

Berry Petroleum Company

Brundage Canyon Field

4000 South 4028 West
Route 2 Box 7735
Roosevelt, UT 84066

Ph. (435) 722-1325
Fax: (435) 722-1321
www.bry.com

May 2, 2007

State Of Utah
Division of Oil, Gas & Mining
1594 W. North Temple,
Suite 1210 Box 145801
Salt Lake City, Utah 84114-5801

Re: Application for Permit to Drill

Attached please find one (1) original copy of an *Application for Permit to Drill* on the following location which is Tribal surface and Tribal minerals:

LC TRIBAL 14-22D-46

If you have any questions regarding this "APD" please call me at (435) 722-1325 or (435) 823-1808.

Thank you,

Shelley E. Crozier
Regulatory & Permitting Specialist
sec@bry.com

RECEIVED

MAY 03 2007

DIV. OF OIL, GAS & M

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

FORM 3

AMENDED REPORT
(highlight changes)

APPLICATION FOR PERMIT TO DRILL

1A. TYPE OF WORK: DRILL <input checked="" type="checkbox"/> REENTER <input type="checkbox"/> DEEPEN <input type="checkbox"/>		5. MINERAL LEASE NO: 14-20-H62-5500 (EDA)	6. SURFACE: INDIAN
B. TYPE OF WELL: OIL <input checked="" type="checkbox"/> GAS <input type="checkbox"/> OTHER _____ SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		7. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE	
2. NAME OF OPERATOR: BERRY PETROLEUM COMPANY		8. UNIT or CA AGREEMENT NAME: N/A	
3. ADDRESS OF OPERATOR: RT. 2 BOX 7735 CITY ROOSEVELT STATE UTAH ZIP 84066		9. WELL NAME and NUMBER: LC TRIBAL 14-22D-46	
PHONE NUMBER: (435)722-1325		10. FIELD AND POOL OR WILDCAT: Attomont	
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: 538132x 4440222y 40.113335 -110.552553 714' FSL, 1477' FWL NAD 27		11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: (SE/SW) SEC. 22, T.4S., R.6W. U.S.B.&M.	
AT PROPOSED PRODUCING ZONE: 538313x 4440203y 40.113158 BHL: 650' FSL, 2071' FWL 40.113386 LAT -110.550429 110.552472 LONG			
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE: 11.5 MILES FROM DUCHESNE, UTAH		12. COUNTY: DUCHESNE	13. STATE: UTAH
15. DISTANCE TO NEAREST PROPERTY OR LEASE LINE (FEET) 714'	16. NUMBER OF ACRES IN LEASE: 80.00	17. NUMBER OF ACRES ASSIGNED TO THIS WELL: 40	
18. DISTANCE TO NEAREST WELL (DRILLING, COMPLETED, OR APPLIED FOR) ON THIS LEASE (FEET) N/A	19. PROPOSED DEPTH: 6160'	20. BOND DESCRIPTION: RLB0005651	
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 7094' GR	22. APPROXIMATE DATE WORK WILL START: REFER TO BPC SOP PLAN	23. ESTIMATED DURATION: REFER TO BPC SOP PLAN	

24. **PROPOSED CASING AND CEMENTING PROGRAM: SEE ATTACHMENT**

SIZE OF HOLE	CASING SIZE, GRADE, AND WEIGHT PER FOOT			SETTING DEPTH	CEMENT TYPE, QUANTITY, YIELD, AND SLURRY WEIGHT			
12 1/4	8 5/8	J-55 STC	24#	300'	TYPE III + ADDITIVES	130 SX	1.43 CF/SK	14.3 PPG
7 7/8	5 1/2	J-55 LTC	15.5#	6160'	HI-FILL MODIFIED+ADDITIVES	250 SX	3.46 CF/SK	11.0 PPG
					65/35 POZ+8% GEL+3% KCL+ADDITIVES	300 SX	1.92 CF/SK	13.0 PPG
NOTE: ACTUAL VOLUMES PUMPED WILL BE CALIPER HOLE VOLUME+25% EXCESS								

25. **ATTACHMENTS: SEE CEMENT RECOMMENDATION ATTACHMENT**

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 (BPC SOP ON FILE WITH STATE) |
| <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 |

NAME (PLEASE PRINT) SHELLEY E. CROZIER TITLE REGULATORY & PERMITTING SPECIALIST

SIGNATURE *Shelley E. Crozier* DATE 05/02/07

(This space for State use only)

API NUMBER ASSIGNED: 43-013-33633

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

RECEIVED
MAY 03 2007

(11/2001)

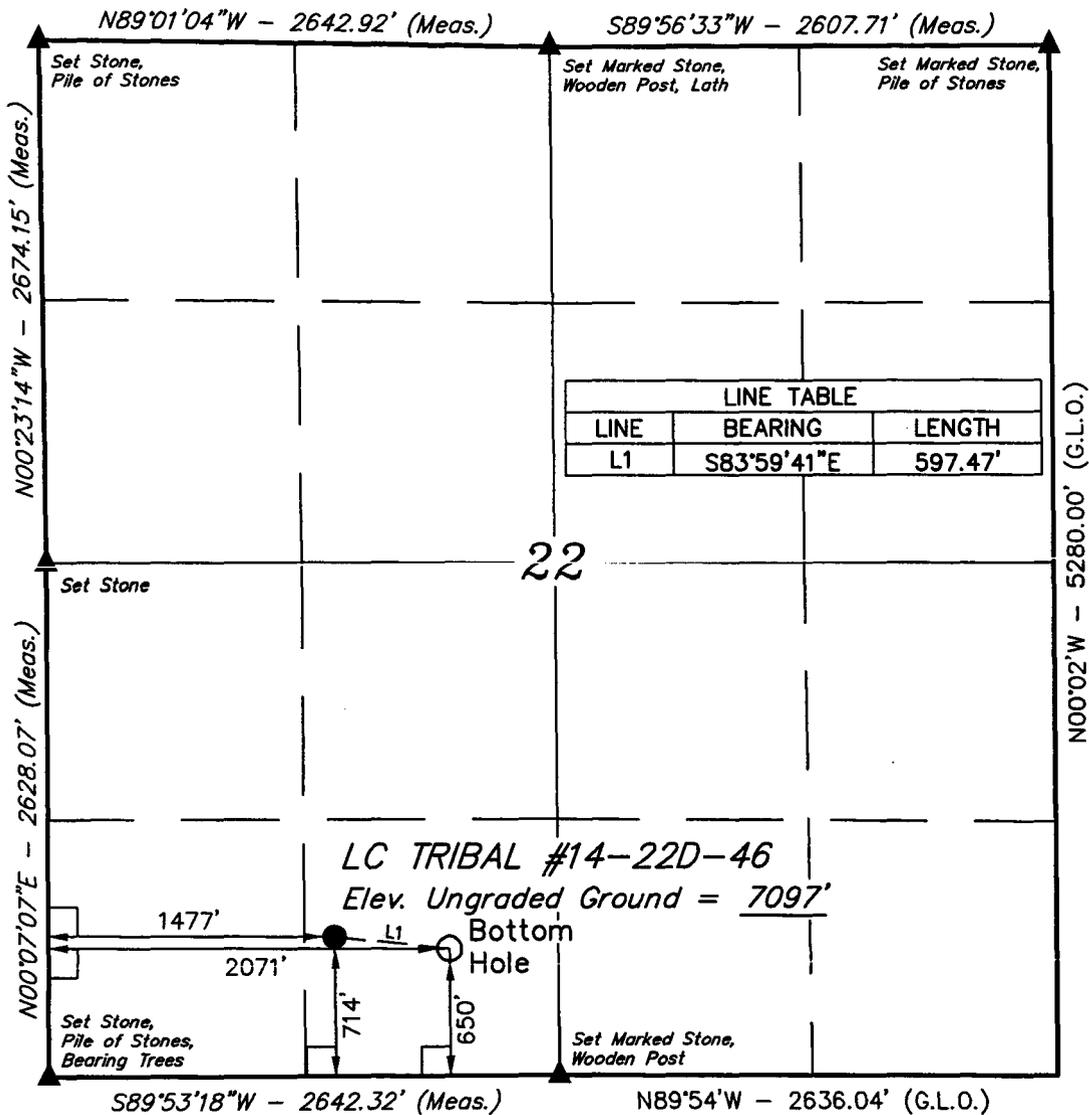
**Federal Approval of this
Action is Necessary**

(See Instr. 2007-02-10)

Date: 05-02-07
By: *[Signature]*

DIV. OF OIL, GAS & MINING

T4S, R6W, U.S.B.&M.



LINE TABLE		
LINE	BEARING	LENGTH
L1	S83°59'41"E	597.47'

BERRY PETROLEUM COMPANY

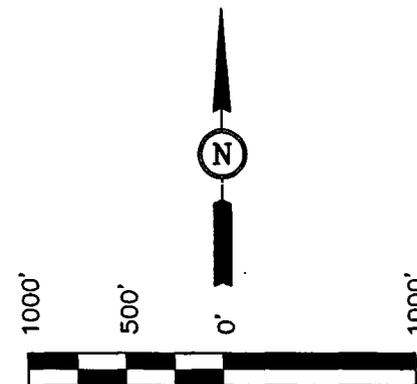
Well location, LC TRIBAL #14-22D-46, located as shown in the SE 1/4 SW 1/4 of Section 22, T4S, R6W, U.S.B.&M., Duchesne County, Utah.

BASIS OF ELEVATION

BENCH MARK (M67) LOCATED IN THE SW 1/4 OF SECTION 9, T5S, R4W, U.S.B.&M., TAKEN FROM THE DUCHESNE SE QUADRANGLE, UTAH, DUCHESNE COUNTY, 7.5 MINUTE QUAD. (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED ON CAP AS BEING 6097 FEET.

BASIS OF BEARINGS

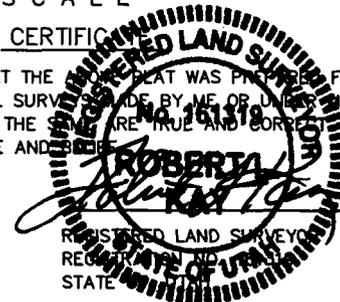
BASIS OF BEARINGS IS A G.P.S. OBSERVATION.



SCALE

CERTIFICATE

THIS IS TO CERTIFY THAT THE SURVEY WAS MADE FROM FIELD NOTES OF ACTUAL SURVEY MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



REVISED: 04-24-07

UINTAH ENGINEERING & LAND SURVEYING

85 SOUTH 200 EAST - VERNAL, UTAH 84078

(435) 789-1017

LEGEND:

└─┘ = 90° SYMBOL

● = PROPOSED WELL HEAD.

▲ = SECTION CORNERS LOCATED.

(NAD 83)

LATITUDE = 40°06'48.04" (40.113344)

LONGITUDE = 110°33'11.46" (110.553183)

(NAD 27)

LATITUDE = 40°06'48.19" (40.113386)

LONGITUDE = 110°33'08.90" (110.552472)

SCALE
1" = 1000'

DATE SURVEYED:
12-19-06

DATE DRAWN:
02-12-07

PARTY
G.S. R.W. P.M.

REFERENCES
G.L.O. PLAT

WEATHER
COLD

FILE
BERRY PETROLEUM COMPANY

SELF-CERTIFICATION STATEMENT

The following self-certification statement is provided per federal requirements dated June 15, 1988.

Please be advised that Berry Petroleum Company is considered to be the operator of the following well.

LC Tribal 14-22D-46

SE 1/4, SW 1/4, 714' FSL, 1477' FWL, Section 22, T. 4 S., R. 6 W., U.S.B.&M.

BHL: SE 1/4, SW 1/4, 650' FSL 2071' FWL

Lease 14-20-H62-5500 (EDA)

Duchesne, County, Utah

Berry Petroleum Company is responsible under the terms of the lease for the operations conducted upon the lease lands.



Shelley E. Crozier
Regulatory & Permitting Specialist
Berry Petroleum Company
4000 South 4028 West
Route 2, Box 7735
Roosevelt, Utah 84066
435-722-1325

BERRY PETROLEUM COMPANY

LC Tribal 14-22D-46

Surface location SE 1/4, SW 1/4, 714' FSL, 1477' FWL, Section 22, T. 4 S., R. 6 W., U.S.B.&M.

BHL: SE 1/4, SW 1/4, 650' FSL 2071' FWL

Duchesne County, Utah

ONSHORE ORDER NO. 1

DRILLING PROGRAM

1.2 Estimated Tops of Geological Markers and Formations Expected to Contain Water, Oil and Gas and Other Minerals

FORMATION	DRILL DEPTH * @ BHL (TVD)	DRILL DEPTH * @ SHL (TVD)
Uinta	Surface	On Surface
Green River	1,775'	1,764'
Green River Upper Marker	1,914'	1,908'
Mahogany	2,582'	2,567'
Tgr3 Marker	3,727'	3,710'
Douglas Creek	4,541'	4,523'
*Black Shale	5,291'	5,271'
*Castle Peak	5,627'	5,582'
Uteland Butte Ls.	5,851'	5,832'
Wasatch	6,078'	6,059'
TD	6,178'	6,160'
Base of Moderately Saline Water (less than 10,000 ppm)	2,049'	2,124'

***PROSPECTIVE PAY**

Berry is locating the well at the surface location and directionally drilling from this location to minimize surface disturbance and Berry will be able to utilize the existing road and pipelines in the area.

Furthermore, Berry hereby certifies that it is the sole working interest owner with 460 feet of the entire directional well bore and the remainder of the section.

3 Pressure Control Equipment : (Schematic Attached)

The BOP and related equipment shall meet the minimum requirements of Onshore Oil and Gas Order No. 2 for equipment and testing requirements, procedures, etc. A 2M system will be utilized. The attached diagram depicts the use of an annular in conjunction with double rams. However, an annular, double rams or both may be used depending on the drilling rig contracted. Chart recorders will be used for all pressure tests.

Test charts, with individual test results identified, shall be maintained on location while drilling and shall be made available to representative upon request.

The anticipated bottom hole pressure will be less than 3,000 psi.

<u>Depth Intervals</u>	<u>BOP Equipment</u>
0 – 300'	No Pressure Control
300 – 6160'	9" 2000# Ram Type BOP 9" 2000# Annular BOP

4 Proposed Casing and Cementing Program

The proposed Casing Program will be as follows:

<u>Purpose</u>	<u>Depth</u>	<u>Hole Size</u>	<u>Casing Size</u>	<u>Type</u>	<u>Connection</u>	<u>Weight</u>
Surface	300'	12 1/4"	8-5/8"	J-55	ST&C	24#
Production	6160'	7-7/8"	5-1/2"	J-55	LT&C	15.5#
<u>Surface</u>	<u>Fill</u>	<u>Type & Amount</u>				

SEE ATTACHED CEMENT PROCEDURES

<u>Production</u>	<u>Type & Amount</u>
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SEE ATTACHED CEMENT PROCEDURES

For production casing, actual cement volumes will be determined from the caliper log plus a minimum of 25% excess.

5 Drilling Fluids Program

<u>Interval</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>	<u>Remarks</u>
0' – 300'	8.6	27	NC	Spud Mud or air
300'-6160'	8.6	27	NC	KCL Water

6 Evaluation Program

Logging Program:	HRI-GR-SP with SDL-DSN-PE: surface casing to TD. Preserve samples from all show intervals.
Sampling:	10' dry cut samples: Douglas Creek to TD. Preserve samples From all show intervals.
Surveys:	As deemed necessary
Mud Logger:	As deemed necessary
Drill Stem Tests:	As deemed necessary
Cores:	As deemed necessary

7 Abnormal Conditions

No abnormal temperatures or pressures or other hazards are anticipated.

8 Anticipated Starting Dates and Notification of Operations

Drilling Activity:

Anticipated Commencement Date:	Upon approval of the APD.
Drilling Days:	Approximately 6 days.
Completion Days:	Approximately 7 days.

BERRY PETROLEUM COMPANY

LC Tribal 14-22D-46

Surface location SE 1/4, SW 1/4, 714' FSL, 1477' FWL, Section 22, T. 4 S., R. 6 W., U.S.B.&M.

BHL: SE 1/4, SW 1/4, 650' FSL 2071' FWL

Duchesne County, Utah

ONSHORE ORDER NO. 1

MULTI POINT SURFACE USE & OPERATIONS PLAN

1 Existing Roads

To reach the Berry Petroleum Company well, LC Tribal 14-22D-46, in Section 22-T4S-R6W:

Start in Duchesne, Utah. Proceed southwest 3.5 miles on US Highway 191. Turn west and proceed west then south 6.6 miles. Turn south on the existing 2 track road and proceed 1.4 miles to the LC Tribal 14-22D-46 location.

The existing oilfield service road may need some surface material to prevent or repair holes in the road due to heavy truck traffic during the drilling and completion operation. If repairs are made the operator will secure material from private sources.

Please see the attached map for additional details.

2 Planned Access Road

See Topographic Map "B" for the location of the proposed access road.

3 Location of Existing Wells

See Topographic Map "C" for the location of existing wells within a 1 mile radius.

4 Location of Tank Batteries, Production Facilities and Production Gathering and Service Lines

All permanent (on site for six months or longer) structures constructed or installed will be painted a flat, non-reflective, earth tone color to match one of the standard environmental colors, as determined by the five state Rocky Mountain Inter-Agency Committee. All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The required paint color is desert brown (10YR 6/4) unless otherwise designated by the Authorized Officer.

A containment dike will be constructed completely around those production facilities which contain fluids (i.e., production tanks, produced water tanks). This dike will be constructed of compacted subsoil, be impervious, hold 100% of the capacity of the largest tank. The site specific APD will address additional capacity if such is needed due to environmental concerns. The use of topsoil for the construction of dikes will not be allowed. If a Spill Prevention, Control, and Countermeasure (SPCC) Plan is required by the Environmental Protection Agency, the containment dike may be expanded with the Authorized Agency Officer's approval to meet SPCC requirements.

A description of the proposed pipeline and a map illustrating the proposed route is attached.

All site security guidelines identified in Federal regulation 43 CFR 3126.7, will be adhered to. All off-lease storage, off-lease measurement, or commingling on-lease or off-lease production will have prior written approval from the Authorized Agency Officer.

Gas meter runs will be located approximately 100 feet from the wellhead. Where necessary, the gas line will be anchored down from the wellhead to the meter.

5 Location and Type of Water Supply

Water for the drilling and completion will be pumped or trucked from the Berry source wells located in Sec. 23, T5S, R5W or Sec. 24, T5S, R5W, permit # 43-11041, or from Douglas E. & Yordis Nielsen source well located in Sec. 12, T5S, R6W, permit # 43-1628, or from Duchesne City Culinary Water Dock located in Sec. 1, T4S, R5W or from East Duchesne Water, Arcadia Feedlot, Sec. 28, T3S, R3W or from Petroglyph Operating Company 08-04 Waterplant, Sec. 8, T5S, R3W.

6 Source of Construction Materials

All construction materials for this location site and access road shall be borrow material accumulated during construction of the location site and access road.

Additional gravel or pit lining material will be obtained from a private source.

The use of materials under Authorized Agency jurisdiction will conform with 43 CFR 3610.2-3.

7 Methods of Handling Waste Materials

Drill cuttings will be contained and buried in the reserve pit.

Drilling fluids, including salts and chemicals, will be contained in the reserve pit. Upon termination of drilling and completion operations, the liquid contents of the reserve pit will be used at the next drill site or will be removed and disposed of at an approved waste disposal facility within 180 days after drilling is terminated. Upon well completion, weather permitting (summer months), any hydrocarbons in the pit shall be removed in accordance with 43 CFR 3162.7-1.

Unless otherwise specified, the reserve pit will be constructed on the location and will not be located within natural drainages, where a flood hazard exists or surface runoff will destroy or damage the pit walls. The reserve pit will be constructed so that it will not leak, break, or allow discharge of liquids.

If it is determined at the onsite that a pit liner is necessary, the reserve pit will be lined with a synthetic reinforced liner a minimum of 12 millimeters thick, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. Trash or scrap that could puncture the liner will not be disposed of in the pit.

Reserve pit leaks are considered an unacceptable and undesirable event and will be orally reported to the Authorized Agency Officer.

After first production, produced wastewater will be trucked to one of the following approved waste water disposal sites: R.N. Industries, Inc. Sec. 4, T2S, R2W, Bluebell; MC & MC Disposal Sec. 12, T6S, R19E, Vernal; LaPoint Recycle & Storage Sec. 12, T5S, R19E, LaPoint or Water Disposal Inc. Sec. 32, T1S, R1W, Roosevelt, used in the operations of the field or, unless prohibited by the Authorized Officer, confined to the approved pit or storage tank for a period not to exceed 90 days. The use of such pit is hereby approved as part of this Application for Permit to Drill.

Production fluids will be contained in leak-proof tanks. All production fluids will be disposed of at approved disposal sites. Produced water, oil, and other byproducts will not be applied to roads or well pads for control of dust or weeds. The indiscriminate dumping of produced fluids on roads, well sites, or other areas will not be allowed.

Any spills of oil, gas, salt water, or other noxious fluids will be immediately cleaned up and removed to an approved disposal site.

A chemical portable toilet will be furnished with the drilling rig.

Garbage, trash, and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. Trash will not be burned on location.

All debris and other waste materials not contained in the trash cage will be cleaned up and removed from the location promptly after removal of the completion rig (weather permitting).

Any open pits will be fenced during the operations. The fencing will be maintained with best efforts until such time as the pits are backfilled.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of wells. Furthermore, extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will not be used, produced, stored, transported, or disposed of in association with the drilling, testing, or completing of wells within these areas.

8 Ancillary Facilities

There are no ancillary facilities planned for at this time and none are foreseen in the future.

9 Wellsite Layout

The attached Location Layout diagram describes drill pad cross-sections, cuts and fills, and locations of the mud tanks, reserve pit, pipe racks, trailer parking, spoil dirt stockpile(s) and surface material stockpile(s)

10 Plans for Restoration of the Surface

The dirt contractor will be provided with approved copies of the Surface Use Plan prior to construction activities.

Upon well completion, within a reasonable time, the location and surrounding area will be cleared of all unused tubing, materials, trash, and debris not required for production.

Abandoned well sites, roads, and other disturbed areas will be restored as near as practical to their original condition. Where applicable, these conditions may include the re-establishment of irrigation systems, the re-establishment of appropriate soil conditions, and the re-establishment of vegetation as specified.

All disturbed areas will be re-contoured to the approximate natural contours.

Any drainage rerouted during the construction activities shall be restored to its original line of flow or as near as possible.

Prior to backfilling the reserve pit, the fence surrounding the reserve pit will be removed. The pit liner will be folded, torn, and perforated after the pit dries and prior to backfilling the reserve pit.

Before any dirt work associated with reserve pit restoration takes place, the reserve pit shall be as dry as possible. All debris in it will be removed. Other waste and spoil materials will be disposed of immediately upon completion of operations. The reserve pit will be reclaimed within 180 days from the date of well completion, weather permitting. Once reclamation activities have begun, the activities will be completed within 30 days.

After the reserve pit has been reclaimed, no depressions in the soil covering the reserve pit will be allowed. The object is to keep seasonal rainfall and runoff from seeping into the soil used to cover the reserve pit. Diversion ditches and water bars will be used to divert runoff as needed.

Prior to the construction of the location, the top 12 inches of soil material (if present) will be stripped and stockpiled. Placement of the topsoil is noted on the location plat attached. Topsoil shall be stockpiled separately from subsoil materials. Topsoil salvaged from the reserve pit shall be stockpiled separately near the reserve pit.

When restoration activities have been completed, the location site and new access road cuts and shoulders shall be reseeded. Prior to reseeding, all disturbed areas, including the old access road, will be scarified and left with a rough surface.

The Authorized Agency Officer shall be contacted for the required seed mixture. Seed will be broadcast and the amount of seed mixture per acre will be doubled. The seeded area will then be "walked" with a dozer to assure coverage of the seeds. The seed mixture will reflect the recommendation from the Archeology study done.

At final abandonment, all casing shall be cut off at the base of the cellar or 3 feet below final restored ground level, whichever is deeper, and cap the casing with a metal plate a minimum of

0.25 inches thick. The cap will be welded in place and the well location and identity will be permanently inscribed on the cap. The cap also will be constructed with a weep hole.

11 Surface Ownership

Ute Indian Tribe

12 Other information

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees. The operator is fully responsible for the actions of his subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

The operator will control noxious weeds along access road use authorizations, pipeline route authorizations, well sites or other applicable facilities. A list of noxious weeds may be obtained from the Authorized Agency or the appropriate County Extension Office.

Drilling rigs and/or equipment used during drilling operations on this location will not be stacked or stored on administered lands after the conclusion of drilling operations or at any other time without authorization by the Authorized Agency Officer. If authorization is obtained, such storage is only a temporary measure.

Travel is restricted to only approved travel routes.

A class III archaeological survey will be conducted on all lands, unless landowner waives rights for archaeological survey. All personnel will refrain from collecting artifacts and from disturbing any significant cultural resources in the area. The operator is responsible for informing all persons in the area who are associated with this project that they may be subject to prosecution for knowingly disturbing historic or archaeological sites or for collecting artifacts. All vehicular traffic, personnel movement, construction, and restoration activities shall be confined to the areas examined, as referenced in the archaeological report, and to the existing roadways and/or evaluated access routes. If historic or archaeological materials are uncovered during construction, the Operator is to immediately stop work that might further disturb such materials and contact the Authorized Agency Officer.

Within five working days, the Authorized Agency Officer will inform the operator as to:

Whether the materials appear eligible for the National Historic Register of Historic Places;

The mitigation measures the operator will likely have to undertake before the site can be used (assuming in-situ preservation is not necessary); and,

The time frame for the Authorized Officer to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the Authorized Officer are correct and that the mitigation measures are appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the Authorized Agency Officer and/or the surface owner will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise the operator will be responsible for mitigation costs. The Authorized Agency Officer and/or the surface owner will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Agency Officer that required mitigation has been completed, the Operator will then be allowed to resume construction.

All Surface Use Conditions of Approval associated with the Landowner Surface Use Agreement and Environmental Analysis Mitigation Stipulations will be adhered to.

All well site locations will have appropriate signs indicating the name of the operator, the lease serial number, the well name and number, the survey description of the well (either footages or the quarter/quarter section, the section, township, and range).

13 Operator's Representative and Certification

A) Representative
NAME: Shelley E. Crozier
ADDRESS: Berry Petroleum Company
4000 South 4028 West
Route 2, Box 7735
Roosevelt, Utah 84066
PHONE: 435-722-1325

All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations and onshore oil and gas orders. The operator is fully responsible for the actions of its subcontractors. A copy of these conditions will be furnished to the field representative to ensure compliance.

The drilling permit will be valid for a period of one year from the date of approval. After permit termination, a new application will be filed for approval for any future operations.

B) Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge and belief, true and correct; and that the work associated with the operations proposed herein will be performed by Berry Petroleum Company 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.

May 2, 2007

DATE

Shelley Crozier

Shelley E. Crozier
Regulatory & Permitting Specialist
Berry Petroleum Company

APPLICATION FOR GRANT OF CORRIDOR RIGHT-OF-WAY

BERRY PETROLEUM COMPANY, having a resident or principal place of business at **Route 2 Box 7735, Roosevelt, Utah, 84066**, hereby files an application with the Bureau of Indian Affairs, pursuant to the terms and provisions of the Act of February 5, 1948 (62 Stat. 17; 25 U.S.C. 323), and to the regulations of the Department of the Interior contained in Title 25, Code of Federal Regulations, Part 169, for the grant of a Right-of-Way for the following purposes and reasons:

To construct a Corridor Right-of-Way for the LC TRIBAL #14-22D-46

Across the following described Indian Lands S ½ SW 1/4 OF SECTION 22, T4S, R6W, U.S.B.&M.

Drill Site = 1.993 Ac.

Corridor R-O-W = 0.121 Ac.
(Access Road & Pipeline)

Total Acreage = 2.114 Acres

4" to 6" SDR-11 POLY PIPELINE

Said Right-of-Way to be approximately 176.36 feet in length, 30 feet in width, and 0.121 Acres, and more particularly described and shown on the map of definite location to be attached and made a part hereof.

The applicant understands and hereby expressly agrees to the following stipulations:

- (a) To construct and maintain the Right-of-Way in a workmanlike manner.
- (b) To pay promptly all damages and compensation, in addition to the deposit made pursuant to 169.4 determined by the Secretary to be due the landowners and authorized users and occupants of the land on account of the survey, granting, construction and maintenance of the Right-of-Way.
- (c) To indemnify the landowners and authorized users and occupants against any liability for loss of life, personal injury and property damage arising from the construction, maintenance, occupancy or use of the lands by the applicant, his employees, contractors and their employees or subcontractors and their employees.
- (d) To restore the lands as nearly as may be possible to their original condition upon the completion of the construction to the extent compatible with the purpose for which the Right-of-Way was granted.
- (e) To clear and keep clear the lands within the Right-of-Way to the extent compatible with the purpose of the Right-of-Way; and to dispose of all vegetative and other material cut, uprooted, or otherwise accumulated during the construction and maintenance of the project.
- (f) To take soil and resource conservation and protection measures, including weed control, on the land covered by the Right-of-Way.

- (g) To do everything reasonable within its power to prevent and suppress fires on or near the lands to be occupied under the Right-of-Way.
- (h) To build and repair such roads, fences, and trails as may be destroyed or injured by construction work and to build and maintain necessary and suitable crossings for all roads and trails that intersect the works constructed, maintained, or operated under the Right-of-Way.
- (I) That upon revocation or termination of the Right-of-Way, the applicant shall, so far as is reasonably possible, restore the land to its original condition.
- (j) To at all times keep the Secretary informed of its address, and in case of corporations of the address of its principal officers.
- (k) That the applicant will not interfere with the use of the lands by or under the authority of the landowners for any purpose not inconsistent with the primary purpose for which the Right-of-Way is granted.

IN WITNESS THEREOF, BERRY PETROLEUM COMPANY, has caused this instrument to be executed this 13 day of Feb., 2007.

Rebecca Bingham
WITNESS

Zosha Lemaezo
WITNESS

BERRY PETROLEUM COMPANY
APPLICANT

Ed Courtright
Ed Courtright/Production Foreman
Route 2 Box 7735
Roosevelt, Utah 84066
Phone:(435)722-1325

SUPPORTING DOCUMENTS:

- () Written consent of the landowners.
- () Evidence of good faith and financial responsibility.
- (x) \$0 as per the terms of the Exploration and Development Agreement (14-20-H62-5500)
- () State certified copy of corporate charter or articles of corporation.
- () Certified copy of resolution or bylaws of the corporation authorizing the filing of the stipulation
- () State certification that the applicant is authorized to do business in the State where the land is located.
- () Certified copy of the articles of partnership or association.
- (x) Map of definite location.
- () Other:

BERRY PETROLEUM COMPANY

LC TRIBAL #14-22D-46

DAMAGE AREA & CORRIDOR RIGHTS-OF-WAY

SECTION 22, T4S, R6W, U.S.B.&M.

TOTAL CORRIDOR "A" RIGHT-OF-WAY ON UTE TRIBAL LANDS

TOTAL LENGTH OF RIGHT-OF-WAY IS 68.96' OR 0.013 MILES. WIDTH OF RIGHT-OF-WAY IS 30' (15' PERPENDICULAR ON EACH SIDE OF THE CENTERLINE). CONTAINS 0.047 ACRES MORE OR LESS.

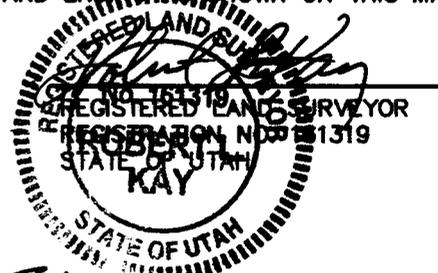
TOTAL CORRIDOR "B" RIGHT-OF-WAY ON UTE TRIBAL LANDS

TOTAL LENGTH OF RIGHT-OF-WAY IS 107.40' OR 0.020 MILES. WIDTH OF RIGHT-OF-WAY IS 30' (15' PERPENDICULAR ON EACH SIDE OF THE CENTERLINE). CONTAINS 0.074 ACRES MORE OR LESS.

ENGINEER'S AFFIDAVIT

STATE OF UTAH }
COUNTY OF UINTAH } SS

ROBERT L. KAY, BEING FIRST DULY SWORN DEPOSES AND STATES THAT HE IS THE REGISTERED LAND SURVEYOR, FOR BERRY PETROLEUM COMPANY, THAT THESE SURVEYS WERE MADE BY HIM (OR UNDER HIS SUPERVISION): THAT HE HAS EXAMINED THE FIELD NOTES OF THE SURVEYS OF THE DAMAGE AREA AND CORRIDOR RIGHTS-OF-WAY AS DESCRIBED AND SHOWN ON THIS MAP, THAT THIS MAP WAS PREPARED UNDER HIS DIRECTION FROM SAID FIELD NOTES; AND THAT SAID RIGHTS-OF-WAY, 0.033 MILES IN LENGTH BEGINNING AND ENDING AS SHOWN ON THIS MAP IS ACCURATELY REPRESENTED.



ACKNOWLEDGEMENT

SUBSCRIBED AND SWORN BEFORE ME THIS 13 DAY OF Feb 2007.

MY COMMISSION EXPIRES Aug 17, 2010

Handwritten signature of Tracy D. Henline and Notary Public stamp for Tracy D. Henline, Vernal, Utah, Commission Expires August 17, 2010.

APPLICANT'S CERTIFICATE

I, ED COURTRIGHT, DO HEREBY CERTIFY THAT I AM THE AGENT FOR BERRY PETROLEUM COMPANY, HEREINAFTER DESIGNATED THE APPLICANT; THAT ROBERT L. KAY WHO SUBSCRIBED TO THE FOREGOING AFFIDAVIT, IS EMPLOYED BY THE APPLICANT AS A LAND SURVEYOR AND THAT HE WAS DIRECTED BY THE APPLICANT TO SURVEY THE LOCATION OF THIS DAMAGE AREA AND CORRIDOR RIGHTS-OF-WAY, 0.033 MILES IN LENGTH BEGINNING AND ENDING AS SHOWN ON THIS MAP, THAT SAID DAMAGE AREA AND CORRIDOR RIGHTS-OF-WAY ARE ACCURATELY REPRESENTED ON THIS MAP; THAT SUCH SURVEY AS REPRESENTED ON THIS MAP HAS BEEN ADOPTED BY THE APPLICANT AS THE DEFINITE LOCATION OF THE RIGHTS-OF-WAY THEREBY SHOWN; AND THAT THE MAP HAS BEEN PREPARED TO BE FILED WITH THE SECRETARY OF THE INTERIOR OR HIS DULY AUTHORIZED REPRESENTATIVE AS PART OF THE APPLICATION FOR SAID RIGHTS-OF-WAY TO BE GRANTED THE APPLICANT, ITS SUCCESSORS AND ASSIGNS, WITH THE RIGHT TO CONSTRUCT, MAINTAIN, AND REPAIR IMPROVEMENTS, THEREON AND THEREOVER, FOR SUCH PURPOSES, AND WITH THE FURTHER RIGHT IN THE APPLICANT, ITS SUCCESSORS AND ASSIGNS TO TRANSFER THIS RIGHT-OF-WAY BY ASSIGNMENT, GRANT, OR OTHERWISE.

Ed Courtright
APPLICANT

PRODUCTION SUPERVISOR
TITLE

BERRY PE. OIL & GAS COMPANY
LOCATION DAMAGE AREA & CORRIDOR RIGHTS-OF-WAY ON UTE TRIBAL LANDS
 (For LC TRIBAL #14-22D-46)

LOCATED IN
 SECTION 22, T4S, R6W, U.S.B.&M.,
 DUCHESNE COUNTY, UTAH

RIGHT-OF-WAY LENGTHS

PROPERTY OWNER	FEET	ACRES	RODS
UTE TRIBAL (Corridor "A")	68.96	0.047	4.18
UTE TRIBAL (Corridor "B")	107.40	0.074	6.51

BASIS OF BEARINGS

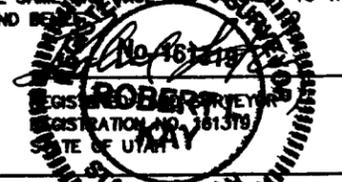
BASIS OF BEARINGS IS A G.P.S. OBSERVATION.

DAMAGE AREA DESCRIPTION

BEGINNING AT A POINT IN THE SE 1/4 SW 1/4 OF SECTION 22, T4S, R6W, U.S.B.&M., WHICH BEARS N52°01'07"W 1440.33' FROM THE SOUTH 1/4 CORNER OF SAID SECTION 22, THENCE S71°17'34"E 163.79'; THENCE S18°42'26"W 230.00'; THENCE S48°57'49"W 138.92'; THENCE N71°17'34"W 190.00'; THENCE N18°42'26"E 350.00'; THENCE S71°17'34"E 96.21' TO THE POINT OF BEGINNING. BASIS OF BEARINGS IS A G.P.S. OBSERVATION. CONTAINS 1.993 ACRES MORE OR LESS.

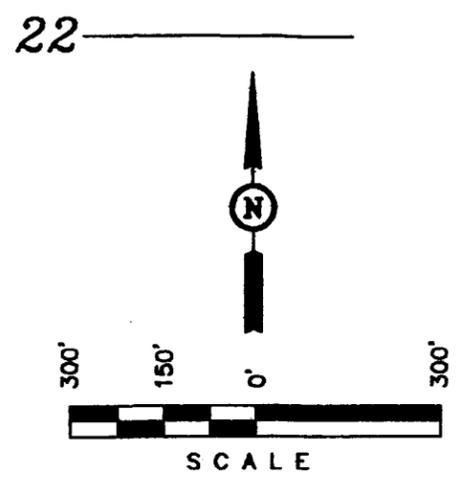
CERTIFICATE

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 ACCORDING TO THE BEST OF MY KNOWLEDGE AND BELIEF.



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

SCALE 1" = 300'	DATE 02-12-07
PARTY G.S. R.W. P.M.	REFERENCES G.L.O. PLAT
WEATHER COLD	FILE 4 8 2 2 6



LINE TABLE

LINE	BEARING	LENGTH
L1	S10°35'00"W	68.96'
L2	S71°17'34"E	163.79'
L3	S18°42'26"W	230.00'
L4	S48°57'49"W	138.92'
L5	N71°17'34"W	190.00'
L6	N18°42'26"E	350.00'
L7	S71°17'34"E	96.21'
L8	S17°14'06"E	107.40'

NOTE:

BEGINNING STA. 0+00 FOR CORRIDOR "A" BEARS N49°38'13"W 1473.34' FROM THE SOUTH 1/4 CORNER OF SECTION 22, T4S, R6W, U.S.B.&M.

END STA. 0+68.96 FOR CORRIDOR "A" BEARS N52°01'07"W 1440.33' FROM THE SOUTH 1/4 CORNER OF SECTION 22, T4S, R6W, U.S.B.&M.

BEGINNING STA. 0+00 FOR CORRIDOR "B" BEARS N65°55'00"W 1338.83' FROM THE SOUTH 1/4 CORNER OF SECTION 22, T4S, R6W, U.S.B.&M.

END STA. 1+07.40 FOR CORRIDOR "B" BEARS N69°33'25"W 1270.48' FROM THE SOUTH 1/4 CORNER OF SECTION 22, T4S, R6W, U.S.B.&M.

Set Marked Stone, Wooden Post

▲ = SECTION CORNERS LOCATED.

CORRIDOR "A" RIGHT-OF-WAY DESCRIPTION

A 30' WIDE RIGHT-OF-WAY 15' ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE.

BEGINNING AT A POINT IN THE SE 1/4 SW 1/4 OF SECTION 22, T4S, R6W, U.S.B.&M., WHICH BEARS N49°38'13"W 1473.34' FROM THE SOUTH 1/4 CORNER OF SAID SECTION 22, THENCE S10°35'00"W 68.96' A POINT IN THE SE 1/4 SW 1/4 OF SAID SECTION 22, WHICH BEARS N52°01'07"W 1440.33' FROM THE SOUTH 1/4 CORNER OF SAID SECTION 22. THE SIDE LINES OF SAID DESCRIBED RIGHT-OF-WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANTOR'S PROPERTY LINES. BASIS OF BEARINGS IS A G.P.S. OBSERVATION. CONTAINS 0.047 ACRES MORE OR LESS.

CORRIDOR "B" RIGHT-OF-WAY DESCRIPTION

A 30' WIDE RIGHT-OF-WAY 15' ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE.

BEGINNING AT A POINT IN THE SE 1/4 SW 1/4 OF SECTION 22, T4S, R6W, U.S.B.&M., WHICH BEARS N65°55'00"W 1338.83' FROM THE SOUTH 1/4 CORNER OF SAID SECTION 22, THENCE S17°14'06"E 107.40' A POINT IN THE SE 1/4 SW 1/4 OF SAID SECTION 22, WHICH BEARS N69°33'25"W 1270.48' FROM THE SOUTH 1/4 CORNER OF SAID SECTION 22. THE SIDE LINES OF SAID DESCRIBED RIGHT-OF-WAY BEING SHORTENED OR ELONGATED TO MEET THE GRANTOR'S PROPERTY LINES. BASIS OF BEARINGS IS A G.P.S. OBSERVATION. CONTAINS 0.074 ACRES MORE OR LESS.

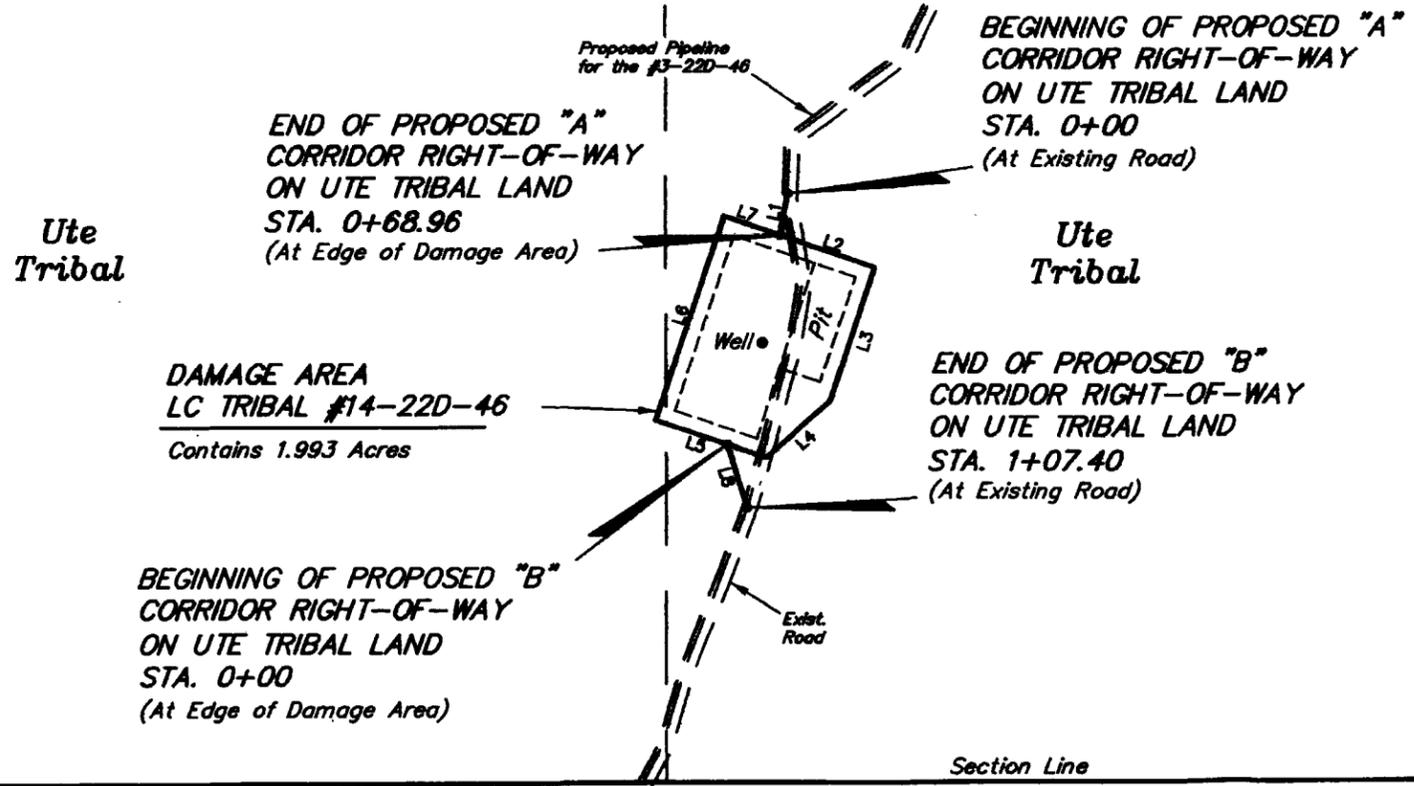
Section Line

N00°07'07"E - 2628.07' (Meas.)

1/16 Section Line

1/4 Section Line

SW 1/4 1/16 Section Line



DAMAGE AREA
 LC TRIBAL #14-22D-46
 Contains 1.993 Acres

BEGINNING OF PROPOSED "B" CORRIDOR RIGHT-OF-WAY ON UTE TRIBAL LAND STA. 0+00 (At Edge of Damage Area)

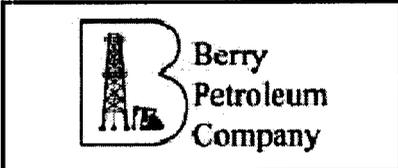
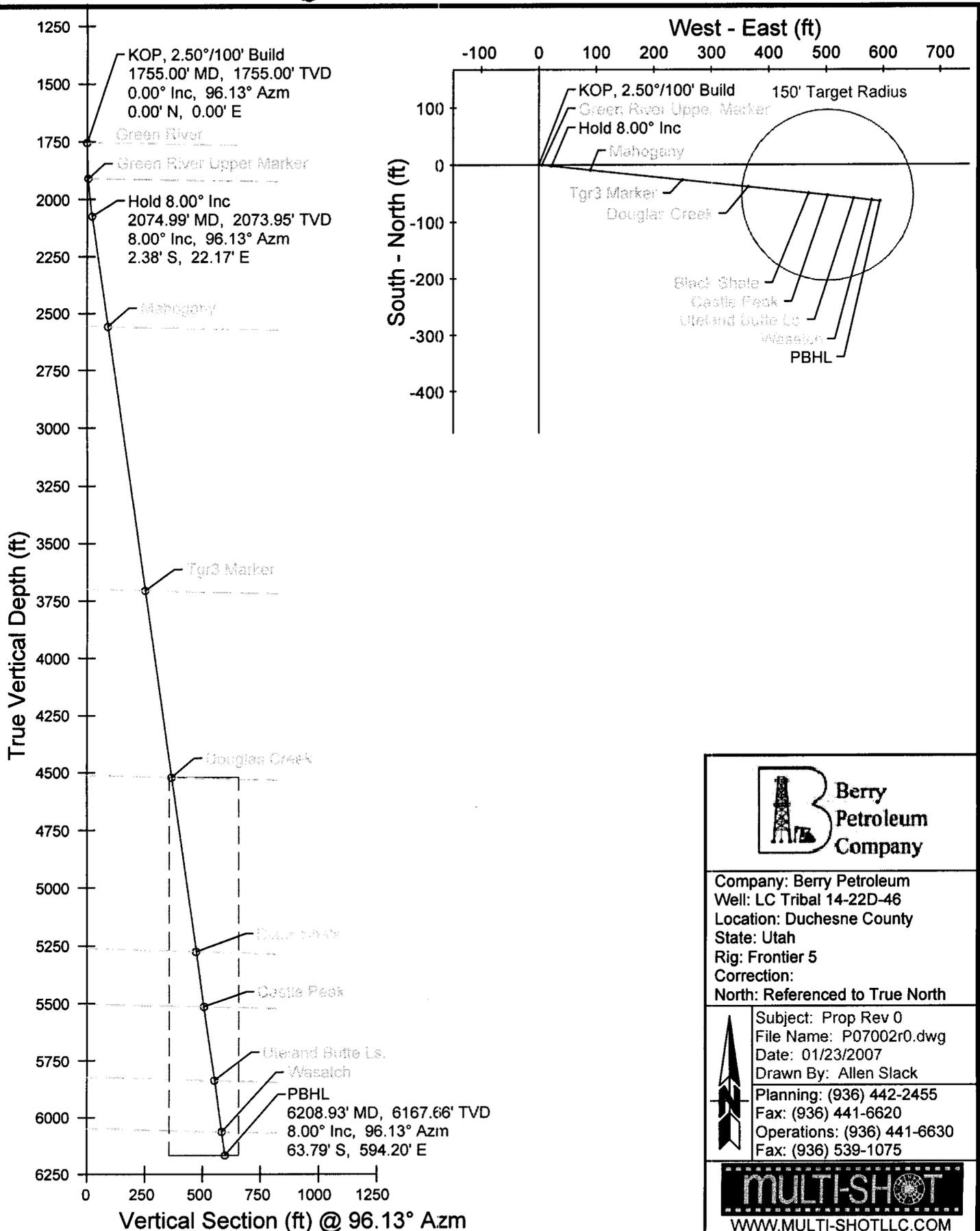
BEGINNING OF PROPOSED "A" CORRIDOR RIGHT-OF-WAY ON UTE TRIBAL LAND STA. 0+00 (At Existing Road)

END OF PROPOSED "B" CORRIDOR RIGHT-OF-WAY ON UTE TRIBAL LAND STA. 1+07.40 (At Existing Road)

Set Stone, Pile of Stones, Bearing Trees

S89°53'18"W - 2642.32' (Meas.)

Section Line



Company: Berry Petroleum
 Well: LC Tribal 14-22D-46
 Location: Duchesne County
 State: Utah
 Rig: Frontier 5
 Correction:
 North: Referenced to True North

Subject: Prop Rev 0
 File Name: P07002r0.dwg
 Date: 01/23/2007
 Drawn By: Allen Slack
 Planning: (936) 442-2455
 Fax: (936) 441-6620
 Operations: (936) 441-6630
 Fax: (936) 539-1075



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by Multi-Shot, LLC are at the sole risk and responsibility of the customer. Multi-Shot, LLC is not responsible for the accuracy of this schematic or the information contained herein.



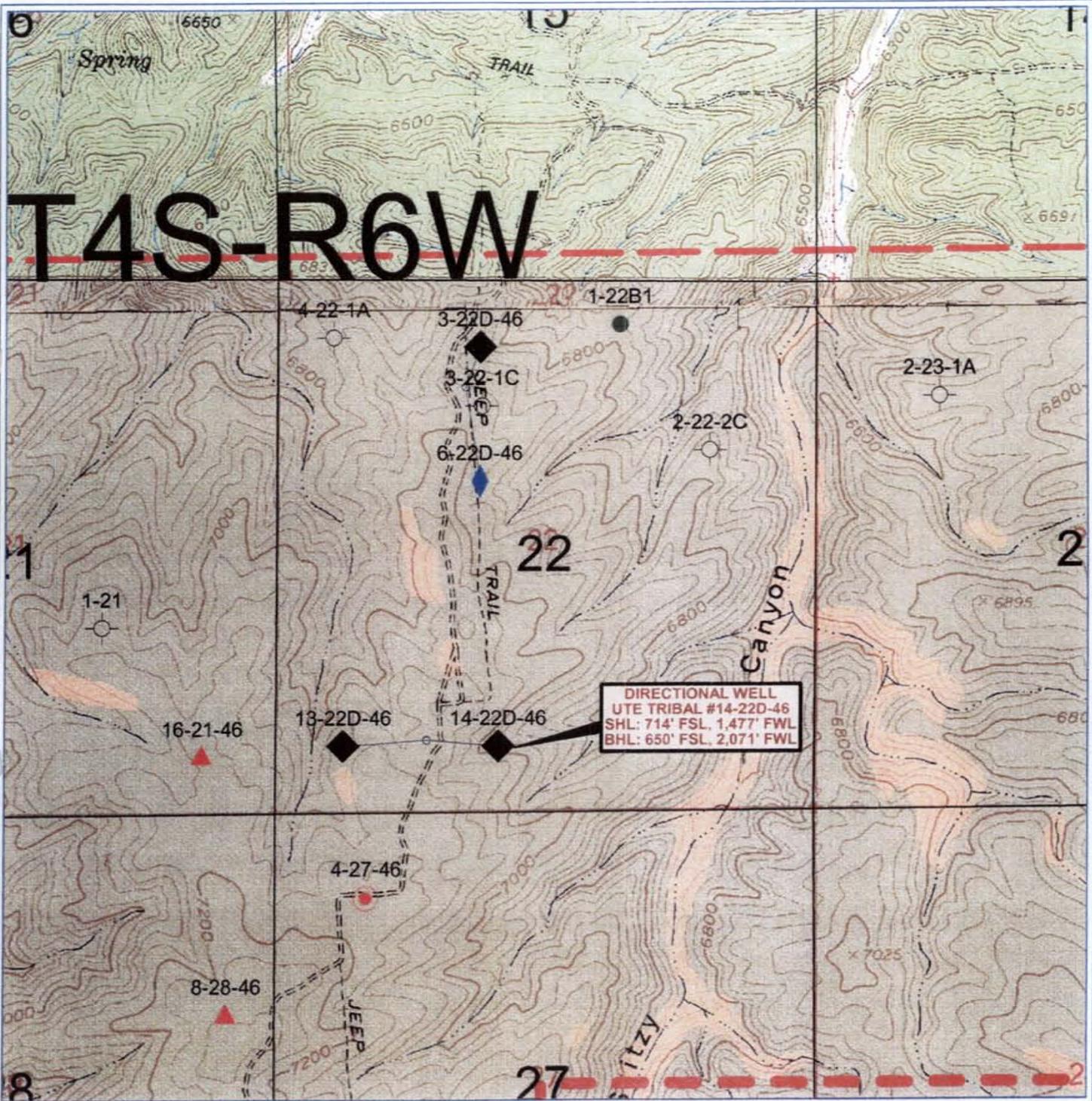
Job Number: P07-002
 Company: Berry Petroleum
 Lease/Well: LC Tribal 14-22D-46
 Location: Duchesne County
 Rig Name: Frontier 5
 RKB: 14'
 G.L. or M.S.L.: 7097' est

State/Country: Utah
 Declination:
 Grid: Referenced to True North
 File name: F:\WELLPL-1\2007\IP07000\SIP07002\07002.SVY
 Date/Time: 23-Jan-07 / 15:05
 Curve Name: Prop Rev 0

WINSERVE PROPOSAL REPORT
Minimum Curvature Method
Vertical Section Plane 96.13
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth</i> FT	<i>Incl Angle</i> Deg	<i>Drift Direction</i> Deg	<i>True Vertical Depth</i>	<i>N-S</i> FT	<i>E-W</i> FT	<i>Vertical Section</i> FT	<i>CLOSURE</i> Distance FT Direction Deg		<i>Dogleg Severity</i> Deg/100
KOP, 2.50°/100' Build									
1755.00	.00	96.13	1755.00	.00	.00	.00	.00	.00	.00
1855.00	2.50	96.13	1854.97	-.23	2.17	2.18	2.18	96.13	2.50
Green River Upper Marker									
1911.19	3.90	96.13	1911.07	-.57	5.29	5.32	5.32	96.13	2.50
1955.00	5.00	96.13	1954.75	-.93	8.67	8.72	8.72	96.13	2.50
2055.00	7.50	96.13	2054.14	-2.09	19.50	19.61	19.61	96.13	2.50
Hold 8.00° Inc									
2074.99	8.00	96.13	2073.95	-2.38	22.17	22.30	22.30	96.13	2.50
Mahogany									
2564.12	8.00	96.13	2558.32	-9.65	89.86	90.37	90.37	96.13	.00
Tgr3 Marker									
3723.78	8.00	96.13	3706.70	-26.87	250.32	251.76	251.76	96.13	.00
Douglas Creek									
4547.70	8.00	96.13	4522.60	-39.11	364.33	366.42	366.42	96.13	.00
Black Shale									
5309.00	8.00	96.13	5276.49	-50.42	469.67	472.37	472.37	96.13	.00
Castle Peak									
5549.85	8.00	96.13	5515.00	-54.00	503.00	505.89	505.89	96.13	.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
Uteland Butte Ls.									
5875.86	8.00	96.13	5837.83	-58.84	548.11	551.26	551.26	96.13	.00
Wasatch									
6105.40	8.00	96.13	6065.14	-62.25	579.87	583.20	583.20	96.13	.00
PBHL									
6208.93	8.00	96.13	6167.66	-63.79	594.20	597.61	597.61	96.13	.00



T4S-R6W

DIRECTIONAL WELL
UTE TRIBAL #14-22D-46
SHL: 714' FSL. 1,477' FWL
BHL: 650' FSL. 2,071' FWL

BERRY PETROLEUM COMPANY

Lake Canyon Project
LC TRIBAL 14-22D-46
Directional Drilling Plat
 Sec. 22 T4S R6W - Duchesne Co, UT



- WELL SYMBOLS**
- ▲ W/O BLM
 - APD - W/O Survey
 - ◆ Geologic Prognosis Prepared
 - Oil Well
 - Dry Hole
 - ◆ Working on APD

May 2, 2007

T4S, R6W, U.S.B.&M.

BERRY PETROLEUM COMPANY

Well location, LC TRIBAL #14-22D-46, located as shown in the SE 1/4 SW 1/4 of Section 22, T4S, R6W, U.S.B.&M., Duchesne County, Utah.

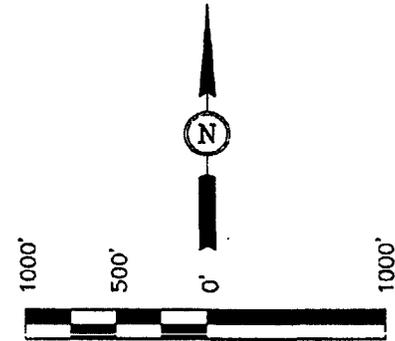
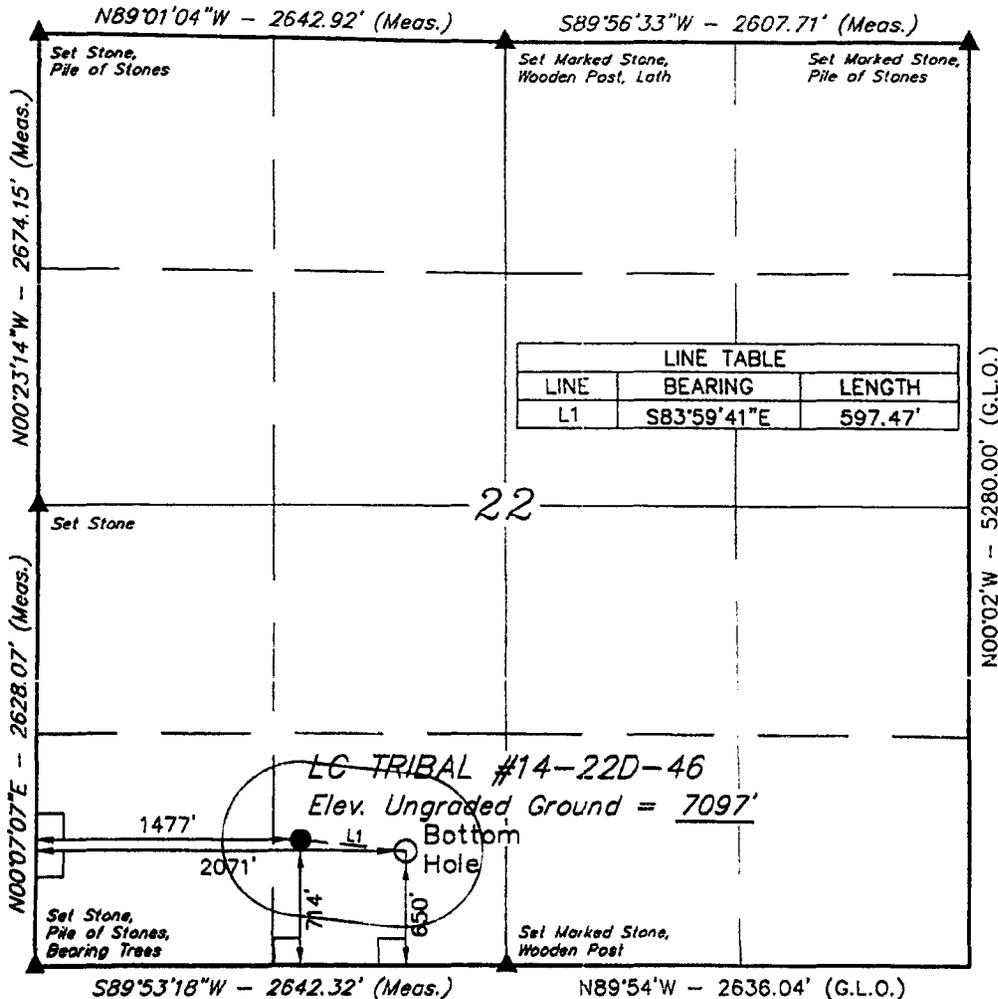
BASIS OF ELEVATION

BENCH MARK (M67) LOCATED IN THE SW 1/4 OF SECTION 9, T5S, R4W, U.S.B.&M., TAKEN FROM THE DUCHESNE SE QUADRANGLE, UTAH, DUCHESNE COUNTY, 7.5 MINUTE QUAD. (TOPOGRAPHIC MAP) PUBLISHED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY. SAID ELEVATION IS MARKED ON CAP AS BEING 6097 FEET.

BASIS OF BEARINGS

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

LINE TABLE		
LINE	BEARING	LENGTH
L1	S83°59'41"E	597.47'



SCALE

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.

[Signature]
 REGISTERED LAND SURVEYOR
 REGISTRATION NO. 161319
 STATE OF UTAH

REVISED: 04-24-07

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

LEGEND:

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

(NAD 83)
 LATITUDE = 40°06'48.04" (40.113344)
 LONGITUDE = 110°33'11.46" (110.553183)
 (NAD 27)
 LATITUDE = 40°06'48.19" (40.113386)
 LONGITUDE = 110°33'08.90" (110.552472)

SCALE 1" = 1000'	DATE SURVEYED: 12-19-06	DATE DRAWN: 02-12-07
PARTY G.S. R.W. P.M.	REFERENCES G.L.O. PLAT	
WEATHER COLD	FILE BERRY PETROLEUM COMPANY	



Proposal No: 1001102957A

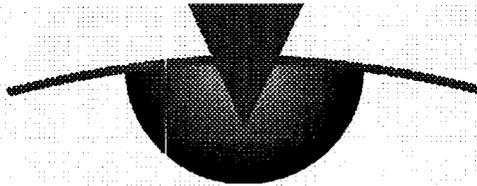
Berry Petroleum Co
LC Tribal 14-22D-46

.22 T4S R6W
Duchesne County, Utah
April 24, 2007

Cement Recommendation

Prepared for:
Tim McDonald
Berry Petroleum Co.

Prepared by:
WESLEY D COOK
District Technical Supervisor
Vernal, Utah
Bus Phone: (435)781-2294
Mobile: (435)828-4121



POWERVISION®

POWERPRO • POWERTRAX • POWERLINK

Service Point:

Vernal
Bus Phone: (435) 781-2294
Fax: (435) 789-4530

Service Representatives:

Darrin Bailey
Senior Sales Rep
Vernal, Utah
Bus Phone: (435) 781-2294

Operator Name: Berry Petroleum Co
Well Name: LC Tribal 14-22D-46
Job Description: Cement 5-1/2 inch Production Casing
Date: April 24, 2007



Proposal No: 1001102957A

JOB AT A GLANCE

Depth (TVD)	6,178 ft
Depth (MD)	6,206 ft
Hole Size	7.875 in
Casing Size/Weight :	5 1/2 in, 15.5 lbs/ft
Pump Via	
Total Mix Water Required	7,235 gals
Pre-Flush	
Fresh Water	10 bbls
Density	8.3 ppg
Spacer	
KCl Water	10 bbls
Density	8.4 ppg
Spacer	
Fresh Water	20 bbls
Density	8.3 ppg
Lead Slurry	
PL2+SF+3#CSE+3%KCL+0.25:	257 sacks
Density	11.0 ppg
Yield	3.46 cf/sack
Tail Slurry	
50:50:2+3%KCL+0.5%EC-1+0.:	323 sacks
Density	14.3 ppg
Yield	1.27 cf/sack
Displacement	
Fresh Water	147 bbls
Density	8.3 ppg

Operator Name: Berry Petroleum Co
 Well Name: LC Tribal 14-22D-46
 Job Description: Cement 5-1/2 inch Production Casing
 Date: April 24, 2007



Proposal No: 1001102957A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
8.097 CASING	342	342
7.875 HOLE	6,206	6,178

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
5.500	4.950	15.5	6,206	6,178

Float Collar set @ 6,166 ft
 Mud Density 8.40 ppg
 Mud Type Water Based
 Est. Static Temp. 145 ° F
 Est. Circ. Temp. 115 ° F

VOLUME CALCULATIONS

342 ft x 0.1926 cf/ft with 0 % excess = 65.9 cf
 3,758 ft x 0.1733 cf/ft with 27 % excess = 824.5 cf
 2,106 ft x 0.1733 cf/ft with 11 % excess = 403.4 cf
 40 ft x 0.1336 cf/ft with 0 % excess = 5.3 cf (inside pipe)
TOTAL SLURRY VOLUME = 1299.1 cf
= 232 bbls

Confirm well data with customer representative prior to pumping.

Operator Name: Berry Petroleum Co
Well Name: LC Tribal 14-22D-46
Job Description: Cement 5-1/2 inch Production Casing
Date: April 24, 2007



Proposal No: 1001102957A

FLUID SPECIFICATIONS

Pre-Flush 10.0 bbls Fresh Water @ 8.34 ppg
 Spacer 10.0 bbls KCl Water @ 8.4 ppg
 Spacer 20.0 bbls Fresh Water @ 8.34 ppg

<u>FLUID</u>	<u>VOLUME CU-FT</u>	<u>VOLUME FACTOR</u>	<u>AMOUNT AND TYPE OF CEMENT</u>
Lead Slurry	890	/ 3.46	= 257 sacks Premium Lite II Cement + 0.05 lbs/sack Static Free + 3% bwoc Potassium Chloride + 0.25 lbs/sack Cello Flake + 5 lbs/sack Kol Seal + 0.002 gps FP-6L + 10% bwoc Bentonite + 0.5% bwoc Sodium Metasilicate + 3 lbs/sack CSE-2 + 201.6% Fresh Water
Tail Slurry	409	/ 1.27	= 323 sacks (50:50) Poz (Fly Ash):Class G Cement + 0.05 lbs/sack Static Free + 3% bwoc Potassium Chloride + 0.5% bwoc EC-1 + 0.25 lbs/sack Cello Flake + 0.002 gps FP-6L + 2% bwoc Bentonite + 0.3% bwoc Sodium Metasilicate + 56.3% Fresh Water

Displacement 146.8 bbls Fresh Water @ 8.34 ppg

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	11.00	14.30
Slurry Yield (cf/sack)	3.46	1.27
Amount of Mix Water (gps)	21.03	5.67
Amount of Mix Fluid (gps)	21.03	5.67
Estimated Pumping Time - 70 BC (HH:MM)	4:30	3:30
COMPRESSIVE STRENGTH		
24 hrs @ 144 ° F (psi)		2300
72 hrs @ 144 ° F (psi)		2550

Compressive strengths and thickening times are estimates only. Final laboratory testing will determine retarder loadings, if necessary.

Slurry volumes are based off of 25% excess with gauge hole.



CONDITIONS

BJ Services' performance of services and sale of materials is expressly conditioned upon the applicability of the Terms and Conditions contained in the current BJ Services Price Book. The Terms and Conditions include, among other things, an indemnity in favor of BJ Services from Customer for damage to the well bore, reservoir damage, loss of the hole, blowouts and loss of control of the well, even if caused by the negligence or other fault of BJ Services. The Terms and Conditions also limit the warranties provided by the BJ Services and the remedies to which Customer may be entitled in the event of a breach of warranty by BJ Services. For these reasons, we strongly recommend that you carefully review a copy of the Terms and Conditions. If you do not have a copy of the BJ Services Price Book, you can view the Terms and Conditions on BJ Services Web Site, www.bjservices.com. By requesting that BJ Services perform the services described herein, Customer acknowledges that such Terms and Conditions are applicable to the services. Further, by requesting the services, Customer warrants that its representative on the well location or other service site will be fully authorized to acknowledge such Terms and Conditions by executing a Field Receipt or other document presented by BJ Services containing such Terms and Conditions.

In the event that Customer and BJ Services have executed a Master Services Agreement covering the work to be performed, such Master Services Agreement shall govern in place of the Terms and Conditions. If you are interested in entering into Master Services Agreement with BJ Services, please contact us through the "Go BJ" button on the BJ Services Web Site.

Operator Name: Berry Petroleum Co
Well Name: LC Tribal 14-22D-46
Date: April 24, 2007



Proposal No: 1001102957A

PRODUCT DESCRIPTIONS

Bentonite

Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.

CSE-2

An additive which contributes to low density, high compressive strength development of cement slurries at all temperature ranges. This material also controls free water without the need for standard extenders.

Cello Flake

Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.

Class G Cement

Intended for use as a basic cement from surface to 8000 ft as manufactured, or can be used with accelerators and retarders to cover a wide range of well depths and temperatures.

EC-1

A proprietary product that provides expansive properties and improves bonding at low to moderate temperatures.

FP-6L

A clear liquid that decreases foaming in slurries during mixing.

Kol Seal

A granular, lightweight material (specific gravity of 1.3) used to control lost circulation in zones of natural and induced fractures, cavities and high permeability.

Potassium Chloride

A granular salt used to reduce clay swelling caused by water-base stimulation fluids.

Potassium Chloride

A granular salt used to reduce clay swelling caused by water-base cementing fluids.

Poz (Fly Ash)

A synthetic pozzolan, (primarily Silicon Dioxide). When blended with cement, Pozzolan can be used to create lightweight cement slurries used as either a filler slurry or a sulfate resistant completion cement.

Premium Lite II Cement

Premium Lite II is a high-yield, cost effective lightweight cement blend that provides exceptional compressive strength and reduced permeability when mixed at low slurry weights.

Sodium Metasilicate

An accelerator used to decrease the thickening time of cement slurries.

Sodium Metasilicate

An extender used to produce an economical, low density cement slurry.

Operator Name: Berry Petroleum Co
Well Name: LC Tribal 14-22D-46
Date: April 24, 2007



Proposal No: 1001102957A

PRODUCT DESCRIPTIONS (Continued)

Static Free

An anti-static additive used to prevent air entrainment due to agglomerated particles. Can be used in Cementing and Fracturing operations to aid in the flow of dry materials.



Proposal No: 1001102956A

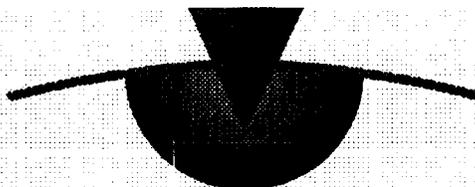
Berry Petroleum Co
LC Tribal 14-22D-46

22 T4S R6W
Duchesne County, Utah
April 24, 2007

Cement Recommendation

Prepared for:
Tim McDonald
Berry Petroleum Co.

Prepared by:
WESLEY D COOK
District Technical Supervisor
Vernal, Utah
Bus Phone: (435)781-2294
Mobile: (435)828-4121



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Service Representatives:

Darrin Bailey
Senior Sales Rep
Vernal, Utah
Bus Phone: (435) 781-2294

Operator Name: Berry Petroleum Co
Well Name: LC Tribal 14-22D-46
Job Description: Cement 5-1/2 inch Production Casing
Date: April 24, 2007



Proposal No: 1001102956A

JOB AT A GLANCE

Depth (TVD)	6,178 ft
Depth (MD)	6,206 ft
Hole Size	7.875 in
Casing Size/Weight :	5 1/2in, 15.5 lbs/ft
Pump Via	
Total Mix Water Required	8,151 gals
Pre-Flush	
Fresh Water	10 bbls
Density	8.3 ppg
Spacer	
KCl Water	10 bbls
Density	8.4 ppg
Spacer	
Fresh Water	20 bbls
Density	8.3 ppg
Lead Slurry	
PL2+SF+3#CSE+3%KCL+0.25:	250 sacks
Density	11.0 ppg
Yield	3.46 cf/sack
Tail Slurry	
PL II HS	300 sacks
Density	13.0 ppg
Yield	1.92 cf/sack
Displacement	
Fresh Water	147 bbls
Density	8.3 ppg

Operator Name: Berry Petroleum Co
 Well Name: LC Tribal 14-22D-46
 Job Description: Cement 5-1/2 inch Production Casing
 Date: April 24, 2007



Proposal No: 1001102956A

WELL DATA

ANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
8.097 CASING	342	342
7.875 HOLE	6,206	6,178

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
5.500	4.950	15.5	6,206	6,178

Float Collar set @ 6,166 ft
 Mud Density 8.40 ppg
 Mud Type Water Based
 Est. Static Temp. 145 ° F
 Est. Circ. Temp. 115 ° F

VOLUME CALCULATIONS

342 ft x 0.1926 cf/ft with 0 % excess = 65.9 cf
 3,158 ft x 0.1733 cf/ft with 46 % excess = 800.2 cf
 2,706 ft x 0.1733 cf/ft with 22 % excess = 569.7 cf
 40 ft x 0.1336 cf/ft with 0 % excess = 5.3 cf (inside pipe)
TOTAL SLURRY VOLUME = 1441.2 cf
= 257 bbls

Confirm well data with customer representative prior to pumping.

Operator Name: Berry Petroleum Co
 Well Name: LC Tribal 14-22D-46
 Job Description: Cement 5-1/2 inch Production Casing
 Date: April 24, 2007



Proposal No: 1001102956A

FLUID SPECIFICATIONS

Pre-Flush 10.0 bbls Fresh Water @ 8.34 ppg
 Spacer 10.0 bbls KCl Water @ 8.4 ppg
 Spacer 20.0 bbls Fresh Water @ 8.34 ppg

<u>FLUID</u>	<u>VOLUME CU-FT</u>	<u>VOLUME FACTOR</u>	<u>AMOUNT AND TYPE OF CEMENT</u>
Lead Slurry	866	/ 3.46	= 250 sacks Premium Lite II Cement + 0.05 lbs/sack Static Free + 3% bwoc Potassium Chloride + 0.25 lbs/sack Cello Flake + 5 lbs/sack Kol Seal + 0.002 gps FP-6L + 10% bwoc Bentonite + 0.5% bwoc Sodium Metasilicate + 3 lbs/sack CSE-2 + 201.6% Fresh Water
Tail Slurry	575	/ 1.92	= 300 sacks Premium Lite II High Strength + 0.05 lbs/sack Static Free + 1% bwoc Calcium Chloride + 0.4% bwoc FL-63 + 0.25 lbs/sack Cello Flake + 2 lbs/sack Kol Seal + 0.002 gps FP-6L + 0.2% bwoc BA-59 + 92.5% Fresh Water
Displacement			146.8 bbls Fresh Water @ 8.34 ppg

CEMENT PROPERTIES

	SLURRY NO. 1	SLURRY NO. 2
Slurry Weight (ppg)	11.00	13.00
Slurry Yield (cf/sack)	3.46	1.92
Amount of Mix Water (gps)	21.03	9.65
Amount of Mix Fluid (gps)	21.03	9.65
Estimated Pumping Time - 70 BC (HH:MM)	4:30	3:30

COMPRESSIVE STRENGTH

24 hrs @ 144 ° F (psi)	2300
72 hrs @ 144 ° F (psi)	2550

Compressive strengths and thickening times are estimates only. Final laboratory testing will determine retarder loadings, if necessary.



CONDITIONS

BJ Services' performance of services and sale of materials is expressly conditioned upon the applicability of the Terms and Conditions contained in the current BJ Services Price Book. The Terms and Conditions include, among other things, an indemnity in favor of BJ Services from Customer for damage to the well bore, reservoir damage, loss of the hole, blowouts and loss of control of the well, even if caused by the negligence or other fault of BJ Services. The Terms and Conditions also limit the warranties provided by the BJ Services and the remedies to which Customer may be entitled in the event of a breach of warranty by BJ Services. For these reasons, we strongly recommend that you carefully review a copy of the Terms and Conditions. If you do not have a copy of the BJ Services Price Book, you can view the Terms and Conditions on BJ Services Web Site, www.bjservices.com. By requesting that BJ Services perform the services described herein, Customer acknowledges that such Terms and Conditions are applicable to the services. Further, by requesting the services, Customer warrants that its representative on the well location or other service site will be fully authorized to acknowledge such Terms and Conditions by executing a Field Receipt or other document presented by BJ Services containing such Terms and Conditions.

In the event that Customer and BJ Services have executed a Master Services Agreement covering the work to be performed, such Master Services Agreement shall govern in place of the Terms and Conditions. If you are interested in entering into Master Services Agreement with BJ Services, please contact us through the "Go BJ" button on the BJ Services Web Site.

Operator Name: Berry Petroleum Co
Well Name: LC Tribal 14-22D-46
Date: April 24, 2007



Proposal No: 1001102956A

PRODUCT DESCRIPTIONS

BA-59

A free flowing powder which provides improved bonding and minimizes gas migration. Provides expansion properties and zero free water to cement slurries.

Bentonite

Commonly called gel, it is a clay material used as a cement extender and to control excessive free water.

CSE-2

An additive which contributes to low density, high compressive strength development of cement slurries at all temperature ranges. This material also controls free water without the need for standard extenders.

Calcium Chloride

A powdered, flaked or pelletized material used to decrease thickening time and increase the rate of strength development.

Cello Flake

Graded (3/8 to 3/4 inch) cellophane flakes used as a lost circulation material.

FL-63

A non-retarding, non-viscosifying fluid loss additive particularly suited for use with coil tubing and/or close tolerance liner cementing. FL-63 is effective from low to high temperatures. Concentrations of 0.2% to 1.0% BWOC are typical.

FP-6L

A clear liquid that decreases foaming in slurries during mixing.

Kol Seal

A granular, lightweight material (specific gravity of 1.3) used to control lost circulation in zones of natural and induced fractures, cavities and high permeability.

Potassium Chloride

A granular salt used to reduce clay swelling caused by water-base stimulation fluids.

Premium Lite II Cement

Premium Lite II is a high-yield, cost effective lightweight cement blend that provides exceptional compressive strength and reduced permeability when mixed at low slurry weights.

Premium Lite II High Strength

Premium Lite II High Strength is a high-yield, cost effective lightweight cement blend that provides exceptional compressive strength and reduced permeability when mixed at low slurry weights.

Sodium Metasilicate

An accelerator used to decrease the thickening time of cement slurries.

Static Free

An anti-static additive used to prevent air entrainment due to agglomerated particles. Can be used in Cementing and Fracturing operations to aid in the flow of dry materials.

LAKE CANYON PROJECT,
DUCHESNE COUNTY, UTAH:
RESULTS OF AN INTENSIVE CULTURAL
RESOURCES INVENTORY



UTAH STATE PROJECT NUMBER: **U-06-UI-1538i,s**

Prepared for:

Berry Petroleum Company
950 17th Street, Suite 2400
Denver, CO 80202

Written By:

Gordon C. Tucker Jr., Ph.D.



URS Corporation
8181 E. Tufts Avenue
Denver, Colorado 80237

Project No.: 22239100.00001

January 3, 2007

COVER PAGE
Must Accompany All Project Reports
Submitted to Utah SHPO

Project Name: Berry Petroleum Company Lake Canyon Project **State Proj. No.** U-06-UI-1538i,s

Report Date: January 3, 2007 **County(ies):** Duchesne

Principal Investigator: Robert J. Mutaw, Ph.D.

Field Supervisor(s): Gordon C. Tucker Jr., Ph.D.

Records search completed at what office(s)? Utah State Historical Society

Record search date(s): October 23, 2006; November 7, 2006;

Area Surveyed – Intensive (<15 m intervals): 1,074 acres **Recon/Intuitive (>15 m intervals):** _____ acres

7.5' Series USGS Map Reference(s): Rabbit Gulch, UT (1980); Buck Knoll, UT (1962)

SITES REPORTED	COUNT / SMITHSONIAN SITE NUMBERS
Archaeological Sites	<u>3/42DC2258, 42DC2259, 42DC2260</u>
Revisits (no inventory form update)	<u>0</u>
Updates (updated IMACS site inventory form attached)	<u>0</u>
New recordings (IMACS site inventory form attached)	<u>3/42DC2258, 42DC2259, 42DC2260</u>
Total Count of Archaeological Sites	<u>3</u>
Historic Structures (USHS 106 site info form attached)	<u>0</u>
Total National Register Eligible Sites	<u>1/42DC2260</u>

- Checklist of Required Items, attached**
1. Copy of the final report
 2. Copy of 7.5' Series USGS map with surveyed/excavated area clearly identified
 3. Completed IMACS site inventory forms
 - Parts A and B or C
 - IMACS Encoding Form
 - Site Sketch Map
 - Photographs
 - Copy of the appropriate 7.5' Series USGS map with site location marked and Smithsonian site number clearly labeled
 4. Completed "Cover Page" accompanying final report and survey materials

For UDSH office use only

Abstract

On behalf of Berry Petroleum Company (Berry), URS Corporation conducted an intensive cultural resources inventory of approximately 807 acres for actual or likely oil/gas wells and 58,150 feet (267 acres) of new or upgraded access roads on Ute tribal lands and State of Utah Division of Wildlife Resources lands in the Lake Canyon area, Duchesne County, Utah. Three historic sites (42DC2258, 42DC2259, and 42DC2260) and ten isolated finds (IF) were documented. One site, the Deerhorn No. 1 Gilsonite Mine (42DC2260), is considered eligible for listing in the National Register of Historic Places (NRHP), but it is unlikely to be adversely affected by project activities. The other three sites and all of the IFs have been recommended as not eligible for listing in the NRHP. Because the project will not affect any historic properties, it was recommended that it be allowed to proceed as planned.

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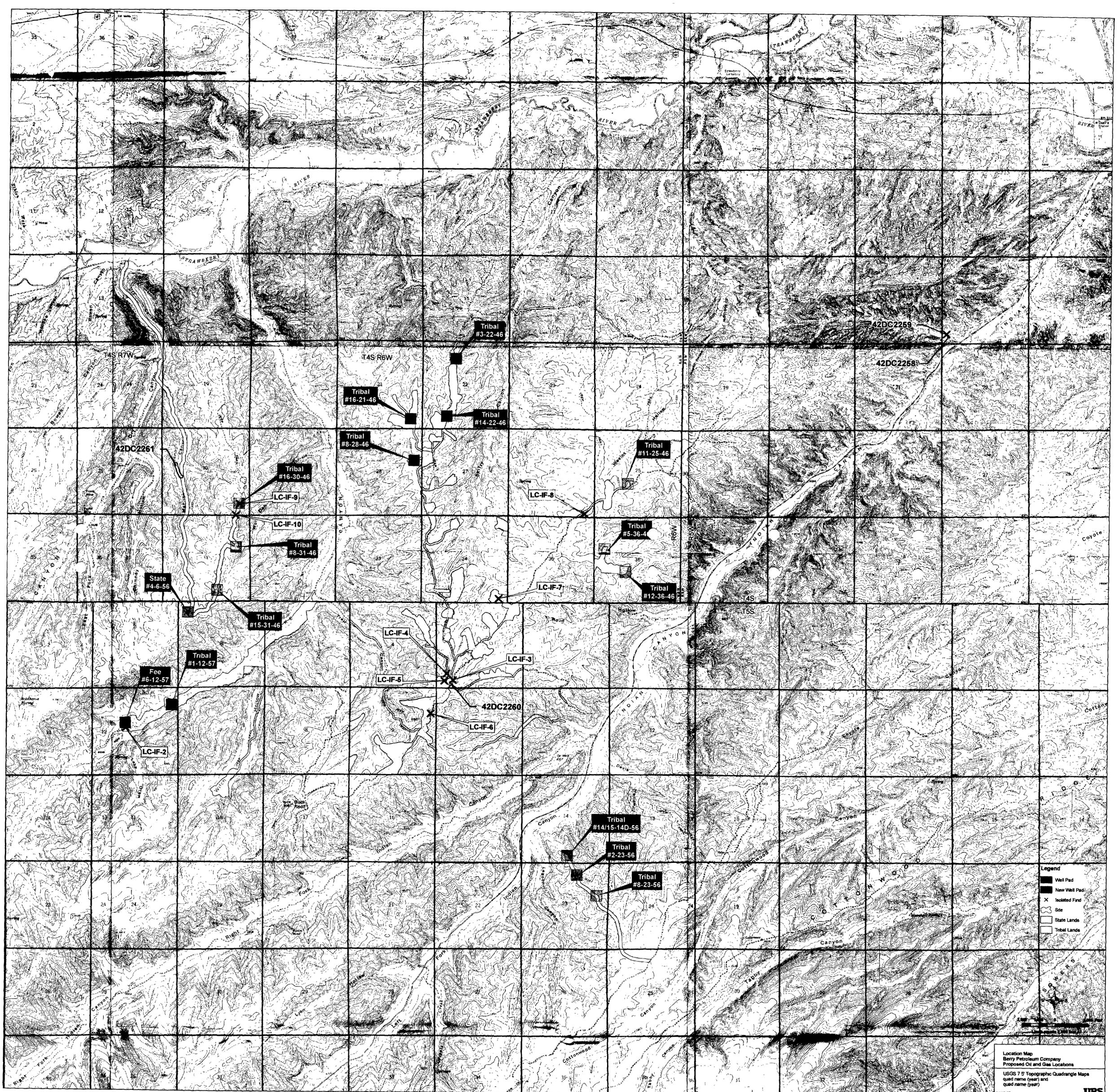
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- Legend**
- Well Pad
 - New Well Pad
 - X Isolated Find
 - Site
 - State Lands
 - Tribal Lands

Location Map
 Berry Petroleum Company
 Proposed Oil and Gas Locations
 USGS 7.5 Topographic Quadrangle Maps
 quad name (year) and
 quad name (year)

Berry Petroleum Company (Berry) proposes to open a new oil field in the Lake Canyon area of Duchesne County, Utah. Actual or likely wells and connecting access roads are found on lands administered by the Ute Indian Tribe (Tribe) and the State of Utah, Division of Wildlife Resources (DWR). The Tribe is obliged under Section 106 of the National Historic Preservation Act (NHPA) of 1966 (P.L. 89-665, 16 U.S.C. 470 *et seq.*, as amended through 2000), and implementing regulations (36 CFR 800), to consider the effects of this project upon any historic properties, which are defined as districts, sites, buildings, structures, or objects that are included in or eligible for inclusion in the National Register of Historic Places (NRHP). In similar fashion, the DWR must take into account the effects of the undertaking on any historic property (DWR Administrative Rules R657-28-3). The Tribe and DWR required that Berry comply with the provisions of federal and state regulations. In turn, Berry has contracted with URS Corporation (URS) to conduct all necessary cultural resources studies for the project. Fieldwork was authorized through an access permit issued by the Tribe's Energy and Minerals Resource Division.

The study area (hereafter, the Area of Potential Effects or APE) is defined as a combination of the following areas: (1) 10 acres surrounding four new well pads—Tribal 16-30-46, Tribal 8-31-46, Tribal 15-31-46, and State 4-6-56; (2) approximately 767 acres where future wells might be placed; and (3) 200-foot (ft)-wide corridors along approximately 58,150 ft (11 miles) of new or upgraded roads to the well locations. An intensive cultural resources survey was conducted within the APE, which encompasses a total of approximately 1,074 acres.

The surveyed well locations and access roads are depicted on the Rabbit Gulch, UT (1980) and Buck Knoll, UT (1962) 7.5' USGS topographic quadrangle maps (Figures 1-1 and 1-2).

The archaeological survey was conducted on October 23 through November 3, 2006. The project principal investigator is Robert J. Mutaw, Ph.D., Cultural Resources Team Leader for the URS Denver office. Gordon C. Tucker Jr., Ph.D., URS Senior Archaeologist, conducted the fieldwork, assisted by Deborah Jensen, URS Staff Archaeologist GIS Specialist. Brad Pinnecoose and Leallen Blackhair, oil and gas technicians with the Energy and Minerals Division, accompanied Dr. Tucker and Ms. Jensen when on Tribal lands. Ms. Jensen completed the IMACS forms, prepared the site sketch maps, and illustrated the artifacts. Dr. Tucker prepared the report, which was reviewed for completeness and accuracy by Dr. Mutaw. Lynne Disette prepared the location maps, Jeanne DeFauw finalized the sketch maps, and Aileen Torres formatted the report.

This report describes the background, methods, and results of an intensive cultural resources survey of the APE. The report complies in form and contents with the Secretary of the Interior's Guidelines for Archaeological Documentation.

Human use of an area, today and in the past, is conditioned to a large extent by environmental parameters. The environment does not determine how and to what extent human groups will respond; rather, it provides opportunities for, and imposes constraints upon, human behavior, ameliorated to a greater or lesser extent by culture. To understand how human groups in an area adapted to a local situation, we must first understand the regional environmental milieu. A description of the present environment is followed by a discussion of past regional environmental conditions.

2.1 PRESENT ENVIRONMENT

The project area is located south of the Uinta Basin, in the Tavaputs Plateau section of the Colorado Plateau physiographic province (McNab and Avers 1996). The underlying geological strata rise gradually upward south from the center of the Uinta Basin (McNab and Avers 1996), such that the area is distinguished by dipping ridge tops and deeply incised canyons (Loosle and Estes 2004). The area is underlain by approximately 20,000-25,000 ft of sedimentary deposits, which include Paleozoic to Late Cenozoic age marine and continental limestones, sandstones, and shales. Oil shale and other hydrocarbon deposits are found in the Cenozoic age Green River shales (Hintze 1980; Moyle 1981; Murphy 1981a).

Duchesne County is generally characterized by a semiarid to arid continental climate with four well-defined seasons. As measured at Duchesne, Utah, for the period 1906-2005, the average annual maximum and minimum temperatures are 60.4°F and 29.8°F, respectively (WRCC 2006). Summers are mild with occasional hot spells and most summer precipitation is associated with thunderstorms. Winters are cold but usually not severe. The average total annual precipitation is 9.51 inches, and August (1.23 inches) and November (0.53 inches) are the wettest and driest months, respectively. The average annual snowfall is 25.7 inches, more than 80 percent of which falls during December through March. The average growing season (the number of days between the last freeze in the spring and the first freeze in the fall, at a daily minimum temperature of 32°F) is 113 days (United States Department of Agriculture [USDA] 1959).

The project area is located within the juniper-pinyon and big sagebrush association of the Upper Sonoran life zone. Juniper, pinyon, black sagebrush, mountain brush, and various grasses historically dominated the endemic vegetation communities (McNab and Avers 1996). Willows and cottonwoods grow in the riparian zones, and pockets of Douglas fir are found on north-facing slopes in some areas. Following settlement by European-Americans in the mid-nineteenth century, the valley bottoms have been cultivated with hay grasses and alfalfa (Murphy 1981b; USDA 1959).

Mammals currently or historically known to inhabit the area include moose, elk, mule deer, pronghorn antelope, black bear, cougar, bobcat, coyote, beaver, raccoon, fox, prairie dog, mink, and muskrat. Avifauna commonly seen in the area include bald and golden eagles, hawks, falcons, mallards, teal, Canada goose, curlews, snipe, blue cranes, sandhill cranes, robins, swallows, blackbirds, crows, sparrows, killdeer, and meadowlarks. Native aquatic species include cutthroat trout, suckers, and chubs (Barton 1998).

Soils in the general area developed in a semiarid to arid, continental climate (Wilson 1959: 7). They are low in organic matter and nitrogen but are high in minerals. Soil colors (dry) range from light brown to yellowish brown or very pale brown.

2.2 PALEOENVIRONMENT

Mehring (1986) provides a comprehensive overview of prehistoric environments in Utah. This overview is briefly summarized below.

Climatic events during the late Pleistocene and early Holocene epochs worked together to create the modern landscape. Most significantly, pluvial (increased rainfall) episodes, which are attributable to moist-cool climatic conditions, filled what are now dry and salt-encrusted basins with large freshwater lakes, which were joined by great fish-filled rivers. The largest of these pluvial lakes were Lake Lahontan in western Nevada and Lake Bonneville in western Utah and eastern Nevada. At approximately 14,000 B.C., the depth of Lake Bonneville had expanded to more than 900 ft above the present level of its modern remnant, the Great Salt Lake. Following catastrophic downcutting and the waning of continental and mountain glaciers, lake levels had fallen to the same elevation of Great Salt Lake by 9000 B.C. Thereafter, as the regional climate fluctuated between warm-dry and cool-moist conditions, the lake levels waxed and waned. The strandlines of these ancient lakes are now clearly visible on the flanks of the hills and mountains that surround the Salt Lake valley.

The abundance and distribution of plants, animals, and aboriginal populations reacted in concert with these climatic variations. The now treeless deserts were filled with woodlands, and herds of camels, horses, and mammoths grazed the steppes and fertile marshes. As the lakes shrank, rivers ceased to flow, springs dried, and plants and animals migrated northward and upwards to higher elevations. Humans were obliged to some extent to follow these resources upon which they were very much dependent. As the trend towards aridity continued, plants and animals continued to adjust their ranges. Reduced effective moisture and higher temperatures prevailed until ca. 2000 B.C. The next millennia witnessed a return to cooler and moister conditions: the rains returned with regularity, and lakes and marshes again dotted the basin floors. Shrubs such as sagebrush and shadscale retreated to lower elevations and south as grass and woodland communities advanced downslope. A warm-dry episode prevailed from the early A.D. 1100s to the early 1400s, which followed 100 years of warm-moist conditions and preceded cool-moist conditions that lasted until the early A.D. 1600s. Essentially modern conditions have existed since then.

Paleoclimatic reconstructions for northeastern Utah are based upon data obtained from several bogs in the Uinta Mountains and from archaeological excavations in the Dutch John area (Johnson and Loosle 2002: 5-6). The record shows that between 8000 and 6600 years before present (BP), climatic conditions were cooler than today. Through the last half of the Middle Holocene (before 4800 BP), the regional climate was generally warm and dry, peaking at ca. 4700-3400 BP. Effective moisture levels were generally greater than today until ca. 1700 BP, after which time warmer and drier conditions prevailed. Colder conditions, probably with increased effective moisture, returned ca. 550 BP and continued for the next 400 years.

It is uncertain to what extent and in what manner regional populations responded to these paleoclimatic perturbations. It is safe to assume, however, that such adaptations will be manifest in the archaeological record. Given the oftentimes discrete and isolated nature of cultural resources investigations in the region, it may be some time before a more complete picture of human adaptations to changing climatic parameters throughout the full extent of human history in the region can be pieced together.

3.1 CULTURAL HISTORY

Humans have occupied Utah for at least 11,000 years, and perhaps longer (Jennings 1986). This lengthy span of occupation can be segregated into prehistoric and historic eras. A general review of the prehistory and history of the Uinta Basin and the Tavaputs Plateau areas of northeastern Utah has been prepared by Spangler (1995). A summary of this overview is provided below, augmented by additional information from other sources, such as *Prehistoric Uinta Mountain Occupations* (Johnson and Loosle 2002), and *History of Duchesne County* (Barton 1998).

3.1.1 Prehistoric Era

The cultural chronology of northeastern Utah is summarized in Table 3-1. This chronological sequence serves principally as an organizing device rather than depicting marked cultural change. The Tavaputs Plateau and Uinta Basin lie on the periphery of three large cultural/geographic regions: the Southwest, Great Plains, and Great Basin. The first occupants of the area were variably influenced by the cultural traditions and economic adaptations of these three areas.

**Table 3-1
CHRONOLOGICAL SEQUENCE
FOR NORTHEASTERN UTAH***

Episode	Age Range
Paleoindian Era	ca. 10,000—6000 B.C.
Archaic Era	6000 B.C.—A.D. 1
Early Archaic Period	6000—2000 B.C.
Late Archaic Period	2000 B.C.—A.D. 1
Late Prehistoric Era	A.D. 1—A.D. 1776
Uinta Fremont Period	A.D. 1—A.D. 1600
Protohistoric Period	A.D. 1650-1776
Historic Era	AD 1776—present

*Source: Reynolds et al. (1983); ANF (2005a, 2005b).

Paleoindian people have been characterized as highly mobile, subsisting on now-extinct large animals such as mammoth and large bison, which were dispatched with spears and atlatl darts (ANF 2005a). The artifactual hallmarks of this era are finely worked projectile points, such as Clovis, Folsom, Agate Basin, Midland, Medicine Lodge Creek, and various unnamed lanceolate and stemmed points (ANF 2005a). No Paleoindian projectile points have been recovered in stratigraphic or chronometrically controlled contexts in the region. They have typically been found on the surface of sites, usually in mixed contacts (ANF 2005a). Because of the paucity of sites containing stratified deposits of possible Paleoindian age, very little has been postulated as to Paleoindian lifeways in the region (Spangler 1995).

The advent of a more balanced foraging strategy that included the intensive processing of floral resources and the procurement of smaller game animals heralds the start of the Archaic era. Archaic groups were generally less mobile and areally restricted than Paleoindians (ANF 2005a). Group movements were based on the seasonal availability of edible plants and animals. In higher elevations, such as the Tavaputs Plateau, plant and animal resources peaked at different times of the season, and indigenous groups could exploit this extended period of availability by moving from one ecozone to another. By winter, however, most of these groups were encamped in the lowlands. Typical artifacts and features include stemmed, corner-notched, and side-notched projectile points; groundstone; scrapers; basketry; rock-lined storage and thermal features; relatively substantial brush structures with internal hearths and pits, which were occupied in the late summer or fall; and activity areas (Loosle and Johnson 2003).

The ANF has divided the Archaic era into Early and Late periods. The Early Archaic period is represented by several dozen sites in the Uinta Basin and Tavaputs Plateau, from which temporally diagnostic projectile points have been recovered. Early Archaic components at Dutch John, on the northern flank of the Uinta Mountains suggest late summer or fall occupations, focused on the procurement and processing of plant seeds and the hunting of deer and mountain sheep (ANF 2005a). During the Late Archaic period, the appearance of slab-lined basins in open settings and the replacement of large side-notched points with Elko series corner-notched points suggest the adoption of a highly mobile strategy focused on late winter or early spring processing of roots, tubers and possibly cactus pads (ANF 2005a; Loosle and Johnson 2003).

Approximately 2,000 years ago, with the advent of auspicious regional climatic conditions, indigenous groups adopted a more sedentary lifestyle and cultivated crops such as maize and squash. In the ANF, these changes are encapsulated as the Late Prehistoric era. Aboriginal farming groups that inhabited Utah north of the Ancestral Puebloan area are collectively known as the Fremont culture. Marwitt (1970) has defined five regional variants, including the Uinta Fremont, which represents Fremont occupation in northeastern Utah (Johnson and Loosle 2002). Hallmarks of the Fremont tradition include the bow and arrow, corn cultivation, and ceramics. Limited agriculture was added to the subsistence strategy of the Uinta Basin occupants, although hunting and gathering remained important. Uinta Fremont sites are typically small settlements in the lowlands, consisting of one to five shallow pit structures. Linked to these lowland residences are upland sites, which are characterized by short occupational duration, fall season visits, Rose Spring corner-notched arrow points, brush structures, targeting of specific resources, and emphasis on large game (Loosle and Johnson 2003). Limestone-tempered ceramics (Uinta Gray ware), specialized groundstone types, and aboveground storage features were later added to this assemblage. Upland Fremont sites—such as 42DC316, Gilsonite Ridge Rockshelter (42DC317), 42DC1210, 42DC1211, and Anthro Mountain (42DA1424)—demonstrate that people were tethered to lowland sites and reflect a collector strategy that focused on the acquisition of a limited number of patchy resources such as large mammals and Chenopodiums (Loosle and Johnson 2003).

Numic-speaking groups occupied the Uinta Basin and adjacent regions at the time of European contact. The Ute occupied the region south of the Yampa and Green Rivers, and Shoshone people north of there. Ethnographic documents indicate that the Green River was the dividing line between Eastern Utes and Western Utes. The antiquity of the Ute in the Uinta Basin is unknown, although it is generally held that they have been in the Basin since the thirteenth or fourteenth century AD. Intermountain Ware pottery, side-notched projectile points, and wikipups

in juniper and pinyon groves document the presence of the Shoshone. The artifact assemblage of the Ute/Shoshone period includes glass trade beads, steatite pipes, metal projectile points, horses' tack, and rock art with horse motifs (Reynolds et al. 1983). Evidence for this Protohistoric period on the ANF is at best scanty, limited to surface finds of Desert Side-notched points and brownware ceramics (Johnsor and Loosle 2002).

3.1.2 Historic Era

Although Spanish explorers may have visited northeastern Utah in the late 1600s, the Dominguez-Escalante expedition in 1776 is the first well-documented account of European presence in the Uinta Basin. Traveling north from New Mexico and southern Colorado, they passed through Douglas Canyon in west-central Colorado to the White River, and camped near present-day Rangely, Colorado. Moving northwest to the Green River, the party camped just east of Myton on September 17, 1776, calling this campsite *La Ribera de San Cosme*. The next day, they traveled west to the junction of the Strawberry and Duchesne rivers (*El Rio de Santa Catarina, de Sena, and El Rio de San Cosme*) and camped for the night in a meadow approximately one mile north of the town of Duchesne. The party continued westward to Utah Lake and returned to Santa Fe in early 1777 (Barton 1998; Reynolds et al. 1983).

The next major European influence came with the arrival of the fur trappers and traders. In the early 1800s, the Green River basin in Wyoming and northern Utah was being intensively explored and trapped. By 1824, trappers Etienne Provost, Antoine Robidoux, and William Huddard were leading companies that actively trapped and traded for furs in the basin. William Ashley arrived the following year and established two new traditions in the fur business. Instead of trading furs with Indian trappers, he proposed that European trappers do their own work and be paid for the number of pelts brought in. He also established the rendezvous system, in which supplies were brought annually to an agreed-upon location where they could be purchased with furs. Ashley sent out parties in 1822, 1823, and 1824, but not until the spring of 1825 was the Green River in Wyoming reached (Barton 1998; Reynolds et al. 1983).

Government-sponsored exploration of the Louisiana Purchase and other parts of the west began with the Lewis and Clark expedition in 1804-1806, and continued until 1876. The main purpose of these various expeditions was to determine the usefulness of the land. Of the several accounts, John C. Fremont's reports were the most informative. He was instructed to find and map trails to Oregon and California to aid the settlement of the west. Fremont's group visited northeastern Utah in 1844. Kit Carson guided a third Fremont army expedition from the Arkansas River to California, and the party traveled west along the White River to the Green River (Reynolds et al. 1983).

By 1870, cattle raising in the west had become a major economic activity; stockmen were supplying military posts and the new settlements. When the railroad was completed, cattle could be shipped out of the area to major market centers. Despite heavy losses during especially harsh winters, the cattle industry boomed. Between 1878 and 1885, the range overflowed with cattle. By 1887-1888, the market was flooded and prices sharply dropped. In the late nineteenth century, cattle management improved when smaller herds were provided with more shelter and supplemental feed (Reynolds et al. 1983). One of the more successful ranchers at this time was Preston Nutter, who secured a grazing lease of more than 665,000 acres on the Uintah Indian Reservation in the early 1890s (Bailey 2004; Barton 1998). The Nutter Ranch headquarters was

located in Nine Mile Canyon, approximately 10 mi. south of the project area, but his cattle ranged across public lands from Blue Mountain on the Colorado-Utah border to the west Tavaputs Plateau.

Sheep raising became more prevalent in the early twentieth century and conflicts arose between the two industries everywhere in the western grasslands. Wool sales were a major source of income for stockmen in the Uinta Basin (Reynolds et al. 1983).

Cattle ranching on lands marginal for farming was a widespread practice in both northeastern Utah and northwestern Colorado. The discovery of various minerals in the same area gave added impetus to the quest for exploitation of Indian-held lands. Many conflicts arose between Europeans and the Uintah Ute Indians in western Uintah County. Continued conflict between Indians and Europeans led to the establishment of several forts—Fort Thornburgh in 1881 and Fort Duchesne in 1886—and the stationing of federal troops until 1910. Various strategies for settling the “Indian problem” ultimately led to the removal of the Utes to reservations with only sporadic and usually unsuccessful attempts to compensate them for their losses of lands and resources (Barton 1998; Reynolds et al. 1983).

The opening of the Ute reservation to European settlement initiated animosity among the Indians, Mormons, and non-Mormons of the region. The Indians did not want European settlement on their lands and the Mormons and non-Mormons both believed that the other would receive preferential treatment. Of the original three million acres set aside as the Uintah Reservation, one million became available to homesteaders (Barton 1998).

At the same time that cattle ranching was flourishing on grasslands, and settlers were farming small fertile tracts near streams, another boom was occurring in the more barren oil shale lands of western Colorado and eastern Utah. Gilsonite, a lightweight, glossy black, bituminous asphaltite (Notarianni 2006), was discovered in the 1870s and was successfully mined in several areas of Duchesne and Uintah Counties well into the twentieth century (Barton 1998; Bender 1970; Reynolds et al. 1983). Gilsonite was mined in vertical fissures with pick and shovel, and ore was hoisted from the shafts. This method limited the depth of these operations to approximately 100 ft (Notarianni 2006). Gilsonite was shipped from this area to eastern markets via the Uintah Toll Road between Vernal, Fort Duchesne, and Dragon, then by way of the Uintah Railway from Dragon to Mack, Colorado, where it connected with the Denver & Rio Grande Western Railroad mainline (Bender 1970; Notarianni 2006). Gilsonite has many commercial uses, including paints, varnishes, insulating compounds, sealers, asphalt floor tiles, roofing materials, printing inks, rope and cable lubricants, and fingerprint powders (Bender 1970: 14).

3.2 PREVIOUS RESEARCH

Ten surveys have previously been conducted in or near the project area (Table 3-2). All of these previous projects were conducted for energy development in 1997 (n = 1), 2005 (n = 2), and 2006 (n = 7). The total acreage surveyed ranged from 4 to 837 acres, with a total of 1,920 acres and a median of 54 acres.

SECTION THREE

Cultural History and Previous Research

**Table 3-2
PREVIOUS SURVEYS IN THE PROJECT AREA**

STATE PROJECT NO.	LOCATION			PROJECT(S)	COMPANY*
	Township	Range	Section(s)		
U-97-AY-0575i	4S	6W	3, 10, 11, 15	Bates 9-1, Tribal 11-1, Reimann 10-1, and Gulf Tribal 15-1 Pipelines and Access	AIA
U-05-MQ-0365i,s,p	4S	6W	17, 18, 19, 20, 21, 22, 26, 27, 28, 30, 31, 34, 35, 36	Lake Canyon 3D Seismic Program	MOAC
	4S	7W	24, 25, 26, 34, 35, 36		
	5S	5W	6, 7, 8, 17, 18, 19		
	5S	6W	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 18, 22, 23, 24, 25, 27, 34, 35		
	5S	7W	1, 2, 3, 10, 11, 12		
U-05-MQ-0371s	4S	6W	14, 23, 26	Skitzzy Canyon DWR Parcels	MOAC
U-06-AY-0002i	5S	6W	11, 12, 13	Lake Canyon Compressor Locality	AIA
U-06-MQ-0631i,p	5S	5W	19	Cottonwood Canyon Pipeline Extension	MOAC
	5S	6W	24		
U-06-MQ-0632i	5S	6W	24	Coyote Compressor Locality	MOAC
U-06-MQ-718i,s	4S	5W	26, 27, 34, 35	Cottonwood Canyon Road Realignment	MOAC
	5S	5W	3, 4, 7, 8, 9, 18, 19		
	5S	6W	24		
U-06-MQ-0906i	5S	6W	13, 24	Ute/FNR 4-13-56, 5-13-56, 12-13-56, 13-13-56, 3-24-56, 5-24-56, 12-24-56 Wells	MOAC
U-06-MQ-1805i	5S	6W	12, 24	Ute/FNR 14-12-56, 2-24-56, 9-24-56, 10-24-56 Wells	MOAC
U-06-MQ-1228i	5S	6W	24	Ute/FNR 15-24-56	MOAC

*Abbreviations: AIA, An Independent Archaeologist; MOAC, Montgomery Archaeological Consultants.

SECTION THREE

Cultural History and Previous Research

Three sites have been recorded in the project area (Table 3-3). One site is a small prehistoric lithic scatter, whose age and cultural affiliation could not be determined. The two historic sites reflect the regionally pervasive themes of agriculture and mining. On the basis of diagnostic artifacts, the gilsonite mine (**42DC1992**) has been dated to 1915-1930, while the brush corral/fence (**42DC2040**) has been dated to 1930-1975. The mine and the lithic scatter are considered eligible for listing in the National Register of Historic Places.

**Table 3-3
KNOWN CULTURAL RESOURCES IN THE PROJECT AREA**

SITE NO.	LOCATION			SITE TYPE	RECORDING DATE(S)	RECORDER ¹	NRHP ELIGIBILITY
	Township	Range	Section(s)				
42DC1992	4S	6W	14	Historic Gilsonite Mine	5/1/2005	MOAC	Eligible
42DC2040	5S	6W	24	Historic Brush Corral & Fence	6/10/2005	MOAC	Not Eligible
42DC2165	5S	6W	24	Prehistoric Lithic Scatter	6/27/2006	MOAC	Eligible

Notes: ¹Recorder—MOAC, Montgomery Archaeological Consultants.

Two archaeologists walked multiple parallel transects, spaced no more than 15 m apart, within the following areas:

- Corridors 200 ft wide along existing and new roads/pipelines
- Blocks of 10 acres for staked well locations
- Topographically selected areas of varying sizes (for example, valley bottoms and mesa tops)

A Trimble® GeoXT™ handheld GPS receiver was used to determine with submeter accuracy the real-time and post-processed location of each access roads, well centerstakes, and block areas.

As they walked, the archaeologists carefully inspected the ground surface for any evidence of past, patterned human activity, 50 years or older. When visible, road cuts and ravine walls were closely inspected for buried cultural evidence. In general, the wells and roads placed in the canyons are found in geomorphological settings that are subject to active erosion and deposition, while locations on the ridges are more conducive to the conservation of cultural resources.

When cultural evidence was encountered, the area around the original discovery was reconnoitered to determine if it was a site or an isolated find. A site is defined as a discrete locus of past human activity that may contain several artifacts in close proximity or a cultural feature. An isolated find (IF) consists of a few undistinguished artifacts, unassociated with any other cultural manifestations. The Trimble® receiver was used to determine the location of each site and IF. Sites were mapped in plan view, described, and photographed, while the IFs were simply described and sketched (or photographed). The plan view map depicted natural landmarks and the areal extent of all artifacts and features. Black-and-white and digital photographs were taken to illustrate the site setting. If features were present, then closer views were photographed.

The eligibility of the site or IF for listing in the NRHP was evaluated in the field. An IF is generally considered to be not eligible for the NRHP, although it could have local significance. The integrity of each site was assessed first, integrity defined as “the ability of a property to convey its significance” (Townsend et al. 1993: 17). The NRHP criteria recognize seven aspects or qualities that, in various combinations, define integrity: location, design, setting, materials, workmanship, feeling, and association. Once the integrity of a property was assessed, then its eligibility for listing in the NRHP was evaluated according to the following criteria, described at 36 CFR 60.4:

The quality of significance in American history, architecture, archeology, engineering and culture is present in districts, sites, buildings, structures, and objects that possess integrity ...and that

- 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 in our past; or*
- c. 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. have yielded, or may be likely to yield, information important in prehistory or history.*

Three sites and 10 IFs were documented in the APE. These resources are briefly described below. Appendix A illustrates the site and IF locations. Additional information about the sites can be found in the Intermountain Antiquities Computer System (IMACS) forms, which are included as Appendix B.

5.1 SITES

5.1.1 42DC2258

This site is a large, but mostly dispersed scatter of historic artifacts. It is not within the APE, but was identified during an initial reconnaissance of the project area. It is located immediately south of a recently upgraded two-track road, just west of Indian Canyon and U.S. 191. A dry wash forms the southern boundary of the site. The site covers an area measuring approximately 200 ft by 100 ft, or 0.5 acre. A dense concentration of artifacts is located in the northwestern corner of the site, and probably represents the original dumping location. Sheet wash may have scattered the other artifacts across the site. The majority of the artifacts found on the site are metal cans of varying sizes and contents, dominated by evaporated milk cans. Numerous fragments of bottle glass (milk, clear, cobalt, and brown) are also present. Small amounts of ceramics (white earthenware and porcelain), rubber, leather, dimensioned lumber, and metal also occur on the site. Diagnostic attributes (can sizes and bottle trademarks) suggest that most of the artifacts were at least manufactured, if not discarded at this location, in the 1940s and 1950s. Some artifacts were manufactured locally (for example, a Pepsi-Cola bottle that originated at the "Larsen Bros., Roosevelt, Utah" bottling plant. Some bottles apparently had more distant origins; for example, a beverage bottle and bleach bottle were manufactured in Los Angeles and Oakland, California, respectively. In the aggregate, these artifacts probably represent domestic refuse that was repeatedly dumped over a period of years alongside the road by local residents.

5.1.2 42DC2259

This site is a large, dispersed scatter of historic artifacts, which is found in a large open (chained) area, near the intersection of several two-track roads, on a level mesa top between Indian and Lake Canyons. The site area measures approximately 75 ft in diameter, covering an area of approximately 0.10 acres. The artifact assemblage includes numerous cans of various sizes and contents, fragments of bottle glass (brown, clear, and purple), and dimensioned lumber. The lumber includes three or four 1" x 12" wooden planks that have been bolted and screwed together as a frame of unknown purpose. The purple glass suggests that this artifact, at least, was manufactured before 1917, the year after which manganese was no longer added as a coloring agent to glass. A trademark on another bottle has an age range of 1920-1964. This evidence suggests that domestic refuse has been dumped here, beginning probably in the early 1920s.

5.1.3 42DC2260 (Deerhorn No. 1 Gilsonite Mine)

This site is a historic gilsonite mine. It consists of an adit, tailings pile, access road, and small scatter of debris at the base of the tailings pile. The access road is approximately 10 ft wide, cut at a grade of 10 percent into a steep (40 percent hillslope) on the west side of Matilda Canyon. It begins at a road following the bottom of Matilda Canyon and climbs uphill for approximately 800 ft to the adit. The gilsonite vein is oriented nearly vertical, with a bearing of N50°E. The

cut continues upslope for approximately 50 ft from the main opening, which is braced with log cribbing. The tailings pile consists of small fragments of gray shale that are strewn in a narrow (50 ft wide) swath down slope from the adit. Two large (6" x 9") hole-in-top cans were found at the top of the pile. At the base of the tailings pile is a pile of debris, including dimensioned lumber (with wire nails), sheet metal, an enameled pot, a galvanized metal tub, several large metal cans, and thin-gauge wire. It is possible that the lumber and sheet metal may have been part of a small, collapsed shed associated with the mine.

According to the General Land Office Records (GLO) that are available from the Bureau of Land Management (BLM 2006), the Raven Mining Co. acquired the title to two mines on November 21, 1907, under the authority of the Mineral Patent Lode (14 Stat. 251) of July 26, 1866. In 1902, the 57th Congress granted to the Raven Mining Company a mineral lease, not to exceed 640 acres, on the Uintah and White River Indian Reservation (Kappler 1904). The U.S. Government allotted \$70,064.48 to the tribe for this particular lease. A map prepared by the Raven Mining Company in 1902 shows their "Hydro-Carbon" claims on the Uintah Indian Reservation. One of these mines, whose location closely corresponds to that recorded as 42DC2261, is labeled the Deerhorn No. 1 claim, measuring 600 ft by 1,500 ft (20.66 acres), with a bearing of N52°38'E (Raven Mining Company 1905). Immediately north of the Deerhorn claim are the Tom Benton and the McConnell claims, both encompassing 20.66 acres and oriented N52°14'E and N74°10'E, respectively.

5.2 ISOLATED FINDS

5.2.1 LC-IF-1

This isolated find consists of a small scatter of historic artifacts. It is not within the APE, but was identified during an initial reconnaissance of the project area. It is located 10 ft north of a recently upgraded two-track road and approximately 100 ft west of Site 42DC2258. The artifacts are concentrated within an area that measures approximately 8 ft in diameter. The assemblage includes 15 artifacts, more than half of which are several types of metal cans, and the remainder consists of beverage bottles made of clear and green glass. A Coca-Cola bottle was produced at the "Vernal, Utah" bottling plant, while a "Pure Spirits of Gum Turpentine" bottle was manufactured in Fairmont, West Virginia. The age ranges of several artifacts with diagnostic trademarks ranged between 1920 and 1975, but most date to the 1940s and 1950s. The limited number of artifacts in a small area suggests that this is a single-episode deposit of domestic refuse.

5.2.2 LC-IF-2

This isolated find consists of two metal cans, found in the bottom of Lake Canyon. The first artifact is a crimped seal can with a solder dot on the top. It measures 3-1/4" in diameter and 4" tall, corresponding to a No. 303 can, which typically contained vegetables, some fruits and juices, and soups (Rock 1980: 100) and was first manufactured in 1936 (Kirkpatrick and Duran 1981: Table 7). The second artifact is a key-opened, crimped seal can. It measures 2-1/2" in diameter and 3" tall, corresponding to an 8Z Regular can, which typically contained meat and fish products and was first manufactured in 1938. Unknown persons apparently discarded these artifacts at this location sometime after the mid-1930s.

5.2.3 LC-IF-3

This isolated find is a small corner-notched projectile point, which was found in a chained area on top of a gently sloping mesa (Figures 5-1 and 5-2). It measures 27 mm long, 17 mm wide, and 3 mm thick, with excurvate blade margins and a rounded base. It resembles a Rose Spring Corner-notched point, which is typically found on Late Prehistoric Uinta Fremont sites in this area (Loosle and Johnson 2003). The artifact reflects an emphasis on the hunting of small to medium-sized game animals.



Figure 5-1. LC-IF-3 Rose Spring Corner-notched projectile point (scale in cm).

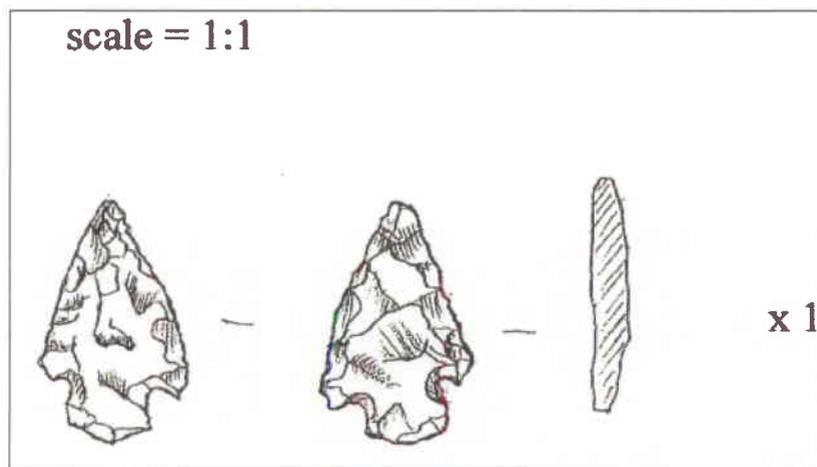


Figure 5-2. Sketch of LC-IF-3, Rose Spring Corner-notched projectile point.

5.2.4 LC-IF-4

This isolated find consists of a mano and a metate, which are found in pinyon-juniper woodlands on a level mesa top (Figures 5-3 and 5-4). The metate is an angular fragment of sandstone, which measures 60 cm long and 22 cm wide. A pecked area measuring 26 cm long and 11 cm wide is found at one end of the artifact. The mano is a broken quartzite cobble, which measures 17 cm long (incomplete), 10 cm wide, and 7.5 cm thick. Slight pecking is evident on one face. The mano is located approximately 30 cm downslope and 20 cm to the side of the metate.



Figure 5-3. LC-IF-4, metate (center) and mano (top right) (scale in cm).

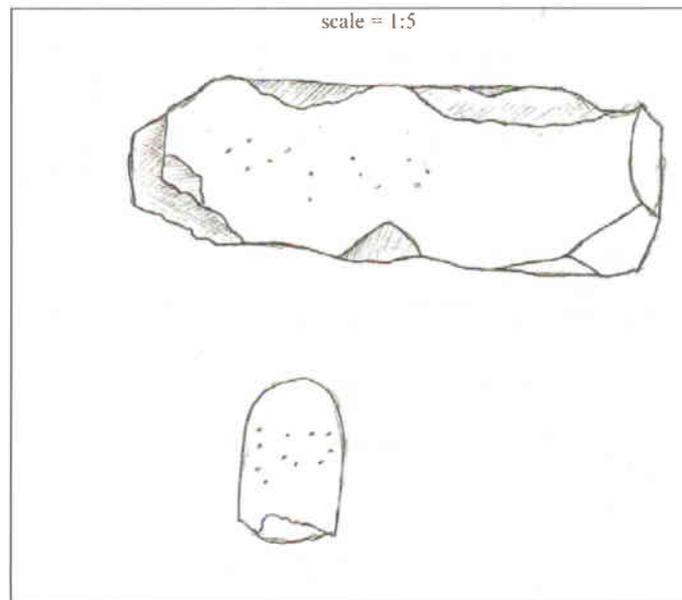


Figure 5-4. Sketch of LC-IF-4, metate (top) and mano (bottom).

5.2.5 LC-IF-5

This isolated artifact is a two-handed mano (Figures 5-5 and 5-6), found in pinyon-juniper woodlands on top of a level mesa. It is made of red quartzite and measures 16 cm long, 7 cm wide, and 4.5 cm thick. One end is squared off and battered, while the opposite end is rounded and unused.



Figure 5-5. LC-IF-5, two-handed mano (scale in cm).

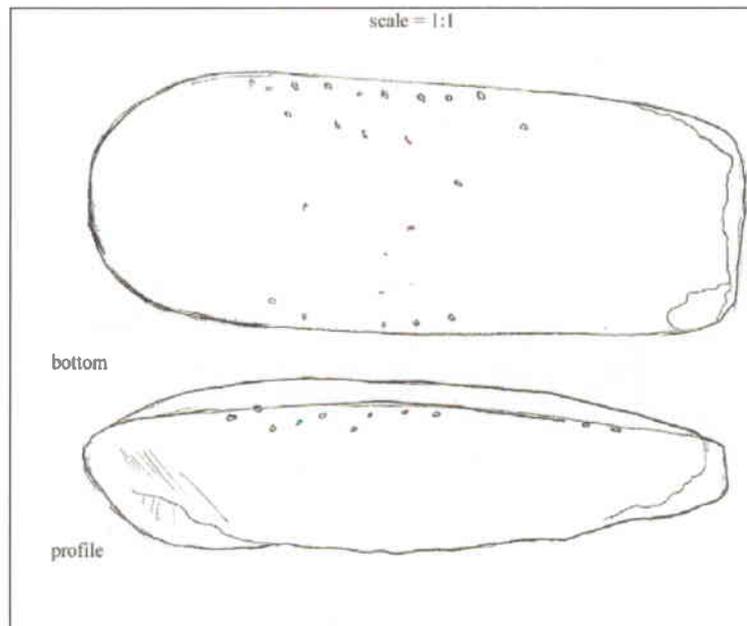


Figure 5-6. Sketch of LC-IF-5, two-handed mano.

5.2.6 LC-IF-6

This isolated find is a small scatter of historic artifacts, located approximately 35 ft east of a two-track road in pinyon-juniper woodlands on top of a level mesa. The artifacts are concentrated within an area measuring approximately 8 ft by 6 ft, at the base of a pinyon pine tree. The assemblage includes the following artifact types:

- 25—No. 19 evaporated milk cans (1950-present)
- 6—“Becker’s Mellow Beer” cans, manufactured by Becker’s Products Co., Ogden, Utah (1932-1962) (Figure 5-7)
- 3—No. 1 tall sanitary cans (post-1936)
- 1—Zippo lighter fluid can
- 1—“Johnson’s Wax Co. Hard Gloss Glo-Coat Floor Polish” can (post-1932)
- 1—Clorox bleach bottle (brown)
- 1—vinegar bottle (clear)
- 1—drinking glass (clear)

Although some of these items could have been manufactured as early as the 1930s, the Becker’s Mellow Beer can was produced in 1956 (Tavern Trove 2006) and best establishes the date for when these items were probably deposited at this location.

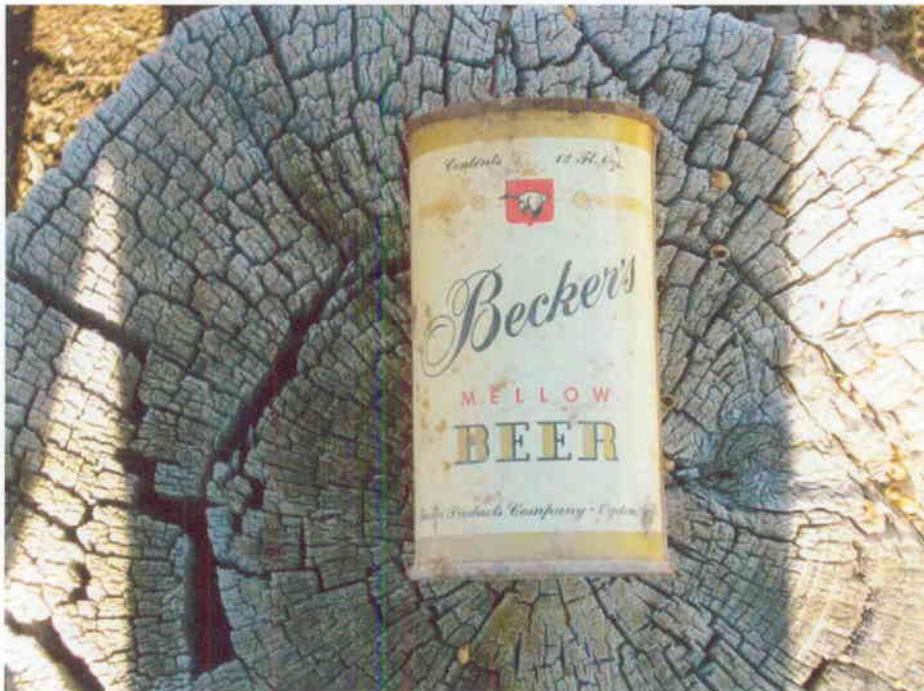


Figure 5-7. LC-IF-6, beer can.

5.2.7 LC-IF-7

This isolated artifact is a small, quartzite unifacial mano (Figures 5-8 and 5-9). It was found in pinyon-juniper woodlands, on top of a level mesa. It measures 13 cm long, 9 cm wide, and 4 cm thick. The use surface is a smoothed oval area on one face. It was probably used for pinyon nut processing.



Figure 5-8. LC-IF-7, unifacial mano (scale in cm).

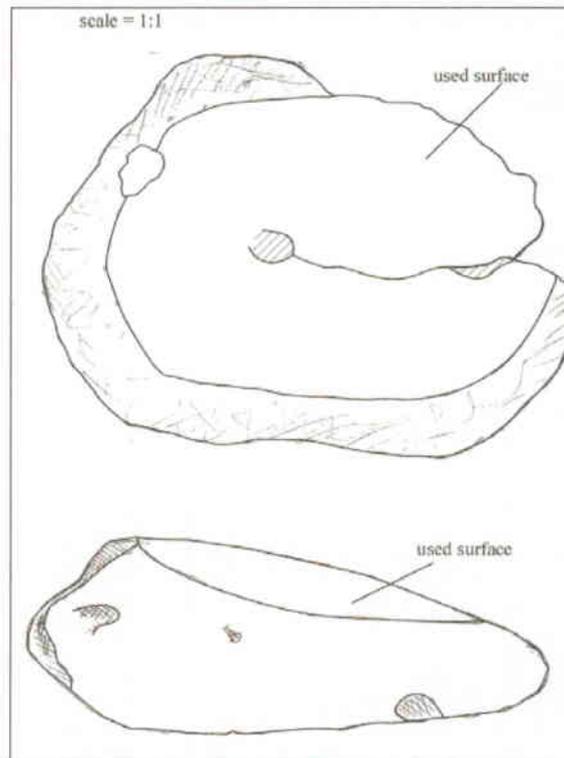


Figure 5-9. Sketch of LC-IF-7, unifacial mano.

5.2.8 LC-IF-8

This find is a hole-in-top can (Figure 5-10). It was found in pinyon-juniper woodlands on top of a level mesa. It is a No. 2-1/2 can (Kirkpatrick and Duran 1981: Table 7), which was ordinarily used for fruits, some vegetables, and some juices (Rock 1980: 100). The diameter of the hole-in-top is 2-1/8". One end has been cut 3/4 of the way around to remove the contents. These types of cans date to the early twentieth century (Kirkpatrick and Duran 1981: Table 7).



Figure 5-10. LC-IF-8, hole-in-top can (scale in cm).

5.2.9 LC-IF-9

This find is a small, quartzite mano (Figures 5-11 and 5-12). It was found underneath a pinyon log, in pinyon-juniper woodlands on top of a level mesa. It measures 10 cm long, 7.5 cm wide, and 4 cm thick.



Figure 5-11. LC-IF-9, manó (scale in cm).

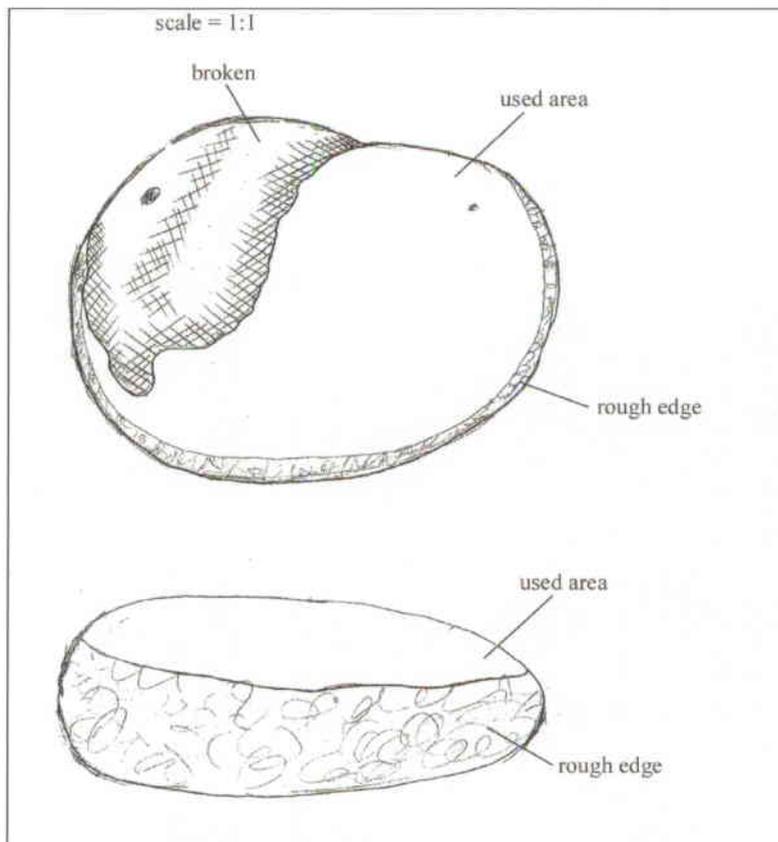


Figure 5-12. Sketch of LC-IF-9, manó.

5.2.10 LC-IF-10

This find is a concentration of 20 ceramic sherds, found in pinyon-juniper woodlands on top of a level mesa. The assemblage includes 16 body sherds and four rim sherds (Figure 5-13). The sherds have a grayish brown paste and appear to be tempered with either limestone or fine-grained sand. The rims are deeply everted, with vertical punctuate marks on the exterior, just below the rim. The majority of the sherds are clustered in an area with a diameter of approximately 0.5 m, but a few have been carried slightly downslope by slope wash. This was probably a single vessel that was dropped and broke into many smaller fragments. The age and/or cultural affiliation of these artifacts are questionable. Byron Loosle, Ashley National Forest Archaeologist, remarked (personal communication to G. Tucker, 14 November 2006) that he hasn't "seen any ware like that before in our area - with that kind of a decoration on the neck." Jim Truesdale of A.I.A., noted (personal communication to G. Tucker, 14 November 2006) that "the color of the sherds and everted rim is strange." He also surmised that the decoration and temper suggests possibly some type of Ute "brown ware." David V. Hill opined (personal communication to G. Tucker, 20 November 2006) that "The light gray paste color and the incised lines look more like Uintah Basin Fremont than Ute."



Figure 5-13. LC-IF-10, ceramics (scale in cm). Body sherds at top, rim sherds at bottom.

All of the cultural resources that were documented in the APE have been evaluated for eligibility for listing in the NRHP based upon the criteria described in Section 4. Although the 10 isolated finds are considered not eligible for the NRHP, the sherds found in the "pot drop" at **LF-IF-10** have been identified as Uinta Fremont and, therefore, may have local significance.

Sites **42DS2258** and **42DC2259** are varying-sized scatters of historic artifacts. They probably represent casual use of the upland areas south of the Uinta valley by ranchers, hunters, miners, or recreationists. They are not associated with important local events or personages, are not architecturally unique, and are unlikely to yield additional important information important to a great understanding of the local history. Therefore, they are recommended as **not eligible** for the NRHP. Further work at these localities is considered unnecessary.

The Deerhorn No. 1 Gilsonite Mine (**42DC2260**) is associated with the opening of the Uintah Indian Reservation to mining claims, an important local event. Therefore, the site is recommended as **eligible** for the NRHP under criterion A and should be avoided by project activities. If avoidance can be accomplished, then further work at the site is considered unnecessary.

Berry Petroleum's proposed Lake Canyon oilfield expansion project area was intensively surveyed for cultural resources. The areas surveyed include access and pipeline corridors, staked oil/gas well locations, and future well locations. The survey documented three sites and 10 isolated finds (IF). Two of the sites are scatters of historic artifacts and are not considered eligible for listing in the NRHP. The third site is the historic Deerhorn No. 1 Gilsonite Mine, which is recommended as eligible for the NRHP and should be avoided by project activities. The 10 IFs are considered not eligible for the NRHP, but the concentration of 20 Uinta Fremont sherds may have local significance.

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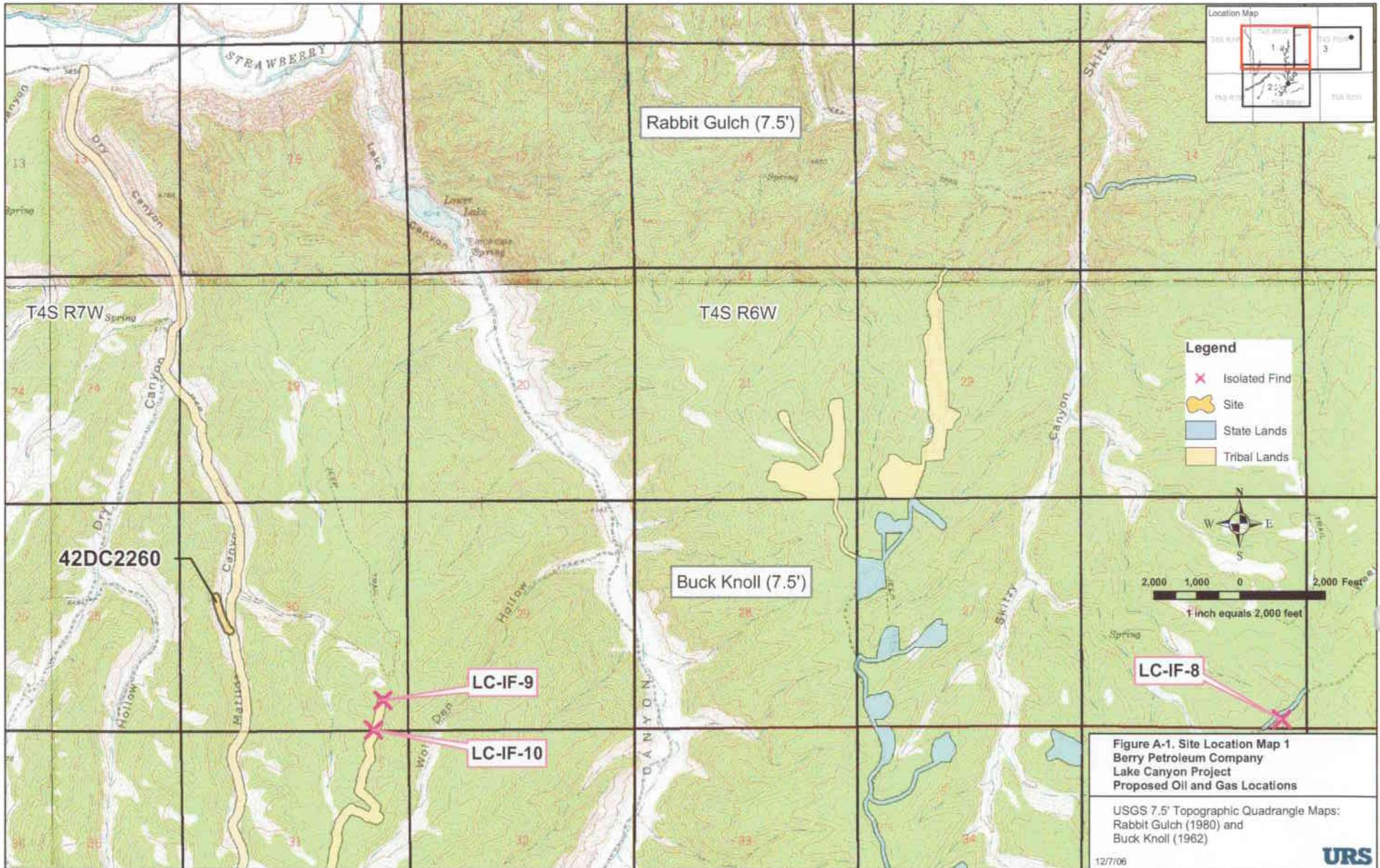
Western Regional Climate Center (WRCC)

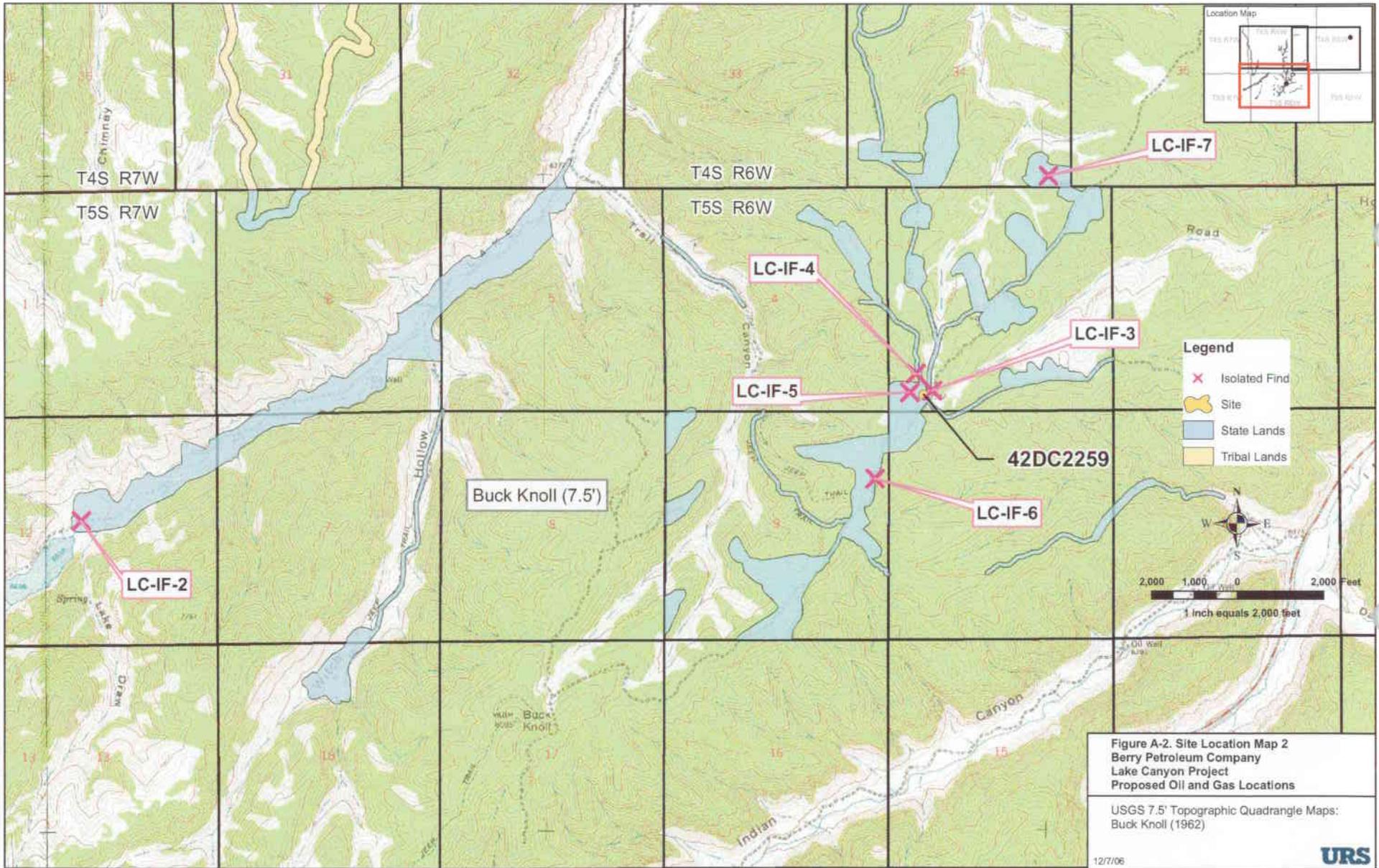
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Appendix A
Site Location Maps





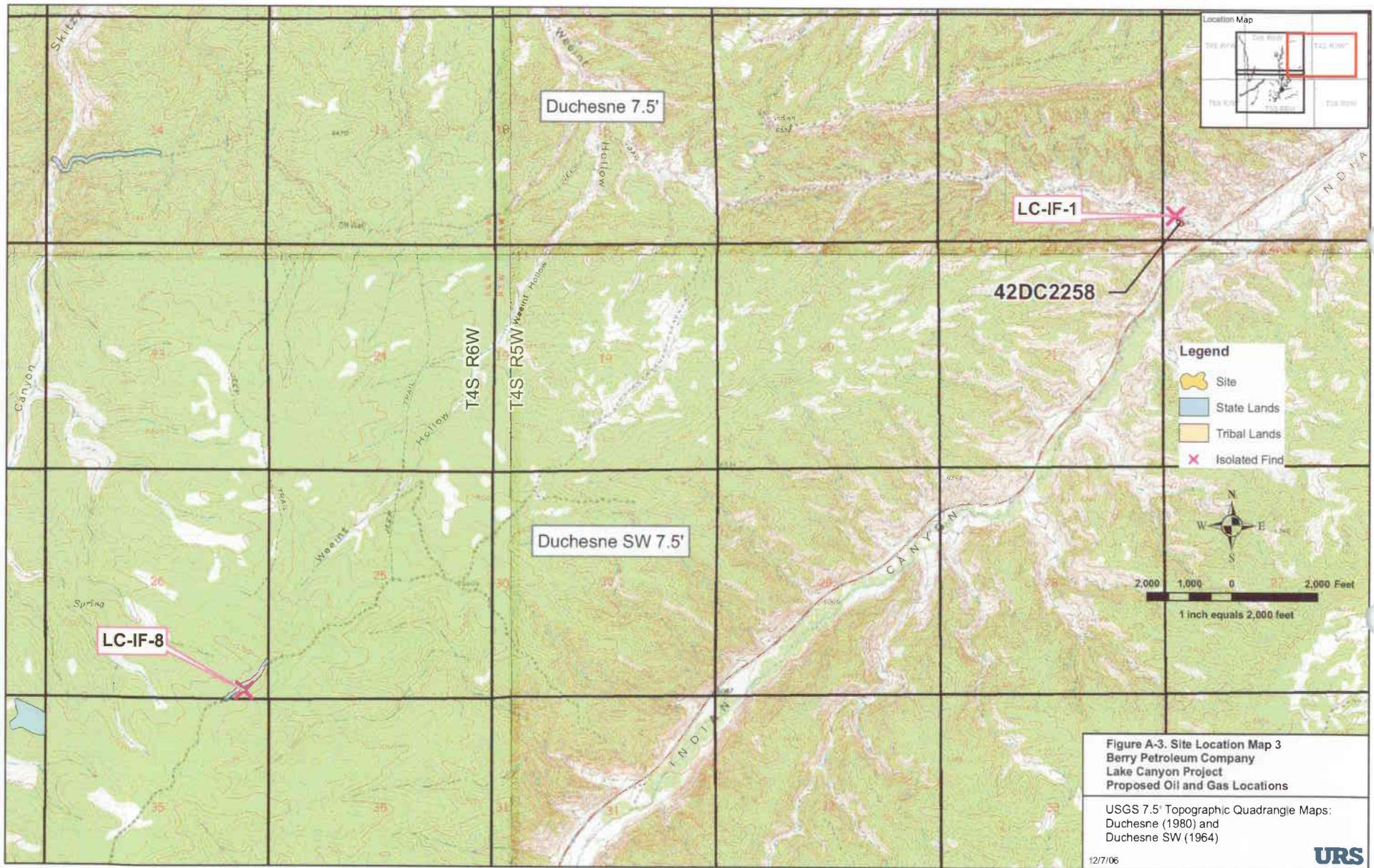


Figure A-3. Site Location Map 3
 Berry Petroleum Company
 Lake Canyon Project
 Proposed Oil and Gas Locations

USGS 7.5' Topographic Quadrangle Maps:
 Duchesne (1980) and
 Duchesne SW (1964)

12/7/06



Appendix B
Intermountain Antiquities Computer System (IMACS) Site Forms

IMACS SITE FORM

Part A - Administrative Data

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM

Form approved for use by:

BLM - Utah, Idaho, Wyoming, Nevada
Division of State History - Utah, Wyoming
USFS - Intermountain Region
NPS - Utah, Wyoming

*1. State No. **42DC2258**

*2. Agency No.

3. Temp. No. **LC-1**

County: **Duchesne**

4. State: **Utah**

5. Project: **Berry Petroleum, Lake Canyon**

*6. Report No.:

7. Site Name / Property Name: **None**

8. Class: Prehistoric Historic

Paleontologic

Ethnographic

9. Site Type: **Historic artifact scatter**

*10. Elevation: **5860 ft.**

*11. UTM Grid: Zone **1121** **547237** m E **4442002** m N

*12. **SW** ¼ of **SW** ¼ of **SW** ¼ of Sec **15**, T. **4S**, R. **5W**

*13. Meridian: **Uintah**

*14. Map Reference: **Duchesne, Utah 7.5' (1980)**

15. Aerial Photo: **None**

16. Location and Access:

From Duchesne, Utah, travel South on Highway 191, which intersects Highway 40. From that intersection, travel south for 2 miles. Turn West onto graded dirt road going up Trail Canyon. The site is located approximately 0.15 miles up the canyon, on the south side of the road.

*17. Land Owner: **Ute Indian Tribe**

*18. Federal Administrative Units: **N/A**

*19. Location of Curated Materials: **N/A**

20. Site Description:

The historic scatter of artifacts is located just south of the bladed road going up Trail Canyon. The site is located between the road and a shallow drainage that runs at the base of the hillslope to the south. The main concentration is found towards the western end of the defined site area, within 5 feet of the south edge of road. Singular artifacts (mostly cans) continue in low numbers off to the south and east—probably carried there by slope wash.

Artifacts consist generally of metal cans (various sizes, but mostly evaporated milk), glass (brown, clear, cobalt blue, and purple), earthenware ceramics, and miscellaneous metal. This site most likely represents domestic trash dumped along the existing two-track road over a period of time, beginning 60 to 70 years ago.

Site area measures 200 feet east-west by 100 feet north-south.

*21. Site Condition: Excellent (A) Good (B) Fair (C) Poor(D)

*22. Impact Agent(s): **road (RD), fluvial erosion (ER)**

*23. National Register Status: Significant (C) Not Significant (D) Unevaluated (Z)

Justify: Site is an unremarkable collection of discarded historic artifacts. It is unassociated with any significant local events or personages and not architecturally distinctive, nor is it likely to yield additional information about the local history.

24. Photos: **LC-1, 1-3 (B&W); LC-D1-1, 3-5 (Digital)**

25. Recorded by: **Gordon C. Tucker Jr.**

*26. Survey Organization: **URS Corporation (UI)**

*28. Survey Date: **24 October 2006**

27. Assisting Crew Members: **Deborah Jensen**

Attachments: Part B Topo Map Photos Continuation Sheets
 Part C Site Sketch Artifact/ Feature Sketch
 Other
 Part E

Part A - Environmental Data

Site No. **42DC2258**

*29. Slope: **2** (Degrees) **open** Aspect (Degrees)

*30. Distance to Permanent Water: **390 meters**

*Type of Water Source: Spring/Seep (A) Stream/River (B) Lake(C) Other (D)

Name of Water Source: **Indian Canyon River**

*31. Geographic Unit: **Book Cliffs-Roan Plateau (CAB)**

*32. Topographic Location: - See Guide for additional information

Primary Landform: Canyon (G)

Secondary Landform: Slope (Q)

- | | | | | |
|--|--|--|---|--|
| <input type="checkbox"/> Mountain Spine (A) | <input type="checkbox"/> Alluvial Fan (A) | <input type="checkbox"/> Dune (I) | <input type="checkbox"/> Slope (Q) | <input type="checkbox"/> Riser (Y) |
| <input type="checkbox"/> Hill (B) | <input type="checkbox"/> Alcove/Rock Shelter (B) | <input type="checkbox"/> Floodplain (J) | <input checked="" type="checkbox"/> Terrace/Bench (R) | <input type="checkbox"/> Multiple S. Landforms (1) |
| <input type="checkbox"/> Tableland/Mesa (C) | <input type="checkbox"/> Arroyo (C) | <input type="checkbox"/> LeJge (K) | <input type="checkbox"/> Talus Slope (S) | <input type="checkbox"/> Bar (2) |
| <input type="checkbox"/> Ridge (D) | <input type="checkbox"/> Basin (D) | <input type="checkbox"/> Mesa/Butte (L) | <input type="checkbox"/> Island (T) | <input type="checkbox"/> Lagoon (3) |
| <input checked="" type="checkbox"/> Valley (E) | <input type="checkbox"/> Cave (E) | <input type="checkbox"/> Playa (M) | <input type="checkbox"/> Outcrop (U) | <input type="checkbox"/> Ephemeral Wash (4) |
| <input type="checkbox"/> Plain (F) | <input type="checkbox"/> Cliff (F) | <input type="checkbox"/> Port Geo Feature(N) | <input type="checkbox"/> Spring Mound/Bog (V) | <input type="checkbox"/> Kipuka (5) |
| <input type="checkbox"/> Canyon (G) | <input type="checkbox"/> Delta (G) | <input type="checkbox"/> Plain (O) | <input type="checkbox"/> Valley (W) | <input type="checkbox"/> Saddle/Pass (6) |
| <input type="checkbox"/> Island (H) | <input type="checkbox"/> Detached Monolith (H) | <input type="checkbox"/> Ridge/Knoll (P) | <input type="checkbox"/> Cutbank (X) | <input type="checkbox"/> Graben (7) |

Describe: **Site is located in narrow valley between bladed road and shallow drainage that runs at the base of the hillslope to the south.**

*33. On Site Depositional Context:

- | | | | |
|--|---|--|--|
| <input type="checkbox"/> Fan (A) | <input type="checkbox"/> Outcrop (Q) | <input type="checkbox"/> Moraine (J) | <input type="checkbox"/> Desert Pavement (P) |
| <input type="checkbox"/> Talus (B) | <input type="checkbox"/> Extinct Lake (F) | <input type="checkbox"/> Flood Plain (K) | <input type="checkbox"/> Stream Bed (R) |
| <input type="checkbox"/> Dune (C) | <input type="checkbox"/> Extant Lake (G) | <input type="checkbox"/> Marsh (L) | <input type="checkbox"/> Aeolian (S) |
| <input checked="" type="checkbox"/> Stream Terrace (D) | <input type="checkbox"/> Alluvial Plain (H) | <input type="checkbox"/> Landslide/Slump (M) | <input type="checkbox"/> None (T) |
| <input type="checkbox"/> Playa (E) | <input type="checkbox"/> Colluvium (I) | <input type="checkbox"/> Delta (N) | <input type="checkbox"/> Residual (U) |

Description of Soil: **Yellowish brown sandy loam**

34. Vegetation: **Sage, rabbitbrush, and cactus.**

*a. Life Zone:

- Arctic-alpine (A) Hudsonian (B) Canadian (C) Transitional (D) Upper Sonoran (E) Lower Sonoran (F)

*b. Community: Primary On Site **Q** Secondary On Site **R** Surrounding Site **H**

- | | | | |
|--------------------|-----------------------------|-------------------------|--------------------|
| Aspen (A) | Other/Mixed Conifer (G) | Grassland/Steppe (M) | Marsh/Swamp (S) |
| Spruce-Fir(B) | Pinyon-Juniper Woodland (H) | Desert Lake Shore (N) | Lake/Reservoir (T) |
| Douglas Fir (C) | Wet Meadow (I) | Shadscale Community (O) | Agricultural (U) |
| Alpine Tundra (D) | Dry Meadow (J) | Tall Sagebrush (P) | Blackbrush (V) |
| Ponderosa Pine (E) | Oak-Maple Shrub (K) | Low Sagebrush (Q) | Creosote Bush (Y) |
| Lodgepole Pine (F) | Riparian (L) | Barren (R) | |

Describe:

*35. Miscellaneous Text

36. Comments/Continuations

Part C - Historic Sites

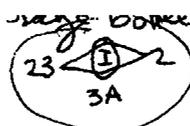
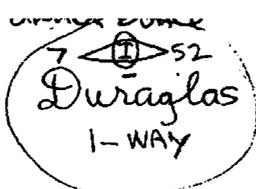
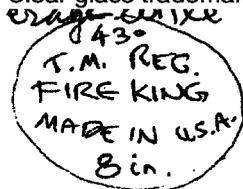
Site No.(s): **42DC2258**

11. Glass:

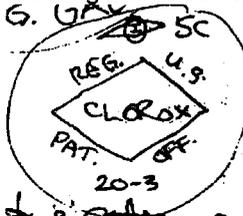
#	Manufacture	Color	Function	Trademarks	Decoration
100+	Kerr, Pepsi-Cola, Larsen Brothers, White Magic, unknown	Clear	Beverage bottles, casserole dish	"LB" Larsen Brothers (Roosevelt, Utah), see below	
180	Clorox, unknown	Brown	Bleach bottles, beverage bottles	see below	
7	Unknown	Cobalt Blue	Unknown		
12	Unknown	Purple	Unknown		

Describe: **Domestic Items**

Clear glass trademarks:



Brown glass trademarks:



12. Maximum Density - #/sq m (glass and ceramics): **60-75**

13. Tin Cans:

Type	Opening	Size	Modified	Label/Mark	Function
Evaporated milk, quantity 80-100	Variety, mostly punch type	4" tall, 3" diameter			Evaporated milk
No. 1 can, quantity 10	Full open or cross	4" tall, 2 5/8" diameter			
No. 1 tall can, quantity 5	Full openings	4 3/8", 3 1/8" diameter			
No. 1 oval, quantity 3	Rolled key lid	4 5/16" long, 3 1/16" wide			Sardine can
Meat can, quantity 1	Punch knife	3" long by 2 1/2" wide			Meat can
No. 3 can, quantity 5	Knife openings	7" tall, 4 4/16" diameter			
Coffee can lid, quantity 5		5" diameter			Coffee
No. 5 can, quantity 2		5 9/16" tall, 5" diameter			Syrup?
Fuel can, quantity 1		12" tall, 8" long, 8" wide			Fuel can with handle
Pint can, quantity 7		5 5/8" tall, 4" long, 2" wide			

Describe:

Site No. (s): **42DC2258**

*14. Landscape and Constructed Features (locate on site map) - (See guide for additional categories)

- Trail/Road (TR) Dump (DU) Dam, Earthen (DA) Hearth/Campfire (HE)
 Tailings (MT,ML) Depression (DE) Ditch (DI) Quarry (QU)
 Rock Alignment (RA) Cemetery Burial (CB) Inscriptions (IN) Other (OT):

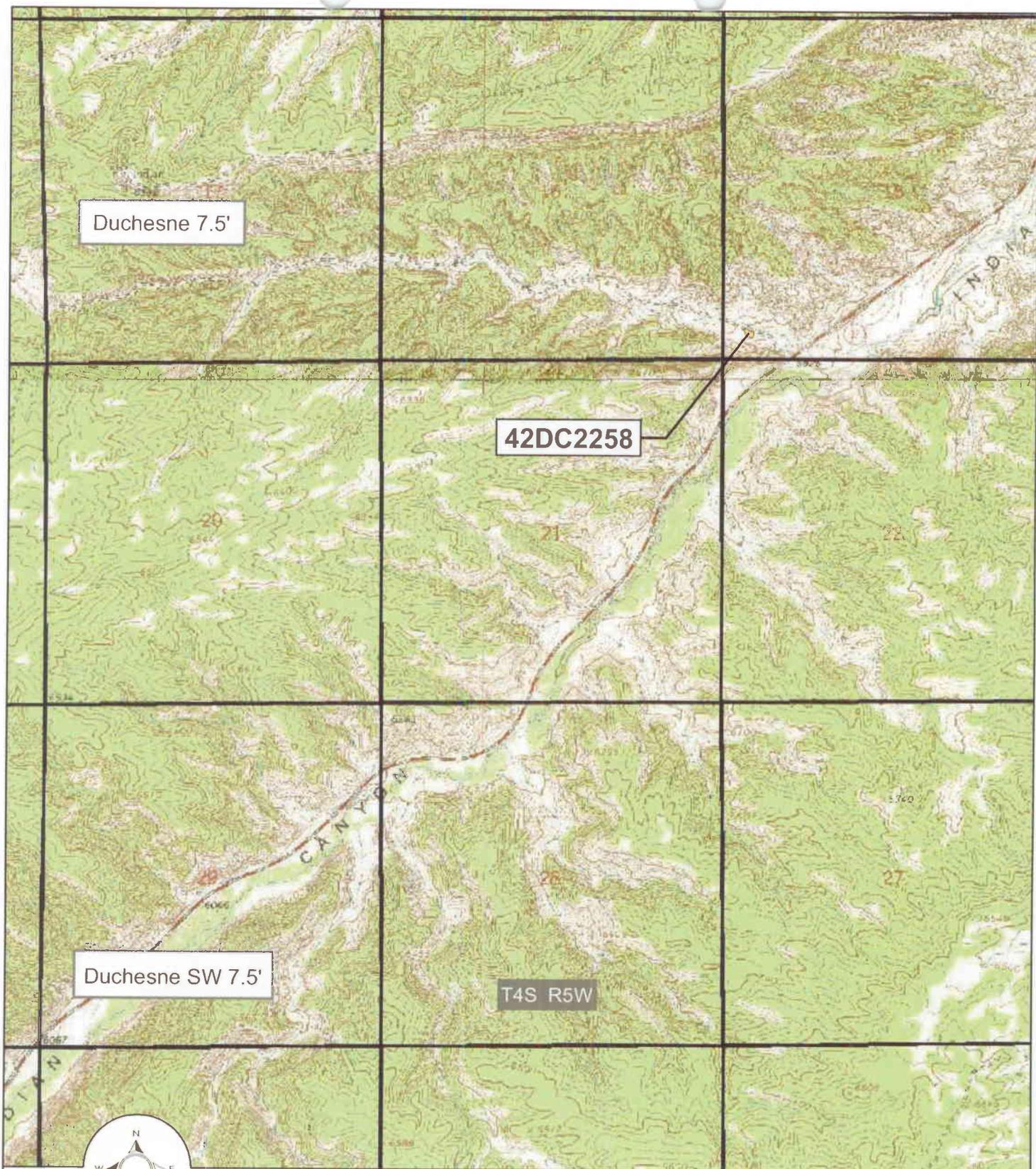
Describe: **Graded road runs east-west directly north of the site.**

*15. Buildings and Structures (locate on site map)

#	Material	Type	#	Material	Type
---	----------	------	---	----------	------

Describe: **None observed**

16. Comments/Continuations - *Please make note of any Historic Record searches performed (for example - County Records, General Land Office, Historical Society, Land Management Agency Records, Oral Histories/interviews).*



Duchesne 7.5'

42DC2258

Duchesne SW 7.5'

T4S R5W



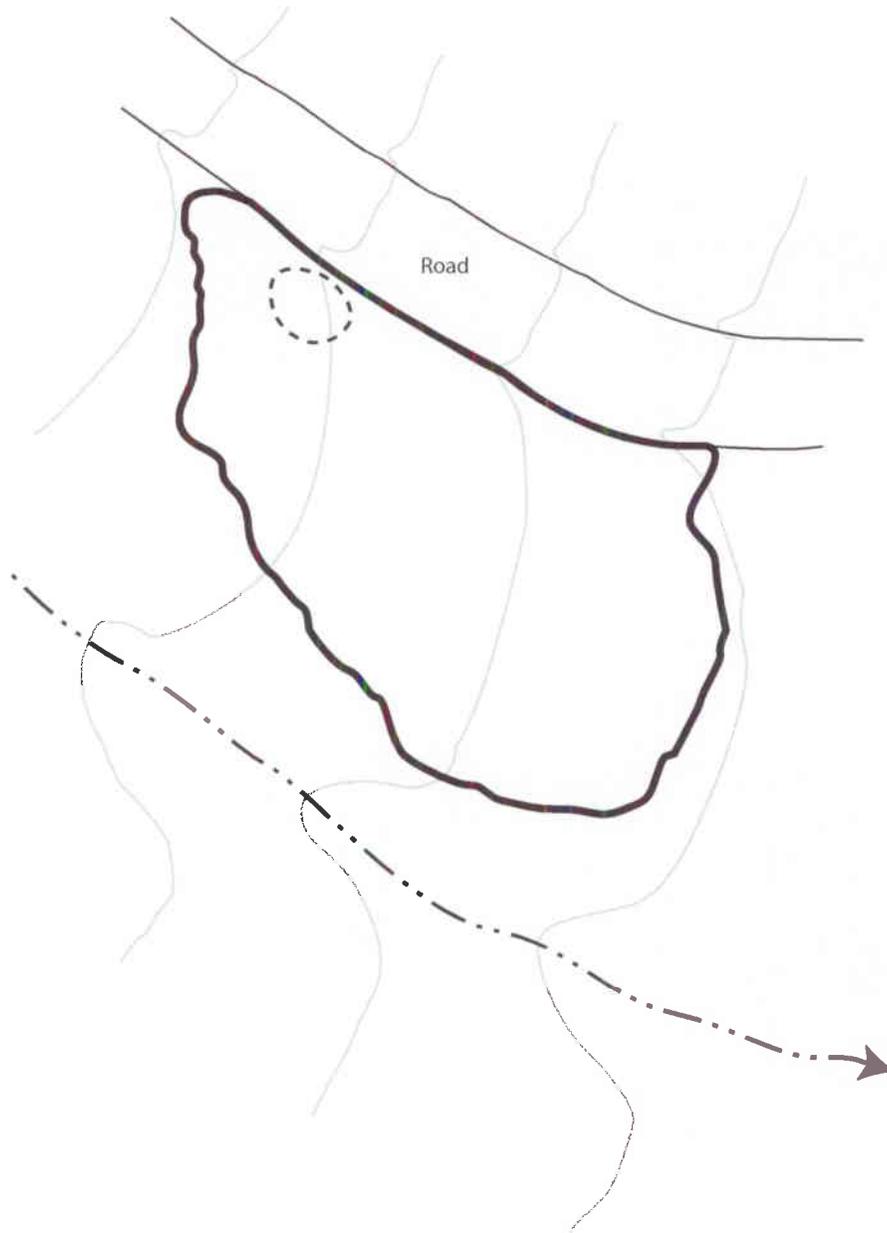
SCALE 1:24,000



Site 42DC2258 Location Map
 Berry Petroleum Company
 Lake Canyon Project
 Proposed Oil and Gas Locations

USGS 7.5' Topographic Quadrangle Maps:
 Duchesne (1980) and
 Duchesne SW (1964)

URS



Contour Lines Are Approximate



URS

Sketch Map of 42DC2258

 Site Boundary

 Artifact Concentration

 Drainage/Wash

Roll LC-1: exp. 2
42DC2258

Overview of historic artifact scatter.
Looking west. 10/24/2006. URS Corporation



Roll LC-1: exp. 1
42DC2258

Overview of historic artifact scatter.
Looking east. 10/24/2006. URS Corporation



Roll LC-1: exp. 3

42DC2258

Close up view of tin can concentration.
Looking north. 10/24/2006. URS Corporation



IMACS SITE FORM

Part A - Administrative Data

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM

Form approved for use by:

BLM - Utah, Idaho, Wyoming, Nevada
Division of State History - Utah, Wyoming
USFS - Intermountain Region
NPS - Utah, Wyoming

*1. State No. **42DC2259**

*2. Agency No.

3. Temp. No. **LC-3**

County: **Duchesne**

4. State: **Utah**

5. Project: **Berry Petroleum, Lake Canyon**

*6. Report No.:

7. Site Name / Property Name:

8. Class: Prehistoric Historic

Paleontologic

Ethnographic

9. Site Type: **Historic artifact scatter**

*10. Elevation: **7530 ft.**

*11. UTM Grid: Zone 112 | 5 | 3 | 8 | 1 | 7 | 2 | m E | 4 | 4 | 3 | 5 | 5 | 3 | 2 | m N

*12. **SE** ¼ of **SW** ¼ of **SW** ¼ of Sec. **3**, T. **5S**, R. **6W**

*13. Meridian: **Uintah**

*14. Map Reference: **Buck Knoll, Utah 7.5' (1962)**

15. Aerial Photo: **None**

16. Location and Access:

From Duchesne, Utah, travel south on Highway 191, which intersects Highway 40. From that intersection, travel south for 2 miles. Turn west onto graded dirt road going up Trail Canyon. Drive 6.5 miles on the main graded dirt road, then turn south at the intersection of graded road onto two-track road. Continue on the two-track road for 5 miles to an intersection of several two-track roads. The site is located on the west side of the road.

*17. Land Owner: **State of Utah, Division of Wildlife Resources**

*18. Federal Administrative Units: **N/A**

*19. Location of Curated Materials: **N/A**

20. Site Description:

Large, dispersed scatter of historic artifacts. Site is located in a large, open, chained area near the intersection of several roads.

*21. Site Condition: Excellent (A) Good (B) Fair (C) Poor(D)

*22. Impact Agent(s): **road (RD), fluvial erosion (ER)**

*23. National Register Status: Significant (C) Not Significant (D) Unevaluated (Z)

Justify: **Site is an unremarkable collection of discarded historic artifacts. It is unassociated with any significant local events or personages and not architecturally distinctive, nor is it likely to yield additional information about the local history.**

24. Photos: **LC-1, 6-7 (B&W); LC-D-1, 21-22 (Digital)**

25. Recorded by: **Gordon C. Tucker Jr.**

*26. Survey Organization: **URS Corporation (UI)**

*28. Survey Date: **29 October 2006**

27. Assisting Crew Members: **Deborah Jensen**

Attachments: Part B Topo Map Photos Continuation Sheets
 Part C Site Sketch Artifact/ Feature Sketch
 Other
 Part E

Part A - Environmental Data

Site No.: **42DC2259**

*29. Slope: **2** (Degrees) **open** Aspect (Degrees)

*30. Distance to Permanent Water: **2,200 meters**

*Type of Water Source: Spring/Seep (A) Stream/River (B) Lake(C) Other (D)

Name of Water Source: **Right Fork Indian Canyon River**

*31. Geographic Unit: **Book Cliffs-Roan Plateau (CAB)**

*32. Topographic Location: - See Guide for additional information

Primary Landform:

- | | | | | |
|---|--|---|---|--|
| <input type="checkbox"/> Mountain Spine (A) | <input type="checkbox"/> Alluvial Fan (A) | <input type="checkbox"/> Dune (I) | <input type="checkbox"/> Slope (Q) | <input type="checkbox"/> Riser (Y) |
| <input type="checkbox"/> Hill (B) | <input type="checkbox"/> Alcove/Rock Shelter (B) | <input type="checkbox"/> Floodplain (J) | <input type="checkbox"/> Terrace/Bench (R) | <input type="checkbox"/> Multiple S. Landforms (1) |
| <input type="checkbox"/> Tableland/Mesa (C) | <input type="checkbox"/> Arroyo (C) | <input type="checkbox"/> Ledge (K) | <input type="checkbox"/> Talus Slope (S) | <input type="checkbox"/> Bar (2) |
| <input checked="" type="checkbox"/> Ridge (D) | <input type="checkbox"/> Basin (D) | <input type="checkbox"/> Mesa/Butte (L) | <input type="checkbox"/> Island (T) | <input type="checkbox"/> Lagoon (3) |
| <input type="checkbox"/> Valley (E) | <input type="checkbox"/> Cave (E) | <input type="checkbox"/> Playa (M) | <input type="checkbox"/> Outcrop (U) | <input type="checkbox"/> Ephemeral Wash (4) |
| <input type="checkbox"/> Plain (F) | <input type="checkbox"/> Cliff (F) | <input type="checkbox"/> Pcr't Geo Feature(N) | <input type="checkbox"/> Spring Mound/Bog (V) | <input type="checkbox"/> Kipuka (5) |
| <input type="checkbox"/> Canyon (G) | <input type="checkbox"/> Delta (G) | <input checked="" type="checkbox"/> Plain (O) | <input type="checkbox"/> Valley (W) | <input type="checkbox"/> Saddle/Pass (6) |
| <input type="checkbox"/> Island (H) | <input type="checkbox"/> Detached Monolith (H) | <input type="checkbox"/> Ridge/Knoll (P) | <input type="checkbox"/> Cutbank (X) | <input type="checkbox"/> Graben (7) |

Describe: **Site is located on the ridge spine of a series of deep canyons and flat mesas. The ridge runs north-south between Indian Canyon (2 miles east) and Lake Canyon (2 miles west).**

*33. On Site Depositional Context

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Fan (A) | <input type="checkbox"/> Outcrop (Q) | <input type="checkbox"/> Moraine (J) | <input type="checkbox"/> Desert Pavement (P) |
| <input type="checkbox"/> Talus (B) | <input type="checkbox"/> Extinct Lake (F) | <input type="checkbox"/> Flood Plain (K) | <input type="checkbox"/> Stream Bed (R) |
| <input type="checkbox"/> Dune (C) | <input type="checkbox"/> Extant Lake (G) | <input type="checkbox"/> Marsh (L) | <input type="checkbox"/> Aeolian (S) |
| <input type="checkbox"/> Stream Terrace (D) | <input type="checkbox"/> Alluvial Plain (H) | <input type="checkbox"/> Landslide/Slump (M) | <input type="checkbox"/> None (T) |
| <input type="checkbox"/> Playa (E) | <input type="checkbox"/> Colluvium (I) | <input type="checkbox"/> Delta (N) | <input checked="" type="checkbox"/> Residual (U) |

Description of Soil: **Soil has developed in place**

34. Vegetation: **Site is located in a chained area with grasses and sagebrush dominating the vegetation. Surrounding areas are pinyon-juniper dominant.**

*a. Life Zone:

- Arctic-alpine (A) Hudsonian (B) Canadian (C) Transitional (D) Upper Sonoran (E) Lower Sonoran (F)

*b. Community: Primary On Site **M** Secondary On Site **Q** Surrounding Site **H**

- | | | | |
|--------------------|-----------------------------|-------------------------|--------------------|
| Aspen (A) | Other/Mixed Conifer (G) | Grassland/Steppe (M) | Marsh/Swamp (S) |
| Spruce-Fir(B) | Pinyon-Juniper Woodland (H) | Desert Lake Shore (N) | Lake/Reservoir (T) |
| Douglas Fir (C) | Wet Meadow (I) | Shadscale Community (O) | Agricultural (U) |
| Alpine Tundra (D) | Dry Meadow (J) | Tall Sagebrush (P) | Blackbrush (V) |
| Ponderosa Pine (E) | Oak-Maple Shrub (K) | Low Sagebrush (Q) | Creosote Bush (Y) |
| Lodgepole Pine (F) | Riparian (L) | Barren (R) | |

Describe:

*35. Miscellaneous Text

36. Comments/Continuations

Part C - Historic Sites

Site No.(s): **42DC2259**

1. Site Type: **Historic artifact scatter**
- *2. Historic Theme(s): **Farming/Ranching (agriculture)**
- *3. Culture: **EA** Cultural Affiliation **F** Dating Method
Describe
- *4. Oldest Date: **1917** Recent Date: **1964**
How determined? Trademarks and glass color (purple)
5. Site Dimensions **23 m x 23 m** *Area: **529 sq m**
- *6. Surface Collection/Method: None(A) Designed Sample (C)
 Grab Sample(B) Complete Collection (D)
Sampling Method:
7. Estimated Depth of Fill: Surface (A) 20 - 100cm (C) Fill noted but unknown (E)
 0 - 20cm (B) 100cm + (D) Depth suspected but not tested (F)
How Estimated: **Road cut**
(If tested, show location on site map)
8. Excavation Status: Excavated (A) Tested (B) Unexcavated (C)
Testing Method:
9. Summary of Artifacts and Debris: *(Refer to guide for additional categories)*
 Glass (GL) Bone (BO) Leather (LE) Ammunition (AM) Domestic Items (DI)
 Metal (ME) Ceramics (CS) Wire (WI) Wood (WD) Kitchen Utensils (KU)
 Nails (NC,NW) Fabric (FA) Tin Cans (TC) Rubber (RB) Car/Car Parts (CR)
Describe:
Artifact scatter includes dozens of metal cans of various sizes, pieces of glass (clear, purple and brown), and dimensioned lumber.

Lumber consists of approximately 4 – 1” by 12” planks bolted and screwed together as a frame.
10. Ceramic Artifacts: Paste Glaze/Slip Decoration Pattern Vessel Form(s) Number

None observed
- a. Estimated Number of Ceramic Trademarks 0
Describe:

Part C - Historic Sites

Site No.(s): **42DC2259**

11. Glass:

#	Manufacture	Color	Function	Trademarks	Decoration
20	Hazel-Atlas Glass Co.	Clear		See below	
5		Purple		See below	
10		Brown			

Describe:

Clear glass trademarks:



Purple glass trademarks:



12. Maximum Density - #/sq m (glass and ceramics): **4-6**

13. Tin Cans:

Type	Opening	Size	Modified	Label/Mark	Function
Coffee can, quantity 6		3" tall, 5" diameter			
No. 2 cans, quantity 12		4 9/16" tall, 3 7/16" diameter			

Describe: **Cans date from 1936 to 1974**

*14. Landscape and Constructed Features (locate on site map) - (See guide for additional categories)

- | | | | |
|---|---|--|---|
| <input checked="" type="checkbox"/> Trail/Road (TR) | <input type="checkbox"/> Dump (DU) | <input type="checkbox"/> Dam, Earthen (DA) | <input type="checkbox"/> Hearth/Campfire (HE) |
| <input type="checkbox"/> Tailings (MT,ML) | <input type="checkbox"/> Depression (DE) | <input type="checkbox"/> Ditch (DI) | <input type="checkbox"/> Quarry (QU) |
| <input type="checkbox"/> Rock Alignment (RA) | <input type="checkbox"/> Cemetery Burial (CB) | <input type="checkbox"/> Inscriptions (IN) | <input type="checkbox"/> Other (OT): |

Describe: **Two-track road is directly east of the site.**

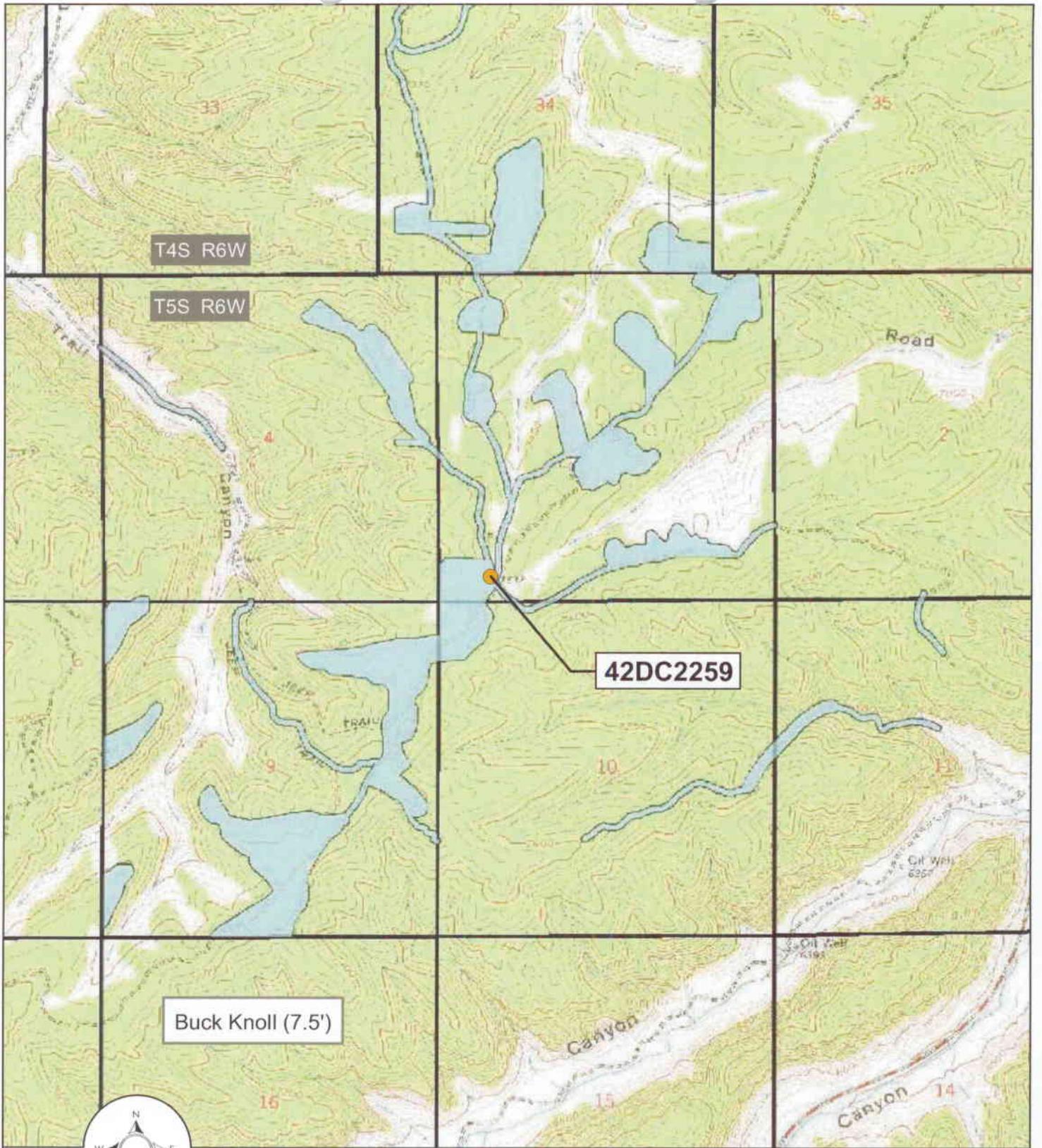
*15. Buildings and Structures (locate on site map)

#	Material	Type	#	Material	Type
---	----------	------	---	----------	------

None

Describe:

16. Comments/Continuations - Please make note of any Historic Record searches performed (for example - County Records, General Land Office, Historical Society, Land Management Agency Records, Oral Histories/interviews).



T4S R6W

T5S R6W

42DC2259

Buck Knoll (7.5')



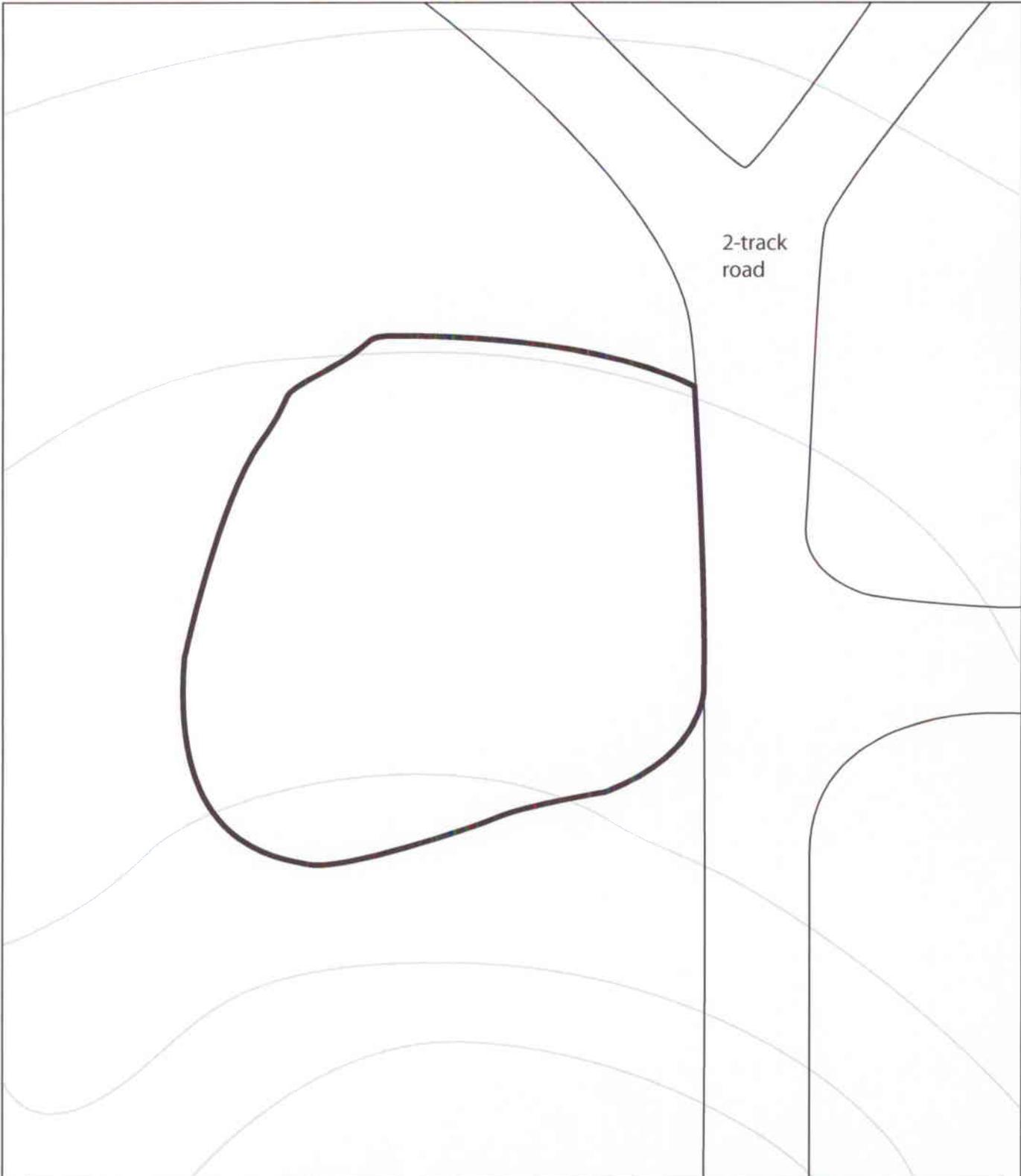
SCALE 1:24,000



Site 42DC2259 Location Map
 Berry Petroleum Company
 Lake Canyon Project
 Proposed Oil and Gas Locations

USGS 7.5' Topographic Quadrangle Map:
 Buck Knoll (1962)

URS



2-track
road



Contour Lines Are Approximate



URS

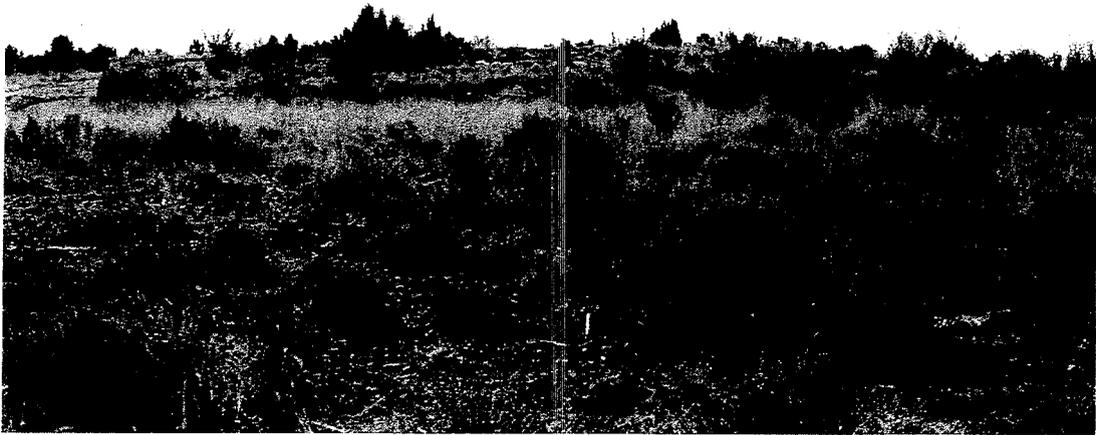
Sketch Map of 42DC2259

 Site Boundary

Roll LC-1: exp. 7

42DC2259

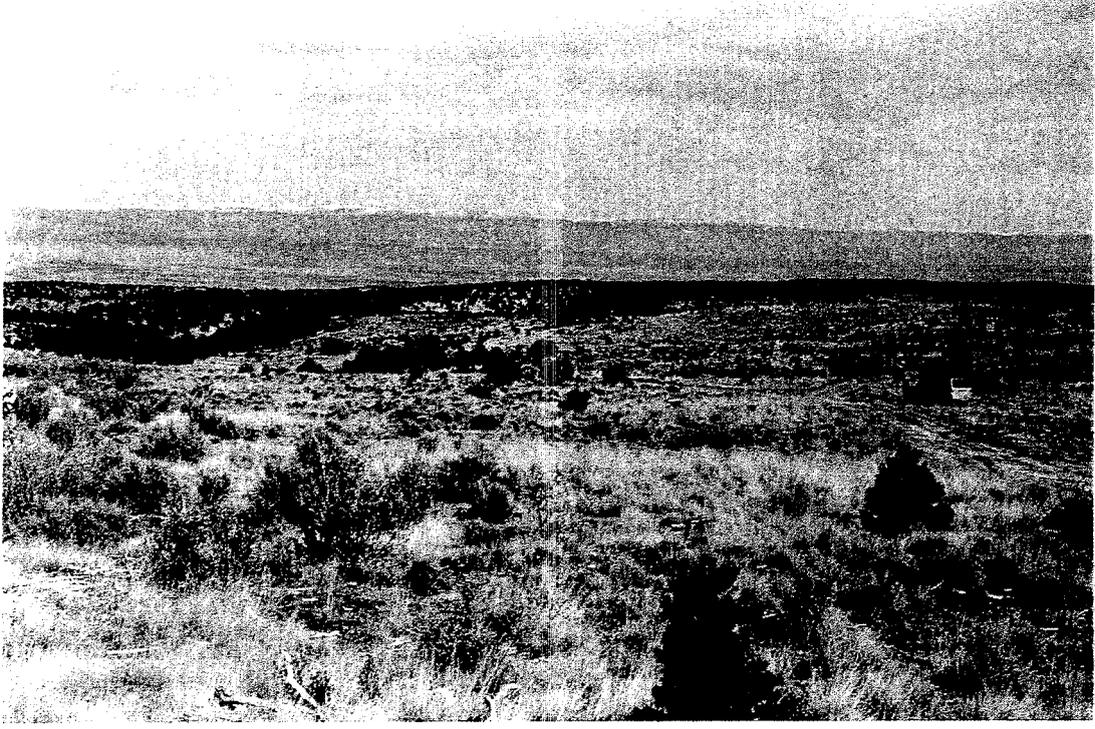
Overview of historic artifact scatter.
Looking south. 10/24/2006. URS Corporation



Roll LC-1: exp. 6

42DC2259

Overview of historic artifact scatter.
Looking north. 10/24/2006. URS Corporation



IMACS SITE FORM

Part A - Administrative Data

INTERMOUNTAIN ANTIQUITIES COMPUTER SYSTEM

Form approved for use by:

BLM - Utah, Idaho, Wyoming, Nevada

Division of State History - Utah, Wyoming

USFS - Intermountain Region

NPS - Utah, Wyoming

*1. State No.: **42DC2260**

*2. Agency No.:

3. Temp. No.: **LC-4**

County: **Duchesne**

4. State: **Utah**

5. Project: **Berry Petroleum, Lake Canyon**

*6. Report No.:

7. Site Name / Property Name: **Deerhorn No. 1 Gilsonite Mine**

8. Class: Prehistoric Historic Paleontologic Ethnographic

9. Site Type: **Mine**

*10. Elevation: **6940 ft.**

*11. UTM Grid (NAD27): Zone **12** | **533126** | m E **4439294** | m N

*12. **SE** ¼ of **SW** ¼ of **NW** ¼ of **SW** ¼ of Sec. **30**, T. **4S**, R. **6W**
NW ¼ of Sec. **30**, T. **4S**, R. **6W**

*13. Meridian: **Uintah**

*14. Map Reference: **Buck Knoll, Utah 7.5' (1962)**

15. Aerial Photo: **None**

16. Location and Access:

From the intersection of Highways 40 and 191 in Duchesne, Utah, travel 8 miles west on Highway 40. Take the Strawberry River turnoff to the south. Continue on this road through the Strawberry River canyon for 7 miles to the Dry Canyon turnoff to the south. Drive up Dry Canyon for 1.5 miles to the intersection of Matilda Canyon, on the east side of Dry Canyon. Travel up Matilda Canyon to the end of the Jeep trail, 1.2 miles. The site is located on the west side of Matilda Canyon. An access road, approximately 10 feet wide, leading to the mine, is cut in the hillslope with a grade of 10% on a 40% slope.

*17. Land Owner: **Ute Indian Tribe**

*18. Federal Administrative Units: **N/A**

*19. Location of Curated Materials: **N/A**

20. Site Description:

Historic gilsonite mine with associated historic artifacts.

*21. Site Condition: Excellent (A) Good (B) Fair (C) Poor (D)

*22. Impact Agent(s): **Erosion (ER), Road (RD)**

*23. National Register Status: Significant (C) Not Significant (D) Unevaluated (Z)

Justify: **The Deerhorn No. 1 Gilsonite Mine is associated with the opening of the Uintah Indian Reservation to mining claims, an important local event.**

24. Photos: **LC-1, 9-12 (B&W); LC-D-1, 35-39 (Digital)**

25. Recorded by: **Gordon C. Tucker Jr.**

*26. Survey Organization: **URS Corporation (UI)**

*28. Survey Date: **2 November 2006**

27. Assisting Crew Members: **Deborah Jensen**

Attachments: Part B Topo Map Photos Continuation Sheets
 Part C Site Sketch Artifact/ Feature Sketch
 Other
 Part E

Part A - Environmental Data

Site No.: 42DC2260

*29. Slope: **40** (Degrees) Aspect: **90** (Degrees)

*30. Distance to Permanent Water: **3,000 meters**

*Type of Water Source: Spring/Seep (A) Stream/River (B) Lake(C) Other (D)

Name of Water Source: **Lake Canyon Stream**

*31. Geographic Unit: **Book Cliffs-Roan Plateau (CAB)**

*32. Topographic Location: - See Guide for additional information

Primary Landform:

<input type="checkbox"/> Mountain Spine (A)	<input type="checkbox"/> Alluvial Fan (A)	<input type="checkbox"/> Dune (I)	<input checked="" type="checkbox"/> Slope (Q)	<input type="checkbox"/> Riser (Y)
<input type="checkbox"/> Hill (B)	<input type="checkbox"/> Alcove/Rock Shelter (B)	<input type="checkbox"/> Floodplain (J)	<input type="checkbox"/> Terrace/Bench (R)	<input type="checkbox"/> Multiple S. Landforms (1)
<input type="checkbox"/> Tableland/Mesa (C)	<input type="checkbox"/> Arroyo (C)	<input type="checkbox"/> Ledge (K)	<input type="checkbox"/> Talus Slope (S)	<input type="checkbox"/> Bar (2)
<input checked="" type="checkbox"/> Ridge (D)	<input type="checkbox"/> Basin (D)	<input type="checkbox"/> Mesa/Butte (L)	<input type="checkbox"/> Island (T)	<input type="checkbox"/> Lagoon (3)
<input type="checkbox"/> Valley (E)	<input type="checkbox"/> Cave (E)	<input type="checkbox"/> Playa (M)	<input type="checkbox"/> Outcrop (U)	<input type="checkbox"/> Ephemeral Wash (4)
<input type="checkbox"/> Plain (F)	<input type="checkbox"/> Cliff (F)	<input type="checkbox"/> Point Geo Feature(N)	<input type="checkbox"/> Spring Mound/Bog (V)	<input type="checkbox"/> Kipuka (5)
<input type="checkbox"/> Canyon (G)	<input type="checkbox"/> Delta (G)	<input type="checkbox"/> Plain (O)	<input type="checkbox"/> Valley (W)	<input type="checkbox"/> Saddle/Pass (6)
<input type="checkbox"/> Island (H)	<input type="checkbox"/> Detached Monolith (H)	<input type="checkbox"/> Ridge/Knoll (P)	<input type="checkbox"/> Cutbank (X)	<input type="checkbox"/> Graben (7)

Describe: **Site is located on the west side of Matilda Canyon, partway up a steep (40%) slope.**

*33. On Site Depositional Context

<input type="checkbox"/> Fan (A)	<input type="checkbox"/> Outcrop (Q)	<input type="checkbox"/> Moraine (J)	<input type="checkbox"/> Desert Pavement (P)
<input checked="" type="checkbox"/> Talus (B)	<input type="checkbox"/> Extinct Lake (F)	<input type="checkbox"/> Flood Plain (K)	<input type="checkbox"/> Stream Bed (R)
<input type="checkbox"/> Dune (C)	<input type="checkbox"/> Extant Lake (G)	<input type="checkbox"/> Marsh (L)	<input type="checkbox"/> Aeolian (S)
<input type="checkbox"/> Stream Terrace (D)	<input type="checkbox"/> Alluvial Plain (H)	<input type="checkbox"/> Landslide/Slump (M)	<input type="checkbox"/> None (T)
<input type="checkbox"/> Playa (E)	<input type="checkbox"/> Colluvium (I)	<input type="checkbox"/> Delta (N)	<input type="checkbox"/> Residual (U)

Description of Soil: **Very shallow residual soil**

34. Vegetation: **Landscape is dominated by grasses and sagebrush.**

*a. Life Zone:

Arctic-alpine (A) Hudsonian (B) Canadian (C) Transitional (D) Upper Sonoran (E) Lower Sonoran (F)

*b. Community: Primary On Site Q Secondary On Site M Surrounding Site H

Aspen (A)	Other/Mixed Conifer (G)	Grassland/Steppe (M)	Marsh/Swamp (S)
Spruce-Fir(B)	Pinyon-Juniper Woodland (H)	Desert Lake Shore (N)	Lake/Reservoir (T)
Douglas Fir (C)	Wet Meadow (I)	Shadscale Community (O)	Agricultural (U)
Alpine Tundra (D)	Dry Meadow (J)	Tall Sagebrush (P)	Blackbrush (V)
Ponderosa Pine (E)	Oak-Maple Shrub (K)	Low Sagebrush (Q)	Creosote Bush (Y)
Lodgepole Pine (F)	Riparian (L)	Barren (R)	

Describe:

*35. Miscellaneous Text

36. Comments/Continuations

Part C - Historic Sites

Site No.(s): **42DC2260**

11. Glass: # Manufacture Color Function Trademarks Decoration

None observed

Describe:

12. Maximum Density - #/sq m (glass and ceramics): **0**

13. Tin Cans:

Type	Opening	Size	Modified	Label/Mark	Function
Hole-in-top, quantity 2		Full gallon, 8 3/4" tall, 6 3/16" diameter			
Metal can, quantity 6		8 3/4" tall, 6 3/16" diameter			

Describe: **Two large cans were found at the top of the tailings pile. Other cans are found in a small scatter of historic artifacts at base of tailings pile.**

*14. Landscape and Constructed Features (locate on site map) - *(See guide for additional categories)*

- | | | | |
|--|---|--|---|
| <input checked="" type="checkbox"/> Trail/Road (TR) | <input type="checkbox"/> Dump (DU) | <input type="checkbox"/> Dam, Earthen (DA) | <input type="checkbox"/> Hearth/Campfire (HE) |
| <input checked="" type="checkbox"/> Tailings (MT,ML) | <input type="checkbox"/> Depression (DE) | <input type="checkbox"/> Ditch (DI) | <input type="checkbox"/> Quarry (QU) |
| <input type="checkbox"/> Rock Alignment (RA) | <input type="checkbox"/> Cemetery Burial (CB) | <input type="checkbox"/> Inscriptions (IN) | <input type="checkbox"/> Other (OT): |

Describe:

Tailings pile of small fragments of grayish shale are strewn down slope in a narrow swath, 50 feet wide. Road (10% grade) is a two-track cut into the canyon slope (40% grade).

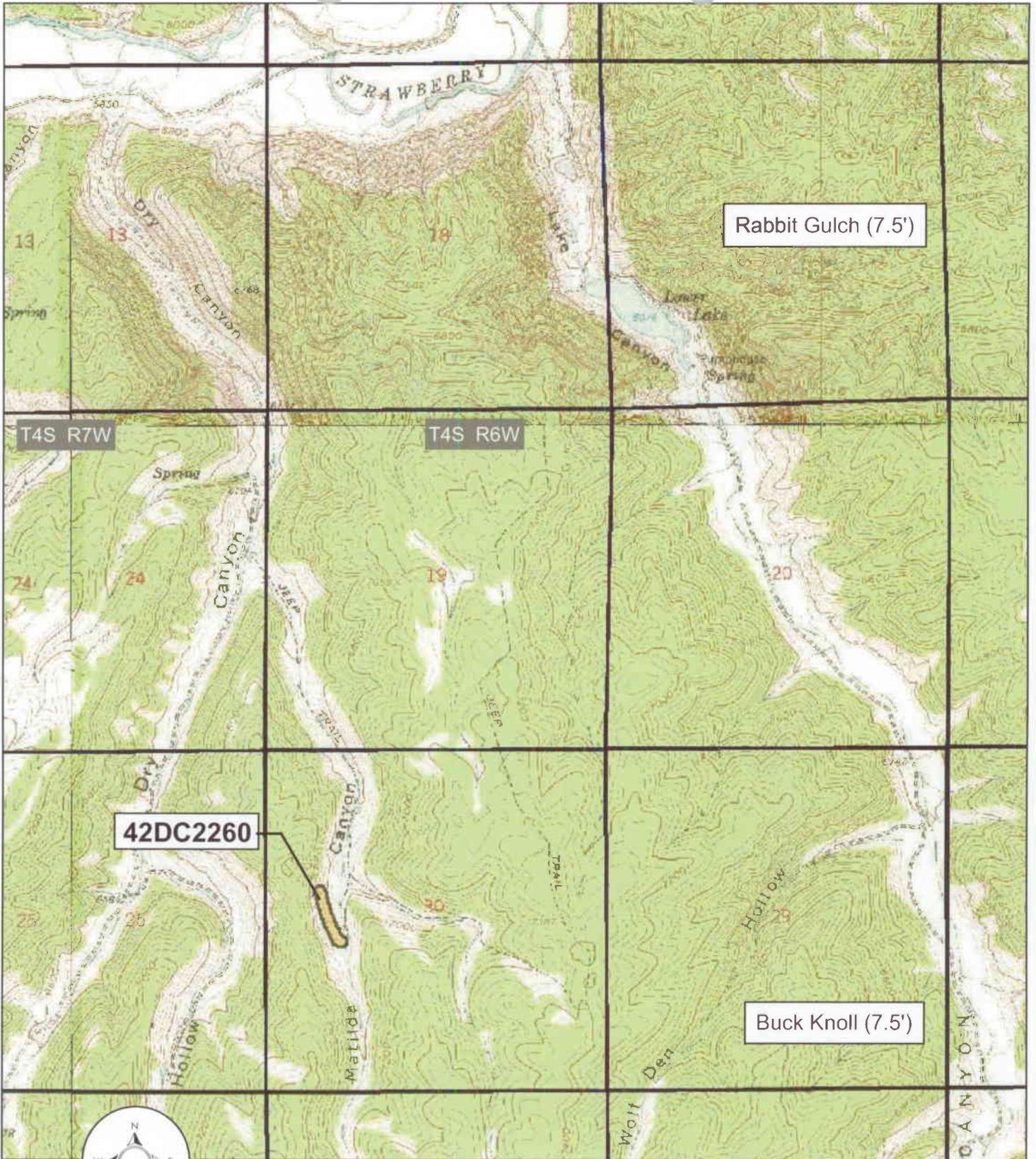
*15. Buildings and Structures (locate on site map)

#	Material	Type	#	Material	Type
1	Log	Mine/adit			

Describe: **Vertical cut for mine follows gilsonite seam upslope. Log cribbing used in mine cut.**

16. Comments/Continuations - *Please make note of any Historic Record searches performed (for example - County Records, General Land Office, Historical Society, Land Management Agency Records, Oral Histories/interviews).*

A map prepared in 1902 by the Raven Mining Co. shows several gilsonite mines in the vicinity of the project area. The recorded location corresponds to the Deerhorn No. 1 Mine (Source: *Diagram of Hydro-carbon Claims, Located by the Raven Mining Co. on the Uintah Indian Reservation, Utah, Under the Provisions of the Act of Congress Approved May 27, 1902.*)



Rabbit Gulch (7.5')

T4S R7W

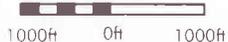
T4S R6W

42DC2260

Buck Knoll (7.5')



SCALE 1:24,000



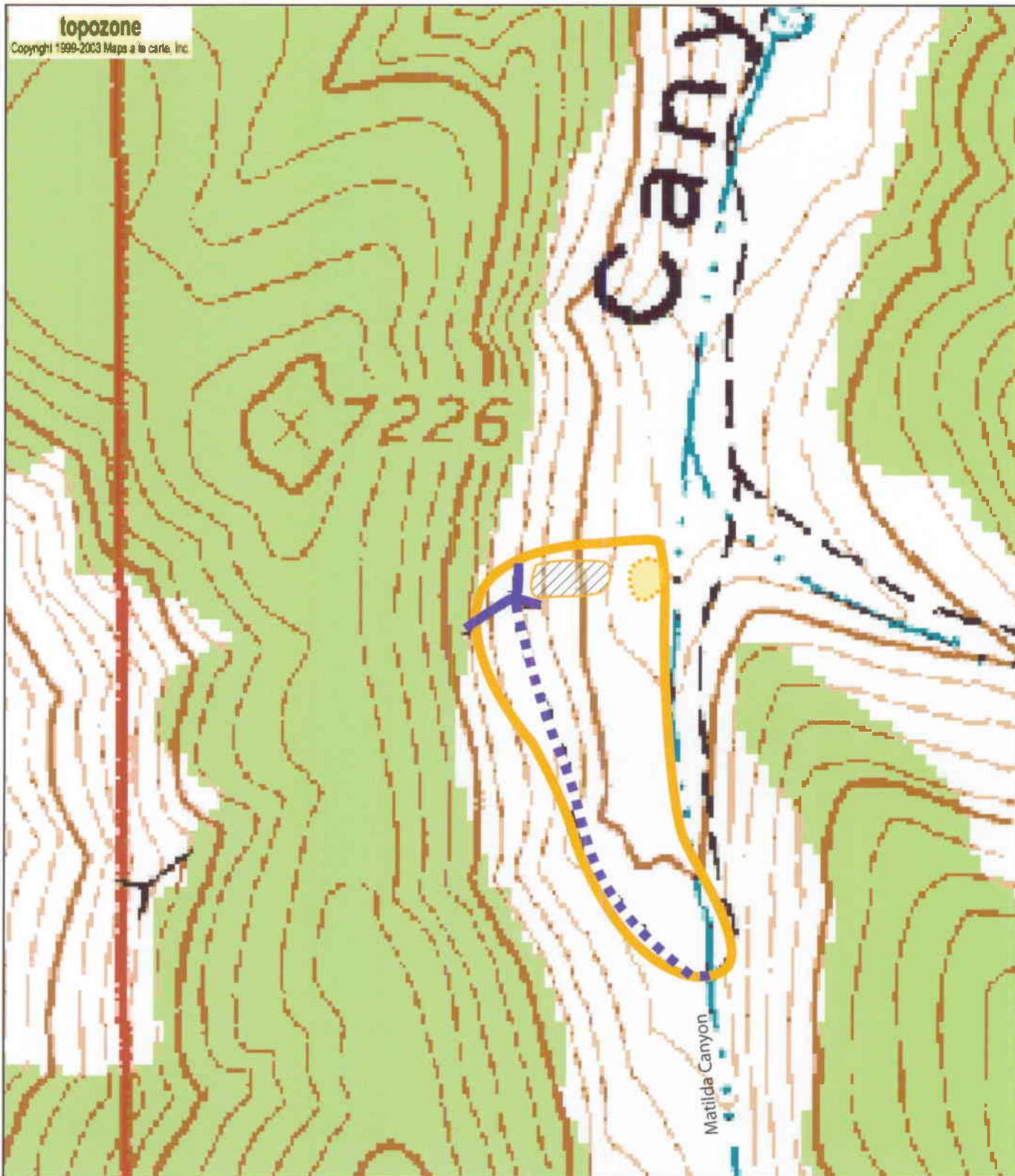
URS

Site 42DC2260 Location Map
Berry Petroleum Company
Lake Canyon Project
Proposed Oil and Gas Locations

USGS 7.5' Topographic Quadrangle Maps:
Rabbit Gulch (1980) and
Buck Knoll (1962)

topozone

Copyright 1999-2003 Maps & the carté, Inc.



Site Map of 42DC2260



Contour Lines Are Approximate



URS

-  Site Boundary
-  Access Road
-  Mine Adit
-  Tailings Pile
-  Artifact Concentration

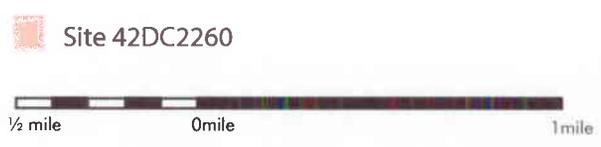
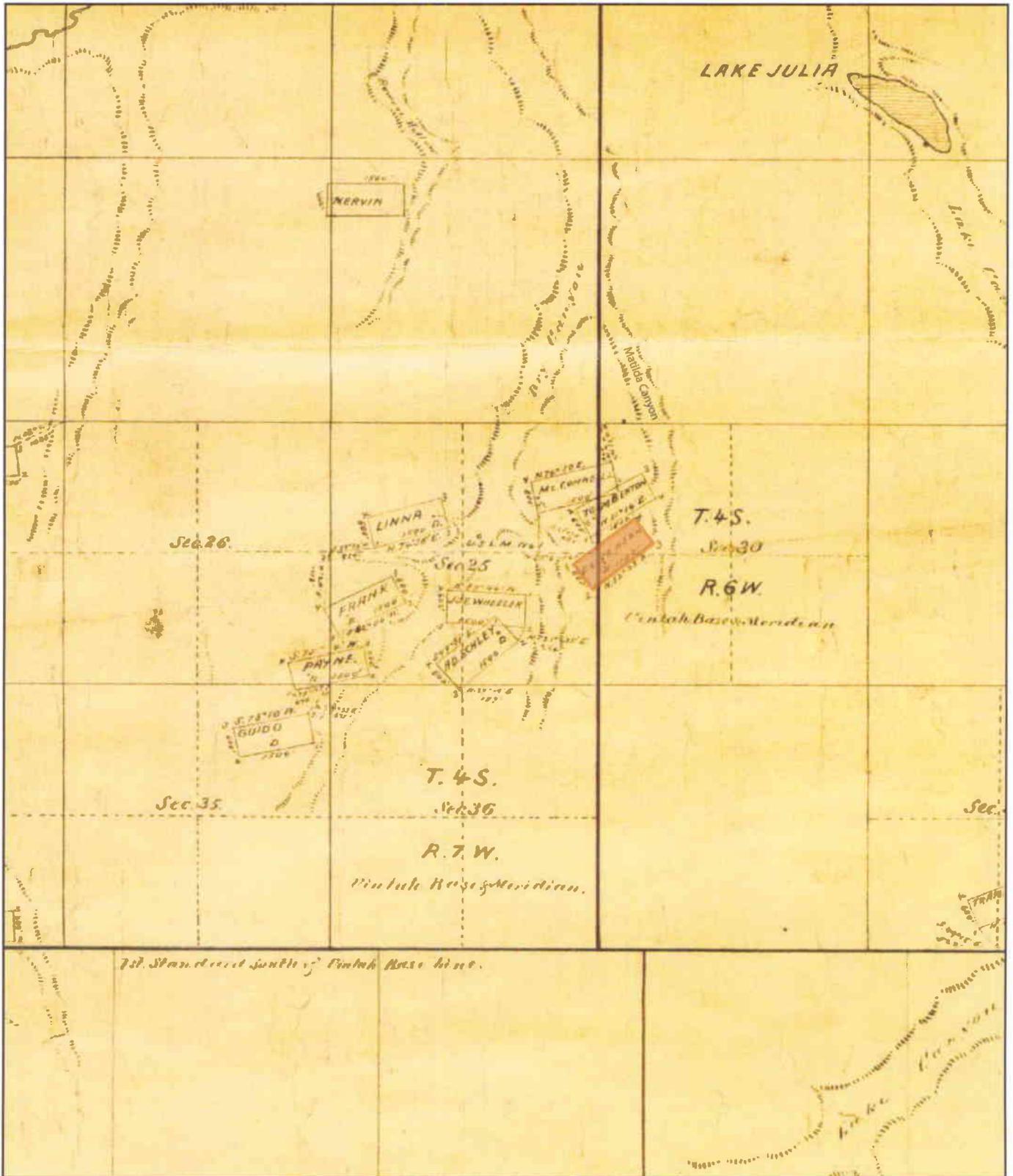


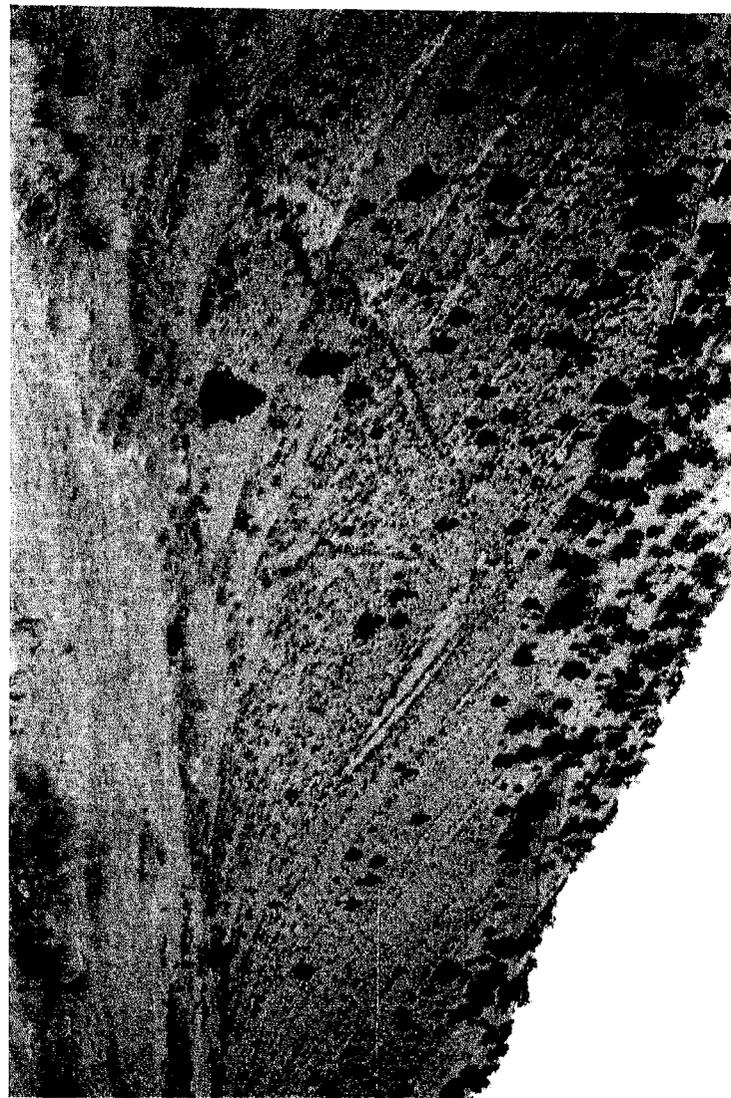
Diagram of Hydro-Carbon Claims Located by the Raven Mining Co. on the Uintah Indian Reservation, Utah, under the provisions of the Act Of Congress approved May 27, 1902

URS

Roll LC-1: exp. 10
Deerhorn No. 1 Gilsonite Mine 42DC2260
Entrance portal and cut for mine adit.
Looking east. 10/24/2006. URS Corporation



Roll LC-1: exp. 9
Deerhorn No. 1 Gilsonite Mine 42DC2260
Overview of historic gilsonite mine.
Looking northwest. 10/24/2006. URS Corporation

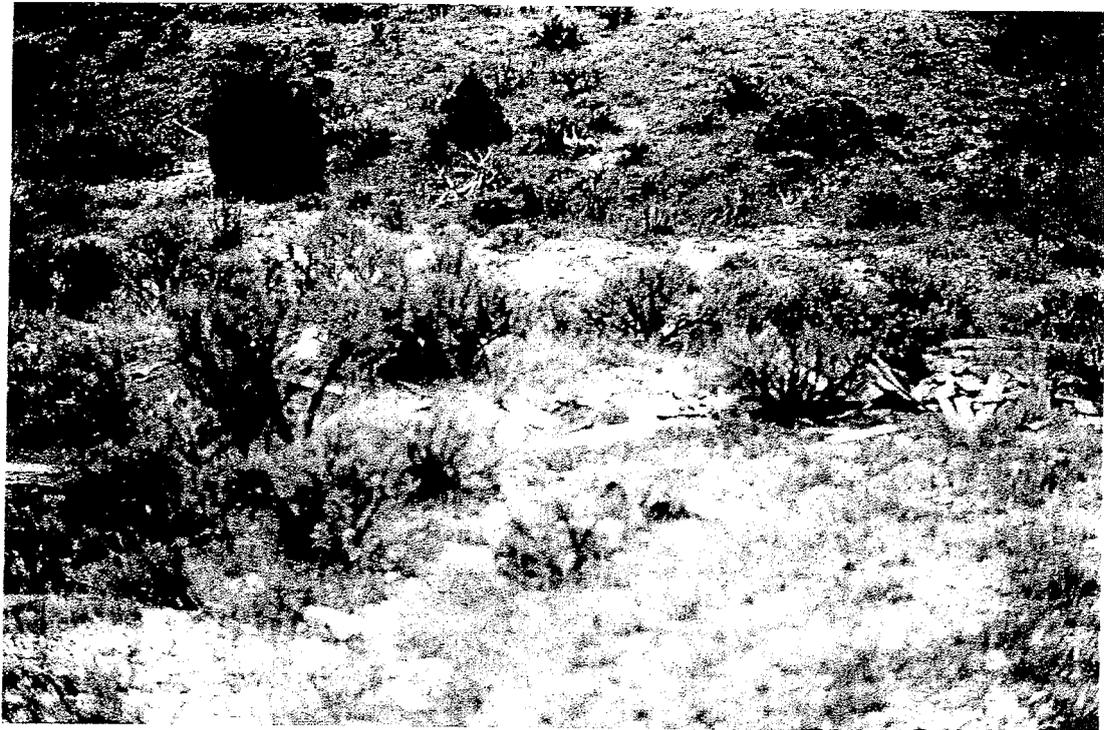


Roll LC-1: exp. 12

Deerhorn No. 1 Gilsonite Mine 42DC2260

Milled lumber debris located below tailings pile.

Looking east. 10/24/2006. URS Corporation

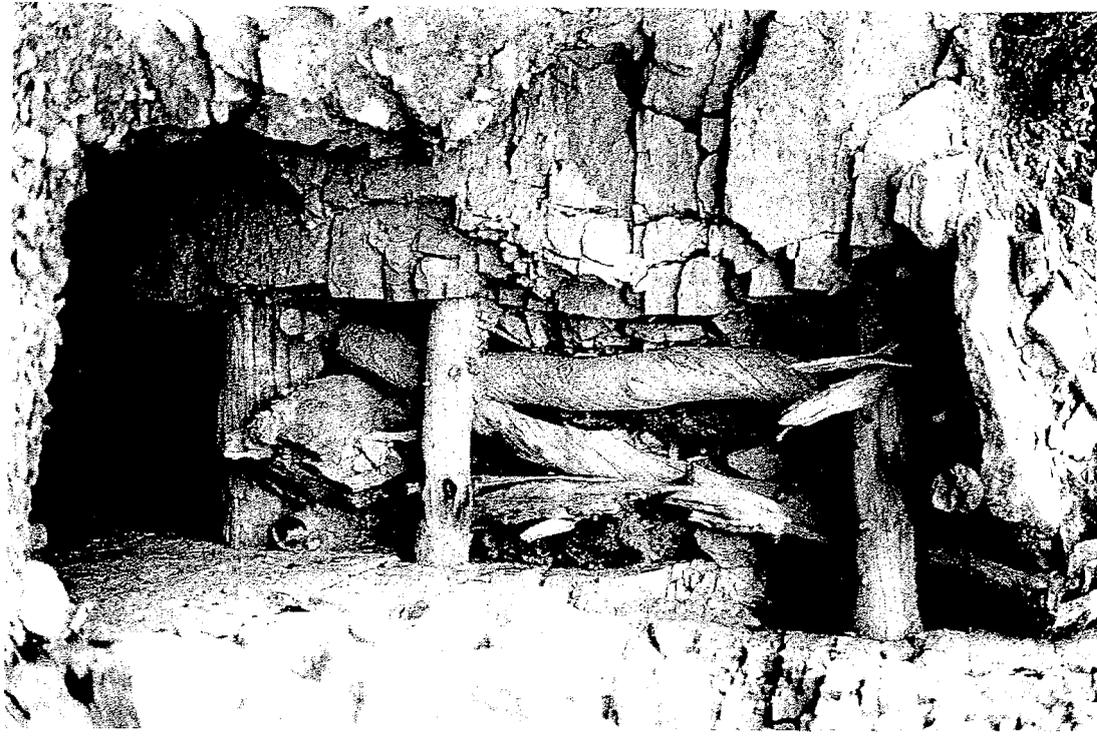


Roll LC-1: exp. 11

Deerhorn No. 1 Gilsonite Mine 42DC2260

Cribbing/roof support of logs at adit entrance.

Looking east. 10/24/2006. URS Corporation



BERRY PETROLEUM COMPANY

LC TRIBAL #14-22D-46

LOCATED IN DUCHESNE COUNTY, UTAH
SECTION 22, T4S, R6W, U.S.B.&M.



PHOTO: VIEW OF LOCATION STAKE

CAMERA ANGLE: SOUTHEASTERLY



PHOTO: VIEW FROM BEGINNING OF PROPOSED ACCESS

CAMERA ANGLE: SOUTHWESTERLY



- Since 1964 -

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

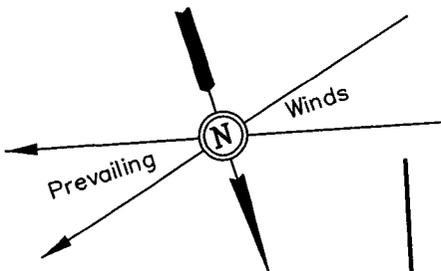
TOPOGRAPHIC			02	12	07
MAP			MONTH	DAY	YEAR
TAKEN BY: S.H.	DRAWN BY: L.K.	REVISED: 00-00-00			

PHOTO

BERRY PETROLEUM COMPANY

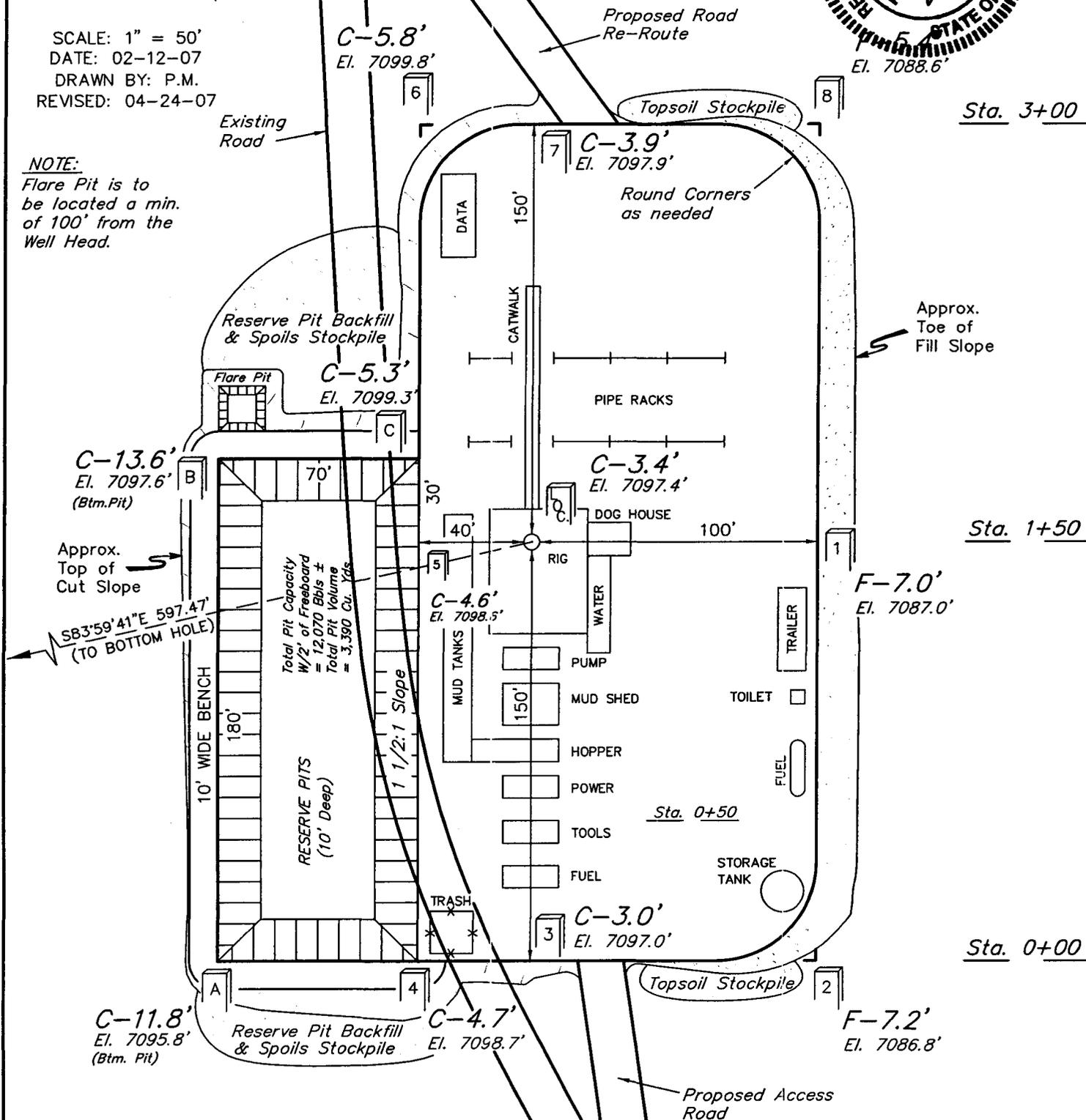
LOCATION LAYOUT FOR

UTE TRIBAL #14-22D-46
SECTION 22, T4S, R6W, U.S.B.&M.
714' FSL 1477' FWL



SCALE: 1" = 50'
DATE: 02-12-07
DRAWN BY: P.M.
REVISED: 04-24-07

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



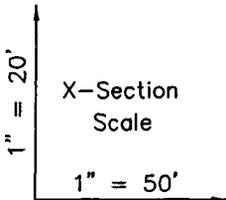
Elev. Ungraded Ground at Location Stake = 7097.4'
Elev. Graded Ground at Location Stake = 7094.0'

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

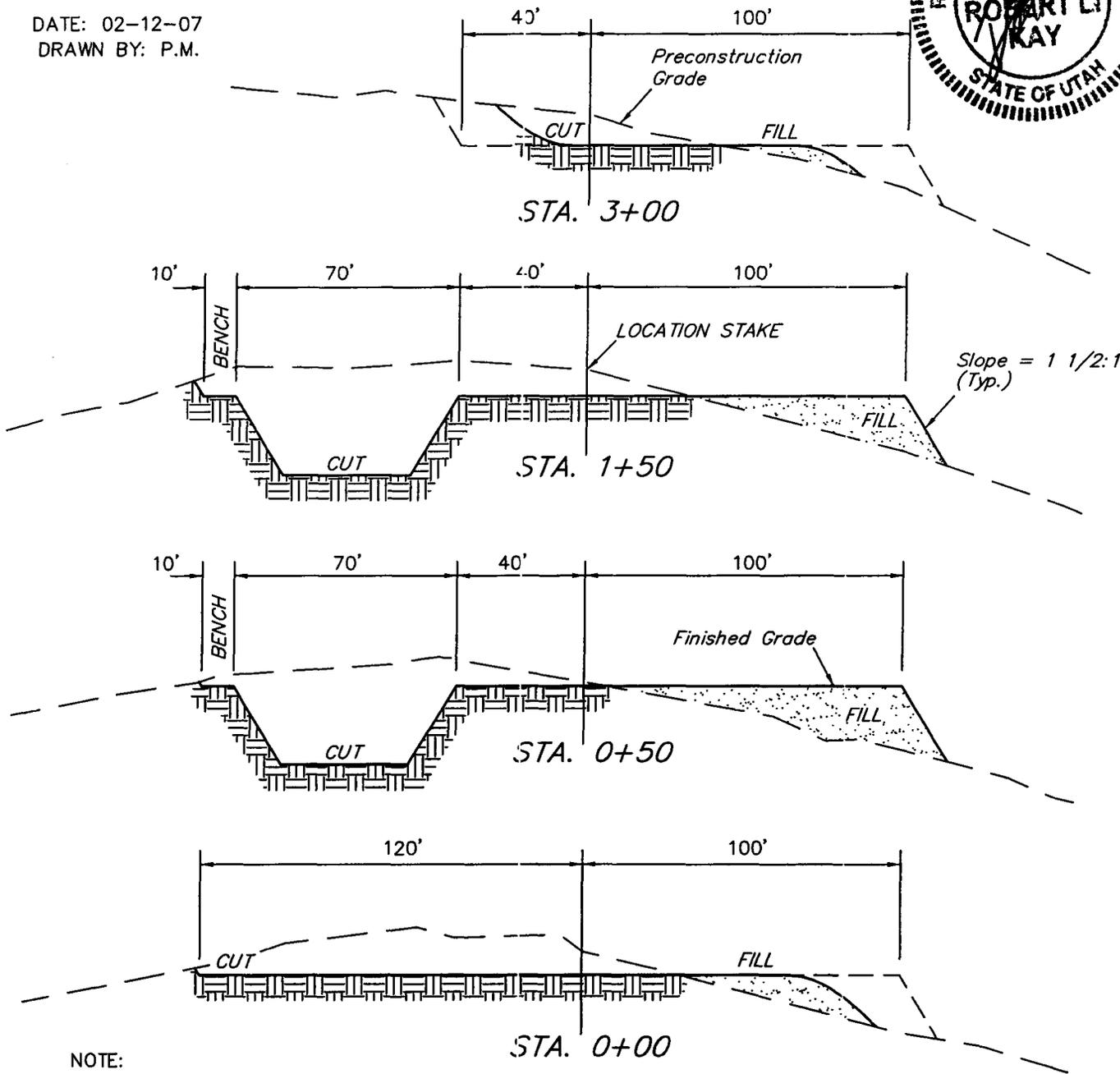
BERRY PETROLEUM COMPANY

TYPICAL CROSS SECTIONS FOR

UTE TRIBAL #14-22D-46
SECTION 22, T4S, R6W, U.S.B.&M.
714' FSL 1477' FWL



DATE: 02-12-07
DRAWN BY: P.M.



NOTE:

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

*** NOTE:**

FILL QUANTITY INCLUDES 5% FOR COMPACTION

APPROXIMATE YARDAGES

CUT	
(12") Topsoil Stripping	= 2,500 Cu. Yds.
Remaining Location	= 6,180 Cu. Yds.
TOTAL CUT	= 8,680 CU.YDS.
FILL	= 4,480 CU.YDS.

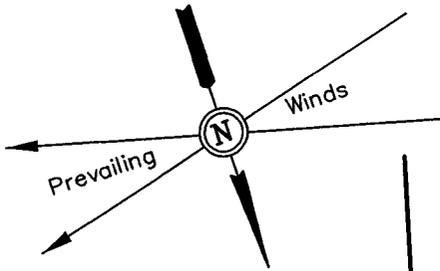
EXCESS MATERIAL	= 4,200 Cu. Yds.
Topsoil & Pit Backfill (1/2 Pit Vol.)	= 4,200 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	= 0 Cu. Yds.

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

BERRY PETROLEUM COMPANY

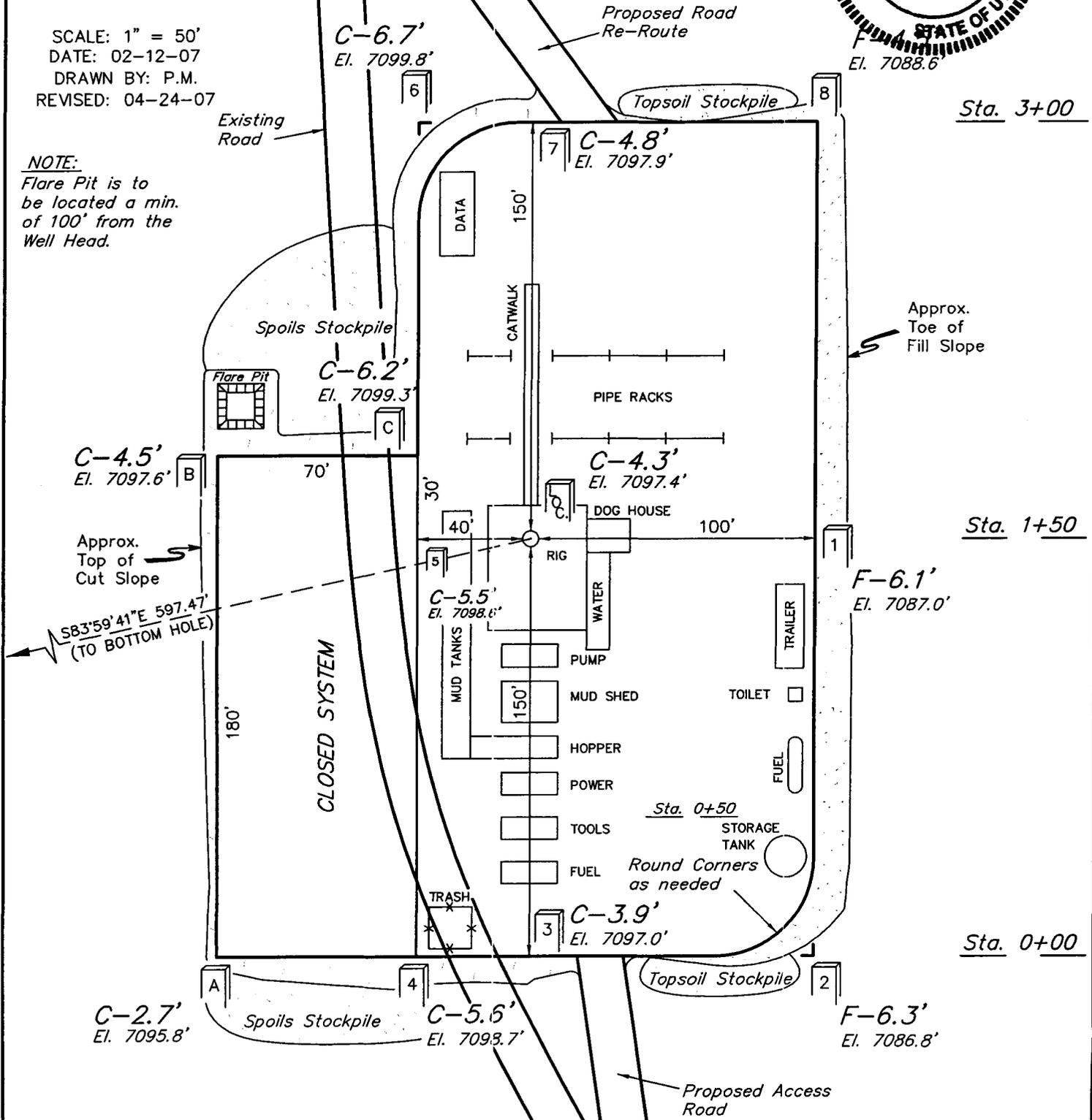
LOCATION LAYOUT FOR

UTE TRIBAL #14-22D-46
SECTION 22, T4S, R6W, U.S.B.&M.
714' FSL 1477' FWL



SCALE: 1" = 50'
DATE: 02-12-07
DRAWN BY: P.M.
REVISED: 04-24-07

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



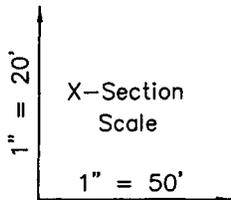
Elev. Ungraded Ground at Location Stake = 7097.4'
Elev. Graded Ground at Location Stake = 7093.1'

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

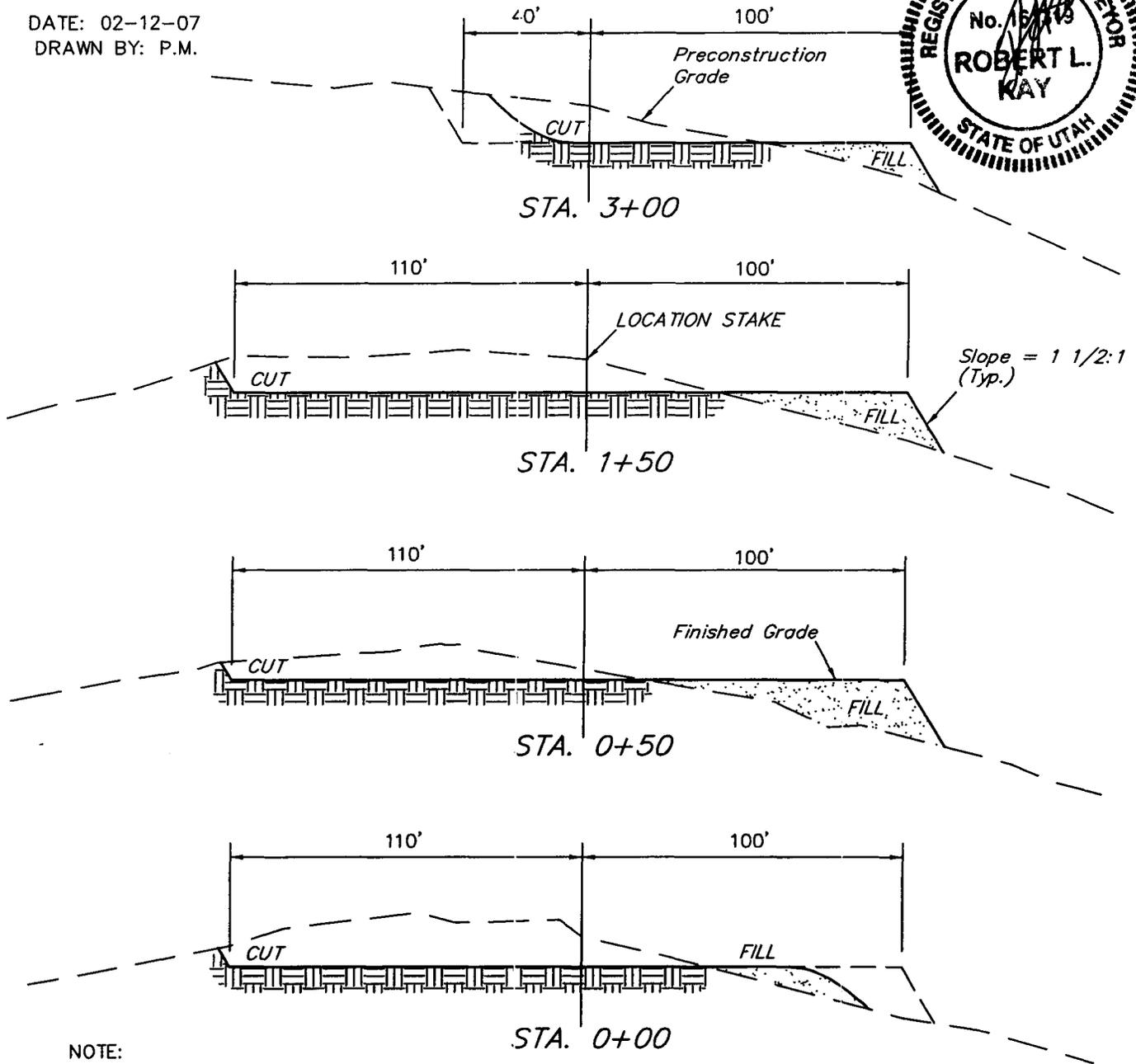
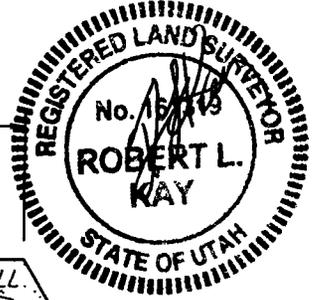
BERRY PETROLEUM COMPANY

TYPICAL CROSS SECTIONS FOR

UTE TRIBAL #14-22D-46
SECTION 22, T4S, R6W, U.S.B.&M.
714' FSL 1477' FWL



DATE: 02-12-07
DRAWN BY: P.M.



NOTE:

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

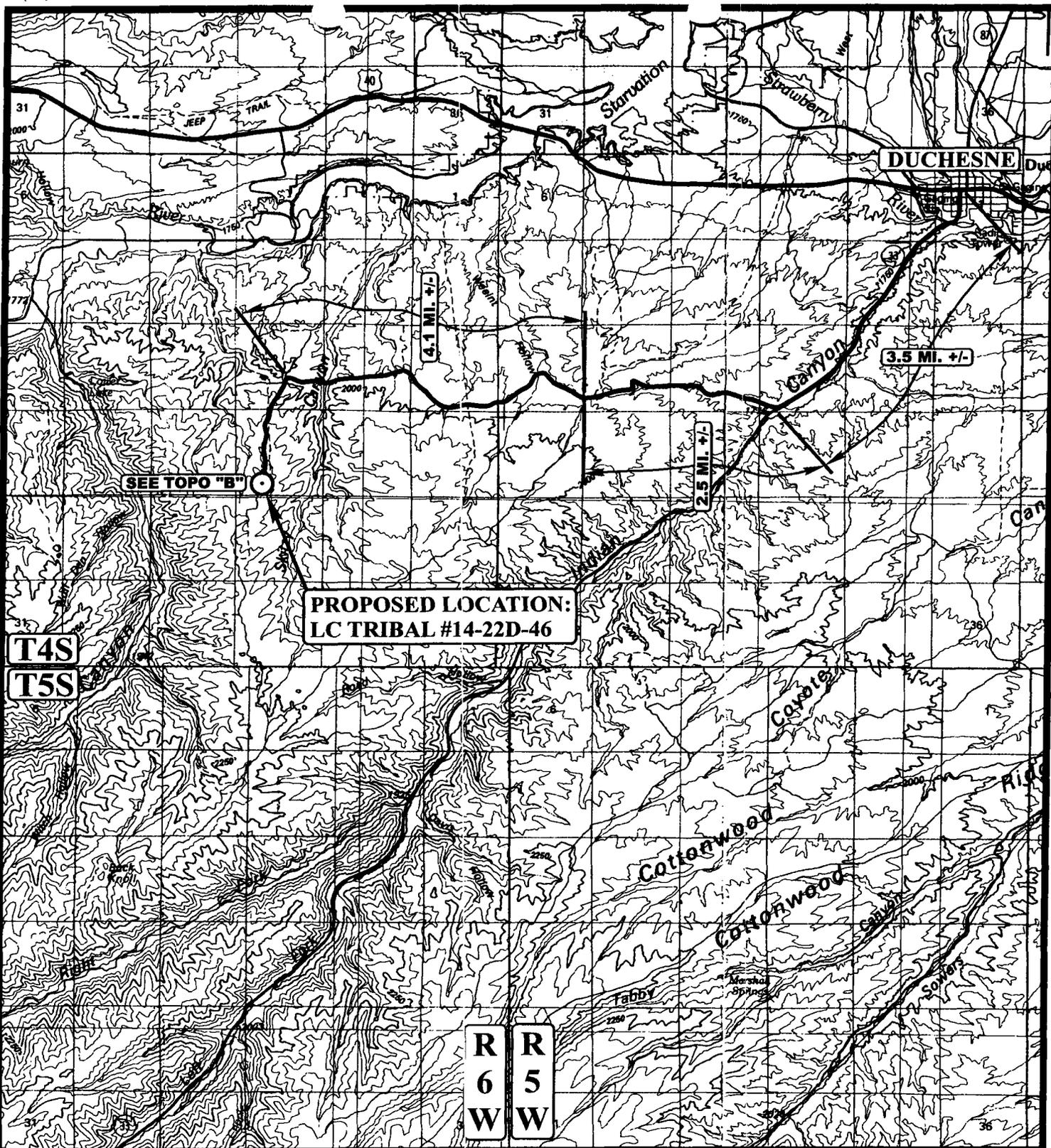
*** NOTE:**

FILL QUANTITY INCLUDES 5% FOR COMPACTION

APPROXIMATE YARDAGES

CUT	
(12") Topsoil Stripping	= 2,350 Cu. Yds.
Remaining Location	= 3,610 Cu. Yds.
TOTAL CUT	= 5,960 CU.YDS.
FILL	= 3,610 CU.YDS.

EXCESS MATERIAL	= 2,350 Cu. Yds.
Topsoil	= 2,350 Cu. Yds.
EXCESS UNBALANCE	= 0 Cu. Yds.
(After Interim Rehabilitation)	



**PROPOSED LOCATION:
LC TRIBAL #14-22D-46**

T4S

T5S

**R
6
W**

**R
5
W**

LEGEND:

○ PROPOSED LOCATION

BERRY PETROLEUM COMPANY

LC TRIBAL #14-22D-46
SECTION 22, T4S, R6W, U.S.B.&M.
714' FSL 1477' FWL



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



TOPOGRAPHIC 02 12 07
MAP MONTH DAY YEAR
SCALE: 1:100,000 DRAWN BY: L.K. REVISED: 00-00-00



R
6
W

DUCHESNE 10.1 MI. +/-

EXISTING 2-TRACK NEEDS
UPGRADED 1.4 MI. +/-

PROPOSED ACCESS 95' +/-

PROPOSED LOCATION:
LC TRIBAL #14-22D-46

PROPOSED ROAD
RE-ROUTE 130' +/-

T4S

LEGEND:

- PROPOSED ACCESS ROAD
- EXISTING 2-TRACK NEEDS UPGRADED

BERRY PETROLEUM COMPANY

LC TRIBAL #14-22D-46
SECTION 22, T4S, R6W, U.S.B.&M.
714' FSL 1477' FWL



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

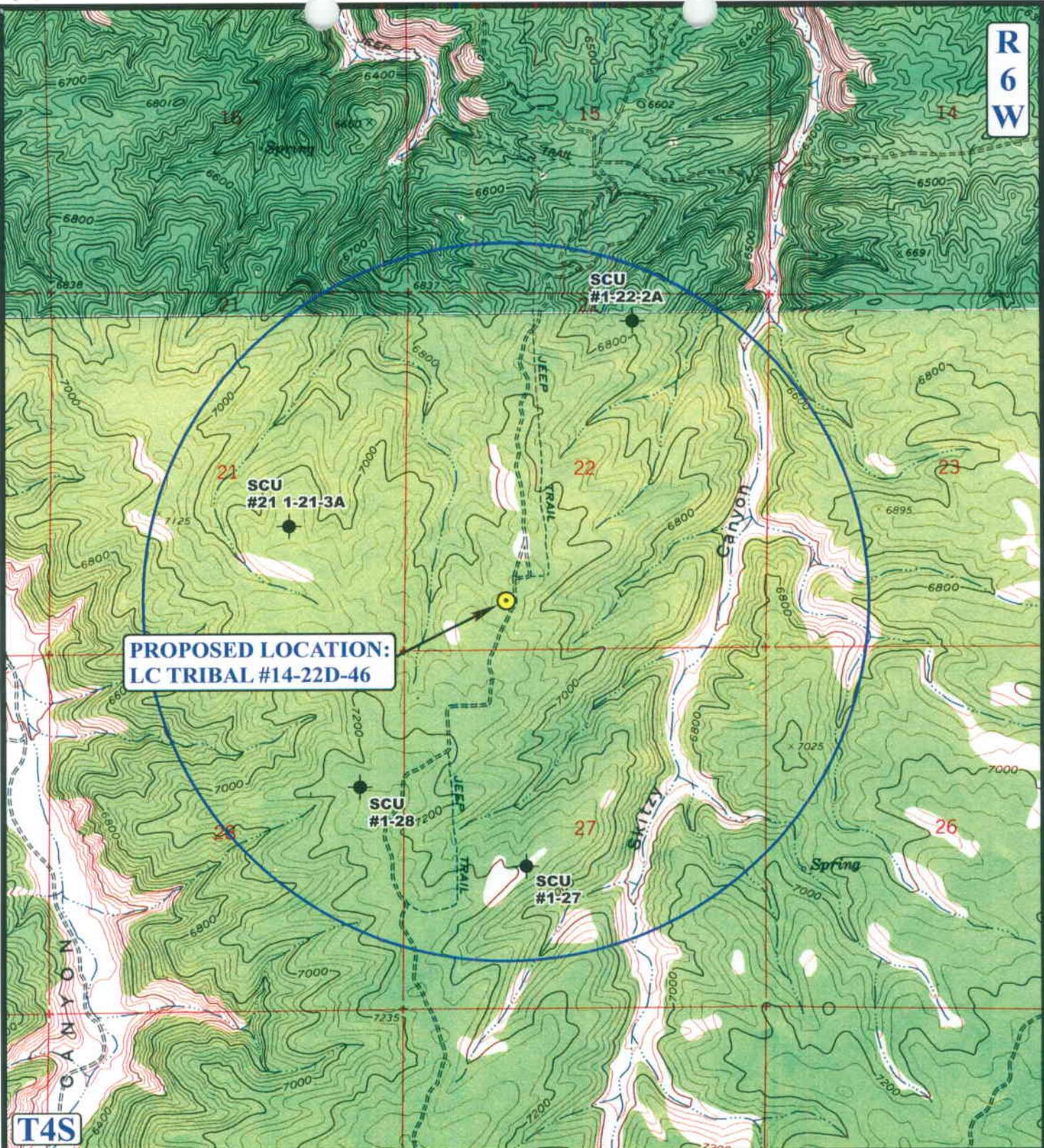
TOPOGRAPHIC
MAP

02 12 07
MONTH DAY YEAR

SCALE: 1" = 2000' DRAWN BY: L.K. REVISED: 00-00-00



R
6
W



**PROPOSED LOCATION:
LC TRIBAL #14-22D-46**

T4S

LEGEND:

- ∅ DISPOSAL WELLS
- PRODUCING WELLS
- SHUT IN WELLS
- ∅ WATER WELLS
- ABANDONED WELLS
- TEMPORARILY ABANDONED

BERRY PETROLEUM COMPANY

**LC TRIBAL #14-22D-46
SECTION 22, T4S, R6W, U.S.B.&M.
714' FSL 1477' FWL**



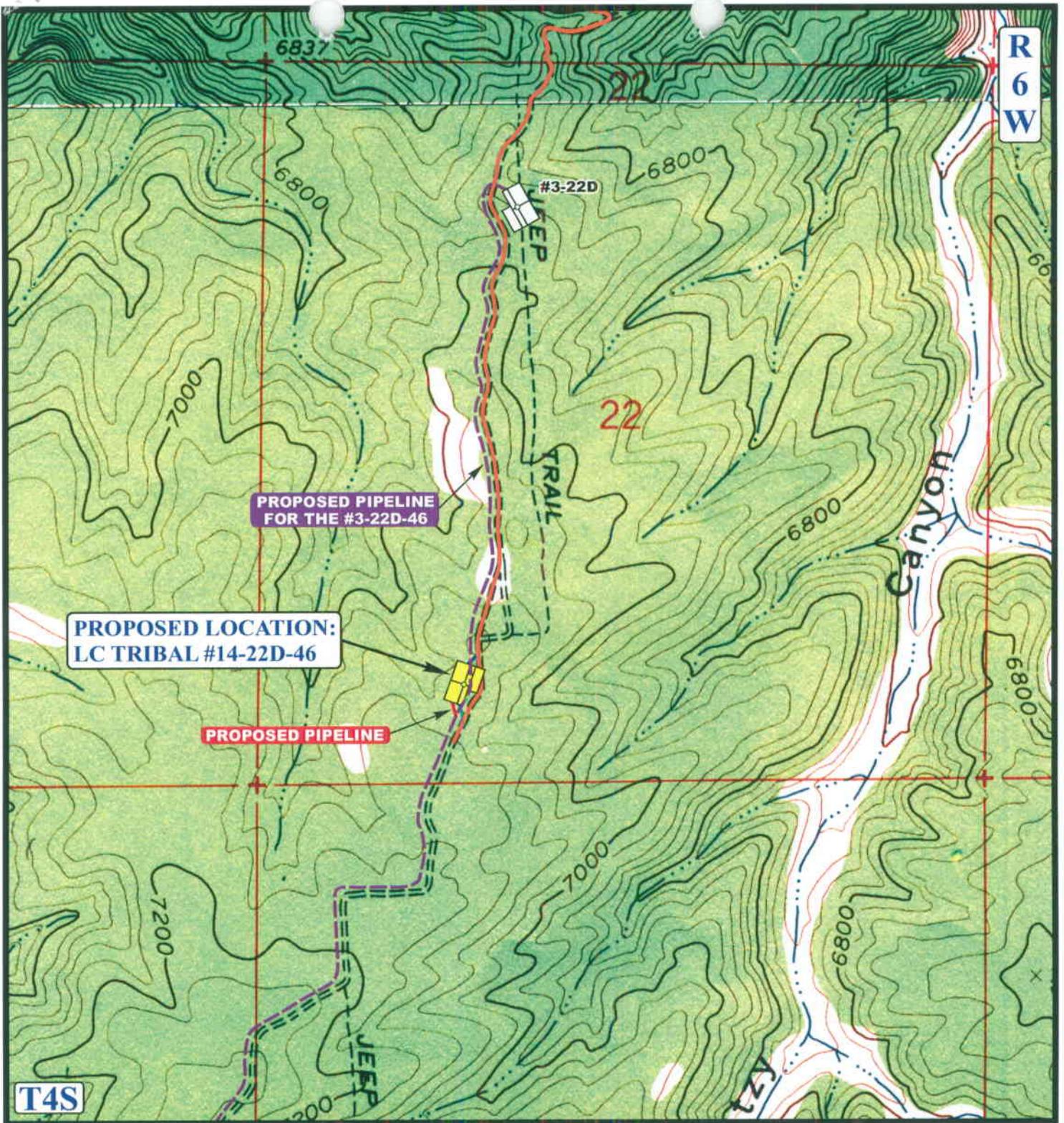
Utah Engineering & Land Surveying
85 South 200 East Vernal, Utah 84078
(435) 789-1017 * FAX (435) 789-1813

**TOPOGRAPHIC
MAP**

02 12 07
MONTH DAY YEAR

SCALE: 1" = 2000' DRAWN BY: L.K. REVISED: 00-00-00





APPROXIMATE TOTAL PIPELINE DISTANCE = 100' +/-

LEGEND:

- PROPOSED ACCESS ROAD
- EXISTING PIPELINE
- PROPOSED PIPELINE
- PROPOSED PIPELINE (SERVICING OTHER WELLS)

BERRY PETROLEUM COMPANY

LC TRIBAL #14-22D-46
SECTION 22, T4S, R6W, U.S.B.&M.
714' FSL 1477' FWL



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



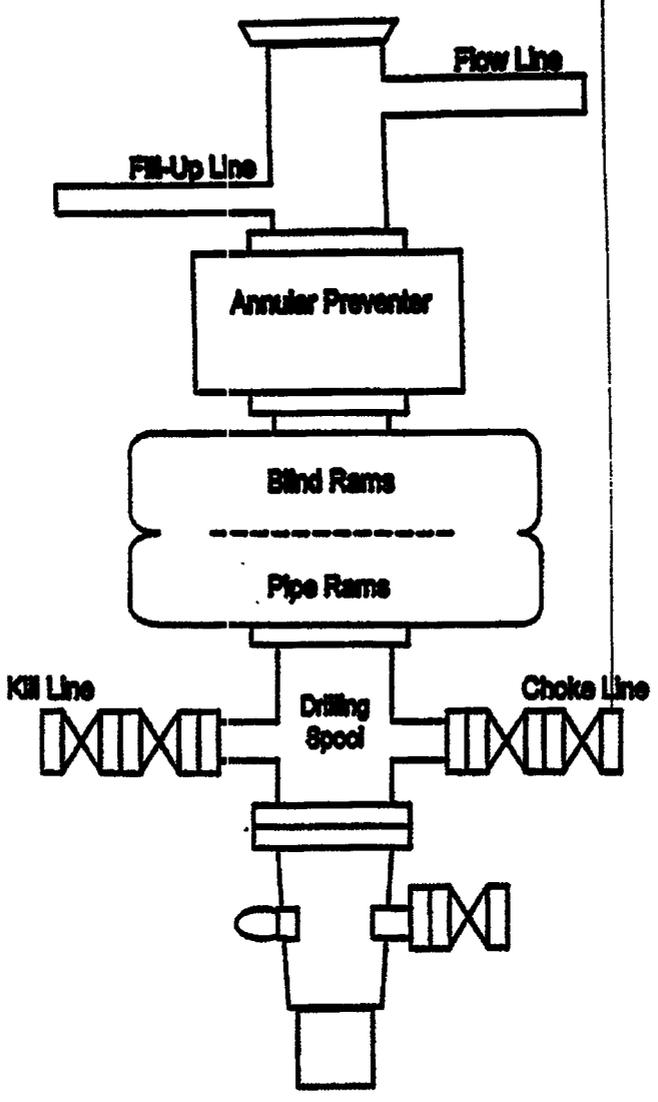
TOPOGRAPHIC
MAP

02	12	07
MONTH	DAY	YEAR

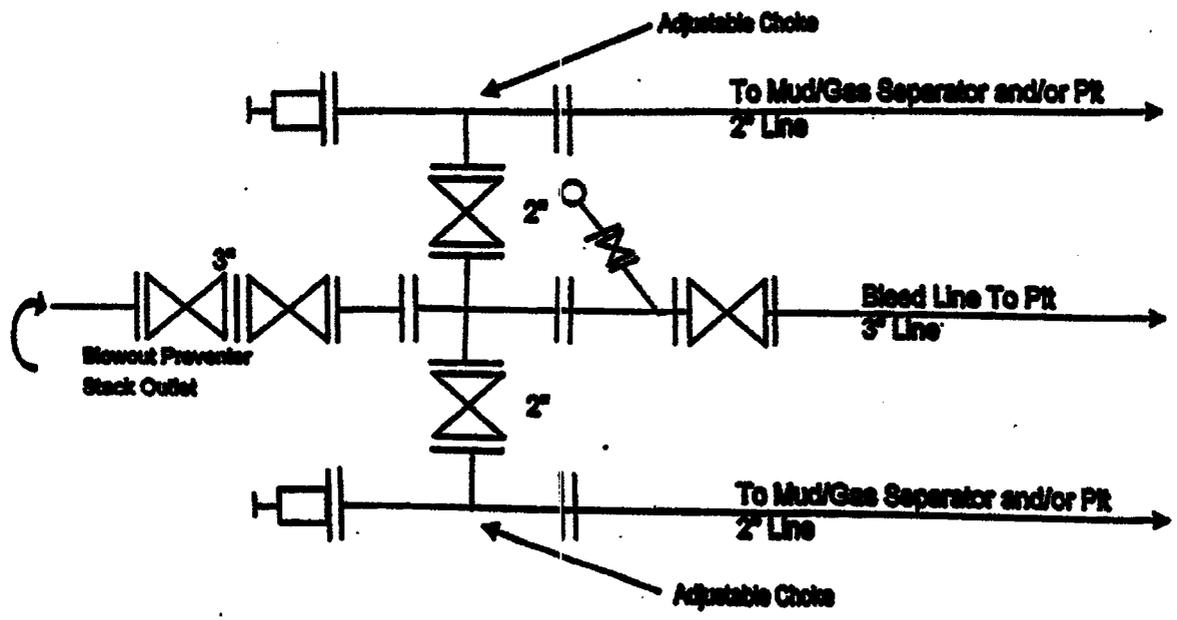
SCALE: 1" = 1000' DRAWN BY: L.K. REVISED: 00-00-00



BOP Diagram



2,000 PSI Choke Manifold Equipment



**WORKSHEET
APPLICATION FOR PERMIT TO DRILL**

APD RECEIVED: 05/03/2007

API NO. ASSIGNED: 43-013-33633

WELL NAME: LC TRIBAL 14-22D-46
 OPERATOR: BERRY PETROLEUM COMPANY (N2480)
 CONTACT: SHELLY CROZIER

PHONE NUMBER: 435-722-1325

PROPOSED LOCATION:

SESW 22 040S 060W
 SURFACE: 0714 FSL 1477 FWL
 BOTTOM: 0650 FSL 2071 FWL
 COUNTY: DUCHESNE
 LATITUDE: 40.11334 LONGITUDE: -110.5526
 UTM SURF EASTINGS: 538132 NORTHINGS: 4440222
 FIELD NAME: ALTAMONT (55)

INSPECT LOCATN BY: / /		
Tech Review	Initials	Date
Engineering		
Geology		
Surface		

LEASE TYPE: 2 - Indian
 LEASE NUMBER: 14-20-H62-5500
 SURFACE OWNER: 2 - Indian

PROPOSED FORMATION: GRRV
 COALBED METHANE WELL? NO

RECEIVED AND/OR REVIEWED:

- Plat
- Bond: Fed[] Ind[2] Sta[] Fee[]
(No. RLB0005651)
- Potash (Y/N)
- Oil Shale 190-5 (B) or 190-3 or 190-13
- Water Permit
(No. 43-10441)
- RDCC Review (Y/N)
(Date: _____)
- Fee Surf Agreement (Y/N)
- 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

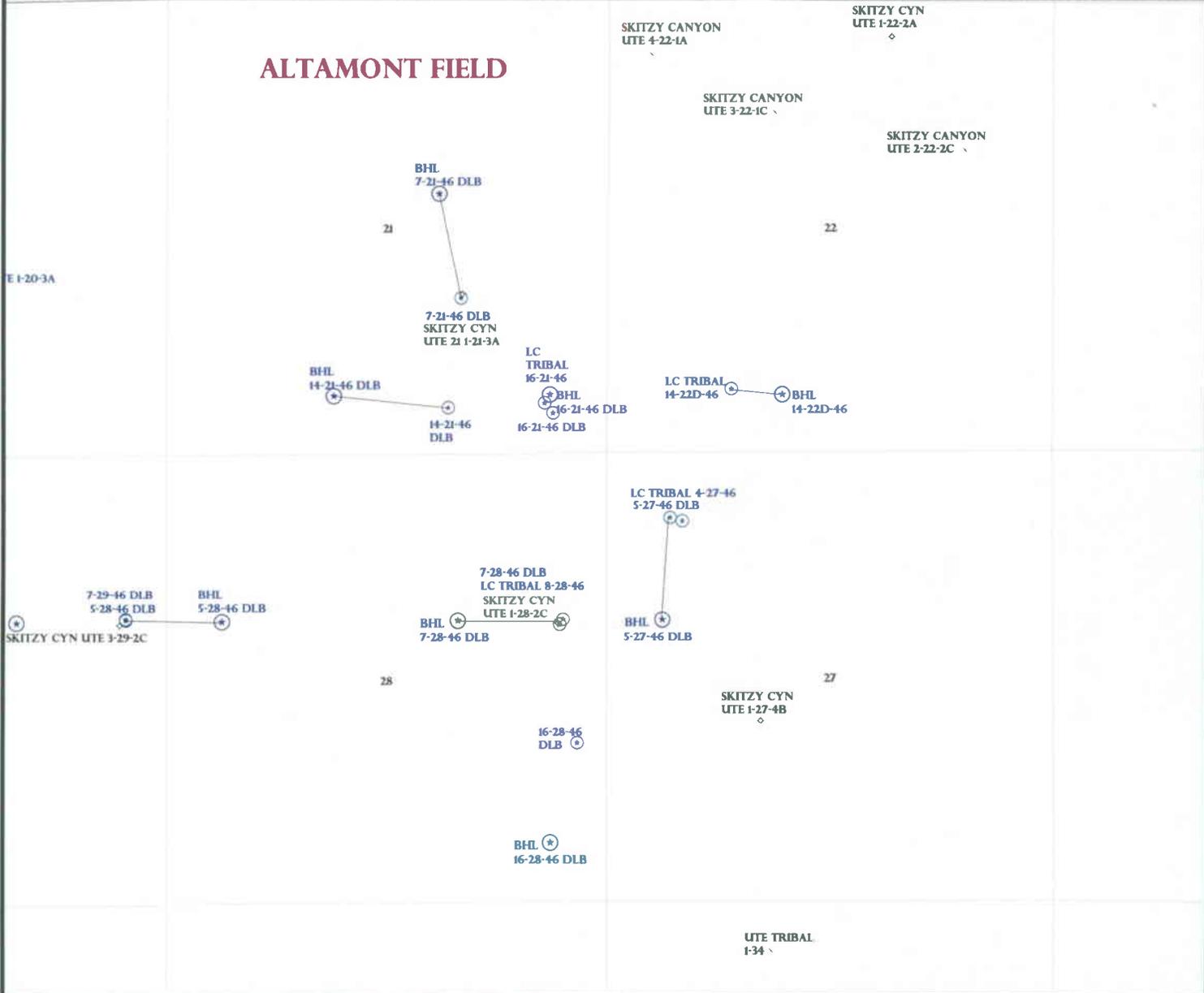
COMMENTS: _____

STIPULATIONS: _____

1- Feder Approved
2- Spacing 100'

T4S R6W

ALTAMONT FIELD



OPERATOR: BERRY PETRO CO (N2480)

SEC: 22 T.4S R.6W

FIELD: ALTAMONT (55)

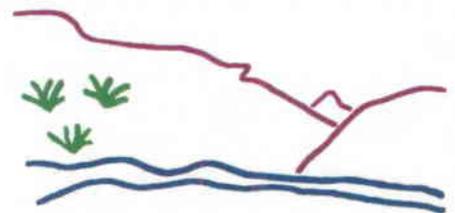
COUNTY: DUCHESNE

SPACING: R649-3-11 / DIRECTIONAL DRILLING

Field Status	
	ABANDONED
	ACTIVE
	COMBINED
	INACTIVE
	PROPOSED
	STORAGE
	TERMINATED

Unit Status	
	EXPLORATORY
	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



Utah Oil Gas and Mining



PREPARED BY: DIANA MASON
DATE: 7-MAY-2007



State of Utah

**Department of
Natural Resources**

MICHAEL R. STYLER
Executive Director

**Division of
Oil, Gas & Mining**

JOHN R. BAZA
Division Director

JON M. HUNTSMAN, JR.
Governor

GARY R. HERBERT
Lieutenant Governor

May 7, 2007

Berry Petroleum Company
Rt. 2, Box 7735
Roosevelt, UT 84066

Re: LC Tribal 14-22D-46 Well, Surface Location 714' FSL, 1477' FWL, SE SW,
Sec. 22, T. 4 South, R. 6 West, Bottom Location 650' FSL, 2071' FWL,
SE SW, Sec. 22, T. 4 South, R. 6 West, Duchesne 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 43-013-33633.

Sincerely,

A handwritten signature in black ink, appearing to read "Gil Hunt".

Gil Hunt
Associate Director

pab
Enclosures

cc: Duchesne County Assessor
Bureau of Land Management, Vernal Office

Operator: Berry Petroleum Company
Well Name & Number LC Tribal 14-22D-46
API Number: 43-013-33633
Lease: 14-20-H62-5500

Surface Location: SE SW **Sec.** 22 **T.** 4 South **R.** 6 West
Bottom Location: SE SW **Sec.** 22 **T.** 4 South **R.** 6 West

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 Dustin Doucet at (301) 538-5281

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.
5. In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.
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.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED
VERNAL FIELD OFFICE
May 2 2007
SEP 5 PM 4:05
DEPT. OF THE INTERIOR
BUREAU OF LAND MGMT

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

5. Lease Serial No. 20G-000-5500	
6. If Indian, Allottee or Tribe Name UTE	
7. Unit or CA Agreement, Name and No. N/A	
8. Lease Name and Well No. LC TRIBAL 14-22D-46	
9. API Well No. 43 013 33633	
1a. TYPE OF WORK <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER	10. Field and Pool, or Exploratory LAKE CANYON
1b. Type of Well: <input checked="" type="checkbox"/> Oil well <input type="checkbox"/> Gas well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single zone <input type="checkbox"/> Multiple zone	11. Sec., T. R. M. or BLK. and Survey or Area SEC. 22, T.4S., R.6W. U.S.B.&M.
2. Name of Operator BERRY PETROLEUM COMPANY	12. County or Parrish DUCHESNE
3a. Address 4000 SOUTH 4028 WEST RT. 2 BOX 7735, ROOSEVELT, UT. 84066	13. State UTAH
3b. Phone No. (include area code) (435) 722-1325	14. Distance in miles and direction from nearest town or post office* 11.5 MILES FROM DUCHESNE, UTAH
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface (SE/SW) 714' FSL, 1477' FWL At proposed prod. zone BHL: (SE/SW) 650' FSL 2071' FWL	15. Distance from proposed* location to nearest property of lease line, ft. (Also to nearest drig. Unit line, if any) 714'
16. No. of acres in lease 80.00	17. Spacing Unit dedicated to this well 40
18. Distance from proposed* to nearest well, drilling, completed, applied for, on this lease, ft. N/A	19. Proposed Depth 6160'
20. BLM/BIA Bond No. on file UTB000035 / RLB0005750	21. Elevations (Show whether DF, KDB, RT, GR, etc.) 7094' GR
22. Approximate date work will start* REFER TO BPC SOP PLAN	23. Estimated duration REFER TO BPC SOP PLAN

24. Attachments

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

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

25. Signature <i>Shelley E. Crozier</i>	Name (Printed/Typed) SHELLEY E. CROZIER	Date 05/02/07
Title REGULATORY & PERMITTING SPECIALIST		
Approved by (Signature) <i>Jerry Kewicka</i>	Name (Printed/Typed) JERRY KEWICKA	Date 3-6-2008
Title Assistant Field Manager Lands & Mineral Resources		
Office VERNAL FIELD OFFICE		

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 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.

*(Instructions on page 2)

RECEIVED
MAR 17 2008
DIV. OF OIL, GAS & MINING

UDO 6M
NOTICE OF APPROVAL

CONDITIONS OF APPROVAL ATTACHED



**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
VERNAL FIELD OFFICE**

170 South 500 East

VERNAL, UT 84078

(435) 781-4400



CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company: Berry Petroleum Company
Well No: LC Tribal 14-22D-46
API No: 43-013- 33633

Location: SWSE, Sec.22, T4S, R6W
Lease No: 2OG-000-5500
Agreement: N/A

Title	Name	Office Phone Number	Cell Phone Number
Petroleum Engineer:	Matt Baker	(435) 781-4490	(435) 828-4470
Petroleum Engineer:	Michael Lee	(435) 781-4432	(435) 828-7875
Petroleum Engineer:	James Ashley	(435) 781-4470	(435) 828-7874
Petroleum Engineer:	Ryan Angus	(435) 781-4430	(435) 828-7368
Geologist:	Robyn Hansen	(435) 781-2777	
Supervisory Petroleum Technician:	Jamie Sparger	(435) 781-4502	(435) 828-3913
Sapervisory NRS/Enviro Scientist:	Karl Wright	(435) 781-4484	(435) 828-7381
NRS/Enviro Scientist:	Holly Villa	(435) 781-4404	
NRS/Enviro Scientist:	Chuck Macdonald	(435) 781-4441	(435) 828-7481
NRS/Enviro Scientist:	Michael Cutler	(435) 781-3401	(435) 828-3546
NRS/Enviro Scientist:	Anna Figueroa	(435) 781-3407	(435) 828-3548
NRS/Enviro Scientist:	Verlyn Pindell	(435) 781-3402	(435) 828-3547
NRS/Enviro Scientist:	Darren Williams	(435) 781-4447	
NRS/Enviro Scientist:	Nathan Packer	(435) 781-3405	(435) 828-3545

Fax: (435) 781-3420

**A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR
FIELD REPRESENTATIVE TO INSURE COMPLIANCE**

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. **This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.**

NOTIFICATION REQUIREMENTS

Construction Activity	- The Ute Tribe Energy & Minerals Dept. shall be notified in writing 48 hours in advance of any construction activity. The Ute Tribal office is open Monday through Thursday.
Construction Completion	- Upon completion of the pertinent APD/ROW construction, notify the Ute Tribe Energy & Minerals Dept. for a Tribal Technician to verify the Affidavit of Completion.
Spud Notice (Notify Petroleum Engineer)	- Twenty-Four (24) hours prior to spudding the well.
Casing String & Cementing (Notify Supv. Petroleum Tech.)	- Twenty-Four (24) hours prior to running casing and cementing all casing strings.
BOP & Related Equipment Tests (Notify Supv. Petroleum Tech.)	- Twenty-Four (24) hours prior to initiating pressure tests.
First Production Notice (Notify Petroleum Engineer)	- Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.

**SURFACE USE PROGRAM
CONDITIONS OF APPROVAL (COAs)**

Site Specific Conditions of Approval:

- Paint tanks Olive Black
- Do not lay pipes in trees
- For any other additional stipulations, see concurrence letter.

General Conditions of Approval

- A 30' foot corridor right-of-way shall be approved. Upon completion of each pipeline in corridor, they shall be identified and filed with the Ute Tribe.
- A qualified Archaeologist accompanied by a Tribal Technician will monitor trenching construction of pipeline.
- The Ute Tribe Energy & Minerals Department is to be notified, in writing 48 hours prior to construction of pipeline.
- Construction notice shall be given to the department of the Ute Tribe workdays, which are Monday through Thursday. The Company understand that they may be responsible for costs incurred by the Ute Tribe after hours.
- The Company shall inform contractors to maintain construction of pipelines within the approved ROW's.
- The Company shall assure the Ute Tribe that "ALL CONTRACTORS, INCLUDING SUBCONTRACTORS, LEASING CONTRACTORS, AND ETC." HAVE ACQUIRED A CURRENT AND VALID Ute Tribal Business License and have "Access Permits" prior to construction, and will have these permits in all vehicles at all times.
- You are hereby notified that working under the "umbrella" of a company does not allow you to be in the field, and can be subject to those fines of the Ute Tribe Severance Tax Ordinance.
- Any deviation of submitted APD's and ROW applications the Companies will notify the Ute Tribe and BIA in writing and will receive written authorization of any such change with appropriate authorization.
- The Company will implement "Safety and Emergency Plan." The Company's safety director will ensure its compliance.
- All Company employees and/or authorized personnel (sub-contractors) in the field will have approved applicable APD's and /or ROW permits/authorizations on their person(s) during all phases of construction.
- All vehicular traffic, personnel movement, construction/restoration operations should be confined to the area examined and approved, and to the existing roadways and/or evaluated access routes.
- All personnel should refrain from collecting artifacts, any Paleontological fossils, and from disturbing any significant cultural resources in the area.
- The personnel from the Ute Tribe Energy & Minerals Department should be notified should cultural remains from subsurface deposits be exposed or identified during construction. All construction will cease.
- All mitigative stipulations contained in the Bureau of Indian Affairs Site Specific Environmental Assessment (EA) will be strictly adhered.
- Upon completion of Application for Corridor Right-of-Way, the company will notify the Ute Tribe Energy & Minerals Department, so that a Tribal Technician can verify Affidavit of Completion.

**DOWNHOLE PROGRAM
CONDITIONS OF APPROVAL (COAs)**

SITE SPECIFIC DOWNHOLE COAs:

- Production casing cement shall be a minimum 200 feet above the surface casing shoe.

All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to. The following items are emphasized:

DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder and **NOT** by the rig pumps. Test shall be reported in the driller's log.
- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- **Cement baskets shall not be run on surface casing.**
- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal Field Office.
- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.
- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.

- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM, Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the top of cement and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- **Please submit an electronic copy of all other logs run on this well in LAS format to UT_VN_Welllogs@BLM.gov. This submission will supersede the requirement for submittal of paper logs to the BLM.**
- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.

- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.
- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office Petroleum Engineers 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 shall be submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover equipment shall be removed from a well to be placed in a suspended status without prior approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30 days, prior approval of the BLM Vernal Field Office shall be obtained and notification given before resumption of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.
- Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

STATE OF UTAH
DIVISION OF OIL, GAS, AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, deepen existing wells, or to re-enter plugged and abandoned wells.
Use APPLICATION FOR PERMIT TO DRILL OR DEEPEN form for such proposals.

5. Lease Designation and Serial Number:

20G-000-5500

6. If Indian, Allottee or Tribe Name:

0

7. Unit Agreement Name:

8. Well Name and Number:

LC TRIBAL 14-22D-46

9. API Well Number:

43-013-33633

10. Field and Pool, or Wildcat:

LAKE CANYON

1. Type of Well: OIL GAS OTHER:

2. Name of Operator:

BERRY PETROLEUM COMPANY

3. Address and Telephone Number:

4000 SOUTH 4028 WEST, RT. 2 BOX 7735 ROOSEVELT, UTAH 84066 (435) 722-1325

4. Location of Well:

Footages: 714' FSL, 1477' FWL BHL: 650' FSL, 2071' FWL
QQ, Sec., T., R., M.: SE/SW SEC. 22, T4S, R6W USB&M

County: DUCHESNE,

State: UTAH

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

NOTICE OF INTENT

(Submit in Duplicate)

- Abandon
- Repair Casing
- Change of Plans
- Convert to Injection
- Fracture Treat or Acidize
- Multiple Completion
- Other ONE YEAR EXTENSION
- New Construction
- Pull or Alter Casing
- Recomplete
- Reperforate
- Vent or Flare
- Water Shut-Off

Approximate date work will start _____

SUBSEQUENT REPORT

(Submit Original Form Only)

- Abandon
- Repair Casing
- Change of Plans
- Convert to Injection
- Fracture Treat or Acidize
- Other _____
- New Construction
- Pull or Alter Casing
- Reperforate
- Vent or Flare
- Water Shut-Off

Date of work completion _____

Report results of Multiple Completions and Recompletions to different reservoirs on WELL COMPLETION OR RECOMPLETION REPORT AND LOG form.

* Must be accompanied by a cement verification report.

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

BERRY PETROEUM COMPANY RESPECTFULLY REQUESTS THAT THE APPROVED APPLICATION TO DRILL FOR THE ABOVE SUBJECT WELL BE EXTENDED FOR A PERIOD OF ONE (1) YEAR.

Approved by the
Utah Division of
Oil, Gas and Mining

STATE BOND #RLB0005651

Date: 05-08-08
By: [Signature]

COPY SENT TO OPERATOR

Date: 5.12.2008
Initials: KS

13

Name & Signature: SHELLEY E. CROZIER [Signature] Title: REGULATORY & PERMITTING SPECIALIST Date: 05/05/08

(This space for Federal or State office use)

RECEIVED
MAY 06 2008
DIV. OF OIL, GAS & MINING

RESET

**Application for Permit to Drill
Request for Permit Extension
Validation**

(this form should accompany the Sundry Notice requesting permit extension)

API: 43-013-33633
Well Name: LC TRIBAL 14-22D-46
Location: (SE/SW) 714' FSL, 1477' FWL, SEC. 22-T4S-R6W
Company Permit Issued to: BERRY PETROLEUM COMPANY
Date Original Permit Issued: 5/7/2007

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision.

Following is a checklist of some items related to the application, which should be verified.

If located on private land, has the ownership changed, if so, has the surface agreement been updated? Yes No

Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location? Yes No

Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well? Yes No

Have there been any changes to the access route including ownership, or right-of-way, which could affect the proposed location? Yes No

Has the approved source of water for drilling changed? Yes No

Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation? Yes No

Is bonding still in place, which covers this proposed well? Yes No

Shelley Crozier
Signature

5/5/2008
Date

Title: Regulatory & Permitting Specialist

Representing: Berry Petroleum Company

RECEIVED
MAY 06 2008
DIV. OF OIL, GAS & MINING

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

FORM 9

5. LEASE DESIGNATION AND SERIAL NUMBER:
~~200-000-5500~~ 14-20-H62-3300

SUNDRY NOTICES AND REPORTS ON WELLS

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.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT or CA AGREEMENT NAME:
N/A

8. WELL NAME and NUMBER:
LC TRIBAL 14-22D-46

9. API NUMBER:
4301333633

10. FIELD AND POOL, OR WILDCAT:
LAKE CANYON

1. TYPE OF WELL OIL WELL GAS WELL OTHER _____

2. NAME OF OPERATOR:
BERRY PETROLEUM COMPANY

3. ADDRESS OF OPERATOR:
4000 S. 4028 W. CITY Roosevelt STATE UT ZIP 84066 PHONE NUMBER: (435) 722-1325

4. LOCATION OF WELL

FOOTAGES AT SURFACE: 714' FSL, 1477' FWL BHL: 650' FSL, 2071' FWL COUNTY: DUCHESNE

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SESW 22 T4S R6W STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input checked="" type="checkbox"/> OTHER: 1 YR. EXTENSION
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

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

BERRY PETROLEUM COMPANY RESPECTFULLY REQUESTS THAT THE APPROVED APPLICATION TO DRILL FOR THE ABOVE SUBJECT WELL BE EXTENDED FOR A PERIOD OF ONE (1) YEAR.

Approved by the
Utah Division of
Oil, Gas and Mining

STATE BOND # RLB0005651

COPY SENT TO OPERATOR
Date: 5.11.2009
Initials: KS

Date: 05-06-09
By: [Signature]

NAME (PLEASE PRINT) SHELLEY E. CROZIER TITLE REGULATORY & PERMITTING SPECIALIST

SIGNATURE [Signature] DATE 5/5/2009

(This space for State use only)

RECEIVED
MAY 06 2009

**Application for Permit to Drill
Request for Permit Extension
Validation**

(this form should accompany the Sundry Notice requesting permit extension)

API: 43-013-33633
Well Name: LC TRIBAL 14-22D-46
Location: (SE/SW) 714' FSL, 1477' FWL, SEC. 22-T4S-R6W
Company Permit Issued to: BERRY PETROLEUM COMPANY
Date Original Permit Issued: 5/7/2007

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision.

Following is a checklist of some items related to the application, which should be verified.

If located on private land, has the ownership changed, if so, has the surface agreement been updated? Yes No

Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location? Yes No

Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well? Yes No

Have there been any changes to the access route including ownership, or right-of-way, which could affect the proposed location? Yes No

Has the approved source of water for drilling changed? Yes No

Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation? Yes No

Is bonding still in place, which covers this proposed well? Yes No

Shelley E. Crozier
Signature

5/5/2009
Date

Title: Regulatory & Permitting Specialist

Representing: Berry Petroleum Company

RECEIVED

MAY 06 2009

DIV. OF OIL, GAS & MINING

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

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.

5. Lease Serial No.
14-20-H62-5500

6. If Indian, Allottee or Tribe Name
UTE

SUBMIT IN TRIPLICATE – Other instructions on page 2.

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		7. If Unit of CA/Agreement, Name and/or No. N/A
2. Name of Operator BERRY PETROLEUM COMPANY		8. Well Name and No. LC TRIBAL 14-22D-46
3a. Address 4000 SOUTH 4028 WEST, RT. 2, BOX 7735 ROOSEVELT, UTAH 84066	3b. Phone No. (include area code) (435) 722-1325	9. API Well No. 4301333633
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 714' FSL, 1477' FWL SE/SW SEC. 22-T4S-R6W		10. Field and Pool or Exploratory Area LAKE CANYON
		11. Country or Parish, State DUCHESNE COUNTY, UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other <u>2 YR EXTENSION</u>
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> 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 recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

BERRY PETROLEUM COMPANY RESPECTFULLY REQUESTS THAT THE APPROVED APPLICATION TO DRILL FOR THE ABOVE SUBJECT WELL BE EXTENDED FOR A PERIOD OF TWO (2) YEARS.

RECEIVED
 FEDERAL FIELD OFFICE
 APR 5 PM 1:10
 DEPT OF THE INTERIOR
 BUREAU OF LAND MGMT

CONDITIONS OF APPROVAL ATTACHED

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)
KATHY K. FIELDSTED Title SR. REGULATORY AND PERMITTING TECH.

Signature *Kathy K. Fieldsted* Date 03/04/2010

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by *Casey J. Jorgle* Title Petroleum Engineer Date MAR 19 2010

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 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 page 2)



APR 06 2010

CONDITIONS OF APPROVAL

Berry Petroleum Company

Notice of Intent APD Extension

Lease: 20G-000-5500
Well: LC Tribal 14-26D-46
Location: NWSE Sec 26-T4S-R6W

An extension for the referenced APD is granted with the following conditions:

1. The extension and APD shall expire on March 15th, 2012.
2. No other extension shall be granted.

If you have any other questions concerning this matter, please contact Carey Doyle of this office at (435) 781-3406

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9 5. LEASE DESIGNATION AND SERIAL NUMBER: 14-20-H62-5500
SUNDRY NOTICES AND REPORTS ON WELLS 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.	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE 7. UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL Oil Well	8. WELL NAME and NUMBER: LC TRIBAL 14-22D-46
2. NAME OF OPERATOR: BERRY PETROLEUM COMPANY	9. API NUMBER: 43013336330000
3. ADDRESS OF OPERATOR: 4000 South 4028 West Rt 2 Box 7735 , Roosevelt, UT, 84066	PHONE NUMBER: 303 999-4044 Ext
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0714 FSL 1477 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SESW Section: 22 Township: 04.0S Range: 06.0W Meridian: U	9. FIELD and POOL or WILDCAT: ALTAMONT COUNTY: DUCHESNE STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 5/7/2011	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> CHANGE WELL NAME
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> CONVERT WELL TYPE
<input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> NEW CONSTRUCTION
	<input type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> PLUG BACK
	<input type="checkbox"/> PRODUCTION START OR RESUME	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	<input type="checkbox"/> TEMPORARY ABANDON
	<input type="checkbox"/> TUBING REPAIR	<input type="checkbox"/> VENT OR FLARE	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> WATER SHUTOFF	<input type="checkbox"/> SI TA STATUS EXTENSION	<input checked="" type="checkbox"/> APD EXTENSION
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> OTHER	OTHER: _____

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

BERRY PETROLEUM RESPECTFULLY REQUESTS THAT THE APPROVED APPLICATION TO DRILL THE ABOVE SUBJECT WELL BE EXTENDED FOR THE PERIOD OF ONE (1) YEAR.

Approved by the Utah Division of Oil, Gas and Mining

Date: May 03, 2010

By:

NAME (PLEASE PRINT) Kathy K. Fieldsted	PHONE NUMBER 435 722-1325	TITLE Sr. Regulatory & Permitting Tech.
SIGNATURE N/A	DATE 4/29/2010	



The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

Request for Permit Extension Validation Well Number 43013336330000

API: 43013336330000

Well Name: LC TRIBAL 14-22D-46

Location: 0714 FSL 1477 FWL QTR SESW SEC 22 TWP 040S RNG 060W MER U

Company Permit Issued to: BERRY PETROLEUM COMPANY

Date Original Permit Issued: 5/7/2007

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

- If located on private land, has the ownership changed, if so, has the surface agreement been updated?
• Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?
• Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?
• Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?
• Has the approved source of water for drilling changed?
• Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?
• Is bonding still in place, which covers this proposed well?

Approved by the Utah Division of Oil, Gas and Mining

Signature: Kathy K. Fieldsted

Date: 4/29/2010

Title: Sr. Regulatory & Permitting Tech. Representing: BERRY PETROLEUM COMPANY Date: May 03, 2010

By: [Signature]



GARY R. HERBERT
Governor

GREGORY S. BELL
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

May 18, 2011

43 013 33633
LC Tribal 14-22D-46
4S 6W 22

Kathy Fieldsted
Berry Petroleum Company
Rt. 2, Box 7735
Roosevelt, UT 84066

Re: APDs Rescinded for Berry Petroleum Company
Duchesne County

Dear Ms. Fieldsted:

Enclosed find the list of APDs that are being rescinded per your request to Berry Petroleum Company. No drilling activity at these locations has been reported to the division. Therefore, approval to drill these wells is hereby rescinded, effective May 11, 2011.

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
Bureau of Land Management, Vernal



43-013-33592 LC Tribal 10-9D-56

43-013-33629 LC Tribal 15-3D-56

→ 43-013-33633 LC Tribal 14-22D-46

43-013-33637 Ute Tribal 1-29D-55

43-013-33589 LC Tribal 14-34-46

43-013-33590 LC Tribal 12-34-46

43-013-33695 Ute Tribal G-21D-55



GARY R. HERBERT
Governor

GREGORY S. BELL
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

May 18, 2011

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LC Tribal 14-22D-46
4S 6W 22

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