



14421 County Rd. 10 • Ft. Lupton, Colorado 80621 • (303) 857-9999 • FAX (303) 857-0577 • E-MAIL Permitco 1@aol.com

October 10, 2007

Division of Oil, Gas & Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, UT 84114-5801

Attn: Diana Mason

Re: **Pioneer Natural Resources USA, Inc.**  
**Horse Point St #41-1-16-23**  
**490' FNL and 465' FEL**  
**Lot 1 (NE NE) Section 1, T16S - R23E**  
**Grand County, Utah**

Dear Diana,

Enclosed please find two copies of the Application for Permit to Drill, along with the required attachments.

If you should need additional information, please don't hesitate to contact me. Approved copies of the A.P.D. should be sent to PermitCo Inc. at the address shown above.

Sincerely,

PERMITCO INC.

*Venessa Langmacher*

Venessa Langmacher  
Consultant for  
Pioneer Natural Resources USA, Inc.

Enc.

cc: Pioneer Natural Resources USA, Inc. - Denver, CO  
Pioneer Natural Resources USA, Inc. - Rangely, CO  
Utah Division of Oil, Gas & Mining - Roosevelt, UT

RECEIVED

OCT 16 2007

DIV. OF OIL, GAS & MINING

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

FORM 3

AMENDED REPORT   
(highlight changes)

<b>APPLICATION FOR PERMIT TO DRILL</b>		5. MINERAL LEASE NO.: <b>ML-48045</b>	6. SURFACE: <b>State</b>
1A. TYPE OF WORK: DRILL <input checked="" type="checkbox"/> REENTER <input type="checkbox"/> DEEPEN <input type="checkbox"/>		7. IF INDIAN, ALLOTTEE OR TRIBE NAME: <b>N/A</b>	
B. TYPE OF WELL: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> OTHER _____ SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		8. UNIT or CA AGREEMENT NAME: <b>N/A</b>	
2. NAME OF OPERATOR: <b>Pioneer Natural Resources USA, Inc.</b>		9. WELL NAME and NUMBER: <b>Horse Point St #41-1-16-23</b>	
3. ADDRESS OF OPERATOR: <b>1401 - 17th Street, Suite 1200, Denver, CO 80202</b>		PHONE NUMBER: <b>303/675-2782</b>	10. FIELD AND POOL, OR WILDCAT: <i>Undesignated</i> <b>Horse Point / Morrison</b>
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: <b>644483X</b>		11. QTR/QTR, SECTION, TOWNSHIP, RANGE MERIDIAN: <b>Section 1, T16S - R23E</b>	
AT PROPOSED PRODUCING ZONE: <b>4367925Y 39.450660</b> <b>490' FNL and 465' FEL</b> <b>Lot 1 (NE NE) - 109 320836</b>			
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: <b>Approximately 58.9 miles south of Ouray, UT</b>		12. COUNTY: <b>Grand County</b>	13. STATE: <b>UT</b>
15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET) <b>465'</b>	16. NUMBER OF ACRES IN LEASE: <b>917.25</b>	17. NUMBER OF ACRES ASSIGNED TO THIS WELL: <b>40 Acres</b>	
18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET): <b>None</b>	19. PROPOSED DEPTH: <b>8300'</b>	20. BOND DESCRIPTION: <b>Utah State Bond No. 104319463</b>	
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): <b>8003' GL</b>	22. APPROXIMATE DATE WORK WILL START: <b>Spring 2008</b>	23. ESTIMATED DURATION: <b>26 Days</b>	

**PROPOSED CASING AND CEMENTING PROGRAM**

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT
14-3/4"	10-3/4", 40.5#, K-55, STC	450'	340 sx Class G, 1.15 ft3/sx, 15.8 ppg
9-7/8"	7-5/8", 29.7#, N-80, LTC	4900'	290 sx RS-1, 4.13 ft3/sx, 10.8 ppg + 150 sx Glass G, 1.12 ft3/sx, 16.0 ppg
6-3/4"	5-1/2", 17#, N-80, LTC	8300'	170 sx Tuned Light VI, 2.3 ft3/sx, 10.5 ppg
<b>CONFIDENTIAL-TIGHT HOLE</b>			

**ATTACHMENTS**

VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER     | <input checked="" type="checkbox"/> COMPLETE DRILLING PLAN                                   |
| <input checked="" type="checkbox"/> EVIDENCE OF DIVISION OF WATER RIGHTS APPROVAL FOR USE OF WATER | <input type="checkbox"/> FORM 5, IF OPERATOR IS PERSON OR COMPANY OTHER THAN THE LEASE OWNER |

AGENT: **PermitCo Inc., 14421 County Road 10, Fort Lupton, CO 80621** AGENT'S PHONE NO.: **303/857-9999**

NAME (PLEASE PRINT) **Venessa Langmacher** TITLE **Agent for Pioneer Natural Resources USA, Inc.**

SIGNATURE *Venessa Langmacher* DATE **October 10, 2007**

(This space for State use only)

**Approved by the  
Utah Division of  
Oil, Gas and Mining**

API NUMBER ASSIGNED: **43019-31559**

APPROVAL:

Date: **01-08-08**  
(See instructions on Reverse Side)

By: *[Signature]*

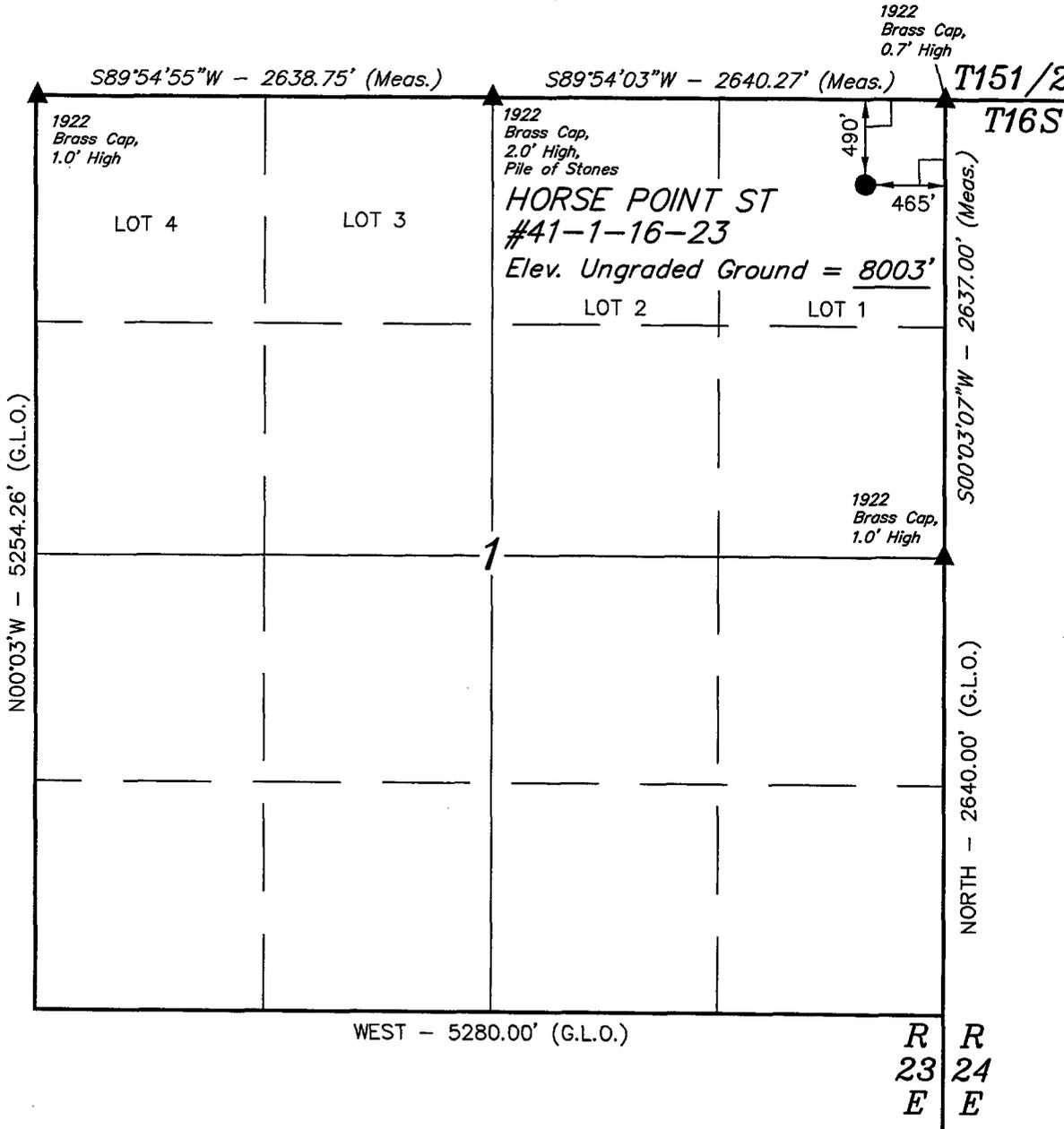
**RECEIVED  
OCT 16 2007**

**DIV. OF OIL, GAS & MINING**

T16S, R23E, S.L.B.&M.

PIONEER NATURAL RESOURCES USA, INC.

Well location, HORSE POINT ST #41-1-16-23, located as shown in LOT 1 of Section 1, T16S, R23E, S.L.B.&M., Grand County, Utah.

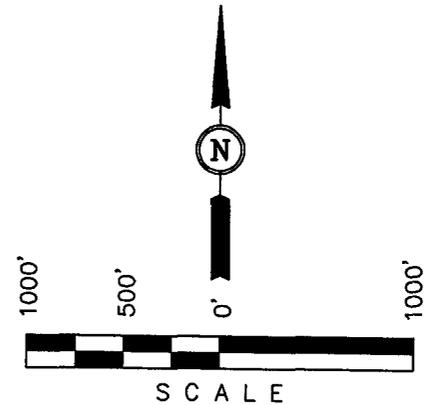


BASIS OF ELEVATION

SPOT ELEVATION LOCATED AT THE SOUTHEAST CORNER OF SECTION 30, T15S, R22E, S.L.B.&M. TAKEN FROM THE CEDAR CAMP CANYON, QUADRANGLE, UTAH, GRAND COUNTY, 7.5 MINUTE QUAD. (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED AS BEING 7454 FEET.

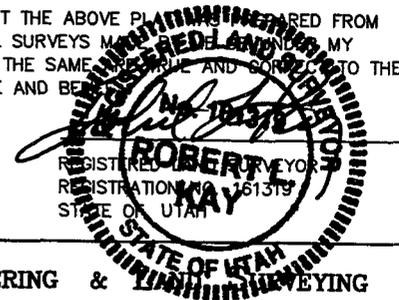
BASIS OF BEARINGS

BASIS OF BEARINGS IS A G.P.S. OBSERVATION.



CERTIFICATE

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



<b>UINTAH ENGINEERING &amp; SURVEYING</b> 85 SOUTH 200 EAST - VERNAL, UTAH 84078 (435) 789-1017		
SCALE 1" = 1000'	DATE SURVEYED: 06-27-07	DATE DRAWN: 07-05-07
PARTY J.W. Q.B. L.K.	REFERENCES G.L.O. PLAT	
WEATHER HOT	FILE PIONEER NATURAL RESOURCES USA, INC.	

LEGEND:

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

(AUTONOMOUS NAD 83)  
 LATITUDE = 39°27'02.69" (39.450747)  
 LONGITUDE = 109°19'17.53" (109.321536)  
 (AUTONOMOUS NAD 27)  
 LATITUDE = 39°27'02.80" (39.450778)  
 LONGITUDE = 109°19'15.10" (109.320861)

1. **Estimated Tops/Geologic Markers**

The estimated tops of important geologic markers are as follows:

<i>Formation</i>	<i>Depth</i>	<i>Subsea</i>
Castlegate	4,260'	+3,766'
Mancos B	5,010'	+3,016'
Mancos B Base	5,810'	+2,216'
Dakota Silt	7,980'	+46'
Morrison	8,260'	-234'
TD	8,300'	-274'

2. **Estimated Depths and Names of Anticipated Water, Oil, Gas or Other Minerals Bearing Formations**

<i>Substance</i>	<i>Formation</i>	<i>Depth</i>
Water	Castlegate	4,260'
Gas	Dakota Silt	7,980'
Gas	Morrison	8,260'

3. **Well Control Equipment & Testing Procedures**

Pioneer Natural Resources USA, Inc.'s minimum specifications for pressure control equipment are as follows:

Ram Type: 11" Hydraulic double with annular, 5000 psi w.p.

Pioneer Natural Resources USA, Inc. will comply with all requirements pertaining to well control as listed in the Rule R649-3-7 of the Utah Division of Oil, Gas & Mining.

The size and rating of the BOP stack is shown on the attached diagram.



**4. Casing Program**

The proposed casing program will be as follows:

<i>Purpose</i>	<i>Depth</i>	<i>Hole Size</i>	<i>O.D.</i>	<i>Weight</i>	<i>Grade</i>	<i>Type</i>	<i>New/Used</i>
Surface	0'-450'	14-3/4"	10-3/4"	40.5#	K-55	ST&C	New
Intermediate	0'-4,900'	9-7/8"	7-5/8"	29.7#	N-80	LT&C	New
Liner	<del>0</del> <sup>4700</sup> -8,300'	6-3/4"	5-1/2"	17#	N-80	LT&C	New

Casing design subject to revision based on geologic conditions encountered.

**5. Cement Program**

<i>Surface</i>	<i>Type and Amount</i>
TOC @ Surface	340 sx Class G, 2% CaCl <sub>2</sub> , 1/4 lb/sk Flocele, 15.8 ppg, 1.15 ft <sup>3</sup> /sx.
<i>Intermediate</i>	<i>Type and Amount</i>
TOC @ 250'	Lead: 290 sx Tuned Light System RS-1, 10.8 ppg, 4.13 ft <sup>3</sup> /sx. Tail: 150 sx Class G, 16.0 ppg, 1.12 ft <sup>3</sup> /sx.
<i>Production-Liner</i>	<i>Type and Amount</i>
TOC @ 4,700'	170 sx Tuned Light V1, 10.5 ppg, 2.3 ft <sup>3</sup> /sx.

**6. Drilling Fluids**

The proposed circulating mediums to be employed in drilling are as follows:

<i>Interval</i>	<i>Mud Type</i>	<i>Mud Wt.</i>	<i>Visc.</i>	<i>F/L</i>
0'-450'	Spud Mud	8.3 - 8.6	28	N/C
450'-8,300'	KCL Polymer	8.8 - 8.9	38 - 40	8 - 10



**7. Testing, Logging and Coring**

The anticipated type and amount of testing, logging and coring are as follows:

- a. No drill stem tests are anticipated.
- b. The logging program will consist of a GR from surface to surface casing and a Triple Combo - AIT/CNL/FDC/CAL/GR/SP/PE and a Temperature Tool GIH to be run from surface casing to Intermediate Casing Point. An SP/AIT/Scanning Sonic/CNL/FDC/CAL/GR/SP/PE and a Temperature Tool GIH will be run from Intermediate Casing point to TD. An ECS (Environmental Capture Spectroscopy) Spectral GR will be run only over interval from Mancos Shale top to 50' into the Dakota Sand and an FMI will be run from the top of the Mancos B (5,212') to TD.
- c. No cores are anticipated.

**8. Anticipated Pressures and H<sub>2</sub>S**

- a. Normal pressures and temperatures are expected in the objective formation. A maximum bottom hole pressure of 3818 psi is expected. A maximum bottom hole temperature of 182 degrees Fahrenheit is anticipated. Sour gas (H<sub>2</sub>S) is not anticipated.

**9. Water Source**

- a. Water will be trucked from a water well located in the SW SE Section 32, T4S - R3E. Ouray, UT Permit No. 43-8496

**10. Other Information**

- a. Drilling is planned to commence in Spring, 2008
- b. It is anticipated that the drilling of this well will take approximately 26 days.



Application for Permit to Drill  
Pioneer Natural Resources USA, Inc.  
**Horse Point St #41-1-16-23**  
490' FNL and 465' FEL  
Lot 1 (NE NE) Section 1, T16S - R23E  
Grand County, Utah

**CONFIDENTIAL - TIGHT HOLE**

**Lease No. ML-48045**

**DRILLING PROGRAM**

**Page 4**

- c. Lining of the reserve pit will be done if deemed necessary by the Utah Division of Oil, Gas and Minerals.
- d. At the end of drilling operations the location will be reclaimed and re-seeded as requested by the surface owner.

Surface Owner  
State of Utah



**CLASS III CULTURAL RESOURCE INVENTORY REPORT  
FOR  
FIVE PROPOSED STATE WELL LOCATIONS  
(MAIN CANYON STATE #12-16-15-23, MAIN CANYON STATE #34-21-15-23,  
GRAND CANYONS STATE #23-35-15.5-23, HORSE POINT STATE #34-10-16-23, AND  
HORSE POINT STATE #41-1-16-23)  
AND RELATED LINEAR ROUTES IN  
GRAND AND UINTAH COUNTIES, UTAH,  
FOR  
PIONEER NATURAL RESOURCES USA, INC.**

GRI Project No. 2756  
23 August 2007

Prepared by

Grand River Institute  
P.O. Box 3543  
Grand Junction, Colorado 81502  
BLM Antiquities Permit No. 07UT-54939  
UDSH Project Authorization No. U07-GB-0656b,p,s

---

Carl E. Conner, Principal Investigator

Submitted to

School and Institutional  
Trust Lands Administration  
675 East 500 South, Suite 500  
Salt Lake City, Utah 84102-2818

The Bureau of Land Management  
Vernal District Office  
170 South 500 East  
Vernal, Utah 84078

## Abstract

At the request of the School and Institutional Trust Lands Administration (SITLA), the Bureau of Land Management Vernal Field Office (BLM), and Pioneer Natural Resources USA, Inc. (Pioneer), Grand River Institute (GRI) conducted a Class III cultural resources inventory for five proposed statewell locations (Main Canyon State #12-16-15-23, Main Canyon State #34-21-15-23, Grand Canyons State #23-35-15.5-23, Horse Point State #34-10-16-23, and Horse Point State #41-1-16-23) and their related linear routes (5.6 miles) in Uintah and Grand Counties, Utah. This project was completed under under Utah Division of State History (UDSH) Project Authorization No. U07GB-0656bps and BLM Antiquities Permit No. 07UT-54939. The fieldwork was completed by Carl E. Conner (Principal Investigator), Barbara Davenport, Kevin O'Hanlon, and Dana Archuleta on the of 16<sup>th</sup>, 17<sup>th</sup>, and 18<sup>th</sup> of August 2007. A total of 185.7 acres (State 149.8, BLM 27.3, and private 8.6) was surveyed.

The inventory was undertaken to ensure the project's compliance with State and Federal legislation governing the identification and protection of cultural resources. The purposes of this investigation were to identify resources within the project areas that may be adversely affected by the proposed action, to evaluate these sites' eligibility for listing in the National Register of Historic Places (NRHP), and to make management recommendations for those sites found to be eligible.

Two isolated finds were newly recorded. The files search indicated one site (42UN913) was previously recorded nearby. It was revisited and reevaluated by this inventory. The site is an open lithic scatter with no surface evidence of hearth features and no apparent depth of cultural fill. It was previously evaluated as non-significant and not eligible for listing on the National Register of Historic Places. No changes were made to that evaluation. Accordingly, archaeological clearance is recommended for this project.

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## **Introduction**

At the request of the School and Institutional Trust Lands Administration (SITLA), the Bureau of Land Management Vernal Field Office (BLM), and Pioneer Natural Resources USA, Inc. (Pioneer), Grand River Institute (GRI) conducted a Class III cultural resources inventory for five proposed well locations (Main Canyon State #12-16-15-23, Main Canyon State #34-21-15-23, Grand Canyons State #23-35-15.5-23, Horse Point State #34-10-16-23, and Horse Point State #41-1-16-23) and their related linear routes (5.6 miles) in Uintah and Grand Counties, Utah. This project was completed under under Utah Division of State History (UDSH) Project Authorization No. U07GB-0656bps and BLM Antiquities Permit No. 07UT-54939. The fieldwork was completed by Carl E. Conner (Principal Investigator), Barbara Davenport, Kevin O'Hanlon, and Dana Archuleta on the of 16<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup> of August 2007. A total of 185.7 acres (State 149.8, BLM 27.3, and private 8.6) was surveyed.

The survey was done to meet requirements of Utah Code, Title 9, Chapter 8; Utah Public Lands Policy Coordination Office Rule 694-1; Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701); National Historic Preservation Act (as amended in 1992); National Environmental Policy Act (NEPA) of 1969; Executive Order 11593 (36 F.R.8921); Historical and Archaeological Data-Preservation Act of 1974 (16 U.S.C. 469); and, Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa *et seq.*, as amended). These laws are concerned with the identification, evaluation, and protection of fragile, non-renewable evidences of human activity, occupation and endeavor reflected in districts, sites, structures, artifacts, objects, ruins, works of art, architecture, and natural features that were of importance in human events. Such resources tend to be localized and highly sensitive to disturbance.

## **Location of the Project Area**

The project area is located approximately 65 miles southeast of the town of Vernal, Utah. The proposed wells, access roads and pipelines are found in T. 15 S., R. 23 E., Sections 16, 21, 22, 27, and 28; T. 15.5 S., R. 23 E., Section 35; T. 16 S., R. 23 E., Sections 1, 2, 10, 14 and 15; T. 16 S., R.24 E., Sections 6 and 7; S.L.B.M. (Figures 1-3).

## **Environment**

The project area is located along the south border of the Uinta Basin, a major geologic subdivision of the Colorado Plateau. The basin is distinctively bowl-shaped and bounded by mountains on all sides. Physiographically, the basin includes the Uinta basin in the northern portion and the Book Cliffs/Roan Plateau in the south portion. The geology of the basin consists of Quaternary- and Tertiary-age deposits which include Holocene and Pleistocene pediment deposits, and Eocene-age fluvial and lacustrine sedimentary rocks. The Tertiary-age Green River Formation forms the bedrock of the study area.

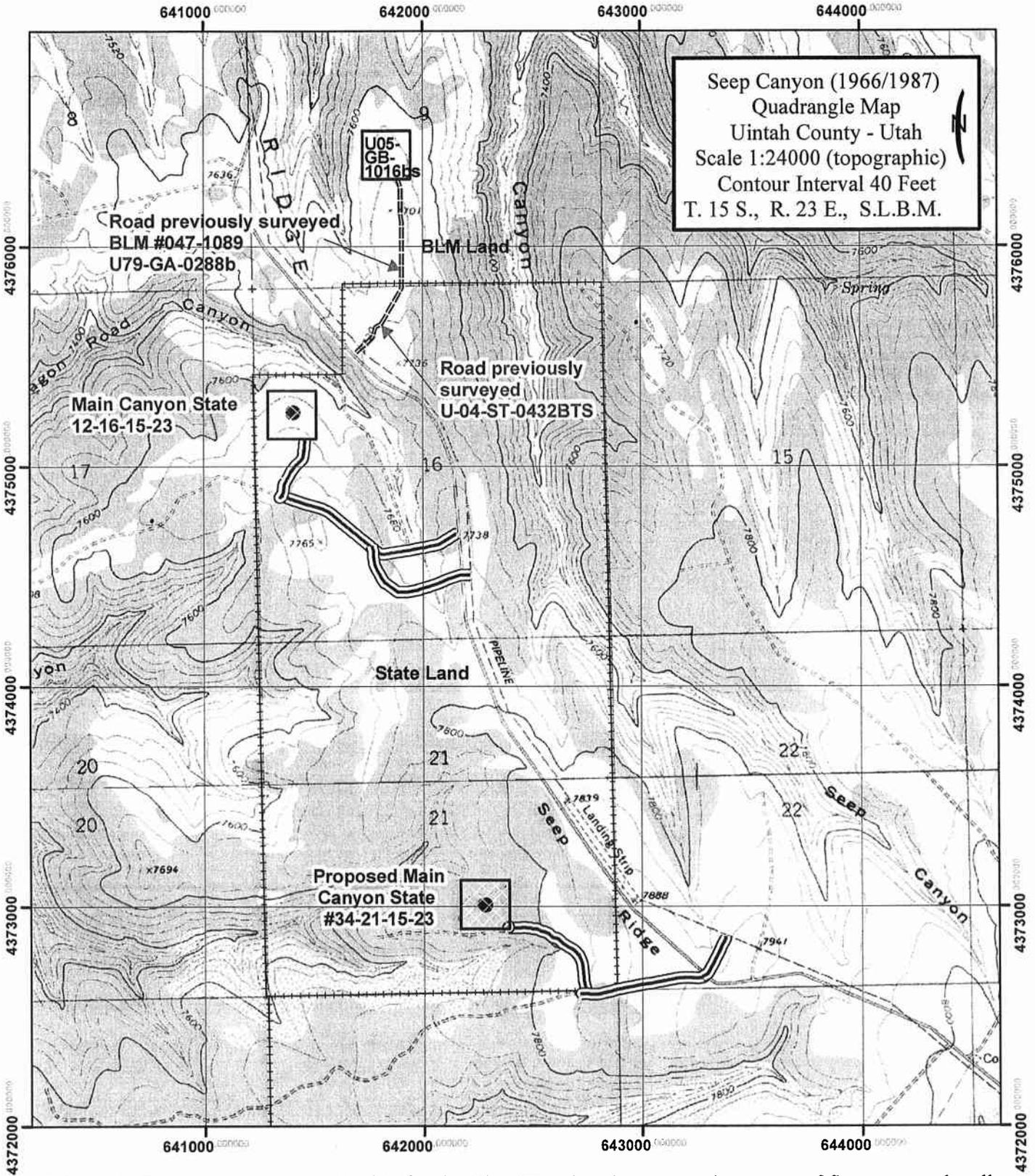


Figure 1. Project location map (1 of 3) for the Class III cultural resources inventory of five proposed well locations and related linear routes in Grand and Uintah Counties, Utah for Pioneer Natural Resources USA, Inc. Areas surveyed for cultural resources are highlighted. [GRI Project No. #2756, 08/23/07]

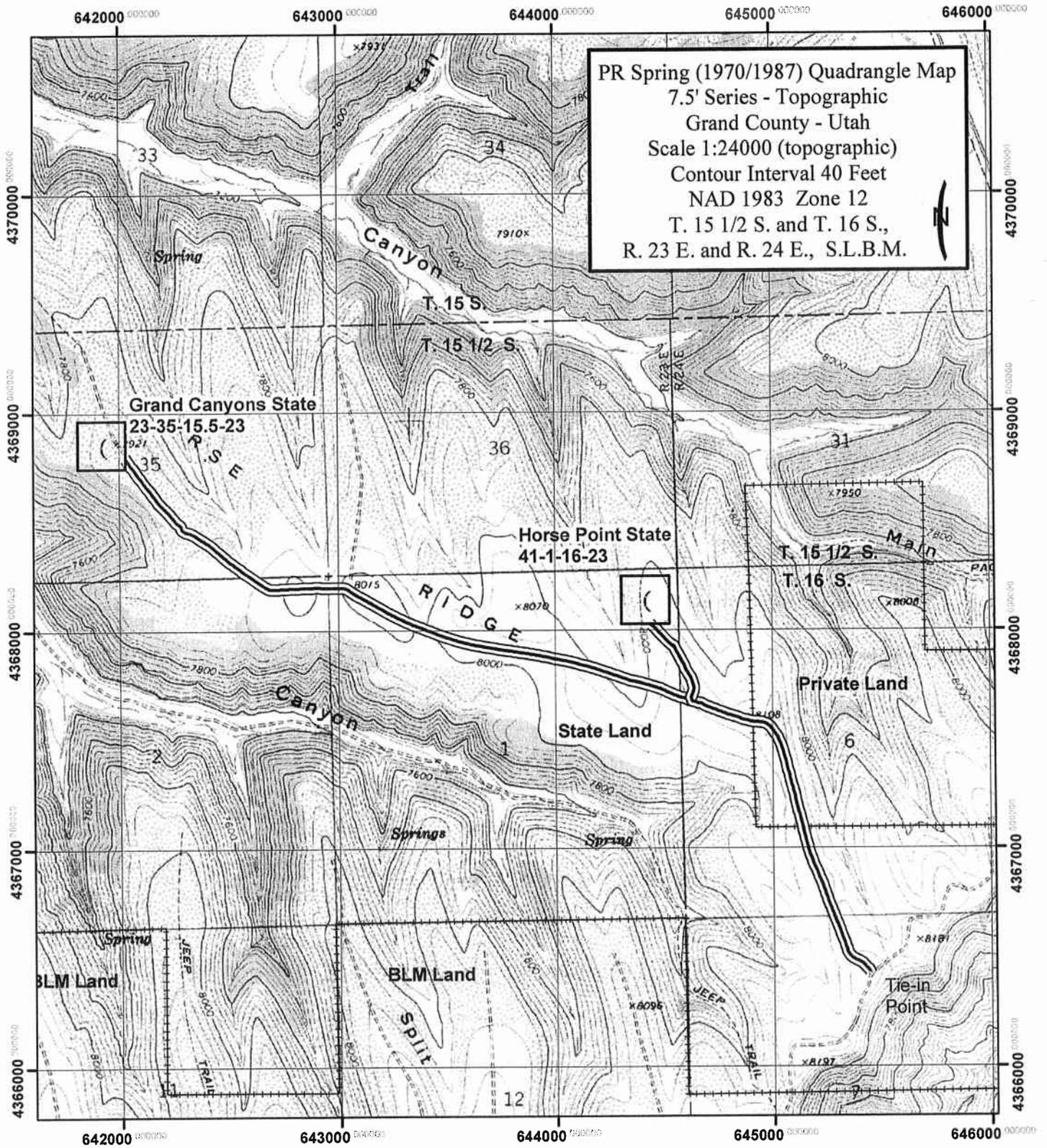


Figure 2. Project location map (2 of 3) for the Class III cultural resources inventory of five proposed well well locations and related linear routes in Grand and Uintah Counties, Utah for Pioneer Natural Resources USA, Inc. Areas surveyed for cultural resources are highlighted. [GRI Project No. #2756, 08/23/07]

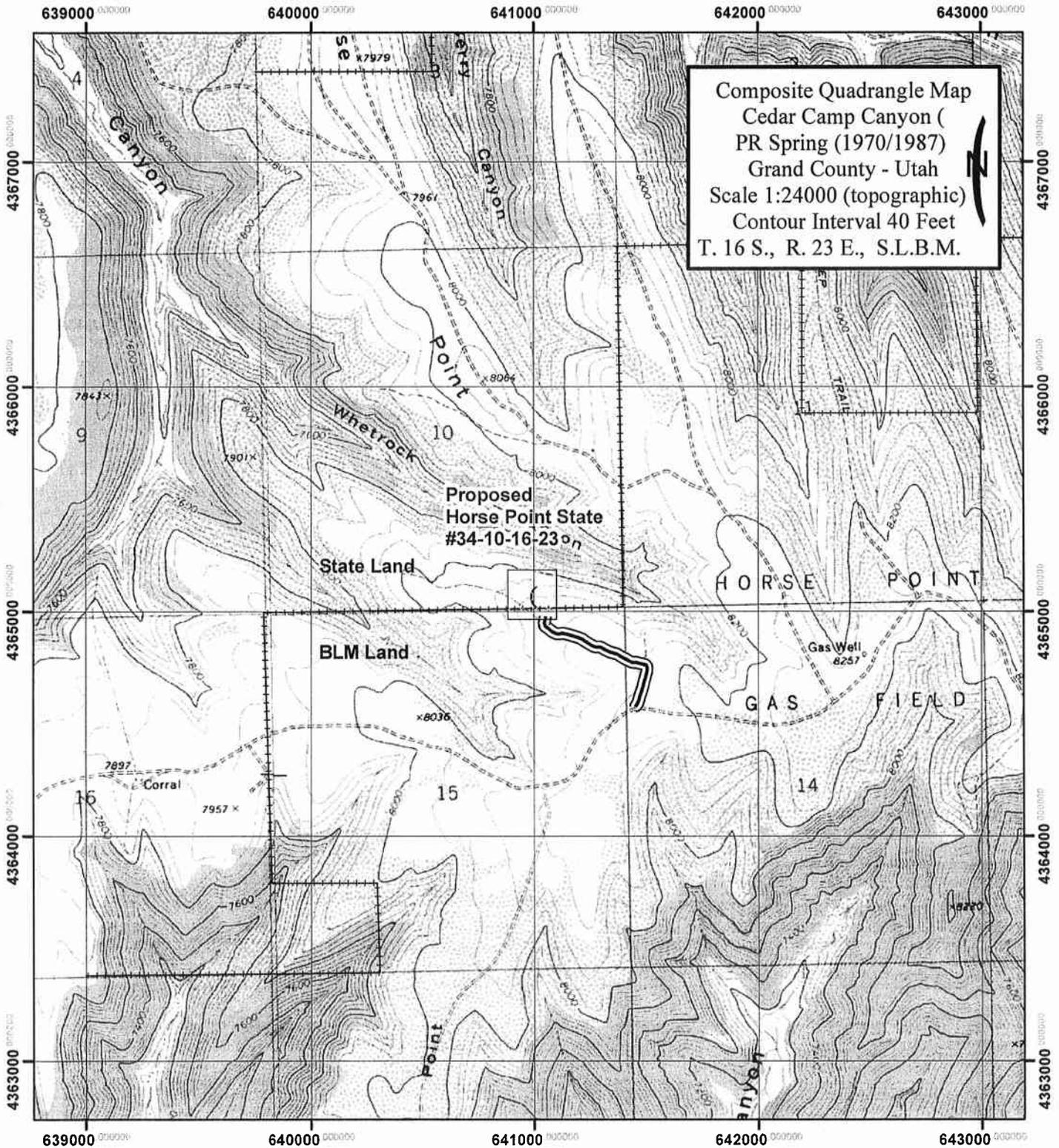


Figure 3. Project location map (3 of 3) for the Class III cultural resources inventory of five proposed well well locations and related linear routes in Grand and Uintah Counties, Utah for Pioneer Natural Resources USA, Inc. Areas surveyed for cultural resources are highlighted. [GRI Project No. #2756, 08/23/07]

Elevations in the inventoried areas range from about 7600 feet-to-8200 feet, which falls within the Transitional Zone. The natural vegetation cover on the ridge tops is pinyon-juniper forest mixed with sagebrush/grasslands and some oakbrush in the lower elevations. The higher elevation ridges have groves of aspen, common particularly at the heads of drainages. In the higher elevations, the understory is quite thick, consisting of chokecherry, smooth maple, serviceberry, and wild rose. On the steep slopes bordering these uplands is found the only coniferous forest type of the project area, the Douglas fir. Associated understory is light--predominantly snowberry, serviceberry, and barberry. The flat terrain of the project areas is occupied by mountain big sage and western snowberry. Gentle north and east-facing aspects support a mountain brush community--Utah serviceberry, gambel oak, and snowberry. Ground cover ranges from 80 to 100 percent. Soils on the ridge tops are shallow loams with intermixed shale, or fractured shale. Down from the ridge tops, soils deepen and become darker and loamier.

Nineteen mammal species--among them the deer mouse, least chipmunk, short-tailed weasel, mule deer, and black bear--and 38 bird species are known in the Douglas fir community. Amid the aspen environment are 16 mammals--including the deer mouse, masked shrew, least chipmunk, northern pocket gopher, montane vole, porcupine, striped skunk, short-tailed weasel, red fox, deer, and elk--and 30 birds. The mountain brush community attracts 37 bird species and 27 mammal species, among these the rock squirrel, bushy-tailed woodrat, deer mouse, porcupine, least chipmunk, beaver, muskrat, raccoon, striped skunk, coyote, red fox, and the short-tailed weasel (Union Oil Company, Energy Mining Division 1982:H14-18). Present land use includes energy development, open range for domestic animals, and modern hunting.

Climatically, the region is characterized as having a steppe-type climate. Average annual rainfall ranges roughly between 12 and 24 inches. On the Roan Plateau at 8000 feet, the average annual rainfall is 25.66 inches and the average annual temperature is 35.5° F. (ibid.:182, Tables K.1.5 and K.1.7). Temperatures have varied between -20 degrees F. in winter and 90 degrees F. in summer with a frost free seasonal range of 70 to 100 days. Agriculture is limited by the low rainfall, a short period of frost-free days, and low winter temperatures (USDA SCS 1978). Paleoenvironmental data for the area are scant, but it is agreed that gross climatic conditions have remained fairly constant over the last 12,000 years. Still, changes in effective moisture and cooling/ warming trends probably affected the prehistoric occupation of the area.

### **Summary of Files Search**

The prefield check-in was made on 15 August 2007. A records search was made through the Utah Division of State History. This was conducted to determine which areas were previously surveyed, to identify all known cultural resources in the vicinity of the study area, and to gather pertinent published and unpublished information on previous surveys in the immediate area. This information is important in the interpretation and evaluation of the

cultural resources that were expected to be found and to identify resources that may be adversely affected. This search indicated one prehistoric site (42UN913, an open lithic scatter, non-significant) was recorded near the proposed access to the Main Canyon State 12-16-15-23 well location. It was originally recorded as part of the U80-UB-0251 project and was revisited as part of U04-SF-0432, and was revisited during this inventory

Several other cultural resources inventory projects occur within or near the present project's boundaries. Part of the access to the Main Canyon State #34-21-15-23 was inventoried as part of project U01-MQ-0531. A linear portion of previous project U02-NV-0340 crosses through the 10-acre inventory area for the Horse Point State #34-10-16-23. A pipeline was previously inventoried under project U03-MQ-0753b that follows the Divide Road, which is the terminal point of the linear route that connects the Grand Canyons State #23-35-15.5-23 and the Horse Point State #41-1-16-23. Drill holes were inventoried along that same route that follows the existing Horse Point ridge road under project U84-MA-763bs, but only one occurs near one of the 10-acre survey areas. Also, one large seismic project (surveyed as U05-ST-1038bps) had lines placed throughout the present project area.

Regional archaeological studies suggest nearly continuous human occupation of northeastern Utah for the past 12,000 years. Evidence of the Paleoindian Tradition, the Archaic Tradition, Fremont Culture, and Protohistoric/Historic Utes has been found. Historic records suggest occupation or use by EuroAmerican trappers, settlers, miners, and ranchers as well. Overviews of the prehistory and history of the region are provided in the Utah BLM Cultural Resource Series No. 11, "Archaeological Inventory in the Seep Ridge Cultural Study Tract, Uintah County, Northeastern Utah with a Regional Predictive Model for Site Locations" (Chandler and Larralde 1980), in the "Cultural Resources Existing Data Inventory Vernal District, Utah" (Jones and Mackay 1980), and in the BLM Grand Resource Area Class I Cultural Resource Inventory (Horn et al. 1994).

## **Study Objectives**

The inventory was undertaken to ensure the project's compliance with state and federal legislation governing the identification and protection of cultural resources. The purposes of this investigation were to identify resources within the project area that may be adversely affected by the proposed action, to evaluate these sites' eligibility for listing in the National Register of Historic Places (NRHP), and to make management recommendations for those sites found to be eligible.

## **Field Methods**

A 100 percent, intensive, pedestrian Class III cultural resource survey of the previously unsurveyed 10-acre blocks related to well pad placement was conducted by two archaeologists who walked a series of north-south and east-west transects spaced at 20-meter

intervals. The inventory of the proposed linear routes was conducted by two surveyors who walked parallel transects spaced at 15 meter intervals to cover 200 foot-wide corridors.

Cultural resources were sought as surface exposures and were characterized as sites or isolated finds. Sites were defined as discrete loci of patterned activity greater than 50 years of age and consisting of 5 or more prehistoric artifacts with or without features or over 50 historic artifacts with associated features. Also, a single isolated hearth with no other associated artifacts or features was to be recorded as a site. Isolated finds were defined as less than 5 artifacts without associated features; historic trash dumps without associated features; single core reduction events with a single core and associated reduction debitage; single pot drops where the sherds are from a single vessel; or prospector pits with/or without artifacts and no associated historic structures or features.

Environmental constraints which might be expected included previous natural ground disturbance that has modified the surface so extensively that the likelihood of finding cultural resources is negligible; human activity within the past 50 years that has created a new land surface such that all traces of cultural resources have been eradicated; natural environmental characteristics that are unfavorable to the presence of historic properties; slopes greater than 30% where no potential for rock shelter, rock art, or other cultural properties associated with rock faces or ledges exist; and areas with 100% vegetation coverage.

All cultural resources that qualified as sites (such as prehistoric open camps, lithic scatters, occupied overhangs, rockshelters, and evidence of historic occupation) or isolated finds were recorded as they were encountered to standards set by the BLM and the State. Cultural resources were to be recorded using the following methods of mapping and note taking. The basic approach to the data collection was to be the continuous mapping of observed artifacts and features by recording UTM coordinates (NAD 83 Datum) using a Trimble Geo XT. Site maps were to be created using corrected GPS data and ARCMAP. Photographs were to be taken at each site and include general views and specific artifacts or features. Field notes for this project are on file at Grand River Institute. No artifacts were collected.

## **Study Findings**

No cultural resource sites were newly recorded; however, the files search indicated one site (42UN913) was recorded nearby. It was revisited and reevaluated by this inventory. Two isolated finds were also documented. Appendix A contains site location data and maps showing the relationship between the resource and the potential area of direct impact. For additional information, refer to the IMACS continuation form in Appendix A (on file at the Utah Division of State History and the BLM Vernal Field Office). After a discussion of site

significance evaluation, this portion of the report briefly describes the site and provides a field evaluation.

### Site Significance

The National Historic Preservation Act of 1966 (NHPA) directs federal agencies to ensure that authorized actions do not inadvertently disturb or destroy significant cultural resource values. Significance is a quality of cultural resource properties that qualifies them for inclusion in the NRHP. The statements of significance included in this report are field assessments to support recommendations to the State Historic Preservation Officer (SHPO). The final determination of site significance is made by the controlling federal agency in consultation with the SHPO and the Keeper of the Register.

The Code of Federal Regulations was used as a guide for the in-field site evaluations. Titles 36 CFR 50, 36 CFR 800, and 36 CFR 64 are concerned with the concepts of significance and (possible) historic value of cultural resources. Titles 36 CFR 65 and 36 CFR 66 provide standards for the conduct of significant and scientific data recovery activities. Finally, Title 36 CFR 60.4 establishes the measure of significance that is critical to the determination of a site's NRHP eligibility, which is used to assess a site's research potential:

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, materials, workmanship, feeling, and association, and a) that are associated with events that have made a significant contribution to the broad patterns of history; or b) that are associated with the lives of persons significant in our past; or c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent 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) that have yielded, or may be likely to yield, information important in the prehistory or history.

### Site Description

Site **42UN913** is an open lithic scatter that has been previously recorded on two occasions. The initial recording was by DC and Marian Jacklin of UTARC (U80-UB-0251). At that time, it was characterized as a "lithic scatter of white chert and chalcedony flakes - mainly tertiary and secondary. One flake of grey brown flint. No diagnostic artifacts observed." The recorded site dimensions were 10m x 10m. The research potential was stated as minimal and avoidance was recommended. The second visit was by archaeologists of SWCA Environmental Consultants in 2004 (U04-SF-0432). At that time the site was

described as, “a prehistoric lithic scatter of unknown age comprised of a sparse scatter of flakes covering a 48m north/south x 43m east/west area. It is located in a burned, open flat along a northwest facing, dissected, slope of an unnamed ridge overlooking Jacks Wagon Road Canyon. Vegetation consists of a moderately dense pinyon-juniper overstory; a moderately dense shrub layer of low sagebrush; and a sparse to moderately dense ground layer of various short grasses, and forbs. Soil consists of a thin aeolian deposit (approximately 2-5cm) of light brown silty loam, and some shallow dispersed alluvial deposits. Previous disturbance to the site was limited to erosion. The artifact assemblage included one primary, one secondary and 30 tertiary flakes. Raw materials noted in the assemblage included five white chert, one gray chert, one tan chert, twenty white chalcedony, and five white/red chalcedony flakes.”

During this revisit, the site was relocated, a new map was created that is updated with UTM data , and new photos taken. The site was in much the same condition, however this recording identified a uni-directional core fragment of brown with white cortex opalitic chert and a biface fragment of red/white banded chert. Again, no thermal or architectural features were identified.

#### Evaluation and Management Recommendation

No changes are recommended to the previous evaluation of non-significant. The proposed access road passes through the south end of the present site boundary. However, since the site has been deemed non-significant with three on-site visits and no features are visible on the surface and the soils are shallow, no further work is recommended.

---

Two isolated finds were also recorded. IF#1 is a micro-flake of red chert and IF#2 is a chopper fragment of meta-quartzite (this could have been one that was previously recorded, because it was found in about the same location). Both were found along the access road to the Main Canyon State #12-16-15-23.

#### **Management Summary**

The eligibility determination and consultation process is guided by Section 106 of the NHPA (36 CFR 60, 63, and 800). Inventory to identify, evaluate, and mitigate potential effects to cultural resources affected by an undertaking is the first step in the Section 106 process. Federal actions cannot be authorized until the Section 106 process is completed (36 CFR 800.3). Final determinations of National Register eligibility and effect should be sought from the controlling federal agencies in consultation with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation.

Two isolated finds were newly recorded by this inventory and were field evaluated as non-significant. Previously recorded site 42UN913 was revisited. It was previously

evaluated as non-significant and not eligible for listing on the National Register of Historic Places, and no changes were made to that evaluation. Accordingly, archaeological clearance is recommended for this project.

As directed by the new 36 CFR800 regulations, this inventory included the search for relevant traditional cultural properties. Based on the files search, field survey, and this researchers personal knowledge, no such sites were found. The American Indian Religious Freedom Act of 1979 (AIRFA) and amendments to National Historic Preservation Act require a determination of site's eligibility according to their classification as sacred sites by regional Tribes, and/or their location within traditional use areas. Presently, BLM archacologists are conducting the consultations with the tribes.

## References

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1994 Grand Resource Area Class I Cultural Resource Inventory. Ms on file Bureau of Land Management Grand Field Office, Moab.
- Jones, Kevin T. and K.L. Mackay  
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1976 Northern Colorado Plateau. Kendall/Hunt Publishing Company. Dubuque.
- Union Oil Company, Energy Mining Division  
1982 Colorado Mined Land Reclamation Board Permit Application. Phase II: Parachute Creek Shale Oil Program. Volumes VI and VII. Union Oil Company of California, Parachute.
- U.S.D.A., Soil Conservation Service  
1976 Technical Guide.
- Young, Robert G. and Joann W. Young  
1977 Colorado West, Land of Geology and Wildflowers. Wheelwright Press, Ltd.

**FOR OFFICIAL USE ONLY: DISCLOSURE OF SITE LOCATIONS IS PROHIBITED (43 CFR 7.18)**

**Appendix A: Cultural Resources Location Data and  
IMACS Site Continuation Form**

# PIONEER NATURAL RESOURCES USA, INC.

## HORSE POINT ST #41-1-16-23

LOCATED IN GRAND COUNTY, UTAH

SECTION 1, T16S, R23E, S.L.B.&M.

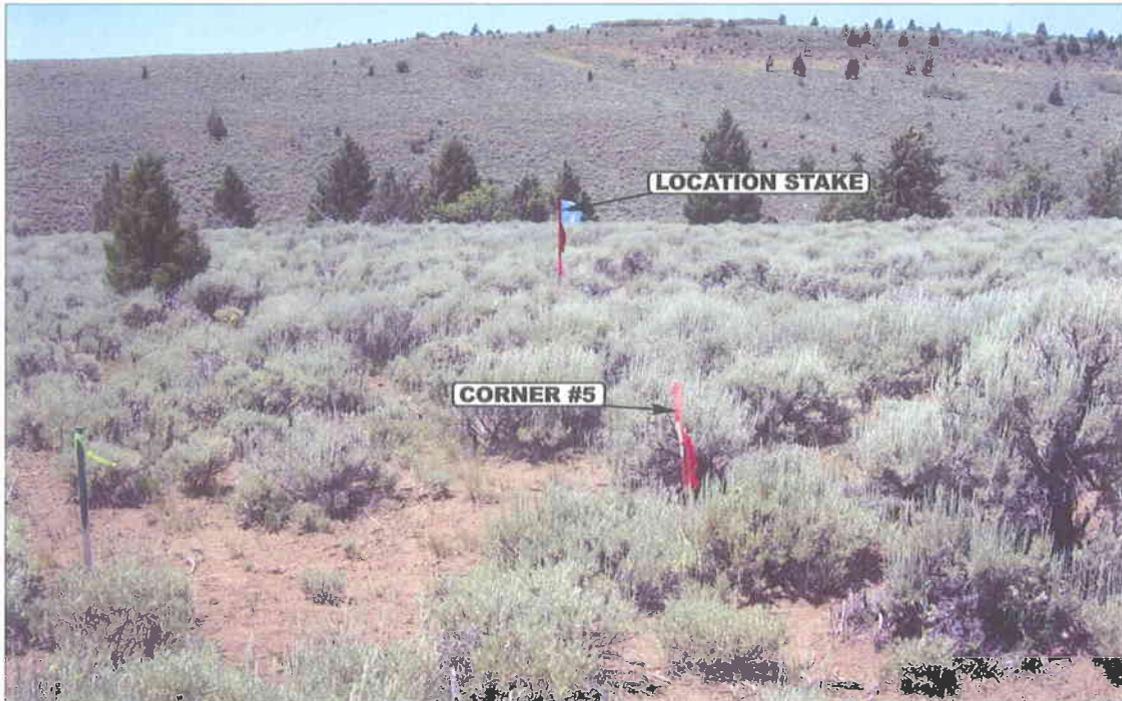


PHOTO: VIEW FROM CORNER #5 TO LOCATION STAKE

CAMERA ANGLE: SOUTHWESTERLY



PHOTO: VIEW FROM BEGINNING OF PROPOSED ACCESS

CAMERA ANGLE: NORTHERLY

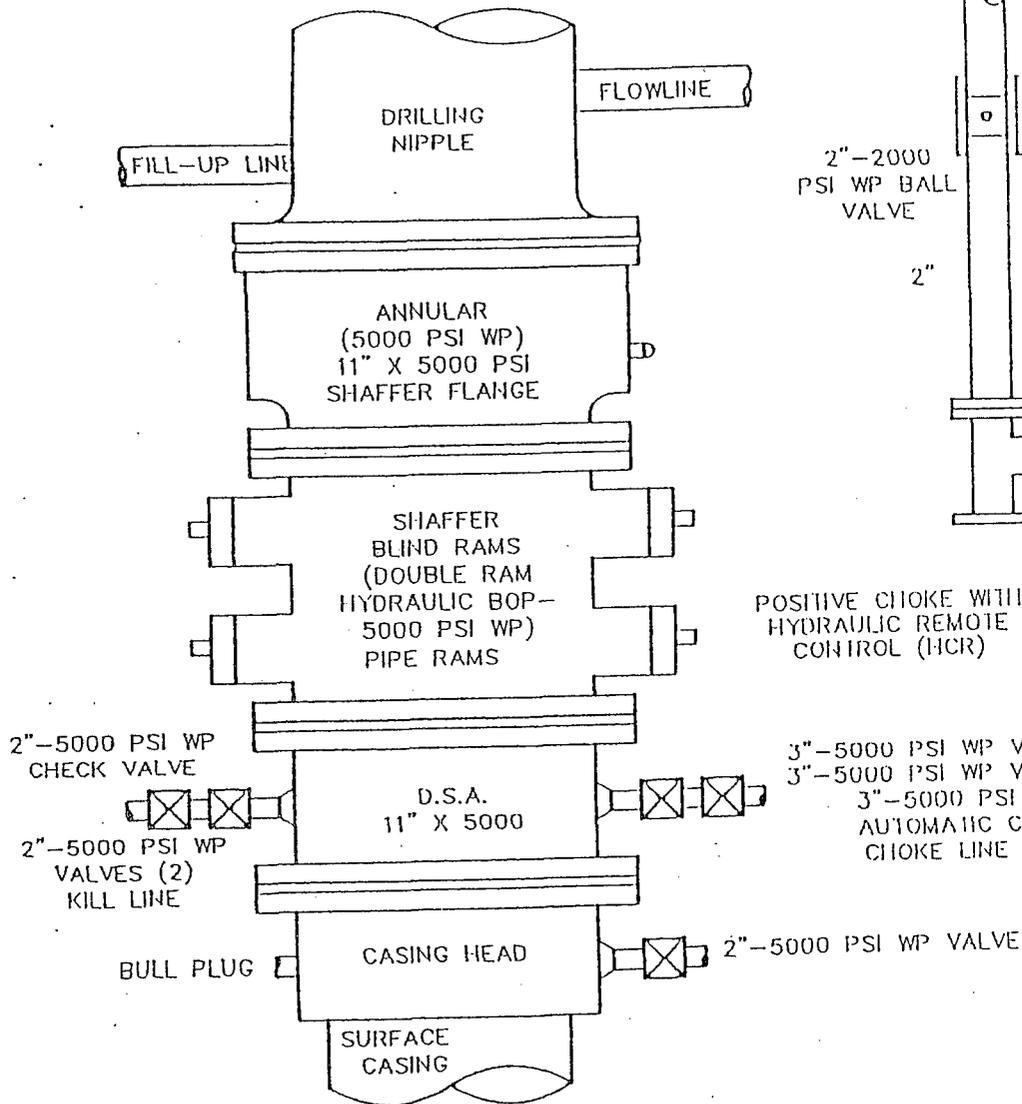


- Since 1964 -

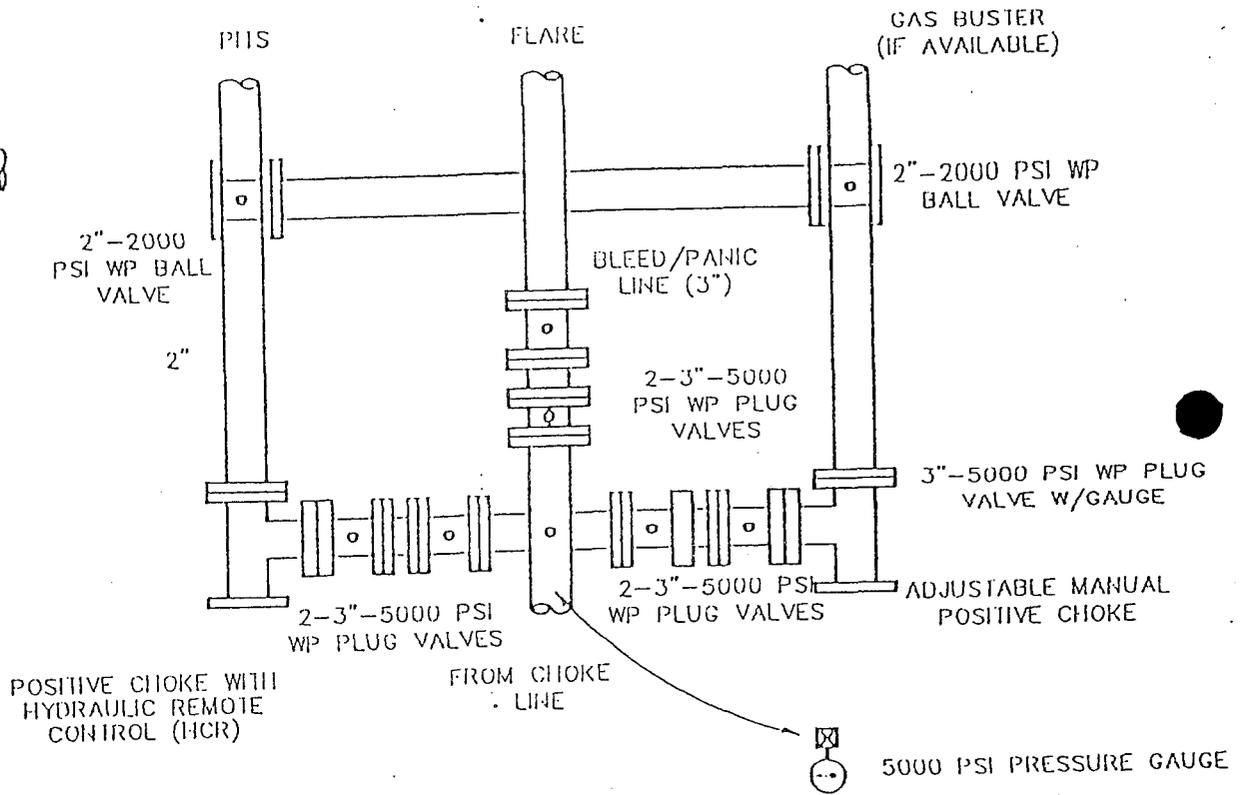
**U** Uintah Engineering & Land Surveying  
**E** 85 South 200 East Vernal, Utah 84078  
**S** 435-789-1017 uels@uelsinc.com

<b>LOCATION PHOTOS</b>	<b>06</b>	<b>28</b>	<b>07</b>	<b>PHOTO</b>
	MONTH	DAY	YEAR	
TAKEN BY: J.W.	DRAWN BY: C.P.		REVISED: 00-00-00	

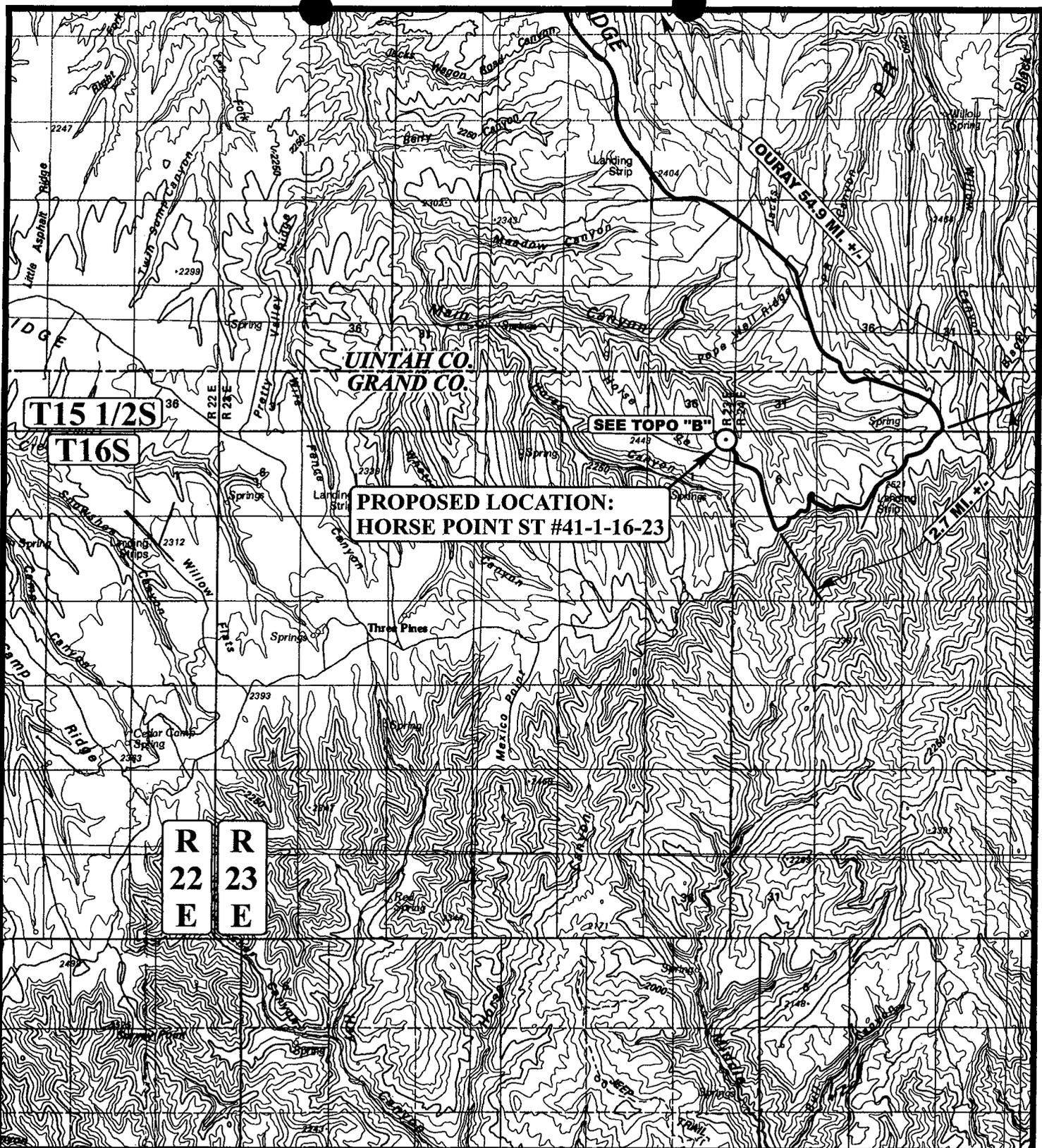
**BOP SCHEMATIC**  
5000 PSI WORKING PRESSURE



**PLAN VIEW CHIOKE MANIFOLD**



THE HYDRAULIC CLOSING UNIT WILL BE LOCATED MORE THAN 30' FROM THE WELLHEAD. CHOKE AND BLEED/PANIC LINES WILL GO TO THE PIT AND FLARE. ALL CONNECTIONS IN CHOKE LINES AND MANIFOLD WILL BE FLANGED OR WELDED. ALL FLANGES SHOULD BE RING JOINT GASKET TYPE. ALL TURNS IN LINES SHALL BE CONSTRUCTED USING TARGETING 90° TEES OR ELLS. ALL LINES SHALL BE ANCHORED.



**LEGEND:**

○ PROPOSED LOCATION



**PIONEER NATURAL RESOURCES USA, INC.**

**HORSE PIONT ST #41-1-16-23**  
**SECTION 1, T16S, R23E, S.L.B.&M.**  
**490' FNL 465' FEL**



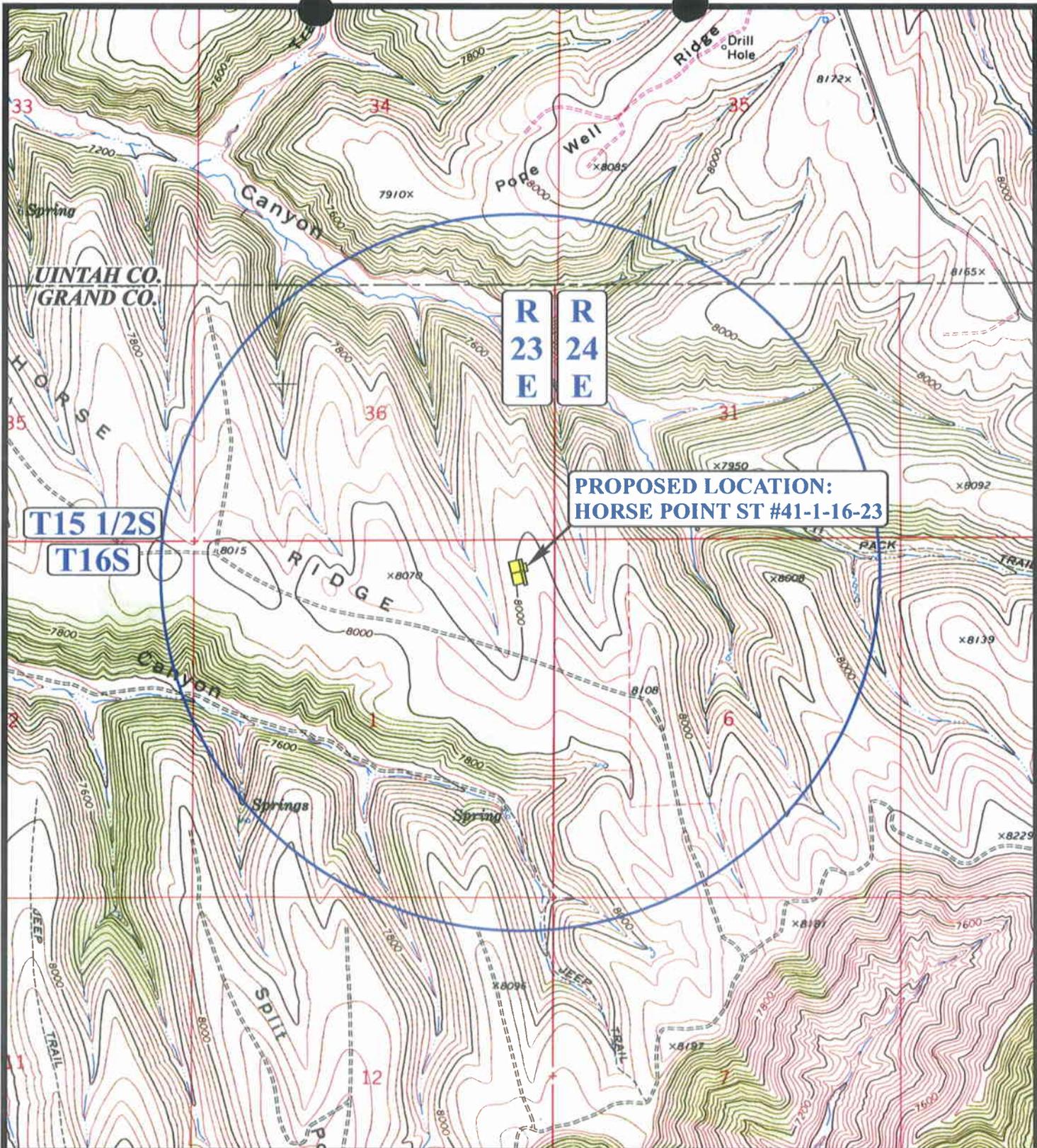
**Utah Engineering & Land Surveying**  
 85 South 200 East Vernal, Utah 84078  
 (435) 789-1017 \* FAX (435) 789-1813

**TOPOGRAPHIC** 06 28 07  
**MAP** MONTH DAY YEAR

SCALE: 1:100,000 DRAWN BY: C.P. REVISED: 00-00-00







**PROPOSED LOCATION:  
HORSE POINT ST #41-1-16-23**

**T15 1/2S  
T16S**

**R  
23  
E**

**R  
24  
E**

**LEGEND:**

- ⊗ DISPOSAL WELLS
- PRODUCING WELLS
- ⊖ SHUT IN WELLS
- ⊗ WATER WELLS
- ⊖ ABANDONED WELLS
- ⊖ TEMPORARILY ABANDONED

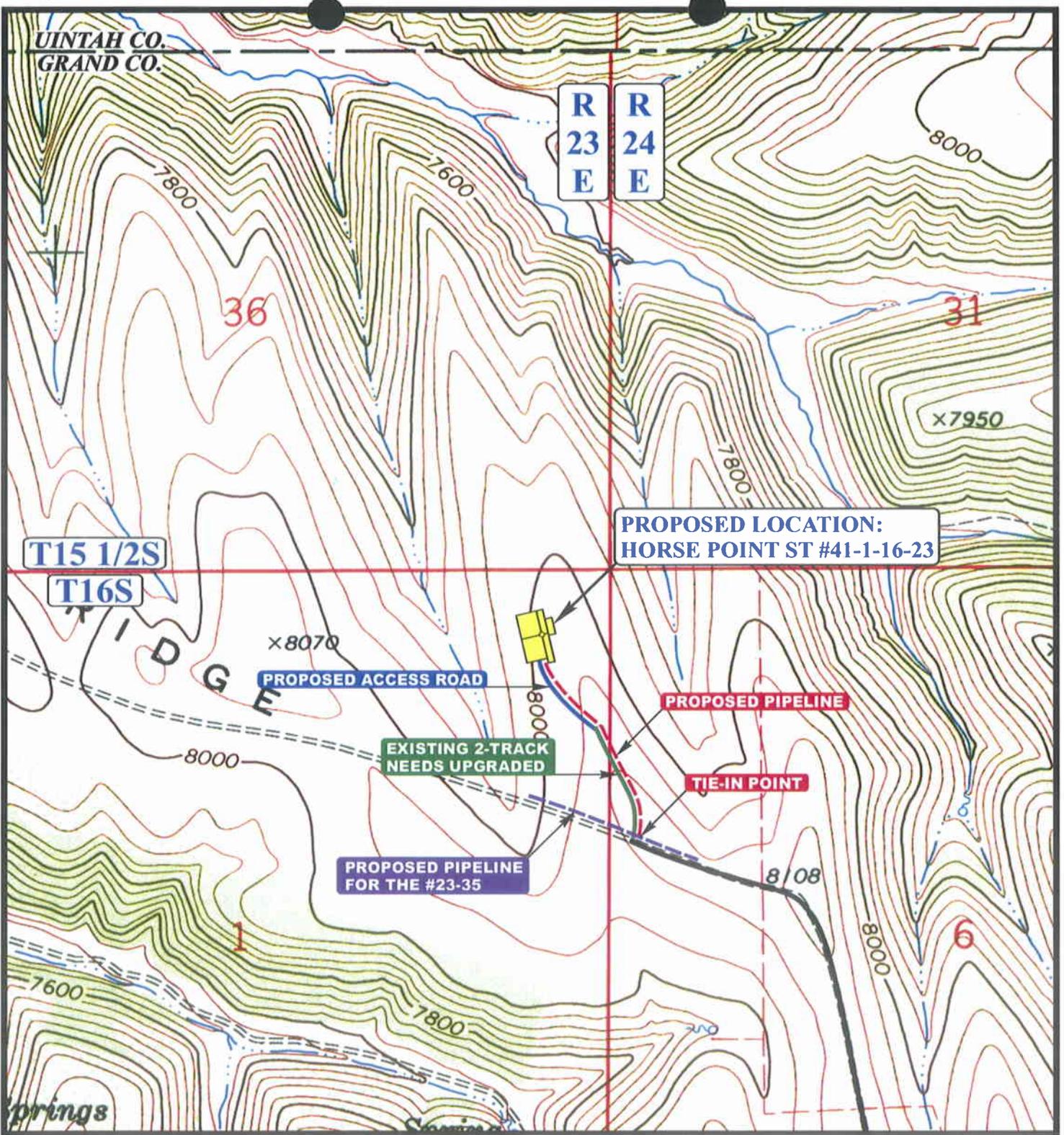
**PIONEER NATURAL RESOURCES USA, INC.**

**HORSE PIONT ST #41-1-16-23  
SECTION 1, T16S, R23E, S.L.B.&M.  
490' FNL 465' FEL**

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

**TOPOGRAPHIC MAP** 06 28 07  
MONTH DAY YEAR  
SCALE: 1" = 2000' DRAWN BY: C.P. REVISED: 00-00-00





**PROPOSED LOCATION:  
HORSE POINT ST #41-1-16-23**

**T15 1/2S**

**T16S**

**PROPOSED ACCESS ROAD**

**EXISTING 2-TRACK  
NEEDS UPGRADED**

**PROPOSED PIPELINE**

**TIE-IN POINT**

**PROPOSED PIPELINE  
FOR THE #23-35**

**APPROXIMATE TOTAL PIPELINE DISTANCE = 1,553' +/-**

**LEGEND:**

-  PROPOSED ACCESS ROAD
-  EXISTING 2-TRACK NEEDS UPGRADED
-  PROPOSED PIPELINE
-  PROPOSED PIPELINE (SERVICING OTHER WELLS)

**PIONEER NATURAL RESOURCES USA, INC.**

**HORSE PIONT ST #41-1-16-23  
SECTION 1, T16S, R23E, S.L.B.&M.  
490' FNL 465' FEL**

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



**TOPOGRAPHIC** 06 28 07  
**MAP** MONTH DAY YEAR  
SCALE: 1" = 1000' DRAWN BY: C.P. REVISED: 00-00-00 **D**  
TOPO

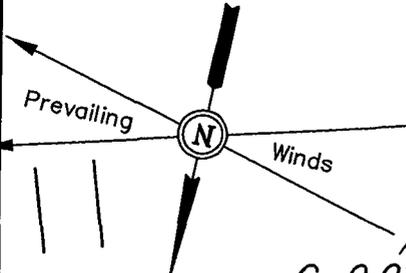
PIONEER NATURAL RESOURCES

FIGURE #1

LOCATION LAYOUT FOR

HORSE POINT ST #41-1-16-23  
SECTION 1, T16S, R23E, S.L.B.&M.

490' FNL 465' FEL

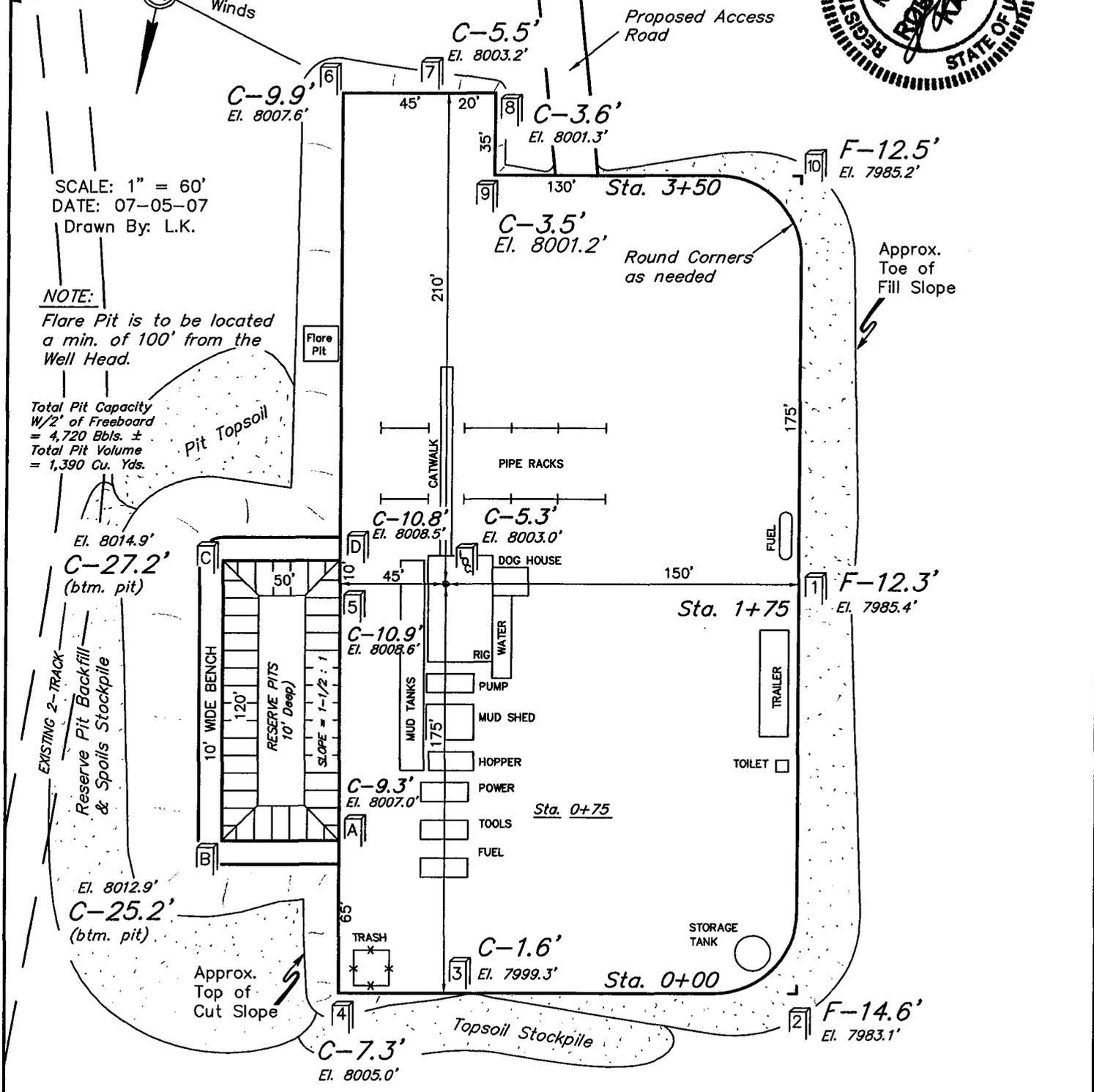


SCALE: 1" = 60'  
DATE: 07-05-07  
Drawn By: L.K.

NOTE:

Flare Pit is to be located a min. of 100' from the Well Head.

Total Pit Capacity  
W/2' of Freeboard  
= 4,720 Bbbls. ±  
Total Pit Volume  
= 1,390 Cu. Yds.



NOTES:

Elev. Ungraded Ground At Loc. Stake = 8003.0'  
FINISHED GRADE ELEV. AT LOC. STAKE = 7997.7'

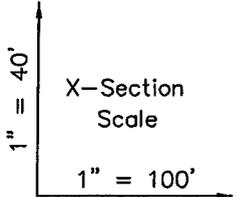
UINTAH ENGINEERING & LAND SURVEYING  
85 So. 200 East \* Vernal, Utah 84078 \* (435) 789-1017

**PIONEER NATURAL RESOURCES**

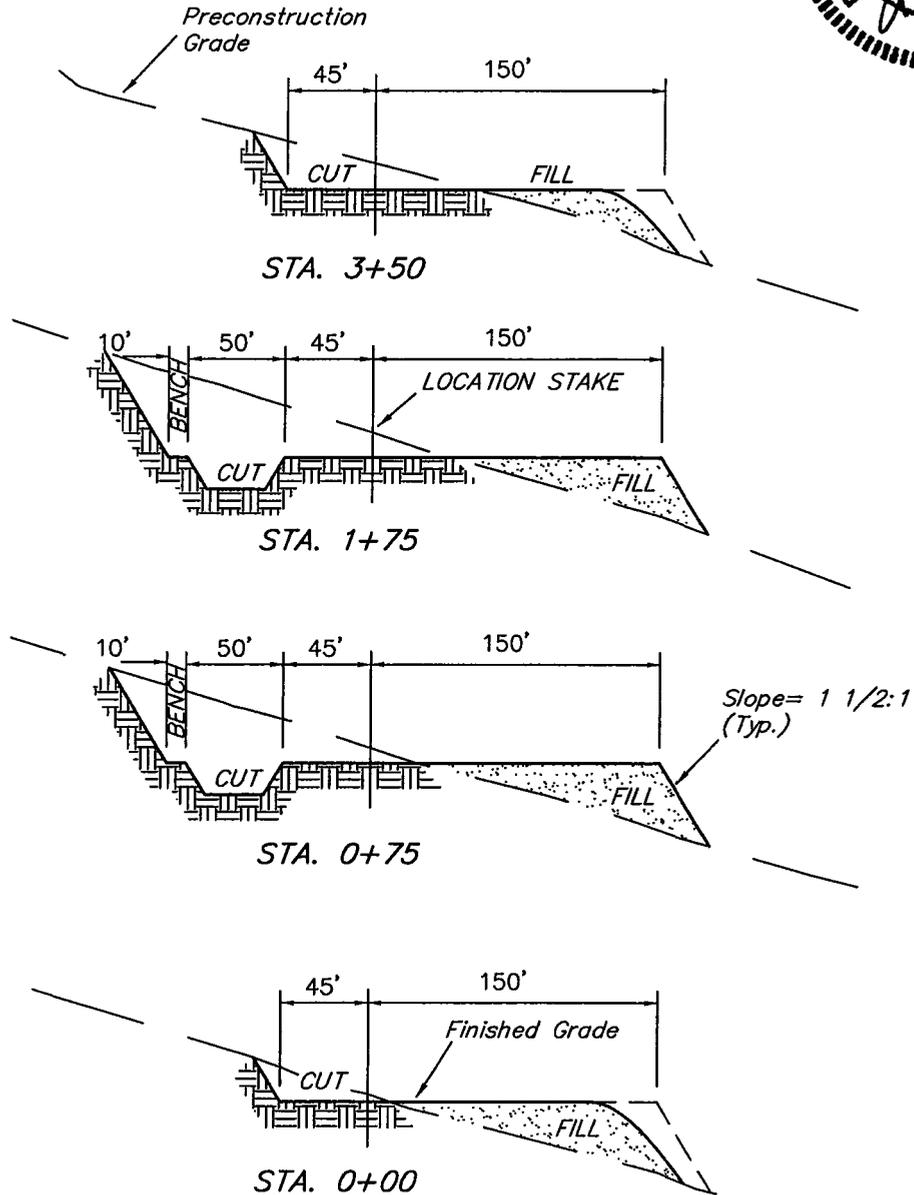
**FIGURE #2**

**TYPICAL CROSS SECTIONS FOR**

**HORSE POINT ST #41-1-16-23  
SECTION 1, T16S, R23E, S.L.B.&M.  
490' FNL 465' FEL**



DATE: 07-05-07  
Drawn By: L.K.



**NOTE:**

Topsoil should not be Stripped Below Finished Grade on Substructure Area.

**\* NOTE:**

FILL QUANTITY INCLUDES 5% FOR COMPACTION

**APPROXIMATE YARDAGES**

<b>CUT</b>	
(6") Topsoil Stripping	= 2,010 Cu. Yds.
Remaining Location	= 13,760 Cu. Yds.
<b>TOTAL CUT</b>	<b>= 15,770 CU.YDS.</b>
<b>FILL</b>	<b>= 13,060 CU.YDS.</b>

EXCESS MATERIAL	= 2,710 Cu. Yds.
Topsoil & Pit Backfill (1/2 Pit Vol.)	= 2,710 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	= 0 Cu. Yds.

**WORKSHEET  
APPLICATION FOR PERMIT TO DRILL**

APD RECEIVED: 10/16/2007

API NO. ASSIGNED: 43-019-31559

WELL NAME: HORSE POINT ST 41-1-16-23  
 OPERATOR: PIONEER NATURAL ( N5155 )  
 CONTACT: VENESSA LANGMACHER

PHONE NUMBER: 303-857-9999

PROPOSED LOCATION:  
 NENE 01 160S 230E  
 SURFACE: 0490 FNL 0465 FEL  
 BOTTOM: 0490 FNL 0465 FEL  
 COUNTY: GRAND  
 LATITUDE: 39.45066 LONGITUDE: -109.3208  
 UTM SURF EASTINGS: 644483 NORTHINGS: 4367925  
 FIELD NAME: UNDESIGNATED ( 2 )

INSPECT LOCATN BY: / /		
Tech Review	Initials	Date
Engineering	DKD	11/21/07
Geology		
Surface		

LEASE TYPE: 3 - State  
 LEASE NUMBER: ML-48045  
 SURFACE OWNER: 3 - State

PROPOSED FORMATION: MRSN  
 COALBED METHANE WELL? NO

RECEIVED AND/OR REVIEWED:

Plat

Bond: Fed[] Ind[] Sta[] Fee[]  
 (No. 104319462 )

N Potash (Y/N)

N Oil Shale 190-5 (B) or 190-3 or 190-13

Water Permit  
 (No. 43-8496 )

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

N/A Fee Surf Agreement (Y/N)

N/A Intent to Commingle (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: \_\_\_\_\_

Eff Date: \_\_\_\_\_

Siting: \_\_\_\_\_

\_\_\_ R649-3-11. Directional Drill

COMMENTS: PRESITE (11-07-07)

\_\_\_\_\_

\_\_\_\_\_

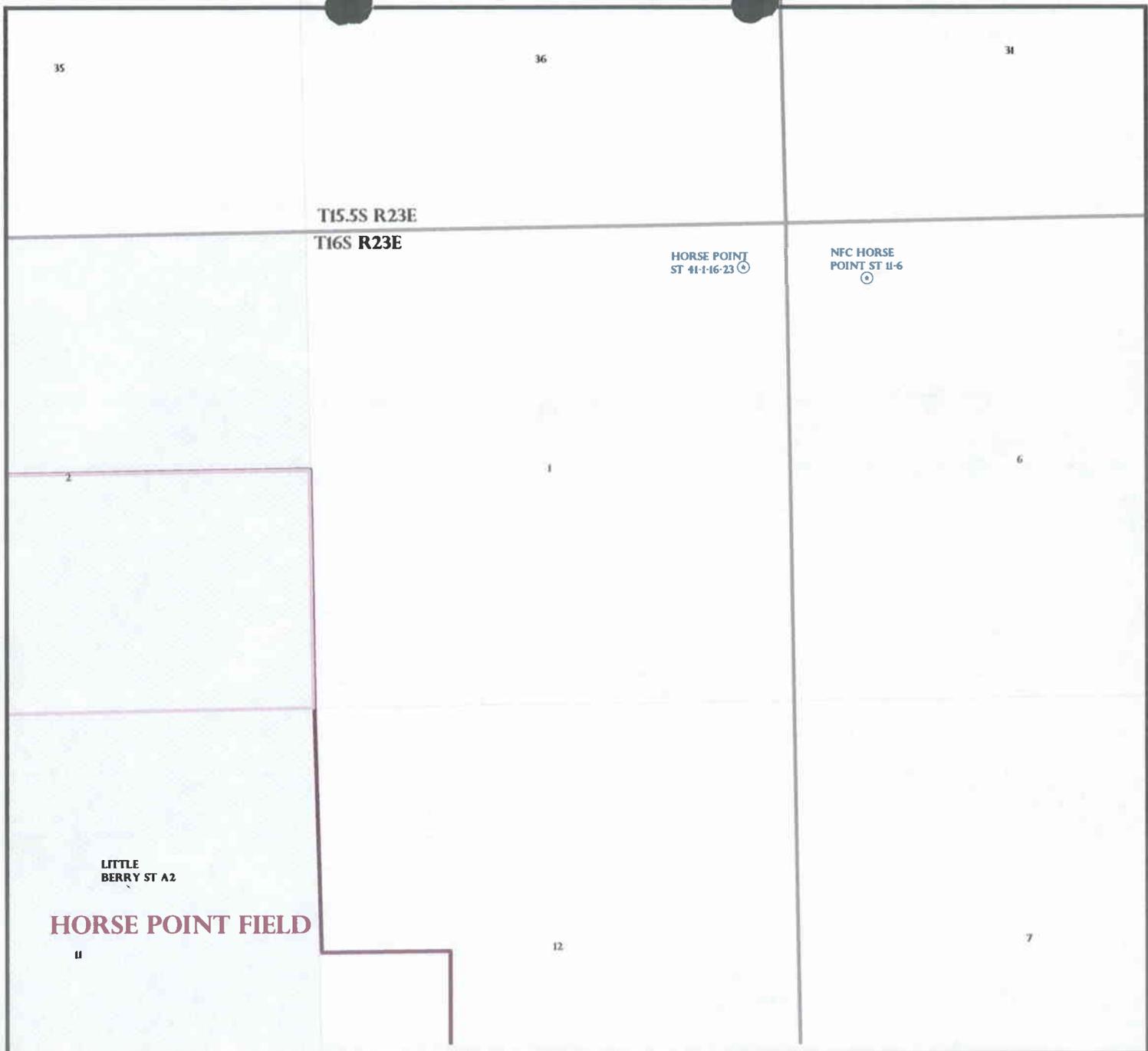
STIPULATIONS: \_\_\_\_\_

1- Spacing SRP

2- STATEMENT OF BASIS

\_\_\_\_\_

\_\_\_\_\_



OPERATOR: PIONEER NAT RES (N5155)

SEC: 1 T.16S R. 23E

FIELD: UNDESIGNATED (002)

COUNTY: GRAND

SPACING: R649-3-2 / GENERAL SITNG

**Field Status**

	ABANDONED
	ACTIVE
	COMBINED
	INACTIVE
	PROPOSED
	STORAGE
	TERMINATED

**Unit Status**

	EXPLORATORY GAS STORAGE
	GAS STORAGE
	NF PP OIL
	NF SECONDARY
	PENDING
	PI OIL
	PP GAS
	PP GEOTHERML
	PP OIL
	SECONDARY
	TERMINATED

**Wells Status**

	GAS INJECTION
	GAS STORAGE
	LOCATION ABANDONED
	NEW LOCATION
	PLUGGED & ABANDONED
	PRODUCING GAS
	PRODUCING OIL
	SHUT-IN GAS
	SHUT-IN OIL
	TEMP. ABANDONED
	TEST WELL
	WATER INJECTION
	WATER SUPPLY
	WATER DISPOSAL
	DRILLING



PREPARED BY: DIANA MASON  
DATE: 17-OCTOBERR-2007

# Application for Permit to Drill

## Statement of Basis

11/13/2007

Utah Division of Oil, Gas and Mining

Page 1

APD No	API WellNo	Status	Well Type	Surf Ownr	CBM
576	43-019-31559-00-00		GW	S	No
<b>Operator</b>	PIONEER NATURAL RESOURCES USA, IN		<b>Surface Owner-APD</b>		
<b>Well Name</b>	HORSE POINT ST 41-1-16-23		<b>Unit</b>		
<b>Field</b>	UNDESIGNATED		<b>Type of Work</b>		
<b>Location</b>	NENE 1 16S 23E S 490 FNL 465 FEL		GPS Coord (UTM) 644483E 4367925N		

### Geologic Statement of Basis

Pioneer proposes to set 450' of surface casing and 4900' of intermediate casing. The surface casing will be cemented to surface and the intermediate casing cement top is proposed at 250 feet. The base of the moderately saline water is at approximately 3,000 feet in this area. This location lies on the Green River Formation. The proposed location is in a recharge area for the aquifers of the upper Green River formation and fresh water can be expected to be found in the upper Green River. A search of Division of Water Rights records indicates no water wells within a 10,000 foot radius of the proposed location. The proposed casing and cement program should adequately protect any useable ground water.

Brad Hill  
APD Evaluator

11/13/2007  
Date / Time

### Surface Statement of Basis

The general location is in the Book Cliff Mountains or Roan Plateau of northern Grand County, Utah. Vernal Utah is approximately 75 air miles to the north and Ouray, Utah 59 road miles to the north. Access to the area from Ouray, Utah is following the Seep Ridge Uintah County road and the Book Cliffs Divide Grand County and oil field development roads. Approximately 0.15 miles of new road will be constructed to reach the proposed location. Topography in the general area is broad flat or rounded ridges generally sloping in a north or westerly direction. Ridges are intersected with draws or deep canyons. Canyon walls may become excessively steep and rimmed with exposed sandstone bedrock out crops or ledges. Main Canyon is the major drainage in the area and runs in a westerly direction into Willow Creek. The Green River formation is the surface formation. Occasional seeps or springs occur in the numerous side drainages with the only flowing stream occurring below the springs where Horse Canyon and Main Canyon join. An occasional constructed pond to collect surface runoff for livestock and game watering exists.

The Horse Point State #41-1-16-23 well is proposed on edge and side of a secondary ridge of Horse Ridge. Cutting for the reserve pit and the location begins near the edge of the ridge-top and extends down slope with a fill. No diversions are needed. No stability problems are expected to occur with the location as proposed. The selected location appears to be an acceptable site for constructing a pad and operating a well.

Both the minerals and surface are owned by SITLA.

Jim Davis of SITLA and Ben Williams representing the UDWR attended the pre-site.

Mr. Williams of the UDWR stated the area is classified as crucial value spring fawning habitat for deer and calving habitat for elk. He recommended to Mr. Smith representing Pioneer Natural Resources and Mr. Davis of SITLA that construction activity, drilling and the use of work-over rigs avoid the period of May 15 to July 15. Mr. Davis stated that SITLA would like to see Pioneer observe this restriction and if they have reasons why they can not they need to discuss the situation with SITLA. Mr. Williams also gave Mr. Smith and Mr. Davis a copy of this evaluation and also a seed mix recommendation to be used when the reserve pit and location are reclaimed.

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# Application for Permit to Drill

## Statement of Basis

11/13/2007

Utah Division of Oil, Gas and Mining

Page 2

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Floyd Bartlett  
Onsite Evaluator

11/7/2007  
Date / Time

### Conditions of Approval / Application for Permit to Drill

Category	Condition
Pits	A synthetic liner with a minimum thickness of 16 mils with a felt subliner shall be properly installed and maintained in the reserve pit.

# ON-SITE PREDRILL EVALUATION

## Utah Division of Oil, Gas and Mining

**Operator** PIONEER NATURAL RESOURCES USA, INC  
**Well Name** HORSE POINT ST 41-1-16-23  
**API Number** 43-019-31559-0 **APD No** 576 **Field/Unit** UNDESIGNATED  
**Location:** 1/4,1/4 NENE **Sec** 1 **Tw** 16S **Rng** 23E 490 FNL 465 FEL  
**GPS Coord (UTM)** 644480 4367933 **Surface Owner**

### Participants

Floyd Bartlett (DOGM), Jim Davis (SITLA), Ben Williams and Daniel Emmett (UDWR), Randy Smith (Permitco-Permitting Agent for Pioneer Natural Resources) and Luke Kay (Uintah Engineering and Land Surveying).

### Regional/Local Setting & Topography

General location is in the Book Cliff Mountains or Roan Plateau of northern Grand County, Utah. Vernal Utah is approximately 75 air miles to the north and Ouray, Utah 59 road miles to the north. Access to the area from Ouray, Utah is following the Seep Ridge Uintah County road and the Book Cliffs Divide Grand County and oil field development roads. Approximately 0.15 miles of new road will be constructed to reach the proposed location. Topography in the general area is broad flat or rounded ridges generally sloping in a north or westerly direction. Ridges are intersected with draws or deep canyons. Canyon walls may become excessively steep and rimmed with exposed sandstone bedrock out crops or ledges. Main Canyon is the major drainage in the area and runs in a westerly direction into Willow Creek. The Green River formation is the surface formation. Occasional seeps or springs occur in the numerous side drainages with the only flowing stream occurring below the springs where Horse Canyon and Main Canyon join. An occasional constructed pond to collect surface runoff for livestock and game watering exists.

The Horse Point State #41-1-16-23 well is proposed on a secondary ridge of Horse Ridge. Cutting for the reserve pit and the location begins near the edge of the ridge-top and extends down slope with a fill. No diversions are needed. No stability problems are expected to occur with the location as proposed. The selected location appears to be an acceptable site for constructing a pad and operating a well.

Both the minerals and surface are owned by SITLA.

### Surface Use Plan

#### **Current Surface Use**

Grazing  
Recreational  
Wildlife Habitat

#### **New Road**

Miles	Well Pad	Src Const Material	Surface Formation
0.15	Width 255	Length 385	Onsite
			GRRV

**Ancillary Facilities** N

### Waste Management Plan Adequate? Y

### Environmental Parameters

**Affected Floodplains and/or Wetland** N

#### **Flora / Fauna**

Vegetation is a big sagebrush type. Principal species include curl-leaf Mt. Mahogany, sagebrush, snowberry, poa sp., slender wheatgrass, festuca sp., bitter brush and oak brush.

Deer, elk, coyotes, rabbits, bear, lion, small mammals and birds. Cattle graze the area during the summer.

**Soil Type and Characteristics**

Moderately deep sandy loam.

**Erosion Issues** N

**Sedimentation Issues** N

**Site Stability Issues** N

**Drainage Diversion Required** N

**Berm Required?** N

**Erosion Sedimentation Control Required?** N

**Paleo Survey Run?** N    **Paleo Potential Observed?** N    **Cultural Survey Run?** Y    **Cultural Resources?** N

**Reserve Pit**

**Site-Specific Factors**

<b>Site-Specific Factors</b>		<b>Site Ranking</b>
<b>Distance to Groundwater (feet)</b>	>200	0
<b>Distance to Surface Water (feet)</b>	>1000	0
<b>Dist. Nearest Municipal Well (ft)</b>	>5280	0
<b>Distance to Other Wells (feet)</b>	>1320	0
<b>Native Soil Type</b>	Mod permeability	10
<b>Fluid Type</b>	Fresh Water	5
<b>Drill Cuttings</b>	Normal Rock	0
<b>Annual Precipitation (inches)</b>	10 to 20	5
<b>Affected Populations</b>	<10	0
<b>Presence Nearby Utility Conduits</b>	Not Present	0

**Final Score** 20    1    **Sensitivity Level**

**Characteristics / Requirements**

A reserve pit 50' by 120' and 10' deep in an area of cut on the northeast corner of the location. No stabilization problems are expected. A 16 mil liner will be required.

**Closed Loop Mud Required?** N    **Liner Required?** Y    **Liner Thickness** 16    **Pit Underlayment Required?** Y

**Other Observations / Comments**

Floyd Bartlett  
**Evaluator**

11/7/2007  
**Date / Time**

2007-11 Pioneer Horse Point ST 41-1-16-23

Casing Schematic

BHP intmd.  
 $0.052(4900)8.9 = 2268 \text{ psi}$

Gas  $.12(4900) = 588$   
 $2268 - 588 = 1680 \text{ psi, MAST}$

BOPE 5M

Burst 3130  
 70% 2191 psi

Max P@ surf. shoe  
 $.22(4450) = 979$   
 $2268 - 979 = 1289 \text{ psi}$

test to 1300 psi ✓

BHP  $0.052(8300)8.9 = 3841 \text{ psi}$   
 anticipate 3818 psi

Gas  $.12(8300) = 996$   
 $3841 - 996 = 2845 \text{ psi, MAST}$

BOPE 5M

Burst 6890  
 70% 4823 psi

Max P@ intmd. shoe  
 $.22(3600) = 792$   
 $3841 - 792 = 3049 \text{ psi}$

test to 3050 psi ✓

✓ Adequate DCD 11/21/07

Surface

15%

18%

TOC @ Green River ✓  
 67.

Surface  
 450. MD

to 220' w/ 7%  
 propose to 250' ✓ o.k.

TOC @  
 1365.

3000' ± BMSW

4260' Castlegate

12%

TOL @  
 4700.

5010' Intermediate Mancos B  
 4900. MD

to 4712' w/ 5%  
 TOC @ 5810' Base Mancos B  
 5635.

Propose to 4700' ✓ o.k.

7980' Dakota Silt

8260' Morrison

Production Liner  
 8300. MD

5-1/2"  
 MW 8.9

Well name:	<b>2007-11 Pioneer Horse Point ST 41-1-16-23</b>	
Operator:	<b>Pioneer Natural Resources USA, Inc.</b>	
String type:	Surface	Project ID: 43-019-31559
Location:	Grand County	

**Design parameters:**

**Collapse**

Mud weight: 8.330 ppg  
Design is based on evacuated pipe.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 65 °F  
Bottom hole temperature: 71 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 250 ft

Cement top: 67 ft

**Burst**

Max anticipated surface pressure: 396 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 450 psi  
  
Annular backup: 8.33 ppg

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

Tension is based on buoyed weight.  
Neutral point: 395 ft

**Non-directional string.**

**Re subsequent strings:**

Next setting depth: 4,900 ft  
Next mud weight: 8.900 ppg  
Next setting BHP: 2,265 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 450 ft  
Injection pressure: 450 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	450	10.75	40.50	K-55	ST&C	450	450	9.925	247.9
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	195	1580	8.114	396	3130	7.90	16	450	28.13 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Minerals

Phone: (801) 538-5357  
FAX: (801) 359-3940

Date: November 20, 2007  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 450 ft, a mud weight of 8.33 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	<b>2007-11 Pioneer Horse Point ST 41-1-16-23</b>	
Operator:	<b>Pioneer Natural Resources USA, Inc.</b>	
String type:	Intermediate	Project ID: 43-019-31559
Location:	Grand County	

**Design parameters:**

**Collapse**  
Mud weight: 8.900 ppg  
Design is based on evacuated pipe.

**Minimum design factors:**

**Collapse:**  
Design factor 1.125

**Environment:**

H2S considered? No  
Surface temperature: 65 °F  
Bottom hole temperature: 134 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,500 ft

**Burst:**  
Design factor 1.00

Cement top: 1,365 ft

**Burst**

Max anticipated surface pressure: 2,011 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP 3,089 psi

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

**Non-directional string.**

No backup mud specified.

Tension is based on buoyed weight.  
Neutral point: 4,248 ft

**Re subsequent strings:**

Next setting depth: 8,300 ft  
Next mud weight: 8.900 ppg  
Next setting BHP: 3,837 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 4,900 ft  
Injection pressure: 4,900 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	4900	7.625	29.70	N-80	LT&C	4900	4900	6.75	1263.2
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	2265	4790	2.114	3089	6890	2.23	126	575	4.56 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Minerals

Phone: (801) 538-5357  
FAX: (801) 359-3940

Date: November 20, 2007  
Salt Lake City, Utah

Remarks:  
Collapse is based on a vertical depth of 4900 ft, a mud weight of 8.9 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Well name:	<b>2007-11 Pioneer Horse Point ST 41-1-16-23</b>	
Operator:	<b>Pioneer Natural Resources USA, Inc.</b>	
String type:	Production Liner	Project ID: 43-019-31559
Location:	Grand County	

**Design parameters:**

**Collapse**

Mud weight: 8.900 ppg  
Design is based on evacuated pipe.

**Burst**

Max anticipated surface pressure: 2,011 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP: 3,837 psi  
  
No backup mud specified.

**Minimum design factors:**

**Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

Tension is based on buoyed weight.  
Neutral point: 7,814 ft

**Environment:**

H2S considered? No  
Surface temperature: 65 °F  
Bottom hole temperature: 181 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 1,500 ft

Cement top: 5,635 ft

Liner top: 4,700 ft

**Non-directional string.**

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	3600	5.5	17.00	N-80	LT&C	8300	8300	4.767	469.9
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	3837	6290	1.639	3837	7740	2.02	53	348	6.57 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Minerals

Phone: (801) 538-5357  
FAX: (801) 359-3940

Date: November 20, 2007  
Salt Lake City, Utah

Remarks:  
For this liner string, the top is rounded to the nearest 100 ft. Collapse is based on a vertical depth of 8300 ft, a mud weight of 8.9 ppg. The Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

**From:** Ed Bonner  
**To:** Mason, Diana  
**Date:** 1/8/2008 12:05 PM  
**Subject:** Well Clearance

**CC:** Davis, Jim; Garrison, LaVonne; Hill, Brad; Jarvis, Dan  
The following wells have been given cultural resources clearance by the Trust Lands Cultural Resources Group:

ConocoPhillips Company  
Utah 29-574D (API 43 015 30735)

EOG Resources, Inc  
CWU 956-32 (API 43 047 39515)

Kerr McGee Oil & Gas Onshore LP  
NBU 1021-2N (API 43 047 38840)

Newfield Production Company  
Wells Draw Fed C-5-9-16 (API 43 013 33753)  
State 1A-16-9-16 (API 43 013 33845)  
State 2A-16-9-16 (API 43 013 33846)  
State 3-16-9-16 (API 43 013 33847)  
State 4-16-9-16 (API 43 013 33848)  
State 5-16-9-16 (API 43 013 33849)  
State 6-16-9-16 (API 43 013 33850)  
State 12-16-9-16 (API 43 013 33852)  
State 13-16-9-16 (API 43 013 33853)  
State 16-16-9-16 (API 43 013 33854)

Pioneer Natural Resources USA, Inc  
Main Canyon State 12-16-15-23 (API 43 047 39695)  
Main Canyon State 34-21-15-23 (API 43 047 39696)  
Horse Point State 34-10-16-23 (API 43 019 31558)  
Horse Point State 41-1-16-23 (API 43 019 31599)  
Grand Canyon State 23-35-15.5-23 (API 43 019 31560)

If you have any questions regarding this matter please give me a call.



JON M. HUNTSMAN, JR.  
Governor

GARY R. HERBERT  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil Gas and Mining

JOHN R. BAZA  
Division Director

January 8, 2008

Pioneer Natural Resources USA, Inc.  
1401 17th St., Ste 1200  
Denver, CO 80202

Re: Horse Point St 41-1-16-23 Well, 490' FNL, 465' FEL, NE NE, Sec. 1, T. 16 South,  
R. 23 East, Grand 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 43-019-31559.

Sincerely,

Gil Hunt  
Associate Director

pab  
Enclosures

cc: Grand County Assessor  
SITLA



Operator: Pioneer Natural Resources USA, Inc.

Well Name & Number Horse Point St 41-1-16-23

API Number: 43-019-31559

Lease: ML-48045

Location: NE NE      Sec. 1      T. 16 South      R. 23 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

The operator is required to notify the Division of Oil, Gas and Mining of the following action during drilling of this well:

- 24 hours prior to cementing or testing casing – contact Dan Jarvis
- 24 hours prior to testing blowout prevention equipment – contact Dan Jarvis
- 24 hours prior to spudding the well – contact Carol Daniels
- Within 24 hours of any emergency changes made to the approved drilling program – contact Dustin Doucet
- Prior to commencing operations to plug and abandon the well – contact Dan Jarvis

The operator is required to get approval from the Division of Oil, Gas and Mining before performing any of the following actions during the drilling of this well:

- Plugging and abandonment or significant plug back of this well – contact Dustin Doucet
- Any changes to the approved drilling plan – contact Dustin Doucet

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voice mail message if the person is not available to take the call):

- Dan Jarvis at:           (801) 538-5338 office           (801) 942-0873 home
- Carol Daniels at:       (801) 538-5284 office
- Dustin Doucet at:      (801) 538-5281 office           (801) 733-0983 home

#### 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. Compliance with the State of Utah Antiquities Act forbids disturbance of archeological, historical, or paleontological remains. Should archeological, historical or paleontological remains be encountered during your operations, you are required to immediately suspend all operations and immediately inform the Trust Lands Administration and the Division of State History of the discovery of such remains.
5. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached)
6. This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.



JON M. HUNTSMAN, JR.  
Governor

GARY R. HERBERT  
Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
Executive Director

### Division of Oil, Gas and Mining

JOHN R. BAZA  
Division Director

March 19, 2009

Pioneer Natural Resources USA, Inc.  
1401 17<sup>th</sup> Street, Suite 1200  
Denver, CO 80202

Re: APD Rescinded – Horse Point St. 41-1-16-23, Sec. 1, T. 16S,  
R. 23E, Grand County, Utah, API No. 43-019-31559

Ladies and Gentlemen:

The Application for Permit to Drill (APD) for the subject well was approved by the Division of Oil, Gas and Mining (Division) on January 8, 2008. No drilling activity at this location has been reported to the division. Therefore, approval to drill the well is hereby rescinded, effective March 19, 2009.

A new APD must be filed with this office for approval prior to the commencement of any future work on the subject location.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,

Diana Mason  
Environmental Scientist

cc: Well File  
SITLA, Ed Bonner

