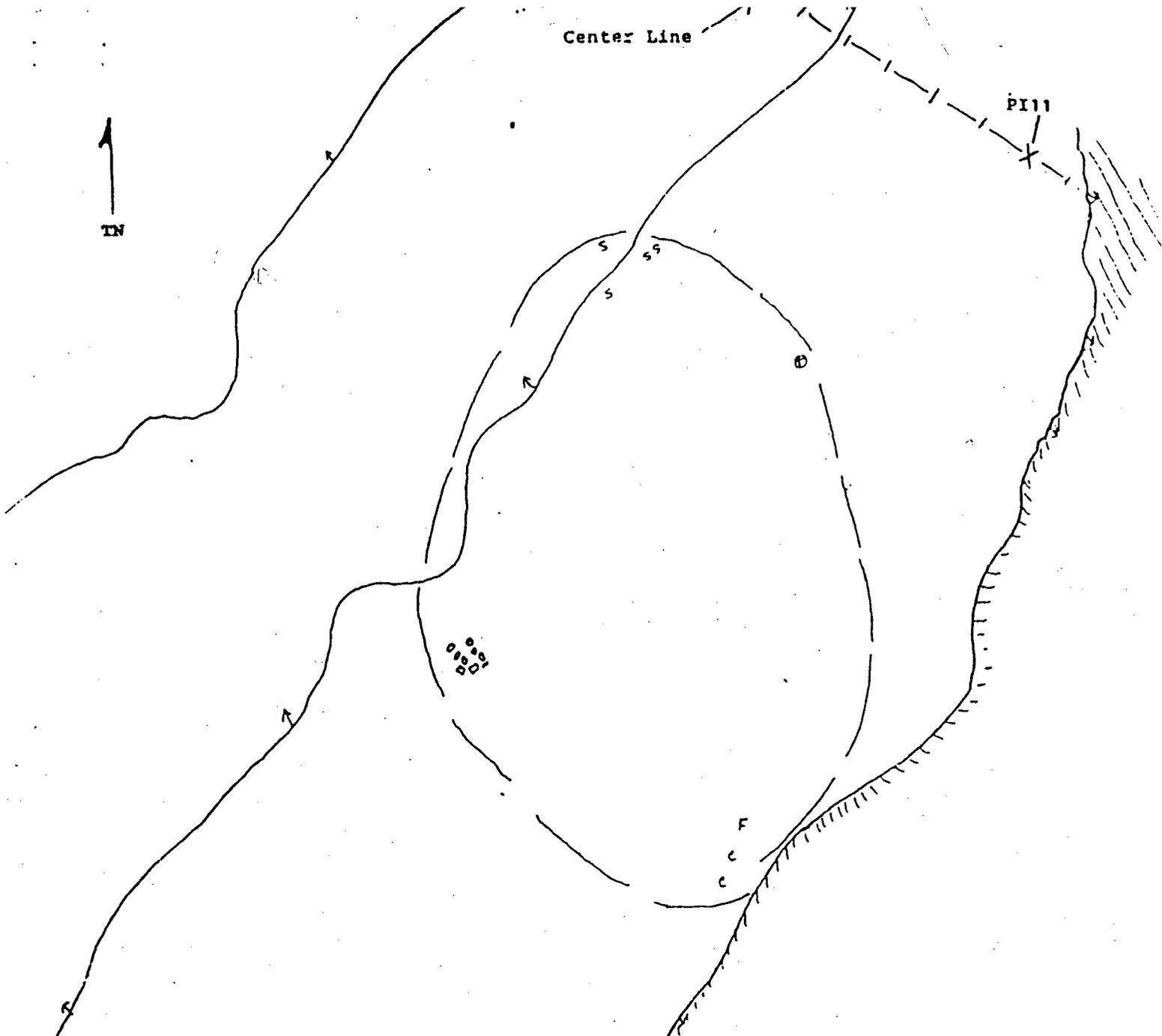
Cultural Resources: During the current survey 5 sites and 31 isolated manifestations were recorded. Only one of the sites is within the restaked well location Rosa 342 buffer zone. The other four sites are outside of the restaked access/pipeline ROW buffer zones. As this current report is part of the report CNF No. 1990-02-145 (Moore, 1990), the isolated manifestation numbers are in sequence with those of the original locations survey report. During the current survey none of the previously-recorded isolated manifestations were encountered where the original locations survey overlapped with the restaked locations survey.

No sites were encountered within the surveyed area for restaked proposed location Rosa 341.

Two sites are within the archaeological buffer zone of restaked proposed location Rosa 342:

Site AR-03-02-03-457 (M.A.R. 90-88) was encountered during the survey of the original proposed well locations and recorded for the original report (Moore, 1990). The site consists of a low density scatter of lithic and ceramic artifacts and a possible hearth of Anasazi PI Piedra age. For further details see the original report (Moore, 1990). This site is located on the southern margin of the restaked location surveyed area, only partly within the archaeological buffer zone.

Site AR-03-02-03-541 (mmgc-91-6) was encountered during the current survey. It is located within the northeastern buffer zone, and encroaches 20' into the construction zone. The site contains 30 sherds of plain grayware with quartz sand temper, including 2 rims with straight sides. One of the rims has a round top, and one has a flat top. There is also a portion of a jar shoulder. There is a single sherd of a neckbanded grayware, with a 1.2cm band width. This sherd contained quartz sand temper. There are also 3 banded grayware sherds, each band being .5cm in width. One sherd contained 5 bands, all of this same width. The temper in the banded ware is quartz sand. There is a single sherd, very corroded and with quartz sand temper, of a carbon-painted B/W ware, with no slip or polish. There are 3 sherds with carbon paint and polished interiors, also with quartz sand temper. There are



Center Line

PI11

IN

1000

M.A.R. 90-88

Site# AR-03-02-03-457

M.A.R. Rpt. #90-85

Forest Rpt. #1990-02-145

Drawn By: D. Soldo

Date Drawn; 7/25/90

- [= 2 meters
- ⊗ = Site Tag
- ⊗ = Feature 1
- = Site Boundary
- - - = R.O.W. Centerline
- { = Contour Line (1 meter)
- ▨ = Steep Slope
- C = Core Fragment
- S = Sherd
- F = Flake

Om

true North



- ▲ datum tag
- ⊕ juniper
- l lithic
- - - gully
- - - site boundary
- - - contours

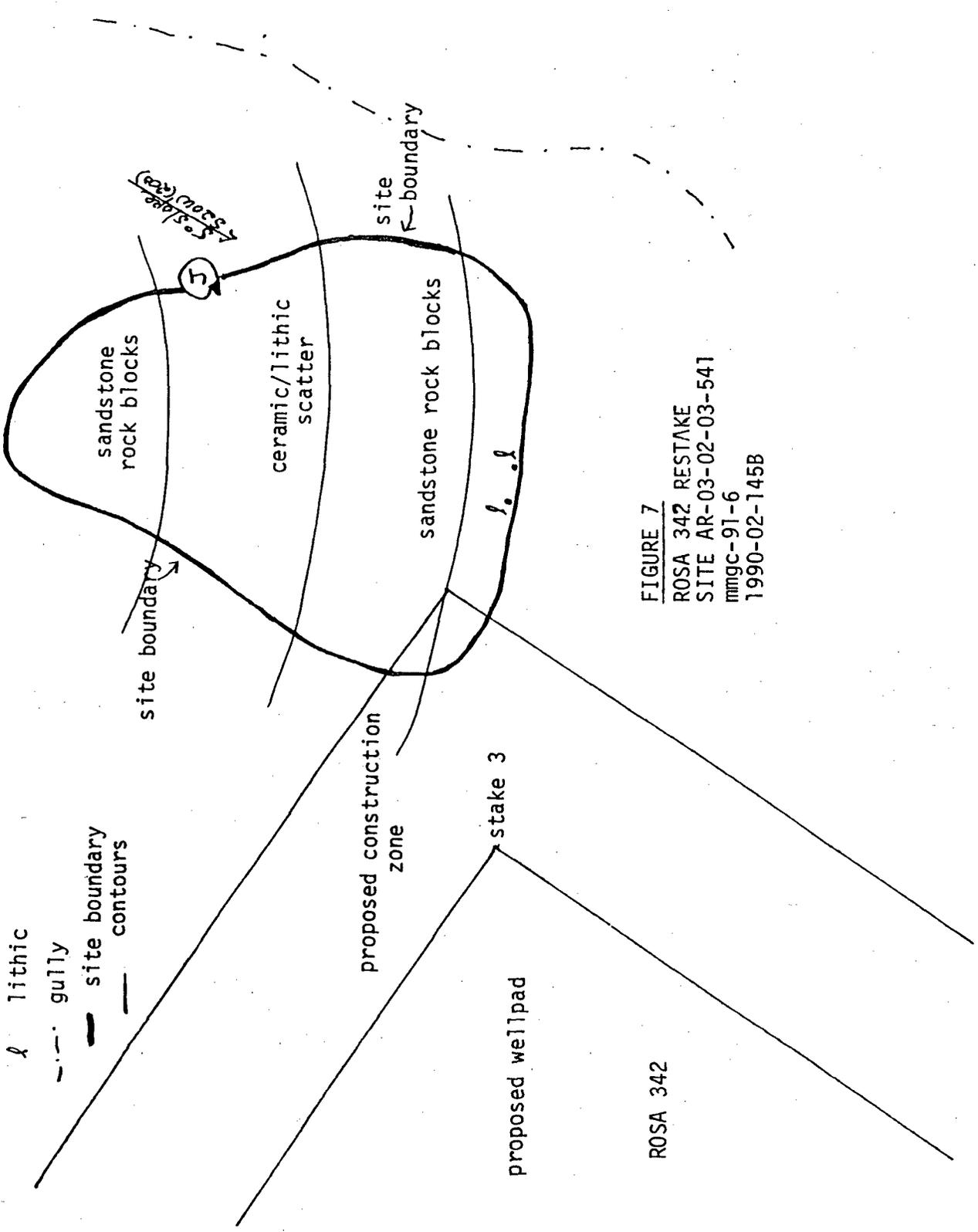


FIGURE 7
 ROSA 342 RESTAKE
 SITE AR-03-02-03-541
 mmgc-91-6
 1990-02-145B

ROSA 342

4 sherds of whiteware with quartz sand temper and polished interiors. One of the sherds is a rim, with straight sides and a round top. There are 2 sherds of corrugated grayware, one of which is a rim. The rim has a 1.3cm-wide neckband and the corrugations run at a 45 degree angle to the band, and is probably Payan Corrugated. The corrugated ware contains quartz sand temper.

Very few lithic materials were encountered within this site. There is a single primary and 2 tertiary flakes, made of chalcedony, quartzite and argillite. There are 5 dark gray igneous rock cores, and 2 axes, one of which is argillite and is retouched on 2 sides.

No features, structures or construction materials were observed.

This site is in stable condition.

The site consists of a ceramic/lithic scatter with no apparent pattern. Although it is small in extent, this site contains potsherds from several vessels. Although polished whiteware and corrugated sherds are present, all of the tempers are quartz sand, not crushed rock. As the site is quite small, it does not logically appear that it should be of 3 different phases, Rosa, Piedra, and Arboles. Due to the presence of the polished, unslipped B/W ware and the polished whiteware sherds, and the neckbanded sherds, this site appears to be Anasazi PI late Piedra-early Arboles in age, the Arboles influence due to the presence of the single corrugated sherd. The quartz sand temper used instead of the crushed rock may be a local preference. Thus the plain grayware is probably Piedra in age, although by definition, due to the presence of the quartz sand temper, it is Rosa Gray. The same applies to the Banded wares, which are probably Piedra Neckbanded, not Rosa. The B/W wares and whitewares are all polished except for a very corroded sherd, and the B/W wares exhibit carbon paint. As the carbon paint tradition was carried on in Piedra time, and also carbon paint was used as a vessel for the mineral paint, the polish indicates it is probably Piedra B/W, in spite of the quartz sand temper, especially as there is no slip. The single sherd of corrugated ware is of special interest, as it combines corrugation with a wide neckband, typical of Payan Corrugated (Eddy, 1966) style, but also contains quartz sand temper, not an Arboles trait. Again, this may be an areal preference.

The presence of predominantly ceramic artifactual material, and the sparseness of lithic flakes, coupled with the absence of structural evidence, indicates that this site is a limited activity site. The presence of 5 cores and the 2 large axes/cutting tools, which are in proximity to one another, indicate the limited activity may be related to cutting of large objects and possibly pounding (?). Both of the axes were at the downslope margin of the site. It is not known whether these are in situ or have moved down the slope from some location higher up.

The site is probably a surface site, as probing within the rocky slope outside the site area revealed that approximately 2" down there is shale bedrock. The conglomeratic sandstone is a caprock which has slid down over the shale bedrock in large blocks.

- ▲ datum tag
- Ⓟ pinon pine
- Ⓞ juniper
- S sherd
- l lithic
- J jacał
- = access/pł ROW
- site boundary
- - - contours
- · - · - gully
- H hearth

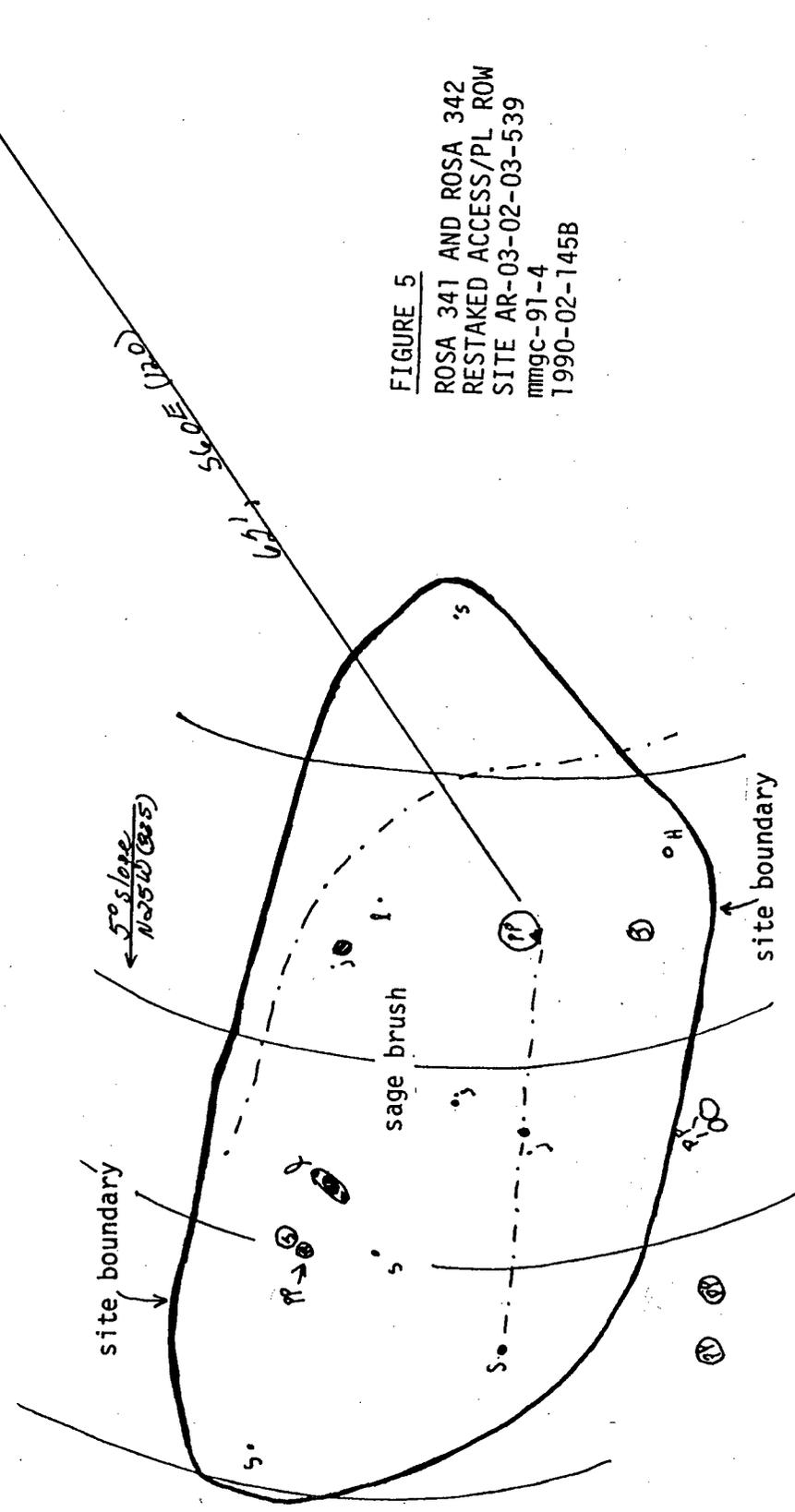
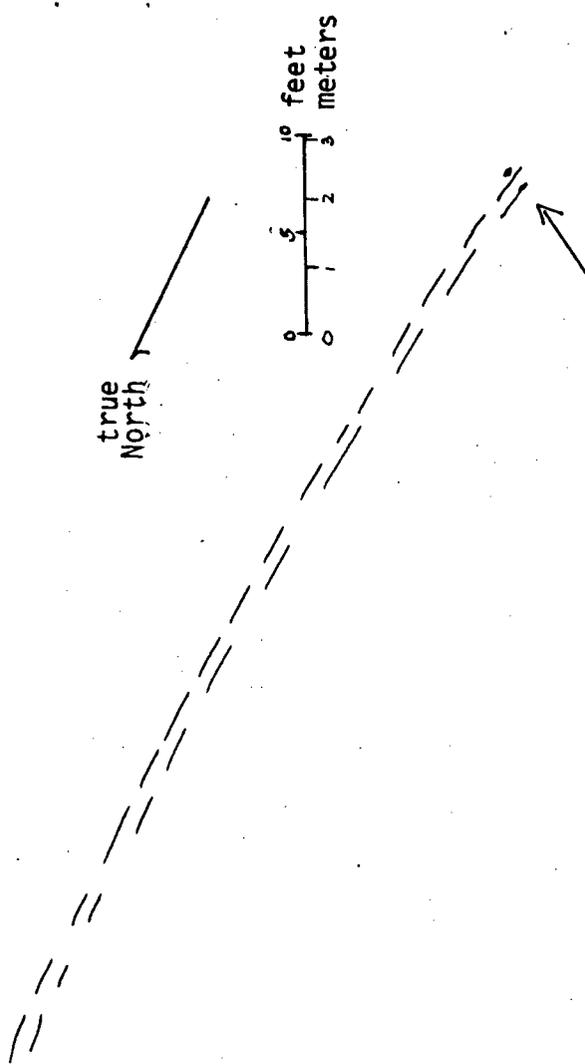


FIGURE 5
 ROSA 341 AND ROSA 342
 RESTAKED ACCESS/PL ROW
 SITE AR-03-02-03-539
 mmgc-91-4
 1990-02-145B

The site is on a shale bedrock slope, with conglomeratic sandstone blocks spread all over the slope. None of the sandstone blocks appear to be aligned or to have been used as structures. As the site is small, and confined to only a portion of the slope, perhaps the deciding factor in where they performed their limited activity was governed by the presence of an excellent gully system nearby, which would have provided water at specific times. Currently, there is thick vegetative growth, both trees and bushes, on the rocky slope.

There is a site of PI age 600' to the southwest (See Moore, 1990, and above, AR-03-02-03-457). There are additional PI-PII-age sites within the valley to the north and the mesa top to the south (See Moore, 1990, and current report). These may all be related.

Four sites were encountered during the survey of the restaked access/pipeline ROW, although all of them are outside of the buffer zones.

Site AR-03-02-03-539 (mmgc-91-4) consists of a small area containing ceramics, sparse lithics, and fragments of jacal indicating the presence of a pithouse. There are 8 sherds, 5 of which are corrugated grayware, and the other 3 are grayware with quartz sand temper. The 5 corrugated sherds are in a single cluster, are probably from a single pot, and contain quartz sand temper.

There are 2 occurrences of lithics. One is a separate fragment of a vesicular basaltic rock. The other is a cluster of 4 fragments of a vesicular basaltic rock, possibly from a single rock. One of the fragments within this cluster is larger than the other 3, and is possibly the core.

There are 3 surface occurrences of jacal. Two of these contain 3 small fragments of burnt jacal each. The other contains a cluster of approximately 14 small burnt fragments. The jacal indicates the presence of a pithouse, which has probably filled in, so its original extent is indefinable during the current survey.

There is a small hearth, approximately 6" in diameter, which is located on the outskirts of the site. It consists of ashy gray soil to a depth of 4" minimum.

The site is in stable condition

The site consists of a small ceramic scatter with jacal fragments present within the site. The corrugated ware indicates this is an Anasazi PI-PII Piedra-Arboles age site, probably late Piedra, as the temper is quartz sand rather than crushed rock. The jacal fragments indicate the presence of a pithouse, thereby indicating this is a habitation site, although a small one. The use, if any, of the vesicular basaltic rock fragments is not known. The site is situated on a north-sloping sagebrush-covered area, with an occasional pinon pine and juniper tree. There is a site of PI Piedra age 500' to the east (See Moore, 1990, AR-03-02-03-457 and above). There are additional Piedra-age sites within the valley to the north and the mesa top to the south (See Moore, 1990, and current report). These may all be related.

Site AR-03-02-03-540 (mmgc-91-5) consists of a small area containing a ceramic/lithic scatter down a wash, and a small hearth. It is probably a limited activity site, perhaps an overnite hunting camp.

There is a single plain grayware sherd with a temper of crushed quartz/black rock, possibly Piedra Gray (Eddy, 1966). There are 7 sherds of plain grayware with quartz sand temper, including a rim with straight sides and a round top. There are 6 sherds of corrugated grayware with quartz sand temper. As crushed rock temper is very little used in this site assemblage, these are most likely Piedra in age, although they may be Arboles because of the presence of the corrugated ware.

There are 2 flakes present within the site: a secondary obsidian flake, and a tertiary argillite flake.

There were no signs of a structure, either subterranean or surface.

There is a single hearth, approximately 1 foot in diameter, with dark gray ashy material to a depth of 4". Although there are no associated artifacts, and presently the hearth is separated by oakbrush from the rest of the site material, it is probably a part of this site.

Originally, the site may have been clustered closer together at the head of the runnel, but currently they are strung out strictly within it. There is also a lot of oakbrush and other small bushes which may have been absent previously, with only the pinon-pine and juniper trees as shelter.

The artifacts consist mainly of ceramics, perhaps from 3 different pots. Although corrugated ware is one of the predominant types, the temper is quartz sand, not crushed rock. One of the plain grayware sherds does have a temper of crushed quartz/black rock, but the others also have quartz sand temper. There are only 2 flakes, one a reduction flake of obsidian. The 2 flakes are located at the furthest downslope portion of the site. The single rimsherd of plain grayware exhibits straight sides and a round rim, which is more likely to be Piedra age than Arboles. The ceramic evidence indicates this site is a limited activity site of probably late Piedra age, although possibly early Arboles because of the presence of the corrugated ware. Although crushed rock is supposed to be the temper of choice after the Rosa interval, it appears that locally the preferred temper may still have been quartz sand in this geographic area.

The site is located on the top and slope of a small knoll, with pinon pine and juniper trees around it. There is a site of PI-P II age 500' to the southwest (See Moore, 1990, AR-03-02-03-458). There are additional PI-P II-age sites within the valley to the north and the mesa top to the south (See Moore, 1990, and current report). These may all be related.

Site AR-03-02-03-542 (mmgc-91-8) consists of a meadow among the sandstone boulders which contains a ceramic/lithic scatter of limited area. It is probably a limited activity site.

true North

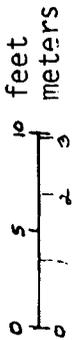
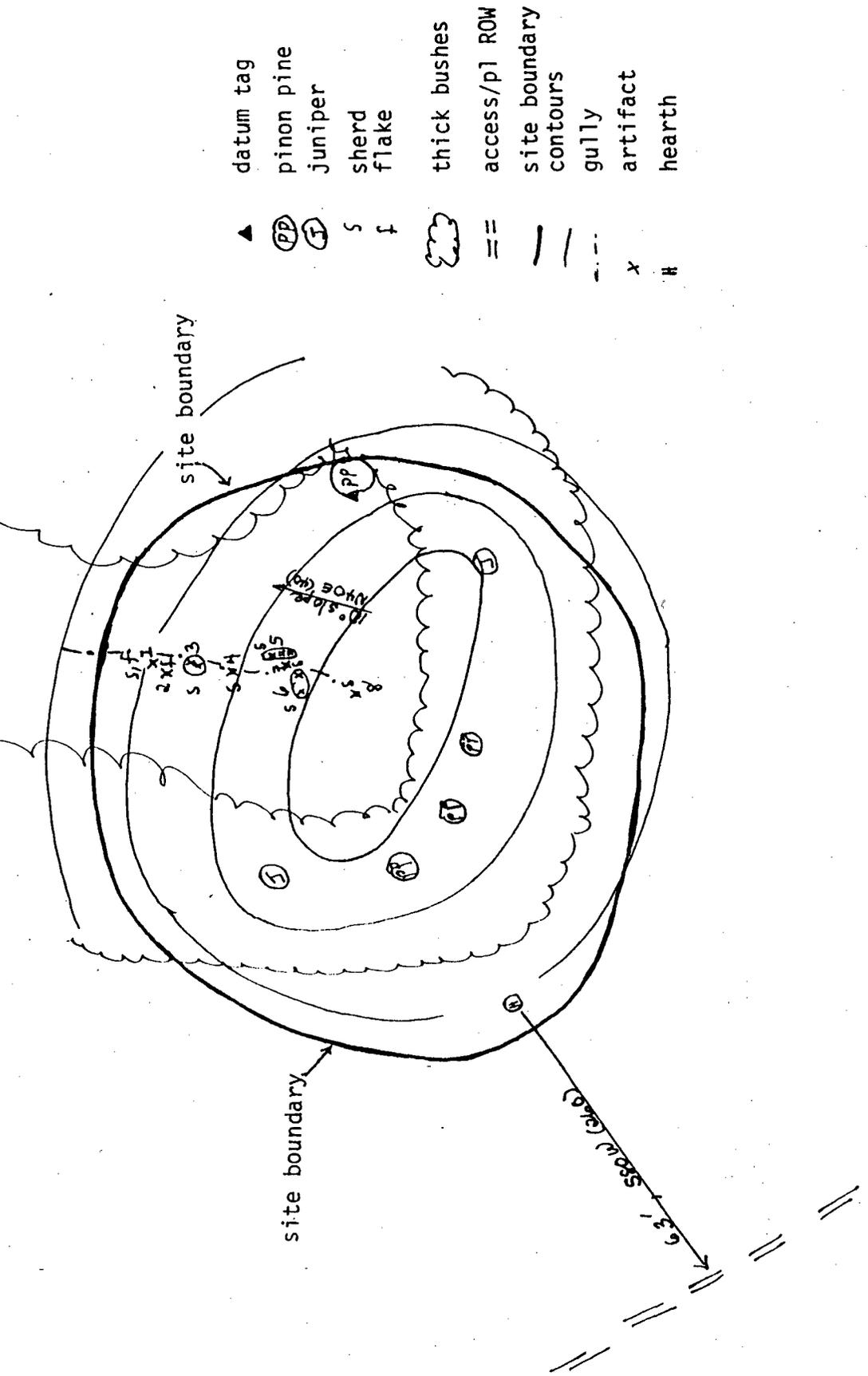


FIGURE 6
 ROSA 341 and ROSA 342 RESTAKE
 ACCESS/PIPELINE ROW
 SITE AR-03-02-03-540
 mmgc-91-5
 1990-02-145B



Within the core site there are 20 sherds of plain grayware, 12 of which contain quartz sand temper, and 8 of which contain a mixture of quartz sand and other gray rounded rock temper. The mixed rock temper grayware sherds contain 3 rims, all with round tops, but 2 with slightly curved sides. These are probably Piedra Gray (Eddy, 1966). There are 2 rimsherds of Piedra Neckbanded (Eddy, 1966), with a .7cm-wide band, straight sides and round tops. They contain a mixed rock temper. There are 2 sherds of badly corroded whiteware, probably Piedra in age, as they still retain an exterior polish and are not slipped. The temper is very fine-grained, and contains some quartz. There are 2 sherds of corrugated ware, with a temper of quartz sand and crushed white rock.

Outside of the core site, there are 4 sherds of plain grayware with a temper of quartz and other rock, including a rim with straight sides and round top. There are 2 sherds of the plain grayware with quartz sand temper.

Within the core site there are 7 tertiary argillite flakes and 1 quartzite primary flake. Three of the argillite flakes have scraper retouching. There is also a fragment of white sandstone mano within the core site (artifact 3).

Outside of the core site there are 2 tertiary argillite flakes, and an elongate oblong of argillite with a burin end. There is also an argillite stream cobble flaked into a small axe (artifact 1), a flat flag of fine-grained sandstone (19cm x 11cm x 2.5cm, artifact 2), and a mano fragment of coarse sandstone which shows little use (10.5cm x 6cm x 2cm, artifact 4)

No evidence for structures or features were encountered.

The site is in stable condition.

There are at least 5 different types of ceramic vessels evidenced by the sherds. The site is small, and probably results from a single usage. The polished, unslipped whiteware and neckbanded sherds with mixed rock temper indicate this site is Anasazi PI Piedra. It is probably late Piedra due to the presence of the 2 corrugated sherds, indicating an Arboles influence. The small axe/chopper indicates possible limited activity occurred here, although the 2 groundstone fragments indicate food processing for on-site consumption also took place here. The lithic flakes indicate lithic reduction occurred, and the 3 scrapers indicate again a possible limited activity use. The concentration of artifacts within the core site indicate that the main activity occurred within a small area. The presence of the larger lithic tools outside of the core area indicate other possible activity areas where an axe/chopper, flat rock and mano fragment were required, all in different spots. There is a single sherd of plain grayware far outside of the site boundaries, among the large boulders. Its relationship to the site proper is not determinable. The predominance of argillite flakes and tools on the site may be an areal or group preference for rock type, as has been observed on other sites within the area.

The site is located on a west-facing slope. The site is within a small meadow surrounded by large sandstone boulders, just down from upslope sandstone bedrock. There are trees all around the margins of the meadow and

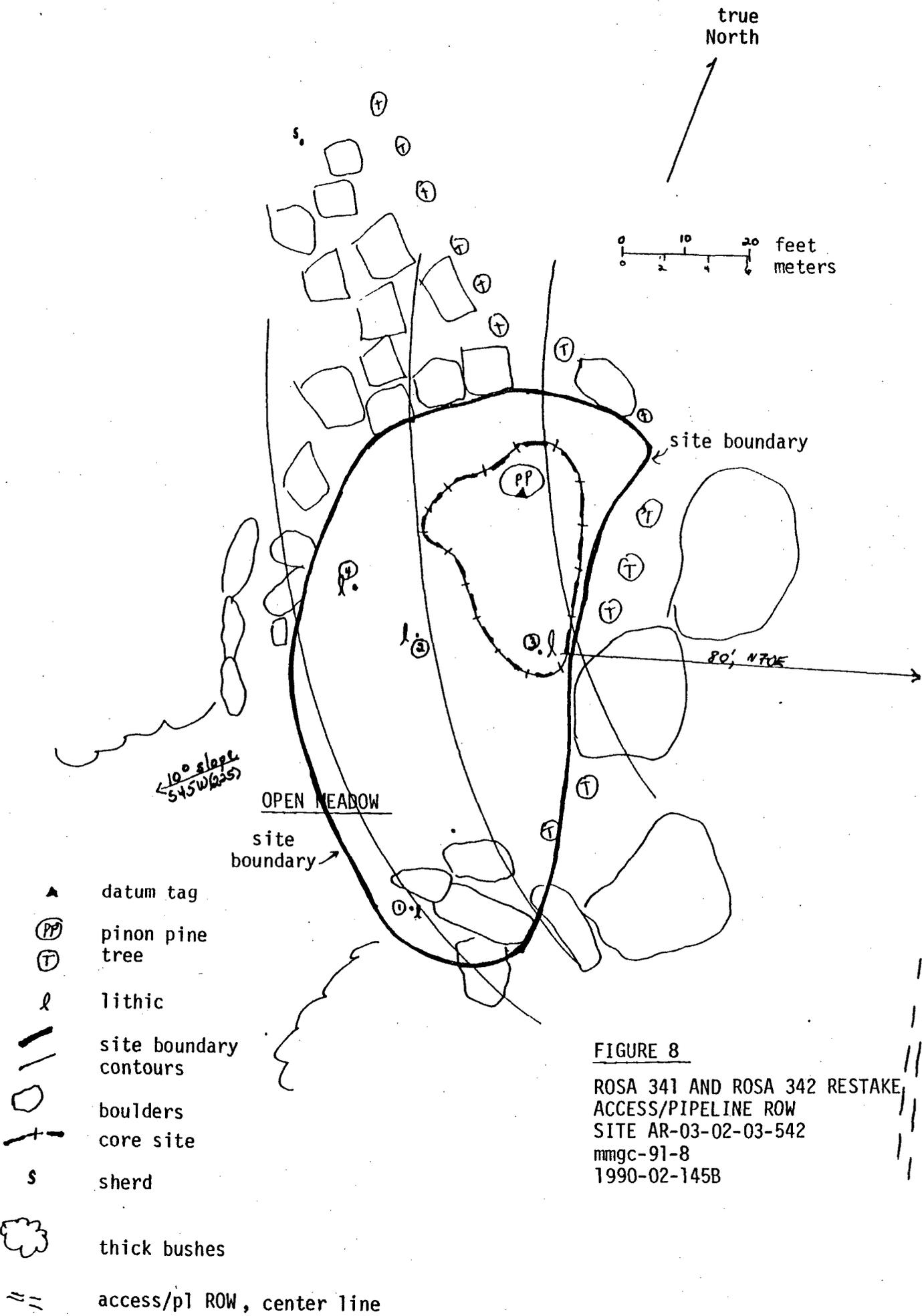


FIGURE 8
 ROSA 341 AND ROSA 342 RESTAKE
 ACCESS/PIPELINE ROW
 SITE AR-03-02-03-542
 mmgc-91-8
 1990-02-145B

among the rock boulders.

There is a site of PI age 700' to the southwest within the valley (See Moore, 1990, AR-03-02-03-454). There are additional PI-PII-age sites within the valley to the west and the mesa top to the south (See Moore, 1990, and current report). These may all be related.

Site AR-03-02-03-543 (mmgc-91-9) is a large Anasazi PI Piedra pithouse habitation site, with 3 possible pithouse depressions on the top of the knoll where the site is located. There are numerous fragments of burned jacal present, numerous mano fragments, and half of a trough metate. There are 2 overlapping middens with heavy concentrations of artifacts. The jacal clusters and middens indicate there are possibly 7-8 pithouses present, although most seem to be filled in completely.

There are 122 sherds of plain grayware with a temper of quartz sand and crushed dark rock, probably Piedra Gray (Eddy, 1966). This includes 4 rims, one of which is flared slightly with a flat top, two of which have straight sides and a round top, and one of which has straight sides and a flat top. There are 4 sherds of Piedra B/W (Eddy, 1966), with mineral paint, polished surface, and no slip, with a quartz sand/dark rock temper. There are 3 with carbon paint, polished surface, and no slip, still probably Piedra B/W. There is a single plain grayware lug located near the northern margin of the site. It is 1.25" x 1.25" and is tempered with quartz sand. There are 2 overlapping midden areas on the north slope, just down from the top of the knoll, which contain dense accumulations of Piedra Gray ware, Piedra B/W ware.

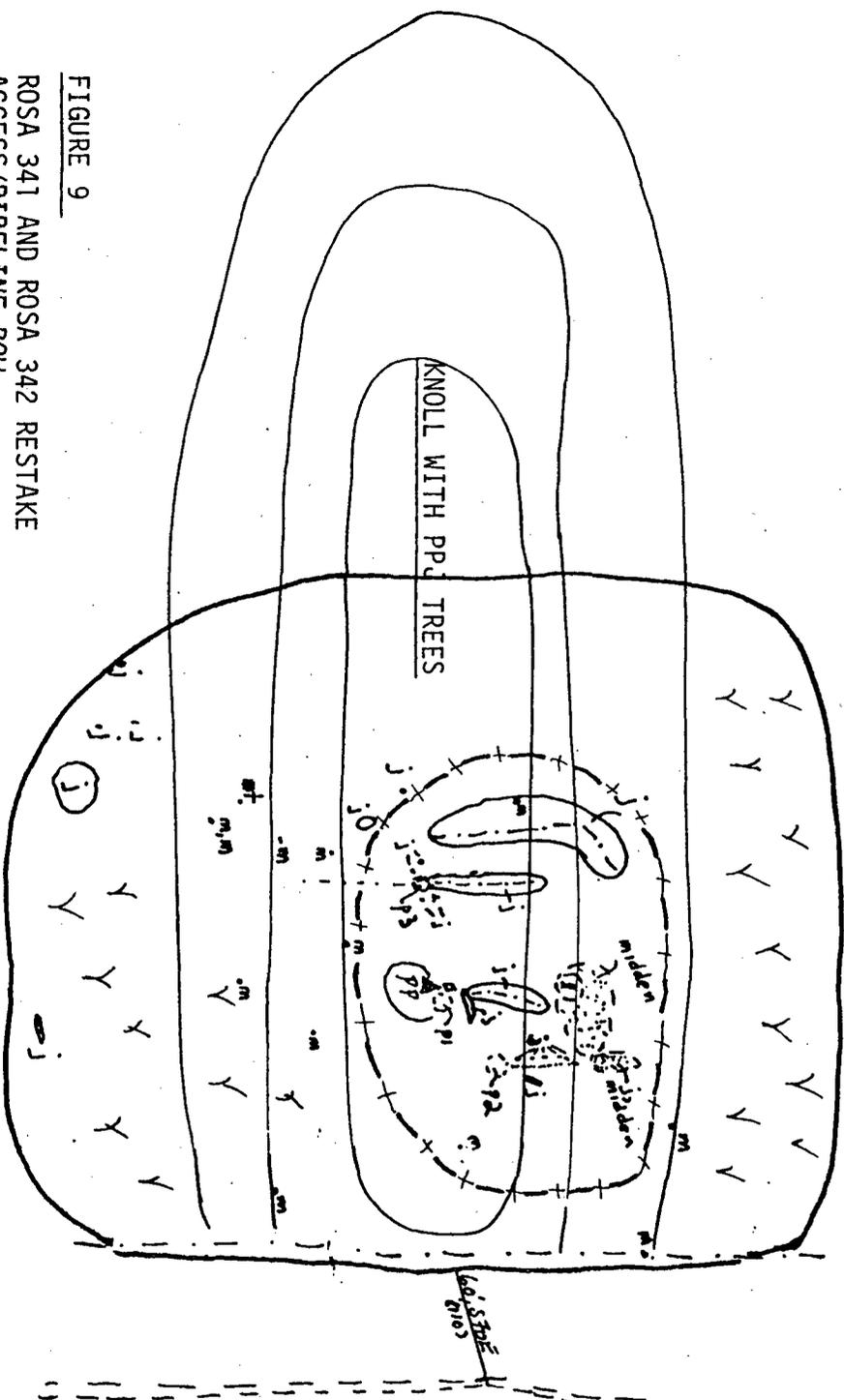
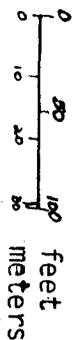
There are 24 primary, 17 secondary, and 57 tertiary flakes. They are predominantly argillite, with subsidiary chert, igneous, quartzite, and chalcedony flakes. Several of the flakes have been made into scraper tools. The lithics within the middens on the north side of the site reflect the same types and argillite dominance as does the rest of the site. There is a very dense lithic flake area within the midden down the slope from possible pithouse 1. Quantities of cores and hammerstones of these same rock types are also present on the site.

Twelve groundstone fragments were encountered within the site, mainly of sandstone and quartzite, with subsidiary use of a fine-grained granitic rock and fine-grained dioritic rock. The groundstones seem equally divided between being unifacially ground and bifacially ground. These groundstones all appear to be from manos, and are plotted in the site sketch map. Most of them are on the southern slope of the site. A couple of the manos appear to have been used as a hammerstone, perhaps after being discarded as a viable mano.

A half of a trough metate was encountered on the southern slope of the site (See site sketch map). It is of red sandstone, and lichens have roughened the surface, but its shape is unmistakable. It is also in the vicinity of 2 closely-associated mano fragments.

There are 3 shallow depressions at the top of the knoll which are surrounded by jacal, and have been labeled possible pithouses 1, 2 and 3. They are

True North



- ▲ datum tag
- (P) pinon pine
- j jacal
- λ lithic
- m mano
- mt metate
- (P#) possible pithouse
- gully
- site boundary
- contours
- access/p1 ROW center
- sandstone boulder
- Y sagebrush
- core area

FIGURE 9
 ROSA 341 AND ROSA 342 RESTAKE
 ACCESS/PIPELINE ROW
 SITE AR-03-02-03-543
 mmgc-91-9
 1990-02-145B

approximately 15 feet in diameter. On the margin of possible pithouse 1 are two very large sandstone boulders. There is a gully north of possible pithouse 1 which is filled with jacal fragments, presumed to be from pithouse 1. There is a similar gully filled with jacal fragments in an analogous position with relationship to possible pithouse 2 and pithouse 3. There is also a gully leading south from possible pithouse 3, but it contains no jacal scatter.

There are additional clusters of jacal fragments which indicate the presence of possibly 3-4 more pithouse structures. Two of these clusters are near the margin of the site on the southern slope of the knoll. Two are at the top of the knoll, west of possible pithouse 3. The presence of 2 overlapping middens, one associated with jacal fragments, located on the north slope, may indicate 1-2 more pithouses. There are several jacal fragments which are scattered throughout the rest of the site, especially on the southern slope. There is no way to determine by surface examination how many additional structures these fragments represent, or where they are located. Some of the jacal fragments are larger than a fist, and contain wood impressions, some as large as a 2" post. All of the jacal appears to have been burned.

This site is stable and intact, Pithouse structures suspected on the slopes appear to have been filled in with soil, as no depressions are visible on the surface.

This site is a large Anasazi PI Piedra-age habitation site, with pithouse structures of undeterminable amounts, minimum 7-8. There are ceramics and lithics scattered throughout the site, but the majority of groundstone is located on the southern slope. This would indicate much of the food grinding was done on this side of the site. Outside of the middens on the north side of the site, down from top of the knoll, the quantities of ceramics and lithics are considered very low for a site of this size and presumed density of habitation structures. It is assumed the majority of artifacts are beneath the surface.

The site occupies a small knoll covered with pinon pine and juniper and numerous low bushes. On the northern side, this gives way to a sagebrush meadow. On the south side, sagebrush occupies the lower slope closest to the wash which forms its eastern boundary.

There is a site of PI-PII age 700' to the northeast (See current report, AR-03-02-03-539). There are additional PI-PII-age sites to the north and the mesa top to the south (See Moore, 1990, and current report). These may all be related.

Within the surveyed area for restaked Rosa 341 location, 7 isolated manifestations were encountered.

IO #41 is located within the southern construction zone in a small gully, and consists of 2 tertiary flakes of argillite (2cm x 2cm x .5cm), 1 with retouching on 2 edges (5cm x 2cm x .5cm); and 1 sherd of plain grayware with quartz sand temper.

IO #42 is located within the wellpad, and consists of an obsidian projectile point base, with very shallow vertical basal notches, no real stem, very vestigial tangs. It may be a PI style point.

IO #43 is located within the western construction zone in a small gully, and consists of 2 sherds of plain grayware with quartz sand temper, including a rim with straight sides and round top. It also includes 2 argillite tertiary flakes (2cm x 1cm x .2cm and 5cm x 4cm x .75cm).

IO #44 is located within the northern construction zone, and consists of 2 sherds of plain grayware with quartz sand temper, including a rim with straight sides and a round top.

IO #45 is located within the western buffer zone, and consists of half of a white sandstone mano, unifacially ground, 7.5cm x 5cm x 4.5cm.

IO #46 is located within the western buffer zone and consists of a sherd of plain grayware with quartz sand temper.

IO #47 is located within the southern buffer zone in a gully, and consists of 6 sherds of plain grayware with quartz sand temper.

Within the surveyed area for restaked Rosa 342 location, 7 isolated manifestations were encountered.

IO #55 is located within the wellpad, and consists of a secondary brown chalcedony flake, retouched on one edge (3.5cm x 3cm x 1cm).

IO #56 is located within the wellpad on a rocky slope, and consists of 2 sherds of plain grayware with quartz sand temper, separated by several feet.

IO #57 is located within the wellpad, and consists of 2 sherds of plain grayware with quartz sand temper, including a rim with straight side and round top. It also includes a tertiary argillite flake (2cm x 2cm x .5cm).

IO #58 is located within the western buffer zone and consists of a potbust of approximately 80 sherds of plain grayware with quartz sand temper from a single vessel.

IO #59 is located within the southwestern construction zone and consists of 4 sherds of corrugated grayware with quartz sand temper, and 3 plain grayware sherds with very fine-grained temper. These are within a small runnel on the slope.

IO #60 is located within the construction zone, and consists of 2 sherds of plain grayware with quartz sand temper, including a rim with straight sides and flat top.

IO #61 is located within the buffer zone in a gully, and consists of a sherd of corrugated grayware with quartz sand temper.

Seventeen isolated manifestations were encountered within the restaked 6000' of additional access/pipeline ROW.

IO #31 is located within the western access buffer, and consists of 3 sherds of plain grayware with quartz sand temper, including a rim with straight sides and round top. One sherd is separated from the others by 100'.

IO #32 is located within the western access buffer, and consists of 3 sherds of plain grayware with quartz sand temper. One sherd is separated by 50' from the others.

IO #33 is located within the access, and consists of a corrugated grayware sherd with quartz sand/crushed rock temper, and a banded grayware rim with very fine-grained temper, straight sides and round top. These are separated by several feet from each other.

IO #34 is located within the western access buffer, and consists of 5 sherds of plain grayware with quartz sand/dark rock temper, and a tertiary tan chert flake with retouched edges (3cm x 3cm x .75cm). They are within a runnel.

IO #35 is located within the western access buffer, and consists of a basal portion of plain grayware handle, very eroded, with very fine-grained temper.

IO #36 is located within the access, and consists of an obsidian tertiary reduction flake (1.5cm x 1cm x .1cm).

IO #37 is located within the access, and consists of a sherd of plain grayware and a sherd of corrugated ware, both with quartz sand temper.

IO #38 is located within the western access buffer, and consists of a sherd of plain grayware with quartz sand temper, and a tertiary basalt flake with retouched edges (4.5cm x 3cm x .5cm).

IO #39 is located within the access in a small gully, and consists of a tertiary white chalcedony reduction flake (2cm x 1.3cm x .1cm).

IO #40 is located in a gully within the western access buffer, and consists of a Piedra B/W bowl sherd, with faint zigzag decoration, polished interior surface, carbon paint, and is discolored brown all over.

(See above for isolated manifestations for Rosa 341 for IO #41-47)

IO #48 is located within the eastern access buffer, and consists of a sherd of very worn Piedra whiteware, polished, with no slip, and quartz sand temper.

IO #49 is located within the access, and consists of a Piedra B/W bowl sherd, with mineral paint dots, polished interior, very fine-grained temper with some quartz.

IO #50 is located within the eastern access buffer zone, and consists of a tertiary argillite flake (3cm x 2.5cm x 1cm) and 4 sherds of plain grayware

with quartz sand temper. The flake is separated by 75' from the sherds.

IO #51 consists of 4 sherds of plain grayware with quartz sand/dark gray round rock temper. One sherd is separated by 50' from the others and is within the access. The other sherds are just within the eastern buffer zone.

IO #52 consists of a sherd of plain grayware with quartz sand temper which is located within the eastern access buffer, and a corrugated grayware rim with straight sides, round top, and crushed quartz temper, with wide band at top (Payan Corrugated). The corrugated sherd is located within the access.

IO #53 is located within the eastern access buffer and consists of a sherd of plain grayware and a sherd of corrugated grayware, both with quartz sand temper.

IO #54 is located within the access, and consists of 3 sherds of plain grayware and a sherd of corrugated grayware, both with quartz sand temper.

Evaluation: Sites AR-03-02-03-539, 540, 541, 542, and 543 are eligible for the National Register under Criterion D (36 CFR 60.4) and should be treated as eligible for purposes of 106 consultation.

As a pithouse is probably present, site AR-03-02-03-539 (mmgc-91-4) could provide valuable information concerning satellite habitations within the vicinity of large habitation sites, and their inter-relationships, if any. Pithouse architecture at this time period can also be observed through excavation. There is also data on the Piedra-Arboles transition period, and data concerning ceramic techniques of the interval. A C-14 date could be obtained from the hearth area.

Site AR-03-02-03-541 (mmgc-91-6) can provide data concerning lithic reduction techniques, as well as ceramic techniques. The ceramic technology may be able to indicate whether the Piedra occupants preferred quartz sand over crushed rock in this area or for a certain interval of time. This small limited activity site can possibly be fitted into the regional assortment of sites, which range from large habitation sites occupied through different phases to other small habitation or limited activity sites.

A date can be obtained for site AR-03-02-03-540 (mmgc-91-5) from obsidian hydration analysis of the secondary flake. Some data can also be obtained concerning lithic reduction techniques, as well as ceramic techniques. The site date plus the ceramic technology may be able to indicate whether the Piedra-Arboles occupants preferred quartz sand over crushed rock in this area or for a certain interval of time. This small limited activity site can possibly be fitted into the regional assortment of sites, which range from large habitation sites occupied through different phases to other small habitation or limited activity sites.

Site AR-03-02-03-542 (mmgc-91-8) can provide data concerning lithic reduction techniques, as well as ceramic techniques. The ceramic technology may be able to indicate whether the Piedra occupants preferred quartz sand over crushed rock in this area or for a certain interval of time before using

entirely crushed rock, if ever. As this site contains wares with both quartz sand and crushed rock, within what interval does this site fall? This small limited activity site can possibly be fitted into the regional assortment of sites, which range from large habitation sites occupied through different phases to other small habitation or limited activity sites. As some of these contain wares with strictly quartz sand tempers, how do they relate in time? The actual activity at this site may be determined by analyzing the assemblage.

Site AR-03-02-03-543 (mmgc-91-9) appears to be strictly a Piedra-age habitation, as no corrugated ware was encountered. As there appears to be much preservation beneath the surface, this site could provide important data regarding the Piedra-Arboles transition, and the relationship of the small limited activity sites in the area, which contain corrugated ware, to the large Piedra age habitation sites. Excavation could reveal information concerning pithouse architecture, density of structures, possible population density on the site, special activity areas, food-processing areas, lithic techniques, rock type preferences, ceramic techniques, and possibly seasonal occupation differentiation.

Recommendation: As Sites AR-03-02-03-457 (M.A.R. 90-88) and AR-03-02-03-541 (mmgc-91-6) are both within the buffer zone of restaked location Rosa 342, and all of the other sites encountered are outside of the access buffer zones, and field documentation of the isolated manifestations has exhausted their research potential, archaeological clearance is recommended for this project of 2 restaked well locations and access/pipeline ROW with the following stipulations:

Due to the density of sites in the area involved, and the presence of 2 sites within the buffer zone of restaked location Rosa 342, monitoring of all construction by an archaeologist is recommended.

As a small portion of Site AR-03-02-03-541 (mmgc-91-6) intrudes into the corner of the construction zone, it is recommended that the construction zone be pulled back to the west by 20' and during monitoring procedures the site shall be flagged before construction starts in order to prevent damage.

The U.S. Forest Service will review this report and make the final decision regarding this project.

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- Moore, Roger A., R. Nathan and D. Soldo
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CNF No. 90-02-145
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CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 31

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 2

Elevation: 7060 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 4 8 0 Easting 3 0 2 1 0 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. _____ Exposure No. _____

Description: 3 sherds plain grayware, includes rim with straight sides and round top, quartz sand temper

Location/Associations: all sherds in west buffer of access, 1 sherd separated by 100 feet from other 2 sherds

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 32

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 2

Elevation: 7060 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 4 4 0 Easting 3 0 2 0 6 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: _____ No Photo: _____ No Roll No. _____ Exposure No. _____

Description: 3 sherds plain grayware, quartz sand temper

Location/Associations: all sherds in west buffer of access, 1 sherd separated by 50 feet from other 2 sherds

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 33

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 2

Elevation: 7030 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 3 5 0 Easting 3 0 2 0 2 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: corrugated grayware sherd with quartz sand/crushed rock temper, banded grayware rim with straight sides and round top, very fine-grained temper

Location/Associations: corrugated sherd in access, separated by several feet from banded sherd

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 34

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 2

Elevation: 7040 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 2 8 0 Easting 3 0 1 9 8 0

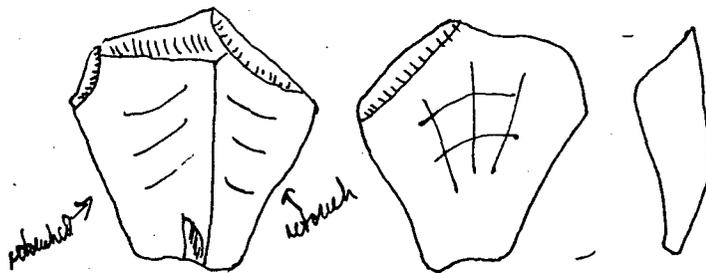
Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 5 sherds plain grayware with temper of quartz sand and dark rock, tertiary tan chert flake with retouching on 2 edges (3cm x 3cm x .75cm)

Location/Associations: in runnel within western buffer of access

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 35

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 2

Elevation: 7040 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 2 4 0 Easting 3 0 1 9 6 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: basal portion plain grayware handle, very eroded, very fine-grained temper

Location/Associations: within western buffer of access

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 36

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7040 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 9 0 0 Easting 3 0 1 8 4 0

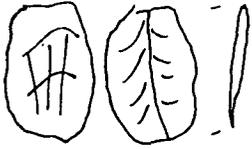
Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: obsidian tertiary reduction flake (1.5cm x 1cm x .1cm)

Location/Associations: within access

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 37

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7040 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 8 6 0 Easting 3 0 1 8 0 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 1 sherd plain grayware, 1 sherd corrugated ware, both with quartz sand temper

Location/Associations: sherds within access

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 38

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7060 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 7 5 0 Easting 3 0 1 7 6 0

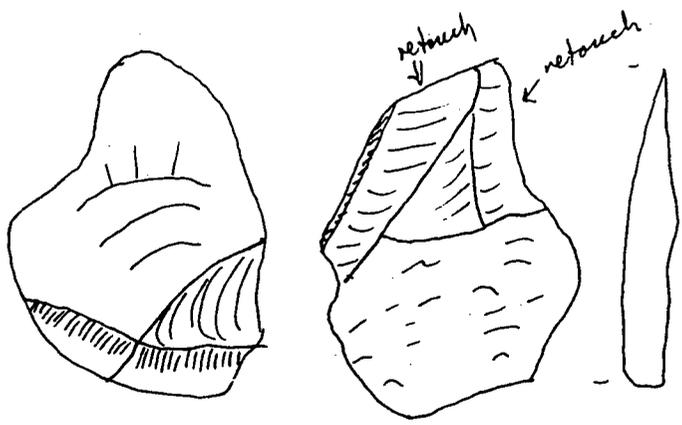
Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: sherd plain grayware with quartz sand temper, tertiary basalt flake with retouched edges (4.5cm x 3cm x .5cm)

Location/Associations: sherds within western access buffer zone

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 39

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7080 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 6 1 0 Easting 3 0 1 7 6 0

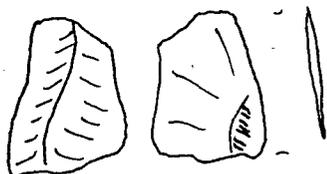
Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: tertiary white chalcedony reduction flake (2cm x 1.3cm x .1cm)

Location/Associations: within access in small gully

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Acc/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 40

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7010 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 4 1 0 Easting 3 0 1 7 6 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: Piedra B/W bowl sherd, faint zigzag decoration, polished interior surface, carbon paint, discolored brown all over

Location/Associations: within western buffer of access, in gully

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 41

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7000 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 3 4 0 Easting 3 0 1 8 2 0

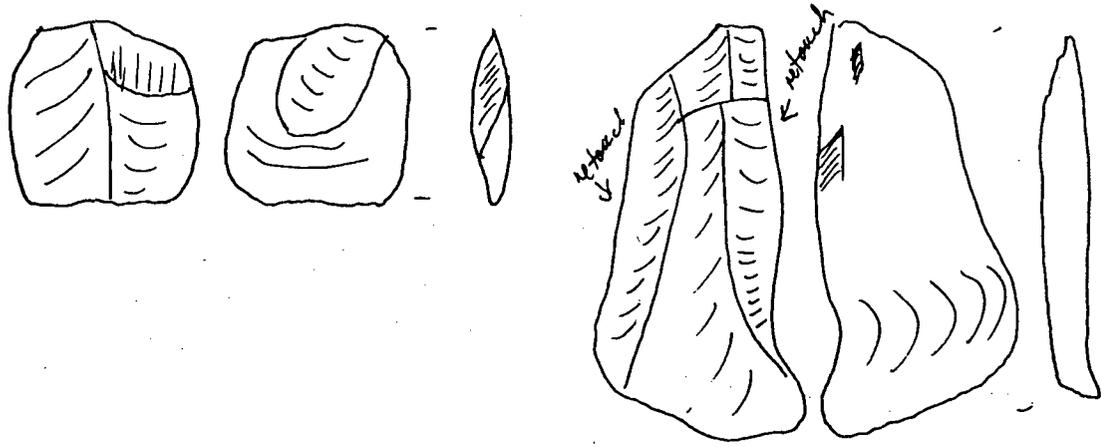
Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 2 tertiary flakes of argillite (2cm x 2cm x .5cm), 1 with retouching on 2 edges (5cm x 2cm x .5cm); 1 sherd plain grayware with quartz sand temper

Location/Associations: within southwestern construction zone of proposed well location in small gully

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 42

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7010 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 3 7 0 Easting 3 0 1 8 3 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: obsidian projectile point base, with tip broken off, very shallow vertical basal notches, no real stem, very vestigial tangs, apparently PI style point

Location/Associations: within western wellpad of proposed well location in small gully

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 43

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7040 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 3 8 0 Easting 3 0 1 8 1 0

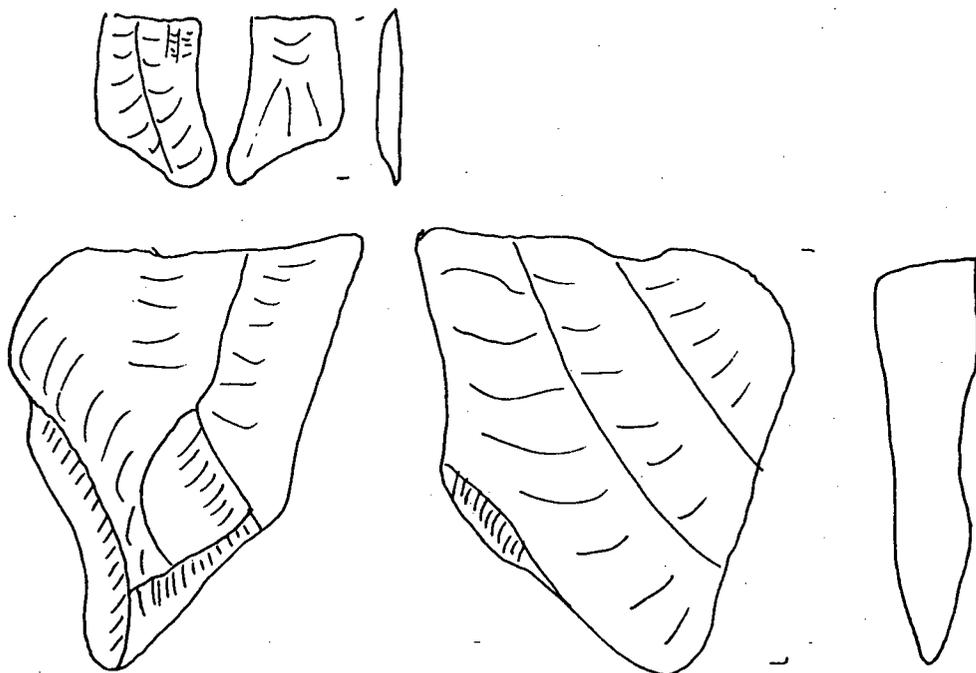
Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 2 sherds plain grayware with quartz sand temper, includes rim with straight sides and round top; 2 argillite tertiary flakes (2cm x 1cm x .2cm and 5cm x 4cm x .75cm)

Location/Associations: within western construction zone of proposed well location in small gully

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 44

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7000 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 4 3 0 Easting 3 0 1 8 6 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 2 sherds plain grayware with quartz sand temper, includes rim with straight sides and round top

Location/Associations: within northern construction zone of proposed well location , separated by 15'

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 45

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7020 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 4 1 0 Easting 3 0 1 7 8 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: half white sandstone mano, unifacially ground, 7.5cm x 5cm x 4.5cm

Location/Associations: within western buffer zone of proposed well location

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 46

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7000 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 3 8 0 Easting 3 0 1 7 8 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: sherd plain grayware with quartz sand temper

Location/Associations: within western buffer zone of proposed well location

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 47

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 6980 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 3 2 0 Easting 3 0 1 8 4 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 6 sherds plain grayware with quartz sand temper

Location/Associations: within southern buffer zone of proposed well location in gully

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Access/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 48

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7080 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 5 6 0 Easting 3 0 1 7 4 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: sherd very worn Piedra whiteware, polished, no slip, quartz sand temper

Location/Associations: within eastern access buffer zone

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Access/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 49

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7070 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 7 2 0 Easting 3 0 1 7 7 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: bowlsherd Piedra B/W, mineral painted dots, polished interior, very fine-grained temper with some quartz

Location/Associations: within access

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Access/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 50

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7060 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 7 6 0 Easting 3 0 1 8 0 0

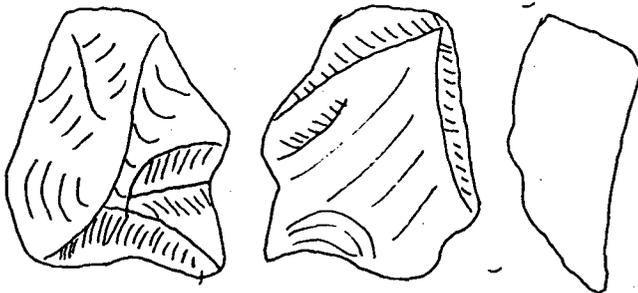
Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: tertiary argillite flake (3cm x 2.5cm x 1cm), 4 sherds plain grayware with quartz sand temper

Location/Associations: within eastern access buffer zone, flake is separated by 75' from sherds

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Access/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 51

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7050 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 1 2 0 Easting 3 0 1 9 2 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 4 sherds plain grayware, quartz sand and dark gray round rock temper

Location/Associations: 3 sherds are just within eastern access buffer zone, 1 sherd is separated by 50' from other sherds and is within access

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Access/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 52

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 2

Elevation: 7030 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 3 8 0 Easting 3 0 2 0 6 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: sherd plain grayware, quartz sand temper and corrugated grayware rim sherd with straight sides and round top and crushed quartz temper and wide band at top (Payan Corrugated)

Location/Associations: plain grayware within eastern access buffer zone, corrugated sherd within access

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Access/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 53

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 2

Elevation: 7080 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 5 6 0 Easting 3 0 2 1 4 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: sherd plain grayware and sherd corrugated grayware, both with quartz sand temper

Location/Associations: within eastern access buffer zone

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 341/342 Rstk, Access/PL ROW Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 54

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 2

Elevation: 7060 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 6 4 0 Easting 3 0 2 1 5 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 3 sherds plain grayware and sherd corrugated grayware, both with quartz sand temper

Location/Associations: within access

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 342 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 55

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7060 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 0 0 0 Easting 3 0 1 9 7 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: secondary brown chalcedony flake, retouched on one edge 3.5cm x 3cm x 1cm

Location/Associations: within proposed wellpad

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 342 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 56

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7060 Landform: hillslope Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 0 4 0 Easting 3 0 1 9 6 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 2 sherds plain grayware with quartz sand temper

Location/Associations: on rocky slope within proposed wellpad, separated by several feet

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 342 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 57

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7060 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 0 2 0 Easting 3 0 1 9 7 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 2 sherds plain grayware with quartz sand temper, includes rim with straight side and round top which is broken into 3 pieces; tertiary argillite flake (2cm x 2cm x .5cm)

Location/Associations: in runnels and gullies within proposed wellpad

Sketch of artifact and/or location and/or additional comments below:



CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 342 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 58

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7040 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 0 0 0 Easting 3 0 1 9 0 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: potbust of approximately 80 sherds plain grayware with quartz sand temper, from a single vessel

Location/Associations: on rocky slope within buffer zone of proposed location

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 342 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 59

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7040 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 9 5 0 Easting 3 0 1 9 0 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: 4 sherds corrugated grayware with quartz sand temper, 3 plain grayware sherds with very fine-grained temper

Location/Associations: in small runnel in slope within construction zone of proposed location , corrugated sherds together, several feet apart from plain grayware sherds

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 342 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 60

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7040 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 8 9 4 0 Easting 3 0 1 9 7 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. _____ Exposure No. _____

Description: 2 sherds plain grayware with quartz sand temper, includes rimsherd with straight sides and flat top

Location/Associations: on washbank within construction zone of proposed location

Sketch of artifact and/or location and/or additional comments below:

CARSON NATIONAL FOREST ISOLATED FIND FORM

Project Name: Rosa 342 Rstk Project Number: 1990-02-145B

Recorders Name: S. Sofranoff (Matthews) Date: 6/91 Field No: 61

District: Jicarilla County: Rio Arriba Legal: T31 N , R 4 W, Sec. 11

Elevation: 7060 Landform: mesatop Vegetation: ponderosa, pinon pine, juniper, oakbrush, bitterbrush, mountain mahogany, sagebrush, Utah cedar

UTM Zone 13 Northing 4 0 8 7 9 8 0 Easting 3 0 2 0 0 0

Map/Aerial Photo Reference: USGS 7.5' Carracas Cnyn, NM, 1963, Phrev 1982

Collected: No Photo: No Roll No. Exposure No.

Description: sherd corrugated grayware with quartz sand temper

Location/Associations: on bank of arroyo within buffer zone of proposed location

Sketch of artifact and/or location and/or additional comments below: