Form 3160-3
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0136
Expires: November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: U-71675

1a. Type of Work: [X] DRILL [ ] REENTER

6. If Indian, Allotee or Tribe Name: N/A

1b. Type of Well: [ ] Oil Well [ ] Gas Well [X] Other CBM [X] Single Zone [ ] Multiple Zone

7. Unit or CA Agreement Name and No.: N/A

2. Name of Operator: Anadarko Petroleum Corporation

CONFIDENTIAL

8. Lease Name and Well No.: Helper Federal E-7

3a. Address: 17001 Northchase Dr. Rm229, Houston, Texas 77060

3b. Phone No. (include area code): 281-874-3441

9. API Well No.: 43-007-30508

4. Location of Well (*Report location clearly and in accordance with any State equirements*)*

At surface: 883'FSL & 587'FEL 439162 1N 514048E

At proposed prod. zone: Same

10. Field and Pool, or Exploratory: Helper Field

11. Sec., T., R., M., or Blk. and Survey or Area: Sec.19-T13S-R10E

14. Distance in miles and direction from nearest town or post office*: 11.5 miles North of Price

12. County or Parish: Carbon

13. State: Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
587'	1040	160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
5280'	3940'	153571
21. Elevations (Show whether DF, KDB, RT, GL, etc.	**22. Approximate date work will start***	**23. Estimated duration**
6137' GL	5/2001	5

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name (*Printed/Typed*)	Date
	Jennifer Berlin	4/17/2001
Title: Environmental Regulatory Analyst		
Approved by (Signature)	Name (*Printed/Typed*): BRADLEY G. HILL	Date: 04-18-01
Title	Office: RECLAMATION SPECIALIST III	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowlingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on Reverse)

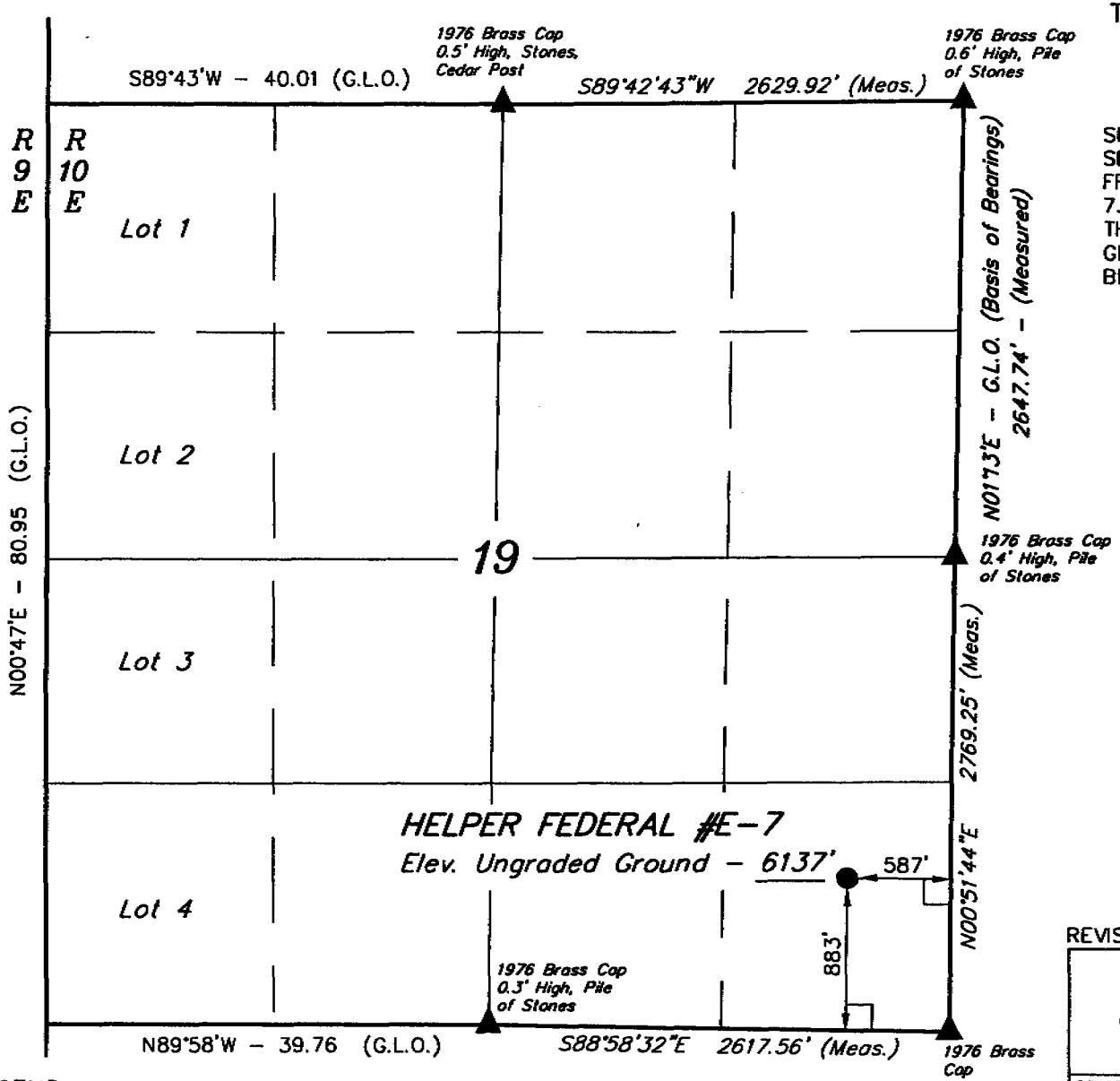
Federal Approval of this Action is Necessary

RECEIVED
APR 18 2001
DIVISION OF
OIL, GAS AND MINING

T13S, R10E, S.L.B.&M.

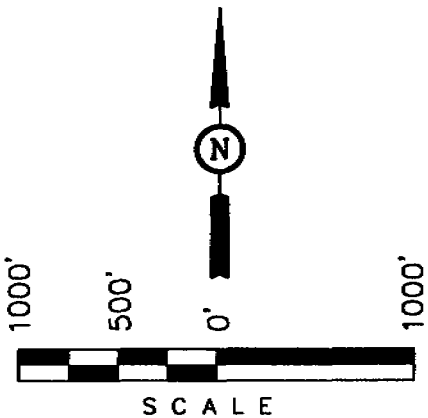
ANADARKO PETROLEUM CORP.

Well Location, HELPER FEDERAL #E-7, located as shown in the SE 1/4 SE 1/4 of Section 19, T13S, R10E, S.L.B.&M. Carbon County, Utah.



BASIS OF ELEVATION

SPOT ELEVATION AT A ROAD INTERSECTION LOCATED IN THE SE 1/4 OF SECTION 30, T13S, R10E, S.L.B.&M. TAKEN FROM THE HELPER QUADRANGLE, UTAH, CARBON COUNTY, 7.5 MINUTE SERIES (TOPOGRAPHICAL MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 5835 FEET.



CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
REGISTRATION NO. 161319
STATE OF UTAH

REVISED: 5-11-00 D.COX

LEGEND:

- └ = 90° SYMBOL
- ● = PROPOSED WELL HEAD.
- ▲ = SECTION CORNERS LOCATED.

Latitude = 39°40'34"
Longitude = 110°50'11"

UINTAH ENGINEERING & LAND SURVEYING
85 SOUTH 200 EAST - VERNAL, UTAH 84078
(435) 789-1017

SCALE	DATE SURVEYED:	DATE DRAWN:
1" = 1000'	11-22-99	1-17-00
PARTY: D.K. L.J. C.B.T.	REFERENCES: G.L.O. PLAT	
WEATHER: COOL	FILE: ANADARKO PETROLEUM CORP.	

Anadarko Petroleum Corp.
Helper Federal E-7
Federal Surface – Federal Minerals
Sec.19-T13S-R10E
Carbon County, Utah

RECEIVED
APR 17 2001
DIVISION OF
OIL, GAS AND MINING

ANADARKO PETROLEUM CORPORATION (APC)
FERRON COALBED METHANE
HELPER FIELD
CARBON COUNTY, UTAH

STANDARD OPERATING PRACTICES FOR:
HELPER FEDERAL E-7
SEC.19-T13S-R10E
LEASE # UTU-71675

I. DRILLING PROGRAM

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations, (43CFR3100), Onshore Oil & Gas Orders No. 1 and No. 2, and the approved Plan of Operations. APC is fully responsible for the actions of its subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

BLM Notification Requirements (*Price BLM Office – 435-636-4000*):

Location Construction	48 hours before commencing
Location Completion	Prior to moving the drilling rig on site
Spud notice	24 hours before commencing operations
BOPE Test	24 hours before commencing operations
Casing & Cement	24 hours before commencing operations
First Production	Within 5 days after new well begins producing

1. **Estimated formation tops of important geologic markers:**

Geological Marker	Depth
Emery	Surface
Bluegate Shale	**2297**
Ferron SS Member	**3397**
Ferron Coal Top	**3412**
Base of Ferron Coal	**3542**
Tununk Shale	**3602**

2. **Estimated Depths of Anticipated Water, Oil, Gas or other Mineral-Bearing zones:**

Gas-bearing Ferron Sandstone Member is expected to be encountered from: **3397-3542**

All useable water (<10,000 ppm TDS) zones and prospectively valuable mineral zones encountered during drilling will be recorded by depth and adequately protected. Report all water shows and water bearing formations within one day to the Price Office before running the next casing string and before plugging orders are requested. Detected water flows shall be sampled and analyzed for the following properties: Flow rate, Temperature, pH, Hardness, Iron (FE - mg/l),

Calcium (Ca – mg/l), Magnesium (Mg – mg/l), Sodium (Na – mg/l), Bicarbonate (HCO_3 – mg/l), Carbonate (CO_3 – mg/l), Sulfate (SO_4 – mg/l), Chlorine (Cl – mg/l), and Total Dissolved Solids (TDS – mg/l).

Significant oil and gas shows will be tested to determine commercial potential.

3. **Pressure Control Equipment – Figure 1 Attached:**

A 9" 2M BOPE system will be installed on the 8-5/8" casinghead. In addition to the BOP stack, a rotating/stripping head will be installed on top of the BOP to assist in safe air drilling operations. The BOP stack will be tested prior to drilling below surface casing. The ram preventers will be tested to 70% of the working pressure of the casing head. The annular will be tested to 50% of its working pressure. Operational checks will be made daily or on trips.

The BOP system will be consistent with API RP 53 and Onshore Order No. 2 for a 2M system. Pressure tests will be conducted before drilling out from under surface casing which is set and cemented in place. Blowout preventer controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. BOPE will be inspected and operated to ensure good mechanical working order. This inspection will be recorded on the IADC daily drilling report. BOPE will be pressure tested before drilling casing cement plugs. The accumulator system will meet IADC guidelines concerning pump capacities, storage capacity, and reservoir volume. Closing unit fluid volume will be sufficient to pre-charge the system to operating pressure plus 50% excess. One set of controls will be in the doghouse on the rig floor and one set will be remote on the drilling pad. See attached BOP schematic, Figure 1.

4. **Casing Program:**

Surface Casing:	8-5/8", 24#, J55, STC new casing will be set at approximately 300'.
Production Casing	5-1/2" 17#, N80, LTC, new casing will be set at TD if productive.

The safety factors on casing strings will equal or exceed the following values:

Collapse	1.0
Joint Strength	1.6
Burst	1.33

All casing strings below the conductor shall be pressure tested to 0.22 psi per linear foot of casing or to 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield. If pressure declines more than 10% in 30 minutes, corrective action will be taken.

5. **Cementing Program:**

Surface – Cement will be circulated to the surface. Casing will be cemented with approximately 150 sx or 170 cu. ft. of API Class 'G' neat cement.

Waiting on cement time will be adequate to achieve 500 psi compressive strength at the shoe prior to drilling out.

Production – Cement will be raised to a minimum depth of 500' above the productive interval. Casing will be cemented with thixotropic Class G cement mixed at 14.2 ppg to yield 1.59 cf/sk. Actual cement volume will be determined from the caliper log plus 15%.

Additional additives will be used to retard the cement, accelerate the cement, control lost circulation, or control fluid loss. All cementing will be done in accordance with API cementing practices.

Where usable quality water and/or prospectively valuable minerals are encountered by the well bore, those formations will be isolated and/or protected by the cement program for the production casing.

6. **Drilling Fluids Program:**

A truck-mounted air drilling rig will be used to drill the surface hole to approximately 300' in order to pre-set the surface casing before moving a drilling rig on location to drill the rest of the hole.

An air/mist system will be used for drilling from below surface pipe to TD. Upon reaching TD, the hole will be filled with produced or other available water to assist logging & cementing operations.

The following equipment will be in place and operational during air/mist drilling:

- A properly lubricated and maintained rotating head
- Spark arrestors on engines or water cooled exhaust
- Blooie line discharge 100 feet from well bore and securely anchored
- Straight run blooie line unless otherwise approved by AO
- De-dusting equipment
- A mud pump and with sufficient volume of water to fill the hole and pits

All air/mist drill cuttings will be aimed into a reserve / flare pit. In the event that gas is circulated to surface while drilling, an automatic igniter or continuous pilot light will be used to ignite the flare at the blooie line discharge.

7. **Logging, Coring, and Testing Program:**

Minimum open-hole log measurements will include bulk density, gamma ray (GR), and caliper (TD to surface casing, GR- TD to surface) subject to hole conditions.

a) Rotary sidewall coring in the Ferron Sandstone interval may be performed, depending upon shows and hole conditions.

b) DST's - As deemed necessary.

c) The following logging program is planned:
   1. SDL-GR-CAL over prospective intervals
   2. DIL-SP-GR-CAL over prospective intervals

d) a mud-logging unit with chromatograph will be used from approximately 1000' to TD.

e) After production casing is installed, a cement bond log and GR/ casing collar log will be run to determine the top of cement and to correlate perforation depth intervals. Productive zones will then be perforated and swab tested. Water produced during testing will be contained in the temporary reserve pit. All produced oil will be stored and sold. Gas will be flared during testing.

DST/RFT, if run, will adhere to the following requirements:

Initial opening of DST tools shall be restricted to daylight hours. A DST may be allowed to continue at night if the test was initiated during daylight hours and the rate of flow is stabilized and if adequate lighting is available (i.e., lighting which allows sufficient visibility and is vapor-proof for safe operations). Packers can be released, but tripping shall not commence before daylight unless prior approval is obtained from the Authorized Officer. Closed chamber DST's (such as RFT logging tools) may be performed day or night.

If hydrocarbon liquids are encountered during the test, surface flow shall be aborted and the remaining fluid in the drill pipe reversed to surface storage tanks. Separation & storage equipment for the anticipated recovery shall be properly installed before the test begins.

8. **Abnormal Conditions:**

Abnormal conditions such as abnormal temperatures or pressures are not anticipated. Reservoir pressure in the Ferron interval is only anticipated to be 1200 psi or equivalent a pressure gradient of 0.3 psi per vertical foot of depth.

Potential hazards such as H2S are not anticipated based on offset drilling experience.

9. **Anticipated Starting Dates and Notification of Operations:**

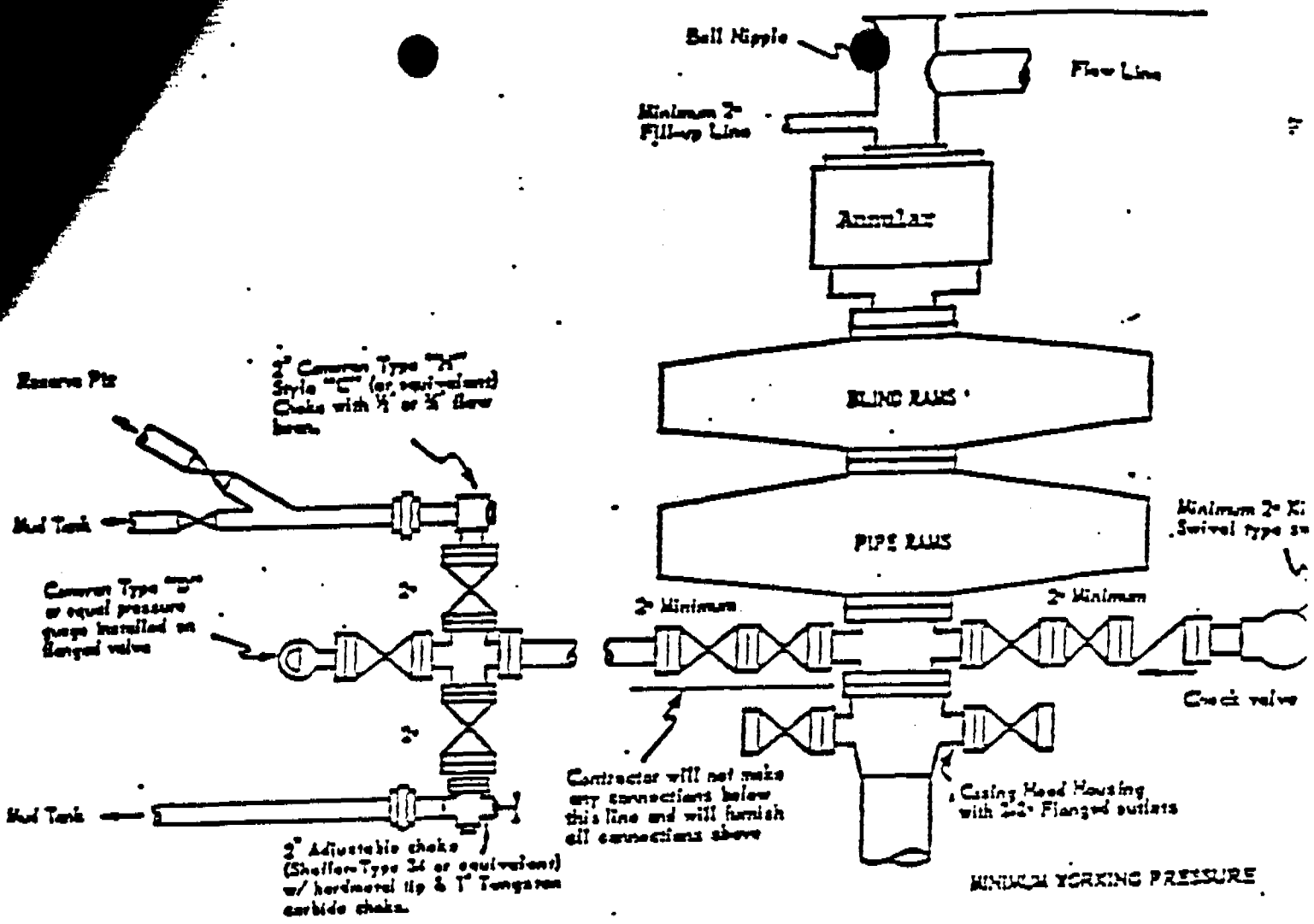
BLM Notification Requirements (Price BLM Office – 435-636-3600):

Location Construction	48 hours before commencing
Location Completion	Prior to moving the drilling rig on site
Spud notice	24 hours before commencing operations
BOPE Test	24 hours before commencing operations
Casing & Cement	24 hours before commencing operations
First Production	Within 5 days after new well begins producing

No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in suspended status without prior approval from the Authorized Officer. If operations are to be suspended, prior approval of the Authorized Officer will be obtained and notification will be given before operations resume.

A completion rig will be used for completion operations. All conditions of this approved plan will be applicable during all operations conducted with the completion rig.

Spills, blowouts, fires, leaks, accidents, or any other unusual incidence shall be reported in accordance with the requirements of NTL-3A or its revision.



Anadarko Petroleum Corporation

MINIMUM BLOWOUT PREVENTER
REQUIREMENTS - NORMAL
PRESSURE SERVICE

ANADARKO PETROLEUM CORP.

HELPER FEDERAL #E-7

LOCATED IN CARBON COUNTY, UTAH
SECTION 19, T13S, R10E, S.L.B.&M.

PHOTO: VIEW OF LOCATION STAKE **CAMERA ANGLE: EASTERLY**

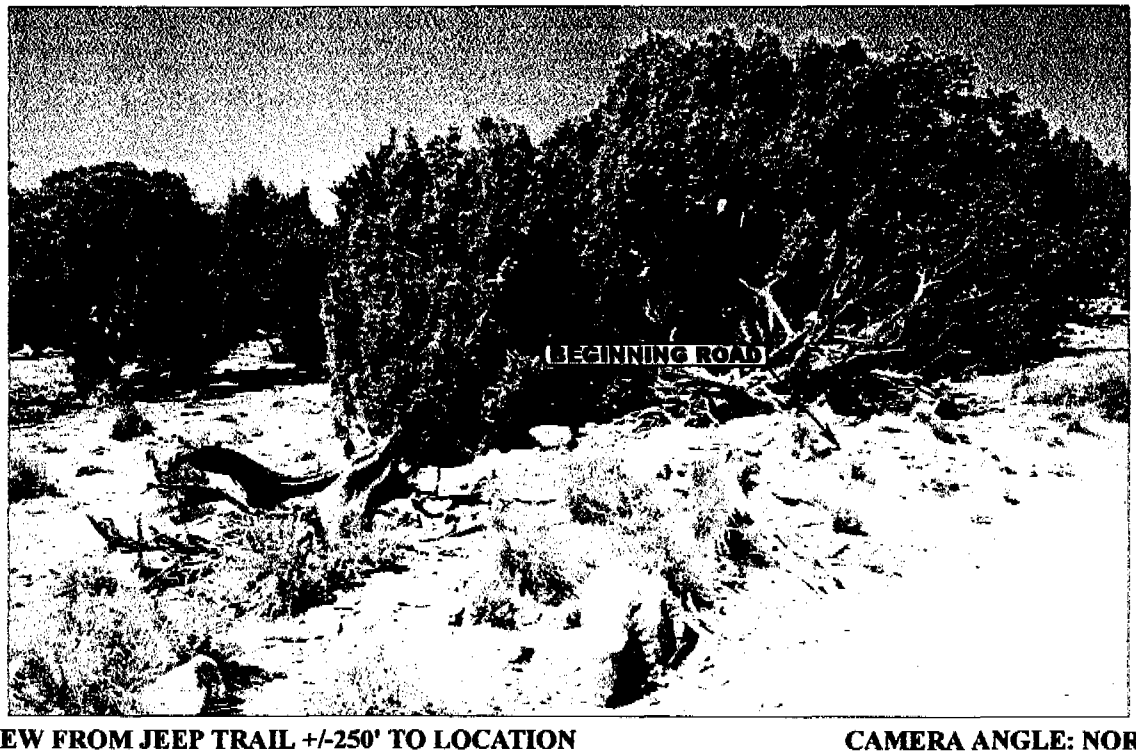


PHOTO: VIEW FROM JEEP TRAIL +/-250' TO LOCATION **CAMERA ANGLE: NORTHERLY**

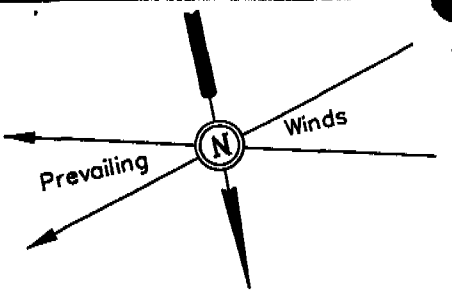
- Since 1964 -
Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
435-789-1017 uels@uelsinc.com

LOCATION PHOTOS	5 MONTH	2 DAY	00 YEAR	PHOTO
TAKEN BY: D.K.	DRAWN BY: J.L.G.	REVISED: 00-00-00		

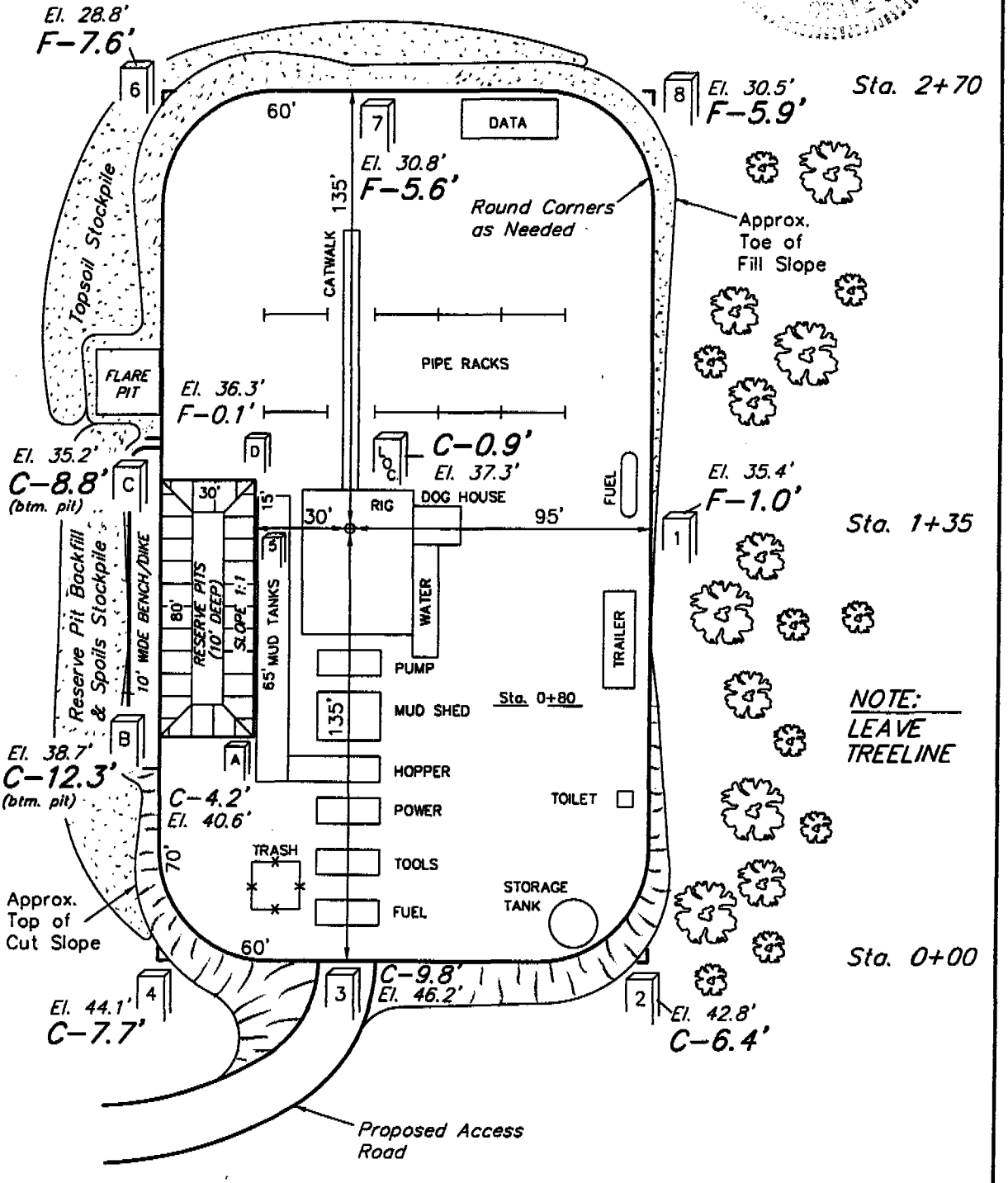
ANADARKO PETROLEUM CORP.

LOCATION LAYOUT FOR

HELPER FEDERAL #E-7
SECTION 19, T13S, R10E, S.L.B.&M.
883' FSL 587' FEL



SCALE: 1" = 50'
DATE: 5-11-00
Drawn By: D.COX



NOTE:
Pit Capacity with 2' of Freeboard = 1,770 Bbls.

NOTE:
LEAVE TREELINE

ELEV. UNGRADED GROUND AT LOC. STAKE = 6137.3'
ELEV. GRADED GROUND AT LOC. STAKE = 6136.4'

UINTAH ENGINEERING & LAND SURVEYING
85 So. 200 East • Vernal, Utah 84078 • (435) 789-1017

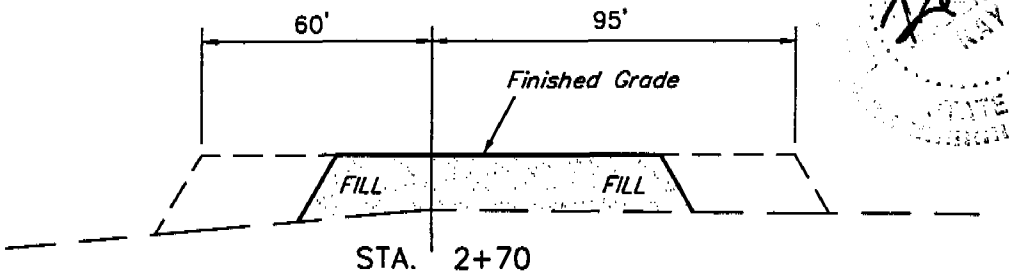
ANADARKO PETROLEUM CORP.

TYPICAL CROSS SECTIONS FOR

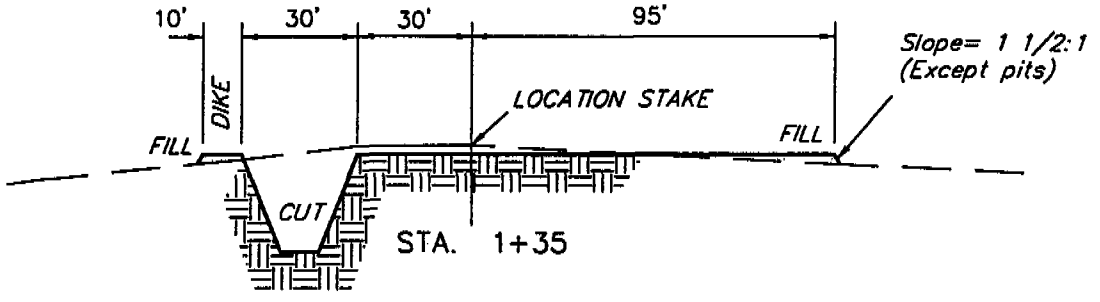
HELPER FEDERAL #E-7
SECTION 19, T13S, R10E, S.L.B.&M.
883' FSL 587' FEL

1" = 20'
X-Section Scale
1" = 50'

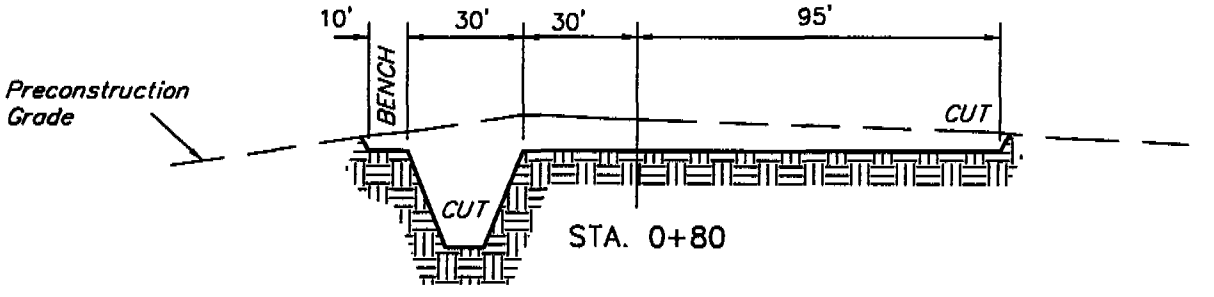
DATE: 5-11-00
Drawn By: D.COX



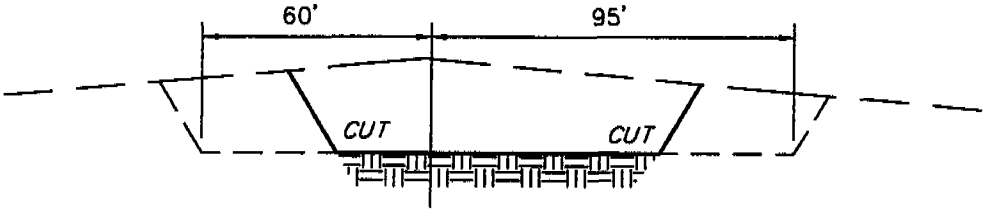
STA. 2+70



STA. 1+35



STA. 0+80



STA. 0+00

APPROXIMATE YARDAGES

CUT

(6") Topsoil Stripping	= *800*	Cu. Yds.
Remaining Location	= *3,300*	Cu. Yds.
TOTAL CUT	= *4,100*	CU.YDS.
FILL	= *2,880*	CU.YDS.

EXCESS MATERIAL AFTER 5% COMPACTION	= *1,070*	Cu. Yds.
Topsoil & Pit Backfill (1/2 Pit Vol.)	= *1,070*	Cu. Yds.
EXCESS UNBALANCE (After Rehabilitation)	= *0*	Cu. Yds.

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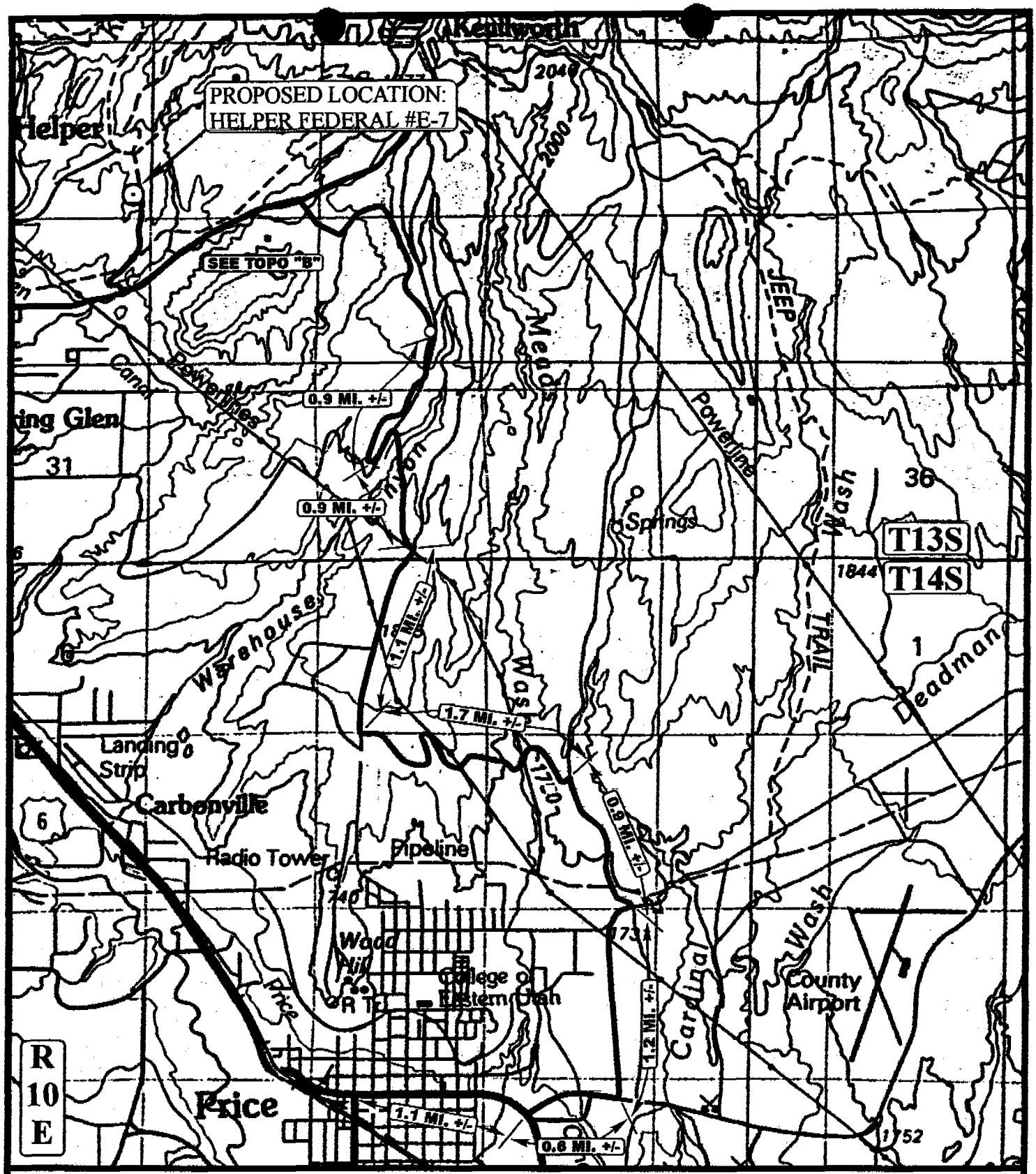
85 So. 200 East • Vernal, Utah 84078 • (435) 789-1017



LEGEND:

⊙ PROPOSED LOCATION

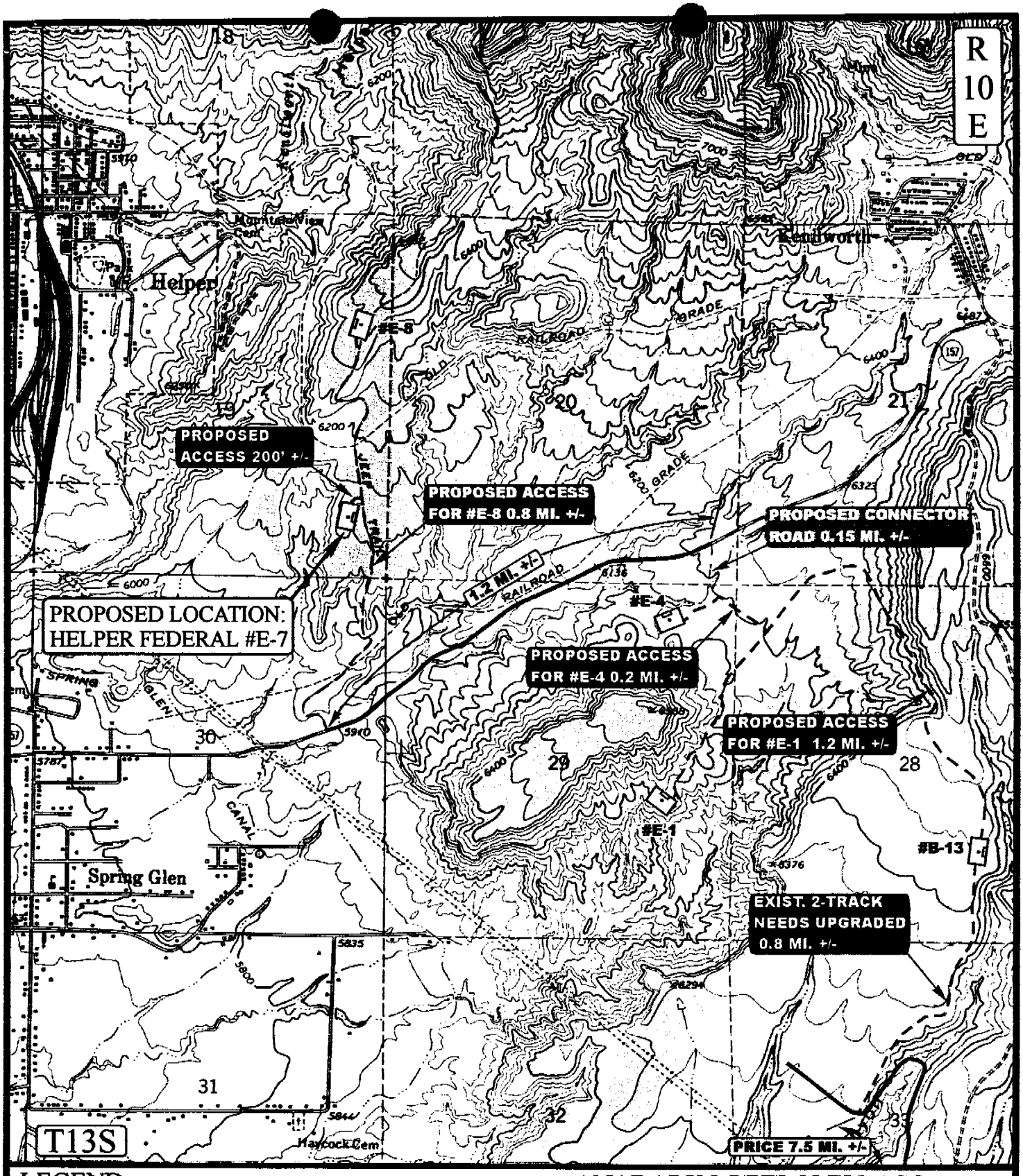
N

ANADARKO PETROLEUM CORP.

HELPER FEDERAL #E-7
SECTION 19, T13S, R10E, S.L.B.&M.
883' FSL 587' FEL

UELS
Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1018

TOPOGRAPHIC MAP	1 MONTH	5 DAY	00 YEAR	A TOPO
SCALE: 1" = 4000'	DRAWN BY: J.L.G.	REVISED: 5-2-00		



LEGEND:

PROPOSED ACCESS ROAD

EXISTING ROAD

N

ANADARKO PETROLEUM CORP.

HELPER FEDERAL #E-7

SECTION 29, T13S, R10E, S.L.B.&M.

883' FSL 587' FEL

Uintah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

TOPOGRAPHIC MAP	1 MONTH	5 DAY	00 YEAR	B TOPO
SCALE: 1" = 2000'	DRAWN BY: J.L.G.	REVISED: 5-2-00		

ANADARKO PETROLEUM CORPORATION (APC)
FERRON COALBED METHANE
HELPER FIELD
CARBON COUNTY, UTAH

STANDARD OPERATING PRACTICES FOR:
HELPER FEDERAL E-7
SEC.19-T13S-R10E
LEASE # UTU-71675

II. MULTI-POINT SURFACE USE & OPERATIONS PLAN

1. Existing Roads:

a. Proposed well is located within approximately 11.5 miles North of Price, Utah in Section 19-T13S-R10E.

b. Proposed routes to location: Access will be using approximately 9.5 miles of County Road due North of Price to State Highway 157 in which approximately 1mile will be used. The proposed access leaves State Highway 157 in Section 30-T13S-R10E.

Existing Two-Track – Needs upgrading: From State Highway 157, 1/2 mile of two-track trail will need to be upgraded on Plateau Mining Company Surface. The remaining ¼ mile two-track access route will need to be upgraded on Federal Lands. All Federal Lands as part of this access route is on-lease. Reference site specific Topographic, Access, and Area Maps attached. I have contracted Don Hamilton with Talon Resources to handle our permitting of State and County well site encroachments.

c. Access Summary: Existing County and State roads up to Section 30-T13S-R10E
T13S-R10E
Section 30: SE1/4 = Plateau Mining – 2-Track Trail
Section 19: E1/2 = BLM 2-Track Trail On-Lease

The overall network of existing roads is displayed in Plate 2-1 of the Ferron Natural Gas Environmental Impact Statement (FNG EIS), individual access maps, and individual area maps are attached.

d. Plans for improvement and/or maintenance of existing roads: The existing roads used for access to facilities will be maintained in the same or better condition as existed prior to the commencement of operations and in accordance with Figure 2-1 of the FNG EIS. Routine maintenance will be done on a year round basis or as ground and site conditions permit. Summer maintenance will involve blading and / or gravel additions. Winter maintenance will involve blading of snow and summer-like maintenance when necessary

and permitted by weather conditions. Routine maintenance shall be performed during periods when soils are dry enough to adequately support construction equipment. Soils will be deemed too wet if construction equipment creates ruts more than six inches deep.

2. Planned Access Roads:

a. Roads will be constructed using standard equipment and techniques such as the crown-and-ditch method (Surface Operating Standards for Oil & Gas Exploration and Development – USDOI / BLM 1989 3rd Edition). Heavy equipment will clear subsoil and topsoil materials from the road surface. Both materials will be windrowed (topsoil from access road construction shall be windrowed along the uphill side of the road for uses as a seed bed top coating during road rehabilitation for future redistribution during reclamation. All roads will be constructed with, adequate drainage and erosion control features/structures (e.g., cut and fill slopes and drainage ditch stabilization, relief and drainage culverts, water bars, wing ditches, and rip-rap). When needed, two to four inches of sand and gravel will be placed on newly constructed roads to provide a year round travel way surface. The maximum disturbed width will not exceed seventy feet with a twenty-four foot running surface.

During the construction and drilling phases, dust will be controlled by the use of water or an approved dust retardant, as directed by the Authorized Officer (AO). Road construction or routine maintenance shall be performed during periods when soils are dry enough to adequately support construction equipment. Soils will be deemed too wet if construction equipment creates ruts more than six inches deep. All roads will be maintained in as good or better condition than existing condition and in accordance with Figure 2-1 of the FNG EIS.

b. Maximum grades: Maximum road grades will not exceed 15% as per FNG EIS.
- New roads will be constructed to avoid critical soil areas, where possible. Where roads must be allowed, new roads will be constructed in accordance with agency-specified design standards to minimize watershed damage.
- On critical soils, road grades greater than 10 percent will be avoided. The Authorized Officer (BLM or FS) may allow grades in excess of 10 percent with a maximum length of 1,000 feet.
- Road construction on slopes in excess of 25 percent will not be allowed.

c. Location: No new roads will be constructed for access.

d. Drainage: Roads will be designed to divert storm water runoff and reduce erosion by:
- Proper design and installation of erosion control structures, such as water bars and diversion channels.
- Road ditch turnouts shall be equipped with energy dissipaters.
- Use of rock energy dissipators and gravel dispersion fans or other designs where roads interrupt overland sheet-flow of water to convert this runoff to channel flow.
- Cut banks, road drainages and road crossings shall be armored or otherwise designed to prevent headcutting.
- The road surface will be center crowned with ditches on each side of road. Slopes will have a maximum slope of 3:1.

2. Planned Access Roads (*continued*):

e. Culverts will be used where necessary during the drilling phase of operations. Future evaluation will be made for the further additions of culverts if the road is to have long-term use. Maintain stream channel stability road crossings on channels having 10 year flows by:

- Crossing designs shall be based on cross-sections, longitudinal profile, and other pertinent physical characteristics specific to each crossing.
- A culvert diameter of 30 inches or greater shall be engineered to allow flows to pass through the crossing at the same velocity and position (i.e., on the floodplain or in the channel) as will occur if the crossing were absent.
- Bankfull flow shall be determined and crossings designed to pass this flow within the channel. Flows in excess of this quantity shall be channeled separately through the crossing (i.e., on the floodplain).
- Flows shall not be converged from a floodplain into a channel when passed through by a road crossing. Multiple culverts or combination low-water crossing designs are be encouraged in these circumstances.
- Where multiple culverts are used, the minimum cumulative capacity of all culverts shall be the 10-year flow.
- Floodplain culvert outlets shall be equipped with energy brakes and dispersion fans if needed to preserve existing flow velocity and position. Such stream crossing designs will preserve the physical dimensions of channels such as slope, width, depth, pool/riffle ration, etc.

3. Locations of existing wells:

A. Proposed Wells - SWSW Sec. 19-T13S-R11E
SWNE Sec. 19-T13S-R11E
NE/4 Sec. 30-T13S-R11E
NWNW Sec. 29-T13S-R11E
E/2 SW Sec. 20-T13S-R11E

4. Location of Tank Batteries and Production Facilities:

Figure 2-5 in the FNG EIS depicts the typical production well pad and production facilities. All permanent (on site for six months or longer) structures constructed or installed (including pumping units) will be painted a flat, non-reflective, earthtone color to match the standard environmental colors, as determined by the AO and in accordance with the FNG EIS. This will include all facilities except those required to comply with O.S.H.A. (Occupational Safety and Health Act) regulations. These will be painted the color stipulated by O.S.H.A. All facilities will be painted within six months of installation or as soon as possible when seasonal weather permits.

Gas meter runs for each well, if needed, will be located within 500 feet of the wellhead. The gas flowline will be buried from the wellhead to the meter and 500 feet downstream of the meter run or any production facilities. Meter runs will be housed and/or fenced.

The gas measurement facilities will be installed on each well location. The gas meters will be calibrated in place prior to any deliveries. Test for meter accuracy will be conducted monthly for the first three months on new meter installations and at least quarterly thereafter. The AO will be provided with a date and time for the initial meter calibration and all future meter-proving schedules. A copy of the meter calibration reports will be submitted to Price Field Office. All meter measurement facilities will conform to API standards for liquid hydrocarbons and the AGA standard for natural gas measurement.

4. Location of Tank Batteries and Production Facilities *(continued)*:

Three types of pipelines will be used for production facilities. They are gas gathering pipelines, produced water gathering pipelines, and high-pressure gas delivery pipelines. The gas and water gathering pipelines will deliver gas and water from the well to the Central Production Facility (CPF) and produced water disposal facilities, respectively. The high-pressure pipeline will connect the CPF to gas transmission lines. Most pipelines will be buried underground. However, some pipelines may be laid above ground where rocky conditions result in more potential environmentally damaging and expensive construction methods. On critical soils, pipelines will avoid slopes in excess of 15 percent. Pipeline construction on slopes in excess of 25 percent will be determined on a site-specific basis. Site specific determinations will be made by the AO.

In general, all three pipelines will be installed in rights-of-way along access roads. Gas and water gathering lines will be placed together in the same ditch parallel to the access roads (Figure 2-1 FNG EIS). High-pressure pipelines will be installed in a separate ditch. Gas and water production pipelines will be made of polyethylene or steel pipe with a diameter of 2-20 inches. Manholes will be constructed and strategically placed to provide access for maintenance and operational purposes. Barricades painted yellow for safety will mark and protect manholes. High-pressure pipelines will be made of steel with an outside diameter of 2-10 inches.

Pipeline construction will be a planned sequence of operations along or with access roads. The path will first be cleared of trees and heavy brush by blading the surface. Where feasible, trees will be avoided. Brush and woody vegetation will be left in place and driven over as necessary. Construction will use the following steps: (1) pipe stringing, (2) trench excavation, (3) pipe lowering, (4) pipe padding, and (5) trench back filling. Materials, equipment, and techniques, including quality assurance control checks, will follow the standards for industry. The pipeline trench will be excavated mechanically with a track excavator to a depth that allows 3.5 feet of material to be placed on top of the pipeline. Trench width will range from 18-36 inches depending on number of pipelines and pipe diameters to be placed in the trench. Earthen materials will be back filled immediately following installation.

5. Location and Type of Water Supply:

Water supply for drilling and completion purposes will be furnished by a water truck and will be obtained from the Price River Municipal Water District hydrant located at 1800 East 800 North, Price, Utah. This water supply is subject to change if a more economic source can be found.

6. Source of Construction Material:

Native material will be used for road surfacing and pad construction. Should additional construction material be required, it will be the responsibility of the dirt contractor to locate and permit (if necessary) use of that material.

7. Methods of Handling Waste Disposal

All reserve pits will be lined. Produced waste water will be confined to a lined pits for a period not to exceed 90-days after initial production.

Trash will be confined in covered containers and hauled to an approved landfill. Burning of waste or oil is not approved, and soil material will be kept on site for recontouring.

No bore holes will be used for disposal of waste materials. Human waste will be contained and will be disposed in accordance with county regulations.

8. Ancillary Facilities:

Not applicable for drilling operations in this area.

9. Wellsite Layout:

Construction of a well pad primarily will involve preparing a level area of approximately 1.0 – 1.4 acres. Pad size will vary depending on drilling contractor selected for the project and will be a minimum of 165 feet by 250 feet up to a maximum of 200 feet by 300 feet (Refer to site specific Location Layout plat attached).

Drill pads and facility sites shall be designed and constructed to prevent overland flow of water from entering or leaving the sites through the use of berms, terraces and grading to form depressions

Where topography permits, well sites will be positioned to prevent "sky lining". Existing vegetation and topographic features will be used to screen wells, facilities, and roads from the viewshed of Key Observation Points. To eliminate broadside views of pumping units, design well locations so the pumping units are situated "in line" with Key Observation Points. When installing chain link fences, use non-reflective materials to reduce visibility from a distance.

The locations will be cleared of vegetation. Topsoil will be stripped prior to any construction and stockpiled. The pad will then be graded using standard cut-and-fill techniques of construction using a bulldozer, grader, or both. If the AO determines site-specific conditions warrant, the pad will be surfaced with sand or gravel to minimize disturbance of soils and to promote efficient drainage.

A reserve pit (maximum dimensions of 50' wide x 130' long x 8' deep) will be excavated and may be plastic lined with a liner of at least 12 mills. The AO will determine whether a plastic lined pit is necessary based on the onsite inspection.

The reserve pit will be fenced on three sides prior to drilling activity and closed off on the fourth side after drilling is finished. Fencing will be four strands of barbed wire or 48-inch woven wire with one strand of barbed wire above the woven wire. All corners will be braced. The fence construction will be on cut or undisturbed ground and the fence will be maintained in a livestock tight condition.

10. Plans for Restoration of Surface:

The Price Field Office Manager will be notified at least 24-hours prior to commencing reclamation work.

Final decommissioning, reclamation, and abandonment of the Ferron Natural Gas Project's facilities will occur at the end of the facilities' economic life. APC will reclaim and revegetate each of its facilities (well pads, roads, and central production facilities) according to accepted procedures. Although subject to revision following appropriate standards, general reclamation procedures are described next.

10. Plans for Restoration of Surface (*continued*):

Reclamation of Facilities

Reclamation of individual facilities will involve three primary components: backfilling and grading, redistributing soils, and installing structures to control erosion. Each of these components is outlined below.

Backfilling and Grading

Following decommissioning and the removal of the individual facility's surface equipment, reclamation will begin with backfilling, if necessary, and grading of the site to approximate original contours. Specifically:

- Reclamation will start immediately upon completion of construction, unless prevented by weather conditions. Disturbed areas will be restored to approximately the original contour.

- All pits will be reclaimed to a natural condition similar to the rest of the reclaimed area and must be restored to a safe and stable condition.

- Pipelines will be cleaned by filling with water or nitrogen and pigging to remove the water or nitrogen and then abandoned in place to avoid renewed surface disturbance.

- Reclamation and abandonment of pipelines and flowlines will require backfilling original cuts, reducing and grading cut and fill slopes to conform to the adjacent terrain, replacement of surface soil materials, water barring, and revegetation.

- Reclamation on sites with critical soils will be graded using slopes of 5 percent or less where feasible and grading the site so as to collect water for revegetation. Site-specific evaluation by the surface managing agency may allow for modification to this standard.

- In general, APC will leave well pads and roads on federal lands roughed up somewhat to facilitate the capture of water from precipitation.

- After well plugging and abandonment, roads constructed by APC not required for the landowner's transportation system will be closed. Reclamation may include ripping, scarifying, water barring, and barricading. Stockpiled soil, debris, and fill materials will be replaced on the roadbed.

- Water bars will be constructed on road grades or slopes, if required by BLM. Spacing of water breaks depends on slope and type of soils present. For most soil types, the following spacings will be used:

Slope	Spacing
2 percent	200 feet
2–4 percent	100 feet
4–5 percent	75 feet
>5 percent	50 feet

- Temporary erosion control measures such as mulch, jute netting, or other appropriate methods will be used on unstable soils, steep slopes, and wetland areas to prevent erosion and sedimentation until vegetation becomes established.

10. Plans for Restoration of Surface (*continued*):

- Dry holes, depleted producers, and disposal wells will be abandoned according to Onshore Oil and Gas Order No. 2.

- Subsurface power lines will be abandoned in place. Above-ground powerlines will be dismantled and removed.

- Access roads will be reclaimed unless the landowner and/or land manager wishes to keep any roads and accept responsibility for future road maintenance.

- All existing recreational trails identified in the 1998 Carbon County Trails Plan that are disturbed by APC will be reclaimed to pre-development conditions upon abandonment of individual roads and locations. Reclamation of company-constructed roads throughout the Project Area will be determined by the Authorized Officer on a case-by-case basis in consultation with the County.

All disturbed areas will be subject to final grading, but will remain in rough condition to help ensure the stability of topsoil after its redistribution. Leaving the graded surface in a roughened condition will also improve moisture permeability between the soil/spoil interface. Compacted areas, such as roads, will be ripped to a depth of 4 to 12 inches.

Redistribution of Soils

After the site has been backfilled (if necessary) and regraded, topsoils and subsoils that were stripped and stockpiled before the initial construction will be redistributed across the disturbance. The timing of this redistribution will depend on completion of backfilling and grading. It will be advantageous for redistribution to occur before the fall or spring seeding windows.

Before the stockpiled topsoil and subsoil are redistributed, representative samples will be analyzed to identify their physical and chemical characteristics. These characteristics will be used to identify any amendments that may be applied to soils to facilitate the establishment of the vegetative cover.

Topsoil and subsoil will be removed from stockpiles using dozers. Subsoil, if available, will be spread evenly over disturbance using dozers working along the contour, when practical. This will be followed by redistribution of topsoil over the subsoil using the same technique and equipment.

Steep slopes may preclude redistribution along the contour in some areas. In these situations, topsoil will be graded to ensure a uniform and stable thickness consistent with reclamation and revegetation requirements. Before seeding, topsoil will be chisel-plowed to alleviate compaction and promote water infiltration.

In general, all topsoil and usable subsoil stripped and stockpiled for each facility will be redistributed evenly across that facility. In the unlikely event that a significant surplus of soil has been stockpiled in a specific location, it will be used to supplement supplies at one or more other sites where topsoils or subsoils are deficient. Additional usable soil may be recovered from areas where mapping shows that less soil or no soil is available. Recovery of this additional soil during stripping will increase the thickness of the respread.

10. Plans for Restoration of Surface (*continued*):

Revegetation

Site-specific revegetation procedures for each facility will be developed by APC in coordination with the BLM (Price Field Office), UDWR, and UDOGM. Revegetation procedures and plans will meet applicable requirements outlined in the Surface Operating Standards for Oil and Gas Exploration and Development (BLM and Forest Service 1989), the Environmental Assessment Supplement on Cumulative Impacts on Oil and Gas Categories, Price River Resource Area (BLM 1984a) and the Solid Minerals Reclamation Handbook H–3042–1 (BLM 1992).

All disturbed sites will be reclaimed and revegetated according to 43 CFR Part 3160. The overall goal of reclamation is to establish a diverse, effective, and permanent vegetation cover of the same seasonal variety and utility as the vegetation native to the affected area, and capable of supporting the planned post-well site land uses on disturbed areas. The prompt establishment of a protective plant cover and recovery of productivity levels compatible with the proposed post-well site land uses will be accomplished by implementing the reclamation plan described herein.

The revegetation plan has been designed to meet short- and long-term reclamation goals by: 1) controlling erosion and sedimentation, 2) reestablishing a vegetative cover that is ecologically comparable to native pre-disturbance conditions, and 3) restoring livestock grazing, wildlife, watershed, and aesthetic values to meet pre-operation land use objectives.

Revegetation will occur after final grading and redistribution of subsoil and topsoil activities have taken place. Revegetation communities representative of the native plant communities that existed before the disturbance occurred will be established.

Revegetation will occur in a series of steps. These steps will be:

- Disturbed areas will be revegetated after the site has been satisfactorily prepared. Site preparation may include ripping, contour furrowing, terracing, reduction of steep cut and fill slopes, water barring, or other procedures.

- Reclamation on big game crucial winter range will include hand planting of seedling browse plants and use of seedling protectors.

- On all cut slopes, seeding will extend from the bottom of the ditch to the top of the cut slope. On embankment slopes, the seeding will extend from the roadway to the toe of the slope. Seeding all borrow pit areas and all sidecast slopes in areas of full bench construction also will be seeded.

- Seedbed preparation will be conducted immediately after grading, topsoiling, and subsoiling.

- Seeding and/or planting will be repeated until satisfactory revegetation (to pre-disturbance conditions) is accomplished, as determined by the BLM or other landowner. Mulching, fertilizing (if specifically required — in general the BLM will not require the application of fertilizer), fencing or other practices may be required.

- Seeding will be coordinated with other reclamation activities to occur as soon after seedbed preparation as possible and within 90 days of soil redistribution. Interim revegetation of sites to be stabilized before permanent revegetation, such as sediment control structures or topsoil stockpiles, will be conducted as soon after construction as possible.

10. Plans for Restoration of Surface (*continued*):

- Disturbances will be seeded using the appropriate revegetation mixture. Seeding will occur from October 1 to November 15 and from February 1 to March 31.
- Broadcast-seeded areas will be chained, harrowed, cultipacked, dozer-tracked, or raked, as needed, to firm the seedbed and cover seed.
- Certified weed-free hay or straw mulch will be evenly spread over and crimped into the seeded area at rates dependent on seeding method and slope, as needed.
- Revegetated areas will be grazed by livestock at an approved level during the reclamation liability period.

Seedbed Preparation

Seedbed preparation will be conducted immediately after grading, subsoiling, and topsoiling, and if conducted, fertilizer application. On level to gentle slopes, the seedbed will be disked and harrowed along the contour to breakup large clods. On steeper slopes, rocky sites, or on areas too narrow to negotiate equipment, the soil surface will be left in a roughened condition. An irregular seedbed will provide microsites for plant germination and reduce soil movement on steeper slopes.

Alternative techniques include the use of barriers, check dams, erosion stops, matting, and roughened surfaces. These treatments can be implemented with various kinds of straw or hay bales, nettings, and mattings to effectively reduce overland flow. If gullies deeper than 9-inches should form, the gullies will be blocked with one of the above-mentioned treatments and given the opportunity to stabilize naturally, through the growth of vegetation.

Disk/Chisel Plowing

Before seeding, which will be initiated as soon as practical and within 90 days of final grading, topsoiled sites will be ripped or chisel-plowed to alleviate compaction and promote water infiltration. Chisel-plowing is a highly effective means of temporary stabilization prior to vegetation establishment.

Seeding Methods

Drill seeding will be used on most of the disturbed well site areas. This technique results in proper depth placement of seed and promotes good contact between seed and soil. Drill seeding will be done along the contour wherever the surface is not level.

Broadcast seeding will be employed on rocky areas, on steeper slopes, and on small disturbances. Seed will be broadcast using a manually-operated, cyclone-type, bucket spreader; a mechanical blower; or hydroseeder. Seed will be frequently mixed to discourage settling. Where practical, broadcast seeded areas will be chained, harrowed, or cultipacked to cover the seed. Where slope conditions allow, broadcast seeded areas will be dozer-tracked perpendicular to the slope. On small, isolated, or inaccessible sites, hand raking will be used to cover seed and ensure good soil-to-seed contact.

If hydroseeding is used, seed, fertilizer (if used), and mulch at a rate of approximately 250 pounds/acre will be sprayed in one application. Where hydromulching is used, a second application will spray additional mulch and a tackifier at the manufacturer's recommended application rate.

10. Plans for Restoration of Surface (*continued*):

Timing of Seeding

Revegetation will occur after final grading and redistribution of subsoil and topsoil activities have taken place. Seeding will be coordinated with other reclamation activities to occur as soon after seedbed preparation as possible and within 90 days of soil replacement. Fall seeding (September to November) is recommended based on local soil moisture conditions, germination requirements of selected species, and adaptation of seed to soil temperature. Spring seeding (March to May) will be practiced if areas are ready for revegetation and access is possible. Mixed seedings, one seeding to plant cool season plants in early fall and one seeding to plant warm season plants in spring, will be timed to avoid competition between species and avoid seed distribution problems. Interim revegetation of sites (i.e., on the topsoil storage piles to be stabilized before permanent revegetation) will be conducted as soon after construction as possible.

Mulching

Mulching aids in the control of erosion, retention of soil moisture, and addition of supplemental organic material to the soil. Mulch will be evenly distributed over the seeded area at rates dependent on seeding method and slope. Certified weed-free straw or grass hay mulch will be applied at a rate of 1 to 2 tons/acre on drill seeded areas and at least 1.5 tons/acre on steeper slopes of greater than 10 percent. Mulch will be anchored into the seedbed using a mulch crimper or disk, tackifier, or netting. If used, hydromulch will be applied at a rate of at least 1.0 tons/acre. A tackifier will be used on hydromulched areas in the fall and on areas requiring prompt stabilization. A temporary cover crop of a suitable annual grain, such as annual rye, may be seeded to control erosion until a permanent cover can be established.

Reclamation of Roads

Road locations and design criteria are developed to implement the goals of transportation planning. New road construction, or reconstruction, by APC will be performed to BLM standards consistent with the needs of the users and spelled out in the Surface Operating Standards for Oil and Gas Exploration and Development (BLM and Forest Service 1989). The BLM has designated and defined three classes of roads that may be constructed: Resource, Local, and Collector.

At the request of the landowner, roads will be retained as permanent structures or reclaimed. Roads will be reduced to the designated running surface width and the adjacent roadbed will be ripped, topsoil replaced, and the site revegetated following the cessation of operations. Natural drainage patterns will be restored, all installed crossings will be removed, roadbeds will be ripped and any cut and fills will be blended to conform to existing topography before topsoil replacement and seeding. Light use access roads that predate the well site operation will be left in their existing condition.

10. Plans for Restoration of Surface (*continued*):

Seed Mixtures

APC will use seed mixes adapted to different geomorphic and environmental settings to restore vegetation communities. These mixes may be adjusted for site-specific conditions. The general mixes and the vegetation types to which they apply are:

Seed mixtures have been developed for general land types throughout the Project Area. They are based on erosion control, forage production, elevation, soils, vegetation communities and average annual precipitation zones. The mixtures show the plant species and the pounds per acre of pure live seed (PLS) to be planted.

The following seed mixture will be planted along service road borrow ditches, around the edge of drill pads with a production well, and surrounding other production and maintenance facilities. The purpose for this seeding is to provide a "green strip" buffer to minimize fire hazards and prevent invasion and establishment of noxious weeds in areas that will receive continued disturbance for the life of these areas.

Table A–1

Common Plant Name	Scientific Name	Pounds per acre (PLS)*
Forage kochia	*Kochia prostrata*	2
Wyoming big sagebrush	*Artemisia tridentata wyomingensis* var. Gordon Creek	1
Douglas low rabbitbrush	*Chrysothamnus viscidiflorus*	1
	TOTAL	**4**

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The following seed mixtures are for areas that will receive final reclamation. Areas will be planted to protect them from soil erosion and to restore forage production.

Table A–2

Common Plant Name	Scientific Name	Pounds per acre (PLS)[1]
Salt Desert Areas		
Grasses		
Indian ricegrass	*Stipa hymenoides*	2
Squirreltail	*Elymus elymoides*	2
Galleta	*Hilaria jamesii*	2
Forbs		
Lewis flax	*Linum perenne lewisii*	1
Palmer penstemon	*Penstemon palmerii*	1
Gooseberryleaf globemallow	*Sphaeralcea grossulariifolia*	0.5
Shrubs		
Forage kochia	*Kochia prostrata*	2
Rubber rabbitbrush	*Chrysothamnus nauseosus*	1
Fourwing saltbush	*Atriplex canescens*	2
Winterfat	*Krascheninnikovia (Eurotia) lanata*	2
	TOTAL	**15.5**
Sagebrush/Grass Areas		
Grasses		
Indian ricegrass	*Stipa hymenoides*	2
Squirreltail	*Elymus elymoides*	2
Thickspike wheatgrass	*Elymus lanceolatus*	1
Crested wheatgrass	*Agropyron desertorum*	2
Forbs		
Lewis flax	*Linum perenne lewisii*	1
Palmer penstemon	*Penstemon palmerii*	1
Small burnet	*Sanguisorba minor*	1
Shrubs		
Forage kochia	*Kochia prostrata*	2
Whitestem rabbitbrush	*Chrysothamnus nauseosus albicaulis*	1
Fourwing saltbush	*Atriplex canescens*	2
	TOTAL	**15**

Table A–2 (continued)

Anadarko Petroleum Corp.
Helper Federal E-7
Federal Surface – Federal Minerals
Sec.19-T13S-R10E
Carbon County, Utah

Common Plant Name	Scientific Name	Pounds per acre (PLS)[1]
Pinyon-Juniper Areas		
Grasses		
Thickspike wheatgrass	*Elymus lanceolatus*	1.5
Intermediate wheatgrass	*Elytrigia intermedia*	1.5
Squirreltail	*Elymus elymoides*	2
Crested wheatgrass	*Agropyron desertorum*	2
Forbs		
Lewis flax	*Linum perenne lewisii*	1
Palmer penstemon	*Penstemon palmerii*	1
Shrubs		
Forage kochia	*Kochia prostrata*	2
Fourwing saltbush	*Atriplex canescens*	2
Wyoming big sagebrush	*Arternesia tridentata wyomingensis* var. Gordon Creek	1
Antelope bitterbrush	*Purshia tridentata*	1
	TOTAL	**15**
Mountain Brush Areas		
Grasses		
Sheep fescue	*Festuca ovina*	2
Smooth brome	*Bromus inermis*	2
Slender wheatgrass	*Elymus trachycaulus*	2
Intermediate wheatgrass	*Elytrigia intermedia*	1.5
Russian wildrye	*Psathyrostachys juncea*	1
Forbs		
Lewis flax	*Limum perenne lewisii*	1
Rocky Mt. Penstemon	*Pensternon strictus*	1
Sainfoin	*Onobrychis viciifolia*	0.5
Shrubs		
Forage kochia	*Kochia prostrata*	2
Wyoming big sagebrush	*Artemesia tridentata wyomingensis* var. Gordon Creek	0.5
Antelope bitterbrush	*Purshia tridentata*	1
Mountain big sagebrush	*Artemisia tridentata* var. *vaseyana*	0.5
True Mt. Mahogany	*Cercocarpus montanus*	1
	TOTAL	**16**
Riparian Areas		
Grasses and Grasslike		
Reed canarygrass	*Phalaris arundinacea*	2
Streambank wheatgrass	*Elymus lanceolatus riparium*	4
Nebraska sedge[2]	*Carex nebrascensis*	
Baltic rush[2]	*Juncus balticus*	
Shrubs		
Coyote willow[2]	*Salix exigua*	

Skunkbush sumac	*Rhus trilobata* var. *trilobata*	2
Trees		
Narrowleaf cottonwood[2]	*Populus angustifolia*	
	TOTAL	**8**

Notes:
1. Seeding rate is listed as pounds per acre of pure live seed (PLS) drilled. Rate is increased by 50 percent if broadcast seeded.
   Formula: pure live seed (PLS) = % seed purity x % seed germination.
2. Sedge and rush root mass plugs, willow cuttings and cottonwood bare stock plantings will be done the spring, within one month after high water flows, when the riparian water table and soil moisture will ensure planting success.

Rate of plantings per linear feet of disturbed stream bank is as follows: sedge and rush root mass plugs, one 4-inch diameter plug per 5 linear feet; willows, one cutting per linear foot; and cottonwood stock, one cluster planting of 7 trees per 25 linear feet. Individual cottonwood stock, within a planting cluster will be spaced two feet apart. The willows and cottonwoods will be planted adjacent to the stream bank in moist soil, yet above the normal water line.

Shrub seed sources will be from the states of Colorado or Utah and from areas above elevations of 4,000 feet above sea level. Seed from these sources will provide more winter tolerant plants, thus, increasing over-winter survival rates.

11. Surface and Minerals Ownership:
The surface and the minerals are owned by the United States of America, and managed by the Department of the Interior, Bureau of Land Management.

12. Other Information :

In accordance with the Record of Decision concerning the Final Environmental Impact Statement for the Ferron Natural Gas Project, the following Environmental Protection Measures and Approval Conditions will be adhered to:

- Surface disturbances within 660 feet of springs, whether flowing or not will be avoided.
- Blasting or geophysical drilling within 0.25 mile of a spring or water well will be avoided.
- Construction on frozen or saturated soils will be avoided. The Authorized Officer (BLM or FS) will determine what is wet, muddy, or frozen based on weather and field conditions at the time. This does not apply to maintenance of existing roads and wells.
- On critical soils, construction on slopes greater than 6 percent will be avoided. Where construction cannot be avoided, operations and facilities will be located to reduce erosion and improve the opportunity for revegetation.
- In accordance with a weed control plan developed for this project, APC shall treat and control noxious weed infestations within 100 feet of disturbed areas associated with well sites and facilities and roads or rights-of-way constructed or improved by APC, to the extent the infestation is caused by APC. A list of noxious weeds can be obtained from the BLM or the appropriate County Extension Office. If pesticide or herbicide will be used, a Pesticide Use Proposal will be submitted and approved prior to application of such substances.
- Selected roads in big game winter range habitats shall be gated and signed as per the executed Gate Agreement.

12. Other Information (*continued*):

- In elk and mule deer winter range (crucial and high priority), exploration, drilling, and other development shall occur only during the period of April 16 to November 30. This shall not apply to maintenance and operation of producing wells. Exceptions to this limitation in any year shall be requested in writing to the Authorized Officer of the BLM or Forest Service.

- In elk and mule deer crucial winter range, all non-emergency workover operations, as defined in the FNG EIS, shall occur only during the period April 16 to November 30. APC shall provide notice for all emergency work requiring use of heavy equipment during the winter period (December 1 to April 15). The notice shall be provided within five days of the work.

- Permanent surface disturbance and occupancy shall be prohibited within 0.5 mile of raptor nests that have been documented as occupied within the 3-year period proceeding construction. Site-specific evaluations in coordination with USFWS and UDWR may allow for modifications to this requirement.

- Permanent surface disturbance and occupancy shall be prohibited within 1.0 mile of peregrine falcon nests Section 7, Endangered Species Act consultation with USFWS shall be required for modifications to this requirement.

- Potential conflicts with coal operations shall be coordinated with the coal and the authorizing agencies.

- Spills, leaks, and contaminated soils shall be cleaned up, excavated, or treated, to prevent pollution to surface or ground waters.

- To stabilize topsoil stockpiles, any areas left disturbed for more than one year shall have stockpiles seeded with mixtures specified by the authorizing agency.

- APC shall schedule non-emergency visits to project facilities from one hour after sunrise until one hour before sunset during the big game critical winter period.

- Potential effects to significant cultural resources resulting from direct and indirect project impacts will be mitigated through the Programmatic Agreement developed between APC, BLM, SHPO, and the Advisory Council.

- During construction activities, APC shall install signs on access roads that are also used for recreation to warn users of heavy equipment and truck traffic. Sign placement on BLM lands will be determined by the AO.

There will be no deviation from the proposed drilling and/or workover program without prior approval from the AO. Safe drilling and operating practices must be observed. All wells whether drilling, producing, suspended, or abandoned, will be identified in accordance with 43 CFT 3162.2 and in accordance with the EIS for the Ferron Natural Gas Project.

"Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162.2.

The dirt contractor will be provided with an approved copy of the APD & Surface Use Plan.

Drilling rigs or equipment used during drilling operations on the wellsites will not be stacked or stored on Federal Lands after the conclusion of drilling operations or at any other time without BLM authorization.

Unless previously conducted, a Class III archaeological survey will be conducted on all Federal Lands. All persons will refrain from collecting artifacts and from disturbing any significant cultural resources in the area. APC is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sties, or for collecting artifacts or fossils. APC will immediately bring to the attention of the Price Field Office Manager any and all antiquities or other objects of historic or scientific interest including, but not limited to, historic or prehistoric ruins, artifacts, or fossils discovered as a result of operations under this permit. APC will immediately suspend all activities in the area of the object and will leave such discoveries intact until told to proceed by the Price Field Office Manager. Notice to proceed will be based upon evaluation of the cultural significance of the object. Evaluation will be by a qualified professional selected by the Price Field Office Manager from a Federal Agency insofar as practical. When not practical, APC will follow the mitigation requirements set forth by the Price Field Office Manager concerning protection, preservation, or disposition of any sites or material discovered. Within five working days the Price Field Office Manager will inform APC as to:

- Whether the materials appear eligible for the National Historic Register of Historic Places
- The mitigation measures APC will likely have to undertake before the site can be used (assuming insitu preservation is not necessary); and,
- A time frame for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If APC wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the Price Field Office Manager will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, in those situations where the Price Field Office Manager determines that mitigation, data recovery and/or salvage excavations are necessary, APC will bear the cost. The Price Field Office Manager will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Price Field Office Manager that the required mitigation has been completed, APC will then be allowed to resume construction.

FERRON NATURAL GAS WILDLIFE STIPULATIONS

The following listed stipulations have been developed for the Ferron Natural Gas Project area. These include both standardized stipulations to address known recurring issues and special stipulations to address unique or unusual circumstances or issues that were discussed at the onsite with the proponent.

BIG GAME STIPULATIONS

EPM 15: Gate and Sign Selected Roads in big game winter range habitats during Critical Period

EPM 16 & 17: Winter Seasonal restriction (December 1 to April 15) on exploration, drilling, and other development on crucial and high priority winter range. Winter Seasonal Workover Restriction.

EPM 19: Critical Winter Range Browse Hand Planting (BLM-22)

EPM 20: Big Game Minimum Disturbance Corridors/Site Location Standards

EPM 21: Surface Disturbance Mitigation for Critical and High Priority Winter Range

RAPTOR STIPULATIONS

EPM 23, 24 &26: Raptor Nest Site Protection Measures

EPM 23: Raptor Nest Site Temporary Disturbance Seasonal Closure
EPM 24: Raptor Nest Site Buffer Zone
EPM 26: Raptor Nest Site Survey

THREATENED and ENDANGERED AND BLM SENSITIVE SPECIES STIPULATIONS

EPM 25: Peregrine Falcon Nest Site Protection

EPM 27: Winkler Cactus Survey and Protection

EPM 28: Sensitive Plant Species Survey

BLM SURVEY PROTOCOLS/SURVEY FORMS

Winkler cactus survey

Sensitive Plant Species Survey

Raptor Nest Site Survey

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FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM-15 GATE AND SIGN SELECTED ROADS IN BIG GAME WINTER RANGE HABITATS DURING CRITICAL PERIODD **Pg 1 of 1**

In order to minimize adverse effects of vehicle traffic on wintering big game and in accordance with the Cooperative Agreement signed by Texaco, Anadarko, Chandler, and BLM Price Field Office, the Companies will be required to construct and maintain gate closure at site(s) selected by BLM on the access roads under this Federal permit.

Final gate placement and construction design will be provided by the authorized officer of the BLM after preliminary road construction has been completed. Although final gate placement will utilize topographic barriers to control access, construction design may require short segments of fence to tie into these natural barriers to prevent vehicle travel around the gate.

Gates shall be constructed prior to December 1 of the year that the road is constructed. Gates shall be constructed of materials that meet or exceed the type and durability, strength of powder river gates.

The Companies shall be responsible for locking all gates during the period between December 1 to April 15 of each year unless otherwise notified by BLM. They shall assure that all gates are locked throughout the specified period except as needed for ingress/egress, to avoid other users of the public land from becoming locked inside the closure areas.

The Companies shall use locks throughout the project area that are keyed for the same key (or combination) and have duplicate copy protection. The Companies shall provide two keys (or combination) to BLM as well as provide additional keys upon request for BLM to provide to other users requiring access during the closure period.

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FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 16 & 17 WINTER SEASONAL RESTRICTION (DECEMBER 1 to APRIL 15) ON CRUCIAL AND HIGH PRIORITY WINTER RANGE. **Pg 1 of 2**

Restrictions on Construction Phase Activity: Prohibit construction phase activity, described below, on big game high value and critical winter range during the period (December 1 – April 15) without regard for land ownership.

This condition would not apply to normal maintenance and operation of producing wells, described below. On nonfederal lands (where the federal government does not have either surface or subsurface ownership) the Companies would be allowed to conduct construction phase activity if needed to avoid breech of contract or loss of lease rights. In the event construction phase activity proceeds into the winter closure period on non-federal interest lands, Companies would make available appropriate documentation to UDWR, upon request.

Construction Phase Activity: Construction phase activity is considered to include all work associated with initial drilling and construction of facilities through completion, including installation of pumping equipment, connection with ancillary facilities and tie-in with pipelines necessary for product delivery.

Companies would not be allowed to initiate construction activity unless it is reasonable to believe that such work can be finished to a logical stopping point prior to December 1 of that year. Specific activities considered to be covered by the seasonal closure include all heavy equipment operation including but not limited to the following:

- Mobilization/Demobilization or operation of heavy equipment (crawler tractor, front end loader, backhoe, road grader, etc).
- Construction activity (road construction or upgrading, pad, pipeline, powerline, ancillary facilities, etc),
- Drilling activity (Operator would not propose or initiate drilling activity if the project could not reasonably be expected to be finished to a logical stopping point by the December 1 date of that year.)
- Seismic operation, detonation of explosives

This seasonal closure would not apply to reconnaissance, survey/design and/or flagging of project work or other similar activity not requiring actions listed for heavy equipment operation.

Production Phase: A well is considered to be in production phase when the well and ancillary facilities are completed to the point that they are capable of producing and delivering product for sale. It is noted that heavy equipment operation may be necessary in the performance of maintenance and operation of producing wells.

Restriction on Non Emergency Workover Operations: The Companies will schedule non-emergency workover operations (defined below) on big game crucial and high value winter range outside the December 1 to April 15 date of the seasonal closure.

Non-emergency Workover Operations: Workover operations to correct or reverse a gradual loss of production over time (loss of production of 20 percent or less over a 60 day period) is considered to be routine or non-emergency workover operations and would not be permitted during the December 1 to April 15 time frame.

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PROPONENT: ANADARKO **WELL #: HELPER FIELD**

Emergency Workover Operations: Emergency workover operations are defined as downhole equipment failure problems or workover operation necessary to avoid shut in of the well or to avoid an immediate safety or environmental problem. Loss of production greater than 20 percent within a 60 day period is indicative of pump failure and will be treated as an emergency workover operation. The Companies will submit Sundry notices to BLM within five days of the emergency workover operations between December 1 and April 15.

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FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 19: CRITICAL WINTER RANGE BROWSE HAND PLANING **Pg 1 of 2**

One or two browse species lists (checked below) are to be hand planted at the prescribed application rate and according to the following prescribed methods on critical winter range areas that are undergoing long term reclamation. This would include all pipeline corridors, berm around edge of drill pads, miscellaneous disturbed areas associated with construction such as staging areas for equipment, sidecast on road cuts, along side upgraded or new roads up to and including borrow ditch and in the termination of redundant access roads being closed. This planting shall be completed in the first planting window following reclamation.

Planting Methods:

Planting shall be accomplished using a labor force with specific experience in landscape restoration, hand planting methods and handling and care of browse tubling and or bareroot stock plants.

Browse plants to be utilized can be bareroot stock or tubling stock plants of 1 year old age class or greater.

Browse seedling protectors will be used to provide protection from browsing ungulates for two years. Seedling protectors will be of an open mesh rigid design that will break down when exposed to sunlight and that measures a minimum of 12 inches in length and 4 inches in diameter. The protectors will be secured around the browse seedlings.

Planting shall be completed in the spring (March 1-April 1) and or fall (November 1-December 1) planting windows.

Browse plants shall be stored and handled in such a manner as to maintain viability, according to the type of browse stock being used.

Planting Species and Application Rate:

	[___] Sagebrush-Grass	**[___]Pinyon-Juniper**
Species	Plants Per Acre	
Wyoming Sagebrush (Gordon Creek)	100	50
Fourwing Saltbush (Utah seed source collected at or above 5,000 feet evaluation)	100	50
True Mountain Mahogany (Utah seed source)	0	50
Antelope Bitterbrush (Utah seed source)	0	50
Total	200	200

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PROPONENT: ANADARKO **WELL #: HELPER FIELD**

Suitable Substitutions:

Prostrate Kocia	yes	yes
Whitestem Rubber Rabbitbrush	no	yes
Utah Serviceberry	no	yes
Winterfat	yes	yes

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FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 20: BIG GAME MINIMUM DISTRUBANCE CORRIDORS/SITE LOCATION STANDARDS **Pg 1 of 1**

The subject permit application is proposed within a Big Game Minimum Disturbance Corridor (FEIS). In order to provide winter range protection for big game, the following Site Location Standards will be implemented to avoid or minimize disturbance and or occupancy within these corridors.

Based on site specific evaluation by BLM and DWR, a well or facility may be relocated (within the limits of the 160 acre subdivision in which it is proposed.

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PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 21: SURFACE DISTRUBANCE MITIGATION FOR CRITICAL AND HIGH PRIORITY WINTER RANGE **Pg. 1 of 1**

The subject permit application is proposed within critical and high priority winter range (FEIS) and subject to EPM 21 requiring acre for acre mitigation for surface disturbance on critical winter range. The following condition comes from a cooperative agreement between the Texaco, Anadarko, Chandler (Companies), BLM-Price Field Office, the Utah Division of Wildlife Resources and the National Fish and Wildlife Foundation. The Companies agreed to the following:

1. Contribute $1,301.26 (1998 dollars) for each Federal surface and or subsurface ownership) permitted and drilled by the Companies (or on behalf of Companies by its contractor) on big game critical winter range as depicted in the FEIS Ferron Natural Gas Project Area. (Wells meeting the above criteria for which payment will be required, will be referred to as "subject wells"). This contribution will be adjusted annually for inflation based on the Consumer Price Index (CPI), see Section II.C.6 for the reference source used for the determination of the CPI and the date in which this annual adjustment will go into effect.

   Since this mitigation program is designed to address impacts of all big game critical winter range surface disturbance (roads, well pads, pipelines, etc.), contributions will be required regardless of the success or failure of the subject well to produce.

   a. The recorded date for spudding for each subject well (the first boring of a hole during the drilling of a well) will serve as the reference date triggering the requirement for the mitigation contribution.

   b. Contributions will be submitted (in the form of an Company check, cashiers check or wire transfer) directly to the National Fish and Wildlife Foundation by the 1st of August and February for all subject wells spudded in the preceding six months as reported by the Bureau.

   c. All contributions will be made payable to the "National Fish and Wildlife Foundation re, Proj 99-270" and reference the "Ferron Natural Gas Wildlife Habitat Impact Mitigation Fund".

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FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 23, 24 & 26: RAPTOR NEST SITE PROTECTIN MEASURES **Pg 1 of 3**

The subject permit application is proposed within or near known suitable raptor nesting habitat. In order to avoid potential adverse affects to nesting raptors protected under the Migratory Bird Treaty Act and/or the Bald Eagle Protection Act, the operator must comply with all applicable provisions below.

Provisions check marked below are directly applicable to the Federal action, based on available data at the time of this review. Any other provisions, listed below (even if not check marked) may become applicable to this Federal action as updated raptor data becomes available.

[X] **Survey Requirement:** (EPM 26) Conduct raptor surveys to determine the status of known nests and verify presence of additional nests in the affected area of this Federal action. Surveys are to be conducted by consultants qualified to conduct such surveys and approved by the authorized officer. All surveys would be conducted by helicopter during May of each year unless otherwise provided for in BLM's Raptor Survey Protocol developed for this project. The surveys are required to be completed in the same year as the proposed drilling/construction so that current nest activity status data are available prior to APD/Federal Permit approval. Cost for surveys and preparation of a report of the findings of the survey would be the obligation of the lease holder.

[X] **Raptor Nest Site Bufferzone Permanent Occupancy:**)EPM 24) Upon the finding of the above survey (or other appropriate documentation) that the federal action lies within .5 miles of a raptor nest occupied (defined below) in any of the three years preceding the proposed date of construction, the federal action would be subject to the no surface occupancy provision stated below and provided for in the Ferron Natural Gas Project FEIS.

Permanent surface disturbance and occupancy (i.e. oil and gas production facilities) is prohibited within 0.5 miles of raptor nests which have been documented as occupied within three years.

This provision will apply as long as the nest status remains unchanged (i.e. documented as occupied within any of the three years preceding the proposed date of construction. If the nest is documented as unoccupied for a period of three or more consecutive years, it will be deemed to have been abandoned and the federal action will no longer be subject to the no surface occupancy provision.

FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 23, 24 & 26: RAPTOR NEST SITE PROTECTIN MEASURES Pg 2 of 3

In the event a federal action involving a permanent facility, as described above, is proposed within the .5 miles bufferzone, BLM will complete a site specific evaluation. The evaluation will consider site terrain features such as topographic and vegetative screening, and existing intrusions which may already exist in the bufferzone. Specific standard guidelines used in this analysis are available in the Price Field Office. The site specific analysis and its findings will be attached to this stipulation as a recommendation to the BLM manager. If the site specific evaluation determines that the federal action can be accommodated with no significant adverse affect to the current or future productivity of all the nest, the no surface disturbance/occupancy provision referenced above would not be applicable.

[X] Site Specific Evaluation Attached [ ] Special Mitigation Measures Attached

[X] Raptor Nest Site Bufferzone Temporary Occupancy: (EPM 23) Any temporary surface disturbance and occupancy (i.e. road and pipeline construction, etc.) associated with this federal permit, occurring within .5 miles of a raptor nest documented as occupied in one or more of the three years preceding the proposed date of construction must be conducted outside the nesting period of February 1 to August 15. This will include but not limited to road construction or upgrading required to reach this well location. If such work is required to access this location with heavy equipment, the seasonal closure of February 1 to August 15 will also apply to the drilling of this well.

[X] Maintenance and Operation of Existing Well Within .5 miles of Raptor Nests: In the event a federal action is authorized and constructed and a raptor nest is subsequently build within .5 miles of the development, maintenance and operations involving workovers or heavy equipment operation under this federal action will be subject to the following conditions and notifications.

The proponent is required to submit (at least 5 days in advance of proposed work) a sundry notice for all workover or maintenance operations requiring use of heavy equipment proposed during the raptor breeding season (February 1 – August 15) and within the .5 mile bufferzone of any known raptor nest site. Upon receipt of this notification BLM is consultation with DWR and the USFWS would issue a determination on the activity status of the affected raptor nest. If the nest if found to be occupied, site specific protection measures would be developed to protect the nesting raptors and prevent conditions or actions that may result or contribute to a taking as defined under the Bald Eagle Protection Act and or the Migratory Bird Treaty Act.

To avoid the necessity for this provision, the operator is encouraged to schedule all such work outside of the nesting period on wells subject to this provision.

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FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 23, 24 & 26: RAPTOR NEST SITE PROTECTIN MEASURES Pg 3 of 3

Occupied Nest Site Definition:

An occupied raptor nest is defined, for the purposes of this stipulation, as any nest site exhibiting physical evidence of current use by raptors. Evidence may include but is not limited to: presence of raptors (adults, eggs or young) at the nest or within the nesting territory, presence of greenery in the nest, and/or presence of current year's whitewash at the nest or in the immediate vicinity of the nest.

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PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 25: PEREGRINE FALCON NEST SITE PROTECTION **Pg 1 of 1**

The subject permit application is proposed within or near known suitable habitat for peregrine falcons. Permanent surface disturbance and occupancy shall be prohibited within 1.0 mile of peregrine falcon eyries. Temporary surface disturbance may be allowed between August 16 and January 31 if determined by BLM, UDWR and USFWS not to affect the peregrine falcon. Section 7, Endangered Species Act consultation with USFWS shall be required for modifications to this requirement.

The American peregrine falcon was removed from the Federal List of Endangered and Threatened Wildlife on August 25, 1999. The peregrine will be monitoring by US Fish and Wildlife Service (USFWS) for the next 13 years. A plan for the monitoring will be developed by the USFWS and will be available for public review in the near future. This stipulation will remain until the USFWS monitoring plan indicates that the protection of the peregrine falcon eyrie is no longer warranted.

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FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 27: WINKLER CACTUS PROTECTION **Pg 1 of 1**

"All APDs, Sundry Notices, and rights-of-way submitted for proposed wells and other surface-disturbing activities within Winkler cactus habitat shall be submitted before April 1 of any given year. This would allow the clearances for T & E plants at the optimum time. Any applications for surface-disturbing activities received after April 1 shall be held until the next year. On extremely dry years, the cactus does not surface or bloom and clearances shall be delayed until conditions are better, possibly until the next year."

The subject permit application is proposed within or near known suitable habitat for Winkler cactus (Pediocactus winklerii). In order to avoid potential adverse affects to this species, the proponent/operator must conduct surveys to determine its presence or absence in the affected area of this Federal action. Surveys must comply with BLM protocol and be conducted by qualified consultants approved in advance by BLM. The protocol includes completing surveys on the cactus between April 15 and May 15 annually. Permit applications submitted after April 1 will be held until the next year when the clearance may be reliably completed.

In the event this species is present in the affected area of this Federal Action, site modification or site specific mitigation measures will be developed by BLM and U.S. Fish and Wildlife Service to avoid or mitigate potential adverse impacts.

Site Modification: Proposed facility location will be moved to avoid physical destruction of plants or habitat modifications (i.e., runoff patterns etc.) that may affect the species.

Site Specific Mitigation: In the event physical impacts to this species can not be avoided by site modification, the Bureau would conduct a Section 7 Consultation with U.S. Fish and Wildlife Service. If the action is approve the proponent will adhere to all mitigation required by Bureau after consultation with the US Fish and Wildlife Service. Site specific mitigation may include but is not limited to; transplanting, seed collection and hand planting seeds of the affected species etc.

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FERRON NATURAL GAS PROJECT AREA

PROPONENT: ANADARKO **WELL #: HELPER FIELD**

EPM 28: SENSITIVE PLANT SPECIES PROTECTION **Pg 1 of 1**

The subject permit application is proposed within or near known suitable habitat for special status plant species. In order to avoid potential adverse affects to these species, the proponent/operator must conduct surveys to determine presence or absence of the species checked below, in the affected area of this Federal action. Surveys must comply with BLM protocol and be conducted by qualified consultants approved in advance by BLM.

[ ] Catseye Cryptantha (Crypthanta creutzfeldtii)

[ ] Western Sweetvetch (Hedysarum occidentale var. canone)

In the event this species is present in the affected area of this Federal Action, site modification or site specific mitigation measures will be developed by BLM to avoid or mitigate potential adverse impacts.

Site Modification: Proposed facility location will be moved to avoid physical destruction of plants or habitat modifications (i.e., runoff patterns etc.) that may affect the species.

Site Specific Mitigation: In the event physical impacts to this species can not be avoid by site modification, the proponent will be required to mitigate impacts to affected plants. Site specific mitigation may include but is not limited to; transplanting, seed collection and hand planting seeds of the affected species, etc.

BLM SURVEY PROTOCOLS/SURVEY FORMS

WINKLER CACTUS SURVEY PROTOCOL

Timing of Survey: Winkler Cactus (Pediocactus winklerii)- Surveys must be conducted during the flowering period for this species (April 15 to May 15), and only when the cactus is above ground.

Survey Method: Conduct pedestrian transects across all potential surface disturbed areas. Transects must me spaced no greater than 10 feet apart.

Survey Area: Survey area should include all potential surface disturbed areas plus the following for linear and spot disturbances. Linear disturbances (i.e. roads and pipelines) should include an area 300 feet on either side of centerline. For spot disturbances (i.e. well pads, facility locations, etc.) survey should extend 600 feet beyond anticipated disturbance.

Reporting Format and Schedule: The following documentation is required for the reporting of the findings of required surveys.

Field Survey Form Part 1: Complete separate field form for each distinct action (i.e. one for well pad #_____, one for the access road/utility corridor to well pad #_____). Field form should include the following information.

Date:
Observer:
Type of Action:
Legal Location:
Proponent Name:
Federal Application/Permit #:
Presence/Absence Declaration:
Habitat Suitability Rating:

Field Survey Form Part 2: Complete for only those surveys in which the species was present.

Population Dynamics: include phenology, total count, estimated age class breakdown (seedlings, mature, dead/dying), condition, and trend.
Map: Include 8 ½ by 11 page size map @ 1:24,000 scale depicting location of proposed facilities, location of survey area and spot symbols or polygons showing location of plant species.
Photograph: Include photographs depicting (1) general survey area where plant occurs and (2) closeup of plant.
Avoidance Recommendations: Summarize site specific recommendations to avoid impacts to special status plant species.

BLM SURVEY PROTOCOLS/SURVEY FORMS

WINKLER CACTUS SURVEY PROTOCOL

Field Summary Spreadsheet: Summarize survey work and findings, present, not present, affect, no affect, in a spreadsheet form. Form should include the following data elements.

Date of Survey:
Legal Location:
Federal Permit Application Number (i.e. Well #, Row #):
Presence/Absence Notation:
Affect/No Affect Notation:
Vegetative Community Type:
Habitat Suitability Rating:

Special Notification to Authorized Officer: Notify BLM within 5 days of discovery of Special Status Plant species, where an adverse affect is noted.

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SPECIAL STATUS PLANT SPECIES SURVEY PROTOCOL

Timing of Survey: Catseye Cryptantha – Surveys must be conducted during the flowering period for this species (May 1 to June 15)..

Survey Method: Conduct pedestrian transects across all potential surface disturbed areas. Transects must me spaced no greater than 200 feet apart.

Survey Area: Survey area should include all potential surface disturbed areas plus the following for linear and spot disturbances. Linear disturbances (i.e. roads and pipelines) should include an area 300 feet on either side of centerline. For spot disturbances (i.e. well pads, facility locations, etc.) survey should extend 600 feet beyond anticipated disturbance.

Reporting Format and Schedule: The following documentation is required for the reporting of the findings of required surveys.

Field Survey Form Part 1: Complete separate field form for each distinct action (i.e. one for well pad #_____, one for the access road/utility corridor to well pad #_____). Field form should include the following information.

Date:
Observer:
Type of Action:
Legal Location:
Proponent Name:
Federal Application/Permit #:
Presence/Absence Declaration:
Habitat Suitability Rating:

Field Survey Form Part 2: Complete only for surveys in which the species was present.

Map: Include 8 ½ by 11 page size map @ 1:24,000 scale depicting location of proposed facilities, location of survey area and spot symbols or polygons showing location of plant species.
Photograph: Include photographs depicting (1) general survey area where plant occurs and (2) closeup of plant.
Avoidance Recommendations: Summarize site specific recommendations to avoid impacts to special status plant species.

Field Summary Spreadsheet: Summarize survey work and findings, present, not present, affect, no affect, in a spreadsheet form. Form should include the following data elements.

Date of Survey:
Legal Location:
Federal Permit Application Number (i.e. Well #, Row #):
Presence/Absence Notation:
Affect/No Affect Notation:
Vegetative Community Type:
Habitat Suitability Rating:

Special Notification to Authorized Officer: Notify BLM within 5 days of discovery of Special Status Plant species, where an adverse affect is noted.

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RAPTOR NEST SITE SURVEY/ACTIVITY STATUS PROTOCOL

Two raptor survey protocols are outlined below, addressing different levels of survey scope. The first is a protocol for a broad based intensive survey protocol to assess activity status of a small number of known nest sites.

INTENSIVE BROAD BASED RAPTOR SURVEY PROTOCOL

Survey Timing: Surveys are to be conducted from May 10 through June 1.

Survey Area: Surveys should include all nesting habitat within .5 miles of any proposed surfaced disturbed areas.

Survey Method: Surveys shall be conducted by helicopter.

Observer Qualifications: Consultants must be qualified and experienced in raptor survey methodology and knowledgeable of raptor behavior/biology and must obtain any applicable license or permits that may be required by the State Wildlife Agency.

Field Survey Data Collection: Collect following information during survey.

Map: Provide 1:24,000 scale topographic map depicting location of all raptor nest sites with spot symbols to differentiate nest type, an alpha character to differentiate species and a numeric character to differentiate between nests for survey year. It would be preferable to utilize a 5 digit number to sue as the numeric designator with the survey year occupying the first 2 digits and the last three. This or some other similar system should be used to help build a chronological history of raptor nest data. With this system, only newly constructed nests would be assigned new nest numbers, data for existing nests would simply be filled in from year to year. This would reduce the time and expense of taking GIS points on every nest every year.

Spot Symbols:	Alpha Designator (Species)		Numeric
Designator:			
Cliff Stick Nest+	Golden Eagle	GE	00-000
Cliff Scrape @	Redtail Hawk	RT	
Tree Nest *	Ferruginous Hawk	FH	
Ground Nest #	Prairie Falcon	PF	

Data: Record for all nest sites observed

Activity Status: - Tended (record observed evidence: i.e. adults nearby, fresh whitewash, greenery, nest maintenance

- Active (record number and age of young)
- Inactive-nest in good repair
- Inactive-nest in disrepair (old dilapidated)
- Unable to locate

13. Lessee's or Operator's Representatives and Certification:

REPRESENTATIVE

Name: Jennifer Berlin
Phone: 281-874-3441
Address: Anadarko Petroleum Corporation
17001 Northchase Drive
Houston, Texas 77060

CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsites and access routes, that I am familiar with the conditions which currently exist, that the statements made in this plan are to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be performed by

ANADARKO PETROLEUM CORPORATION

and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

4/16/01
Date

Jennifer Berlin
Environmental Regulatory Analyst

ARCHEOLOGY REPORT

CULTURAL RESOURCE INVENTORY OF ANADARKO PETROLEUM'S 2000 HELPER FIELD DRILLING PROGRAM CARBON COUNTY, UTAH

by

Keith Montgomery
Sharyl Kinnear-Ferris
and
Sarah Ball

Prepared For:

Bureau of Land Management
Price River Resource Area
Moab District
and
State of Utah

Prepared Under Contract With:

Anadarko Petroleum Corporation
P.O. Box 1330
Houston, Texas 77251

Prepared By:

Montgomery Archaeological Consultants
P.O. Box 147
Moab, Utah 84532

February 25, 2000

United States Department of Interior (FLPMA)
Permit No. 99-UT-60122

State of Utah Antiquities Project (Survey)
Permit No. U-99-MQ-0554b,p,s

ABSTRACT

Cultural resource inventories were conducted by Montgomery Archaeological Consultants (MOAC) in the fall of 1999 for Anadarko Petroleum's Helper Field 2000 Drilling Program, Carbon County, Utah. The archaeological survey included 24 proposed well locations with associated access and pipeline corridors. A total of 904 acres were inventoried which included 749 acres on BLM administered land (Price River Resource Area), 37 acres on State of Utah (Trust Land Administration) land, and 118 acres on private property.

The survey resulted in the documentation of seven newly-found archaeological sites (42Cb1380, 4Cb1381, 42Cb1382, 42Cb1383, 42Cb1384, 42Cb1385, and 42Cb1386), one previously documented site (42Cb1355), and 11 isolated finds of artifacts (IF-A through IF-K). During the fieldwork it was determined that Site 42Cb1382 warranted limited testing to obtain data on which to ascertain the potential for subsurface cultural remains along the access road for proposed Helper Federal A-7. Site 42Cb1380 is a small habitation related to turn-of-the-century coal or ranching endeavors. The site contains structural features as well as potential for additional cultural materials, and is considered eligible to the NRHP under Criterion (d). Site 42Cb1382 is a historic landfill associated with the mining town of Kenilworth. The site is determined eligible to the NRHP under Criterion (d), and exhibits some temporal horizontal and vertical stratification. Although the site was extensively examined during this recordation there retains potential for obtaining additional data. Site 42Cb1385 consists of two segments of the D&RGW Kenilworth Branch railroad grade which are eligible to the NRHP under Criterion (a), since they are significant for their association with events and broad patterns important to local history. Site 42Cb1355.2 is a segment of the historic Kenilworth & Helper railroad line which is evaluated as eligible to the NRHP under Criterion (a), because of its significance to area history, particularly the history of Kenilworth and the development of mining in the area. Cultural resources evaluated as not eligible to the NRHP consist of three historic sites (42Cb1381, 42Cb1384, and 42Cb1386) and one prehistoric site (42Cb1383). The historic sites include two early 20th century temporary camps, a dismantled communication system, and a trash scatter. These sites lack additional research potential because they have minimal potential for buried cultural remains or fail to possess physical integrity. Site 42Cb1383 is a surficial lithic scatter of unknown temporal affiliation. It is evaluated as not eligible to the NRHP due to its lack of additional research potential.

The following recommendations are proposed for the four significant historic properties: 42Cb1380 will be avoided since it occurs outside of the proposed well location Helper Federal C-7 development zone. Hence a determination of "no historic properties affected" is recommended. At 42Cb1382 the documentation and testing indicated that the artifact information was redundant, although the site yielded some subsurface deposits. It is recommended that the proposed access road into Helper Federal A-7 (Alternate) be monitored during construction in order to verify the nature of the cultural deposits. If this stipulation is adhered to than a recommendation of "no historic properties adversely affected" is proposed. At 42Cb1385.1 the proposed road into Helper Federal A-7 (Alternate) will cross the railroad grade although this undertaking will not effect the characteristics which constitutes this historic property eligible. Hence a determination of "no historic properties affected" is recommended. At 42Cb1385.2 the proposed access road into Helper Federal E-8 will cross the railroad grade although this undertaking will not effect the characteristics which makes this historic property eligible. Hence a determination of "no historic properties affected" is proposed. At 42Cb1355.2 the proposed access road into Helper Federal E-7 will cross the railroad grade although this undertaking will not effect the characteristics which makes this historic property eligible. Hence a determination of "no historic properties affected" is proposed.

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INTRODUCTION

Cultural resource inventories were conducted by Montgomery Archaeological Consultants (MOAC) in the fall of 1999 for Anadarko Petroleum's Helper Field 2000 Drilling Program, Carbon County, Utah. The archaeological survey included 24 proposed well locations with associated access and pipeline corridors. The inventory was implemented at the request of Mr. Jim Hartley, Anadarko Petroleum Corporation, Helper, Utah. The project area occurs on Bureau of Land Management (BLM) Price Resource Area land, State of Utah (Trust Lands Administration) and private property.

The objectives of the inventory were to locate, document, and evaluate any cultural resources within the project area in order to attain compliance with a number of federal and state mandates, including the National Historic Preservation Act of 1966 (as amended), National Environmental Policy Act of 1969, the Archaeological and Historic Conservation Act of 1972, the Archaeological Resources Protection Act of 1979, American Indian Religious Freedom Act of 1978, and the Utah State Antiquities Act of 1973 (amended 1992).

The fieldwork was performed between September 28 and December 1, 1999, under the direction of Keith Montgomery (Principal Investigator), assisted by Jacki Montgomery, Mark Bond, Joe Pachak, Gregg Nunn, Mark Donham, and Eli Jones. The project was conducted under the auspices of U.S.D.I. (FLPMA) Permit No. 99-UT-60122 and State of Utah Antiquities Project (Survey) No. U-99-MQ-0554b,p,s issued to MOAC, Moab, Utah.

A file search for previous inventories and documented cultural resources was performed by Keith Montgomery (September 28, 1999) at the BLM Price River Resource Area Office. The result of the consultation indicated that various archaeological projects have been completed in the area. In 1981, Northland Research conducted a survey for the Mile-Hi Exploration project. The inventory resulted in the documentation of 42Cb335, a lithic scatter (Robinson 1981). In 1983, the Kenilworth Mine Reclamation Project was completed by Brigham Young University documenting the town and adjacent mining facilities (42Cb385) (Talbot 1983). In 1993, Alpine Archaeological Consultants inventoried two proposed well locations for Anadarko Petroleum, resulting in the recordation of two isolated finds (Pope 1993a). Also in 1993, Alpine Archaeological Consultants inventoried seven well locations for Anadarko Petroleum resulting in the documentation of six sites (Pope 1993b). In 1994, two inventories were completed by Alpine Archaeological Consultants for three proposed well locations, resulting in no cultural resources (Horn 1994; Pope 1994). Metcalf Archaeological Consultants inventoried a proposed well location for Anadarko Petroleum in 1985 resulting in the documentation of site 42Cb1029, a lithic scatter (Travis 1995). In 1996, MOAC surveyed a number of Anadarko Petroleum's well locations documenting three historic sites (42Cb1061, 42Cb1062, 42Cb1063) in the area (Montgomery and Montgomery 1996). In 1997, MOAC inventoried Anadarko Petroleum's Helper State D-2 well location recording two erosion control sites (42Cb1064 and 42Cb1065) (Montgomery 1997). In 1998, five well locations were surveyed by MOAC for Anadarko Petroleum resulting in three historic sites (42Cb1235, 42Cb1236 and 42Cb1237) being documented (J. Montgomery and K. Montgomery 1998). During the same year four well locations and a gravel pit were inventoried by MOAC for Anadarko Petroleum in which two trash scatters (42Cb1265 and 42Cb1266), an

abandoned ditch (42Cb1265), and a wagon road (42Cb1267) were documented (K. Montgomery and J. Montgomery 1998). An inventory was conducted by MOAC in October and November 1998 for Anadarko Petroleum's Helper Field Drilling Program (Montgomery, Montgomery, and Wolfe 1998). This inventory resulted in the documentation of eight newly-found sites, two previously recorded historic sites, and 23 isolated finds of artifacts. In 1999, Environmental Industrial Services (EIS) inventoried a proposed 40 acre land exchange for the Bureau of Land Management (Fergusson 1999). This inventory resulted in the documentation of a portion of the historic Kenilworth & Helper railroad grade (42Cb1355). No previously recorded archaeological sites occur in the immediate project area, although a segment of the Kenilworth & Helper railroad (42Cb1355.2) was documented during this inventory.

DESCRIPTION OF PROJECT AREA

The project area is situated in Anadarko Petroleum's Helper Gas Field, north of the town of Price, Carbon County, Utah. The inventory included 24 proposed well locations with associated access and pipeline corridors (Table 1 and Figures 1 through 5). The legal description is T 13S, R10E, Sections 19, 21, 22, 23, 24, 25, 28, 29, and 36; T 14S, R 10E, Section 1.

Table 1. Legal Descriptions and Cultural Resources.

Well Number	Legal Location	Location at Surface	Access/Pipeline Corridor	Cultural Resources
Helper Federal A-4	T13S, R10E, S.23 NW	1584' FNL 1625'FWL	2000' Access/Pipeline	None
Helper Federal A-4, Alternate	T13S, R10E, S.23 NW	2099' FNL 1007' FWL	1300' Access/Pipeline	None
Helper Federal A-5	T13S, R10E, S.23 NE	1151' FNL 1038' FEL	2000' Access/Pipeline	None
Helper Federal A-7	T13S, R10E, S.22 NW	1486' FNL 1013' FWL	5700' Access/Pipeline	42Cb1382,1384.3 42Cb1385.1, IF-D
Helper Federal A-7 Alternate	T13S, R10E, S.22 NW	2537' FNL 1315'FWL	2800' Access/Pipeline	42Cb1382 42Cb1386
Helper Federal B-15	T13S, R10E, S.28 NE	1551' FNL 1072' FEL	2000' Access/Pipeline	42Cb1381 42Cb1384.1, IF-C
Helper Federal B-16	T13S, R10E, S.28 NW	1363' FNL 627' FWL	1200' Access/Pipeline	IF-B
Helper Federal C-2	T13S, R10E, S.24 NW	1800' FNL 2019' FWL	3700' Access/Pipeline	IF-F
Helper Federal C-3	T13S, R10E, S.24 SW	934' FSL 1971' FWL	3000' Access 2300' Pipeline	None

Well Number	Legal Location	Location at Surface	Access/Pipeline Corridor	Cultural Resources
Helper Federal C-4	T13S, R10E, S.24 SE	1508' FSL 1558' FEL	6000' Access/Pipeline	42Cb1383, IF-E, IF-G, IF-H, IF-I, IF-J
Helper Federal C-5	T13S, R10E, S.24 NE	1415' FNL 1414' FEL	2800' Access/Pipeline	None
Helper Federal C-6	T13S, R10E, S.21 SE	888' FSL 1386' FEL	3700' Access/Pipeline	42Cb1384.2
Helper Federal C-7	T13S, R10E, S.21 SW	843' FSL 1411' FWL	300' Access/Pipeline	42Cb1380
Helper Federal D-9	T13S, R10E, S.25 NW	660' FNL 660' FWL	2000' Access/Pipeline	None
Helper Federal D-10	T13S, R10E, S.25 NE	1500' FNL 1363' FEL	2500' Access/Pipeline	None
Helper Federal D-11	T13S, R10E, S.25 SW	995' FSL 1698' FWL	5000' Access 2100' Pipeline	None
Helper Federal D-12	T13S, R10E, S.25 SE	1097' FSL 1225' FEL	2500' Access 3000' Pipeline	None
Helper Federal E-3	T13S, R10E, S.29 NW	1425' FNL 1062' FEL	1500' Access/Pipeline	None
Helper Federal E-4	T13S, R10E, S.29 NE	518' FNL 1106' FEL	1200' Access/Pipeline	IF-A
Helper Federal E-7	T13S, R10E, S.19 SE	887' FSL 612' FEL	4000' Access/Pipeline	42Cb1355.2
Helper Federal E-8	T13S, R10E, S.19 NE	1623' FNL 465' FEL	3000' Access/Pipeline	42Cb1385.2
Helper Federal H-3	T14S, R10E, S.1 NE	1320' FNL 1320' FEL	2400' Access/Pipeline	None
Helper Federal H-4	T14S, R10E, S.1 SE	1563' FSL 1330' FEL	2500' Access/Pipeline	IF-K
Helper State E-3	T13S, R10E, S.36 NE	494' FNL 1005' FEL	1200' Access/Pipeline	None

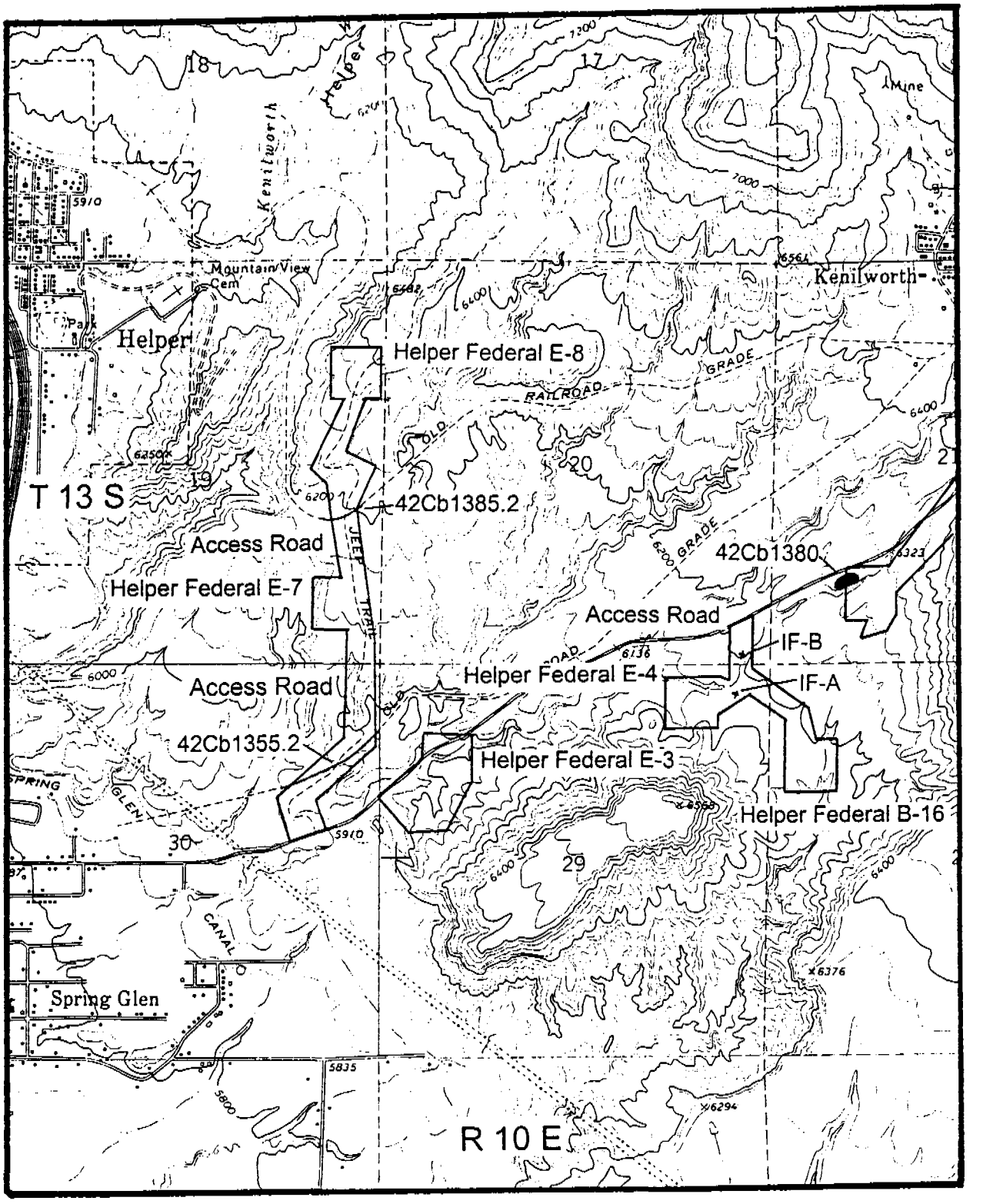

Figure 1. Inventory of Anadarko Petroleum's 2000 Drilling Program, Helper Field Project Area, Carbon County, UT. USGS 7.5 Helper, UT 1972. Scale 1:24000.

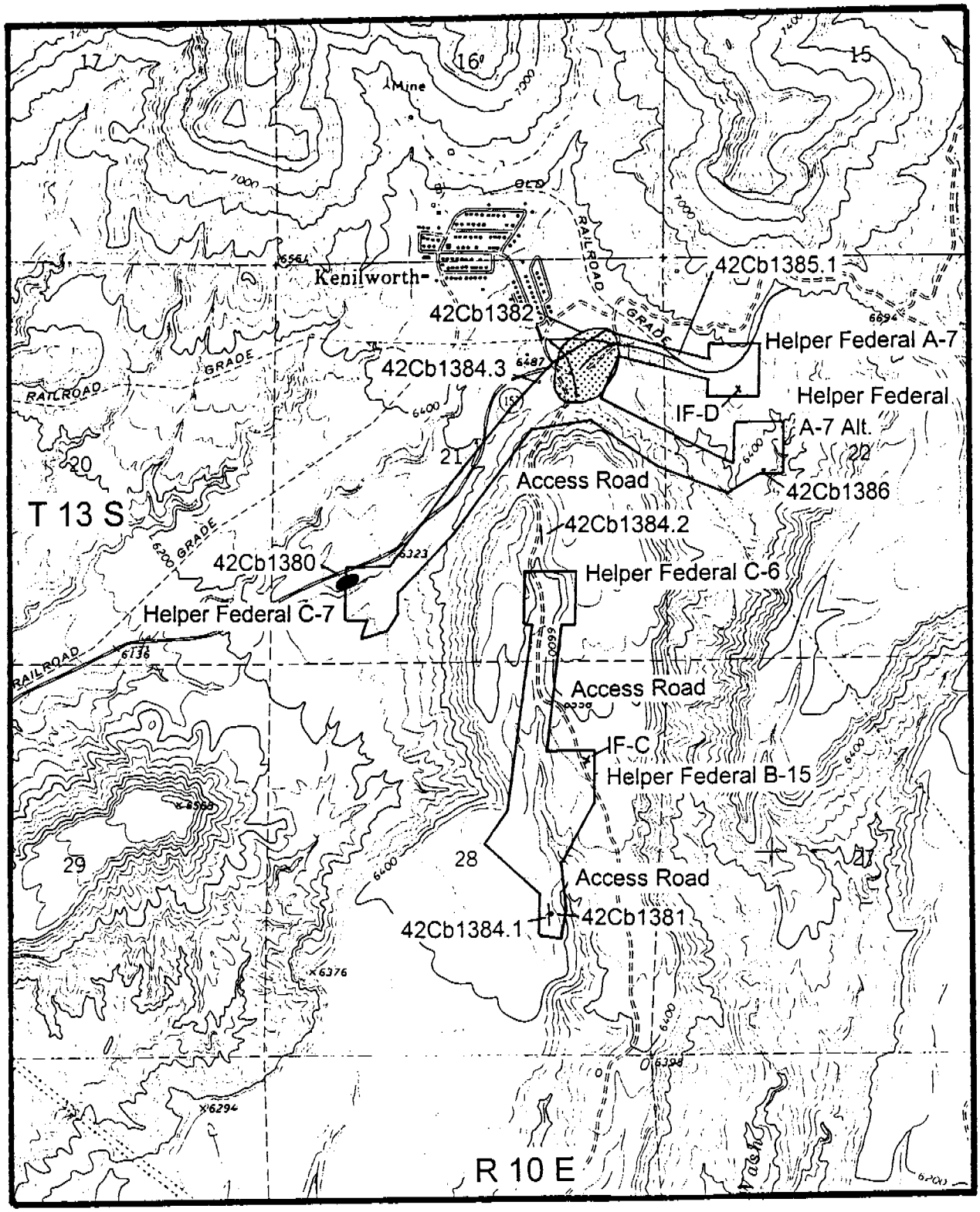

Figure 2. Inventory of Anadarko Petroleum's 2000 Drilling Program, Helper Field Project Area, Carbon County, UT. USGS 7.5 Helper, UT 1972. Scale 1:24000.

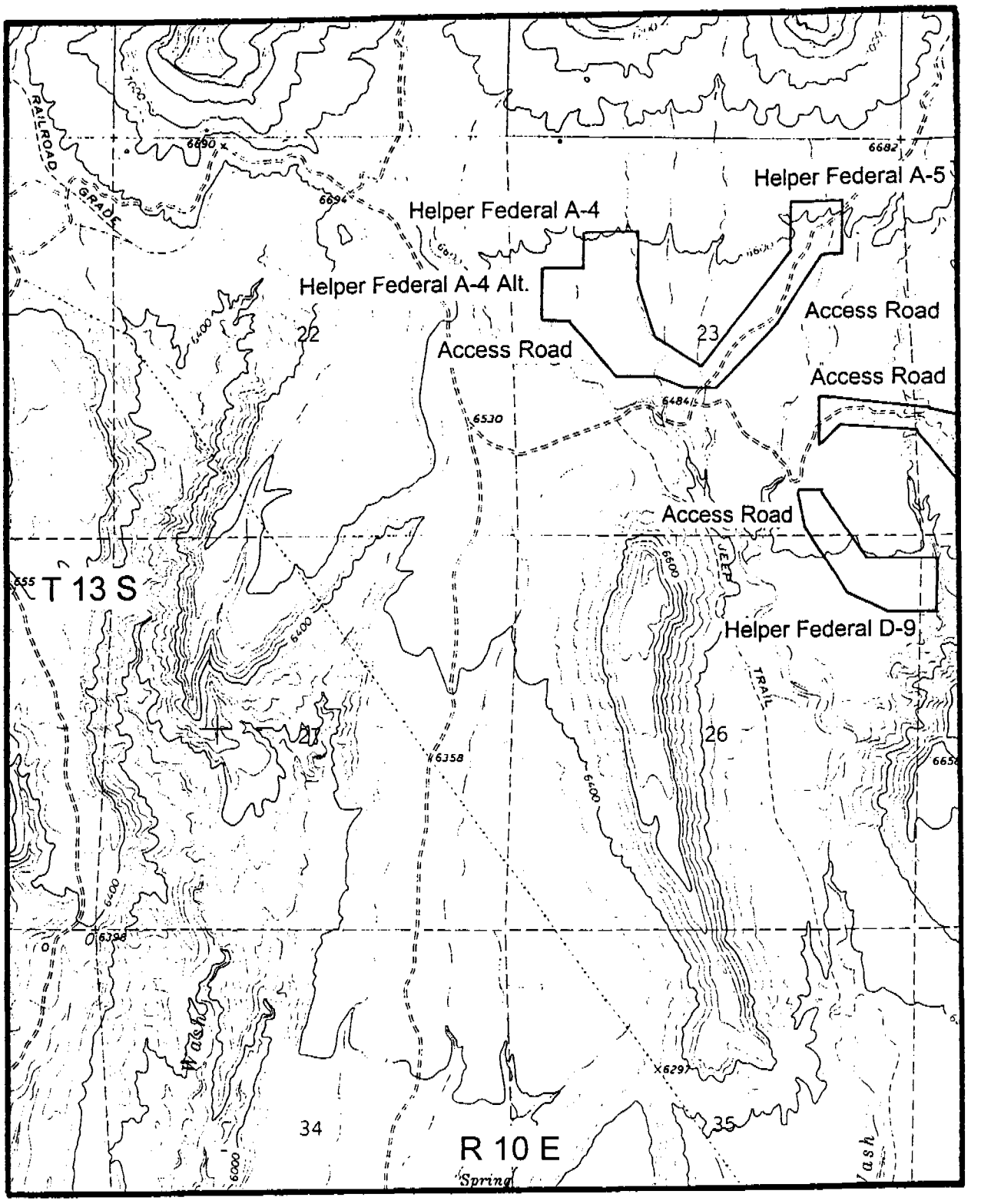

Figure 3. Inventory of Anadarko Petroleum's 2000 Drilling Program, Helper Field Project Area, Carbon County, UT. USGS 7.5 Helper, UT 1972. Scale 1:24000.

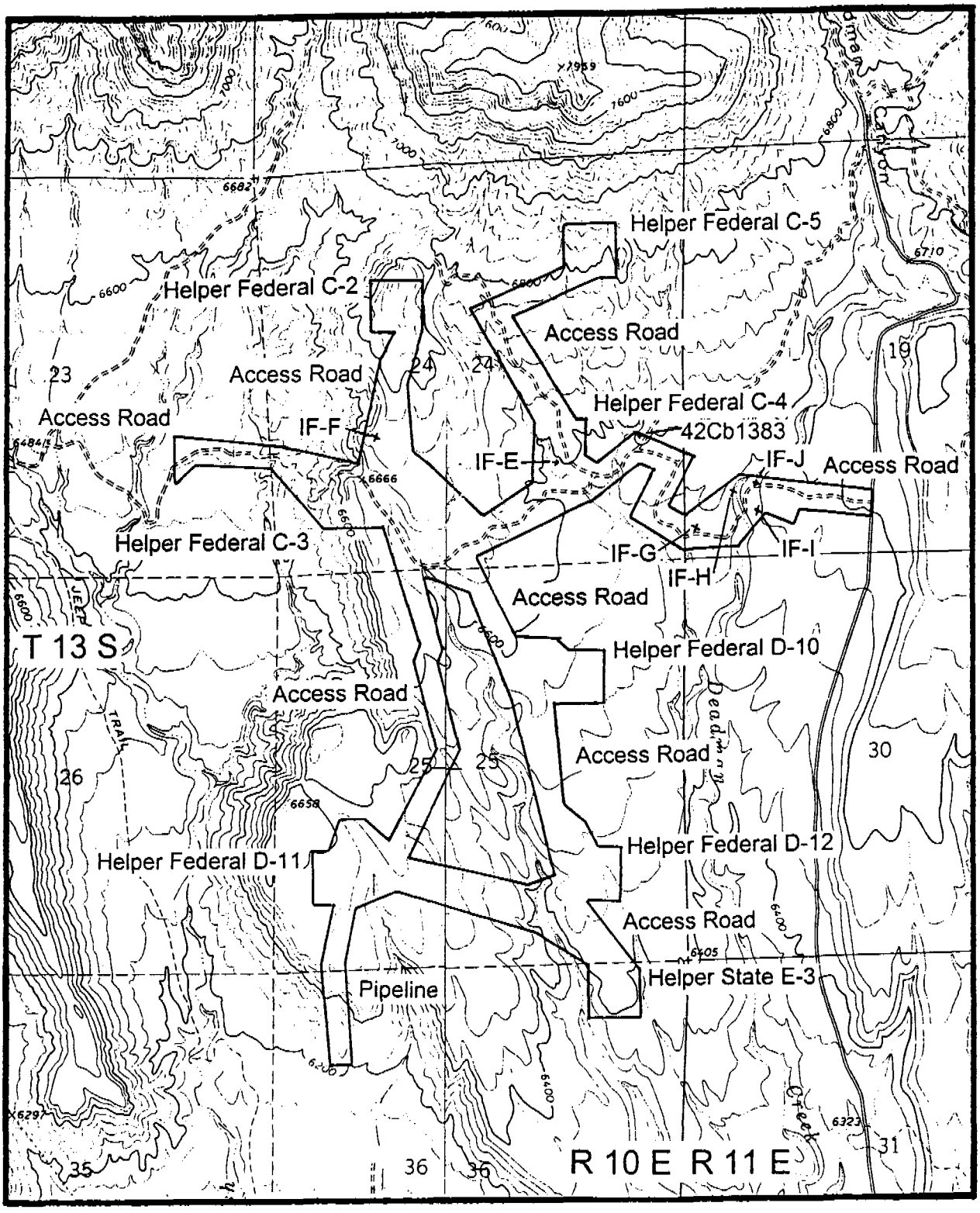

Figure 4. Inventory of Anadarko Petroleum's 2000 Drilling Program, Helper Field Project Area, Carbon County, UT. USGS 7.5 Helper, UT 1972 and Deadman Canyon, UT 1972. Scale 1:24000.

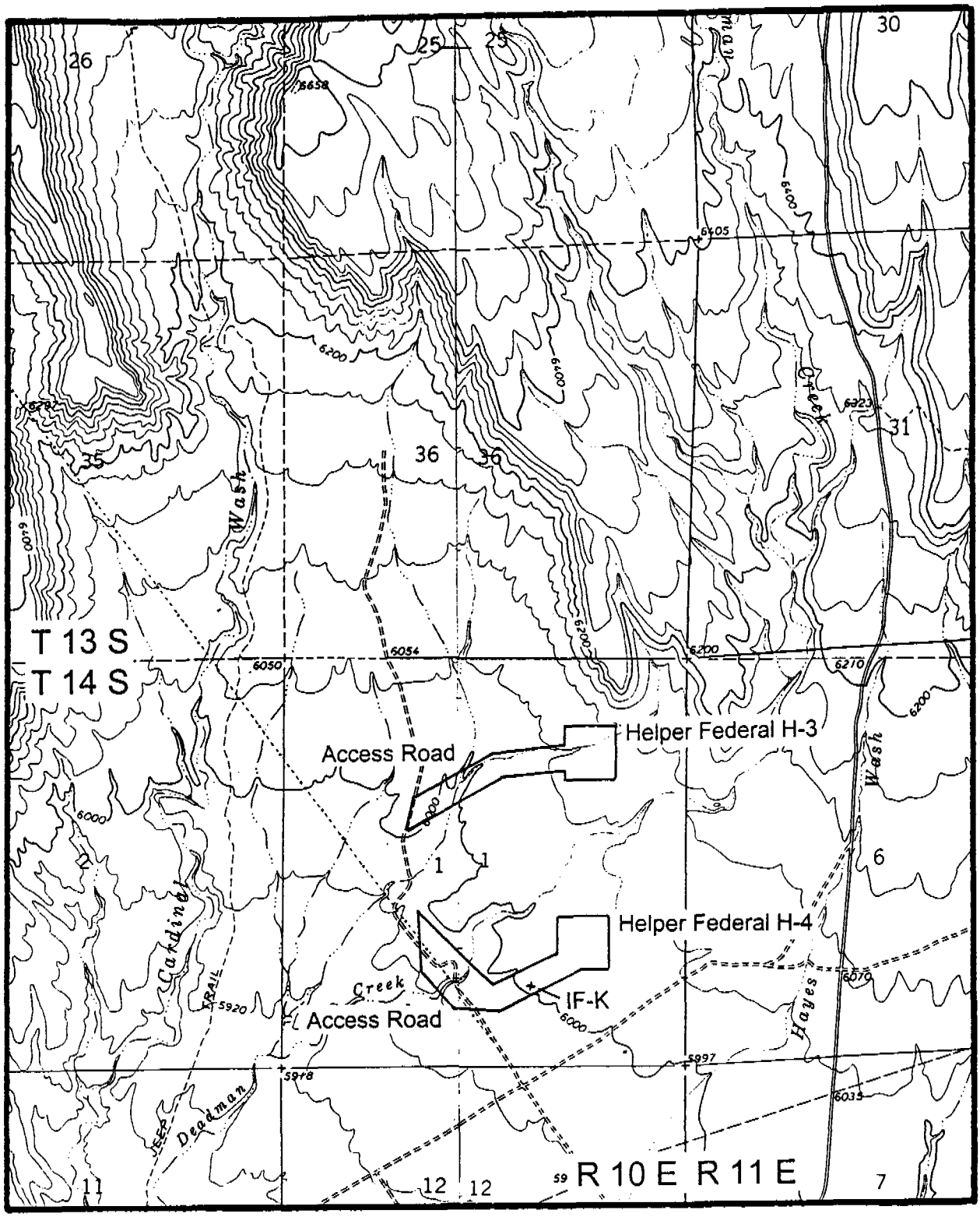

Figure 5. Inventory of Anadarko Petroleum's 2000 Drilling Program, Helper Field Project Area, Carbon County, UT. USGS 7.5 Helper, UT 1972 and Deadman Canyon, UT 1972. Scale 1:24000.

In general, the project area lies in the uplands and margins of the Price River Valley. Nearby settlements include Price, Helper, Spring Glen and Kenilworth. The study area lies within the Mancos Shale Lowlands and Book Cliff-Roan Plateau physiographic subdivisions of the Colorado Plateau (Stokes 1986). The topography of the area is characterized by north-south trending ridges and narrow canyons. Named features in the area include Warehouse Canyon, Meads Wash, Cardinal Wash, and Deadman Creek. The project area is composed mainly of the Cretaceous Mancos Shale formation. From oldest to youngest, the named units of the Mancos Shale are Tununk shale, Ferron sandstone, Blue Gate shale, Emery sandstone and Musuk shale. Older alluvial deposits cap the ridges at higher elevations near Kenilworth. Situated within the Upper Sonoran life zone, the uplands are characterized by a pinyon-juniper woodland, and the lower elevations are dominated by a shadscale and sagebrush community. Plant species observed in the area include pinyon, juniper, shadscale, sagebrush, blackbrush, mountain mahogany, Mormon tea, cliffrose, rabbitbrush, yucca, prickly pear cactus, winterfat and various grasses. The nearest permanent water source is the Price River, situated along the western margins of the project area. Various intermittent drainages and springs occur in the inventory area. Modern impacts to the study area include numerous roads, overhead power lines, buried pipelines, gas field development, erosion control features, and livestock grazing.

Cultural Overview

Prehistoric occupation of the study area spans the last 10,000-12,000 years. Cultural remains representing the Paleoindian, Archaic, Formative, Late Prehistoric and Historic stages have been identified in the study area. The earliest known archaeological remains in central Utah are attributable to the Paleoindian stage, which has been divided into three complexes: the Llano (ca. 11,500-11,000 B.P.), the Folsom (ca. 11,000-10,000 B.P.) and the Plano (ca. 10,500-7500 B.P.). To date, in Carbon and Emery counties, Paleoindian artifacts have been found as surface isolated finds or lithic scatters (Copeland and Fike 1988). Finds of extinct fauna are also reported from the region, including a variety of animals from the Silver Creek locality (Madsen et al. 1976), and a mammoth from Huntington Canyon (Gillette 1989).

The termination of the Pleistocene enacted major changes in the environment in Utah. Overall, the climate became warmer and drier, causing expansion of xeric vegetation zones, and a retreat of plant communities requiring cool and moist conditions at higher elevations. Large herd animals were less intensively exploited, replaced by a greater emphasis upon smaller, more dispersed fauna, in addition to plant resource processing. Archaic sites tend to cluster in areas which offer overview qualities, proximity to outcrops of tool quality stone, as well as nearness to major topographic features (Black and Metcalf 1986). The Archaic stage on the northern Colorado Plateau has been divided into several phases by Schroedl (1976). These include the Black Knoll phase, the Castle Valley phase, the Green River phase, and the Dirty Devil phase. The initial Black Knoll phase (7800-5300 B.C.) sites are characterized by Pinto projectile points and a contrast in subsistence between high and low elevations in which large artiodactyla are hunted in the uplands, while wild plant gathering is emphasized at lower elevations (Schroedl 1976:61-62). The Castle Valley phase (5300-3300 B.C.) is distinguished by a lower aboriginal population on the Colorado Plateau, possibly attributed to a two-stage Altithermal drought (Black and Metcalf 1986:10). During this time period a variety of projectile point styles were employed including Rocker, Hawken, and Sudden side-notched points, as well as Humboldt and McKean basal-notched points. Slab-lined fire pits and the increasing reliance upon grasses and forbs as foodstuffs are also aspects of this phase (Schroedl 1976:63-64). The Green River phase (3300-1500 B.C.) is marked by the occurrence of Gypsum and San Rafael Side-notched projectile point

types and split-twig figurines (Schroedl 1976). In this phase, hunting (especially for mountain sheep) becomes important, and amaranths (weedy plants) were a favored plant resource (Black and Metcalf 1986:11). The Dirty Devil phase (1500-300 B.C.) marks the transition into the Formative stage and is characterized by increased sedentism, as well as the introduction of corn and the bow and arrow. The most common projectile points are the Gypsum type (Schroedl 1976). Recent investigations along the Muddy Creek in Emery County have defined the Archaic to Formative stage transition as the Confluence phase dating to the period A.D. 540-630 (Greubel 1996). Aspects of this phase include the presence of a well-developed pattern of semi-sedentism, pithouse architecture, maize horticulture, large bell-shaped storage pits, and use of the bow and arrow (Greubel 1996:517).

The Formative stage is marked by reliance on domesticated plants, most notably corn; settlement in sedentary or semi-sedentary hamlets near areas optimum for horticulture; and the introduction of pottery, the earliest type in the project area being Emery Gray. The study area is within the cultural area of the San Rafael Fremont, as defined by Marwitt (1970). This variant is characterized by circular, stone-lined or earthen pit dwelling, and the clay-rimmed, flagstone paved firepit. One of the highest San Rafael Fremont site densities is in Castle Valley, especially along Ferron Creek and Muddy Creek tributaries (Black and Metcalf 1986).

Following the Fremont abandonment of the area, a largely nomadic hunting and gathering lifeway resumed. This occupation is attributed to the Numic-speaking peoples, a diverse group that was present throughout much of Utah upon the arrival of Europeans in the 18th century. Historic records indicate that the Ute were the primary occupants of eastern Utah and western Colorado since the late eighteenth century. Numic expansion in the archaeological records appears at approximately A.D. 1100 based on the distribution of chronometric dates associated with brown ware sherds (Reed 1994:188). The archaeological evidence of the Numic-speaking peoples consists primarily of lithic scatters, low density ceramic scatters, and the occasional wickiup. Most of the artifact scatters are in open settings, although a small number are in rockshelters. Diagnostic artifacts include Desert Side-notched, tri-notched, and Cottonwood Triangular projectile points, a fairly crude micaceous tempered pottery and distinctive rock art (Jennings 1978). On the Colorado Plateau eighteenth and nineteenth century Ute sites may also contain varying quantities of Euroamerican artifacts, such as sheet metal cone tinklers, tin cans, weaponry, and equestrian tack (Horn 1988).

In the summer of 1877, the Price River was explored by the Tidwell party who described the land as excellent, although they thought controlling the streams would be difficult (Watt 1997:22). Prior to this time Mormon settlement in southeastern Utah was averted because of the Black Hawk War (1865-1868). The first permanent settlers in the Price River Valley came from Salem, Utah Valley, arriving between 1877 and 1878. These individuals included Caleb B. Rhoades, James D. Gay, Frederick E. Grames, and Charles W. Grames who built dugouts and log cabins in the Price area (Horsely 1984:3). The first colonies in Carbon County were established as agrarian settlements with farming and ranching the primary economic pursuits. For the first few years the emphasis was on subsistence crops to feed the settlers and their domestic livestock.

Coal mining began in Utah in the mid-nineteenth century. Early settlers discovered coal in 1849 at Coalville, 40 miles east of Salt Lake City. In 1882, the Denver and Rio Grande Western (D&RGW) railroad extended its narrow gauge line into Utah. As the railroad was changing to

standard gauge rails, railroad officials decided a freight terminal and center for attaching "helper" engines was required in the area. Around 1887 the railroad built 7 residences, a bunkhouse, and a passenger station in what became Helper (Watt 1997:38). The first of the independent coal companies was organized in 1906: the Independent Coal and Coke Company. Prior to this time most of the coal development in Carbon County was monopolized by the D&RGW's Utah Fuel Company (Nielson and Merrill 1983:1-2). Mining operations by the Independent Coal and Coke Company commenced at Kenilworth in 1907, with coal being shipped over its railroad between the mining complex at Kenilworth and the town of Spring Glen (Kenilworth & Helper line). This railroad line was situated on a steep grade with sharp curves, and a special locomotive was required to pull the coal cars. In 1926, the Denver and Rio Grand Western built a new railroad line between Kenilworth and Helper, thus ending use of the Kenilworth & Helper line (Watt 1997:108-129). The coal mining industry experienced an economic downfall after World War I until 1940. In 1951, the Independent Coal & Coke Company purchased the holdings of the Utah Fuel Company, and thus acquired the Clear Creek mine and the Castle Gate mine and coal washing plant. In 1959-60, a tunnel was constructed from the Kenilworth mine to the Castle Gate mine and washer, thus eliminating the need to haul the Kenilworth coal around the mountain.

Settlement in the project area commenced around 1906 when the Independent Coal and Coke Company began operations at the Aberdeen Mine, followed by the Royal Blue and Kenilworth mines. By 1910 the company employed 485 men and the company-owned town of Kenilworth was developed on the flats south of the tipple with a population of 750 people (Nielson and Merrill 1983:16). In Kenilworth the house lots were relatively large with many landscaped lawns and small gardens. There was no private ownership of land, although individuals might be permitted to construct businesses or residences on company-owned land. Also the company dominated all economic activities either through company-operated stores and businesses or private enterprises that operated by permission of the coal company (Powell 1981:14). Mining companies in the county built stores where the miners could purchase food and clothing. Because of their lack of transportation, most families made most of their purchases at company stores and did not travel regularly to Helper or Price (Watt 1997:186). The main business in the town was the Kenilworth Mercantile Company store which in 1918 boasted 8,000 sq. feet of floor space and sold groceries, hardware, dry goods, furniture, clothing, hats, caps, crockery, powder and auto supplies, with an inventory of $45,000. The employees at the Kenilworth mines consisted of various immigrant heritages including Greeks, Italians, Japanese, Slovenians, and Germans. In 1920 Kenilworth had 316 foreign born, who had 242 children, totaling 558, or 67 % of the total towns population (Watt 1997:211). The mines at Kenilworth were closed in 1960, although the town is still occupied by individuals occupying privately-owned residences.

SURVEY AND TESTING METHODOLOGY

An intensive pedestrian survey was performed for this project which is considered 100% coverage. At each of the well locations, a 10-acre or larger square parcel was defined, laid out on the cardinal directions and centered on the well pads center stake. The interiors of the parcels were examined for cultural resources with a series of parallel sweeps, spaced at 10 meter (30 foot) intervals. The access and pipeline corridors were 300 feet or more wide, surveyed by walking zig-zag and parallel transects along the staked centerline, spaced no more than 10 meters (30 foot) apart. A total of 904 acres were inventoried which included 749 acres on BLM administered land, 37 acres on State of Utah, TLA land, and 118 acres on private property.

Cultural resources were recorded as either an archaeological site or isolated find of artifact. Archaeological sites were defined as spatially definable areas with features and/or ten or more artifacts. Sites were documented by the archaeologists walking transects across the site, spaced no more than 3 meters apart, and marking the locations of cultural materials with pinflags. This procedure allowed clear definition of site boundaries and artifact concentrations. At the completion of the surface inspection, a transit was employed to point-provenance diagnostic artifacts and other relevant features in reference to the site datum. Archaeological sites were plotted on a 7.5' USGS quadrangle, photographed, with site data entered on an Intermountain Antiquities Computer System (IMACS, 1990 version) inventory form (Appendix A). Isolated finds are defined as individual artifacts or light scatter of items, which lack sufficient material culture to warrant IMACS forms, or to derive interpretation of human behavior in a cultural and temporal context. All isolated artifacts were plotted on a 7.5' USGS map and described in this report.

During the inventory it was determined that Site 42Cb1382 warranted limited testing to obtain data on which to ascertain the potential for subsurface cultural remains along the access road for proposed Helper Federal A-7. The site was investigated with one 1 by 1 meter test unit (Test Unit 1) placed within Concentration D, in an area which exhibited limited subsurface disturbance (e.g., vandal holes). A subdatum consisting of a permanent capped rebar was placed at the southwest corner of the unit and tied into Datum D. The excavation proceeded in 10 cm arbitrary levels, with fill screened through an 1/4-inch hardware cloth. Levels were numbered sequentially from the modern ground surface. All units were cleared to a depth sufficient to determine that culturally sterile deposits had been contacted. Diagnostic artifacts found in-situ were point plotted and bagged separately. All artifacts from a specific provenience were segregated and bagged by class. On soil profiles, soil texture was identified and soil colors were recorded with reference to a Munsell Soil Color chart. Upon completion of excavation, the units were photographed and profiles of one or more walls were drawn. The test units were then backfilled and the ground was smoothed to approximate the original surface. The recovered artifacts will be curated at the College of Eastern Utah Prehistoric Museum in Price, Utah.

INVENTORY RESULTS

The inventory of Anadarko Petroleum's 2000 Drilling Program resulted in the documentation of seven newly-found archaeological sites (42Cb1380, 4Cb1381, 42Cb1382, 42Cb1383, 42Cb1384, 42Cb1385, and 42Cb1386), a segment of a previously documented site (42Cb1355.2), and 11 isolated finds of artifacts (IF-A through IF-K). No paleontological resources were found during the survey.

Smithsonian Site No.: 42Cb1355.2
Temporary Site No.: None
Legal Description: T 13S, R 10E, Sec. 30
Well Location: Helper Federal E-7
Jurisdiction: Bureau of Land Management
NRHP Eligibility: Eligible
Description: This is a segment of the Kenilworth & Helper Railroad that was previously recorded by Environmental Industrial Services (Fergusson 1999). This historic railroad line was first used by the Independent Coal and Coke Company in 1907 to ship coal from the mines at Kenilworth to the Rio Grande Western railroad line at Spring Glen. In 1926 the Denver and Rio Grande Western railroad line was built from Kenilworth to Helper, thus ending the use of the Kenilworth & Helper line between Kenilworth and Spring Glen with its steep grades and sharp curves.

The access road to Helper Federal E-7 crosses the railroad bed of the historic Kenilworth & Helper rail line. This segment measures approximately 1500 feet in length. The section of the railroad was distinguished primarily by coal residue and two railroad ties are found on the north side of the rail bed. One tie is 8' ½" x 9 " x 6", and the other is 5'6" x 9" x 6". This railroad grade segment fails to retain structural integrity and the rail bed is impacted by a graded road and is used as an utility corridor for power, water, and sewer lines.

Smithsonian Site No.: 42Cb1380
Temporary Site No.: MOAC 554-1
Legal Description: T 13S, R 10E, S. 21
Well Location: Helper Federal C-7
Jurisdiction: Private Land
NRHP Eligibility: Eligible
Description: This is a habitation site situated on a low bench adjacent to SR-157. The site measures approximately 80 by 58 meters and occurs along the interface of a sagebrush and pinyon-juniper woodland. The earliest occupation of the site appears to date to the early 20th century and may be related to the ranching or coal mining pursuits in the area. In particular, coal mining in the canyon near Kenilworth commenced around 1906 and workers established camps in the area. Structural features at the site, which probably date to the initial use of the locality, include a single-room dugout (Feature 1), and two small probable collapsed structures (Features 2 and 3). Various rock piles also occur throughout the site probably representing clearing or stockpiling of the local cobbles. Diagnostic items which may represent the earliest use of the site include an aqua alcohol container manufactured by the Adolphus Busch Glass Manufacturing Co. (1904 to 1927), and a purple container made by the A. H. Heisey Glass Co. (ca. 1900-1917), in addition to hole-in-top cans and other metal objects. Five concentrations of artifacts were documented across the site, some of which represent later barrel dumping episodes which are common along SR-157.

Smithsonian Site No.: 42Cb1381
Temporary Site No.: MOAC-2
Legal Description: T 13S, R 10E, S. 28
Well Location: Helper Federal B-15
Jurisdiction: BLM Land
NRHP Eligibility: Not eligible
Description: This site represents an early (1900-1920) temporary occupation and a later out-of-period trash dump. The site is located on a prominent ridge along the old road which linked Price to Kenilworth. It lies on residual deposition within a chained pinyon-juniper woodland. The earliest occupation consists of a scatter of less than 30 artifacts including 16 aqua and purple body container fragments and an aqua round bottle base embossed with "C B K". Thirteen hole-in-cap cans were found exhibiting soldered seams and matchstick filler holes (post 1900). Approximately 10 meters to the east of this scatter is a pile of out-of-period debris: milled lumber, cinder block fragments, wire nails, a hacksaw blade, several sanitary tin cans, a paint can, and a canning jar fragment. Also observed on the site were remnants of a telegraph or telephone line (42Cb1384), consisting of ca. 100 feet of tangled wire in a dead tree (probably a result of the chaining), and a Hemingray 16-0.4 clear glass insulator on a wooden dowel. The site may be related to ranching or perhaps road construction/communication activities.

Smithsonian Site No.: 42Cb1382
Temporary Site No.: MOAC 554-3
Legal Description: T 13S, R 10E, S. 21
Well Location: Helper Federal A-7
Jurisdiction: BLM and State of Utah (TLA)
NRHP Eligibility: Eligible
Description: Eight more or less discrete trash dumps (Concentrations A through H) were documented within a 32987 sq. meter area. The cultural materials are described according to the concentrations. The older trash dumps display numerous vandal holes some of which have been screened. A large portion of the trash was transported to the area in barrels and dumped along the various two-track roads. Based on datable artifacts the earliest trash clusters (Concentration C, D, F and G) are associated with the old road which linked Kenilworth to Price. Datable artifacts in these dumps range temporally from around 1890 to 1930, although the earliest artifacts pre-1900 appear to be curated items (ceramic dishes). The most recent dumps are Concentrations A, B and H with most artifacts dating between 1930 and 1960. In particular, Concentration H overlies the abandoned D&RGW Kenilworth Branch railroad (circa 1927-1961). All classes of domestic trash were represented at this site including: hole-in-top and sanitary tin cans (milk, olive oil, meat, fish, juice, fruit, vegetables, tobacco, coffee, cocoa); ceramics (earthenware, semi-porcelain, crockery); glass (soda, alcohol, medicine, canning, condiment, cleaning, vessels); faunal remains (cow, elk, deer, goat, sheep, rabbit and bird) and miscellaneous items (wash tubs, stove parts, leather shoes, cow bell, baby stroller, thermos, bed pan, kettles, milled lumber, bricks, barrels, clock parts, sewer pipe). Similar ceramic and decorative glass items were observed across the landfill suggesting that the vessels may have been purchased at the same company-owned store (e.g., Kenilworth Mercantile Company). This landfill is still being used by the locals for discarding large and small items.

Subsurface testing was conducted at the site to obtain data on which to ascertain the potential for subsurface stratified cultural materials. One 1 by 1 meter test unit (Test Unit 1) was placed within Concentration D, in an area which exhibited limited subsurface disturbance (e.g., vandal holes). Test Unit 1 was excavated to 40 cm bmgs and exhibited three stratigraphic units with cultural deposits a result of numerous barrel dumps. A variety of cultural materials were recovered from the unit. Artifact classes include tin cans (mainly sanitary for milk, tobacco, coffee, fruit, vegetables, paint), ceramics (earthenware, semi-porcelain, and crockery), glass (soda and alcohol bottles, medicine bottles and canning jars), and faunal remains (elk, deer, rabbit, goat, cow, and bird). Other items include LP record album pieces, wood stove lid, leather shoes, toy gun, nail polish, shell buttons, pencil sharpener, mouse trap, wire nails, peach pit, and linoleum. Artifacts with temporal information indicate items were discarded primarily between 1915 and 1930. The vertical distribution of the historic items failed to exhibit any distinct temporal stratification.

Smithsonian Site No.: 42Cb1383
Temporary Site No.: MOAC 554-4
Legal Description: T 13S, R 10E, Sec. 24 SE/NE/SE
Well Location: Helper Federal C-4
Jurisdiction: BLM Land
NRHP Eligibility: Not Eligible
Description: This is a lithic scatter of unknown temporal affiliation situated along a secondary drainage of Deadman Canyon. The site lies in a pinyon-juniper woodland on rocky residual soil, extending 30 by 35 meters. The majority of the cultural materials are in two concentrations separated by about 15 meters. Cluster 1 occurs in the southern portion of the site and contains two used flakes (Tools 2 and 3) and about 30 mainly secondary flakes manufactured from dark gray banded obsidian and light tan opaque chert. Cluster 2 is situated in the west-central area of the site and contains approximately 9 secondary flakes made from opaque light pink and light tan chert. Four isolated flakes are located downslope from Cluster 2. Three light tan chert used secondary flakes were documented indicating expedient cutting or scraping tasks. Seven small burned mammal fragments were observed in Cluster 2, although it is uncertain if they are cultural. The site lacked evidence of cultural features.

Smithsonian Site No.: 42Cb1384
Temporary Site No.: None
Legal Description: T 13S, R 10E, Section 28 (Segment 1)
T 13S, R 10E, Section 21 (Segment 2)
T 13S, R 10E, Section 21 (Segment 3)
Well Location: Helper Federal B-15 (Segment 1), Helper Federal C-6 (Segment 2) and Helper Federal A-7 (Segment 3)
Jurisdiction: Private Land, BLM Land
NRHP Eligibility: Not Eligible
Description: This is a dismantled communication system which appears to have been built between the town of Price and the mining district of Kenilworth. Evidence indicates that it was erected primarily along the old road, a distance of about 5 miles. The three segments documented during this project represent remnants of the line and encompass a linear area of 1.3 miles. Segment 1 consists of three 6 inch diameter upright poles (355 degree axis), spaced 160 feet apart. The poles are sawed off about 12 inches above the ground, and are associated with

a tangled section of wire and glass insulators. Segment 2 consists of two cut-off poles (6 inch diameter), spaced 160 feet apart, with an associated aqua glass insulator. Segment 3 represents a single pole, 8 inches in diameter and 25 feet high. A cross member (2 x 4 inches x 3 ft) with wire is attached to the pole about 16 feet above the ground.

Smithsonian Site No.: 42Cb1385
Temporary Site No.: MOAC 554-9
Legal Description: T 13S, R 10E, Section 21 (Segment 1)
T 13S, R 10E, Section 19 (Segment 2)
Well Location: Helper Federal A-7 (Segment 1), Helper Federal E-8 (Segment 2)
Jurisdiction: Private and BLM Land
NRHP Eligibility: Eligible
Description: This site consists of two segments of the D&RGW Kenilworth Branch abandoned railroad grade which dates from 1927 to about 1961. According to historical record, the Independent Coal and Coke Company began mining operations at Kenilworth in 1906, and shipped its first coal in 1907 on a Rio Grande Western railroad line between Kenilworth and Spring Glen (Kenilworth & Helper line). This line remained in operation until 1926 when the Denver and Rio Grande Western replaced it with a new railroad north of Helper, thereby eliminating the steep grades and sharp curves (Watt 1997:113). This railroad was abandoned by 1961 when the Kenilworth and Castle Gate mines were connected by an underground tunnel. At that time, coal from Kenilworth was transported via the tunnel to the washer and preparation plant at Castle Gate (Watt 1997:125). Segment 1 is located just east of Kenilworth and includes two spur tracks for storing railroad cars, a section of track to the tipple, and the end-of-line track. The two spurs are situated in the historic town dump (42Cb1382). Four culverts are located under the railroad line, three under Spur 2 and the fourth under the end-of-line track. Segment 2 is a section of the railroad grade that intersects a two-track road. At the intersection of the railroad grade and a two-track road are four in-situ rail ties and a section of the north rail.

Smithsonian Site No.: 42Cb1386
Temporary Site No.: MOAC 554-10
Legal Description: T 13S, R 10E, Sec. 22
Well Location: Helper Federal A-7 Alternate
Jurisdiction: BLM Land
NRHP Eligibility: Not Eligible
Description: The site is a historic temporary camp located within a pinyon-juniper woodland along a ridge above the valley. Occupation of the site is related to ranching or mining pursuits. Documented artifacts include approximately fifty brown, aqua and clear glass fragments, six ceramic sherds, nine tin cans (most of which were hole-in-the-top), some harmonica reeds, a rubber galoshes buckle, a tent stake, and a juniper post. In the center of the site is an in-situ stake associated with a level area which facilitated a tent. Based on the diagnostic artifacts, it dates between 1892 and 1954, although most of the items appear to be concentrated from around the 1900 to 1920s.

Isolated Finds of Artifacts

Isolated Find A (IF-A) is located in the SW/NE/NE of Sec. 29, T 13S, R 10E (UTM 515680E-4391120N), Figure 1. It consists of two purple glass bottle body fragments.

Isolated Find B (IF-B) is situated in the SE/SE/SE of Sec. 20, T 13S, R 10E (UTM 515720E-4391380N), Figure 1. It consists of three white semitranslucent chert secondary flakes, and one white with yellow banding semitranslucent chert secondary flake.

Isolated Find C (IF-C) is located in the SW/NE/NE of Sec. 28, T 13S, R 10E (UTM 517160E-4390940N), Figure 2. It consists of a green round bottle based embossed with "SAN JOSE CAL" manufactured by the Owens Illinois Glass Co. (after 1954) and a light green round bottle base with the Adolphus Busch Co. (AB) trademark (1904-1907).

Isolated Find D (IF-D) is situated in the NE/SW/NW of Sec. 22 T 13S, R 10E (UTM 517720E-4392420N), Figure 2. It is a variegated pink-red-white opaque chert knife, measuring 7 x 2.8 x 0.6 cm.

Isolated Find E (IF-E) is situated in the NE/SW/SE of Sec. 24, T 13S, R 10E (UTM 521900E-4391820N), Figure 4. It consists of four gray opaque chert secondary flakes and two dark gray mottled opaque chert decortication flakes.

Isolated Find F (IF-F) is situated in the SW/NE/SW of Sec. 24, T 13S, R 10E (UTM 521160E-4391900N), Figure 4. It consists of a flat-sided hinge lid tobacco can (post 1892).

Isolated Find G (IF-G) is situated in the SW/SW/SW of Sec. 19, T 13S, R 11E (UTM 522460E-4391540N), Figure 4. This is a cut-around hole-in-cap tin can (4 ½" x 3 3/8" x 11/2").

Isolated Find H (IF-H) is situated in the NW/SW/SW of Sec. 19, T 13S, R 11E (UTM 522620E-4391680N), Figure 4. It is a red-gray mottled opaque chert complete used secondary flake. It exhibits use on the right lateral edge.

Isolated Find I (IF-I) is situated in the SE/SW/SW of Sec. 19, T 13S, R 11E (UTM 522720E-4391600N), Figure 4. It consists of a white opaque chert large stem projectile point and a white opaque chert end scraper. The projectile point measures 3 [IC] x 3.5 x 0.3 cm with a broken base and tip. The end scraper measures 3.5 [IC] x 2.5 x 0.7 cm and displays a broken distal end.

Isolated Find J (IF-J) is situated in the NE/SW/SW of Sec. 19, T 13S, R 11E (UTM 522720E-4391700N), Figure 4. It is a brown-gray-white opaque chert Stage IV biface exhibiting a bend fracture. It measures 3.5 x 1.8 x 0.5 cm.

Isolated Find K (IF-K) is situated in the NW/Sw/SE of Sec. 1, T 13S, R 10E (UTM 521780E-4386840N), Figure 5. It is a yellow-brown opaque mottled chert decortication flake, measuring 6 x 4.2 x 0.9 cm.

NATIONAL REGISTER OF HISTORIC PLACES EVALUATION

The National Register Criteria for Evaluation of Significance and procedures for nominating cultural resources to the National Register of Historic Places (NRHP) are outlined in 36 CFR 60.4 as follows:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, material, workmanship, feeling, and association, and that they:
>
> a)...are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b)...are associated with the lives of persons significant to our past; or
>
> c)...embody the distinctive characteristics of a type, period, or method of construction; or that represents the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d)...have yielded or may be likely to yield information important in prehistory or history.

The cultural resource inventories resulted in the documentation of seven newly-found archaeological sites (42Cb1380, 4Cb1381, 42Cb1382, 42Cb1383, 42Cb1384, 42Cb1385, and 42Cb1386), one previously documented site (42Cb1355), and 11 isolated finds of artifacts (IF-A through IF-K). Archaeological sites which are evaluated as eligible to the NRHP include four historic sites (42Cb1380, 42Cb1382, 42Cb1385, and 42Cb1355.2). Site 42Cb1380 is a small habitation related to turn-of-the-century coal or ranching endeavors. The site contains structural features as well as potential for additional cultural materials, and is considered eligible to the NRHP under Criterion (d). Site 42Cb1382 is a historic garbage dump associated with the mining town of Kenilworth. The site is determined eligible to the NRHP under Criterion (d), since it exhibits some temporal horizontal and vertical stratification based on surface examination and testing. This garbage dump provides an unique opportunity to study the material remains from a mining town occupied by a diverse ethnic population and a particular economic group. Two segments (42Cb1385.1 and 42Cb1385.2) of the D&RGW Kenilworth Branch railroad grade were documented. These lineal features are considered eligible to the NRHP under Criterion (a), since they are significant for their association with events and broad patterns important to local history. The railroad played a significant role in the social and economic history of the project area, and in particular with mining development. The third eligible historic site (42Cb1355.2) is a segment of the historic Kenilworth & Helper railroad line. This previously-recorded site is evaluated as eligible to the NRHP under Criterion (a), because of its significance to area history, particularly the history of Kenilworth and the development of mining in the area (Talbot 1983).

Cultural resources evaluated as not eligible to the NRHP consist of three historic sites (42Cb1381, 42Cb1384, and 42Cb1386) and one prehistoric site (42Cb1383). The historic sites includes two early 20th century temporary camps, a dismantled communication system, and a trash scatter. These sites lack additional research potential because they have minimal potential for buried cultural remains or fail to possess physical integrity. Site 42Cb1383 is a surficial lithic scatter lacking diagnostic artifacts and cultural features. It is considered not eligible to the NRHP due to its lack of additional research potential. The isolated finds of artifacts are considered not eligible for NRHP consideration due to their lack of research potential.

MANAGEMENT RECOMMENDATION

The cultural resource inventory of Anadarko Petroleum's 2000 Helper Field Drilling Program resulted in the documentation of four archaeological sites (42Cb1380, 42Cb1382, 42Cb1385.1, 42Cb1385.2 and 42Cb1355.2) which are evaluated as eligible to the NRHP. The following recommendations are proposed for these historic properties:

1. 42Cb1380 will be avoided since it occurs outside of the proposed well location Helper Federal C-7 development zone. Hence a determination of "no historic properties affected" is recommended.

2. At 42Cb1382 the documentation and testing indicated that the artifact information was redundant, although the site yielded some subsurface deposits. It is recommended that the proposed access road into Helper Federal A-7 (Alternate) be monitored during construction in order to verify the nature of the cultural deposits. If this stipulation is adhered to than a recommendation of "no historic properties adversely affected" is proposed.

3. At 42Cb1385.1 the proposed road into Helper Federal A-7 (Alternate) will cross the railroad grade although this undertaking will not effect the characteristics which constitutes this historic property eligible. Hence a determination of "no historic properties affected" is recommended.

4. At 42Cb1385.2 the proposed access road into Helper Federal E-8 will cross the railroad grade although this undertaking will not effect the characteristics which makes this historic property eligible. Hence a determination of "no historic properties affected" is proposed.

5. At 42Cb1355.2 the proposed access road into Helper Federal E-7 will cross the railroad grade although this undertaking will not effect the characteristics which makes this historic property eligible. Hence a determination of "no historic properties affected" is proposed.

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WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 04/17/2001

API NO. ASSIGNED: 43-007-30508

WELL NAME: HELPER FED E-7

OPERATOR: ANADARKO PETROLEUM CORP (N0035)

CONTACT: JENNIFER BERLIN PHONE NUMBER: 281-874-3441

PROPOSED LOCATION:

SESE 19 130S 100E

SURFACE: 0883 FSL 0587 FEL

BOTTOM: 0883 FSL 0587 FEL

CARBON

UNDESIGNATED (2)

LEASE TYPE: 1 - Federal

LEASE NUMBER: UTU-71675

SURFACE OWNER: 1 - Federal

PROPOSED FORMATION: FRSD

INSPECT LOCATN BY: / /

Tech Review	Initials	Date
Engineering		
Geology		
Surface		

RECEIVED AND/OR REVIEWED:

✓ Plat

✓ Bond: Fed[1] Ind[] Sta[] Fee[]
(No. 15357)

N Potash (Y/N)

N Oil Shale (Y/N) *190-5 (B) or 190-3

✓ Water Permit
(No. PRWID)

N RDCC Review (Y/N)
(Date:)

N/A Fee Surf Agreement (Y/N)

LOCATION AND SITING:

___ R649-2-3. Unit

___ R649-3-2. General
Siting: 460 From Qtr/Qtr & 920' Between Wells

___ R649-3-3. Exception

✓ Drilling Unit
Board Cause No: 241-4 (160')
Eff Date: 9-26-2000
Siting: 460' fr. Drl. Unit Boundary & 920' between wells.

___ R649-3-11. Directional Drill

COMMENTS:

STIPULATIONS: (1) FEDERAL APPROVAL

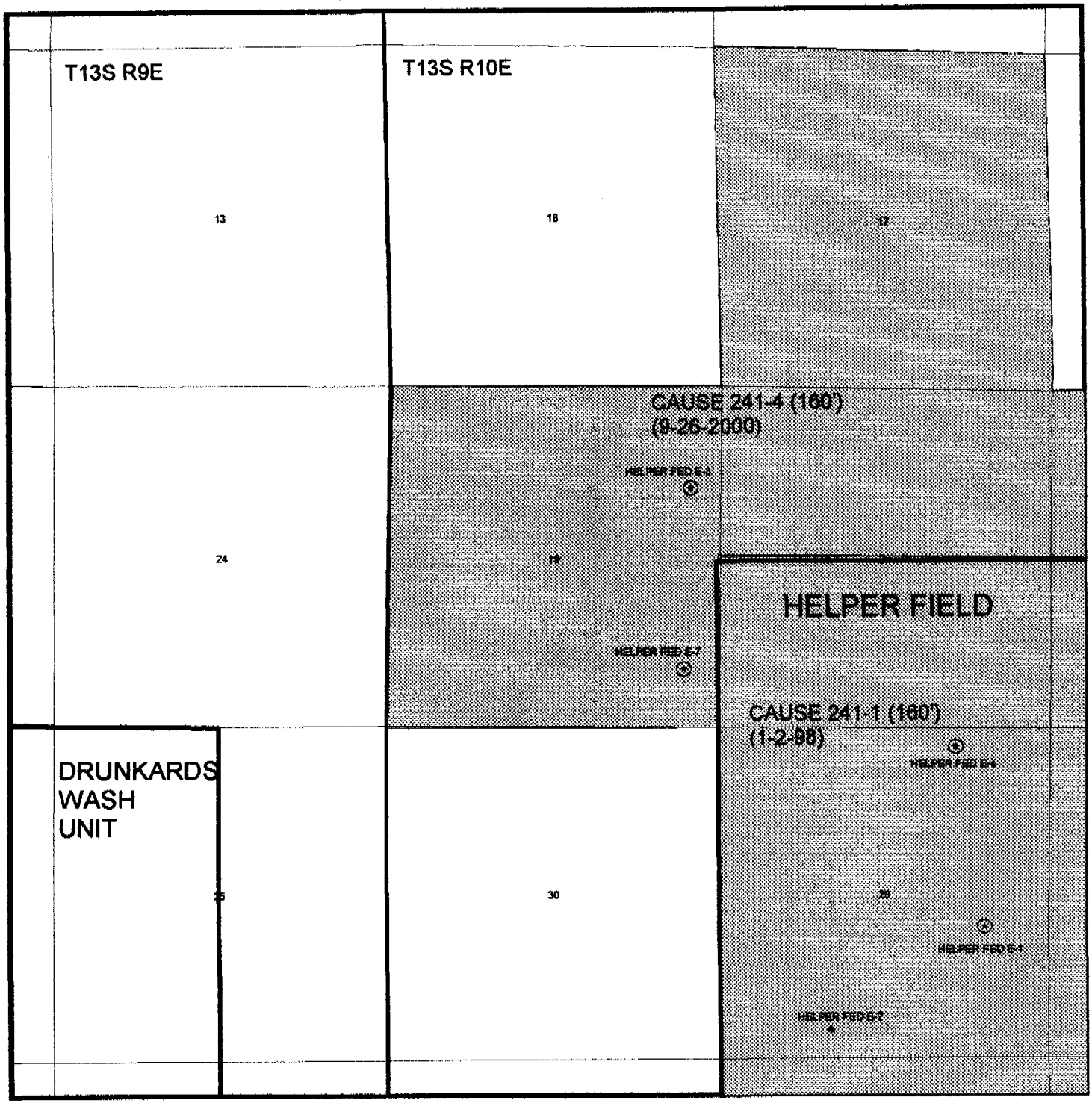
Utah Oil Gas and Mining

OPERATOR: ANADARKO PETROLEUM (N0035)

SEC. 19, T13S, R10E

FIELD: UNDESIGNATED (002)

COUNTY: CARBON CAUSE: 241-4 / 160'



PREPARED BY: LCORDOVA
DATE: 17-APRIL-2001

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

April 18, 2001

Anadarko Petroleum Corporation
17001 Northchase Dr, Room 229
Houston, TX 77060

Re: Helper Federal E-7 Well, 883' FSL, 587' FEL, SE SE, Sec. 19, T. 13 South, R. 10 East, Carbon County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-007-30508.

Sincerely,

John R. Baza
Associate Director

er
Enclosures
cc: Carbon County Assessor
Bureau of Land Management, Moab District Office

Operator: Anadarko Petroleum Corporation

Well Name & Number Helper Federal E-7

API Number: 43-007-30508

Lease: U 71675

Location: SE SE **Sec.** 19 **T.** 13 South **R.** 10 East

Conditions of Approval

1. General

   Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

2. Notification Requirements

   Notify the Division within 24 hours of spudding the well.

   - Contact Carol Daniels at (801) 538-5284.

   Notify the Division prior to commencing operations to plug and abandon the well.

   - Contact Dan Jarvis at (801) 538-5338

3. Reporting Requirements

   All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. State approval of this well does not supersede the required federal approval, which must be obtained prior to drilling.

Form 3160- 5
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004- 0135
Expires: November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

5. Lease Serial No.
U-71675

6. If Indian, Allottee, or Tribe Name
N/A

7. If Unit or CA. Agreement Designation
N/A

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

CONFIDENTIAL

8. Well Name and No.
Helper Federal E-7

2. Name of Operator
Anadarko Petroleum Corporation

9. API Well No.
43-007-30508

3a. Address
P.O.Box 1330, Houston, TX 77251-1330

3b. Phone No. *(include area code)*
(832) 636-3315

10. Field and Pool, or Exploratory Area
Helper

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
883' FSL & 587' FEL in Sec 19-T13S-R10E

11. County or Parish, State
Carbon County, Utah

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/ Resume)	☐ Water Shut-off
	☐ Altering Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☒ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other **Reinstate APD**
	☐ Change Plans	☐ Plug and abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of pertinent markers and sands. Attach the Bond under which the work will performed or provide the Bond No. on file with the BLM/ BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

This sundry is being filed to request that the expired APD be reinstated on the above referenced well. Should any additional information be required, please contact Carla Ghazizadeh @ 832-636-3315.

RECEIVED
JUL 0 1 2002
DIVISION OF
OIL, GAS AND MINING

COPY SENT TO OPERATOR
Date: 7-8-02
Initials: CHD

Approved by the
Utah Division of
Oil, Gas and Mining
Date: 07-03-02
By:

14. I hereby certify that the foregoing is true and correct.

Name *(Printed/ Typed)*	Title
Carla Ghazizadeh	**Enviromental & Regulatory Analyst**
Signature: Carla Ghazizadeh	Date: 6/ 28/ 2

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Title	Date
Conditions of approval, if any are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C. Section 1001 AND Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitiousor fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on reverse)

Form 3160-3
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0136
Expires: November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: U-71675

1a. Type of Work: [X] DRILL [ ] REENTER

6. If Indian, Allotee or Tribe Name: N/A

1b. Type of Well: [ ] Oil Well [ ] Gas Well [X] Other CBM [X] Single Zone [ ] Multiple Zone

7. Unit or CA Agreement Name and No.: N/A

2. Name of Operator: Anadarko Petroleum Corporation

8. Lease Name and Well No.: Helper Federal E-7

3a. Address: 17001 Northchase Dr. Rm229, Houston, Texas 77060

3b. Phone No. (include area code): 281-874-3441

9. API Well No.: 43-007-30508

4. Location of Well (*Report location clearly and in accordance with any State equirements*)*

At surface: 883'FSL & 587'FEL

At proposed prod. zone: Same

10. Field and Pool, or Exploratory: Helper Field

11. Sec., T., R., M., or Blk. and Survey or Area: Sec.19-T13S-R10E

14. Distance in miles and direction from nearest town or post office*: 11.5 miles North of Price

12. County or Parish: Carbon

13. State: Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
587'	1040	160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
5280'	3940'	153571
21. Elevations (Show whether DF, KDB, RT, GL, etc.	**22. Approximate date work will start***	**23. Estimated duration**
6137' GL	5/2001	5

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name (*Printed/Typed*)	Date
	Jennifer Berlin	4/17/2001
Title		
Environmental Regulatory Analyst		
Approved by (Signautre)	**Name (*Printed/Typed*)**	**Date**
/S/ WILLIAM C. STRINGER		AUG - 7 2002
Title	**Office**	
Assistant Field Manager, Division of Resources		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowlingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on Reverse)

CONDITIONS OF APPROVAL ATTACHED

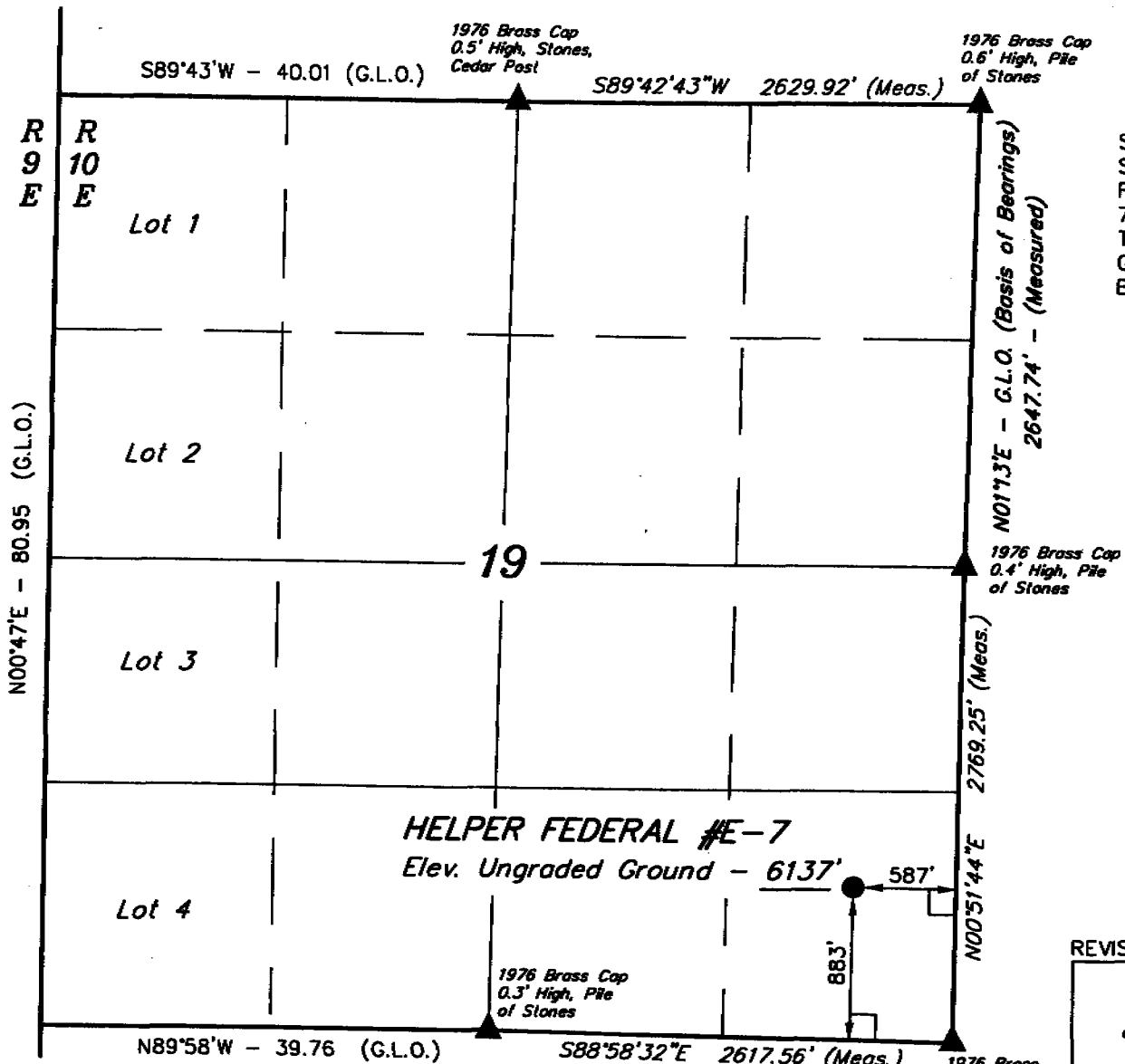
RECEIVED
AUG 12 2002
DIVISION OF
OIL, GAS AND MINING

RECEIVED
2001 APR 18 P 12:53
DEPT OF THE INTERIOR
BUREAU OF LAND MGMT
MOAB FIELD OFFICE

T13S, R10E, S.L.B.&M.

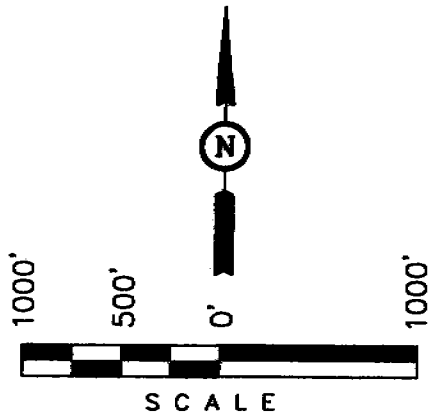
ANADARKO PETROLEUM CORP.

Well Location, HELPER FEDERAL #E-7, located as shown in the SE 1/4 SE 1/4 of Section 19, T13S, R10E, S.L.B.&M. Carbon County, Utah.



BASIS OF ELEVATION

SPOT ELEVATION AT A ROAD INTERSECTION LOCATED IN THE SE 1/4 OF SECTION 30, T13S, R10E, S.L.B.&M. TAKEN FROM THE HELPER QUADRANGLE, UTAH, CARBON COUNTY, 7.5 MINUTE SERIES (TOPOGRAPHICAL MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 5835 FEET.



CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
REGISTRATION NO. 161319
STATE OF UTAH

REVISED: 5-11-00 D.COX

LEGEND:

- = 90° SYMBOL
- = PROPOSED WELL HEAD.
- = SECTION CORNERS LOCATED.

Latitude = 39°40'34"
Longitude = 110°50'11"

UINTAH ENGINEERING & LAND SURVEYING
85 SOUTH 200 EAST - VERNAL, UTAH 84078
(435) 789-1017

SCALE	DATE SURVEYED:	DATE DRAWN:
1" = 1000'	11-22-99	1-17-00
PARTY: D.K. L.J. C.B.T.	REFERENCES: G.L.O. PLAT	
WEATHER: COOL	FILE: ANADARKO PETROLEUM CORP.	

Anadarko Petroleum Corporation
Helper Federal E-7
Lease U-71675
SE/SE Section 19 T13S, R10E
Carbon County, Utah

A COMPLETE COPY OF THIS PERMIT SHALL BE KEPT ON LOCATION from the beginning of site construction through well completion, and shall be available to contractors to ensure compliance.

CONDITIONS OF APPROVAL

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Be advised that Anadarko Petroleum Corporation is considered to be the operator of the above well and is responsible under the terms and conditions of the lease for the operations conducted on the leased lands.

Bond coverage for this well is provided by ES 0128 (Principal - Anadarko Petroleum Corporation) via surety consent as provided for in 43 CFR § 3104.2.

This office will hold the aforementioned operator and bond liable until the provisions of 43 CFR § 3106.7-2 continuing responsibility are met.

This permit will be valid for a period of one year from the date of approval. After permit termination, a new application must be filed for approval.

All lease operations will be conducted in full compliance with applicable regulations (43 CFR § 3100), Onshore Oil and Gas Orders, lease terms, notices to lessees, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractors.

A. DRILLING PROGRAM

1. The proposed BOPE is in a 2M configuration, and is adequate for this depth in this area. Installation, testing and operation of the system shall be in conformance with Onshore Oil and Gas Order No. 2.

2. The requirements for air drilling, found in Onshore Oil and Gas Order No. 2, part III, E (Special Drilling Operations), shall be followed.

3. Materials to counteract a gas kick shall be available on location.

4. Concurrent approval from the State of Utah, Division of Oil, Gas & Mining is required before conducting any surface disturbing activities.

5. Notifications, as proposed in the APD, should be made to the following people/numbers:

   Price Field Office 435-636-3600
   Don Stephens (work: 435-636-3608, home: 435-637-7967)
   Mike Kaminski (work: 435-636-3640, home: 435-637-2518)

   If unsuccessful, please notify the Moab Field Office (435) 259-2100

   Well abandonment operations require 24 hour advance notice and prior approval. In the case of newly drilled dry holes, verbal approval can be obtained by calling the Moab Field Office at (435) 259-2100. If approval is needed after work hours, you may contact:

   Eric Jones, Petroleum Engineer — Office: (435) 259-2117
   Home: (435) 259-2214

B. SURFACE USE

1. The following appendices are attached for your reference. They are to be followed as conditions of approval:

Table A-1, Seed Mixture for Green Strip Areas
Table A-2, Seed Mixture for Final Reclamation, Pinyon-Juniper

2. The following wildlife stipulations in the Standard Operating Practices shall be followed as conditions of approval:

EMP 16 & 17, Winter Seasonal Restriction on Critical & High Priority Winter Range
EMP 19, Critical Winter Range Browse Hand Planting
EMP 20, Big Game Minimum Disturbance Corridors/Site Location Standards

3. Whether the mud pit shall be lined will be determined at the time of construction.

4. Within six months of installation, surface structures shall be painted in the following flat, earth tone color: Olive Black (5WA20-6). This Fuller O'Brien color is for reference only. Any brand of paint may be used provided the colors match. Any facilities that must be painted to comply with OSHA standards are exempt.

5. The proposed action is within critical winter range and the surface disturbance associated with the project exceeds that which was analyzed and mitigated for the EIS. Since this surface disturbance has not been mitigated for in the EIS, the action is subject to the acre for acre mitigation for surface disturbance on critical winer range as provided for in the Price River Resource Management Framework Plan. The proponent shall complete a wildlife enhancement project designed to mitigate impacts on big game critical winter range at the rate of one acre of enhancement for each acre of disturbance. Acceptable projects may include vegetative manipulation designed to increase winter forage or other winter range habitat enhancements to improve big game distribution patterns. Projects shall be completed during the same calender year as the surface disturbing activity taking place. All aspects of project design and implementation, NEPA compliance, project design and implementation shall be the responsibility of the proponent.

GENERAL CONSTRUCTION

1. Operator shall contact the Price BLM Office at least forty-eight hours prior to the anticipated start of construction and/or any surface disturbing activities. The BLM

the operator commencing construction and/or surface disturbing activities. The operator and the operator's contractor, or agents involved with construction and/or any surface disturbing activities associated with the project, shall attend this conference to review the Conditions of Approval and plan of development. The operator's inspector will be designated at the pre-drill conference, and is to be given an approved copy of all maps, permits and conditions of approval before the start of construction. The BLM will also designate a representative for the project at the preconstruction conference.

2. The operator shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the BLM. The operator's representative shall be available for communication with the BLM within a reasonable time when construction or other surface disturbing activities are underway.

3. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the operator, or any person working on his behalf, on public land is to be immediately reported to the Price BLM Office. The operator will suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Price BLM Office. An evaluation of the discovery will be made by the BLM to determine appropriate actions to prevent the loss of significant cultural or scientific values. The operator is responsible for the cost of evaluation of any site found during construction. The BLM will determine what mitigation is necessary.

4. During project construction, surface disturbance and vehicle travel shall be limited to the approved location and access routes. Any additional area needed must be approved by the Price BLM Office prior to use.

5. The operator must provide a trash cage for the collection and containment of all trash. The trash shall be disposed in an authorized landfill. The location and access roads shall be kept litter free.

6. Vegetation removal necessitated by construction shall be confined to the limits of actual construction. Removed vegetation will be stockpiled for use in reclamation or removed from the construction site at the direction of the BLM.

7. Prior to surface disturbance, topsoil is to be separately removed and segregated from other material. Topsoil depth will be decided onsite by BLM. If the topsoil is less than 6 inches, a 6-inch layer that includes the A horizon and the unconsolidated material immediately below the A horizon shall be removed and the mixture segregated and redistributed as the surface soil layer.

   Generally topsoil shall be stored within the pad site or adjacent to access roads. The company in consultation with BLM shall determine stockpile locations and dimensions at the onsite. If the topsoil stockpiles will not be redistributed for a

period in excess of one (1) year, the stockpiles are to be seeded with seed mixture Pinyon- Juniper (see attached).

ROAD and PIPELINE CONSTRUCTION

8. Operator shall provide an inspector under the direction of a registered professional engineer (PE) at all times during road construction. A PE shall certify (statement with PE stamp) that the road was constructed to the required Bureau of Land Management (BLM) road standards.

9. Road construction or routine maintenance activities are to be performed during periods when the soil can adequately support construction equipment. If such equipment creates ruts more than 6 inches deep, the soil is deemed too wet to adequately support construction equipment.

10. The operator is responsible for maintenance of all roads authorized through the lease or a right-of-way. Construction and maintenance shall comply with Class II or III Road Standards as described in BLM Manual Section 9113 and the Moab District Road Standards, except as modified by BLM. Maintenance may include but is not limited to grading, applying gravel, snow removal, ditch cleaning, headcut restoration/prevention.

11. Topsoil from access roads and pipelines is to be wind rowed along the uphill side of the road or stored in an approved manner. When the road and pipeline is rehabilitated, this soil will then be used as a top coating for the seed bed.

12. Erosion-control structures such as water bars, diversion channels, and terraces will be constructed to divert water and reduce soil erosion on the disturbed area. Road ditch turnouts shall be equipped with energy dissipators as needed to avoid erosion. Where roads interrupt overland sheet-flow and convert this runoff to channel flow, ditch turnouts shall be designed to reconvert channel flow to sheet flow. Rock energy dissipators and gravel dispersion fans may be used, or any other design which would accomplish the desired reconversion of flow regime. As necessary cut banks, road drainages, and road crossings shall be armored or otherwise engineered to prevent headcutting.

PAD CONSTRUCTION

13. During the construction of the drill pad, suitable topsoil material is to be stripped and conserved in a stockpile on the pad. If stockpiles are to remain for more than a year, they shall be seeded with the seed mixture Pinyon- Juniper (see attached).

14. Generally, drill pads are to be designed to prevent overland flow of water from entering or leaving the site. The pad is to be sloped to drain spills and water into the reserve pit. The drill pad shall be designed to disperse diverted overland flow

and to regulate flow velocity so as to prevent or minimize erosion. Well pad diversion outlets shall be equipped with rock energy brakes and gravel-bedded dispersion fans.

REHABILITATION PROCEDURES

Site Preparation

15. The entire roadbed should be obliterated and brought back to the approximate original contour. Drainage control is to be reestablished as necessary. All areas affected by road construction are to be recontoured to blend in with the existing topography. All berms are to be removed unless determined to be beneficial by BLM. In recontouring the disturbed areas, care should be taken to not disturb additional vegetation.

Seedbed Preparation

16. An adequate seedbed should be prepared for all sites to be seeded. Areas to be revegetated should be chiselled or disked to a depth of at least 12 inches unless restrained by bedrock.

17. Ripping of fill materials should be completed by a bulldozer equipped with single or a twin set of ripper shanks. Ripping should be done on 4-foot centers to a depth of 12 inches. The process should be repeated until the compacted area is loose and friable, then shall be followed by final grading. Seedbed preparation will be considered complete when the soil surface is completely roughened and the number of rocks (if present) on the site is sufficient to cause the site to match the surrounding terrain.

18. After final grading, the stockpiled topsoil shall be spread evenly across the disturbed area.

Fertilization

19. Commercial fertilizer with a formula of 16-16-8 is to be applied at a rate of 200 pounds per acre to the site. The rate may be adjusted depending on soil.

20. Fertilizer is to be applied not more than 48 hours before seeding, and shall be cultivated into the upper 3 inches of soil.

21. Fertilizer is to be broadcast over the soil using hand-operated "cyclone-type" seeders or rotary broadcast equipment attached to construction or revegetation machinery as appropriate to slope. All equipment should be equipped with a

metering device. Fertilizer application is to take place before the final seeding preparation treatment. Fertilizer broadcasting operations should not be conducted when wind velocities would interfere with even distribution of the material.

Mulching

22. When it is time to reclaim this location, the Price BLM Office will determine whether it will be necessary to use mulch in the reclamation process. The type of mulch should meet the following requirements: Wood cellulose fiber shall be natural or cooked, shall disperse readily in water, and shall be nontoxic. Mulch shall be thermally produced and air dried. The homogeneous slurry or mixture shall be capable of application with power spray equipment. A colored dye that is noninjurious to plant growth may be used when specified. Wood cellulose fiber is to be packaged in new, labeled containers. A minimum application of 1500 pounds per acre shall be applied. A suitable tackifier shall be applied with the mulch at a rate of 60 to 80 pounds per acre.

    An alternative method of mulching on small sites would be the application of straw or hay mulch at a rate of 2000 pounds per acre. Hay or straw shall be certified weed free. Following the application of straw or hay, crimping shall occur to ensure retention.

Reseeding

23. All disturbed areas are to be seeded with the seed mixture required by the BLM. The seed mixture(s) shall be planted in the fall of the year (Sept-Nov), in the amounts specified in pounds of pure live seed (PLS)/acre. There shall be no noxious weed seed in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within 12 months prior to planting. Commercial seed will be either certified or registered seed. The seed mixture container shall be tagged in accordance with State law(s) and available for inspection by the BLM. Seed is to be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area. (Smaller/heavier seeds tend to drop to the bottom of the drill and are planted first. Appropriate measures should be taken to ensure this does not occur.) Where drilling is not possible, seed is to be broadcast and the area raked or chained to cover the seed. Woody species with seeds that are too large for the drill will be broadcast. When broadcasting the seed, the pounds per acre noted below are to be increased by 50 percent. Reseeding may be required if a satisfactory stand is not established to the surface rights owner's specifications. Evaluation of the seeding's success will not be made before completion of the second growing season after the vegetation becomes established. The Price BLM Office is to be notified a minimum of seven days before seeding a project.

24. The disturbed areas for the road and pipeline must be seeded in the fall of the year, immediately after the topsoil is replaced. The prescribed seed mixture is Pinyon-Juniper (see attatched table).

General

25. Prior to the use of insecticides, herbicides, fungicides, rodenticides and other similar substances, the operator must obtain from BLM, approval of a written plan. The plan must describe the type and quantity of material to be used, the pest to be controlled, the method of application, the location for storage and disposal of containers, and other information that BLM may require. A pesticide may be used only in accordance with its registered uses and within other agency limitations. Pesticides must not be permanently stored on public lands.

The following seed mixture would be planted along service road borrow ditches, around the edges of drill pads with a production well, and surrounding other production and maintenance facilities. The purpose for this is to provide a "green strip" buffer to minimize fire hazards and prevent invasion and establishment of noxious weeds in areas that will receive continued disturbance for the life of these areas.

Table A-1

Common Plant Name	Scientific Name	Pounds per acre (PLS)
Forage kochia	*Kochia prostrata*	2
Wyoming big sagebrush	*Artemisia tridentata wyomingenis* var. Gordon Creek	1
Douglas low rabbitbrush	*Chrysothamnus viscidiflorus*	1
	TOTAL	4

The following seed mixture is for the area that would receive final reclamation. Areas would be planted to protect them from soil erosion and to restore forage production.

Table A-2

Common Plant Name	Scientific Name	Pounds per acre (PLS)[1]
Pinyon Juniper Areas		
Grasses		
Thickspike wheatgrass	*Elymus lanceolatus*	1.5
Intermediate wheatgrass	*Elytrigia intermedia*	1.5
Squirreltail	*Elymus elymoides*	2
Crested wheatgrass	*Agropyron desertorum*	2
Forbs		
Lewis flax	*Linum perenne lewisii*	1
Palmer penstemon	*Penstemon palmerii*	1
Shrubs		
Forage kochia	*Kochia prostrata*	2
Fourwing saltbrush	*Atriplex canescense*	2
Wyoming big sagebrush	*Artemesia tridentata wyomingensis* var. Gordon Creek	1
Antelope bitterbrush	*Purshia tridentata*	1
	TOTAL	15

1. Seeding rate is listed as pounds per acre of pure live seed (PLS) drilled. Rate is increased by 50 percent if broadcast seeded.
Formula: pure live seed (PLS) = % seed purity x % seed germination

C. REQUIRED APPROVALS, REPORTS AND NOTIFICATIONS

Required verbal notifications are summarized in Table 1, attached.

Building Location- Contact the Price Field Office, Natural Resource Protection Specialist at least 48-hours prior to commencing construction of location.

Spud- The spud date will be reported to BLM 24-hours prior to spudding. Written notification in the form of a Sundry Notice (Form 3160-5) will be submitted to the Moab Field Office within 24-hours after spudding, regardless of whether spud was made with a dry hole digger or big rig.

Daily Drilling Reports- Daily drilling reports shall detail the progress and status of the well and shall be submitted to the Moab Field Office on a weekly basis.

Monthly Reports of Operations- In accordance with Onshore Oil and Gas Order No. 1, this well shall be reported on Minerals Management Service (MMS) Form 3160, "Monthly Report of Operations," starting the month in which operations commence and continuing each month until the well is physically plugged and abandoned. This report will be filed directly with MMS.

Sundry Notices- There will be no deviation from the proposed drilling and/or workover program without prior approval. "Sundry Notices and Reports on Wells" (Form 3160-5) will be filed, with the Moab Field Office, for approval of all changes of plans and subsequent operations in accordance with 43 CFR § 3162.3-2. Safe drilling and operating practices must be observed.

Drilling Suspensions- Operations authorized by this permit shall not be suspended for more than 30 days without prior approval of the Moab Field Office. All conditions of this approval shall be applicable during any operations conducted with a replacement rig.

Undesirable Events- Spills, blowouts, fires, leaks, accidents, or any other unusual occurrences shall be immediately reported to the BLM in accordance with requirements of NTL-3A.

Cultural Resources- If cultural resources are discovered during construction, work that might disturb the resources is to stop, and the Price Field Office is to be notified.

First Production- Should the well be successfully completed for production, the Moab Field Office will be notified when the well is placed in producing status. Such notification may be made by phone, but must be followed by a sundry notice or letter not later than five business days following the date on which the well is placed into production.

A first production conference will be scheduled as soon as the productivity of the well is apparent. This conference should be coordinated through the Price Field Office. The Price Field Office shall be notified prior to the first sale.

Well Completion Report- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) will be submitted to the Moab Field Office not later than thirty-days after completion of the well or after completion of operations being performed, in accordance with 43 CFR § 3162.4-1. Two copies of all logs, core descriptions, core analyses, well test data, geologic summaries, sample description, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. When requested, samples (cuttings and/or samples) will be submitted to the Moab Field Office.

Venting/Flaring of Gas- Gas produced from this well may not be vented/flared beyond an initial, authorized test period of 30 days or 50 MMcf, whichever first occurs, without the prior, written approval of the Moab Field Office. Should gas be vented or flared without approval beyond the authorized test period, the well may be ordered shut-in until the gas can be captured or approval to continue the venting/flaring as uneconomic is granted. In such case, compensation to the lessor shall be required for that portion of the gas that is vented/flared without approval and which is determined to have been avoidably lost.

Produced Water- An application for approval of a permanent disposal method and location will be submitted to the Moab Field Office for approval pursuant to Onshore Oil and Gas Order No.7.

Off-Lease Measurement, Storage, Commingling- Prior approval must be obtained from the Moab Field Office for off-lease measurement, off-lease storage and/or commingling (either down-hole or at the surface).

Plugging and Abandonment- If the well is completed as a dry hole, plugging instructions must be obtained from the Moab Field Office prior to initiating plugging operations.

A "Subsequent Report of Abandonment" (Form 3160-5) will be filed with the Moab Field Office within thirty-days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Upon completion of approved plugging, a regulation marker will be erected in accordance with 43 CFR § 3162.6. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the Price Field Office or the appropriate surface managing agency.

CONFIDENTIAL

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: **ANADARKO PETROLEUM COMPANY**

Well Name: **HELPER FED E-7**

Api No: **43-007--30508** Lease Type: **FEDERAL**

Section **19** Township **13S** Range **10E** County **CARBON**

Drilling Contractor **BEAMAN DRILLING** RIG # _____

SPUDDED:

Date **09/24/02**

Time **8:00 AM**

How **ROTARY**

Drilling will commence: _____

Reported by **HARLAN COLLIER**

Telephone # **1-435-636-9000**

Date **09/25/2002** Signed: **CHD**

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 6

ENTITY ACTION FORM

Operator: Anadarko Petroleum Corporation
Operator Account Number: N ~~2245~~ 0035
Address: P. O. Box 1330
city Houston
state TX zip 77251
Phone Number: (832) 636-3315

Well 1

API Number	Well Name	QQ	Sec	Twp	Rng	County
4300730872	Saccomanno A-1	SENE	30	13S	10E	Carbon
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**		**Entity Assignment Effective Date**	
A	99999	13622	9/28/2002		10-8-02	

Comments:

Well 2

API Number	Well Name	QQ	Sec	Twp	Rng	County
4300730508	Helper Federal E-7	SESE	19	13S	10E	Carbon
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**		**Entity Assignment Effective Date**	
A	99999	13623	9/25/2002		10-8-02	

Comments:

CONFIDENTIAL

Well 3

API Number	Well Name	QQ	Sec	Twp	Rng	County
4300730776	Helper Federal E-8	SENE	19	13S	10E	Carbon
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**		**Entity Assignment Effective Date**	
A	99999	13624	9/26/2002		10-8-02	

Comments:

CONFIDENTIAL

ACTION CODES:

- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (Explain in 'comments' section)

Carla C. Ghazizadeh
Name (Please Print)
Carla C. Ghazizadeh
Signature
Env. & Reg. Analyst
Title
10/2/2002
Date

(5/2000)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

COPY

FORM 6

ENTITY ACTION FORM

Operator: Anadarko Petroleum Corporation

Operator Account Number: N 2245

Address: P. O. Box 1330

city Houston

state TX zip 77251

Phone Number: (832) 636-3315

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4300730872	Saccomanno A-1		SENE	30	13S	10E	Carbon
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
	99999		9/28/2002				
Comments:							

Well 2

API Number	Well Name		QQ	Sec	Twp	Rng	County
4300730508	Helper Federal E-7		SESE	19	13S	10E	Carbon
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
A	99999		9/25/2002				
Comments:							

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4300730776	Helper Federal E-8		SENE	19	13S	10E	Carbon
Action Code	**Current Entity Number**	**New Entity Number**	**Spud Date**			**Entity Assignment Effective Date**	
A	99999		9/26/2002				
Comments:							

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OCT 03 2002
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ACTION CODES:

- **A** - Establish new entity for new well (single well only)
- **B** - Add new well to existing entity (group or unit well)
- **C** - Re-assign well from one existing entity to another existing entity
- **D** - Re-assign well from one existing entity to a new entity
- **E** - Other (Explain in 'comments' section)

Carla C. Ghazizadeh
Name (Please Print)

Carla C. Ghazizadeh
Signature

Env. & Reg. Analyst
Title

10/2/2002
Date

(5/2000)

Form 3160-4
(September 2001)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELL COMPLETION OR RECOMPLETION REPORT AND LOG

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2004

5. LEASE DESIGNATION AND SERIAL NO.: U-71675

1a. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Dry Other CBM
b. Type of Completion: ☒ New Well ☐ Workover ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other

6. INDIAN ALLOTTEE OR TRIBE NAME: N/A

7. UNIT AGREEMENT: N/A

2. Name of Operator: Anadarko E&P Company, LP
Rocky Mountain Permitting, Inc.(Agent) 6500 Indian Wells Dr. Casper, Wy 82604

8. FARM OR LEASE NAME: Helper Federal E-7

3. Address: P.O. Box 1330 Houston, Texas 77251

3a. Phone No. *(include area code)*: 307-473-2414

9. API WELL NO.: 43-007-30508

4. LOCATION OF WELL, Show quarter-quarter description and footage measurements

10. FIELD NAME: Helper Field

At surface: 883'FSL & 587'FEL SE/4SE/4 Section 19

CONFIDENTIAL

11. SEC. T, R, M., OR BLOCK AND SURVEY OR AREA: Sec 19 T13S R10E

At top prod. interval, reported below

At total depth: same

12. COUNTY OR PARISH: Carbon

13. STATE: Utah

14. DATE SPUDDED: 9/25/2002

15. DATE T.D. REACHED: 10/7/2002

16. Date Completed: ☐ D & A ☒ Ready to Prod.

17. ELEVATIONS (DF, RKB, RT, GR, etc.)*: 6137 GL

18. Total Depth: MD 3935 TVD 3935

19. Plug back T.D.: MD 3850 TVD 3850

20. Depth Bridge Plug Set: MD TVD

21. Type Electric & other Logs Run (Submit a copy of each)
CCL, CBL, GR, Cement Bond - 3-4-03

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit report)
Directional Survey? ☒ No ☐ Yes (Submit copy)

23. Casing and Liner Record *(Report all strings set in well)*

Hole Size	Size/ Grade	Wt. (#/ft.)	Top (MD)	Bottom(MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (Bbl)	Cement Top*	Amount Pulled
11 "	8.625 J-55	24	0	302		126 sx "G"	25 4/5	surface	
7 7/8"	5.5 N-80	17	0	3935		140 sx "G"	40	3004	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)
2 7/8	3,686		6.5lb J-55					

25. Producing Intervals

	Formation	Top	Bottom
A)	Ferron Coal	3575	3683
B)			
C)			
D)			

26. Perforation Record

Perforated Interval	Size	No. of Holes	Perf. Status
3607-3627		120	open

27. Acid,Fracture Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
3607-3627	750 gal 15%HCL, 25#XLG,158675 lb 16/30 sand, 3859 Blwtr

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28. Production- Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr. API	Gas Gravity	Production Method
12/3/2002	12/3/2002	24	→		4	6			
Choke Size	**Tbg. Press Flwg. SI**	**Csg Press.**	**24 Hr. Rate**	**Oil Bbl**	**Gas MCF**	**Water Bbl**	**Gas: Oil Ratio**	**Well Status**	
	50	50	→		4	6		CONFIDENTIAL PERIOD EXPIRED ON 1-3-04	

28a. Production- Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						
Choke Size	**Tbg. Press Flwg. SI**	**Csg Press.**	**24 Hr. Rate**	**Oil Bbl**	**Gas MCF**	**Water Bbl**	**Gas: Oil Ratio**	**Well Status**	
			→						

28b. Production- Interval C

Date First Produced	Test Date	Hours Tested	Test Production	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						

Choke Size	Tbg. Press Flwg. SI	Csg Press.	24 Hr. Rate	Oil Bbl	Gas MCF	Water Bbl	Gas: Oil Ratio	Well Status
			→					CONFIDENTIAL

28c. Production- Interval D

Date First Produced	Test Date	Hours Tested	Test Production	Oil Bbl	Gas MCF	Water Bbl	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						

Choke Size	Tbg. Press Flwg. SI	Csg Press.	24 Hr. Rate	Oil Bbl	Gas MCF	Water Bbl	Gas: Oil Ratio	Well Status
			→					

29. Disposition of Gas *(Sold, used for fuel, vented, etc.)*

sold

30. Summary of Porous Zones (include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers:

Formation	Top	Bottom	Descriptions Contents, Etc.	Name	Top Measured Depth
Ferron Coal	3575	3683	Gas and Water	Bluegate	2400
				Ferron SS	3540
				Ferron Coal	3575
				Base Ferron Coal	3683
				Tununk	3760

32. Additional remarks (include plugging procedure):

33. Circle enclosed attachments:

1. Electrical/ Mechanical Logs (1 full set required)
2. Geologic Report
3. DST Report
4. Directional Survey
5. Sundry Notice for plugging and cement verification
6. Core Analysis
7. Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*

Name (please print) Chuck Williams Title Agent

Signature Chuck Williams Date JAN. 9, 2003

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET (for state use only)

ROUTING
CDW

X - Change of Operator (Well Sold) Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: **4/1/2013**

FROM: (Old Operator):	**TO:** (New Operator):
N0035-Anadarko Petroleum Corporation	N3940- Anadarko E&P Onshore LLC
PO Box 173779	PO Box 173779
Denver, CO, 80214	Denver, CO 802014
Phone: 1 (720) 929-6000	Phone: 1 (720) 929-6000

CA No. **Unit:**

WELL NAME	SEC	TWN	RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
See Attached List								

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/9/2013
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 4/9/2013
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 4/10/2013
4a. Is the new operator registered in the State of Utah: _____ Business Number: 593715-0161
5a. (R649-9-2)Waste Management Plan has been received on: Yes
5b. Inspections of LA PA state/fee well sites complete on: 4/10/2013
5c. Reports current for Production/Disposition & Sundries on: 4/10/2013
6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM 4/2/2013 BIA N/A
7. **Federal and Indian Units:**
   The BLM or BIA has approved the successor of unit operator for wells listed on: N/A
8. **Federal and Indian Communization Agreements ("CA"):**
   The BLM or BIA has approved the operator for all wells listed within a CA on: N/A
9. **Underground Injection Control ("UIC")** Division has approved UIC Form 5 Transfer of Authority to **Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 4/10/2013

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 4/11/2013
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 4/11/2013
3. Bond information entered in RBDMS on: 4/10/2013
4. Fee/State wells attached to bond in RBDMS on: 4/11/2013
5. Injection Projects to new operator in RBDMS on: 4/11/2013
6. Receipt of Acceptance of Drilling Procedures for APD/New on: N/A

BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: WYB000291
2. Indian well(s) covered by Bond Number: N/A
3a. (R649-3-1) The **NEW** operator of any state/fee well(s) listed covered by Bond Number 22013542
3b. The **FORMER** operator has requested a release of liability from their bond on: N/A

LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **NEW** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: 4/11/2013

COMMENTS:

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER: See Wells

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER CBM Wells

8. WELL NAME and NUMBER:

2. NAME OF OPERATOR: Anadarko Petroleum Corporation

9. API NUMBER: See Wells

3. ADDRESS OF OPERATOR: P.O. Box 173779 CITY Denver STATE CO ZIP 80217

PHONE NUMBER: (720) 929-6000

10. FIELD AND POOL, OR WILDCAT:

4. LOCATION OF WELL

FOOTAGES AT SURFACE:

COUNTY:

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 4/8/2013	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

The operator is requesting authorization to transfer the wells from Anadarko Petroleum Corporation and Anadarko Production Company to Anadarko E&P Onshore, LLC. Please see the attached list of 181 wells that are currently filed under Anadarko Petroleum Corporation and Anadarko Production Company. The state/fee wells will be under bond number 22013542, and the federal wells will be under bond number WYB000291.

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Effective 4/1/13

APR 09 2013

Please contact the undersigned if there are any questions.

DIV. OF OIL, GAS & MINING

Jaime Scharnowske
Regulatory Analyst

Anadarko Petroleum Corporation N0035
P.O. Box 173779
Denver, CO 80214
(720) 929-6000

Jaime Scharnowske
Regulatory Analyst

Anadarko E&P Onshore, LLC N3940
P.O. Box 173779
Denver, CO 80214
(720) 929-6000

NAME (PLEASE PRINT) Jaime Scharnowske TITLE Regulatory Analyst

SIGNATURE Jaime Scharnowske DATE 4/8/2013

(This space for State use only)

APPROVED

APR 11 2013

DIV. OIL GAS & MINING

Rachel Medina

(5/2000) (See Instructions on Reverse Side)

Anadarko Petroleum Corporation (N0035) to Anadarko E&P Onshore, LLC (N3940)
Effective 1 April-2013

Well Name	Sec	Twnshp	Range	API	Entity No.	Lease Type	Well Type	Well status
HELPER ST SWD 1	03	140S	100E	4300730361	12258	State	WD	A
FED F-2 SWD	08	140S	100E	4300730555	12557	Federal	WD	A
CLAWSON SPRING ST SWD 4	13	160S	080E	4301530477	12979	State	WD	A
CLAWSON SPRING ST SWD 1	36	150S	080E	4300730721	12832	State	WD	I
HELPER FED B-1	33	130S	100E	4300730189	11537	Federal	GW	P
HELPER FED A-1	23	130S	100E	4300730190	11517	Federal	GW	P
HELPER FED A-3	22	130S	100E	4300730213	11700	Federal	GW	P
HELPER FED C-1	22	130S	100E	4300730214	11702	Federal	GW	P
HELPER FED B-5	27	130S	100E	4300730215	11701	Federal	GW	P
HELPER FED A-2	22	130S	100E	4300730216	11699	Federal	GW	P
HELPER FED D-1	26	130S	100E	4300730286	12061	Federal	GW	P
BIRCH A-1	05	140S	100E	4300730348	12120	Fee	GW	P
HELPER ST A-1	03	140S	100E	4300730349	12122	State	GW	P
HELPER ST D-7	04	140S	100E	4300730350	12121	State	GW	P
CHUBBUCK A-1	31	130S	100E	4300730352	12397	Fee	GW	P
VEA A-1	32	130S	100E	4300730353	12381	Fee	GW	P
VEA A-2	32	130S	100E	4300730354	12483	Fee	GW	P
VEA A-3	32	130S	100E	4300730355	12398	Fee	GW	P
VEA A-4	32	130S	100E	4300730356	12482	Fee	GW	P
HELPER ST A-8	02	140S	100E	4300730357	12257	State	GW	P
HELPER ST A-3	02	140S	100E	4300730358	12254	State	GW	P
HELPER ST A-4	02	140S	100E	4300730359	12255	State	GW	P
HELPER ST A-7	02	140S	100E	4300730360	12256	State	GW	P
HELPER ST A-2	03	140S	100E	4300730362	12232	State	GW	P
HELPER ST A-5	03	140S	100E	4300730363	12231	State	GW	P
HELPER ST A-6	03	140S	100E	4300730364	12233	State	GW	P
HELPER ST D-4	04	140S	100E	4300730365	12228	State	GW	P
HELPER ST D-3	05	140S	100E	4300730366	12184	State	GW	P
HELPER ST D-5	04	140S	100E	4300730367	12226	State	GW	P
HELPER ST D-8	04	140S	100E	4300730368	12229	State	GW	P
HELPER ST D-2	05	140S	100E	4300730369	12481	State	GW	P
HELPER ST D-6	05	140S	100E	4300730370	12234	State	GW	P
HELPER ST D-1	06	140S	100E	4300730371	12399	State	GW	P
BIRCH A-2	08	140S	100E	4300730372	12189	Fee	GW	P
HELPER ST A-9	10	140S	100E	4300730373	12230	State	GW	P
HELPER ST B-1	09	140S	100E	4300730376	12227	State	GW	P
HELPER FED F-3	08	140S	100E	4300730378	12252	Federal	GW	P
HELPER FED F-4	09	140S	100E	4300730379	12253	Federal	GW	P
HELPER ST A-10	10	140S	100E	4300730433	12488	State	GW	P
HELPER ST A-11	11	140S	100E	4300730434	12487	State	GW	P
HELPER ST A-12	10	140S	100E	4300730435	12486	State	GW	P
HELPER ST A-13	10	140S	100E	4300730436	12485	State	GW	P
HELPER ST B-2	09	140S	100E	4300730437	12484	State	GW	P
HELPER FED E-7	19	130S	100E	4300730508	13623	Federal	GW	P
HELPER FED B-2	33	130S	100E	4300730530	12619	Federal	GW	P
HELPER FED B-3	33	130S	100E	4300730531	12622	Federal	GW	P
HELPER FED B-4	33	130S	100E	4300730532	12623	Federal	GW	P
HELPER FED B-6	27	130S	100E	4300730533	12644	Federal	GW	P
HELPER FED B-7	27	130S	100E	4300730534	12645	Federal	GW	P
HELPER FED B-8	27	130S	100E	4300730535	12631	Federal	GW	P

Anadarko Petroleum Corporation (N0035) to Anadarko E&P Onshore, LLC (N3940)
Effective1-April-2013

Well Name	Sec	Twnshp	Range	API	Entity No.	Lease Type	Well Type	Well status
HELPER FED B-9	34	130S	100E	4300730536	12646	Federal	GW	P
HELPER FED B-10	34	130S	100E	4300730537	12626	Federal	GW	P
HELPER FED B-11	34	130S	100E	4300730538	12628	Federal	GW	P
HELPER FED B-12	34	130S	100E	4300730539	12627	Federal	GW	P
HELPER FED B-13	28	130S	100E	4300730540	12621	Federal	GW	P
HELPER FED B-14	28	130S	100E	4300730541	12620	Federal	GW	P
HELPER FED D-2	26	130S	100E	4300730542	12650	Federal	GW	P
HELPER FED D-3	26	130S	100E	4300730543	12634	Federal	GW	P
HELPER FED D-4	35	130S	100E	4300730544	12625	Federal	GW	P
HELPER FED D-5	35	130S	100E	4300730545	12637	Federal	GW	P
HELPER FED D-6	35	130S	100E	4300730546	12635	Federal	GW	P
HELPER FED E-1	29	130S	100E	4300730547	13246	Federal	GW	P
HELPER FED E-2	29	130S	100E	4300730548	12636	Federal	GW	P
HELPER FED H-1	01	140S	100E	4300730549	12653	Federal	GW	P
HELPER FED H-2	01	140S	100E	4300730550	12647	Federal	GW	P
OLIVETO FED A-2	08	140S	100E	4300730556	12630	Federal	GW	P
HELPER FED F-1	08	140S	100E	4300730557	12629	Federal	GW	P
SMITH FED A-1	09	140S	100E	4300730558	13004	Federal	GW	P
SE INVESTMENTS A-1	06	140S	100E	4300730570	12624	Fee	GW	P
HELPER ST A-14	11	140S	100E	4300730571	12612	State	GW	P
HELPER ST A-15	11	140S	100E	4300730572	12613	State	GW	P
HELPER ST E-1	36	130S	100E	4300730573	12615	State	GW	P
HELPER ST E-2	36	130S	100E	4300730574	12614	State	GW	P
HARMOND A-1	07	140S	100E	4300730586	12616	Fee	GW	P
HELPER ST E-3	36	130S	100E	4300730592	12868	State	GW	P
HELPER FED A-6	23	130S	100E	4300730593	12649	Federal	GW	P
HELPER FED D-7	26	130S	100E	4300730594	12651	Federal	GW	P
HELPER FED D-8	35	130S	100E	4300730595	12652	Federal	GW	P
CLAWSON SPRING ST A-1	36	150S	080E	4300730597	12618	State	GW	P
HELPER ST E-4	36	130S	100E	4300730598	12825	State	GW	P
HELPER ST A-16	11	140S	100E	4300730603	12638	State	GW	P
CHUBBUCK A-2	06	140S	100E	4300730604	12648	Fee	GW	P
CLAWSON SPRING ST A-2	36	150S	080E	4300730635	12856	State	GW	P
CLAWSON SPRING ST A-3	36	150S	080E	4300730636	13001	State	GW	P
CLAWSON SPRING ST A-4	36	150S	080E	4300730637	12844	State	GW	P
CLAWSON SPRING ST D-5	31	150S	090E	4300730642	12852	State	GW	P
CLAWSON SPRING ST D-6	31	150S	090E	4300730643	12847	State	GW	P
CLAWSON SPRING ST D-7	31	150S	090E	4300730644	12849	State	GW	P
HELPER FED A-5	23	130S	100E	4300730677	13010	Federal	GW	P
HELPER FED A-7	22	130S	100E	4300730678	13346	Federal	GW	P
HELPER FED B-15	28	130S	100E	4300730679	13015	Federal	GW	P
HELPER FED B-16	28	130S	100E	4300730680	13203	Federal	GW	P
HELPER FED C-2	24	130S	100E	4300730681	13016	Federal	GW	P
HELPER FED C-4	24	130S	100E	4300730682	13012	Federal	GW	P
HELPER FED C-7	21	130S	100E	4300730684	13204	Federal	GW	P
HELPER FED D-9	25	130S	100E	4300730685	13245	Federal	GW	P
HELPER FED D-10	25	130S	100E	4300730686	12993	Federal	GW	P
HELPER FED D-11	25	130S	100E	4300730687	12992	Federal	GW	P
HELPER FED D-12	25	130S	100E	4300730688	13005	Federal	GW	P
HELPER FED E-4	29	130S	100E	4300730689	13229	Federal	GW	P

Anadarko Petroleum Corporation (N0035) to Anadarko E&P Onshore, LLC (N3940)
Effective1-April-2013

Well Name	Sec	Twnshp	Range	API	Entity No.	Lease Type	Well Type	Well status
HELPER FED A-4	23	130S	100E	4300730692	13009	Federal	GW	P
HELPER FED C-5	24	130S	100E	4300730693	13013	Federal	GW	P
HELPER FED G-1	30	130S	110E	4300730694	13006	Federal	GW	P
HELPER FED G-2	30	130S	110E	4300730695	13007	Federal	GW	P
HELPER FED G-3	31	130S	110E	4300730696	13002	Federal	GW	P
HELPER FED G-4	31	130S	110E	4300730697	13003	Federal	GW	P
HELPER FED H-3	01	140S	100E	4300730698	12831	Federal	GW	P
HELPER FED H-4	01	140S	100E	4300730699	12833	Federal	GW	P
CLAWSON SPRING ST D-8	31	150S	090E	4300730701	12851	State	GW	P
HELPER FED C-3	24	130S	100E	4300730702	13011	Federal	GW	P
CLAWSON SPRING ST J-1	35	150S	080E	4300730726	13299	Fee	GW	P
PIERUCCI 1	35	150S	080E	4300730727	13325	Fee	GW	P
POTTER ETAL 1	35	150S	080E	4300730728	12958	Fee	GW	P
POTTER ETAL 2	35	150S	080E	4300730737	12959	Fee	GW	P
HELPER FED G-5	30	130S	110E	4300730770	13655	Federal	GW	P
HELPER FED G-6	30	130S	110E	4300730771	13656	Federal	GW	P
HELPER FED G-7	31	130S	110E	4300730772	13657	Federal	GW	P
HELPER FED G-8	31	130S	110E	4300730773	13658	Federal	GW	P
GOODALL A-1	06	140S	110E	4300730774	13348	Fee	GW	P
HELPER FED E-8	19	130S	100E	4300730776	13624	Federal	GW	P
HAUSKNECHT A-1	21	130S	100E	4300730781	13347	Fee	GW	P
HELPER FED E-9	19	130S	100E	4300730868	13628	Federal	GW	P
HELPER FED E-5	20	130S	100E	4300730869	13625	Federal	GW	P
HELPER FED E-6	20	130S	100E	4300730870	13631	Federal	GW	P
HELPER FED E-10	30	130S	100E	4300730871	13629	Federal	GW	P
SACCOMANNO A-1	30	130S	100E	4300730872	13622	Fee	GW	P
HELPER FED E-11	30	130S	100E	4300730873	13630	Federal	GW	P
BLACKHAWK A-2	29	130S	100E	4300730886	13783	Fee	GW	P
BLACKHAWK A-3	20	130S	100E	4300730914	13794	Fee	GW	P
BLACKHAWK A-4	21	130S	100E	4300730915	13795	Fee	GW	P
BLACKHAWK A-1X	20	130S	100E	4300730923	13798	Fee	GW	P
HELPER STATE 12-3	03	140S	100E	4300750070	17824	State	GW	P
HELPER STATE 32-3	03	140S	100E	4300750071	17827	State	GW	P
HELPER STATE 32-36	36	130S	100E	4300750072	17825	State	GW	P
VEA 32-32	32	130S	100E	4300750075	17826	Fee	GW	P
CLAWSON SPRING ST E-7	07	160S	090E	4301530392	12960	State	GW	P
CLAWSON SPRING ST E-8	07	160S	090E	4301530394	12964	State	GW	P
CLAWSON SPRING ST E-3	06	160S	090E	4301530403	12965	State	GW	P
CLAWSON SPRING ST E-1	06	160S	090E	4301530404	12966	State	GW	P
CLAWSON SPRING ST E-2	06	160S	090E	4301530405	12961	State	GW	P
CLAWSON SPRING ST E-4	06	160S	090E	4301530406	12962	State	GW	P
CLAWSON SPRING ST C-1	12	160S	080E	4301530410	12617	State	GW	P
CLAWSON SPRING ST B-1	01	160S	080E	4301530427	12845	State	GW	P
CLAWSON SPRING ST B-2	01	160S	080E	4301530428	12846	State	GW	P
CLAWSON SPRING ST B-3	01	160S	080E	4301530429	12848	State	GW	P
CLAWSON SPRING ST B-4	01	160S	080E	4301530430	12854	State	GW	P
CLAWSON SPRING ST B-5	12	160S	080E	4301530431	12963	State	GW	P
CLAWSON SPRING ST B-8	11	160S	080E	4301530432	12863	State	GW	P
CLAWSON SPRING ST B-9	11	160S	080E	4301530433	12864	State	GW	P
CLAWSON SPRING ST C-2	12	160S	080E	4301530434	12850	State	GW	P

Anadarko Petroleum Corporation (N0035) to Anadarko E&P Onshore, LLC (N3940)
Effective1-April-2013

Well Name	Sec	Twnshp	Range	API	Entity No.	Lease Type	Well Type	Well status
CLAWSON SPRING ST C-4	14	160S	080E	4301530435	13199	State	GW	P
CLAWSON SPRING ST B-7	11	160S	080E	4301530460	12967	State	GW	P
CLAWSON SPRING ST C-6	14	160S	080E	4301530461	13355	State	GW	P
CLAWSON SPRING ST C-3	12	160S	080E	4301530463	12968	State	GW	P
CLAWSON SPRING ST B-6	11	160S	080E	4301530465	12969	State	GW	P
CLAWSON SPRING ST H-1	13	160S	080E	4301530466	13323	State	GW	P
CLAWSON SPRING ST H-2	13	160S	080E	4301530467	12955	State	GW	P
CLAWSON SPRING ST IPA-1	10	160S	080E	4301530468	12956	Fee	GW	P
CLAWSON SPRING ST IPA-2	15	160S	080E	4301530469	13200	Fee	GW	P
CLAWSON SPRING ST E-5	07	160S	090E	4301530470	12971	State	GW	P
CLAWSON SPRING ST G-1	02	160S	080E	4301530471	13014	State	GW	P
CLAWSON SPRING ST F-2	03	160S	080E	4301530472	13282	State	GW	P
CLAWSON SPRING ST F-1	03	160S	080E	4301530473	13278	State	GW	P
CLAWSON SPRING ST E-6	07	160S	090E	4301530474	13052	State	GW	P
CLAWSON SPRING ST G-2	02	160S	080E	4301530475	12957	State	GW	P
CLAWSON SPRING ST M-1	02	160S	080E	4301530488	13201	State	GW	P
CLAWSON SPRING ST K-1	02	160S	080E	4301530489	13202	State	GW	P
SHIMMIN TRUST 3	14	120S	100E	4300730119	11096	Fee	GW	PA
SHIMMIN TRUST 1	11	120S	100E	4300730120	11096	Fee	GW	PA
SHIMMIN TRUST 2	14	120S	100E	4300730121	11096	Fee	GW	PA
SHIMMIN TRUST 4	11	120S	100E	4300730123	11096	Fee	GW	PA
ST 9-16	16	120S	100E	4300730132	11402	State	GW	PA
ST 2-16	16	120S	100E	4300730133	11399	State	GW	PA
MATTS SUMMIT ST A-1	14	120S	090E	4300730141	11273	State	GW	PA
SLEMAKER A-1	05	120S	120E	4300730158	11441	Fee	GW	PA
JENSEN 16-10	10	120S	100E	4300730161	11403	Fee	GW	PA
JENSEN 7-15	15	120S	100E	4300730165	11407	Fee	GW	PA
SHIMMIN TRUST 12-12	12	120S	100E	4300730168	11420	Fee	GW	PA
JENSEN 11-15	15	120S	100E	4300730175	11425	Fee	GW	PA
BRYNER A-1	11	120S	120E	4300730188	11503	Fee	GW	PA
BRYNER A-1X (RIG SKID)	11	120S	120E	4300730209	11503	Fee	GW	PA
BLACKHAWK A-1	20	130S	100E	4300730885	13798	Fee	D	PA
BLACKHAWK A-5H	20	130S	100E	4300731402	17029	Fee	D	PA
CLAWSON SPRING ST SWD 3	06	160S	090E	4301530476	12978	State	D	PA
HELPER FED C-6	21	130S	100E	4300730683	13008	Federal	GW	S
UTAH 10-415	10	160S	080E	4301530391	12632	State	GW	TA

	API Well Number	Well Name	Qtr/Qtr	Section	Township	Range	Mineral Lease Type	Mineral Lease Number	Well Status
1	4300730189	HELPER FED B-1	NESW	33	13S	10E	Federal	USA UTU 71392	Producing
2	4300730190	HELPER FED A-1	C-SW	23	13S	10E	Federal	USA UTU 58434	Producing
3	4300730213	HELPER FED A-3	SESE	22	13S	10E	Federal	USA UTU 58434	Producing
4	4300730214	HELPER FED C-1	SENE	22	13S	10E	Federal	USA UTU 71391	Producing
5	4300730215	HELPER FED B-5	NENE	27	13S	10E	Federal	USA UTU 71392	Producing
6	4300730216	HELPER FED A-2	NESW	22	13S	10E	Federal	USA UTU 58434	Producing
7	4300730286	HELPER FED D-1	SWNE	26	13S	10E	Federal	USA UTU 68315	Producing
8	4300730378	HELPER FED F-3	NENE	8	14S	10E	Federal	USA UTU 65762	Producing
9	4300730379	HELPER FED F-4	NWNW	9	14S	10E	Federal	USA UTU 65762	Producing
10	4300730508	HELPER FED E-7	SESE	19	13S	10E	Federal	USA UTU 77980	Producing
11	4300730530	HELPER FED B-2	SENW	33	13S	10E	Federal	USA UTU 71392	Producing
12	4300730531	HELPER FED B-3	NESE	33	13S	10E	Federal	USA UTU 71392	Producing
13	4300730532	HELPER FED B-4	NENE	33	13S	10E	Federal	USA UTU 71392	Producing
14	4300730533	HELPER FED B-6	NENW	27	13S	10E	Federal	USA UTU 71392	Producing
15	4300730534	HELPER FED B-7	NESW	27	13S	10E	Federal	USA UTU 71392	Producing
16	4300730535	HELPER FED B-8	SESE	27	13S	10E	Federal	USA UTU 71392	Producing
17	4300730536	HELPER FED B-9	SENW	34	13S	10E	Federal	USA UTU 71392	Producing
18	4300730537	HELPER FED B-10	NWNE	34	13S	10E	Federal	USA UTU 71392	Producing
19	4300730538	HELPER FED B-11	SESW	34	13S	10E	Federal	USA UTU 71392	Producing
20	4300730539	HELPER FED B-12	NESE	34	13S	10E	Federal	USA UTU 71392	Producing
21	4300730540	HELPER FED B-13	SWSE	28	13S	10E	Federal	USA UTU 71392	Producing
22	4300730541	HELPER FED B-14	SWSW	28	13S	10E	Federal	USA UTU 71392	Producing
23	4300730542	HELPER FED D-2	SWNW	26	13S	10E	Federal	USA UTU 68315	Producing
24	4300730543	HELPER FED D-3	SESW	26	13S	10E	Federal	USA UTU 68315	Producing
25	4300730544	HELPER FED D-4	NWNW	35	13S	10E	Federal	USA UTU 68315	Producing
26	4300730545	HELPER FED D-5	SESW	35	13S	10E	Federal	USA UTU 68315	Producing
27	4300730546	HELPER FED D-6	NWSE	35	13S	10E	Federal	USA UTU 68315	Producing
28	4300730547	HELPER FED E-1	NESE	29	13S	10E	Federal	USA UTU 71675	Producing
29	4300730548	HELPER FED E-2	SESW	29	13S	10E	Federal	USA UTU 71675	Producing
30	4300730549	HELPER FED H-1	NENW	1	14S	10E	Federal	USA UTU 72352	Producing
31	4300730550	HELPER FED H-2	SESW	1	14S	10E	Federal	USA UTU 72352	Producing
32	4300730556	OLIVETO FED A-2	NESW	8	14S	10E	Federal	USA UTU 65762	Producing
33	4300730557	HELPER FED F-1	SESE	8	14S	10E	Federal	USA UTU 65762	Producing
34	4300730558	SMITH FED A-1	NWSW	9	14S	10E	Federal	USA UTU 65762	Producing
35	4300730593	HELPER FED A-6	SESE	23	13S	10E	Federal	USA UTU 58434	Producing
36	4300730594	HELPER FED D-7	C-SE	26	13S	10E	Federal	USA UTU 68315	Producing
37	4300730595	HELPER FED D-8	NENE	35	13S	10E	Federal	USA UTU 68315	Producing
38	4300730677	HELPER FED A-5	NENE	23	13S	10E	Federal	USA UTU 58434	Producing
39	4300730678	HELPER FED A-7	SENW	22	13S	10E	Federal	USA UTU 58434	Producing
40	4300730679	HELPER FED B-15	SENE	28	13S	10E	Federal	USA UTU 71392	Producing
41	4300730680	HELPER FED B-16	SWNW	28	13S	10E	Federal	USA UTU 71392	Producing
42	4300730681	HELPER FED C-2	NENW	24	13S	10E	Federal	USA UTU 71391	Producing

	API Well Number	Well Name	Qtr/Qtr	Section	Township	Range	Mineral Lease Type	Mineral Lease Number	Well Status
43	4300730682	HELPER FED C-4	NWSW	24	13S	10E	Federal	USA UTU 71391	Producing
44	4300730683	HELPER FED C-6	SWSE	21	13S	10E	Federal	USA UTU 71391	Shut-In
45	4300730684	HELPER FED C-7	SESW	21	13S	10E	Federal	USA UTU 71391	Producing
46	4300730685	HELPER FED D-9	NWNW	25	13S	10E	Federal	USA UTU 68315	Producing
47	4300730686	HELPER FED D-10	SENE	25	13S	10E	Federal	USA UTU 68315	Producing
48	4300730687	HELPER FED D-11	SESW	25	13S	10E	Federal	USA UTU 68315	Producing
49	4300730688	HELPER FED D-12	SESE	25	13S	10E	Federal	USA UTU 68315	Producing
50	4300730689	HELPER FED E-4	NWNE	29	13S	10E	Federal	USA UTU 71675	Producing
51	4300730692	HELPER FED A-4	SWNW	23	13S	10E	Federal	USA UTU 58434	Producing
52	4300730693	HELPER FED C-5	SWNE	24	13S	10E	Federal	USA UTU 71391	Producing
53	4300730694	HELPER FED G-1	C-NW	30	13S	11E	Federal	USA UTU 71677	Producing
54	4300730695	HELPER FED G-2	SWSW	30	13S	11E	Federal	USA UTU 71677	Producing
55	4300730696	HELPER FED G-3	SENW	31	13S	11E	Federal	USA UTU 71677	Producing
56	4300730697	HELPER FED G-4	SESW	31	13S	11E	Federal	USA UTU 71677	Producing
57	4300730698	HELPER FED H-3	SWNE	1	14S	10E	Federal	USA UTU 72352	Producing
58	4300730699	HELPER FED H-4	NESE	1	14S	10E	Federal	USA UTU 72352	Producing
59	4300730702	HELPER FED C-3	SESW	24	13S	10E	Federal	USA UTU 71391	Producing
60	4300730770	HELPER FED G-5	SWNE	30	13S	11E	Federal	USA UTU 71677	Producing
61	4300730771	HELPER FED G-6	SWSE	30	13S	11E	Federal	USA UTU 71677	Producing
62	4300730772	HELPER FED G-7	NWNE	31	13S	11E	Federal	USA UTU 71677	Producing
63	4300730773	HELPER FED G-8	NESE	31	13S	11E	Federal	USA UTU 71677	Producing
64	4300730776	HELPER FED E-8	SENE	19	13S	10E	Federal	USA UTU 77980	Producing
65	4300730868	HELPER FED E-9	SESW	19	13S	10E	Federal	USA UTU 77980	Producing
66	4300730869	HELPER FED E-5	SWSW	20	13S	10E	Federal	USA UTU 71675	Producing
67	4300730870	HELPER FED E-6	SWNW	20	13S	10E	Federal	USA UTU 71675	Producing
68	4300730871	HELPER FED E-10	NENW	30	13S	10E	Federal	USA UTU 71675	Producing
69	4300730873	HELPER FED E-11	NWNE	30	13S	10E	Federal	USA UTU 71675	Producing
70	4300730119	SHIMMIN TRUST 3	SENW	14	12S	10E	Fee (Private)		Plugged and Abandoned
71	4300730120	SHIMMIN TRUST 1	SESE	11	12S	10E	Fee (Private)		Plugged and Abandoned
72	4300730121	SHIMMIN TRUST 2	SENE	14	12S	10E	Fee (Private)		Plugged and Abandoned
73	4300730123	SHIMMIN TRUST 4	SESW	11	12S	10E	Fee (Private)		Plugged and Abandoned
74	4300730158	SLEMAKER A-1	SWNE	5	12S	12E	Fee (Private)		Plugged and Abandoned
75	4300730161	JENSEN 16-10	SESE	10	12S	10E	Fee (Private)		Plugged and Abandoned
76	4300730165	JENSEN 7-15	SWNE	15	12S	10E	Fee (Private)		Plugged and Abandoned
77	4300730168	SHIMMIN TRUST 12-12	NWSW	12	12S	10E	Fee (Private)		Plugged and Abandoned
78	4300730175	JENSEN 11-15	NESW	15	12S	10E	Fee (Private)		Plugged and Abandoned
79	4300730188	BRYNER A-1	NESE	11	12S	12E	Fee (Private)		Plugged and Abandoned
80	4300730209	BRYNER A-1X (RIG SKID)	NESE	11	12S	12E	Fee (Private)		Plugged and Abandoned
81	4300730348	BIRCH A-1	NWSW	5	14S	10E	Fee (Private)		Producing
82	4300730352	CHUBBUCK A-1	NESE	31	13S	10E	Fee (Private)		Producing
83	4300730353	VEA A-1	SWNW	32	13S	10E	Fee (Private)		Producing
84	4300730354	VEA A-2	NENE	32	13S	10E	Fee (Private)		Producing

	API Well Number	Well Name	Qtr/Qtr	Section	Township	Range	Mineral Lease Type	Mineral Lease Number	Well Status
85	4300730355	VEA A-3	SESW	32	13S	10E	Fee (Private)		Producing
86	4300730356	VEA A-4	NWSE	32	13S	10E	Fee (Private)		Producing
87	4300730372	BIRCH A-2	NWNW	8	14S	10E	Fee (Private)		Producing
88	4300730570	SE INVESTMENTS A-1	NESE	6	14S	10E	Fee (Private)		Producing
89	4300730586	HARMOND A-1	SENE	7	14S	10E	Fee (Private)		Producing
90	4300730604	CHUBBUCK A-2	SENW	6	14S	10E	Fee (Private)		Producing
91	4300730726	CLAWSON SPRING ST J-1	SESW	35	15S	8E	Fee (Private)		Producing
92	4300730727	PIERUCCI 1	SENW	35	15S	8E	Fee (Private)		Producing
93	4300730728	POTTER ETAL 1	SWNE	35	15S	8E	Fee (Private)		Producing
94	4300730737	POTTER ETAL 2	NESE	35	15S	8E	Fee (Private)		Producing
95	4300730774	GOODALL A-1	NWSW	6	14S	11E	Fee (Private)		Producing
96	4300730781	HAUSKNECHT A-1	SWNW	21	13S	10E	Fee (Private)		Producing
97	4300730872	SACCOMANNO A-1	NESE	30	13S	10E	Fee (Private)		Producing
98	4300730885	BLACKHAWK A-1	SESE	20	13S	10E	Fee (Private)		Plugged and Abandoned
99	4300730886	BLACKHAWK A-2	NWNW	29	13S	10E	Fee (Private)		Producing
100	4300730914	BLACKHAWK A-3	SENE	20	13S	10E	Fee (Private)		Producing
101	4300730915	BLACKHAWK A-4	NENE	21	13S	10E	Fee (Private)		Producing
102	4300730923	BLACKHAWK A-1X	SESE	20	13S	10E	Fee (Private)		Producing
103	4300731402	BLACKHAWK A-5H	NENE	20	13S	10E	Fee (Private)		Plugged and Abandoned
104	4300750075	VEA 32-32	SWNE	32	13S	10E	Fee (Private)		Producing
105	4301530468	CLAWSON SPRING ST IPA-1	SESE	10	16S	8E	Fee (Private)		Producing
106	4301530469	CLAWSON SPRING ST IPA-2	NENE	15	16S	8E	Fee (Private)		Producing
107	4300730132	ST 9-16	NESE	16	12S	10E	State	ML-44443	Plugged and Abandoned
108	4300730133	ST 2-16	NWNE	16	12S	10E	State	ML-44443	Plugged and Abandoned
109	4300730141	MATTS SUMMIT ST A-1	NWNW	14	12S	9E	State	ML-44496	Plugged and Abandoned
110	4300730349	HELPER ST A-1	SENW	3	14S	10E	State	ST UT ML 45805	Producing
111	4300730350	HELPER ST D-7	NWSW	4	14S	10E	State	ST UT ML 45804	Producing
112	4300730357	HELPER ST A-8	NWSE	2	14S	10E	State	ST UT ML 45805	Producing
113	4300730358	HELPER ST A-3	NWNW	2	14S	10E	State	ST UT ML 45805	Producing
114	4300730359	HELPER ST A-4	NWNE	2	14S	10E	State	ST UT ML 45805	Producing
115	4300730360	HELPER ST A-7	NESW	2	14S	10E	State	ST UT ML 45805	Producing
116	4300730362	HELPER ST A-2	NENE	3	14S	10E	State	ST UT ML 45805	Producing
117	4300730363	HELPER ST A-5	NESW	3	14S	10E	State	ST UT ML 45805	Producing
118	4300730364	HELPER ST A-6	NESE	3	14S	10E	State	ST UT ML 45805	Producing
119	4300730365	HELPER ST D-4	SWNW	4	14S	10E	State	ST UT ML 45804	Producing
120	4300730366	HELPER ST D-3	NENE	5	14S	10E	State	ST UT ML 45804	Producing
121	4300730367	HELPER ST D-5	NWNE	4	14S	10E	State	ST UT ML 45804	Producing
122	4300730368	HELPER ST D-8	SESE	4	14S	10E	State	ST UT ML 45804	Producing
123	4300730369	HELPER ST D-2	NENW	5	14S	10E	State	ST UT ML 45804	Producing
124	4300730370	HELPER ST D-6	SESE	5	14S	10E	State	ST UT ML 45804	Producing
125	4300730371	HELPER ST D-1	NENE	6	14S	10E	State	ST UT ML 45804	Producing
126	4300730373	HELPER ST A-9	SENW	10	14S	10E	State	ST UT ML 45805	Producing

	API Well Number	Well Name	Qtr/Qtr	Section	Township	Range	Mineral Lease Type	Mineral Lease Number	Well Status
127	4300730376	HELPER ST B-1	SWNE	9	14S	10E	State	ST UT ML 47556	Producing
128	4300730433	HELPER ST A-10	NWNE	10	14S	10E	State	ST UT ML 45805	Producing
129	4300730434	HELPER ST A-11	SWNW	11	14S	10E	State	ST UT ML 45805	Producing
130	4300730435	HELPER ST A-12	NWSW	10	14S	10E	State	ST UT ML 45805	Producing
131	4300730436	HELPER ST A-13	NESE	10	14S	10E	State	ST UT ML 45805	Producing
132	4300730437	HELPER ST B-2	NESE	9	14S	10E	State	ST UT ML 47556	Producing
133	4300730571	HELPER ST A-14	SESW	11	14S	10E	State	ST UT ML 45805	Producing
134	4300730572	HELPER ST A-15	SENE	11	14S	10E	State	ST UT ML 45805	Producing
135	4300730573	HELPER ST E-1	SESW	36	13S	10E	State	ST UT ML 45802	Producing
136	4300730574	HELPER ST E-2	SWNW	36	13S	10E	State	ST UT ML 45802	Producing
137	4300730592	HELPER ST E-3	NENE	36	13S	10E	State	ST UT ML 45802	Producing
138	4300730597	CLAWSON SPRING ST A-1	SWSE	36	15S	8E	State	ST UT ML 46106	Producing
139	4300730598	HELPER ST E-4	SWSE	36	13S	10E	State	ST UT ML 45802	Producing
140	4300730603	HELPER ST A-16	SWSE	11	14S	10E	State	ST UT ML 45805	Producing
141	4300730635	CLAWSON SPRING ST A-2	NWNW	36	15S	8E	State	ST UT ML 46106	Producing
142	4300730636	CLAWSON SPRING ST A-3	NESW	36	15S	8E	State	ST UT ML 46106	Producing
143	4300730637	CLAWSON SPRING ST A-4	NWNE	36	15S	8E	State	ST UT ML 46106	Producing
144	4300730642	CLAWSON SPRING ST D-5	NENW	31	15S	9E	State	ML-48226	Producing
145	4300730643	CLAWSON SPRING ST D-6	SWSW	31	15S	9E	State	ML-48226	Producing
146	4300730644	CLAWSON SPRING ST D-7	NWNE	31	15S	9E	State	ML-48226	Producing
147	4300730701	CLAWSON SPRING ST D-8	NWSE	31	15S	9E	State	ML-48226	Producing
148	4300750070	HELPER STATE 12-3	SWNW	3	14S	10E	State	ST UT ML 45805	Producing
149	4300750071	HELPER STATE 32-3	SWNE	3	14S	10E	State	ST UT ML 45805	Producing
150	4300750072	HELPER STATE 32-36	SWNE	36	13S	10E	State	ST UT ML 45802	Producing
151	4301530391	UTAH 10-415	NENE	10	16S	8E	State	ST UT ML 48189	Temporarily-Abandoned
152	4301530392	CLAWSON SPRING ST E-7	SENE	7	16S	9E	State	ST UT ML 48220-A	Producing
153	4301530394	CLAWSON SPRING ST E-8	SWSE	7	16S	9E	State	ST UT ML 48220-A	Producing
154	4301530403	CLAWSON SPRING ST E-3	SENE	6	16S	9E	State	ST UT ML 48220-A	Producing
155	4301530404	CLAWSON SPRING ST E-1	SENW	6	16S	9E	State	ST UT ML 48220-A	Producing
156	4301530405	CLAWSON SPRING ST E-2	NESW	6	16S	9E	State	ST UT ML 48220-A	Producing
157	4301530406	CLAWSON SPRING ST E-4	NWSE	6	16S	9E	State	ST UT ML 48220-A	Producing
158	4301530410	CLAWSON SPRING ST C-1	SWNW	12	16S	8E	State	ST UT UO 48209	Producing
159	4301530427	CLAWSON SPRING ST B-1	NENW	1	16S	8E	State	ST UT ML 48216	Producing
160	4301530428	CLAWSON SPRING ST B-2	NWSW	1	16S	8E	State	ST UT ML 48216	Producing
161	4301530429	CLAWSON SPRING ST B-3	NWNE	1	16S	8E	State	ST UT ML 48216	Producing
162	4301530430	CLAWSON SPRING ST B-4	SESE	1	16S	8E	State	ST UT ML 48216	Producing
163	4301530431	CLAWSON SPRING ST B-5	SWSW	12	16S	8E	State	ST UT ML 48216	Producing
164	4301530432	CLAWSON SPRING ST B-8	SENE	11	16S	8E	State	ST UT ML 48216	Producing
165	4301530433	CLAWSON SPRING ST B-9	NWSE	11	16S	8E	State	ST UT ML 48216	Producing
166	4301530434	CLAWSON SPRING ST C-2	SENE	12	16S	8E	State	ST UT UO 48209	Producing
167	4301530435	CLAWSON SPRING ST C-4	SWNW	14	16S	8E	State	ST UT UO 48209	Producing
168	4301530460	CLAWSON SPRING ST B-7	NWSW	11	16S	8E	State	ST UT ML 48216	Producing

	API Well Number	Well Name	Qtr/Qtr	Section	Township	Range	Mineral Lease Type	Mineral Lease Number	Well Status
169	4301530461	CLAWSON SPRING ST C-6	SENE	14	16S	8E	State	ST UT UO 48209	Producing
170	4301530463	CLAWSON SPRING ST C-3	C-SE	12	16S	8E	State	ST UT UO 48209	Producing
171	4301530465	CLAWSON SPRING ST B-6	NENW	11	16S	8E	State	ST UT ML 48216	Producing
172	4301530466	CLAWSON SPRING ST H-1	NENW	13	16S	8E	State	ST UT ML 48217-A	Producing
173	4301530467	CLAWSON SPRING ST H-2	NENE	13	16S	8E	State	ST UT ML 48217-A	Producing
174	4301530470	CLAWSON SPRING ST E-5	NENW	7	16S	9E	State	ST UT ML 48220-A	Producing
175	4301530471	CLAWSON SPRING ST G-1	NWNW	2	16S	8E	State	ST UT ML 46314	Producing
176	4301530472	CLAWSON SPRING ST F-2	NESE	3	16S	8E	State	ST UT ML 48515	Producing
177	4301530473	CLAWSON SPRING ST F-1	SENE	3	16S	8E	State	ST UT ML 48514	Producing
178	4301530474	CLAWSON SPRING ST E-6	SESW	7	16S	9E	State	ST UT ML 48220-A	Producing
179	4301530475	CLAWSON SPRING ST G-2	NESW	2	16S	8E	State	ST UT ML 46314	Producing
180	4301530488	CLAWSON SPRING ST M-1	NWNE	2	16S	8E	State	ST UT ML 47561	Producing
181	4301530489	CLAWSON SPRING ST K-1	SESE	2	16S	8E	State	ST UT ML 46043	Producing