

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

(Other instructions on reverse side)

5. Lease Designation and Serial No.
W-61401 U-61401

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

7. Unit Agreement Name
Badlands Unit (Pending Approval)

8. Farm or Lease Name
Badlands Federal

9. Well No.
#1-31

10. Field and Pool, or Wildcat
Wildcat Undesignated

11. Sec., T., R., M., or Bk. and Survey or Area
Sec. 31, T8S - R23E

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work
DRILL [X] DEEPEN [] PLUG BACK []

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

2. Name of Operator
303/628-9211 1050-17th St., Suite 400

Quintana Petroleum Corp. Denver, CO 80265

3. Address of Operator
303/322-7878 P.O. Box 44065

Permitco Inc. - Agent

4. Location of Well (Report location clearly and in accordance with any rules and regulations of the State of Utah)
At surface 2110' FNL and 1910' FWL

At proposed prod. zone SE NW

RECEIVED
OCT 11 1988

14. Distance in miles and direction from nearest town or post office*
28 miles southeast of Vernal, Utah

12. County or Parrish
13. State
Uintah Utah

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. line, if any)
730'

16. No. of acres owned or leased
17. No. of acres assigned to this well
640 160

18. Distance from proposed location* to nearest well, drilling, completed, or applied for, on this lease, ft.
none

19. Proposed depth
20. Rotary or cable tools
7900' Mesa Verde Rotary

21. Elevations (Show whether DF, RT, GR, etc.)
4890' GR 4878'

22. Approx. date work will start*
Immediately upon approval of this application.

23. PROPOSED CASING AND CEMENTING PROGRAM

Table with 5 columns: Size of Hole, Size of Casing, Weight per Foot, Setting Depth, Quantity of Cement. Rows include 12-1/4" hole with 8-5/8" casing and 7-7/8" hole with 5-1/2" casing.

Quintana Petroleum Corp. proposes to drill a well to 7900' to test the Wasatch and Mesa Verde formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of Utah requirements.

See Onshore Order No. 1 attached.

I hereby certify that Quintana Petroleum Corp. is authorized by proper lease interest owners to conduct operations at the above mentioned location. Bonding will be provided by the operator, Quintana Petroleum Corp.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

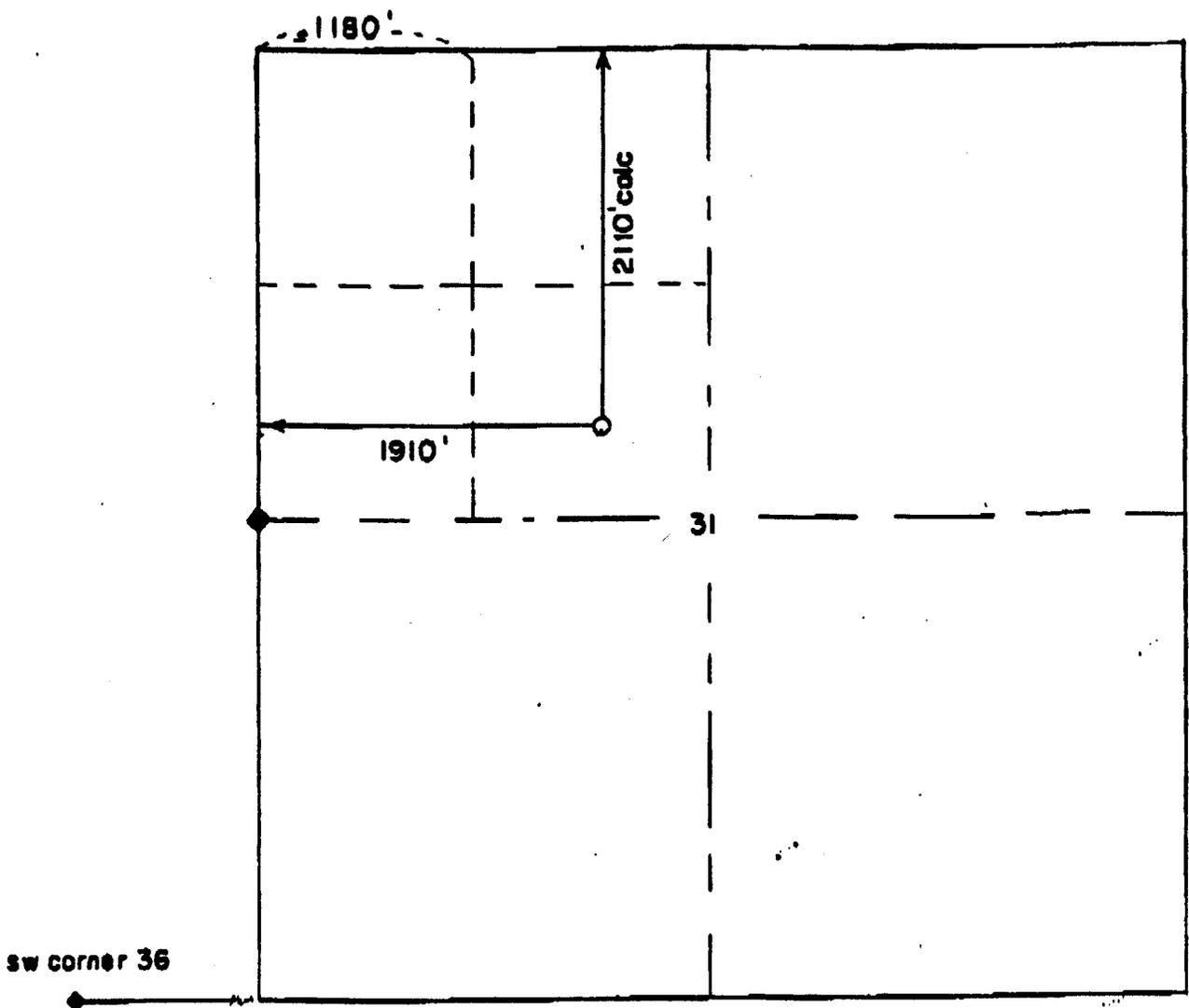
24. Signed [Signature] Title Consultant for Quintana Petroleum Corp. Date 10/6/88

(This space for Federal or State office use)
Permit No. 43-047-31857 Approval Date APPROVED BY THE STATE OF UTAH DIVISION OF OIL, GAS, AND MINING

Approved by [Signature] Title [Signature] DATE: 10-17-88

*See Instructions On Reverse Side
WELL SPACING: 15-3-2

Well Location Plat



WELL LOCATION DESCRIPTION:
 QUINTANA PETROLEUM, Badlands Federal 1-31
 2110' FNL & 1910' FWL
 Section 31, T.8 S., R.23 E., SLM
 Uintah County, Utah
 4878' ground elevation
 Reference: N 81 22'W, 567', 4890' grd.



The above plat is true and correct to my knowledge and belief.

4 October 1988

Gerald G. Huddleston
 Gerald G. Huddleston, LS

QUINTANA PETROLEUM CORPORATION

1050 SEVENTEENTH STREET
SUITE 400
DENVER, COLORADO 80265
(303) 828-9211

September 19, 1988

Bureau of Land Management
17 South 500 East
Vernal, UT 84078

Re: Badlands Federal #1-31
SE NW Section 31, T8S-R23E
Uintah County, Utah

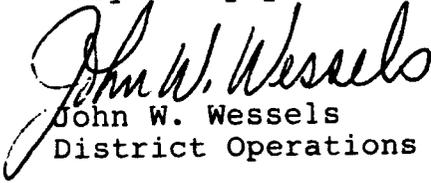
Gentlemen:

This letter is to inform you that Permitco is authorized to act as Agent and to sign documents on behalf of Quintana Petroleum Corporation when necessary for filing county, state and federal permits including Onshore Order No. 1 Right-of-Way applications, etc. for the referenced well.

It should be understood that Permitco is acting as Agent only in those matters stated above and is not responsible for drilling, completion, production or compliance with regulations.

Quintana Petroleum Corporation agrees to accept full responsibility for operations conducted in order to drill, complete and produce the above-mentioned well.

Very truly yours,


John W. Wessels
District Operations Manager

cc: Permitco - Lisa Green

jp

CONFIDENTIAL - TIGHT HOLE

ONSHORE OIL & GAS ORDER NO. 1;

Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

BADLANDS FEDERAL #1-31
2110' FNL and 1910' FWL
Sec. 31, T8S - R23E
Uintah County, Utah

Prepared For:

QUINTANA PETROLEUM CORPORATION

By:

PERMITCO INC.
P.O. Box 44065
Denver, Colorado 80201-4065
303/322-7878

Copies Sent To:

- 4 - BLM - Vernal, Utah
- 1 - Utah Division of Oil Gas & Mining - SLC, UT
- 4 - Quintana Petroleum Corp - Denver, CO



Permitco Incorporated
A Petroleum Permitting Company

ONSHORE OIL & GAS ORDER NO. 1
Quintana Petroleum Corporation
Badlands Federal 1-31
2110' FNL and 1910' FWL
Sec. 31, T8S - R23E
Uintah County, Utah

CONFIDENTIAL - TIGHT HOLE

DRILLING PROGRAM

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Order No. 1, and the approved plan of operations. The operator is fully responsible for the actions of his subcontractor. A copy of these conditions will be furnished to the field representative to ensure compliance.

1. The surface formation and estimated formation tops to be encountered are as follows:

<u>Formation</u>	<u>Depth</u>	<u>Subsea</u>
Uintah	Surface	
Green River "X" Marker	3590'	+1288'
Green River "Z" Marker	4540'	+ 338'
Wasatch	5110'	- 232'
Mesa Verde	7410'	-2532'
T.D.	7900'	-3022'

2. a. The estimated depths at which oil, gas, water or other mineral bearing zones are expected to be encountered are as follows:

<u>Substance</u>	<u>Formation</u>	<u>Anticipated Depth</u>
Oil and Gas	Green River "X"	3590'
Gas	Wasatch	5110'
Gas	Mesa Verde	7410'

All shows of fresh water and minerals will be reported and adequately protected. If requested a sample will be taken of any water flows and furnished to the BLM in Vernal, Utah for analysis. All oil and gas shows will be tested to determine commercial potential.

- b. Quintana Petroleum Corp. plans to protect all surface fresh water zones by running a sufficient amount of surface casing.



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ONSHORE OIL & GAS PERMITS NO. 1
Quintana Petroleum Corporation
Badlands Federal 1-31
2110' FNL and 1910' FWL
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Uintah County, Utah

CONFIDENTIAL - TIGHT HOLE

DRILLING PROGRAM

Production

Type and Amount

Cement design and actual volume will be determined upon inspection of open hole logs.

c. Auxiliary Equipment will be as follows:

1. Kelly cock.
2. A full opening safety valve will be on the floor at all times, with cross overs to all drill collars.
3. Necessary solids control equipment.
4. Pit Level Indicator and Flow Show

5. Drilling fluid will be as follows:

<u>Interval</u>	<u>Mud Type</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>F/L</u>	<u>PH</u>
0-250'	Gel/Lime Spud Mud	8.8-9.2	26-30	N/C	--
250-3000'	Gel/Lime	8.8-9.2	26-30	N/C	--
3000-T.D.	Dispersed	9.0-9.3	35-40	8-10	--

There will be sufficient weighted material on location to control a kick should one occur.

Monitoring of the system will be done visually and as indicated above (4C4).

6. Coring, logging and testing programs are as follows:

- a. No conventional cores are anticipated.
- b. The logging program will consist of an FDC/CNL/GR/CAL will be run from T.D. to 1500'. A DIL/SFL/GR and BHC Sonic will be run from T.D. to base of surface casing.
- c. No DST's are anticipated.



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ONSHORE OIL & GAS ORDER NO. 1
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DRILLING PROGRAM

Whether the well is completed as a dry hole or as a producer, "Well Completion or Recompletion Report and Log" (Form 3160-4) will be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3164. Two copies of all logs, core descriptions, core analysis, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, will be filed with Form 3160-4. Samples (cuttings, fluids, and/or gases) will be submitted if requested by the District Manager.

7. Abnormal conditions, bottom hole pressures and potential hazards.
 - a. The maximum bottom hole pressure to be expected is 3400 psi.
 - b. Quintana Petroleum Corporation plans to spud the Badlands Federal #1-31 immediately upon approval of this application. Quintana Petroleum Corp. intends to complete the well within approximately one month after the well has reached T.D.

8. Other Information
 - a. Location construction is planned to commence upon approval of this application.
 - b. It is anticipated the duration of drilling will be 16 days.
 - c. The proposed completion program is as follows: Perforate zones of interest, frac and acidize as necessary and place well on production.
 - d. The operator will contact the Bureau of Land Management in Vernal, Utah at least 48 hours prior to beginning any dirt work on this location.
 - e. No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the AO. If operations are to be suspended, prior approval of the AO will be obtained and notification given before resumption of operations.



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DRILLING PROGRAM

- f. The spud date will be reported orally to the AO Vernal BLM Office within 24 hours after spudding. If the spudding occurs on a weekend or holiday, the report will be submitted on the following regular work day. The oral report will be followed up with a Sundry Notice.
- g. In accordance with NTL-1, this well must be reported on Form 3160.6, "Monthly Report of Operations," starting with the month in which operations commence and continuing each month until the well is physically plugged and abandoned. This report should be filed in duplicate directly with the BLM, Craig District Office.
- h. Immediate Report: Accidental spills, blowouts, fires, leaks, or any other unusual occurrences shall be promptly reported in accordance with the requirements of NTL-3A or its revision.
- i. If the well is successfully completed for production, then the AO will be notified when the well is placed in a producing status. Such notification will be sent by telegram or other written communication, no later than 5 days following the date on which the well is placed on production. Such notification may be provided orally if confirmed in writing, and must be received in this office not later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1. Operator Name
 - 2. Well name, number and location
 - 3. Date well was placed on production
 - 4. The lease, or communitized tract, or unit participating area to which the well's production is attributable.
- j. Pursuant to NTL-2B requirements regarding disposal facilities for new wells, this is authorization for unlined pit disposal of the water produced from this well for a period of 90 days from the date of initial production for sales purposes. During this period, an application for approval for permanent disposal method, along with the required water analysis and other information, must be submitted for the AO's approval.



DRILLING PROGRAM

- j. (cont.) Failure to timely file an application with the time allowed will be considered an incident of non-compliance, and will be grounds for issuing a shut-in order until the application is submitted.
- k. Pursuant to NTL-4A, lessees or operators are authorized to vent/flare gas during initial well evaluation tests, not exceeding a period of 30 days or the production of 50 MMCF of gas, whichever occurs first. An application must be filed with the AO and approval received, for any venting/flaring of gas beyond the initial 30 day or authorized test period.
- l. A schematic facilities diagram as required by 43 CFR 3162.7-2, 3162.7-3 and 3162.7-4 shall be submitted to the Vernal BLM Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in 43 CFR 3162.7 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with 43 CFR 3162.7-4.
- m. No well abandonment operations will begin without the prior approval of the AO. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval will be obtained from the AO.

SUBMITTAL OF THE THREE ABANDONMENT SUNDRY NOTICES
(FORM 3160-5) AS PER ONSHORE ORDER NO. 1 WILL BE:

- 1. Request for Approval to Abandon
 - a. Proposed plugging procedures, or
 - b. Confirmation of verbal plugging procedures (prompt confirmation required)
- 2. Subsequent Report of Abandonment
 - a. "Other" category marked - executed plugging procedures (within 30 days following completion of abandonment)
- 3. Subsequent Report of Abandonment
 - a. "Other" category marked - final abandonment after surface rehabilitation completion.



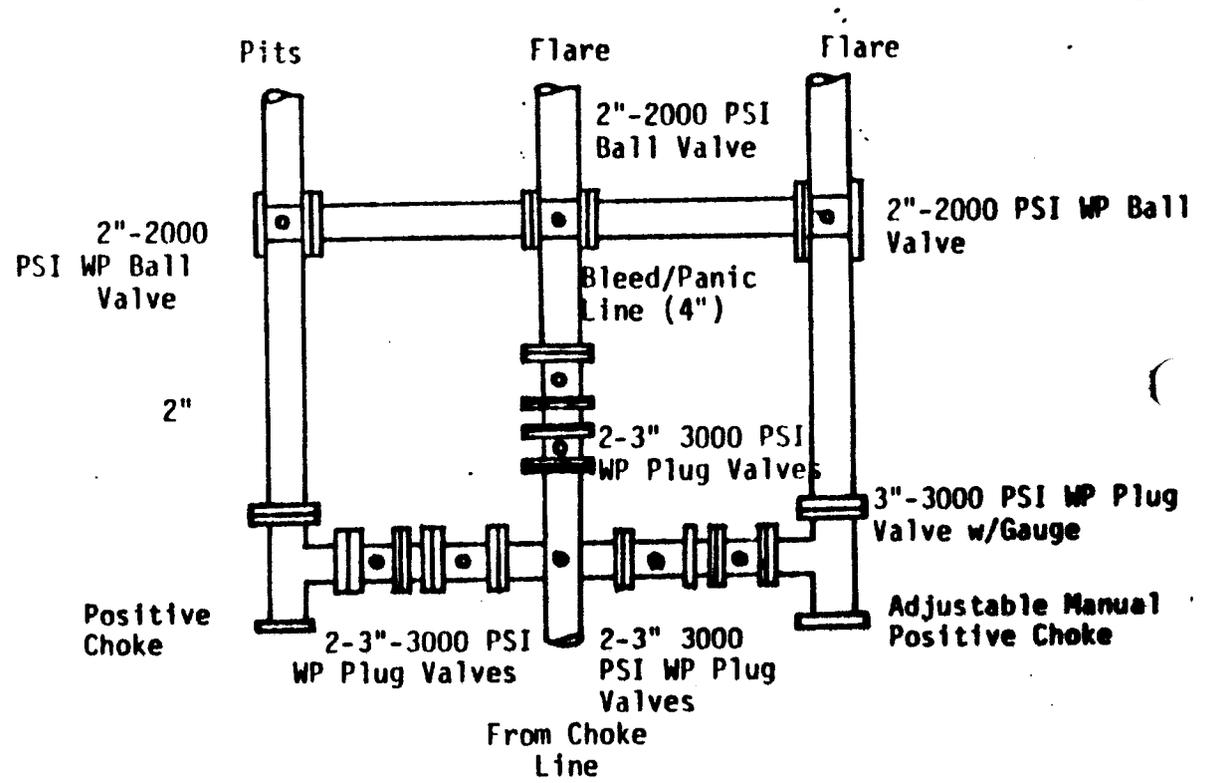
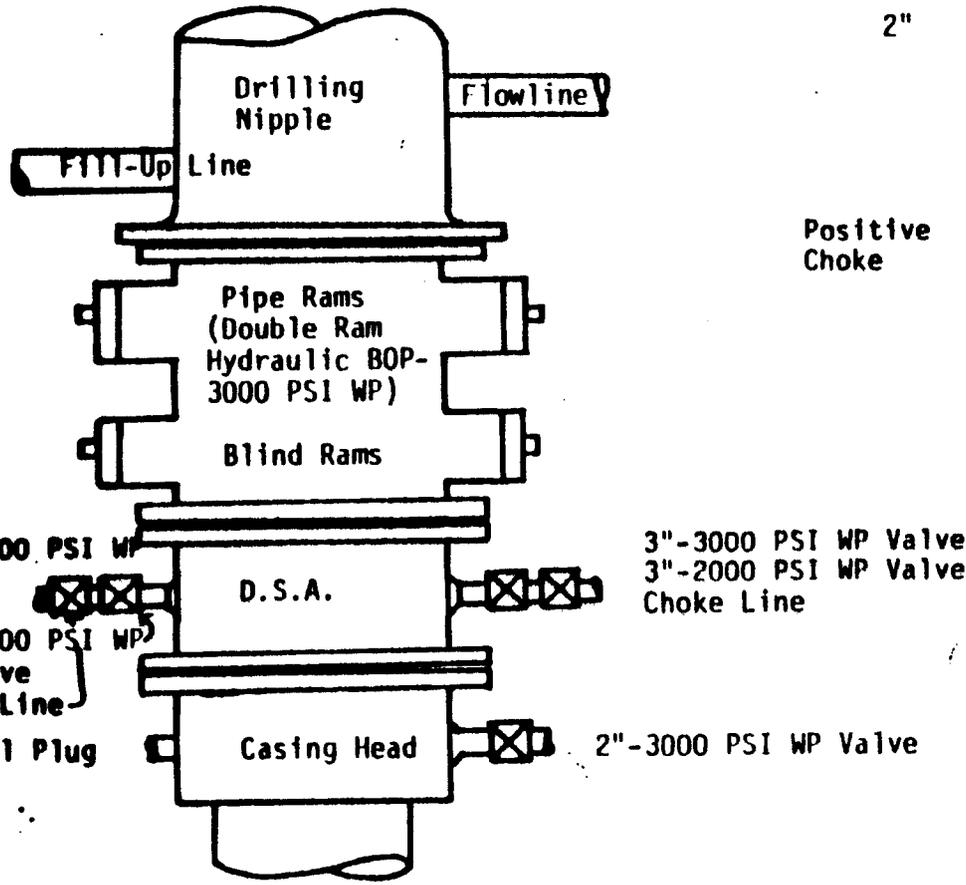
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Quintana Petroleum Corporation
Badlands Federal 1-31
2110' FNL and 1910' FWL
Sec. 31, T8S - R23E
Uintah County, Utah

CONFIDENTIAL - TIGHT HOLE

DRILLING PROGRAM

- n. Subsequent report will indicate where plugs were placed and the current status of surface restoration. Final abandonment will not be approved until the surface reclamation work required by the approved abandonment notice has been completed to the satisfaction of the AO or his representative, or the appropriate surface managing agency.
- o. Pursuant to Onshore Oil and Gas Order No. 1, lessees and operators have the responsibility to see that their exploration, development production, and construction operations are conducted in a manner which conforms with applicable Federal laws and regulations and with State and local laws and regulations to the extent that such State and local laws are applicable to operations on Federal or Indian lands.
- p. If air drilling, the operator shall control blowby line discharge dust by use of water injection or any other acceptable method. The blowby line discharge shall be a minimum of 100 feet from the well head and be directed into the blowby pit in such a manner as to allow containment of drill bit cuttings and waste in the blowby pit.

PLAIN VIEW-CHOKE MANIFOLD



The hydraulic closing unit will be located in the parts house, 85' from the wellhead. Choke & bleed/panic lines will go to the pit and flare.

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Uintah County, Utah

SURFACE USE PLAN

ONSHORE OIL & GAS ORDER NO. 1

Thirteen Point Surface Use Plan

1. Existing Roads

- a. The proposed well site is located 28 miles southeast of Vernal, Utah.
- b. Directions to the location from Vernal, Utah are as follows:

From Vernal at the intersection of Highway 40 and the Bonanza turnoff go southeasterly on the highway for 21.6 miles. Turn right on an existing upgraded road and go 2/10 mile. Turn left onto the Glen Bench Road and go 7.7 miles. Turn left again and go 4.3 mile to the N. Chapita #1-36 turnoff. Proceed into the wellsite and continue an additional 7000' in a northeasterly direction to the location.
- c. For location of access roads within a 2-Mile radius, see Map #1.
- d. Improvement to the existing access will not be necessary.
- e. All existing roads will be maintained and kept in good repair during all drilling and completion operations associated with this well.
- f. Existing roads and newly constructed roads on surface under the jurisdiction of any Surface Managing Agency shall be maintained in accordance with the standards of the SMA.
- g. A right-of-way application will be submitted for new access across Sec. 36, T8S - R22E.
- h. A copy of the ROW grant shall be kept with the dirt contractor during construction and thereafter kept on location with the complete copy of the approved A.P.D.

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SURFACE USE PLAN

2. Planned Access Roads

- a. The last 7000 feet will be new access road and will be flatbladed initially during drilling and completion operations. It will have a maximum disturbed width of 30 feet with a running surface of 18 feet. This access road will be crowned and ditched if production is established. Appropriate water control will be installed to control erosion.
- b. The maximum grade will be approximately 5%.
- c. No turnouts are planned.
- d. The access road was centerline flagged at the time of staking.
- e. Drainage will be installed as deemed necessary by the dirt contractor. No drainages shall be blocked by loose dirt or debris.
- f. One low water crossing will be installed as shown on Map #1.
- g. No cattleguards will be necessary.
- h. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
- i. Surfacing material may be necessary depending on weather conditions.
- j. Access roads and surface disturbing activities will conform to standards outlined in the USGS Publication (1978) Surface Operating Standards for Oil and Gas Development.
- k. If the well is productive, the road shall be upgraded to meet the standards of the anticipated traffic flow and all-weather road requirements. Upgrading shall include ditching, draining, graveling, crowning, and capping the roadbed as necessary to provide a well constructed safe road. Prior to upgrading, the road shall be cleared of any snow cover and allowed to dry completely. Traveling off the 30 foot

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SURFACE USE PLAN

2. Planned Access Roads (cont.)
 - k. (cont.) right-of-way will not be allowed. Road drainage crossings shall be of the typical dry creek drainage crossing type. Crossings shall be designed so they will not cause siltation or accumulation of debris in the drainage crossing nor shall the drainages be blocked by the roadbed. Erosion of drainage ditches by runoff water shall be prevented by diverting water off at frequent intervals by means of cutouts. Upgrading shall not be allowed during muddy conditions. Should mud holes develop, they shall be filled in and detours around them avoided.

3. Location of Existing Wells Within a 1-Mile Radius of the Proposed Location. (See Map #1).
 - a. Water Wells -none
 - b. Injection or disposal wells -none
 - c. Producing Wells - one
 - d. Drilling Wells - none
 - e. Shut-in Wells - none
 - f. Abandoned Wells - none

4. Location of Tank Batteries and Production Facilities.
 - a. All permanent structures (onsite for six months or longer) constructed or installed (including oil well pump jacks) will be painted a non-reflective earthtone color to match one of the standard environmental colors, as determined by the Rocky Mountain Five State Interagency 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 Tan.

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SURFACE USE PLAN

4. Production Facilities (cont.)

- b. If a tank battery is constructed on this lease, it will be surrounded by a dike of sufficient capacity to contain at least 1-1/2 times the storage capacity of the battery. The integrity of the dike must be maintained.
- c. If commercial production is established, a Sundry Notice with a production facility layout will be submitted.
- d. All loading lines will be placed inside the berm surrounding the tank battery.
- e. Any necessary pits will be properly fenced to prevent any wildlife entry. The production pit will be flagged overhead.
- f. All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to.
- g. All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the District Manager.
- h. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed.
- i. Gas meter runs for each well will be located within 500 feet of the wellhead. The gas flowline will be buried from the wellhead to the meter and 500 feet downstream of the meter run or any production facilities. Meter runs will be housed and/or fenced.
- j. All access roads will be upgraded to Class III standards and maintained as necessary to prevent erosion and accommodate year-round traffic.
- k. The road will be maintained in a safe useable condition.



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SURFACE USE PLAN

5. Location and Type of Water Supply

- a. All water needed for drilling purposes will be obtained from the White River located in the Uintah and Ouray Indian Reservation in the NE/4 of Section 17, T9S - R22E.
- b. Water will be trucked to location over the roads marked on Map #1.
- c. No water well is to be drilled on this lease.

6. Source of Construction Material

- a. Surface and subsoil materials in the immediate area will be utilized.
- b. Any gravel used will be obtained from a commercial source.
- c. The use of materials under BLM jurisdiction will conform with 43 CFR 3610.2.3. Construction material will not be located on lease.
- d. No construction materials will be removed from Federal land.

7. Methods of Handling Waste Disposal

- a. The reserve pit will not be lined unless porous material is encountered during construction of the reserve pit. The bottom of the reserve pit shall not be in fill material.
- b. Burning will not be allowed. All trash will be contained in a trash cage and its contents removed at the end of drilling operations and hauled to an approved disposal sight. The road and pad will be kept litter free.
- c. Produced waste water will be confined to a unlined pit for a period not to exceed 90 days after initial production. During the 90-day period, an application for approval of a permanent disposal method and location, along with the required water analysis, will be submitted for the District Manager's approval.



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SURFACE USE PLAN

7. Methods for Handling Waste Disposal (cont.)

- d. Drill cuttings are to be contained and buried in the reserve pit.
- e. Any salts and/or chemicals which are an integral part of the drilling system will be disposed of in the same manner as the drilling fluid.
- f. A chemical porta-toilet will be furnished with the drilling rig.
- g. The produced fluids will be produced into a test tank until such time as construction of production facilities is completed. Any spills of oil, gas salt water or other produced fluids will be cleaned up and removed.
- h. More than one pit for produced water on production facilities must be justified.

8. Ancillary Facilities

- a. There are no airstrips, camps, or other facilities planned during the drilling of the proposed well.

9. Well Site Layout

- a. The reserve pit will be located on the northeast corner of the location. The stockpiled topsoil will be stored on the west side of the wellpad. Pit subsoil will be stockpiled on the north side of the pit. Access to the wellpad will be from the southwest.
- b. Diversion ditches will be constructed on the north, west and south sides of the location.
- c. See Diagram #1 for rig layout. See Diagram #2 for cross section of drill pad. See Diagram #3 for cuts and fills.

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SURFACE USE PLAN

9. Wellsite Layout (cont.)

- d. The location of mud tanks; reserve pit, trash cage; pipe racks; living facilities and soil stockpiles will be shown on Diagrams #1 and #3.
- e. The blooie pit will be located 150' from the well head on the southeast corner of the pad.
- f. During construction, all brush will be removed from the wellpad and access road and stockpiled separately from the topsoil.
- g. During construction 4-6 inches of topsoil will be removed from the cut areas only and stockpiled separately on the west side of the location to be used later during the reclamation process.
- h. All pits will be fenced with a wire mesh fence and topped with at lease one strand of barbed wire. The reserve pit will be fenced on three sides before drilling starts. The fourth side will be fenced as soon as the drilling is completed. Any hydrocarbons on the pit will be removed from the pit as soon as possible after drilling operations are completed. Pits will be fenced and maintained until clean-up.
- i. The fence will be constructed as prescribed in the USGS Publication (1978) Surface Operating Standards for Oil and Gas Development. Alternatives to the prescribed standards shall be submitted to the Authorized Officer for approval.

10. Reclamation

- a. Immediately upon well completion, the location and surrounding area will be cleared of all debris, materials, trash and junk not required for production.
- b. Before any dirt work to restore the location takes place, the reserve pit must be completely dry and all cans, barrels, pipe, etc. will be removed. The reserve pit and that portion of the location and access road not needed for production facilities/operations will be reclaimed. The reserve pit will be reclaimed within 180 days from the date of well completion.



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SURFACE USE PLAN

10. Reclamation of Surface (cont.)

- c. All disturbed areas will be recontoured to approximate the natural contours.
- d. The stockpiled topsoil will be evenly distributed over the disturbed areas.
- e. The reserve pit and that portion of the location and access road not needed for production and production facilities will be reclaimed as described in the reclamation section. Enough topsoil will be kept to reclaim the remainder of the location at a future date. This remaining stockpile of topsoil will be seeded in place using the prescribed seed mixture.
- f. Waste materials will be disposed of as stated in #7 of this Surface Use Plan.
- g. Prior to reseeding, all disturbed areas, including the access roads, will be scarified and left with a rough surface (new access only).
- h. Seed will be broadcast or drilled at the time specified by the BLM. If broadcast, a harrow or some other implement will be dragged over the seeded area to assure seed coverage and the seed mixture will be proportionately larger (double the lbs. per acres).
- i. An appropriate seed mixture will be determined by the BLM at the time the restoration activities are scheduled to begin. All seeding will be done from September 30th until the ground freezes.
- j. At such time as the well is plugged and abandoned the operator will submit a surface reclamation plan to the Surface Management Agency for prescribed seed mixtures and reseeding requirements.
- k. If the seeding is unsuccessful, the lessee/operator may be required to make subsequent seedings.

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SURFACE USE PLAN

10. Reclamation of Surface (cont.)

1. Compacted areas of the wellpad should be plowed or ripped to a depth of 12" before reseeding. Seeding should be done with a disc-type drill to ten inches apart. The seed should be planted between one-half inch deep and three quarter inch deep. A drag, packer or roller may be used to insure uniform coverage of the seed, and adequate compaction. Drilling of the seed should be done on the contour where possible. Where slopes are too steep for contour drilling a "cyclone" hand-seeder or similar broadcast seeder should be used, using twice the recommended seed per acre. Seed should then be covered to a depth described above by what-ever means is practical.

11. a. Surface Ownership

Wellpad and partial access road - Bureau of Land Management
Remainder of the access road is maintained by the Uintah
County Road Department or is on the Uintah and Ouray Indian
reservation.

b. Mineral Ownership

Federal

12. Other Information

- a. There will be no change from the proposed drilling and/or workover program without prior approval from the District Manager. Safe drilling and operating practices must be used. All wells, whether drilling, producing, suspended, or abandoned will be identified in accordance with 43 CFR 3162.2.
- b. "Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3164.
- c. The dirt contractor will be provided with an approved copy of the surface use plan and will keep a copy on-site during the construction and reclamation operations.



Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Badlands Federal 1-31
2110' FNL and 1910' FWL
Sec. 31, T8S - R23E
Uintah County, Utah

SURFACE USE PLAN

12. Other Information (cont.)

- d. This 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.
- e. A Class III survey was conducted by LaPlata Archeological Consultants. No significant cultural resources were found and clearance is recommended. A copy of this report will be submitted directly by LaPlata Archeological Consultants.
- f. If during operations, any archaeological or historical sites, or any object of antiquity (subject to the Antiquities Act of June 8, 1906) are discovered, all operations which would affect such sites are to be suspended and the discovery reported promptly to the Surface Management Agency.
- g. The operator will control noxious weeds along rights-of-way for roads, pipelines, well sites or other applicable facilities. A list of noxious weeds may be obtained from the BLM or the appropriate County Extension Office. On BLM administered land, it is required that a Pesticide Use Proposal shall be submitted, and given approval, prior to the application of herbicides or other pesticides or possible hazardous chemicals.
- h. The operator or his contractor shall contact the BLM Offices at 801/789-1362 between 24 and 48 hours prior to construction activities. Contact Byron Tolman or Jim Piani.
- i. The BLM Office shall be notified upon site completion prior to moving on the drilling rig.
- j. If there is determined to be a presence of Threatened and Endangered plan species, construction or drilling activities may be restricted.
- k. This area has been identified as crucial pronghorn antelope habitat. Modifications may be required in the surface use plan to protect kidding areas between May 15 to June 30.



Permitco Incorporated
A Petroleum Permitting Company

ONSHORE ORDER NO.
Quintana Petroleum Corp.
Badlands Federal 1-31
2110' FNL and 1910' FWL
Sec. 31, T8S - R23E
Uintah County, Utah

SURFACE USE PLAN

12. Other Information (cont.)

1. Drilling rigs and/or equipment used during drilling operations on this wellsite will not be stacked or stored on Federal Lands after the conclusion of drilling operations or at any other time without BLM authorization. However, if BLM authorization is obtained, it is only a temporary measure to allow time to make arrangements for permanent storage on commercial facilities. (The BLM does not seek to compete with private industry. There are commercial facilities available for stacking and storing drilling rigs.)

13. Lessee's or Operator's Representative and Certification

Permit Matters

PERMITCO INC.
Lisa L. Green
P.O. Box 44065
Denver, CO 80201-4065
303/322-7878

Drilling & Completion Matters

QUINTANA PETROLEUM CORP.
1050-17th Street
Suite 400
Denver, CO 80265
John Wessels - 303/628-9211 (W)
Scott Kimbrough - 303/969-9468 (H)

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, true and correct; and, that the work associated with the operations proposed herein will be performed by Quintana Petroleum Corp. and its contractors and subcontractors in conformity with the 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.

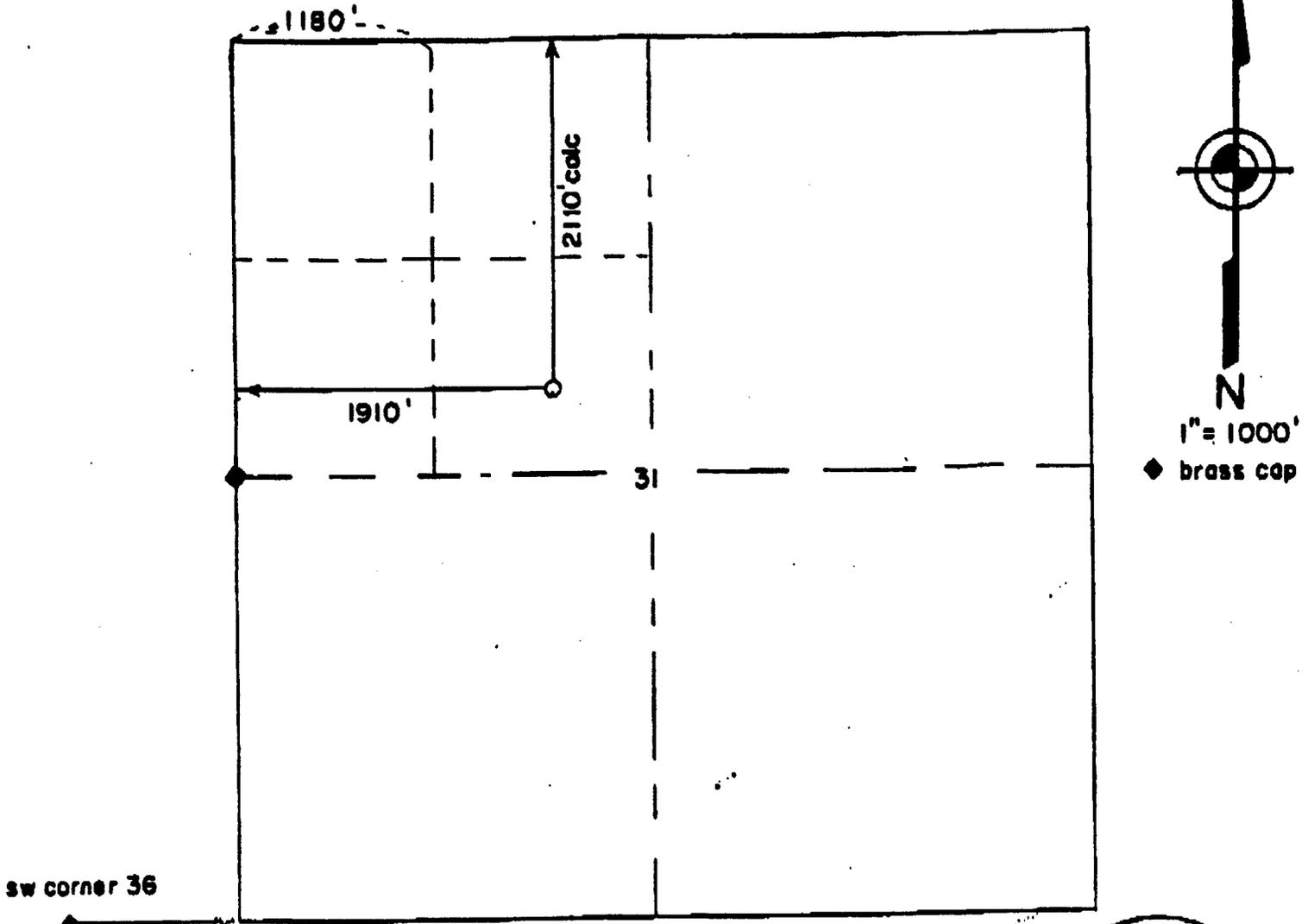
10/5/88
Date: _____



Lisa L. Green - PERMITCO INC.
Authorized Agent for:
QUINTANA PETROLEUM CORP.



Well Location Plat



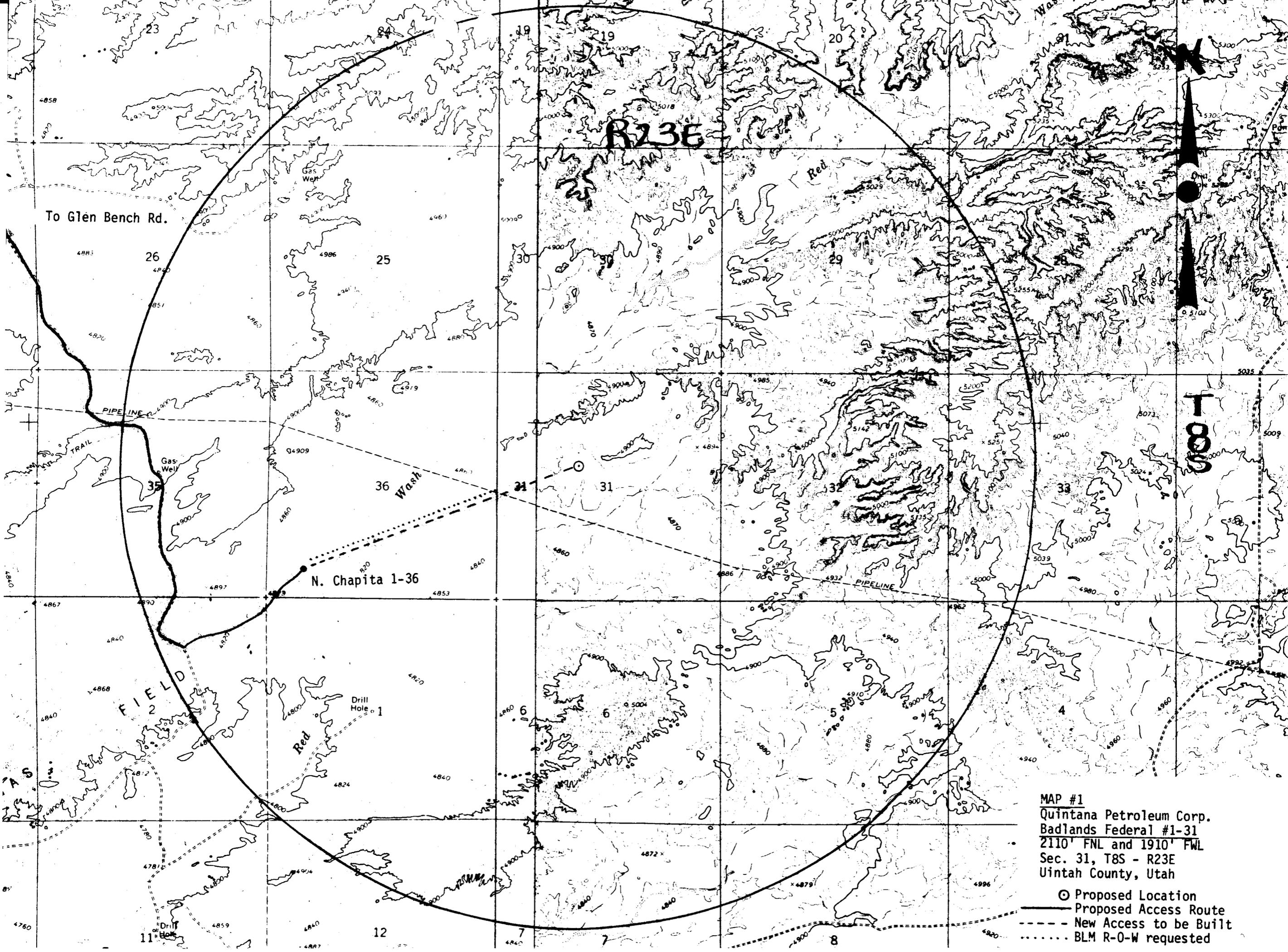
WELL LOCATION DESCRIPTION:
 QUINTANA PETROLEUM, Badlands Federal 1-31
 2110' FNL & 1910' FWL
 Section 31, T.8 S., R.23 E., SLM
 Uintah County, Utah
 4878' ground elevation
 Reference: N 81 22'W, 567', 4890' grd.



The above plat is true and correct to my knowledge and belief.

4 October 1988

Gerald G. Huddleston
 Gerald G. Huddleston, LS



R23E

T8S

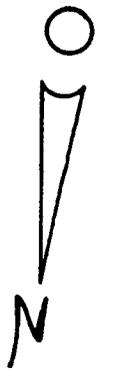
To Glen Bench Rd.

N. Chapita 1-36

MAP #1
 Quintana Petroleum Corp.
 Badlands Federal #1-31
 2110' FNL and 1910' FWL
 Sec. 31, T8S - R23E
 Uintah County, Utah

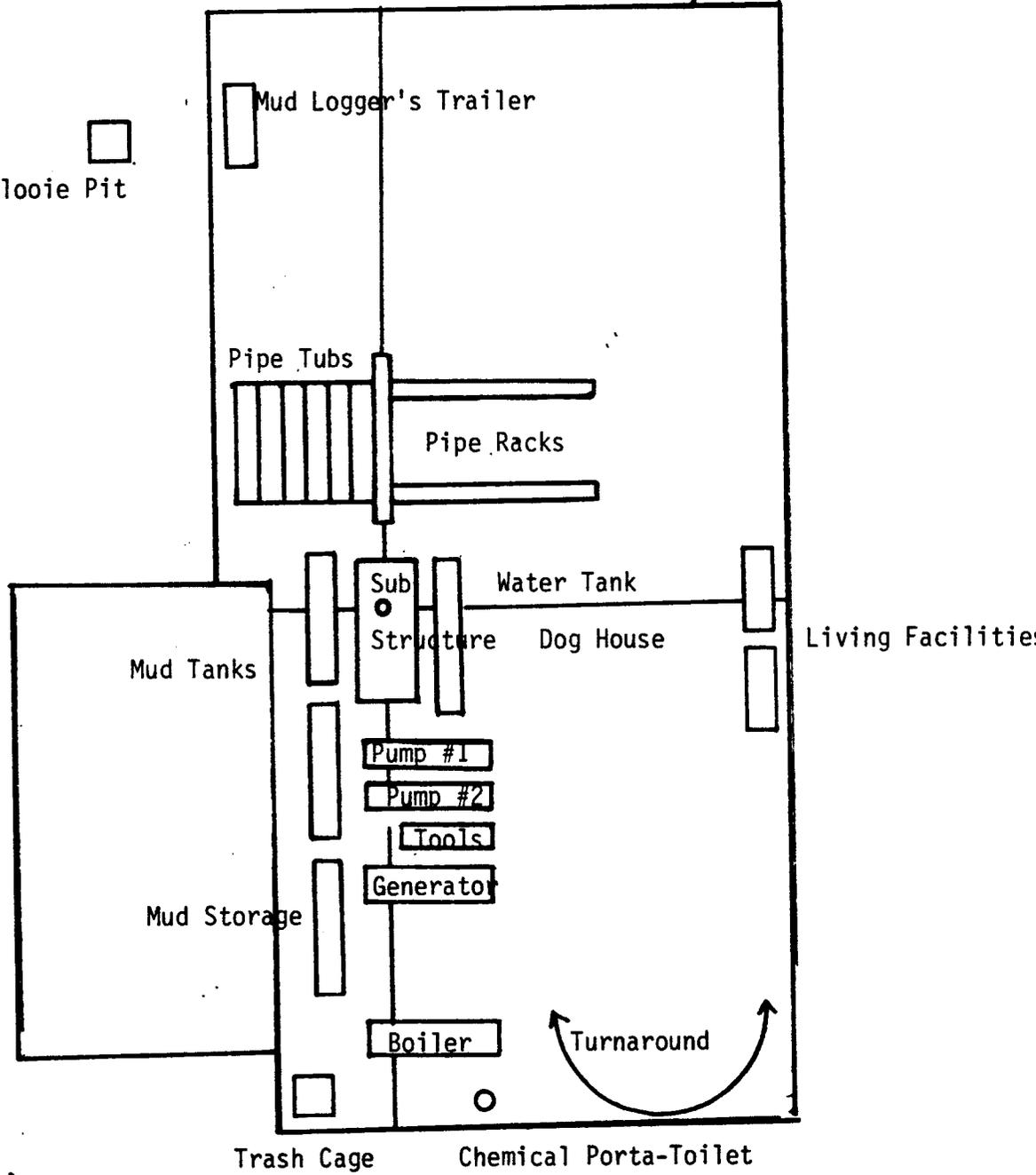
- ⊙ Proposed Location
- Proposed Access Route
- - - New Access to be Built
- BLM R-0-W requested

DIAGRAM #1 - Rig Lay
Quintana Petroleum Corp.
Badlands Federal #1-31
2110' FNL and 1910' FWL
Sec. 31, T8S - R23E
Uintah County, Utah



Blooiie Pit

Access

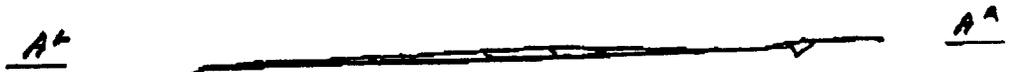
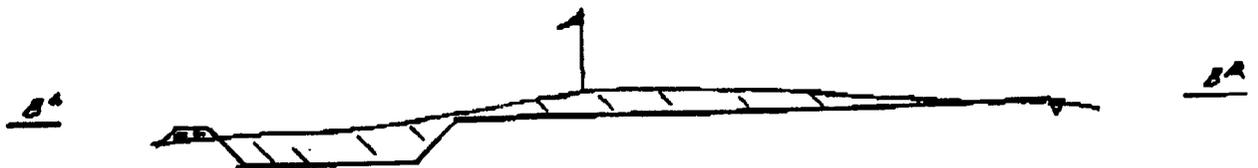
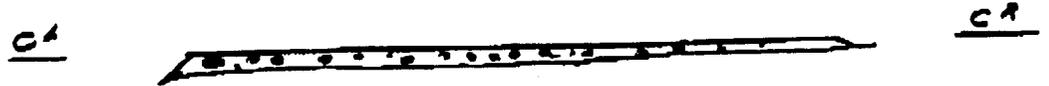


Cross Section

Badlands Federal 1-31

Cut ////
Fill ||||

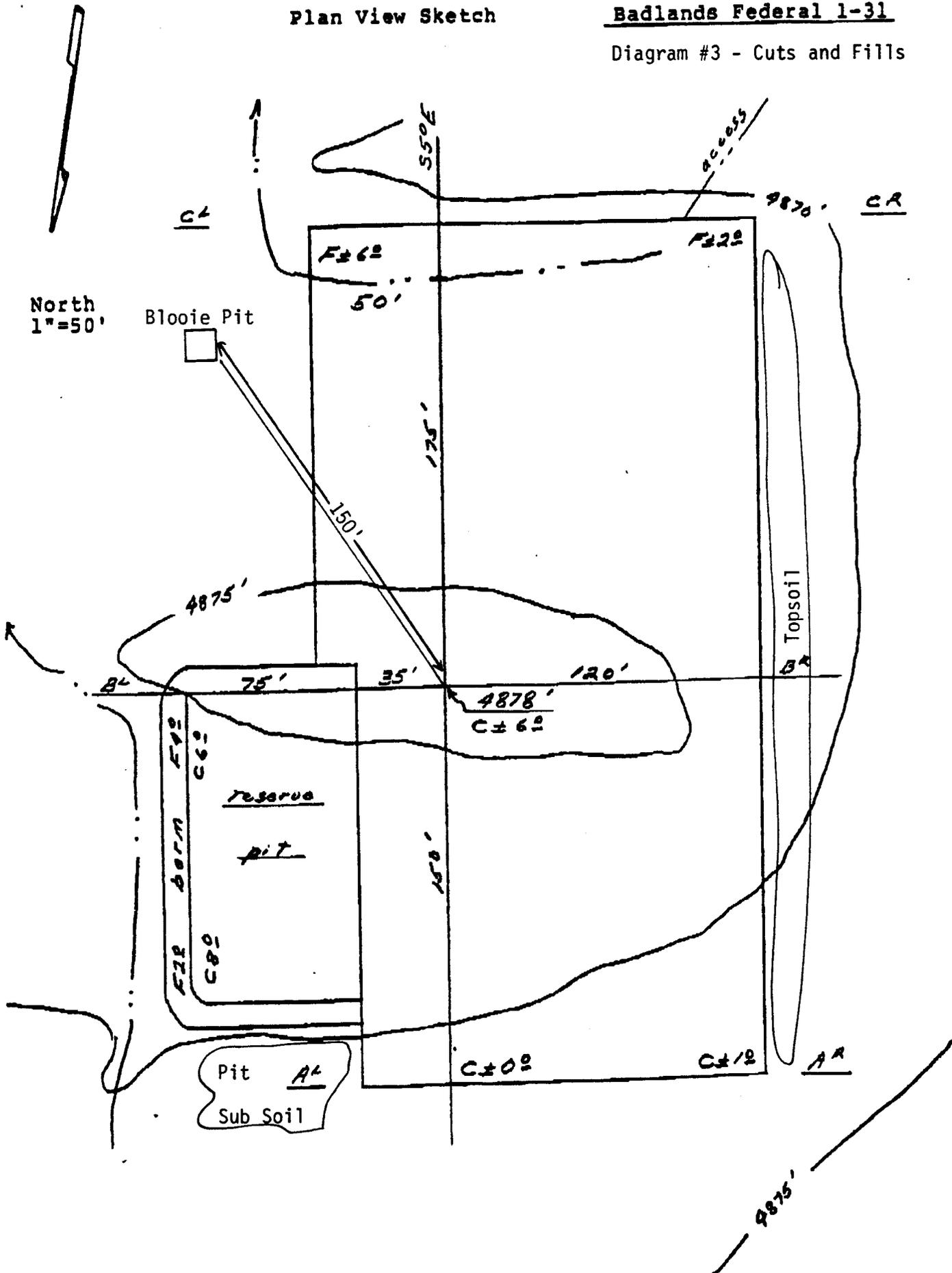
1"=50' Horz. & Vert.



Plan View Sketch

Badlands Federal 1-31

Diagram #3 - Cuts and Fills



AN ARCHEOLOGICAL SURVEY OF
QUINTANA PETROLEUM'S
BADLANDS FEDERAL #1-31
WELL SITE AND ACCESS ROAD,
UINTAH COUNTY, UTAH

RECEIVED
OCT 14 1988

LAC Report 88128

DIVISION OF
OIL, GAS & MINING

by
Barry N. Hibbets

LA PLATA ARCHEOLOGICAL CONSULTANTS, INC.
P.O. BOX 783
DOLORES, COLORADO 81323
(303) 882-4933

October 11, 1988

Utah Antiquities Permit
85UT57626
Utah State Permit
U88-LA-473 (b,s)

Prepared For:
Quintana Petroleum Corporation
1050 17th Street, Suite 400
Denver, Colorado 80265

ABSTRACT

During October 1988 an archeological survey of Quintana Petroleum's proposed Badlands Federal #1-31 well site and 5200' of access road was conducted by personnel of La Plata Archeological Consultants, Inc. The project area is located in the Red Wash vicinity in central Uintah County, Utah. The Bureau of Land Management - Book Cliffs Resource Area administers the well site and 300' of the access road. The remaining 4900' of the access is owned by the State of Utah. A 660x660' square area (10 acres) surrounding the well centerstake and a 100' wide corridor along the access route was archeologically surveyed (11.94 acres: .69 acres BLM & 11.25 acres State). No cultural resources were encountered during the investigation. Archeological clearance for Quintana's Badlands Federal #1-31 well site and access road is recommended.

INTRODUCTION

During October 1988 an archeological survey of Quintana Petroleum's proposed Badlands Federal #1-31 well site and 5200' of access road was conducted by personnel of La Plata Archeological Consultants, Inc. The project area is located in the Red Wash vicinity of central Uintah County, Utah. The well site and 300' of access are located in the SW 1/4 of NW 1/4 of section 31, Township 8 South, Range 23 East on land administered by the Bureau of Land Management - Book Cliffs Resource Area. The remaining 4900' of access traverses the S 1/2 of section 36, Township, 8 South, Range 22 East and is on land owned by the State of Utah. All of the area is contained on the Red Wash SW, Utah, 7.5' series topographic quadrangle.

The proposed development will consist of the construction of a single well site ca. 275x325' in area, and building 5200' of new access road. A 660x660' square area (10 acres) surrounding the well centerstake, and a 100' wide corridor along the access route was archeologically surveyed (11.94 acres: .69 acres BLM & 11.25 acres State).

The survey was requested by Ms. Lisa Green of Permitco and conducted by Mr. Barry N. Hibbets on October 3, 1988 during the on-site pre-drill inspection. Others in attendance were Lisa Green, (Permitco), Gerald Huddleston (Huddleston Land Surveys), Byron Tolman (BLM), Jim Turner (Quintana Petroleum), and representatives of three construction companies.

PHYSIOGRAPHY & ENVIRONMENT

The project area is situated along Red Wash ca. 4 miles northeast of the White River. The area is characterized by a gently undulating plain interspersed with stabilized

The vegetative structure of the area is a saltshrub association dominated by four-wing saltbush, shadscale, and black greasewood. Grasses and forbs increase dramatically on stable sanddunes.

Sediments consist of structureless aeolian sand except on barren playas where a clayey substratum littered with ancestral alluvial gravels are located.

Present perennial water in the region is rare. Red Wash, which bisects the access route, carries seasonal water.

SURVEY PROCEDURE

Prior to the initiation of the field work site file and literature reviews were conducted at the Bureau of Land Management - Vernal District Office and via the Utah Division of State History - Antiquities Section. The results of these reviews concluded that none of the project area has been previously surveyed and no previously recorded sites are present in the project area.

On-the-ground survey was conducted by the single archeologist systematically walking over the proposed well site via a series at 15 meter intervals. The access road was inventoried via two sinuous transects spaced at 15 meter intervals, effectively surveying a corridor 100' wide. No subsurface probings or excavations were attempted.

SURVEY RESULTS

No cultural resources were encountered during the examination.

SUMMARY AND RECOMMENDATIONS

On October 3, 1988 an archeological survey of Quintana Petroleum's proposed Badlands Federal #1-31 well site and 5200' of access road was conducted by Mr. Barry N. Hibbets of La Plata Archeological Consultants, Inc. The project area is located in the Red Wash vicinity of central Uintah County, Utah. The well site and 300' of the access road is located on land administered by the Bureau of Land Management - Book Cliffs Resource Area. The remaining 4900' of access is located on the land owned by the State of Utah. A 660x660' square area (10 acres) surrounding the well centerstake and a 100' wide corridor along the access route was archeologically surveyed (11.94 acres: .69 acres BLM & 11.25 acres State).

No cultural resources were located by the survey. Archeological clearance for the project is recommended.



La Plata Archeological Consultants, Inc.

P.O. Box 783
Dolores, Colorado 81323
303-882-4933

RECEIVED
OCT 14 1988

DIVISION OF
OIL, GAS & MINING

October 11, 1988

Mr. Blaine Phillips
District Archeologist
Bureau of Land Management
170S 500E
Vernal, Utah 84078

Mr. Phillips:

Please find enclosed the archeological survey report for Quintana Petroleum's Badlands Federal #1-31 well site and access road in Uintah County, Utah. No archeological sites were recorded during the examination. Archeological clearance for this project is recommended.

Sincerely,

Barry N. Hibbets
Treasurer-Secretary

Distribution:

Division of State Lands
BLM State Office
Division of State History - Antiquities Section
Ms. Lisa Green Permitco
Mr. Jim Turner, Quintana

BNH/cr

CONFIDENTIAL

OPERATOR Quintana Petroleum Corp. DATE 10-11-88

WELL NAME Badlands Fed. 1-31

SEC SE NW 31 T 8S R 23E COUNTY Uintah

43-047-31857
API NUMBER

Fed.
TYPE OF LEASE

CHECK OFF:

PLAT

BOND

NEAREST WELL

Fed. per BLM
 LEASE

FIELD

POTASH OR OIL SHALE

PROCESSING COMMENTS:

No other well within 920'

Need water permit

Badlands Unit will not be approved for at least one month per BLM (Theresa)

Per Lisa Green permit on a lease basis 10-13-88.

Archeological Survey received 10-14-88.

APPROVAL LETTER:

SPACING: R615-2-3 _____ UNIT

R615-3-2

_____ CAUSE NO. & DATE

R615-3-3

STIPULATIONS:

1-Water Permit

**CONFIDENTIAL
PERIOD
EXPIRED
ON 10-1-90**



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangerter
Governor

Dee C. Hansen
Executive Director

Dianre R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

October 17, 1988

Quintana Petroleum Corporation
c/o Permitco Incorporated
P. O. Box 44065
Denver, Colorado 80201-4065

Gentlemen:

Re: Badlands Federal 1-31 - SE NW Sec. 31, T. 8S, R. 23E - Uintah County, Utah
2110' FNL, 1910' FWL

Approval to drill the referenced well is hereby granted in accordance with Rule R615-3-2, Oil and Gas Conservation General Rules, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water as required by Chapter 3, Title 73, Utah Code Annotated.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification within 24 hours after drilling operations commence.
2. Submittal of an Entity Action Form within five working days following spudding and whenever a change in operations or interests necessitates an entity status change.
3. Submittal of the Report of Water Encountered During Drilling, Form OGC-8-X.
4. Prompt notification if it is necessary to plug and abandon the well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 538-5340, (Home) 298-7695, or Jim Thompson, Lead Inspector, (Home) 298-9318.
5. Compliance with the requirements of Rule R615-3-22, Gas Flaring or Venting, Oil and Gas Conservation General Rules.

Page 2
Quintana Petroleum Corporation
Badlands Federal 1-31
October 17, 1988

6. Prior to commencement of the proposed drilling operations, plans for facilities for disposal of sanitary wastes at the drill site shall be submitted to the local health department. These drilling operations and any subsequent well operations must be conducted in accordance with applicable state and local health department regulations. A list of local health departments and copies of applicable regulations are available from the Division of Environmental Health, Bureau of General Sanitation, telephone (801) 538-6121.
7. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-047-31857.

Sincerely,



R. J. Firth
Associate Director, Oil & Gas

lr
Enclosures
cc: Branch of Fluid Minerals
D. R. Nielson
R. J. Firth
8159T

N/w personal bond \$150,000

LCR

Form 2160-3
(November 1983)
(formerly 9-281C)

SUBMIT IN DUPLICATE
(Other instructions on
reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
NOV 18 1988

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
OIL WELL GAS WELL OTHER
DIVISION OF OIL, GAS & MINING SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR 303/628-9211 1050-17th St., Suite 400
Quintana Petroleum Corp. Denver, CO 80265

3. ADDRESS OF OPERATOR 303/322-7878 P.O. Box 44065
Permitco Inc. - Agent Denver, CO 80201-4065

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface 2110' FNL and 1010' FWL
At proposed prod. zone SE NW

CONFIDENTIAL

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
28 miles southeast of Vernal, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drig. unit line, if any)
730'

16. NO. OF ACRES IN LEASE
640

17. NO. OF ACRES ASSIGNED TO THIS WELL
160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
none

19. PROPOSED DEPTH
7900'

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
4890' GR

22. APPROX. DATE WORK WILL START*
Immediately upon approval of this application.

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	8-5/8"	24#	250'	130 sx or suffic to circ to surf
7-7/8"	5-1/2"	15.5 & 17#	7900'	To be determined upon inspection of open hole logs.

Quintana Petroleum Corp. proposes to drill a well to 7900' to test the Wasatch and Mesa Verde formations. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and State of Utah requirements.

See Onshore Order No. 1 attached.

I hereby certify that Quintana Petroleum Corp. is authorized by proper lease interest owners to conduction operations at the above mentioned location. Bonding will be provided by the operator, Quintana Petroleum Corp.



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED [Signature] TITLE Consultant for Quintana Petroleum Corp. DATE 10/6/88

(This space for Federal or State office use)

PERMIT NO. 43-947-31857 APPROVAL DATE _____

APPROVED BY [Signature] TITLE ASSISTANT DISTRICT MANAGER MINERALS DATE Nov 3, 1988

NOTICE OF APPROVAL CONDITIONS OF APPROVAL ATTACHED TO OPERATOR'S COPY

41080-9m02 *See Instructions On Reverse Side
Title 18 U.S.C. Section 1001, makes 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.

CONDITIONS OF APPROVAL FOR NOTICE TO DRILL

WITHIN THE UINTAH OURAY RESERVATION

Company Quintana Petroleum Company Well No. Badlands Federal No. 1-31

Location Sec. SENW T.8S. R.23E. Lease No. U-61401

Onsite Inspection Date September 23, 1988

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

A. DRILLING PROGRAM

1. Estimated Depth at Which Oil, Gas, Water, or Other Mineral Bearing Zones are Expected to be Encountered

NOTE:

If this well is intended to be the first obligation well for the proposed Badlands Unit, please be advised that the target formation (upper 500 feet of the Mesaverde formation) cannot be penetrated until the Badlands Unit has been approved. If desired, Quintana could spud the well and be drilling prior to unit approval. Should the target formation be penetrated prior to unit approval, then this well could not be considered an obligatory well.

Report ALL water shows and water-bearing sands to Wayne Svejnoha of this office. Copies of State of Utah form OGC-8-X are acceptable. If noticeable water flows are detected, submit samples to this office along with any water analyses conducted.

Fresh water may be encountered from + 100-200 feet and + 1,300-1,600 feet in the Uinta formation and from + 1,800-2,200, + 3,200-3,600, and + 4,200-5,100 feet in the Green River formation. The Mahogany oil shale zone has been identified from + 2,820-2,940 feet. Therefore the above resources will be isolated and/or protected via the cementing program for the production casing by having a cement top for the production casing of at least 200 feet above the oil shale. Also, if gilsonite is encountered while drilling, it needs to be isolated and/or protected.

2. Pressure Control Equipment

BOPE configuration shall be consistent with API RP53 with individual components operable as designed. Also, an annular type

preventer shall be utilized, unless documentation is provided that one is not necessary and approved prior to drilling and tested to a minimum of 50% of the internal yield of the casing.

BOPE pressure tests shall be conducted for at least 10 minutes. The District Office shall be notified, with sufficient lead time, in order to have a BLM representative on location during pressure testing.

3. Casing Program and Auxiliary Equipment

A cement bond log (CBL), or some other means acceptable to the authorized officer, shall be utilized to determine the top of cement (TOC) for the production casing.

The District Office shall be notified, with sufficient lead time, in order to have a BLM representative on location while running all casing strings and cementing.

4. Mud Program and Circulating Medium

No chromate additives will be used in the mud system on Federal and Indian lands without prior BLM approval to ensure adequate protection of fresh water aquifers.

5. Coring, Logging and Testing Program

Daily drilling and completion progress reports shall be submitted to this office on a weekly basis.

6. Notifications of Operations

BOPE pressure tests shall be conducted for at least 10 minutes.

If a replacement rig is contemplated for completion operations, a "Sundry Notice" (Form 3160-5) to that effect will be filed, for prior approval of the AO, and all conditions of this approved plan are applicable during all operations conducted with the replacement rig.

Gas produced from this well may not be vented or flared beyond an initial authorized test period of 30 days or 50 MMCF following its completion, whichever occurs first, without the prior written approval of the authorized officer. Should gas be vented or flared without approval beyond the authorized test period, the operator may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted and the operator shall be required to compensate the lessor for that portion of the gas vented or flared without approval which is determined to have been avoidably lost.

A first production conference will be scheduled within 15 days after receipt of the first production notice.

A "Subsequent Report of Abandonment" Form 3160-5, will be filed with the AO within 30 days following completion of the well for abandonment. This report will indicate where plugs were placed and the current status of surface restoration. Final abandonment will not be approved until the surface reclamation work required by the approved APD or approved abandonment notice has been completed to the satisfaction of the AO or his representative, or the appropriate Surface Managing Agency.

7. Other Information

It was noted in the APD that Form 3160-6, Monthly Report of Operations, will be filed with the BLM Craig District Office. Under the Federal regulation revisions now in effect, Quintana shall report production data to MMS pursuant to 30 CFR 216.50 using Form MMS-3160.

Approval of this APD does not constitute an approval of air drilling methods as referenced by 8 (p) "Other Information".

All loading lines will be placed inside the berm surrounding the tank battery.

All site security guidelines identified in 43 CFR 3162.7 regulations will be adhered to.

All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the AO.

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

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

The use of materials under BLM jurisdiction will conform to 43 CFR 3610.2-3.

There will be no deviation from the proposed drilling and/or work-over program without prior approval from the AO. Safe drilling and operating practices must be observed. All wells, whether drilling, producing, suspended, or abandoned will be identified in accordance with 43 CFR 3162.

"Sundry Notice and Report on Wells" (Form 3160-5) will be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162.3-2.

Section 102(b)(3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1(c), requires that "not later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, of the date on which such production has begun or resumed."

The date on which production is commenced or resumed will be construed for oil wells as the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever first occurs; and, for gas wells as the date on which associated liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank, and for which a run ticket is required to be generated or, the date on which gas is first measured through permanent metering facilities, whichever first occurs.

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to \$10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109(c)(3) of the Federal Oil and Gas Royalty Management Act of 1982 and the implementing regulations at Title 43 CFR 3162.4-1(b)(5)(ii).

APD approval is valid for a period of one (1) year from the signature date. An additional one (1) year approval period may be granted if requested prior to the expiration of the original approval period.

In the event after-hour approvals are necessary, please contact one of the following individuals:

Gerald E. Kenczka
Petroleum Engineer

(801) 781-1190

Ed Forsman
Petroleum Engineer

(801) 789-7077

Revised October 1, 1985

Date NOS Received 9-23-88

CONDITIONS OF APPROVAL
FOR THE SURFACE USE PROGRAM OF THE
APPLICATION FOR PERMIT TO DRILL

Company/Operator Quintana Petroleum Corporation
Well Name & Number 1-31 Badlands Federal
Lease Number U-61401
Location SE ¼ NW ¼ Sec. 31 T.8S. R.23E.
Surface Ownership Federal

B. THIRTEEN POINT SURFACE USE PROGRAM:

1. Planned Access Roads--

The existing pipeline right-of-way road through Sections 35 and 36 T.8S., R.22 E., and Sec. 31 T.8S., R.23 E. should be used for access into the location for drilling purposes. The only new road construction needed would be from the pipeline road in Section 31 to the location (approximately 1/4 mile). If the well is a producer, a road joining the N Cahpita No. 1-36 and the No. 1-31 well could then be considered.

9. Well Site Layout

Diversion ditch(es) shall be constructed on the northwest and south side of the location to allow water to drain away from the well pad.

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

API NO. 43-047-31857

NAME OF COMPANY: QUINTANA PETROLEUM CORPORATION

WELL NAME: BADLANDS FEDERAL #1-31

SECTION SE 31 TOWNSHIP 8S RANGE 23E COUNTY UINTAH

DRILLING CONTRACTOR OLSEN

RIG # 7

SPUDED: DATE 12/4/88

TIME 1:00 p.m.

HOW DRY HOLE DIGGER

CONFIDENTIAL

DRILLING WILL COMMENCE 12/8/88

REPORTED BY DON MURPHY

TELEPHONE # 1-789-9020

DATE 12/7/88 SIGNED TAS

RECEIVED
DEC 29 1988

OPERATOR QUINTANA PETROLEUM CORPORATION

ADDRESS 1050 - 17th Street, Suite 400

Dove, Colorado 80265

OPERATOR CODE N9485

PHONE NO. 303, 628-9211

CONFIDENTIAL

DIVISION OF

OIL, GAS & MINING

OPERATORS MUST COMPLETE FORM UPON SPUDDING NEW WELL OR CHANGE IN OPERATIONS OR INTERESTS NECESSITATES CHANGE IN EXISTING ENTITY NUMBER ASSIGNMENT.

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION					SPUD DATE	EFFECTIVE DATE
					QQ	SC	TP	RG	COUNTY		
A	99999	10960	43-047-31857	BADLANDS UNIT FEDERAL #1-31	SE NW	31	8S	23E	Uintah	12/4/88	
<p>COMMENTS: Federal-Lease Proposed Zone - mesa Verde Field - Undesignated (only well in sec. 31, assign new entity 10960 on 12-30-88.) Not in a Unit</p>											
COMMENTS:											
COMMENTS:											
COMMENTS:											
COMMENTS:											

- ACTION CODES:
- A - ESTABLISH NEW ENTITY FOR NEW WELL
 - B - ADD NEW WELL TO EXISTING ENTITY
 - C - RE-ASSIGN WELL FROM ONE EXISTING ENTITY TO ANOTHER EXISTING ENTITY
 - D - RE-ASSIGN WELL FROM ONE EXISTING ENTITY TO A NEW ENTITY
 - E - OTHER (EXPLAIN IN COMMENTS SECTION)
- (SEE INSTRUCTIONS ON BACK OF FORM)

J. Williams
SIGNATURE
Production Technician 12/27/88
TITLE DATE

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL GAS WELL DRY Other

b. TYPE OF COMPLETION: NEW WELL WORK OVER DEEP-EN PLUG BACK DIFF. RENVR. Other

2. NAME OF OPERATOR: QUINTANA PETROLEUM CORPORATION (303)628-9211

3. ADDRESS OF OPERATOR: 1050 - 17th Street, Suite 400, Denver, Colorado 80202

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface 2110' FNL & 1910' FWL (SE NW)
At top prod. interval reported below same
At total depth Same

14. PERMIT NO. 43-047-31857 DATE ISSUED 10/17/88

5. LEASE DESIGNATION AND SERIAL NO. UTU-61401

6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A

7. UNIT AGREEMENT NAME Badlands Unit

8. ARM OR LEASE NAME BADLANDS FEDERAL

9. WELL NO. #1-31

10. FIELD AND POOL, OR WILDCAT Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA Section 31, T8S-R23E

12. COUNTY OR PARISH Uintah

13. STATE Utah

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15. DATE SPUDDED 12/4/88

16. DATE T.D. REACHED 12/27/88

17. DATE COMPL. (Ready to prod.) SI 3/1/89

18. ELEVATIONS (DF, RKB, RT, GR, ETC.)* 4878' GR

19. ELEV. CASINGHEAD 4878'

20. TOTAL DEPTH, MD & TVD 7900'

21. PLUG BACK T.D., MD & TVD 7663'

22. IF MULTIPLE COMPL., HOW MANY* →

23. INTERVALS DRILLED BY →

ROTARY TOOLS 0'-7900'

CABLE TOOLS N/A

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
- 7401'-7564' (O/A) - Mesa Verde formation

25. WAS DIRECTIONAL SURVEY MADE No

26. TYPE ELECTRIC AND OTHER LOGS RUN DIL/Microlog/GR; FDC/CNL/Cal; CBL/VDL/CCL/GR

27. WAS WELL CORDED No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24# & 32#	266'	12 1/4"	180 sxs "G"	None
5 1/2"	15.5# & 17#	7885'	7 7/8"	605 sxs 50/50 Poz (Stg.1)	None
				100 sxs Highfill, tail w/50 sxs Premium (Stg.2)	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
N/A					2 3/8"	7332.35'	7294.25'

30. PERFORATION RECORD (Interval, size and number)

7770'-7800', 3 3/8" gun, 2 jspf.
Retrievable BP at 7673'

7401'-7427', 7432'-7436', 3 3/8" gun

7455'-7461', 7551'-7564' 2 jspf

31. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
7770'-7800'	16,000# 20/40 sd in 300 CO2 sys.
7401'-7564'	1512 gal 7 1/2% HCl & ball sealers.

32. PRODUCTION

DATE FIRST PRODUCTION 2/6/89 - test
Now S.I.

PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) Flowing

WELL STATUS (Producing or shut-in) S.I.

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3/1/89	24	20/64"	→	---	±1.7MMCF	---	---

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
722	---	→	---	±1.7 MMCFPD	---	---

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) To be sold

TEST WITNESSED BY D. Murphy

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED J. Williams TITLE Production Technician DATE 3/31/89

*(See Instructions and Spaces for Additional Data on Reverse Side)

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.								
<p>No Cores. No DST's.</p>			<div data-bbox="503 777 812 1239" data-label="Image"> <p>OIL AND GAS</p> <table border="1"> <tr> <td></td> <td>RIF</td> </tr> <tr> <td>353</td> <td>GLH</td> </tr> <tr> <td></td> <td>SLS</td> </tr> <tr> <td>I-TAS</td> <td></td> </tr> </table> <p>MICROFILM</p> <p>FILE</p> </div>		RIF	353	GLH		SLS	I-TAS	
	RIF										
353	GLH										
	SLS										
I-TAS											

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
<p>Green River Green River "X" Wasatch Mesa Verde</p>	<p>2070' 3600' 5104' 7296'</p>	

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DEPARTMENT OF
OIL, GAS & MINING

QUINTANA PETROLEUM CORPORATION

BADLANDS FEDERAL #1-31

SE/NW SECTION 31, T8S, R23E

UINTAH COUNTY, UTAH

GEOLOGIC REPORT

BY

CURTIS B. MATTHEWS

ROCKY MOUNTAIN GEO-ENGINEERING COMPANY

T A B L E O F C O N T E N T S

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WELL SUMMARY

- 3 -

OPERATOR: QUINTANA PETROLEUM CORPORATION

WELL NAME: BADLANDS FEDERAL #1-31

LOCATION: SE/NW SECTION 31, T8S, R23E
FOOTAGE: 2110' FNL - 1910' FWL

AREA: NORTH CHAPITA WELLS PROSPECT

COUNTY & STATE: UINTAH, UTAH

ELEVATION: GL: 4878' - KB: 4892'

DRILLING ENGINEER: DONN MURPHY

SPUD DATE: 12/8/88 @ 1830 HRS

COMPLETION DATE: 12/27/88
12/28/88 - RMEC RELEASED DATE

CONTRACTOR: OLSEN DRILLING, RIG #7

TOOL PUSHER: KEN CLARE

HOLE SIZE: 7 7/8"

CASING RECORD: 8 5/8" @ 266'

PIPE: 4"

DRILL COLLARS: 6"

PUMPS: #1 TRISERVICE, TSM500, #2 EMSCO D500

DRILLING MUD: MILPARK GEL LIME: 0-3400', LSND: 3400-7900'
ENGINEER: LYNN BRANDHAGEN

MUD LOGGING COMPANY: ROCKY MOUNTAIN GEO-ENGINEERING COMPANY
ENGINEERS: CURTIS MATTHEWS, STEPHANIE MATTHEWS

ELECTRIC LOGGING: HALLIBURTON, GEARHART
TYPE OF LOGS RUN: RUN #1: DIL/FDC/CNL/MICROLOG (MICROLOG DID NOT WORK)
RUN #2: BHC SONIC, FULL WAVE SONIC (7900-6900')
RUN #3: HIGH RESOLUTION DUAL INDUCTION (GEARHART)

WELLSITE GEOLOGY: ROCKY MOUNTAIN GEO-ENGINEERING COMPANY
WELLSITE GEOLOGIST: CURTIS B. MATTHEWS

OBJECTIVES: PRIMARY - WASATCH & MESA VERDE
SECONDARY - GREEN RIVER

TOTAL DEPTH: DRILLER 7908' - LOGGER 7898'

STATUS: RUN PRODUCTION CASING

QUINTANA PETROLEUM CORP.
BADLANDS FEDERAL #1-31

WELL CHRONOLOGY

DATE & # DAYS	12 AM DEPTH	FTG/ DAY	DAILY OPERATIONS
12/8/88 (1)	266	175	RIG UP - DRILL CMT @ 215 @ 1830 HRS w/7 7/8" REED HP53A BIT - SURVEY @ 240 - 3/4 ⁰ - DRLG AHEAD
12/9 (2)	441	1236	DRLG - SURV @ 610, 3/4 ⁰ - WORK ON LIGHT PLANT - DRLG - SURV @ 934, 3/4 ⁰ - RIG SERVICE - SURV @ 1240, 1/2 ⁰ - DRLG AHEAD
12/10 (3)	1677	980	SURV @ 1726, 1 ⁰ - DRLG, RIG SERV - SURV @ 2237, 1 1/2 ⁰ - DRLG AHEAD
12/11 (4)	2657	882	SURV @ 2630, 1 ⁰ - DRLG - SURV @ 3016, 1 1/2 ⁰ - LOST 1000 BBLS FLUID
12/12 (5)	2539	639	SURV @ 3526, 1 3/4 ⁰ - DRLG - SURV @ 3815, 1 1/2 ⁰ - DRLG - CLN SHAKER PIT - DRLG
12/13 (6)	4147	531	DRLG - RIG SERV - SURV @ 4470, 1 3/4 ⁰ - DRLG - SURV @ 4700, 1 1/4 ⁰ - TOH FOR BIT #2, 7 7/8 STC, F-25, TIH
12/14 (7)	4707	299	FINISH TIH - REAM 80' TO BOT - DRLG - RIG SERV - DRLG AHEAD
12/15 (8)	5006	271	DRLG - SURV @ 4985, 1 ⁰ - DRLG - RIG SERV - DRLG AHEAD
12/16 (9)	5277	220	DRLG - SURV @ 5358, 3/4 ⁰ - TOH FOR BIT #3, 7 7/8 STC F-4 - PICKUP 3 DC's - TIH & WASH 40' TO BOT - DRLG AHEAD
12/17 (10)	5497	259	DRLG - RIG SERV - CK BOP - DRLG - CLN SHALE PIT - DRLG AHEAD
12/18 (11)	5756	242	DRLG - RIG SERV - CK BOP - DRLG - CLN SHALE PIT - DRLG - LOST 15 BBLS FLUID/HR
12/19 (12)	5998	146	DRLG - RIG SERV - CK BOP - DRLG - CK PUMP PRESS FOR HOLE IN DP - DRLG - TWIST OFF @ 6144 - TOH & LAY DN 2 DC's - PICKUP OVERSHOT & TIH
12/20 (13)	6144	129	TIH - FISHING - TOH & LAY DN FISH & TOOLS - TOH w/DC's - TIH W/BIT #4, 7 7/8 REED HP53A, - WASH & REAM 40' TO BOT - DRLG AHEAD
12/21 (14)	6273	277	DRLG - SURV @ 6316, 1 ⁰ , RIG SERV - WORK STUCK PP - DRLG AHEAD
12/22 (15)	6550	269	DRLG - CLN SHALE PIT - DRLG - WORK ON PUMP - DRLG AHEAD
12/23 (16)	6819	210	DRLG - WORK ON MUD PUMP - DRLG - WORK ON PUMP - DRLG - CLN SHALE PIT & RIG SERV - DRLG - WORK ON PUMP - DRLG AHEAD

12/24/88 (17)	7029	178	DRLG - CHG PUMPS - RIG SERV - DRLG - DROP SURV & TOH FOR BIT #5, 7 7/8 REED HP 53A - SURV @ 7167, 1 3/4 ⁰
12/25 (18)	7207	189	TOH FOR NEW BIT - TIH - WASH & REAM 67' TO BOT - 3' FILL - DRLG - RIG SERV - DRLG AHEAD
12/26 (19)	7396	310	DRLG - RIG SERV - DRLG - LOSING 17 BBL/HR FLUID - DRLG AHEAD
12/27 (20)	7706	194	DRLG - WORK ON MUD PUMP - DRLG - TD @ 7900 @ 1600 HRS - CIRC FOR SHORT TRIP - SHORT TRIP 20 STDS - CIRC FOR LOGS - SURV @ 7900, 2 ⁰ - TOH FOR LOGS
12/28 (21)	7900		RIG UP WELEX - RUN IN W/DIL/FDC-CNL/MICROLOG @ 12 AM - RUN IN W/SONIC @ 7:45 AM, RUN IN W/GEARHART HRI @ 6:30 PM - RIG DN GEARHART & WELEX - PREP TO RUN CSG

BIT RECORD

WELL NAME: Badlands Federal #1-31 ELEVATION: 4878' G.L. 4892' K.B.
 CO. NAME: QUINTANA PETROLEUM CORP. SECTION: 31, T8S, R23E
 CONTRACTOR: Olsen Drilling RIG# 7 CO. & STATE: Uintah County, Utah
 SPUD DATE: 12/8/88 T.D. DATE: 12/27/88

BIT RECORD								FT PER/DAY			DEVIATION SURVEYS	
RUN	SIZE	MAKE	TYPE	Wx OUT	FTG	HOURS	FT/HR	DATE	DEPTH	FT	DEPTH	DEV.
1	7 7/8	REED	HP53A	4707	4441	113 3/4	39	12/08	266	175	240	3/4
2	7 7/8	STC	F-25	5398	691	53	13	12/09	441	1236	610	3/4
3	7 7/8	STC	F- 4	6144	746	72 1/2	10.3	12/10	1677	980	934	3/4
4	7 7/8	REED	HP53A	7207	1063	97	11	12/11	2657	882	1240	1/2
5	7 7/8	REED	HP53A	7900	693	56 1/2	12.3	12/12	3539	639	1726	1
								12/13	4178	529	2237	1 1/2
								12/14	4707	299	2630	1
								12/15	5006	271	3016	1 1/2
								12/16	5277	220	3526	1 3/4
								12/17	5497	259	3815	1 1/2
								12/18	5756	242	4470	1 3/4
								12/19	5998	146	4700	1 1/4
								12/20	6144	129	4985	1
								12/21	6273	277	5358	3/4
								12/22	6550	269	6316	1
								12/23	6819	210	7167	1 3/4
								12/24	7029	178	7900	2
								12/25	7207	189		
								12/26	7396	310		
								12/27	7706	194		
								T.D.	7900			

SAMPLE DESCRIPTION

1650-1680	90%	SS	clr, ltorng ip, vfg-uncons, sbrd-rd, wsrt, p-mcmt, calc cmt, slarg ip, fir-hd, dul yel-org <u>FLOR</u> , ltyel-grn strm <u>CUT</u>
	10%	LS	ltorng-bf, crpxl, v dol, sbplty-sbblky, mfrm-frm
1680-1710	80%	SS	AA ltgn, incr arg, wcmt ip
	20%	LS	AA bf-ltbrn
1710-1740	90%	SS	clr, ltorng ip, vfg, occ uncons, sbrd-rd, wsrt, m-wcmt, calc cmt, occ arg, fri-mfrm, dul yelorg <u>FLOR</u> , ltyel-grn strm <u>CUT</u>
	10%	LS	ltorng-bf, ltbrn, crpxl, vdol, sbblky-sbplty, mfrm-frm
1740-1770	100%	SS	AA pyr, incr uncons
1770-1800	80%	SS	AA ltorng
	20%	LS	ltgybf, ltorng, bf, crpxl, dol. sbblky-sbplty, mfrm-frm
1800-1830	100%	SS	clr-fros, ltgy, vfg-fgr, uncons ip, sbrd-sbang, wsrt, m-wcmt, calc cmt, arg ip, occ carb, grd ip to sdy SLTST, sft-hd, dul yel-org <u>FLOR</u> , ltyel-grn strm <u>CUT</u>
1830-1860	90%	SS	AA
	10%	LS	ltorng-bf, crpxl, dol, sbblky-sbplty, mfrm-frm
1860-1890	90%	LS	ltorng-bf, gybf, ltbrn, crpxl-micxl, grd to lmy dol ip, rthy ip, sbblky-sbplty, sft-mfrm
	10%	SS	clr-fros, vfg-uncons, sbang-sbrd, m-wsrt, m-wcmt, calc cmt arg ip, occ carb, mfrm-hd, sl dul yel-org <u>FLOR</u> , wk ltyel-grn strm <u>CUT</u>
1890-1920	90%	SS	AA ltgn, ltorng,
	10%	LS	ltorng, crpxl, dol, sbblky-sbplty, mfrm-frm
1920-1950	100%	SS	clr-fros, vfgr-uncons, sbrd-rd, wsrt, pcmt, calc cmt, arg ip, occ carb, fri-mfrm
1950-1980	90%	SS	clr-fros, wh, ltorng, vfgr-uncons, sbang-sbrd, wsrt, m-wcmt, calc cmt, arg ip, occ carb, slty ip, fri-frm
	10%	LS	ltorng, orng-brn, gybf occ, crpxl, dol, grd ip to lmy dol, sbblky-sbplty, mfrm-frm
1980-2010	60%	SLTST	bf-ltbrn, calc, varg, occ carb, grd ip to slty SS, sft-mfrm
	40%	SS	AA grd ip to sdy SLTST
2010-2040	60%	SLTST	AA
	40%	SS	clr-fros, wh, ltorng, vfgr-uncons, sbang-sbrd, wsrt, p-mcmt, calc cmt, arg ip, occ carb, slty ip, fri-frm
2040-2070	80%	SLTST	bf-ltbrn, calc, varg, occ carb, grd ip to slty SS, sft-mfrm

2040-2070 (CON'T)	20%	SS AA	
2070-2100	80%	LS	ltorng-orngbrn, crpxl-micxl, dol, grd g ip to lmy dol, rthy ip, sbblky-sbplty, frm-mfrm
	20%	SS	clr-fros, wh, ltorng, vfgr-uncons, sbang-sbrd, wsrt ip-m cmt, calc cmt, arg, grd g ip to sdy SLTST, sft-mfrm, ltyel FLOR, ltyel stmg <u>CUT</u>
2100-2130	80%	LS AA	
	20%	SS AA	varg
2130-2160	90%	LS AA	
	10%	SS AA	varg
	TR	DOL	dkredbrn, micxl, lmy ip, aplitic
2160-2190	100%	LS	lt-dkorng, orngbrn, orngbf, crmy, crpxl-micxl, dol, grd g ip to lmy dol, pred cln, tt, sbblky-plty, frm-mhd, dul orng FLOR, good ltyel stmg <u>CUT</u>
2190-2220	70%	DOL	dkredbn, micxl, lmy ip, aplitic, blky-sbplty, frm-mhd
	30%	LS AA,	vrthy, vdol
2220-2250	80%	DOL AA	
	20%	LS	lt-dkorng, orngbrn, orngbf, crmy, crpxl-micxl, dol, grd g ip to lmy dol, pred cln, sbplty-plty, frm-mhd
2250-2280	90%	LS	ltorng-orngbf, ltbn, crpxl, dol pyr, sbblky-plty, mfrm-mhd
	10%	MARL	crm, lmy, sft, NFSOC
	TR	DOL AA	dul orng FLOR, stmg ltyel <u>CUT</u>
2280-2310	50%	LS AA	dul orng FLOR/NO <u>CUT</u>
	50%	DOL	dkredbrn, micxl, lmy ip, aplitic, blky-sbplty, frm-mhd, dul orng FLOR/stmg ltyel <u>CUT</u>
2310-2340	60%	LS	ltorng, bf, crpxl, slrthy ip, trns1 ip, grd g to lmy dol ip, sbplty-plty, mfrm-mhd, NFSOC
	40%	DOL AA	NFSOC
2340-2370	60%	LS AA,	fnt dul orng FLOR/vslow ltyel <u>CUT</u>
	40%	DOL AA	NFSOC
2370-2400	70%	LS	ltorng, bf, dkorngbrn, crpxl-micxl, slrthy ip, trns1 ip, grd g to lmy dol ip, sbplty-plty, mfrm-mhd NFOS, slo ltyel <u>CUT</u>
	30%	DOL	dkred, micxl, lmy ip, aplitic, sbblky-sbplty, frm-mhd, NFSOC
2400-2430	65%	DOL	lt-dkbrn, rdbrn, micxl, lmy ip, aplitic, sbblky-sbplty, frm-mhd, NFOS, vslo ltyel <u>CUT</u>
	35%	LS	tn-bf, ltbrn, crp-micxl, slrthy ip, grd g to lmy dol ip, sbblky-plty, mfrm-mhd, dul orng FLOR, stmg ltyel <u>CUT</u>
	TR	GILSONITE	
2430-2460	75%	DOL AA	NFOS, vslo ltyel <u>CUT</u>
	25%	LS AA	NFSOC
2460-2490	50%	DOL	lt-dkbrn, micxl, lmy ip, aplitic, sbblky-sbplty, frm-mhd, dulorng FLOR/NO <u>CUT</u>

2460-2490 (CONT)	50%	LS tn-bf, ltbrn, crp-micxl, grdg to lmy dol ip, sbplty-pty, mfrm-mhd, dulorng <u>FLOR/slo stmg ltyel CUT</u>
2490-2520	40%	SH dkbrn-mbrn, blk-sbblky, slcalc, hd, kerogen lam, mot ip, dol
	30%	DOL mbrn-rdbrn, micxl, aplitic, sbblky-sbplty, frm-hd
	30%	LS AA dul orng <u>FLOR</u> , NSOC/sft-mfrm, dulorng <u>FLOR/slo stmg ltyel CUT</u>
2520-2550	75%	LS bf-tn, pty, micxl, sft, fos ip, rthy ip, NFOS/slo stmg ltyel <u>CUT</u>
	25%	DOL mbrn-rdbrn, micxl, aplitic, sbplty, frm-hd, NFOS/slo stmg ltyel <u>CUT</u>
2550-2580	60%	DOL AA NFSOC
	40%	LS AA NFSOC
2580-2610	50%	DOL mbrn-rdbrn, micxl, sbplty, aplitic, frm-hd, NFOS/vslo stmg ltyel <u>CUT</u>
	35%	LS bf-tn, ltbrn, sbplty-pty, micxl, sft-mhd, NFOS/vslo stmg ltyel <u>CUT</u>
	15%	SH dkbrn, sbplty, slcalc, kerogen lam, dol, hd
2610-2640	50%	LS bf-tn, ltbrn, sbplty-pty, crp-micxl, sft-mhd, rthy ip, NFSOC
	30%	DOL AA NFOS/vslo ltyel <u>CUT</u>
	20%	SH AA
2640-2670	60%	LS AA, dulorng <u>FLOR/slo stmg ltyel CUT</u>
	30%	DOL mbrn-rdbrn, micxl, sbplty, aplitic, frm-hd, NFOS/slo ltyel <u>CUT</u>
	10%	SH dkbrn, sbplty, slcalc, kerogen lam, dol, hd
2670-2700	75%	DOL mbrn, redbrn, micxl, sbblky-sbplty, aplitic, frm-hd, NFOS/vslo stmg ltyel <u>CUT</u>
	25%	LS bf-tn, ltbrn, sbplty-pty, crp-micxl, sft-mfrm, rthy ip, dulorng <u>FLOR/stmg ltyel CUT</u>
		ABNT TARBALLS
2700-2730	60%	DOL mbrn-rdbrn, micxl, sbplty, aplitic, frm-mhd, NFSOC
	40%	LS bf-tan, ltbrn, pty-sbplty ip, crp-micxl, sft-mhd, NFSOC
2730-2760	70%	DOL AA NFSOC
	30%	LS AA dulorng <u>FLOR/NO CUT</u>
2760-2790	60%	DOL mbrn-rdbrn, micxl, sbplty, vsdy, frm-mhd, dulorng <u>FLOR/NO CUT</u>
	40%	LS bf-tn, ltbrn, pty-sbplty, crpxl, sdy, sft-mhd, rthy ip, dulorng <u>FLOR/NO CUT</u>
2790-2820	75%	DOL m-dkbrn, redbrn, micxl, sbplty, aplitic, frm-mhd, kerogen lam, dulorng <u>FLOR/NO CUT</u>
	25%	LS AA dulorng <u>FLOR/vslo stmg ltyel CUT</u>
2820-2850	70%	DOL AA NFSOC
	30%	LS bf-tn, pty-sbplty, crp-micxl, sft-mhd, rthy ip, dulorng <u>FLOR/NO CUT</u>
2850-2880	65%	LS bf-tn, ltbrn, pty-sbplty, crp-micxl, sft-mhd, rthy ip,

2850-2880 (CONT)	35%	DOL mbrn, rdbn ip, micxl, sbplty, aplitic, frm-hd, NFSOC
2880-2910	60%	LS bf-tn, ltbrn, sbblky-plty, crp-micxl, rthy ip, slsdy ip, occ mrlly, sft-mhd, dul orng <u>FLOR/NO CUT</u>
	40%	DOL mbrn, rdbn ip, sbblky-sbplty, micxl, aplitic, frm-hd, NFSOC
2910-2970	100%	LS crm-bf, occ tn-ltbrn, sbblky-sbplty, crpxl, chk ip, cln, dns, frm-sft, dulorng <u>FLOR/slo ltyel CUT</u>
2970-3000	60%	LS bf-tn, ltbrn, sbblky-plty, crp-micxl, slchky-slrthy ip, sft-mhd, NFSOC
	30%	DOL mbrn, rdbn ip, sbblky-sbplty, micxl, aplitic, frm-hd, NFOS, slo stmg ltyel <u>CUT</u>
	10%	SS clr-fros, vfg, sbrd-rd, wsrt, m-wcmt, calc cmt slarg, un-cons ip, fri-frm, dulorng <u>FLOR/NO CUT</u>
3000-3030	60%	LS AA, dulorng <u>FLOR/NO CUT</u>
	40%	DOL AA, dulorng <u>FLOR/slo stmg ltyel CUT</u>
3030-3060		NS
3060-3090	90%	LS crm-bf, occ tn-ltbrn, sbblky-sbplty, crp-micxl, chk ip, cln, dns, msft-frm, dulorng <u>FLOR/NO CUT</u>
	10%	DOL AA
3090-3120	100%	LS AA, dulorng <u>FLOR/NO CUT</u>
3120-3150	85%	LS crmy bf, tn-ltbrn, sbblky-plty, crpxl, slchk ip, cln, dns, msft-frm, cul orng <u>FLOR/stmg ltyel CUT</u>
	15%	DOL mbrn, occ rdbn, sbblky-sbplty, micxl, aplitic, frm-hd, slo stmg ltyel <u>CUT</u>
3150-3180	90%	LS AA, dulorng <u>FLOR/NO CUT</u>
	10%	DOL AA, dulorng <u>FLOR/fnt ltyel CUT</u>
3180-3210	65%	SS clr-fros, wh, vfgr-uncons, sbrd-rd, wsrt, m-wcmt, slcalc cmt, occ slarg, fri-frm, NFSOC
	35%	LS crmy-bf, tan-ltbrn ip, sbblky-sbplty, crpxl, cln, dns, msft-frm, NFOS, fnt ltyel <u>CUT</u>
3210-3240	90%	LS AA, dulorng <u>FLOR</u> , vs1 ltyel <u>CUT</u>
	10%	SS AA, NFSOC
3240-3270	60%	SS clr-fros, wh, vfgr-uncons, sbrd-rd, wsrt, m-wcmt, slcalc cmt, pred cln, pyr ip, fri-frm, dulorng <u>FLOR/stmg ltyel CUT</u>
	40%	LS crm-bf, wh, ltgy, occ tn, sbblky-sbplty, mic-crpxl, msft-frm, dulorng <u>FLOR</u> , fnt ltyel <u>CUT</u>
3270-3300	75%	LS AA
	15%	SS AA
	10%	DOL mbrn, occ rdbn, sbblky-sbplty, micxl, aplitic, frm-hd, NFSOC
3300-3330	75%	LS crmy-bf, wh, ltgy, occ tn, sbblky-sbplty, mic-crpxl, msft-frm
	15%	DOL AA
	10%	SS clr-fros, wh, vfgr-uncons, sbrd-rd, wsrt, m-wcmt, slcalc cmt, pred cln, pyr ip, fri-frm

3330-3330	75%	LS crmy-bf, wh, ltgy, occ tn, sbblky-sbplty, mic-crp1, msft-frm
	15%	DOL AA
	10%	SS clr-fros, wh, vfg-uncons, sbrd-rd, wsrt, m-wcmt
3330-3360	70%	DOL lt-mbrn, occ rdbn, pred sbplty, sbblky ip, micx1, mfrm-hd, ltyel <u>FLOR/ltyel stmg CUT</u>
	30%	LS crm-bf, tn, sbplty-plty, mic-crp1, sft-mfrm
3360-3390	40%	DOL AA
	30%	LS AA
	30%	SS Wh-ltgy, clr, vfg-uncons, sbrd-rd, wsrt, m-wcmt, slcalc, slfri-mhd
3390-3420	50%	DOL lt-dkbrn, occ rdbn, sbplty-sbblky, micx1, mfrm-hd, ltyel <u>FLOR/ltyel stmg CUT</u>
	40%	LS crm-bf, tn, sbplty-plty, mic-crp1, sft-mfrm
	10%	SS AA
3420-3450	80%	DOL lt-dkbrn, bf-tn, ltgy, sbplty, crp-micx1, msft-hd
	20%	LS AA
3450-3510	100%	DOL lt-dkbrn, bf-tn, sbplty-plty, crp-micx1, msft-hd, ltyel-gn <u>FLOR/NO CUT</u>
3510-3540	60%	DOL AA w/shly, sl dul ltyelgn <u>FLOR/NO CUT</u>
	40%	SH m-dkbrn, sbblky-sbplty, slcalc, mfrm-frm, dol
3540-3570	50%	DOL AA
	50%	SH m-dkbrn, gybrn, sbblky-sbplty, slcalc, mfrm-frm, dol
3570-3600	100%	DOL lt-mbrn, bf-tan, occ rdbn, gy-ltgy, sbblky-sbplty, msft-hd, dul orng <u>FLOR</u> , sl ltyel stmg <u>CUT</u>
3600-3630	90%	DOL AA w/ltyel <u>FLOR/NO CUT</u>
	10%	SS clr-ltgy, vf-occ fgr, sbrd-sbang, m-wsrt, m-wcmt, slcalc, slfri-hd, NFSOC
3630-3660	60%	LS ltgy-gy, sbblky-sbplty, mhd-hd, sdy, dol
	20%	DOL ltbrn, gy, buf-tn, sbblky-sbplty, msft-hd, ltyel <u>FLOR/NO CUT</u>
	20%	SS ltgy, clr ip, vfgr, occ cgr, sbrd-sbang, m-wsrt, m-wcmt, slcalc, slfri-hd, NFSOC
3660-3690	70%	LS bf, ltgy-ltgybrn, sbblky-sbplty, mic-crp1, dol, trns1 ip, vsdy, mfrm-frm
	20%	SS ltgy, occ clr, vfgr-uncons, sbrd-rdd, m-wsrt, m-wcmt, calc cmt, fri-hd
	10%	DOL lt-mbrn, sbblky, micx1, aplitic, frm-hd
3690-3720	70%	SS AA NFOC, sl 0 <u>STN</u>
	30%	LS bf-tn, ltgy-gybrn, sbblky-sbplty, crpx1, dol, slsdy-cln, mfrm-frm (OIL & TARBALLS IN PIT)
3720-3750	95%	LS bf-tn, ltgy-ltgybrn, sbblky-sbplty, crpx1-micx1, dol, sdy, mfrm-frm, dul orng <u>FLOR/NO CUT</u>
	5%	SS ltgy, clr, vfgr-uncons, sbrd-sbang, m-wsrt, m-wcmt, calc

3750-3780	70%	LS AA vsdy NFSOC
	30%	SS AA
3780-3810	55%	SS wh-fros, clr, ltgygn, vfgr, occ cgl, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, occ uncons, fri-hd, NFSOC
	25%	LS bf-tan, ltgy-gybrn, ltgygn ip, blk-sbplty, crp-micxl, dol ip, slsdy ip, mfrm-frm, dulorng <u>FLOR/NO CUT</u>
	20%	SH ltgn-gygn, sbplty, slcalc, sbwxy ip, mfrm-frm (FREE OIL IN SPL)
3810-3840	65%	SS AA (VPS - LCM MAT)
	25%	LS AA
	10%	SH AA
3840-3870	70%	SS wh-fros, clr, ltgy, vfgr-uncons, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-hd, dulorng <u>FLOR/fnt mlky CUT</u>
	25%	SH ltgn-gygn, sbplty, slcalc, sbwxy, mfrm-frm
	5%	LS bf-tn, ltgy-gybrn, ltgygn ip, blk-sbplty, crp-micxl, dol ip, slsdy ip, mfrm-frm
3870-3900	70%	SH tn, m-dkbrn, ltgy-gygn, sbblky-sbplty, lmy-dol, slarg, sdy ip, sbwxy ip, sft-mfrm
	20%	DOL m-dkbrn, redbrn, micxl, lmy ip, aplitic, frm-hd
	10%	LS bf-tan, ltgy, blk-sbblky, crp-micxl, dol ip, sdy ip, mfrm-hd
	TR	SS AA
3900-3930	70%	SH lt-mgy, mbrn, sbblky-sbplty, lmy-dol, slarg, sdy ip, sbwxy ip, sft-mfrm
	30%	SS ltgy, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg, carb ip, grdg to sdy SLTST ip, fri-frm, NFSOC
3930-3960	80%	SH AA
	20%	SS AA
	TR	DOL AA
	ABNT	<u>0 STN</u>
3960-3990	100%	SH dkgybrn, dkbrn, tn, ltgy, occ bf, blk-sbplty, lmy-dol, arg ip, occ sdy, sbwxy ip, sft-frm
	ABNT	<u>0 STN</u>
3990-4020	95%	SH AA rdbrn
	5%	SS clr-ltgy, vfg-fg, sbrd-rd, m-wsrt, m-wcmt, calc cmt, arg, fri-frm
4020-4050	75%	SH m-dkbrn, gy, gybrn, tn, sbblky-sbplty, lmy, arg ip, sbwxy ip, sft-frm, fos
	15%	LS crm-ltbrn, sbblky, crp-micxl, hd, fos, abnt ost
	10%	SS wh0ltgy, vfg, sbrd-sbang, wsrt, wcmt, slcalc, slfri-hd
4050-4080	85%	SH mgy, blk-sbplty, arg ip, slcalc, msft-hd, pyr
	15%	SS AA w/pyr
4080-4110	65%	SH AA
	35%	SS wh, lt-dkgy, vfg, sbrd-sbang, wsrt, wcmt, slcalc, slfri-hd
4110-4140	65%	SH mgy, m-dkbrn, gybrn, bf, sbblky-sbplty, lmy, arg ip, sft-frm
	35%	SS lt-dkgy, wh, vfg, sbrd-sbang, wsrt, wcmt, slcalc, slfri-hd, sity

4140-4170	50%	SH lt-mgy, gybrn ip, sbblky-sbplty, arg ip, slcalc, sft-mfrm
	50%	SS wh-ltgy, mgy, vfgr, sbrd-sbang, wsrt, wcmt, slcalc, slfri-hd, NFSOC
4170-4200	50%	SH AA
	50%	SS AA w/pyr
4200-4230	90%	SH lt-mgy, lt-dkbrn, gybrn, tan-buf, sbblky-sbplty, arg ip, sdy ip, slcalc, sft-hd, pyr ip
	10%	SS ltgy, vfgr, sbrd-sbang, wsrt, wcmt, slcalc, slfri-hd, NFSOC
4230-4260	80%	SH AA w/incr gy, gn
	20%	SS AA w/gn, vf-fgr
4260-4290	75%	SH lt-mgy, lt-dkbrn, gybrn, tn-buf, sbblky-sbplty, arg ip, slcalc, sft-frm, dul yel FLOR, ltyel stmg CUT
	15%	SS clr, ltgy, gn, vf-fgr, p-wsrt, p-mcmt, calc-slcalc, fri-hd, uncons ip
	10%	LS crm-buf, plty, crpxl, sft
4290-4320	90%	SH AA
	10%	SS AA
4320-4350	95%	SH crmy, lt-mgy, ltbrn, gybrn, sbblky-sbplty, arg, vlmy, grdg ip to shly LS, brit-frm
	5%	LS bf-ltgy, gybrn, blk-sbplty, crpxl, cln, dns, frm-mhd
4350-4380	90%	SH crmy, lt-mgy, lt-dkbrn, gybrn, sbblky-sbplty, slarg ip, sl sdy ip, lmy, sbwxy ip, brit-frm
	10%	SS clr, ltgy, fros, vfgr-uncons, sbrd-sbang, wsrt, wcmt, calc cmt, slarg, slfri-hd
4380-4410	100%	SH AA dkgy, incr sdy
4410-4470	100%	SH lt-dkgy, lt-dkbrn, gybrn, occ crmy, sbblky-sbplty, slsdy ip, lmy, sbwxy ip, brit-frm
4470-4500	95%	SH bf-crm-tn, lt-dkbrn, lt-dkgybrn, blk-plty, sdy ip, vlmy ip, grdg to vshly LS, occ sbwxy, mot ip, sft-frm
	5%	SS clr-fros-wh, vfgr-occ uncons, sbang-sbrd, wsrt, p-mcmt, calc cmt, occ slarg, fri-hd
4500-4530	100%	SH AA
4530-4560	100%	SH bf-tn, lt-dkbrn, lt-dkgybrn, blk-plty, slty-sdy ip, lmy ip, grdg occ to vshly LS, occ sbwxy, mot ip, sft-frm
4560-4590	100%	SH AA (FREE OIL)
4590-4620	80%	SH bf-tn, lt-dkbrn, lt-dkgybrn, blk-sbplty, lmy, occ sbwxy, pyr ip, arg ip, sft-frm
	10%	SS wh-clr, fros, vfgr-fgr, occ cgr, ang-sbrd, p-wsrt, wcmt, calc cmt, occ cgl, frm-hd
	10%	LS wh, ltgy, tn, gybrn, brn, blk-sbblky, crpxl-micxl, shly ip, cln-dns, frm-hd (FREE OIL)
4620-4650	80%	SH AA incr sdy

	10%	LS AA
	10%	SS AA
4650-4680	70%	SS clr, fros, wh, vfgr-uncons, sbang-rd, wsrt, wcmt, calc cmt, frm-hd, ltyel <u>FLOR</u> , fnt mlky <u>CUT</u>
	25%	SH bf-tn, lt-dkbrn, lt-dkgybrn, blk- <u>sbplty</u> , lmy, occ sbwxy, slarg, sdy ip, sft-frm
	5%	LS tn, gybrn, blk-sbblk, crpxl, slshly, frm-hd
4680-4710	80%	SH lt-dkgy, gybrn, lt-dkbrn, blk- <u>sbplty</u> , occ sbwxy, slarg, sft-frm
	20%	SS AA
4710-4740	50%	SH AA
	50%	SS wh, clr, vf-fgr, rd-sbrd, wsrt, m-wcmt, calc, cmt, slfri, pyr, NFSOC
4740-4770	75%	SH lt-dkgy, gybrn, lt-dkbrn, gygn, mar ip, rdbrn, sbblk- <u>sbplty</u> , sbwxy, arg ip, sdy ip, n-slcalc, msft
	25%	SS AA
4770-4800	50%	SH gygn, gybrn, rd, lt-mgy, lt-mbrn, occ yel, sbblk- <u>sbplty</u> , sbwxy, arg ip, sdy ip, n-slcalc, msft
	50%	SS wh-clr, vf-fgr, wsrt, p-mcmt, fri-slfri, pyr, fnt ltyel sp <u>FLOR</u> , vfnt ltyel stmg <u>CUT</u>
4800-4820	50%	SH ltgy, gygn, gybrn, rd, occ mot w/wh, sbblk- <u>sbplty</u> , sbwxy ip, sdy ip, slarg ip, n-slcalc, sft-mfrm
	50%	SS wh-clr, vfgr-fgr, sbrd-rd, wsrt, p-mcmt, slarg ip, fri-mfrm, NSFOC
4820-4840	70%	SH ltgy, ltgn, rd, occ dkgy, gybrn, blk, sbblk- <u>plty</u> , sbwxy ip, slty ip, occ sdy, slarg, n-slcalc, pyr, sft-mfrm
	30%	SS AA
4840-4860	60%	SH AA pred ltgygn, gy, occ wh, occ pyr
	40%	SS wh, ltgy, vfgr-fgr, sbrd-rd, wsrt, p-mcmt, slarg, occ cgl, fri-mfrm, NFSOC
4860-4880	70%	SH ltgy-dkgy, gygn, ltgn, rd, brn-gybrn, sbblk- <u>sbplty</u> , sbwxy ip, slty ip, occ sdy, slarg, n-slcalc, pyr, sft-mfrm
	30%	SS AA sl incr cgl, NFSOC (FREE OIL IN SPL)
4880-4900	70%	SS wh, clr, fros, vfgr-fgr, sbang-sbrd, p-wsrt, p-mcmt, calc cmt, slarg ip, fri-frm, NFSOC
	30%	SH AA
4900-4920	80%	SH lt-dkgy, gygn, ltgn, rd, brn, gybrn, sbblk- <u>sbplty</u> , sbwxy ip, slty ip, occ slsdy, slarg, slcalc, pyr, sft-frm
	20%	SS AA NFSOC
4920-4940	70%	SH AA
	30%	SS wh, clr, vfgr-fgr, sbang-sbrd, m-wsrt, p-wcmt, calc cmt, vslarg ip, fri-frm
4940-4960	50%	SH lt-lt-dkgy, wh, ltgn, rd, sbblk- <u>sbplty</u> , sbwxy ip, sft-frm
	40%	SS clr, wh, ltbrn, vfgr-uncons, ang-sbrd, p-wsrt, m-wcmt, calc cmt, cgl ip, fri-frm, dul orng <u>FLOR/NO CUT</u>

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	10%	LS crmy-honeybrn, blk, crp-micxl, fos hash, frm, dul orng <u>FLOR/NO CUT</u>
4960-4980	80%	LS AA
	20%	SH AA dkrdbn
4980-5000	85%	SH lt-dkgy, wh, ltgn, rd, blk, brn-gybrn, sbblky-plt, sbwxy ip, slty ip, occ sdy ip, slarg, slcalc, sft-frm
	15%	SS AA
5000-5010	70%	SH AA
	30%	SS clr, wh, vfgr-fgr, sbrd-rd, wsrt, m-wcmt, calc cmt, fri-frm
5010-5020	70%	SH lt-dkgy, brn-gybrn, rd, ltgn, occ blk, sbblky-sbplty, slty ip, slarg ip, slcalc, sft-frm
	30%	SS AA
5020-5030	80%	SH AA
	20%	SS clr, wh, sbrd-rd, fgr, wsrt, m-wcmt, calc cmt, fri-hd
5030-5040	80%	SH lt-dkgy, ltgn, gygn, rd, gybrn, sbblky-sbplty, sbwxy ip, sdy ip, mot ip, sl-ncalc, sft-mfrm
	20%	SS clr-wh, ltgy, vf-fgr, wsrt, m-wcmt, calc cmt, fri-hd
5040-5050	90%	SH AA w/incr rd
	10%	SS AA
5050-5060	60%	SH lt-dkgy, gybrn, ltgn, gy, rd, sbblky-sbplty, sbwxy ip, sdy ip, mot ip, sl-ncalc, sft-mfrm
	40%	LS gybrn-gy, blk, crp-micxl, abnt fos, ost, frm, ltyelgn <u>FLOR/</u> ltyelgn stmg <u>CUT</u>
5060-5070	80%	SH AA
	20%	LS AA
5070-5080	90%	SH lt-dkgy, gybrn, ltgn, bf, occ rd, sbblky-sbplty, sdy, slty, arg, sbwxy ip, sl-ncalc, sft-mfrm
	10%	LS gybrn-gy, blk, crp-micxl, abnt fos, ost, frm
5080-5090	90%	SH AA w/dul orng mnrl <u>FLOR</u>
	10%	LS gybrn-gy, wh-crm, blk-sbblky, crp-micxl, fos, ost, frm
5090-5100	70%	SH lt-dkgy, gybrn, ltgn, rd, sbblky-sbplty, sdy, arg, sbwxy ip, pyr, sl-ncalc, sft-mfrm
	30%	LS gybrn-gy, ltbrn-bf, blk, crp-micxl, abnt fos, ost, frm
5100-5110	75%	SH AA
	15%	LS AA
	10%	SS ltbrn, clr, fgr, occ cgr, sbrd-sbang, msrt, mcmt, calc cmt, fri-mhd, yel <u>FLOR/ltyel stmg CUT/O STN</u>
5110-5120	90%	SH lt-dkgy, ltgn, gybrn, rd, sbblky-sbplty, sdy, arg, sbwxy ip, sl-ncalc, mot ip, sft-mfrm
	10%	LS gybrn-gy, wh, blk, crp-micxl, frm
5120-5130	100%	SH gygn, rd, lt-mgy, blk-sbplty, sdy, arg, sbwxy ip, pyr, sft-mfrm

5130-5140	100%	SH rd, gygn, lt-mgy, yel, sbblky-sbplty, sbwxy ip, sdy ip, arg ip, mot ip, pyr, sft-msft
5140-5150	85%	SH AA w/ltbrn
	15%	SS wh-clr, vf-fgr, sbrd-sbang, wsrt, m-wcmt, calc cmt, slfri-hd, NFSOC
5150-5160	85%	SH gygn, rd, lt-dkgy, gybrn, yel, sbblky-sbplty, sdy, arg, sbwxy ip, mot ip, pyr, sl-ncalc, sft-mfrm
	15%	SS AA
5160-5170		NS
5170-5180	95%	SH lt-mgy, ltgn, gygn, red, gybrn, occ yel, sbblky-plty, occ splty, sdy, arg, sbwxy ip, mot ip, n-slcalc, sft-brit
	5%	SS clr, wh, ltgn, vfgr-uncons, sbang-sbrd, wsrt, p-mcmt, calc cmt, fri-hd
5180-5190	90%	SH AA
	10%	SS AA
5190-5200	95%	SH lt-mgy, ltgn, gygn, red, brn, gybrn, sbblky-plty, occ splty, sdy ip, arg ip, sbwxy ip, mot ip, n-slcalc, sft-frm
	5%	SS clr, wh, occ ltgn, vfg-fg, sbrd-rd, wsrt, m-wcmt, calc cmt, fri-frm
5200-5210	90%	SH AA pyr ip
	10%	SS AA ltgy, ltbrn, NFSOC
5210-5220	100%	SH lt-mgy, ltgn, gygn, rd, brn, gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, sbwxy ip, mot ip, n-slcalc, pyr, sft-frm
	TR	SS AA
5220-5230	95%	SH AA
	5%	SS clr-ltgy, wh, vfgr-fgr, sbrd-rd, wsrt, m-wcmt, calc cmt, fri-frm
5230-5240	100%	SH lt-mgy, ltgn, gygn, rd, occ blk, sbblky-sbplty, slty ip, occ sdy, arg ip, sbwxy ip, n-slcalc, pyr ip, sft-frm
5240-5250	100%	SH AA occ yel, gybrn
5250-5270	100%	SH lt-mgy, ltgn, gygn, rd, gybrn, ltbrn-kdbrn, occ yel, sbblky-sbplty, slty ip, occ sdy, arg ip, sbwxy ip, n-slcalc, pyr, sft-frm
5270-5280	95%	SH rd, lt-mgy, ltgn, gygn, gybrn, occ yel, sbblky-sbplty, slty ip, sdy ip, arg ip, occ sbwxy, n-slcalc, pyr, sft-frm
	5%	SS clr, wh, ltgn, vfgr-fgr, sbrd-rdd, wsrt, m-wcmt, calc cmt, fri-frm
5280-5290	90%	SH AA
	10%	SS AA
5290-5300	100%	SH rd, ltgn, lt-mgy, occ yel, sbblky-sbplty, slty ip, sdy ip, arg ip, occ sbwxy, n-slcalc, pyr, sft-frm

5300-5310	90% SH AA 10% SS	clr, wh, vfgr-fgr, sbrd-rd, wsrt, m-wcmt, calc cmt, fri-frm
5310-5330	100% SH	rd, ltgn, lt-mgy, gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, sbwxy, n-slcalc, abnt pyr, sft-mfrm
5330-5340	90% SH 10% SS	rd, ltgn, lt-mgy, yel, sbblky-sbplty, sdy ip, slty ip, mot ip, arg ip, sbwxy, n-slcalc, sft-frm wh-clr, vf-mgr, sbrd-sbang, p-msrt, m-wcmt, calc cmt, sl fri-hd
5340-5350	90% SH AA 10% SS	wh-clr, s&p, ltgy, vf-fgr, sbang-sbrd, wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
5350-5360	50% SS 50% SH	wh-clr, pred mgr, cgr ip, sbang-wsrt, p-mcmt, calc cmt, fri-slfri, NFSOC rd, ltgn, lt-mgy, yel, sbblky-sbplty, sdy ip, mot ip, arg ip, sbwxy, n-slcalc, sft-mfrm
5360-5370	70% SH AA 30% SS	AA
5370-5380	85% SH 15% SS	rd, lt-mgy, ltgn-gygn, yel, mbrn, sbblky-sbplty, sdy ip, mot ip, arg ip, sbwxy, n-slcalc, sft-mfrm wh-clr, ltgy, vf-mgr, msrt, p-mcmt, calc cmt, fri-slfri, NFSOC
5380-5390	100% SH	AA
5390-5400	100% SH	rd, ltgn-gygn, lt-mgy, yel, mbrn, sbblky-sbplty, sdy ip, mot ip, arg ip, sbwxy, n-slcalc, sft-mfrm
5400-5420	100% SH	rd, ltgn-gygn, lt-mgy, yel, brn-gybrn, sbblky-sbplty, sdy ip, slty ip, mot ip, arg ip, sbwxy ip, n-slcalc, sft-mfrm
5420-5430	90% SH 10% SS	AA occ blk wh, clr, ltbrn, vfgr-mgr, sbang-sbrd, p-wsrt, m-wcmt, calc cmt, slfri-frm NFSOC
5430-5450	100% SH	rd, ltgn-gygn, lt-mgy, yel, brn-gybrn, sbblky-sbplty, sl sdy ip, slty ip, mot ip, arg ip, sbwxy ip, n-slcalc, sft-mfrm
5450-5470	100% SH	rd, ltgn-gygn, lt-mgy, yel, brn-gybrn, sbblky-plty, sl sdy ip, slty ip, mot ip, arg ip, sbwxy ip, n-slcalc, sft-mfrm
5470-5480	95% SH 5% SS	rd, ltgn-gygn, lt-mgy, yel, brn-gybrn, sbblky-sbplty, sdy ip, slty ip, arg ip, sbwxy ip, n-slcalc, sft-mfrm clr, wh, ltgy, ltbrn, vfgr-fgr, sbrd-rd, wsrt, wcmt, calc, slfri-frm
5480-5490	100% SH	AA
5490-5510	100% SH	rd, ltgn-gygn, lt-mgy, yel, brn-gybrn, sbblky-sbplty, sdy

			ip, slty ip, arg ip, mot ip, sbwxy ip, n-slcalc, sft-mfrm
5510-5520	100%	SH AA, pyr	
5520-5530	100%	SH rd, ltgn-gygn, lt-mgy, brn-gybrn, sbblky-sbplty, sdy ip, slty ip, arg ip, mot ip, sbwxy, n-slcalc, sft-mfrm	
5530-5540	100%	SH AA w/yel	
5540-5550	100%	SH rd, ltgn-gygn, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, slty ip, arg ip, mot ip, sbwxy, n-slcalc, sft-mfrm	
5550-5570	100%	SH rd, ltgn-gygn, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, mot ip, sbwxy, n-slcalc, sft-mfrm	
5570-5580	100%	SH rd, ltgn-gygn, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, mot ip, sbwxy, n-slcalc, sft-mfrm	
		TR SS	
5580-5600	100%	SH AA	
5600-5620	100%	SH AA	
5620-5650	100%	SH rd, lt-mgy, ltgn-gygn, brn-gybrn, yel, sbblky-sbplty, sdy, arg ip, mot ip, sbwxy, n-slcalc, sft-mfrm	
5650-5670	100%	SH rd, lt-mgy, brn-gybrn, ltgn-gygn, yel, sbblky-sbplty, sdy, arg ip, mot ip, sbwxy ip, n-slcalc, sft-mfrm	
5670-5680	90%	SH rd, lt-mgy, brn-gybrn, ltgn-gygn, sbblky-sbplty, sdy ip, sbwxy ip, n-slcalc, sft-mfrm	
	10%	SS clr, wh, ltbrn, s&p, m-fgr, sbang-sbrd, p-msrt, m-wcmt, calc cmt, arg, slfri-frm, NFSOC	
5680-5690	100%	SH AA, yel	
5690-5710	100%	SH rd, lt-mgy, brn-gybrn, ltgn-gygn, yel, sbblky-sbplty, sdy, arg ip, sbwxy ip, n-slcalc, sft-mfrm	
5710-5740	100%	SH rd, lt-mgy, ltgn-gygn, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, sbwxy ip, n-slcalc, sft-mfrm	
5740-5760	100%	SH red, ltgn-gygn, lt-mgy, brn-gybrn, sbblky-sbplty, sdy, arg, n-slcalc, sft-mfrm	
5760-5790	100%	SH red, ltgn-gygn, lt-mgy, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
5790-5800	100%	SH rd, ltgn-gngy, lt-mgy, brn-gybrn, sbblky-sbplty, slty ip, arg ip, n-slcalc, sft-mfrm	
5800-5810	80%	SH AA	
	20%	SS ltgy-gybrn, s&p ip, vf-fgr, sbang-sbrd, msrt, pcmt, sl shly, calc cmt, fri	
5810-5820	60%	SH rd, ltgn-gngy, lt-mgy, brn-gybrn, sbblky-sbplty, slty ip, arg ip, n-slcalc, sft-mfrm	

	40%	SS	ltgy-gybrn, s&p ip, vfg-fgr, sbang-sbrd, msrt, pcmt, sl shly, calc cmt, fri
5820-5830	90%	SH	rd, ltgn-gngy, lt-mgy, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, pyr, n-slcalc, sft-mfrm
	10%	SS	AA
5830-5840	100%	SH	AA
5840-5860	100%	SH	rd, lt-mgy, ltgn-gygn, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, pyr, mot ip, n-slcalc, sft-mfrm
5860-5870	100%	SH	rd, lt-mgy, ltgn-gygn, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, mot ip, n-slcalc, sft-mfrm
5870-5880	90%	SH	AA
	10%	SS	ltgy, brn, vfgr, sbrd-sbang, msrt, pcmt, calc cmt, fri, NFSOC
5880-5890	85%	SH	rd, lt-mgy, ltgn-gygn, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, m-slcalc, sft-mfrm
	15%	SS	wh-clr, ltgy, s&p, vfg-fgr, sbang-sbrd, m-psrt, pcmt, calc cmt, fri, NFSOC
5890-5910	90%	SH	rd, lt-mgy, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
	10%	SS	wh, clr, ltgy, s&p, vfg, sbrd-rd, m-wsrt, m-pcmt, calc cmt, fri-slfrm, NFSOC
5910-5920	100%	SH	AA
5920-5940	100%	SH	rd, lt-mgy, brn-gybn, yel, sbblky-sbplty, slsdy ip, arg ip, n-slcalc, sft-mfrm
5940-5950	95%	SH	rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, slsdy ip, arg ip, n-slcalc, sft-mfrm
	5%	SS	clr-wh, s&p, fgr-mgr, sbang-sbrd, m-wsrt, m-pcmt, calc cmt, fri-slfrm
5950-5960	100%	SH	AA
5960-5970	95%	SH	AA
	5%	SS	AA NFSOC
5970-5980	80%	SH	AA
	20%	SS	clr-wh, ltgy, s&p, vfgr-fgr, sbrd-rd, wsrt, m-wcmt, calc cmt, fri-frm, NFSOC
5980-5990	85%	SH	rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, slsdy ip, arg ip, pyr, n-slcalc, sft-mfrm
	15%	SS	AA NFSOC
5990-6000	100%	SH	AA
6000-6020	100%	SH	rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, slsdy ip, arg ip, sbwxy ip, n-slcalc, sft-mfrm
6020-6040	90%	SH	rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, sbwxy ip, n-slcalc, sft-mfrm

	10%	SS wh, ltbrn, vfgr, sbrd-sbang, wsrt, pcmt, calc cmt, fri, NFSOC
6040-6050	80%	SH rd, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
	20%	SS wh, frst, ltgy, gybrn, s&p ip, vfg-fgr, sbang-sbrd, m-p srt, m-pcmt, calc cmt, mic, fri, NFSOC
6050-6060	90%	SH AA
	10%	SS AA
6060-6080	90%	SH AA
	10%	SS wh, ltgy, gybrn, vfg-fgr, sbang-sbrd, w-msrt, m-pcmt, calc cmt, fri-slfri, NFSOC
6080-6090	100%	SH rd, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
6090-6100	85%	SH AA
	15%	SS wh-ltgy, gybrn, vf-fgr, sbang-sbrd, msrt, m-pcmt, calc cmt, fri, NFSOC
6100-6110	90%	SH rd, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
	10%	SS AA
6110-6130	100%	SH lt-mgy, rd, brn-gybrn, occ yel, sbblky-sbplty, sdy, arg ip n-slcalc, sft-mfrm
6130-6140	95%	SH lt-mgy, rd, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
	5%	SS wh-clr, ltgy, vfgr-fgr, sbrd-rd, m-wsrt, m-wcmt, calc cmt, slfri-frm
6140-6170	100%	SH rd, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
6170-6200	100%	SH rd, lt-mgy, brn-gybrn, sbblky-sbplty, sdy, arg n-slcalc, sft-mfrm
6200-6210	95%	SH rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
	5%	SS wh-ltgy, vfg-fgr, sbrd-rd, wsrt, m-wcmt, calc cmt, slfri-frm, NFSOC
6210-6220	90%	SH AA, incr sdy
	10%	SS AA
6220-6230	90%	SH AA
	10%	SS ltgy, occ s&p, vfg, sbrd-rd, wsrt, m-wcmt, calc cmt, slty, fri-frm, NFSOC
6230-6240	90%	SH AA
	10%	SS AA, grdg to sdy SLTST ip
6240-6250	90%	SH rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
	10%	SS wh-ltgy, s&p, m-fgr, sbang-sbrd, m-wsrt, wcmt, calc cmt, slfri-frm

6250-6260	90%	SH AA	
	10%	SS AA, slty ip, NFSOC	
6260-6270	90%	SH rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	10%	SS wh, ltgy, s&p, vfg-fgr, sbrd-rd, wsrt, wcmt, calc cmt, slty ip, slfri-frm	
6270-6280	100%	SH AA	
	TR	SS AA	
6280-6290	85%	SH rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	15%	SS clr-wh, ltgy, s&p, vfg-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg, slfri-frm, NFSOC	
6290-6300	60%	SH AA	
	40%	SS AA NFSOC	
6300-6310	70%	SH rd, rdbrn, lt-mgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	30%	SS wh-clr, s&p, ltgy ip, f-vfgr, mgr ip, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri	
6310-6320	70%	SH AA	
	30%	SS wh-clr, s&p, frst, ltgy ip, fg-vfgr, mgr ip, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
6320-6330	75%	SH rd, lt-mgy, rdbrn, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	25%	SS AA	
6330-6340	80%	SH AA	
	20%	SS wh-clr, s&p, ltgy, fg-vfgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
6340-6350	80%	SH rd, lt-mgy, rdbrn, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	20%	SS AA	
6350-6360	90%	SH AA	
	10%	SS wh, ltgy, s&p, fg-vfgr, sbang-sbrd, w-msrt, m-wcmt, fri-slfri, NFSOC	
6360-6370	85%	SH rd, lt-mgy, rdbrn, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	15%	SS AA	
6370-6380	85%	SH rd, lt-mgy, rdbrn, brn-gybrn, occ yel, sbblky-sbplty, slty ip, arg, n-slcalc, sft-mfrm	
	15%	SS wh, ltgy, vfg-fgr, sbang-sbrd, wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
6380-6390	85%	SH AA w/sdy ip	
	15%	SS AA	
6390-6410	80%	SH rd, lt-mgy, rdbrn, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	

	20%	SS AA	
6410-6430	85%	SH rd, lt-mgy, rdbrn, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	15%	SS wh-clr, ltgy, vfg-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri, NFSOC	
6430-6440	70%	SH rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	30%	SS wh-clr, lt-gy, s&p, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slty ip, arg ip, slfri-frm, NFSOC	
6440-6450	85%	SH AA	
	15%	SS AA	
6450-6460	90%	SH rd, lt-mgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	10%	SS wh-clr, ltgy, s&p ip, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg ip, slfri-frm	
6460-6470	100%	SH AA	
	TR	SS AA	
6470-6480	95%	SH AA	
	5%	SS wh-clr, ltgy, vfgr-fgr, sbrd-rd, m-wsrt, m-wcmt, calc cmt, arg ip, slfri-frm	
6480-6490	90%	SH rd, m-ltgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	10%	SS AA NFSOC	
6490-6500	100%	SH AA	
	TR	SS wh, ltgy, vfgr-fgr, sbrd-rd, m-wsrt, m-wcmt, calc cmt, arg ip, slfri-frm	
6500-6520	100%	SH AA	
6520-6530	90%	SH rd, m-ltgy, brn-gybrn, yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	10%	SS AA, grdg ip to sdy SLTST, pyr, NFSOC	
6530-6540	80%	SH AA	
	20%	SS wh-ltgy, vfgr-fgr, sbrd-rd, wsrt, p-mcmt, calc cmt, arg, grdg to sdy SLTST, fri-sft, NFSOC	
6540-6550	90%	SH rd, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	10%	SS AA	
6550-6560	95%	SH AA, lt-dkgy	
	5%	SS clr-wh, ltgy, vfgr-fgr, sbang-sbrd, wsrt, m-wcmt, calc cmt, arg, slfri-frm, NFSOC	
6560-6570	95%	SH AA	
	5%	SS AA	
6570-6580	70%	SH rd, lt-mgy, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	

	30%	SS wh-clr, s&p, ltgy, fg-vfgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
6580-6600	90%	SH rd, lt-mgy, rdbrn, brn-gybrn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slclac, sft-mfrm
	10%	SS AA
6600-6610	85%	SH rd, lt-mgy, brn-gybrn, rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-frm
	15%	SS AA
6610-6620	85%	SH AA
	15%	SS wh-clr, s&p, ltgy, fg-vfgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
6620-6630	80%	SH rd, lt-mgy, gybrn-brn, rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-frm
	20%	SS wh-clr, ltgy-ltbrn, s&p, vfg-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
6630-6640	75%	SH AA
	25%	SS AA
6640-6650	90%	SH rd, lt-mgy, gybrn-brn, rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-frm
	10%	SS wh-clr, ltgy-ltbrn, s&p, vfg-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
6650-6660	85%	SH AA
	15%	SS AA
6660-6670	90%	SH rd, lt-mgy, gybrn-brn, rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-frm
	10%	SS wh, ltgy, f-vfgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
6670-6680	85%	SH rd, lt-mgy, gybrn-brn, rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	15%	SS AA
6680-6690	85%	SH AA
	15%	SS wh-clr, s&p, ltgy, fg-vfgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri, NFSOC
6690-6700	80%	SS wh-clr, s&p, pred fgr, mgr ip, sbang-sbrd, msrt, p-mcmt, slcalc cmt, fri-slfri, NFSOC
	20%	SH rd, lt-mgy, gybrn-brn, rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
6700-6710	90%	SS wh-clr, s&p, fg-mgr, sbang-sbrd, msrt, p-mcmt, slcalc cmt, fri, sl ltyel <u>FLOR</u> , sl mlky <u>CUT</u>
	10%	SH AA
6710-6720	60%	SS AA arg ip, NFOS, Vfnt mlky <u>CUT</u>
	40%	SH rd, lt-mgy, gybrn-brn, rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
6720-6730	75%	SH AA, blk

	25%	SS	clr-wh, ltbrn, ltgy, vfg-fgr, sbang-sbrd, wsrt, p-wcmt, calc cmt, grdg to sdy SLTST ip, fri-frm, NFSOC
6730-6740	65%	SH	rd, lt-dkgy, blk, gybrn-brn, rdbrn, sbblky-sbplty, sdy ip, arg ip, pyr, n-slcalc, msft-mfrm
	35%	SS	AA
6740-6750	80%	SH	lt-dkgy, blk, gybrn-brn, occ rd, sbblky-sbplty, sdy ip, arg ip, lmy ip, msft-frm
	20%	SS	wh-ltgy, ltbrn, vf-fgr, sbang-sbrd, wsrt, p-mcmt, calc cmt, arg, slfri-frm
6750-6760	85%	SH	AA
	15%	SS	AA
6760-6770	60%	SH	lt-dkgy, rd, brn-gybrn, blk, sbblky-sbplty, sdy ip, arg ip, n-slcalc, pyr, msft-frm
	40%	SS	clr-wh, ltgy, vfg-fgr, sbang-sbrd, wsrt, m-wcmt, calc cmt, arg, slfri-frm, NFSOC
6770-6780	75%	SH	AA, lmy
	25%	SS	AA, NFSOC
6780-6790	90%	SH	rd, lt-dkgy, blk, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, ncalc-calc, msft-frm
	10%	SS	clr-wh, ltgy, s&p ip, vfgr-fg, sbang-sbrd, wsrt, m-wcmt, calc cmt, arg, slfri-frm
6790-6800	95%	SH	AA
	5%	SS	AA
6800-6820	80%	SH	rd, lt-dkgy, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, ncalc-lmy, msft-frm
	10%	SS	wh, ltgy, vfgr, sbrd-rd, wsrt, p-mcmt, calc cmt, arg, grdg to sdy SLTST ip, fri-frm
	10%	LS	bf, gybrn, crmy, crpxl, cln, dns, frm dul orng <u>FLOR</u> , NSOC
6820-6830	90%	SH	rd, lt-dkgy, blk, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, ncalc-lmy, msft-frm
	10%	SS	wh, ltgy, vfgr-fgr, sbang-sbrd, wsrt, m-wcmt, calc cmt, arg, slfri-frm
6830-6840	90%	SH	lt-mgy, rd, rdbrn, brn-gybrn, sbblky-sbplty, plty ip, sdy ip, arg ip, vlmy-ncalc, msft-frm
	10%	SS	AA
6840-6850	65%	SH	AA
	20%	LS	wh-crm, crpxl, sbplty, mfrm
	15%	SS	wh-ltgy, s&p ip, f-vfg, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
6850-6860	50%	SH	lt-mgy, rd, rdbrn, gybrn, sbblky-sbplty, sdy, arg ip, vlmy-ncalc, msft-frm
	30%	SS	SS wh-ltgy, gybrn, s&p ip, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, fri-slfri, NFSOC
	20%	LS	AA w/bf
6860-6870	80%	SH	AA
	20%	SS	AA

6870-6880	75%	SH lt-dkgy, dkbrn-blk, rd, rdbrn, sbblky-sbplty, sdy ip, arg ip, coal, ncalc-lmy, msft-frm
	15%	LS ltbrn, crm, sbplty-plty, crpxl, frm
	10%	SS ltgy-wh, vfgr, sbrd-sbang, wsrt, m-wcmt, calc cmt, fri-sl fri, NFSOC
	TR	COAL
6880-6890	60%	SH lt-dkgy, brn-dkbrn, blk, rd, rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	20%	SS AA
	10%	LS AA
	10%	COAL blk, vit, slbrit-mhd
6890-6900	70%	SH AA
	20%	SS ltgy-wh, gybrn, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfr, NFSOC
	10%	LS ltbrn, crm, sbplty-plty, crpxl, frm
6900-6910	70%	SH lt-dkgy, brn-gybrn, rd, rdbrn, sbblky-sbplty, sdy, arg ip, n-slcalc, msft-frm
	20%	SS ltgy-wh, ltgybrn, gn, vfgr, fgr ip, sbang-sbrd, w-psrt, m-wcmt, calc cmt, glau ip, fri-slfr, NFSOC
	10%	LS AA
6910-6920	60%	SH lt-mgy, rd, gybrn, ltgngy, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	30%	LS ltbrn-bf, plty, crpxl, mfrm
	10%	SS AA
6920-6930	50%	SH AA
	40%	SS wh-ltgy, s&p ip, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, fri-slfr, NFSOC
	10%	LS AA
6930-6940	50%	SH lt-mgy, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, mot ip, n-slcalc, msft-frm
	40%	LS crmy, bf, ltbrn, gybrn, crpxl, trnsl ip, dns, cln, frm-mfrm
	10%	SS AA
6940-6950	60%	LS AA
	25%	SH AA
	15%	SS ltgy, vfgr-fgr, sbrd-rd, wsrt, m-wcmt, calc cmt, arg, slty slfr-frm
6950-6960	50%	SS AA NFSOC
	40%	SH lt-mgy, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, mot ip, n-sl calc, msft-frm
	10%	LS crmy, bf, ltbrn, gybrn, crpxl, dns, cln, frm-mfrm
6960-6970	70%	SS clr-wh, ltgy, s&p, fgr-vfgr, sbang0sbrd, m-wsrt, m-wcmt, calc cmt, arg, slfr-frm NFSOC
	30%	SH AA
6970-6980	40%	LS AA
	40%	SS AA
	20%	SH lt-mgy, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, n-sl calc, msft-frm

6980-6990	40%	SH AA	
	30%	LS crmy, bf, ltbrn, gybrn, crpxl, dns, cln, frm-mfrm	
	30%	SS clr, wh, ltgy, s&p, fg-vfgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg slfri-frm, NFSOC	
6990-7000	65%	SH lt-mgy, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, n-sl calc, msft-frm	
	25%	LS AA	
	10%	SS AA	
7000-7010	60%	SH AA	
	30%	LS AA	
	10%	SS clr-wh, ltgy, fgr-vfgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg ip, slfri-frm, NFSOC	
7010-7020	60%	SH lt-mgy, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, n-sl calc, msft-frm	
	30%	LS AA	
	10%	SS AA	
7020-7030	65%	SH AA	
	25%	SS clr-wh, ltgy, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg ip, slfri-frm, NFSOC	
	10%	LS crmy, bf, ltbrn, gybrn, crpxl, dns, cln, frm-mfrm	
7030-7040	70%	SH lt-mgy, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, n-sl calc, msft-frm	
	30%	SS AA NFSOC	
7040-7050	90%	SH AA	
	10%	SS clr-wh, ltgy, vfgr, sbang-sbrd, wsrt, m-wcmt, calc cmt, arg ip, slfri-frm, NFSOC	
	TR	LS AA	
7050-7070	90%	SH lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, sl-ncalc, msft-frm	
	10%	SS clr-wh, ltgy, vfgr, sbang-sbrd, wsrt, m-wcmt, calc cmt, slfri-hd, Nfsoc	
7070-7080	85%	SH lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, sl-ncalc, msft-frm	
	15%	SS wh-ltgy, vfgr, sbrd-sbang, wsrt, m-wcmt, calc cmt, fri-slfri	
7080-7090	80%	SH AA	
	20%	SS wh-ltgy, vf-fgr, sbrd-sbang, wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
7090-7100	80%	SH lt-dkgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm	
	20%	SS wh-clr, ltgy, s&p, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
7100-7110	65%	SH AA	
	25%	LS wh-crm, sbplty-pty, crpxl, sft-mfrm	
	10%	SS AA	
7110-7120	65%	SH lt-mgy, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, ncalc-lmy, msft-frm	

	25%	LS	AA	
	10%	SS	wh-clr, ltgy, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
7120-7130	85%	SH	lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-sl calc, msft-frm	
	15%	SS	wh-ltgy, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
7130-7140	90%	SH	AA	
	10%	SS	AA	
7140-7150	80%	SH	lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy, arg ip, n-sl calc, msft-frm	
	20%	SS	wh-ltgy, ltbrn, vf-fgr, sbang-sbrd, p-msrt, m-wxmt, calc cmt, fri-slfri, NFSOC	
7150-7160	50%	SS	wh0ltgy, ltbrn, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg, fri-slfri, NFOS, sl stmg mlky <u>CUT</u>	
	50%	SH	lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy, arg ip, n-sl calc, msft-frm	
7160-7170	70%	SH	AA	
	30%	SS	AA NFOC, vfnt mlky <u>CUT</u>	
7170-7180	90%	SH	lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy, arg ip, n-sl calc, msft-frm	
	10%	SS	wh0ltgy, vfgr, sbrd-rd, wsrt, p-mcmt, calc cmt, arg, slty, fri-slfri	
7180-7190	80%	SH	AA, dkgy	
	20%	LS	crmy, bf, tn, brn, crpxl, blk-ysbplty, msft-frm	
7190-7200	50%	SH	lt-mgy, rd, brn-gybrn, yel, sbblky-sbplty, sdy, arg ip, n-slcalc, msft-frm	
	40%	LS	AA	
	10%	SS	AA	
7200-7220	80%	SH	lt-dkgy, rd, gybrn-brn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm	
	10%	LS	crm-bf, tn, crpxl, sbplty, msft-frm	
	10%	SS	wh-ltgy, vfgr, sbrd-sbang, wsrt, m-wcmt, calc cmt, slty,	
7220-7230	65%	SH	lt-mgy, rd, gybrn-brn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm	
	25%	SS	wh-ltgy, vfgr, sbrd-sbang, wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
	10%	LS	crm-bf, crpxl, sbplty-plty, msft-mfrm	
7230-7240	90%	SH	lt-mgy, ltgn, gygn, rd, brn-gybrn, blk-ysbplty, sdy ip, arg ip, n-slcalc, sft-frm	
	10%	SS	AA	
7240-7250	60%	SH	AA	
	40%	SS	wh-ltgy, vfgr, sbrd, wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC	
7250-7260	85%	SH	lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-frm	

	15%	SS AA	
7260-7270	90%	SH AA	
	10%	SS AA	
7270-7280	100%	SH lt-mgy, rd, gybrn-brn, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
7280-7290	100%	SH lt-dkgy, rd, brn-gybrn, blk, yel, sbblky-sbplty, vsdy ip, arg ip, n-slcalc, sft-mfrm	
7290-7300	90%	SH AA	
	10%	LS AA crmy, bf, crpxl, sbblky-sbplty, msft-mfrm	
7300-7310	90%	SH AA	
	10%	LS AA	
	TR	COAL blk, vit, sft	
7310-7320	90%	SH lt-mgy, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	10%	LS crmy, bf, crp-micxl, sbblky-sbplty, msft-mfrm	
7320-7330	90%	LS AA	
	10%	SH AA, dkgy	
7330-7340	95%	SH lt-mgy, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
	5%	LS crmy, bf, crpxl, sbblky-sbplty, msft-mfrm	
7340-7350	90%	SH AA	
	5%	LS AA	
	5%	SS clr-ltgy, vfgr, sbrd-sbang, wsrt, m-wcmt, calc cmt, calc cmt, fri-slfri, NFSOC	
7350-7360	85%	SH m-dkgy, brn-gybrn, sbblky-sbplty, vsdy ip, arg ip, pyr, n-slcalc, sft-mfrm	
	10%	SS AA NFOS, vs1 stmg mlky <u>CUT</u>	
	5%	LS crmy, bf, crpxl, sbblky-sbplty, msft-mfrm	
7360-7370	80%	SH AA	
	10%	SS wh-clr, ltgy, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg, fri-slfri, NFOS, vs1 mlky <u>CUT</u>	
	10%	LS AA, NFSOC	
7370-7380	90%	SS wh-ltgy, clr, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg, slfri-frm, NFOS, vsllt yel <u>CUT</u>	
	10%	SH brn-gybrn, m-ltgy, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	
7380-7390	60%	SS AA, NFOS, sl stmg mlky <u>CUT</u>	
	40%	SH AA	
7390-7400	50%	SS wh-clr, ltgy, s&p, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg, slfri-frm, NFOS, fnt stmg mlky <u>CUT</u>	
	50%	SH AA	
7400-7410	85%	SS AA NFOS, fnt stmg mlky <u>CUT</u>	
	15%	SH brn-gybrn, m-ltgy, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm	

7410-7430	100%	SS	clr-wh, s&p ip, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg ip, slfri-mhd, NFOS, vsl mlky <u>CUT</u>
7430-7440	85%	SS	clr-wh, s&p ip, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-mhd, NFSOC
	15%	SH	rd, ltgy, tn-bf, occ yel, sbblky-sbplty, sdy ip, arg ip, n-slcalc, sft-mfrm
7440-7450	90%	SS	AA
	10%	SH	AA
7450-7460	100%	SS	wh-clr, s&p, fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
7460-7470	90%	SS	AA
	10%	SH	rd, yel, ltgy, bf, sbblky-sbplty, sdy-slty ip, arg ip, n-slcalc, msft-mfrm
7470-7480	60%	SH	lt-mgy, rd, gybrn-brn, bf, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	40%	SS	wh-clr, s&p, f-vfgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
7480-7490	60%	SH	AA
	40%	SS	clr, wh, s&p, vf-fgr, cgr ip, sbang-sbrd; m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
7490-7500	60%	SH	lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy, arg ip, n-slcalc, msft-frm
	40%	SS	AA
7500-7510	70%	SH	AA
	30%	SS	wh-ltgy, s&p ip, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-hd, NFSOC
7510-7530	60%	SH	lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	40%	SS	wh-ltgy, s&p, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, fri-slfri, NFSOC
7530-7540	75%	SH	lt-dkgy, gybrn-brn, rd, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	25%	SS	wh-ltgy, s&p, vf-fgr, sbrd-sbang, wstt, m-wcmt, calc cmt, slfri, NFSOC
7540-7550	80%	SH	lt-dkgy, rd, brn-gybrn, dkbrn-blk, bf, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	20%	SS	AA
7550-7560	70%	SH	AA
	30%	SS	wh-ltgy, s&p, vf-fgr, sbrd-sbang, m-wsrt, m-wcmt, calc cmt, fri-hd, NFSOC
7560-7570	60%	SS	wh-clr, ltgy, s&p, fg-mgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-hd, NFSOC
	40%	SH	lt-dkgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm

7570-7580	50%	SS AA , NFSOC
	50%	SH AA
5780-7590	90%	SH lt-dkgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	10%	SS clr-wh, ltgy, s&p, fg-mgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-frm, NFSOC
7590-7600	70%	SH AA
	30%	SS AA, NFSOC
7600-7610	60%	SS clr-wh, ltgy, s&p, fgr-mgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-frm, NFSOC
	40%	SH lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
7610-7620	70%	SH AA
	30%	SS AA
7620-7630	90%	SH lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	10%	SS clr-wh, s&p, fgr-mgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-frm NFSOC
7630-7640	70%	SH AA
	30%	SS AA
7640-7650	65%	SH lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	35%	SS clr-wh, ltgy, s&p, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-frm NFSOC
7650-7660	90%	SH AA
	10%	SS AA
7660-7670	70%	SH lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	30%	SS clr-wh, ltgy, s&p, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-frm, NFOS, ft strmg mky <u>CUT</u>
7670-7680	50%	SS AA, NFSOC
	50%	SH AA
7680-7690	50%	SS clr-wh, s&p, vfgr-fgr, occ mgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-frm, NFSOC
	50%	SH lt-mgy, rd, brn-gybrn, sbllky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
7690-7700	65%	SS AA NFSOC
	35%	SH AA
7700-7710	80%	SS clr-wh, ltgy, s&p, vfgr-fgr, occ mgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-frm, NFSOC
	20%	SH lt-mgy, rd, brn-gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
7710-7720	60%	SS AA, NFSOC
	40%	SH AA

7720-7730	90%	SS AA, NFSOC
	10%	SH AA
7730-7750	60%	SS wh-clr, s&p, vf-mgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-hd, NFSOC
	40%	SH lt-dkgy, gybrn-brn, rd, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
7750-7760	80%	SH lt-dkgy, gybrn-brn, rd, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	20%	SS AA
7760-7770	50%	SH AA
	50%	SS AA
7770-7780	85%	SS wh-clr, s&p, fg-vfgr, sbang-sbrd, wsrt, m-wcmt, slcalc cmt, fri-hd, NFSOC
	15%	SH AA
7780-7790	70%	SS AA
	30%	SH AA
7790-7800	85%	SS wh-clr, s&p, vf-mgr, sbang-sbrd, m-wsrt, m-wcmt, slcalc cmt, slfri-hd, ltgn spty <u>FLOR/vfnt mlky stmg CUT</u>
	15%	SH AA
7800-7810	70%	SH lt-dkgy, gybrn-brn, rd-rdbrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
	30%	SS AA
7810-7820	80%	SH AA
	20%	SS AA w/NFSOC
7820-7830	80%	SH m-dkgy, brn-gybrn, rd, sdy ip, arg ip, sbblky-sbplty, n-slcalc, msft-frm
	20%	SS AA
7830-7840	70%	SS wh-clr, s&p, vf-mgr, sbang-sbrd, m-wsrt, m-wcmt, slcalc cmt, slfri-hd, NFSOC
	30%	SH AA
7840-7850	70%	SS AA
	30%	SH dkbrn, dkgy, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
7850-7860	60%	SH AA
	40%	SS wh-clr, s&p, vf-mgr, sbang-sbrd, m-wsrt, m-wcmt, slcalc cmt, slfri-hd, NFSOC
7860-7870	70%	SS wh-clr, ltgy, s&p, mgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-frm, NFSOC
	30%	SH dkgy, dkbrn, rd, gybrn, sbblky-sbplty, sdy ip, arg ip, n-slcalc, msft-frm
7870-7880	80%	SS AA, NFSOC
	20%	SH AA
7880-7890	80%	SH AA

20% SS clr, wh, ltgy, s&p, m-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc
cmt, slsly ip, slfri frm, NFSOC

7890-7900 85% SH AA
15% SS AA

QUINTANA PETROLEUM CORP.
 BADLANDS FEDERAL #1-31
 SECTION 31, T8S-R23E
 UINTAH COUNTY - UTAH

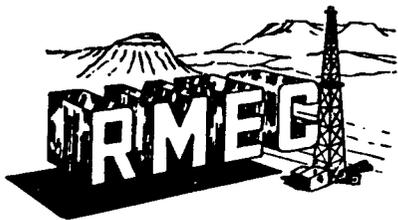
E-LOG CALCULATIONS

FORMATION	INTERVAL	R(w)	R(t)	ø(N)	ø(D)	ø(S)	O(ND)	ø	S(w)
WASATCH FM:									
<u>5293-5305</u>	5300	.24	22	.11	.15	.14	.13	.13	72%
<u>5349-5358</u>	5355	.24	28	.13	.16	.13	.15	.14	60%
MESA VERDE FM:									
<u>7156-7159</u>	7156	.30	70	.16	.165	.165	.16	.16	37%
<u>7371-7382</u>	7374	.30	135	.10	.13	.12	.11	.11	39%
	7367	.30	70	.09	.07	.07	.08	.08	74%
<u>7402-7436</u>	7417	.30	100	.08	.12	.12	.10	.11	45%
<u>7448-7465</u>	7462	.30	100	.08	.12	.10	.10	.10	49%
<u>7549-7566</u>	7558	.30	68	.11	.16	.17	.14	.15	40%
<u>7708-7722</u>	7718	.30	58	.14	.15	.14	.14	.14	46%
<u>7771-7799</u>	7792	.30	150	.11	.14	.14	.13	.13	31%

NOTE: R(w)'s estimated from nearby well

FORMULAS:
$$S(w) = \sqrt{\frac{.81 R(w)}{\phi^2 R(t)}}$$

$$O(ND) = \sqrt{\frac{\phi(D)^2 + \phi(N)^2}{2}}$$



ROCKY MOUNTAIN GEO-ENGINEERING CO.

WELL LOGGING — CORE AND WATER ANALYSIS

2450 INDUSTRIAL BLVD.

PHONE 243-3044

GRAND JUNCTION, COLORADO 81501

COMPANY QUINTANA PETROLEUM CORPORATION

WELL NO. Badlands Federal #1-31

LOCATION SECTION 31, T8S, R23E Uintah County, Utah

ZONE OF INTEREST NO. 1

INTERVAL: From 7156' To 7159'

DRILL RATE: Abv 6 min/ft Thru 3 min/ft Below 6½ min/ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C ₁	C ₂	C ₃	C ₄	C ₅	OTHER
Before	40	7,595	410	TR			
During	170	31,360	1,640	TR			
After	55	11,025	615	320			

Type gas increase: Gradual Sharp

Gas variation within zone: Steady Erratic Increasing Decreasing

CARBIDE HOLE RATIO: $\frac{\text{GRAMS}}{\text{READING}}$ X Min. in Peak = _____ Sensitivity: Poor Fair Good

FLUO: Mineral Even Spotty CUT: None Streaming _____
 None % in total sample _____ Poor Slow
 Poor Fair Mod
 Fair % in show lithology _____ Good Fast
 Good COLOR: _____ COLOR: milky white

STAIN: None Poor Fair Good Live Dead Residue Even Spotty Lt. Dk.

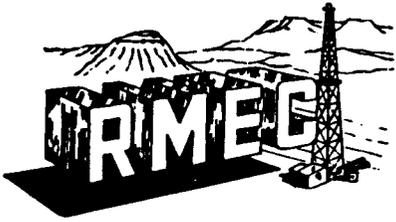
POROSITY: Poor Fair Good Kind intergranular

LITHOLOGY SS white-ltgy, ltbrn, bfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, ang, fri-slfri SAMPLE QUALITY Fair

NOTIFIED Al Larson @ 07:30 HRS. DATE: 12/25/88

REMARKS _____

ZONE DESCRIBED BY S. Matthews



ROCKY MOUNTAIN GEO-ENGINEERING CO.

WELL LOGGING — CORE AND WATER ANALYSIS

2450 INDUSTRIAL BLVD.

PHONE 243-3044

GRAND JUNCTION, COLORADO 81501

COMPANY QUINTANA PETROLEUM CORPORATION

WELL NO. Badlands Federal #1-31

LOCATION SECTION 31, T8S, R23E Uintah County, Utah

ZONE OF INTEREST NO. 2

INTERVAL: From 7371' To 7382'

DRILL RATE: Abv 5 min/ft Thru 3 min/ft Below 5-8 min/ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C ₁	C ₂	C ₃	C ₄	C ₅	OTHER
Before	60	12,495	512	160			
During	250	56,840	2,460	640			
After	70	12,985	1,025	320			

Type gas increase: Gradual Sharp

Gas variation within zone: Steady Erratic Increasing Decreasing

CARBIDE HOLE RATIO: $\frac{\text{GRAMS}}{\text{READING}}$ X Min. in Peak = _____ Sensitivity: Poor Fair Good

FLUO: Mineral Even Spotty
 None % in total sample _____
 Poor
 Fair % in show lithology _____
 Good COLOR: _____

CUT: None Streaming
 Poor Slow
 Fair Mod
 Good Fast
 COLOR: lt yellow

STAIN: None Poor Fair Good Live Dead Residue Even Spotty Lt. Dk.

POROSITY: Poor Fair Good Kind intergranular

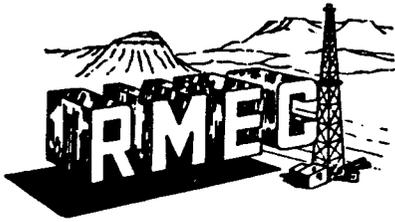
LITHOLOGY SS wh-ltgy, clr, vfgr-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, arg, slfri-fm

SAMPLE QUALITY Fair

NOTIFIED Al Larson @ 07:30 HRS. DATE: 12/26/88

REMARKS _____

ZONE DESCRIBED BY S. Matthews



ROCKY MOUNTAIN GEO-ENGINEERING CO.

WELL LOGGING — CORE AND WATER ANALYSIS

2450 INDUSTRIAL BLVD.

PHONE 243-3044

GRAND JUNCTION, COLORADO 81501

COMPANY QUINTANA PETROLEUM CORPORATION

WELL NO. Badlands Federal #1-31

LOCATION SECTION 31, T8S, R23E Uintah County, Utah

ZONE OF INTEREST NO. 3

INTERVAL: From 7402' To 7436'

DRILL RATE: Abv 5 min/ft Thru 2 min/ft Below 5 min/ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C ₁	C ₂	C ₃	C ₄	C ₅	OTHER
Before	50	8,820	615	TR			
During	350	68,110	4,510	1280			
After	60	9,800	820	TR			

Type gas increase: Gradual Sharp

Gas variation within zone: Steady Erratic Increasing Decreasing

CARBIDE HOLE RATIO: $\frac{\text{GRAMS}}{\text{READING}}$ X Min. in Peak = _____ Sensitivity: Poor Fair Good

FLUO: Mineral Even Spotty
None % in total sample _____
Poor
Fair % in show lithology _____
Good COLOR: _____

CUT: None Streaming
Poor Slow
Fair Mod
Good Fast
COLOR: milky white

STAIN: None Poor Fair Good Live Dead Residue Even Spotty Lt. Dk.

POROSITY: Poor Fair Good Kind intergranular

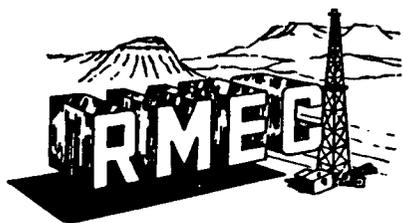
LITHOLOGY SS wh-clr, s&p ip, vf-fgr, sbang-sbrd, m-wsrt, m-wcmt, calc cmt, slfri-mhd

SAMPLE QUALITY Fair-Good

NOTIFIED Al Larson @ 07:30 HRS. DATE: 12/26/88

REMARKS _____

ZONE DESCRIBED BY C. Matthews



ROCKY MOUNTAIN GEO-ENGINEERING CO.

WELL LOGGING — CORE AND WATER ANALYSIS

2450 INDUSTRIAL BLVD.

PHONE 243-3044

GRAND JUNCTION, COLORADO 81501

COMPANY QUINTANA PETROLEUM CORPORATION

WELL NO. Badlands Federal #1-31

LOCATION Section 31, T8S, R23E Uintah County, Utah

ZONE OF INTEREST NO. 4

INTERVAL: From 7448' To 7465'

DRILL RATE: Abv 5 min/ft Thru 2 min/ft Below 4½ min/ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C ₁	C ₂	C ₃	C ₄	C ₅	OTHER
Before	60	9,800	820	TR			
During	400	39,200	2,870	960			
After	50	8,820	820	TR			

Type gas increase: Gradual Sharp

Gas variation within zone: Steady Erratic Increasing Decreasing

CARBIDE HOLE RATIO: $\frac{\text{GRAMS}}{\text{READING}}$ X Min. in Peak = _____ Sensitivity: Poor Fair Good

FLUO: Mineral Even Spotty
 None % in total sample _____
 Poor
 Fair % in show lithology _____
 Good COLOR: _____

CUT: None Streaming _____
 Poor Slow
 Fair Mod
 Good Fast

COLOR: _____

STAIN: None Poor Fair Good Live Dead Residue Even Spotty Lt. Dk.

POROSITY: Poor Fair Good Kind _____

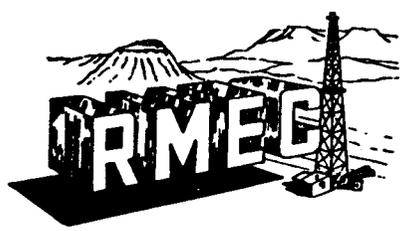
LITHOLOGY SS wh-clr, s&p, fgr, sbang-sbrd, m-wsrt, m-wcmt, cal cmt, fri-slfri

SAMPLE QUALITY Poor

NOTIFIED Al Larson @ 07:30 HRS. DATE: 12/26/88

REMARKS Sample quality poor due to LCM in mud.

ZONE DESCRIBED BY C. Matthews



ROCKY MOUNTAIN GEO-ENGINEERING CO.

WELL LOGGING — CORE AND WATER ANALYSIS

2450 INDUSTRIAL BLVD. PHONE 243-3044 GRAND JUNCTION, COLORADO 81501

COMPANY QUINTANA PETROLEUM CORPORATION

WELL NO. Badlands Federal #1-31

LOCATION Section 31, T8S, R23E Uintah County, Utah

ZONE OF INTEREST NO. 5

INTERVAL: From 7549' To 7566'

DRILL RATE: Abv 5½ min/ft Thru 1½ - 2 min/ft Below 6 min/ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C ₁	C ₂	C ₃	C ₄	C ₅	OTHER
Before	50	7,350	410	TR			
During	275	49,000	2,940	TR			
After	60	8,575	410	TR			

Type gas increase: Gradual Sharp

Gas variation within zone: Steady Erratic Increasing Decreasing

CARBIDE HOLE RATIO: $\frac{\text{GRAMS}}{\text{READING}}$ X Min. in Peak = _____ Sensitivity: Poor Fair Good

FLUO: Mineral Even Spotty CUT: None Streaming
 None % in total sample _____ Poor Slow
 Poor Fair Mod
 Fair % in show lithology _____ Good Fast
 Good COLOR: _____

STAIN: None Poor Fair Good Live Dead Residue Even Spotty Lt. Dk.

POROSITY: Poor Fair Good Kind intergranular

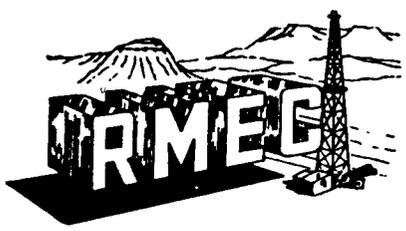
LITHOLOGY SS wh-ltgy, s&p, vf-fgr, sbrd-sbang, m-wsrt, m-wcmt, calc cmt, fri-hd

SAMPLE QUALITY Poor

NOTIFIED Al Larson @ 10:30 HRS. DATE: 12/27/88

REMARKS Poor sample quality due to LCM in mud. Samples taken from possum belly.

ZONE DESCRIBED BY C. Matthews



ROCKY MOUNTAIN GEO-ENGINEERING CO.

WELL LOGGING — CORE AND WATER ANALYSIS

2450 INDUSTRIAL BLVD. PHONE 243-3044 GRAND JUNCTION, COLORADO 81501

COMPANY QUINTANA PETROLEUM CORPORATION

WELL NO. Badlands Federal #1-31

LOCATION Section 31, T8S, R23E Uintah County, Utah

ZONE OF INTEREST NO. 6

INTERVAL: From 7708' To 7722'

DRILL RATE: Abv 4 min/ft Thru 1½ min/ft Below 5 min/ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C ₁	C ₂	C ₃	C ₄	C ₅	OTHER
Before	40	8,085	512	TR			
During	200	42,385	2,665	960			
After	50	8,624	410	TR			

Type gas increase: Gradual Sharp

Gas variation within zone: Steady Erratic Increasing Decreasing

CARBIDE HOLE RATIO: $\frac{\text{GRAMS}}{\text{READING}}$ X Min. in Peak = _____ Sensitivity: Poor Fair Good

FLUO: Mineral Even Spotty CUT: None Streaming

None % in total sample _____ Poor Slow

Poor Fair Mod

Fair % in show lithology _____ Good Fast

Good COLOR: _____

STAIN: None Poor Fair Good Live Dead Residue Even Spotty Lt. Dk.

POROSITY: Poor Fair Good Kind intergranular

LITHOLOGY SS clr-wh, ltgy, s&p, vfgr-fgr, occ mgr, sbang-sbrd, m-wsrt, m-wcmt, calc, cmt, slfri-frm SAMPLE QUALITY Poor

NOTIFIED Al Larson @ 10:30 HRS. DATE: 12/27/88

REMARKS _____

ZONE DESCRIBED BY S. Matthews



ROCKY MOUNTAIN GEO-ENGINEERING CO.

WELL LOGGING — CORE AND WATER ANALYSIS
2450 INDUSTRIAL BLVD. PHONE 243-3044 GRAND JUNCTION, COLORADO 81501

COMPANY QUINTANA PETROLEUM CORPORATION
WELL NO. Badlands Federal #1-31
LOCATION Section 31, T8S, R23E Uintah County, Utah

ZONE OF INTEREST NO. 7

INTERVAL: From 7771' To 7799'

DRILL RATE: Abv 5 min/ft Thru 1 1/2 min/ft Below 5 min/ft

MUD GAS-CHROMATOGRAPH DATA

	TOTAL	C ₁	C ₂	C ₃	C ₄	C ₅	OTHER
Before	40	7,840	615	TR			
During	270	41,600	3,280	1280			
After	40	5,880	307	TR			

Type gas increase: Gradual Sharp

Gas variation within zone: Steady Erratic Increasing Decreasing

CARBIDE HOLE RATIO: $\frac{\text{GRAMS}}{\text{READING}}$ X Min. in Peak = _____ Sensitivity: Poor Fair Good

FLUO: Mineral Even Spotty CUT: None Streaming _____
 None % in total sample _____ Poor Slow
 Poor Fair Mod
 Fair % in show lithology _____ Good Fast
 Good COLOR: lt gn _____ COLOR: milky _____

STAIN: None Poor Fair Good Live Dead Residue Even Spotty Lt. Dk.

POROSITY: Poor Fair Good Kind intergranular

LITHOLOGY SS wh-clr, s&p, vf-mgr, sbang-sbrd, m-wsrt, m-wcmt, slcalc cmt, slfri-hd

SAMPLE QUALITY Poor-Fair

NOTIFIED Al Larson @ 10:30 HRS. DATE: 12/27/88

REMARKS _____

ZONE DESCRIBED BY C. Matthews

QUINTANA PETROLEUM CORP.
BADLANDS FEDERAL #1-31
SE/NW SECTION 31-T8S-R23E
UINTAH COUNTY, UTAH

FORMATION TOPS		
FORMATION	E-LOG DATUM	SEA LEVEL DATUM
GREEN RIVER	2070'?	+2822'?
GREEN RIVER "X"	3600'	+1292'
WASATCH	5104'	- 212'
MESA VERDE	7296'	-2404'

GEOLOGIC SUMMARY
AND
ZONES OF INTEREST

Quintana Petroleum Corporation's well Badlands Federal #1-31, located in SE/NW Section 31, T8S, R23E of Uintah County, Utah, was spudded December 8, 1988 in the Tertiary Uintah Formation. A total depth of 7900' was reached on December 27, 1988 in the Upper Cretaceous Mesa Verde Formation. The primary objectives of this well were the gas potential of the Wasatch and Mesa Verde Formations. Secondary objectives were the gas/oil potential of the Green River Formation.

GREEN RIVER FORMATION (2070' - 5104')

LITHOLOGY:

The Eocene Green River Formation consists of shale, sandstone, limestone and dolomite. The Green River shales ranged from light-to-dark brown, light-to-dark gray, and a minor amount of gray green. The shale section of the Green River occurred from approximately 3890' to the top of the Wasatch Formation.

The shales were slightly calcareous, sandy, limy, subwaxy in part, and occasionally contained dull orange and light yellow fluorescence with a slow-to-moderate light yellow streaming cut.

The Green River sandstones contained clear-to-white frosted, light-to-medium gray sands. Grain size was very fine-to-fine grained and subrounded-to-subangular in shape. The sands were predominately unconsolidated. The sandstones had calcareous cement, were moderate-to-well sorted, and moderately-to-well cemented. Pyrite and trace amounts of glauconite were observed. Visible porosity was poor-to-good with an occasional trace of oil stain observed. Occasionally a dull orange fluorescence with a slow light yellow streaming cut was noted.

Limestones were predominately light brown-to-tan and cream-to-buff. Grain size was cryptocrystalline-to-microcrystalline with fine crystalline observed near the base of the formation. The limestones in the basal 200 feet of the Green River Formation were very fossiliferous with ostracods and occasional oolites. The limestones exhibited a dull orange fluorescence with a moderate light yellow streaming cut.

Dolomites were light-to-dark brown and red brown, microcrystalline and limy in part. The dolomites predominately had no fluorescence, stain, odor or cut. An occasional dull orange fluorescence was seen.

SHOW ZONES:

There were no show zones observed within the Green River Formation. Background gas ranged from 5 units to a maximum of 700 units. A sand at 3692' produced oil and tarballs in the mud pit.

WASATCH FORMATION (5104' - 7296')

LITHOLOGY:

The Lower Eocene Wasatch Formation consists of shale, sandstone, and

QUINTANA PETROLEUM CORP.
BADLANDS FEDERAL #1-31

limestone. The shales had a wide range of colors, including light-to-dark gray, red, red brown, light-to-dark brown, yellow, orange red and gray green. The shales were predominately noncalcareous-to-slightly calcareous with trace amounts of pyrite. The gray and brown shales were generally smooth in texture with occasional silt. The red, orange red and yellow shales were silty-to-sandy and had a mottled appearance.

The sandstones were white-to-clear, light gray and salt-and-pepper. Grain size ranged from very fine-to-medium with subrounded-to-subangular particles. The sandstones were moderate-to-well sorted, moderate-to-poorly cemented, and moderate-to-very calcareous cemented.

Limestones were buff-to-brown, brown gray, gray and cream. Grain size was cryptocrystalline. Occasional dull orange fluorescence was observed with no stain, odor or cut.

SHOW ZONES:

Background gas in the Wasatch Formation ranged from 20 units to 200 units. SHOW ZONE #1 was encountered near the base of the Wasatch from 7156' - 7159' with 170 units of total gas over 40 units of background gas. Methane, ethane, and a trace of propane were noted. The sandstone had no fluorescence, stain, odor and only a poor slow milky-white streaming cut. Electric Log analysis of this zone shows a water saturation of 37%.

MESA VERDE FORMATION (7296' - T.D.)

LITHOLOGY:

The Upper Cretaceous Mesa Verde Formation consists of shale, sandstone and a minor amount of limestone. The shales ranged from light-to-dark gray and brown-to-gray brown. The shales were noncalcareous-to-slightly calcareous, argillaceous and sandy in part.

The sandstones were white-to-clear, salt-and-peppered, and light gray with grain size ranging from very fine-to-medium grained with subangular-to-subrounded particles. The sandstone was moderately-to-well sorted, moderately-to-well cemented with calcareous-to-slightly calcareous cement.

The limestones were cream-to-buff with cryptocrystalline-to-microcrystalline grain size.

SHOW ZONES:

Background gas in the Mesa Verde Formation ranged from 15 units to 100 units. SHOW ZONE #2 was encountered from 7371' - 7382' with 250 units of total gas over 60 units of background gas. Methane, ethane and propane were observed. The sandstone had no fluorescence with a poor slow light yellow streaming cut and poor visible porosity. Electric log analysis shows a water saturation of 39%-to-74%.

SHOW ZONE #3 was noted from 7402' - 7436' with 350 units of total gas over 50 units of background gas. Methane, ethane and propane were observed.

QUINTANA PETROLEUM CO
BADLANDS FEDERAL #1-31

SHOW ZONE #3 Cont. The sandstone had no fluorescence with a poor slow milky white cut and poor visible porosity. Electric Log analysis of the zone shows a water saturation of 45%.

SHOW ZONE #4 was encountered from 7448' - 7465' with 400 units of total gas over 60 units of background gas. Methane, ethane and propane were noted. The sandstone had no fluorescence, stain, odor or cut with poor-to-fair visible porosity. Electric Log analysis of this zone shows a water saturation of 49%.

SHOW ZONE #5 was encountered from 7549' - 7566' with 275 units of total gas over 50 units of background gas. Methane, ethane and a trace of propane were present. The sandstone had no fluorescence, stain, odor or cut and had poor visible porosity. Electric Log analysis of this zone shows a water saturation of 40%.

SHOW ZONE #6 was noted from 7708' - 7722' with 200 units of total gas over 40 units of background gas. Methane, ethane and propane were observed. The sandstone had no fluorescence, stain, odor or cut with poor visible porosity. Electric Log analysis of this zone shows a water saturation of 46%.

SHOW ZONE #7 was encountered from 7771' - 7799' with 270 units of total gas over 40 units of background gas. Methane, ethane and propane were observed. The sandstone had poor spotty light green fluorescence with a poor slow milky cut. Electric Log analysis of this zone shows a water saturation of 31%.

COMMENTS:

The Badlands Federal #1-31 had production casing run to total depth. Determinations of production zones to complete have not been made as yet, but the show zones with 30%-to-50% water saturation should be commercial with little, if any, water production encountered.

If I may be of further assistance in the final evaluation of zones encountered, please feel free to contact me. Thank you for giving me the opportunity to serve as your geological consultant. Rocky Mountain Geo-Engineering Company and I would welcome the opportunity to work with you again in the future.

QUINTANA PETROLEUM CORPORATION

1050 SEVENTEENTH STREET
SUITE 400
DENVER, COLORADO 80285
(303) 628-9211

March 31, 1989

RECEIVED
APR 12 1989

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

DIVISION OF
OIL, GAS & MINING

RE: Badlands Federal #1-31
SE NW Section 31, T8S-R23E
Uintah County, Utah

Gentlemen:

Enclosed for your records please find the following information on the subject well:

1. Well Completion Report (Form 3160-4)
2. Geologist's Report
3. Electric Logs

Very truly yours,



Jeannie Williams
Production Technician

/jw
enclosures
cc: State DOGM

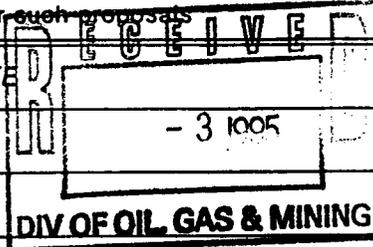
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE



1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
 Ballard & Associates

3. Address and Telephone No.
 518 - 17th Street, Suite 1180, Denver, CO 80202 (303)595-8515

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
 2110' FNL & 1910' FWL
 SE NW Section 31, T8S-R23E

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation
 UTU60917A

8. Well Name and No.
 BADLANDS FED. #1-31

9. API Well No.
 43-047-31857

10. Field and Pool, or Exploratory Area
 Wildcat

11. County or Parish, State
 Uintah County, Utah

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

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <u>Change of Operator</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Effective 7:00 a.m. December 1, 1994, the Operator of this well will change from Quintana Petroleum Corporation to:

Ballard & Associates
 518 - 17th Street, Suite 1180
 Denver, Colorado 80202

Effective December 1, 1994, Ballard & Associates is responsible under the terms and conditions of the lease for operations conducted on the leased lands or a portion thereof under Bureau of Land Management Bond UT1005 issued by Norwest Bank Billings letter of credit.

Seller/Owner/Lessee Name: QUINTANA PETROLEUM CORPORATION
 Date: December 7, 1994
 Signed: *[Signature]*

cc: Utah DOGM

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

Signed *H. J. Kagle* Title Vice President Acquisitions Date 12/19/94

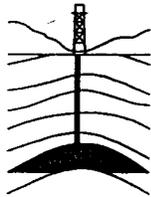
(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
 Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes 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.

BALLARD & ASSOCIATES, INC.

**P. O. Box 20174
Billings, Montana 59104
(406) 259-8790**



**518 17th St., Suite #1180
Denver, Colorado 80202
(303) 595-8515**

**W. W. Ballard
President**

**H. J. Kagie
Vice President**

December 29, 1994

State of Utah
Division of Oil, Gas & Mining
3 Triad Center, Suite 350
355 West North Temple
Salt Lake City, UT 84180-1204

Re: Change of Operator

Dear Sir/Madam:

Enclosed please find Sundry Notices and Reports on Wells submitted to the Bureau of Land Management to change operator from Quintana Petroleum Corporation to Ballard & Associates, Inc.

If you require additional information please contact me at (303) 595-8515.

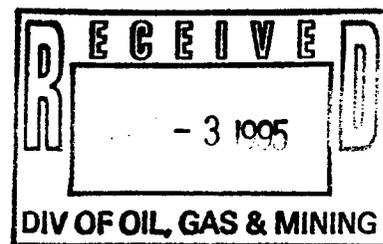
Sincerely,

A handwritten signature in cursive script that reads "Jodie Sundquist".

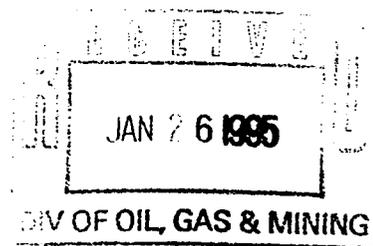
Jodie Sundquist
Production/Operation Technician

/jls

Enclosure



United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155



IN REPLY REFER TO:
UT-922

January 25, 1995

Ballard & Associates, Inc.
518 17th Street, Suite 1180
Denver, Colorado 80202

Re: Badlands Unit
Uintah County, Utah

Gentlemen:

On January 23, 1995, we received an indenture dated December 1, 1994, whereby Quintana Petroleum Corporation resigned as Unit Operator and Ballard & Associates, Inc. was designated as Successor Unit Operator for the Badlands Unit, Uintah County, Utah.

The instrument is hereby approved effective January 25, 1995. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under the Badlands Unit Agreement.

Your statewide (Utah) oil and gas bond No. 1005 will be used to cover all operations within the Badlands Unit.

It is requested that you notify all interested parties of the change in unit operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Robert A. Henricks

Robert A. Henricks
Chief, Branch of Fluid Minerals

Enclosure

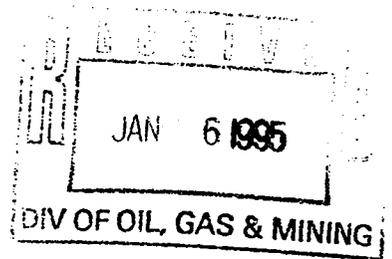
bcc: District Manager - Vernal (w/enclosure)
Division of Oil, Gas & Mining
Branch of Mineral Leasing Adjudication
File - Badlands Unit (w/enclosure)
MMS - Data Management Division
Agr. Sec. Chron
Fluid Chron

U-922:TAThompson:tt:01-25-95

WELL STATUS REPORTS
UTAH STATE OFFICE

INSPECTION ITEM	API NO.	WELL NUMBER	QTQT	SEC	TWN	RNG	WELL STATUS	LEASE NAME	OPERATOR
** INSPECTION ITEM UTU60917A UTU60917A	430473185700S1	BADLANDS MV A 1-31	SE	31	8S	23E	PGW	UTU61401	QUINTANA PETROLEUM CORPOR
** INSPECTION ITEM UTU60917B UTU60917B	430473179500S1	BADLANDS WS A 1-36	S	36	8S	22E	PGW	UTU56960	QUINTANA PETROLEUM CORPOR
** INSPECTION ITEM UTU60917C UTU60917C	430473186900S1	BADLANDS WS B 1-32	SE	32	8S	23E	PGW	UTU56965	QUINTANA PETROLEUM CORPOR

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155



IN REPLY REFER TO:
UT-922

January 25, 1995

Ballard & Associates, Inc.
518 17th Street, Suite 1180
Denver, Colorado 80202

Re: Caballo Unit
San Juan County, Utah

Gentlemen:

On January 23, 1995, we received an indenture dated December 1, 1994, whereby Quintana Petroleum Corporation resigned as Unit Operator and Ballard & Associates, Inc. was designated as Successor Unit Operator for the Caballo Unit, San Juan County, Utah.

The instrument is hereby approved effective January 25, 1995. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under the Caballo Unit Agreement.

Your statewide (Utah) oil and gas bond No. 1005 will be used to cover all operations within the Caballo Unit.

It is requested that you notify all interested parties of the change in unit operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Robert A. Henricks

Robert A. Henricks
Chief, Branch of Fluid Minerals

Enclosure

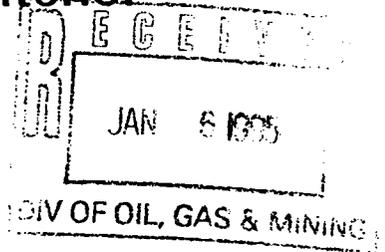
bcc: District Manager - Moab (w/enclosure)
Division of Oil, Gas & Mining
Branch of Mineral Leasing Adjudication
File - Caballo Unit (w/enclosure)
MMS - Data Management Division
Agr. Sec. Chron
Fluid Chron

U-922:TAThompson:tt:01-25-95

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155



IN REPLY REFER TO:
UT-922

January 25, 1995

Ballard & Associates, Inc.
518 17th Street, Suite 1180
Denver, Colorado 80202

Re: Deadman (Upper Ismay) Unit
San Juan County, Utah

Gentlemen:

On January 23, 1995, we received an indenture dated December 1, 1994, whereby Quintana Petroleum Corporation resigned as Unit Operator and Ballard & Associates, Inc. was designated as Successor Unit Operator for the Deadman (Upper Ismay) Unit, San Juan County, Utah.

The instrument is hereby approved effective January 25, 1995. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under the Deadman (Upper Ismay) Unit Agreement.

Your statewide (Utah) oil and gas bond No. 1005 will be used to cover all operations within the Deadman (Upper Ismay) Unit.

It is requested that you notify all interested parties of the change in unit operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Robert A. Henricks

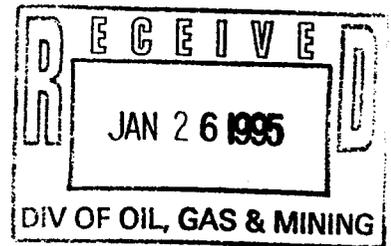
Robert A. Henricks
Chief, Branch of Fluid Minerals

Enclosure

bcc: District Manager - Moab (w/enclosure)
Division of Oil, Gas & Mining
Branch of Mineral Leasing Adjudication
File - Deadman (Upper Ismay) Unit (w/enclosure)
MMS - Data Management Division
Agr. Sec. Chron
Fluid Chron

United States Department of the Interior
BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155



IN REPLY REFER TO:
UT-922

January 25, 1995

Ballard & Associates, Inc.
518 17th Street, Suite 1180
Denver, Colorado 80202

Re: Successor of Operator
Communitization Agreement (CA)
UTU71692
Uintah County, Utah

Gentlemen:

On January 23, 1995, we received an indenture dated December 1, 1994, whereby Quintana Petroleum Corporation resigned as Operator and Ballard & Associates, Inc. was designated as Successor Operator for CA UTU71692, Uintah County, Utah.

The instrument is hereby approved effective January 25, 1995. In approving this designation, the Authorized Officer neither warrants nor certifies that the designated party has obtained all required approval that would entitle it to conduct operations under CA UTU71692.

Your statewide (Utah) oil and gas bond No. 1005 will be used to cover all operations within CA UTU71692.

It is requested that you notify all interested parties of the change in operator. Copies of the approved instruments are being distributed to the appropriate federal offices, with one copy returned herewith.

Sincerely,

/s/ Robert A. Henricks

Robert A. Henricks
Chief, Branch of Fluid Minerals

Enclosure

bcc: District Manager - Vernal (w/enclosure)
~~Division of Oil, Gas & Mining~~
File - CA UTU71692 (w/enclosure)
MMS - Data Management Division
Agr. Sec. Chron
Fluid Chron

U-922:TAThompson:tt:01-25-95

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

1- REC GA
2- LWP 7-PL
3- BTS 8-SJ
4- VLC 9-FILE
5- RJF ✓
6- LWP ✓

Attach all documentation received by the division regarding this change.
 Initial each listed item when completed. Write N/A if item is not applicable.

- Change of Operator (well sold) Designation of Agent
 Designation of Operator Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 12-1-94)

TO (new operator)	<u>BALLARD & ASSOCIATES INC</u>	FROM (former operator)	<u>QUINTANA PETROLEUM CORP</u>
(address)	<u>518 - 17TH ST STE 1180</u>	(address)	<u>1325 S COLORADO BLVD B411</u>
	<u>DENVER CO 80202</u>		<u>DENVER CO 80222</u>
	<u>JODIE SUNDQUIST</u>		<u>JEANNIE SNIDER</u>
	phone <u>(303) 595-8515</u>		phone <u>(303) 629-9559</u>
	account no. <u>N 0895 (1-30-95)</u>		account no. <u>N 9485</u>

Well(s) (attach additional page if needed):

Name: **SEE ATTACHED**	API: <u>047-31657</u>	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____

OPERATOR CHANGE DOCUMENTATION

- Lee 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Rec'd 1-3-95)
- Lee 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form). (Rec'd 1-3-95)
- Lee 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes) (X) If yes, show company file number: #172063
- Lee 4. (For Indian and Federal Wells ONLY) The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of Federal and Indian well operator changes should take place prior to completion of steps 5 through 9 below.
- Lee 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (1-30-95)
- Lepp 6. Cardex file has been updated for each well listed above. 2-9-95
- Lepp 7. Well file labels have been updated for each well listed above. 2-9-95
- Lee 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (1-30-95)
- Lee 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

ENTITY REVIEW

- Yes 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ____ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).
- N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only)

- Yes
N/A 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond
- ____ 2. A copy of this form has been placed in the new and former operators' bond files.
- ____ 3. The former operator has requested a release of liability from their bond (yes/no) ____ Today's date _____ 19____. If yes, division response was made by letter dated _____ 19____.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

- N/A
2/9/95
etc 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19____, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.
- N/A 2. Copies of documents have been sent to State Lands for changes involving State leases.

FILMING

1. All attachments to this form have been microfilmed. Date: February 21 1995.

FILING

- ____ 1. Copies of all attachments to this form have been filed in each well file.
- ____ 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

Bm Appr. eff. 1-25-95

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
 355 West North Temple, 3 Triad, Suite 350, Salt Lake City, UT 84180-1203

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

JEANNIE SNIDER
 QUINTANA PETROLEUM CORP
 1325 S COLORADO BLVD B411
 DENVER CO 80222

UTAH ACCOUNT NUMBER: N9485

REPORT PERIOD (MONTH/YEAR): 11 / 94

AMENDED REPORT (Highlight Changes)

Well Name			Producing Zone	Well Status	Days Oper	Production Volumes		
API Number	Entity	Location				OIL(BBL)	GAS(MCF)	WATER(BBL)
NORTH CHAPITA FED. 1-36 4304731795	10745	08S 22E 36	MVRD			U-56960	(Badlands Unit)	BLM App. 1-25-95
LITTLE BONANZA 1-4 4304731854	10937	09S 24E 4	NESE WSTC			U-54017	(C.A. UTA 71692)	BLM App. 1-25-95
BADLANDS FEDERAL 1-31 4304731857	10960	08S 23E 31	MVRD			U-61401	(Badlands Unit)	BLM App. 1-25-95
CABALLO UNIT 1-15 4303731403	10994	36S 23E 15	ISMY			U-62953	(Caballo Unit)	"
DEADMAN CANYON FEDERAL #2-20 4303731303	11010	37S 24E 20	ISMY			U-57469	(Deadman Unit)	"
DEADMAN CANYON 3-20 4303731304	11010	37S 24E 20				U-57469	(Deadman Unit)	"
DEADMAN CANYON FED #1-28 4303731306	11010	37S 24E 28	ISMY			U-49678	(Deadman Unit)	"
BADLANDS FED #1-32 4304731869	11627	08S 23E 32	MVRD			U-56965	(Badlands Unit)	BLM App. 1-25-95
Deadman Cn. 1-20 *4303731293	10696	37S 24E 20	ISMY	GIW		U-57469	(Deadman Unit)	"
TOTALS								

COMMENTS: _____

I hereby certify that this report is true and complete to the best of my knowledge.

Date: _____

Name and Signature: _____

Telephone Number: _____



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

In Reply Refer To:
3100
U-20544 et al
(UT-932)

APR 7 1997

NOTICE

Ballard Petroleum LLC : Oil and Gas
1050 Seventeenth Street, Suite 2500 :
Denver, CO 80265 :

Mergers Recognized

Acceptable evidence has been filed in this office concerning the merger of Ballard Energy 1992 Limited Partnership into Ballard Energy (Delaware) LP. Subsequently, Ballard Energy (Delaware) LP was converted to Ballard Energy (Delaware) LLC. Finally, Ballard Energy (Delaware) LLC merged into Ballard Petroleum LLC with Ballard Petroleum LLC being the surviving entity.

For our purposes, the final merger is recognized effective March 20, 1997, the date of approval by the Delaware Secretary of State.

The following oil and gas lease and right-of-way files have been noted as to the merger.

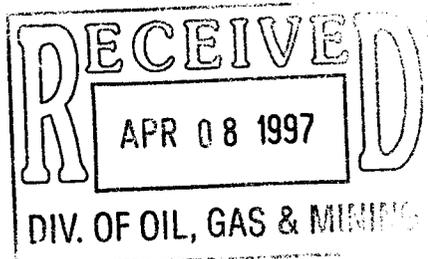
Deadman-U-20544	Deadman-U-57469	Ceballo-U-62953	U-62073 (ROW)
Deadman-U-49678	U-58726	UTU-64422	U-63959 (ROW)
U-54017	U-61400	UTU-65471	U-63980 (ROW)
Bedlands-U-56960	Bedlands-U-61401	UTU-65472	U-63996 (ROW)
Bedlands-U-56965	U-62252	U-59127 (ROW)	UTU-65118 (ROW)

We are notifying the Minerals Management Service and all applicable Bureau of Land Management offices of the change by a copy of this notice. If additional documentation for changes of operator are required by our Field Offices, you will be contacted by them.

The principal/obligor has already filed a rider changing the name on the statewide bond (BLM No. UT1005) to Ballard Petroleum LLC.

ROBERT LOPEZ

Group Leader,
Minerals Adjudication Group



cc:

Moab District Office

Vernal Field Office

San Juan Resource Area

MMS-Reference Data Branch, MS 3130, Box 5860, Denver, CO 80217

State of Utah, DOGM, Attn: Lisha Cordova (Ste 1210), Box 145801, SLC, UT 84114-5801

John F. Meck, Attorney-at-Law, 1775 Sherman St., Ste. 1800, Denver, CO 80203

OPERATOR CHANGE WORKSHEET

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

Routing	
1-LEC ✓	6-ABC ✓
2-GLH ✓	7-KAS ✓
3-DTS ✓	8-SI ✓
4-VLD ✓	9-FILE ✓
5-JRB ✓	

- Change of Operator (~~well sold~~) Designation of Agent
 Designation of Operator Operator Name Change ~~Only~~

The operator of the well(s) listed below has changed, effective: 3-20-97

TO: (new operator)	<u>BALLARD PETROLEUM LLC</u>	FROM: (old operator)	<u>BALLARD & ASSOCIATES INC</u>
(address)	<u>621 17TH ST STE 1800</u>	(address)	<u>518 17TH ST STE 400</u>
	<u>DENVER CO 80293</u>		<u>DENVER CO 80202</u>
Phone:	<u>(303)675-0300</u>	Phone:	<u>(303)675-0300</u>
Account no.	<u>N2310 (7-18-97)</u>	Account no.	<u>N0895</u>

WELL(S) attach additional page if needed: *GIW (CABALLO, BADLANDS & DEADMAN (UPPER ISMAY) UNITS)

Name:	*DEADMAN CYN FED 1-20	API:	43-037-31293	Entity:	10696	S	20	T	37S	R	24E	Lease:	U57469
Name:	NORTH CHAPITA FED 1-36	API:	43-047-31795	Entity:	10745	S	36	T	8S	R	22E	Lease:	U56960
Name:	BADLANDS FED 1-31	API:	43-047-31857	Entity:	10960	S	31	T	8S	R	23E	Lease:	U61401
Name:	CABALLO UNIT 1-15	API:	43-037-31403	Entity:	10994	S	15	T	36S	R	23E	Lease:	U62953
Name:	DEADMAN CYN FED 2-20	API:	43-037-31303	Entity:	11010	S	20	T	37S	R	24E	Lease:	U57469
Name:	DEADMAN CANYON 3-20	API:	43-037-31304	Entity:	11010	S	20	T	37S	R	24E	Lease:	U57469
Name:	DEADMAN CYN FED 1-28	API:	43-037-31306	Entity:	11010	S	28	T	37S	R	24E	Lease:	U49678
Name:	BADLANDS FEDERAL 1-32	API:	43-047-31869	Entity:	11627	S	32	T	08S	R	23E	Lease:	U56965

OPERATOR CHANGE DOCUMENTATION

1. (r649-8-10) Sundry or other legal documentation has been received from the FORMER operator (attach to this form). *(Rec'd 7-17-97)*
2. (r649-8-10) Sundry or other legal documentation has been received from the NEW operator (Attach to this form). *(Rec'd 7-17-97)*
3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is the company registered with the state? (yes/no) yes If yes, show company file number: #LC018225 (r.H. 3-17-97)
4. FOR INDIAN AND FEDERAL WELLS ONLY. The BLM has been contacted regarding this change. Make note of BLM status in comments section of this form. BLM approval of Federal and Indian well operator changes should ordinarily take place prior to the division's approval, and before the completion of steps 5 through 9 below.
5. Changes have been entered in the Oil and Gas Information System (3270) for each well listed above. *(7-18-97) #UIC Program Updated.*
6. Cardex file has been updated for each well listed above. *(7-18-97)*
7. Well file labels have been updated for each well listed above. *(7-18-97)*
8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to Trust Lands, Sovereign Lands, UGS, Tax Commission, etc. *(7-18-97)*
9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

ENTITY REVIEW

- Yes 1. (r649-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) no If entity assignments were changed, attach copies of Form 6, Entity Action Form.
- N/A 2. Trust Lands, Sovereign Lands, Tax Commission, etc., have been notified through normal procedures of entity changes.

BOND VERIFICATION - (FEE WELLS ONLY)

- N/A 1. (r649-3-1) The NEW operator of any fee lease well listed above has furnished a proper bond.
- Yes 2. A copy of this form has been placed in the new and former operator's bond files.
3. The FORMER operator has requested a release of liability from their bond (yes/no) , as of today's date . If yes, division response was made to this request by letter dated .

LEASE INTEREST OWNER NOTIFICATION OF RESPONSIBILITY

- N/A 1. Copies of documents have been sent on to at Trust Lands for changes involving State leases, in order to remind that agency of their responsibility to review for proper bonding.
DCS
7/21/97
- N/A 2. (r649-2-10) The former operator of any fee lease wells listed above has been contacted and informed by letter dated 19 , of their responsibility to notify all interest owners of this change.

FILMING

- Yes 1. All attachments to this form have been microfilmed. Today's date: 7-30-97.

FILING

1. Copies of all attachments to this form have been filed in each well file.
2. The original of this form, and the original attachments are now being filed in the Operator Change file.

COMMENTS

970718 BLM Apprv. eff. 3-20-97. (No official "Unit Operator Changes" copy of BLM Apprv. merger letter will be filed in unit files)

Return recorded cop. to: Welborn Sullivan Mer & Tooley, P.C. 1775 Sherman Street Suite 1800 Denver CO 80203

AFFIDAVIT OF CONVERSION AND MERGERS

STATE OF COLORADO)
)
CITY AND COUNTY OF DENVER) SS
)

KNOW ALL MEN BY THESE PRESENTS, on this date personally appeared before me H. J. Kagie, who, being first duly sworn, did depose and say:

- I am Senior Vice President of Ballard and Associates, Inc., a Montana corporation (herein "BAI"), whose principal place of business is 845 12th Street West, Billings, Montana 59102. I am over the age of 18 years and have personal knowledge of all the matters set forth in this Affidavit.
- BAI is sole Manager or sole General Partner of the following entities as set forth in the table:

<u>Name of Entity</u>	<u>Jurisdiction of Organization</u>	<u>Form of Entity</u>	<u>Manager or General Partner</u>
Ballard Petroleum LLC	Montana	limited liability company	Manager
Ballard Energy (Delaware) LLC	Delaware	limited liability company	Manager
Ballard Energy (Delaware) LP	Delaware	limited partnership	General Partner
Ballard Energy 1992 Limited Partnership	Montana	limited partnership	General Partner

3. Effective March 19, 1997, Ballard Energy 1992 Limited Partnership (herein "BELP") was merged with and into Ballard Energy (Delaware) LP (herein "Ballard Delaware" and, together with BELP, the "Constituent LP's"), pursuant to that certain Agreement and Plan of Merger dated March 19, 1997 among the Constituent LP's (the "LP Merger Agreement"), and Section 17-211 of the Delaware Revised Uniform Limited Partnership Act and Sections 35-10-641 through 643, inclusive, of the Montana Code Annotated (the "LP Merger"). The LP Merger Agreement was duly authorized, approved, executed and delivered by each LP Constituent in accordance with its governing documents and applicable law. Attached hereto as Exhibit A is a true and correct copy of the Certificate of Merger as filed in the Office of the Secretary of State, State of Delaware, at 2:30 p.m. on March 19, 1997, evidencing the LP Merger.

4. Effective March 19, 1997, Ballard Delaware was converted into Ballard Energy (Delaware) LLC (herein "Delaware LLC" and, together with Ballard Delaware, the "Conversion Constituents"), pursuant to Section 17-219 of the Delaware Revised Uniform Limited Partnership Act and Section 18-214 of the Delaware Limited Liability Company Act (the "Conversion"). The Conversion was duly authorized and approved by each Conversion Constituent in accordance with its governing documents and applicable law. Attached hereto as Exhibit B is a true and correct copy of the Certificate of Conversion as filed in the Office of the Secretary of State, State of Delaware, at 2:35 p.m. on March 19, 1997, evidencing the Conversion.

5. Effective March 20, 1997, Ballard Energy (Delaware) LLC (herein "Delaware LLC") was merged with and into Ballard Petroleum LLC (herein "Ballard Petroleum" and, together with Delaware LLC, the "Constituent LLC's"), pursuant to that certain Agreement and Plan of Merger dated March 20, 1997 among the Constituent LLC's (the "LLC Merger Agreement"), and Section 18-209 of the Delaware Limited Liability Company Act and Section 35-8-1201 of the Montana Code Annotated (the "LLC Merger"). The LLC Merger Agreement was duly authorized, approved, executed and delivered by each

LLC Constituent in accordance with its governing documents and applicable law. Attached hereto as Exhibit C is a true and correct copy of the Certificate of Merger as filed in the Office of the Secretary of State, State of Delaware, at 1:30 p.m. on March 20, 1997, evidencing the LP Merger.

6. Complete copies of the foregoing merger and conversion documents may be requested in writing from Ballard and Associates, Inc., 845 12th Street West, Billings, Montana 59102; Attention: W. W. Ballard.

7. Where necessary for recording purposes, Exhibit D is attached hereto to describe properties located within those states requiring such descriptions and owned by BERP immediately prior to the described conversion and mergers and which, as a result thereof, are owned by Ballard Petroleum LLC, effective as of March 20, 1997, at 1:30 p.m., the effective date of the LLC Merger.

Dated March 21, 1997.

H. J. Kagie
H. J. Kagie

WITNESSES:

Mary Morris-Stacy
Mary Morris-Stacy
Barbara Woods
Barbara Woods

BE IT REMEMBERED that the undersigned, a Notary Public duly qualified, commissioned, sworn and acting in and for the County and State aforesaid, hereby certifies that, on this 21st day of March, 1997, there appeared before me H. J. Kagie, and that:

[COLORADO, OKLAHOMA, UTAH, WYOMING]

The foregoing instrument was acknowledged before me on this date by H. J. Kagie and at the same time the Affiant was duly sworn to the foregoing affidavit.

[MONTANA, NORTH DAKOTA]

On this day before me, a Notary Public of said State, duly commissioned and sworn, personally appeared such person, known to me, and, being duly sworn to the foregoing instrument, acknowledged to me that he executed the within instrument.

Given under my hand and official seal this 21st day of March, 1997.

My Commission Expires: March 22, 1999

Jacquie Myers
Notary Public



BALLARD PETROLEUM LLC

**W. W. Ballard
President, Director
Billings, Montana**



**621 17th Street,
Suite 1800
Denver, Colorado 80293**

**(303) 675-8300 Office
(303) 675-0400 Facsimile**



**H. J. Kagie
Sr. Vice President, Director
Denver, Colorado**

FAX TRANSMITTAL

The information contained in this facsimile message is legally privileged and confidential information intended solely for the use of the persons or entities named below. If you are not such persons or entities, you are hereby notified that any distribution, dissemination or reproduction of this facsimile message is strictly prohibited. If you have received this message in error, please immediately call us collect at (303) 595-8515.

TO: *Lisha Cordoba*
FAX: *801-359-3940*

FROM: *Bill Donovan*
FAX: 303-675-0400

NUMBER OF PAGES INCLUDING THIS SHEET: *3*

COMMENTS:

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

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.

1. TYPE OF WELL		5. LEASE DESIGNATION AND SERIAL NUMBER.
OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>CHANGE OF OPERATOR</u>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
2. NAME OF OPERATOR: BALLARD PETROLEUM LLC		7. UNIT or CA AGREEMENT NAME:
3. ADDRESS OF OPERATOR: 950 17TH ST, #2600 CITY DENVER STATE CO ZIP 80202		8. WELL NAME and NUMBER:
PHONE NUMBER: (303) 389-5060		9. API NUMBER:
4. LOCATION OF WELL		10. FIELD AND POOL, OR WILDCAT:
FOOTAGES AT SURFACE:		COUNTY:
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:		STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input 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"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" 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 type="checkbox"/> OTHER: _____
	<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.
A MERGER BETWEEN BALLARD PETROLEUM LLC AND AEC OIL & GAS (USA) INC. BECAME EFFECTIVE ON 12-31-01. A COPY OF THE CERTIFICATE OF MERGER IS ATTACHED. THE NAME OF THE SURVIVING CORPORATION IS AEC OIL & GAS (USA) INC., A DELAWARE CORPORATION, WHICH WILL CONTINUE TO OPERATE UNDER BOND RLB0002902 (UT-1005).

ATTACHED IS A LIST OF THE UTAH WELLS AFFECTED BY THIS MERGER. IT IS REQUESTED THE OPERATOR NAME BE CHANGED TO AEC OIL & GAS (USA) INC.

NAME ERIC MARSH TITLE: VICE PRESIDENT, BALLARD PETROLEUM LLC
 SIGNATURE  DATE: 1/29/02

NAME (PLEASE PRINT) ERIC MARSH TITLE TEAM LEADER, AEC OIL & GAS (USA) INC.
 SIGNATURE  DATE 1/29/02

(This space for State use only)

RECEIVED

FEB 04 2002

DIVISION OF
OIL, GAS AND MINING

API	WELL NAME	LEASE	QUARTER/ QUARTER	SEC- TOWNSHIP- RANGE	COUNTY	WELL STATUS
43-037-30909	HORSEHEAD POINT 18-44	UTU40754	SESE	18-36S-25E	SAN JUAN	SI
43-037-31293	DEADMAN CANYON 1-20	UTU57469	NWSE	20-37S-24E	SAN JUAN	INJ
43-037-31303	DEADMAN CANYON 2-20	UTU57469	SESE	20-37S-24E	SAN JUAN	PROD
43-037-31304	DEADMAN CANYON 3-20	UTU57469	SESW	20-37S-24E	SAN JUAN	P&A
43-037-31306	DEADMAN CANYON 1-28	UTU49678	NWNW	28-37S-24E	SAN JUAN	SI
43-037-31403	1-15 CABALLO UNIT	UTU62953	NWNW	15-36S-23E	SAN JUAN	PROD
43-047-31795	NORTH CHAPITA 1-36	UTU56590	SWSW	36-8S-22E	UINTAH	PROD
43-047-31857	BADLANDS 1-31	UTU61401	SESW	31-8S-23E	UINTAH	P&A
43-047-31869	BADLANDS 1-32	UTU56965	SESE	32-8S-23E	UINTAH	PROD
43-047-33451	NORTH CHAPITA 24-31	UTU61401	SESW	31-8S-23E	UINTAH	PROD
43-047-33452	NORTH CHAPITA 44-30	UTU61400	SESE	30-8S-23E	UINTAH	PROD
43-047-33454	NORTH CHAPITA 44-36	UTU56960	SESE	35-8S-22E	UINTAH	PROD
43-049-30018	OIL HOLLOW 5-1	UTU77275	NWSW	5-11S-5E	UTAH	P&A
43-047-34084	FEDERAL 22-36	UTU56960	SESW	36-8S-22E	UINTAH	PROD
43-047-34085	FEDERAL 32-30	UTU61400	SWNE	30-8S-23E	UINTAH	PROD
43-047-33453	FEDERAL 44-31	UTU61401	SESE	31-8S-23E	UINTAH	PROD
43-047-34128	FEDERAL 24-36	UTU56960	SESW	36-8S-22E	UINTAH	APD
43-047-34180	FEDERAL 33-20	UTU77300	NWSE	20-8S-24E	UINTAH	APD
43-047-34182	FEDERAL 42-25	UTU65471	SENE	25-8S-22E	UINTAH	APD
43-047-34130	FEDERAL 41-36	UTU56960	NENE	36-8S-22E	UINTAH	APD
43-047-34016	FEDERAL 22-32	UTU56965	SESW	32-8S-23E	UINTAH	APD
43-047-34132	FEDERAL 43-36	UTU56960	NESE	36-8S-22E	UINTAH	APD
43-047-34181	FEDERAL 33-25	UTU65472	NWSE	25-8S-22E	UINTAH	APD
43-047-34179	FEDERAL 24-30	UTU61400	SESW	30-8S-23E	UINTAH	APD
43-047-34131	FEDERAL 43-31	UTU61401	NESE	31-8S-23E	UINTAH	APD
43-047-34127	FEDERAL 23-36	UTU56960	NESW	36-8S-22E	UINTAH	APD
43-047-34125	FEDERAL 22-36E	UTU78025	SESW	36-8S-23E	UINTAH	APD
43-047-34126	FEDERAL 23-31	UTU61401	NESW	31-8S-23E	UINTAH	APD
43-047-34178	FEDERAL 22-26	UTU76042	SESW	26-8S-23E	UINTAH	APD
43-047-34129	FEDERAL 41-31	UTU61401	NENE	31-8S-23E	UINTAH	APD



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155

In Reply Refer To:
3106
UTU-20544 et al
(UT-924)

FEB 01 2002

NOTICE

AEC Oil & Gas (USA) Inc. : Oil and Gas
950 17th Street :
Suite 2600 :
Denver, Colorado 80202 :

Merger Recognized

Acceptable evidence has been received in this office concerning the Merger of Ballard Petroleum LLC into AEC Oil & Gas (USA) Inc. with AEC Oil & Gas (USA) Inc. being the surviving entity.

For our purposes, the name change is recognized effective December 28, 2001.

The oil and gas lease files identified on the enclosed exhibit have been noted as to the merger. The exhibit was compiled from a list of leases obtained from our computer program. We have not abstracted the lease files to determine if the entities affected by this name change hold an interest in the leases identified nor have we attempted to identify leases where the entities are the operator on the ground maintaining no vested recorded title or operating rights interests. We will be notifying the Minerals Management Service and all applicable Bureau of Land Management offices of the change by a copy of this notice. If additional documentation for changes of operator are required by our Field Offices, you will be contacted by them.

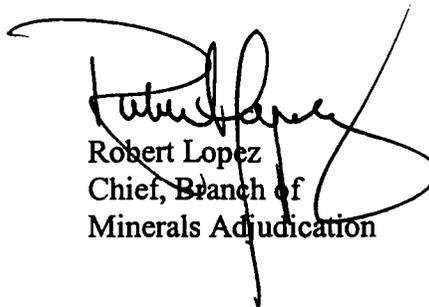
A cross reference was accomplished with our records and found that the lease UTU-58726 was not identified on your listing. We will appropriately document those files with a copy of this Notice.

RECEIVED

FEB 04 2002

DIVISION OF
OIL, GAS AND MINING

Due to the name change, the name of the principal/obligor on the bond is required to be changed from Ballard Petroleum LLC to AEC Oil & Gas (USA) Inc.. You may accomplish this either by consent of surety rider on the original bond or by submitting a bond under the new name. The statewide bond is held in Utah.



Robert Lopez
Chief, Branch of
Minerals Adjudication

Enclosure

1. Exhibit of Leases (1 pp)

cc: Moab Field Office
Vernal Field Office
MMS, Reference Data Branch, MS3130, PO Box 5860, Denver CO 80217
State of Utah, DOGM, Attn: Jim Thompson (Ste. 1210), Box 145801, SLC UT 84114
Teresa Thompson (UT-922)
Joe Incardine (UT-921)

Exhibit of Leases

UTU-20544	UTU-73495
UTU-40754	UTU-73498
UTU-49678	UTU-73717
UTU-54017	UTU-73942
UTU-56960	UTU-74437
UTU-56965	UTU-74439
UTU-57469	UTU-74988
UTU-58726	UTU-76042
UTU-61400	UTU-76043
UTU-61401	UTU-76475
UTU-62252	UTU-76584
UTU-62953	UTU-76705
UTU-63182	UTU-76730
UTU-64422	UTU-76816
UTU-65471	UTU-76817
UTU-65472	UTU-76850
UTU-72045	UTU-77075
UTU-72047	UTU-77267
UTU-72644	UTU-77268
UTU-72645	UTU-77269
UTU-73038	UTU-77270
UTU-73193	UTU-77271
UTU-73417	UTU-77272
UTU-73418	UTU-77273
UTU-73419	UTU-77274
UTU-73426	UTU-77275
UTU-73426	UTU-77276
UTU-73427	UTU-77277
UTU-73428	UTU-77278
UTU-73429	UTU-77300
UTU-73430	UTU-77335
UTU-73431	UTU-77540
UTU-73432	UTU-77862
UTU-73484	UTU-78025
UTU-73446	UTU-78176
UTU-73447	UTU-78223
UTU-73448	UTU-78736
UTU-73454	UTU-78987
UTU-73485	UTU-78988
UTU-73486	UTU-79020
UTU-73487	UTU-79186
UTU-73489	
UTU-73490	

**CERTIFICATE OF MERGER OF
MAPLELEAF TRANSACTIONS, INC. AND BALLARD PETROLEUM LLC
INTO AEC OIL & GAS (USA) INC.**

The undersigned corporation, formed and existing under and by virtue of the Delaware General Corporation Law, does hereby certify:

FIRST: The name and jurisdiction of incorporation of each of the entities which is to merge are as follows:

<u>Name</u>	<u>Jurisdiction of Incorporation</u>
AEC Oil & Gas (USA) Inc.	Delaware
Mapleleaf Transactions, Inc.	Delaware
Ballard Petroleum LLC	Delaware

SECOND: An Agreement and Plan of Merger has been approved, adopted, certified, executed and acknowledged by AEC Oil & Gas (USA) Inc. and Mapleleaf Transactions, Inc. in accordance with Section 264 of the Delaware General Corporation Law and by Ballard Petroleum LLC in accordance with Section 209 of the Delaware Limited Liability Company Act

THIRD: The name of the surviving corporation is AEC Oil & Gas (USA) Inc., a Delaware corporation.

FOURTH: The Certificate of Incorporation of the surviving corporation shall be the Certificate of Incorporation of AEC Oil & Gas (USA) Inc. as in effect immediately preceding the merger.

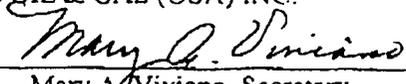
FIFTH: The merger of Mapleleaf Transactions, Inc. and Ballard Petroleum LLC into AEC Oil & Gas (USA) Inc. shall be effective on (i) 11:59 pm EST, December 31, 2001; and (ii) the day and hour of the filing of this Certificate of Merger in the office of the Secretary of State of Delaware.

SIXTH: The executed Agreement and Plan of Merger is on file at the principal place of business of the surviving corporation, which is AEC Oil & Gas (USA) Inc., 950 17th Street, Suite 2600, Denver, Colorado 80202.

SEVENTH: A copy of the Agreement and Plan of Merger will be furnished by the surviving corporation, on request and without cost, to any stockholder of Mapleleaf Transactions, Inc. and AEC Oil & Gas (USA) Inc. and to any member of Ballard Petroleum LLC.

AEC OIL & GAS (USA) INC.

By:


Mary A. Viviano, Secretary



State of Delaware

010674344

SECRETARY OF STATE
 DIVISION OF CORPORATIONS
 P.O. BOX 898
 DOVER, DELAWARE 19903

9343315

12-28-2001

WELBORN SULLIVAN MECK & TOOLE, P.C.

821 17TH STREET

STE 500

DENVER

CO 80202

ATTN: AMY MANG X#

DESCRIPTION	AMOUNT
BALLARD PETROLEUM LLC	
3056340 0250N Merger; Non-Survivor	
Merger	50.00
Franchise Tax Balance	100.00
FILING TOTAL	150.00
MAPLELEAF TRANSACTIONS, INC.	
3340722 0250N Merger; Non-Survivor	
Franchise Tax Balance	30.00
FILING TOTAL	30.00
AEC OIL & GAS (USA) INC.	
2137895 0250S Merger; Survivor	
Merger	75.00
Receiving/Indexing	50.00
Data Entry Fee	20.00
Surcharge Assessment-New Castle	6.00
Page Assessment-New Castle Count	18.00
Expedite Fee, Same Day	200.00
FILING TOTAL	369.00
TOTAL CHARGES	549.00
TOTAL PAYMENTS	549.00
SERVICE REQUEST BALANCE	.00

BOND RIDER NO. 2

Attaching to and forming part of Oil and Gas or Geothermal Lease Bond, Bond No. RLB0002902, effective February 20, 2001, on behalf of Ballard Petroleum, LLC as Principal, in favor of the United States of America as Obligee, in the amount of Fifty Thousand and No/100 Dollars (\$50,000.00).

It is understood and agreed that effective January 15, 2002, the name of the Principal has been changed under this bond to read:

AEC Oil & Gas (USA) Inc.

All other conditions and terms to remain as originally written.

Signed, Sealed and dated this 15th day of January, 2002

AEC Oil & Gas (USA) Inc.

Principal

Mac

By

Jonathan L. Grannis, Vice President,
Rockies Exploration

RLI Insurance Company

Surety

By

Greg E. Chilson
Greg E. Chilson, Attorney-in-Fact
8 Greenway Plaza, Suite 400
Houston, Texas 77046

Mary A. Viviano
Mary A. Viviano, Secretary



9025 North Lindbergh Dr. • Peoria, IL 61615
(309) 692-1000 or (800) 645-2402

RLB0002902

POWER OF ATTORNEY

RLI Insurance Company

Know All Men by These Presents:

That the RLI INSURANCE COMPANY, a corporation organized and existing under the laws of the State of Illinois, and authorized and licensed to do business in all states and the District of Columbia does hereby make, constitute and appoint: GREG E. CHILSON

in the City of HOUSTON, State of TEXAS, as Attorney-in-Fact, with full power and authority hereby conferred upon him to sign, execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, all of the following classes of documents to-wit:

\$50,000.00

Indemnity, Surety and Undertakings that may be desired by contract, or may be given in any action or proceeding in any court of law or equity; policies indemnifying employers against loss or damage caused by the misconduct of their employees; official, bail and surety and fidelity bonds. Indemnity in all cases where indemnity may be lawfully given; and with full power and authority to execute consents and waivers to modify or change or extend any bond or document executed for this Company, and to compromise and settle any and all claims or demands made or existing against said Company.

The RLI INSURANCE COMPANY further certifies that the following is a true and exact copy of a Resolution adopted by the Board of Directors of RLI Insurance Company, and now in force to-wit:

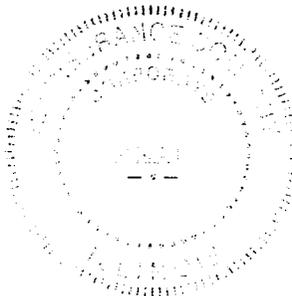
"All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys-in-Fact or Agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile."

(Blue shaded areas above indicate authenticity)

IN WITNESS WHEREOF, the RLI Insurance Company has caused these presents to be executed by its PRESIDENT with its corporate seal affixed this

ATTEST:

Camille J. Hensey
Corporate Secretary



By: Jonathan E. Michael
President

State of Illinois)
) SS
County of Peoria)

On this 15 day of Jan., 2002 before me, a Notary Public, personally appeared Jonathan E. Michael and Camille J. Hensey, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as President and Corporate Secretary, respectively, of the said RLI INSURANCE COMPANY, and acknowledged said instrument to be the voluntary act and deed of said corporation.

Cherie L. Montgomery
Notary Public



ROUTING

OPERATOR CHANGE WORKSHEET

1. GLH
2. CDW <input checked="" type="checkbox"/>
3. FILE

Change of Operator (Well Sold)

Designation of Agent

Operator Name Change

X **Merger**

The operator of the well(s) listed below has changed, effective: 12-31-2001	
FROM: (Old Operator):	TO: (New Operator):
BALLARD PETROLEUM LLC	AEC OIL & GAS (USA) INC
Address: 950 17TH STREET, STE 2600	Address: 950 17TH STREET, STE 2600
DENVER, CO 80202	DENVER, CO 80202
Phone: 1-(303)-389-5015	Phone: 1-(303)-389-5015
Account No. N2310	Account No. N2085

CA No. **Unit: BADLANDS**

WELL(S)						
NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
NORTH CHAPITA 1-36	36-08S-22E	43-047-31795	10745	FEDERAL	GW	P
BADLANDS FEDERAL 1-31	31-08S-23E	43-047-31857	10960	FEDERAL	GW	S
BADLANDS FEDERAL 1-32	32-08S-23E	43-047-31869	11627	FEDERAL	GW	P

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 02/04/2002
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 02/04/2002
- The new company has been checked through the **Department of Commerce, Division of Corporations Database** on: 02/04/2002
- Is the new operator registered in the State of Utah: YES Business Number: 764413-0143
- If **NO**, the operator was contacted on: N/A

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: 12/28/2001

7. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: 12/28/2001

8. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: N/A

9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 02/05/2002

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database** on: 02/04/2002
2. Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 02/04/2002
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: N/A

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: RLB 0002902

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: N/A

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number N/A
2. The **FORMER** operator has requested a release of liability from their bond on: N/A
The Division sent response by letter on: N/A

LEASE INTEREST OWNER NOTIFICATION:

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

COMMENTS:



In Reply To:

United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Montana State Office
5001 Southgate Drive, P.O. Box 36800
Billings, Montana 59107-6800
<http://www.mt.blm.gov/>

MTBIL 027549 et al
BLM Bond Nos. MT1009
WY1380
UT1005
CO1384

(922.EK)

May 10, 2002

NOTICE

EnCana Energy Resources Inc.
EnCana Oil & Gas (USA) Inc.
600 South Excelsior
Butte, Montana 59701

CORPORATE MERGERS AND NAME CHANGES RECOGNIZED

You have filed acceptable evidence confirming the following corporate merger and resulting name changes.

Merger:

PanCanadian Energy Corporation and Alberta Energy Company Ltd. with a name change to EnCana Corporation - April 8, 2002

Name Changes:

PanCanadian Resources to EnCana Resources - April 9, 2002
PanCanadian Heritage Lands to EnCana Heritage Lands - April 9, 2002
PanCanadian Energy Services Inc. to EnCana Energy Services Inc. -
April 8, 2002
PanCanadian Energy Resources Inc. to EnCana Energy Resources Inc. -
April 3, 2002
PanCanadian Gulf of Mexico Inc. to EnCana GOM Inc. - April 8, 2002
PanCanadian Midstream Inc. to EnCana Midstream Inc. - April 8, 2002
PanCanadian Midstream Limited to EnCana Midstream Limited -
April 8, 2002
PanCanadian Energy Holdings Inc. to EnCana Energy Holdings Inc. -
April 8, 2002

AEC Gathering Services (USA) Inc. to EnCana Gathering Services (USA)
Inc. - April 5, 2002
AEC Gulf of Mexico Inc. to EnCana Gulf of Mexico Inc. - April 8, 2002
AEC International (USA) Inc. to EnCana International (USA) Inc. -
April 8, 2002
AEC Marketing (USA) Inc. to EnCana Marketing (USA) Inc. - April 8, 2002
AEC Oil & Gas (USA) Inc. to EnCana Oil & Gas (USA) Inc. - April 5, 2002
AEC Oil & Gas Co. Ltd. to EnCana Oil & Gas Co. Ltd. - April 5, 2002
AEC Oil & Gas Partnership to EnCana Oil & Gas Partnership -
April 8, 2002
AEC Pipelines (USA) Inc. to EnCana Pipelines (USA) Inc. - April 8, 2002

AEC Storage and Hub Services Inc. to EnCana Gas Storage Inc. -

April 8, 2002
AEC West Ltd. to EnCana West Ltd. - April 5, 2002
AEC Pipelines Ltd. to EnCana Pipelines Ltd. - April 8, 2002

For our purpose we are recognizing the merger and name changes effective as shown above, as certified by the various Secretary of the States or the Canadian Office of Register. The principal automatically changes by operation of law from PanCanadian Energy Resources Inc. to EnCana Energy Resources Inc. on bond no. 055 S103356131BCM (BLM Bond No. MT1009) with Travelers Casualty & Surety Company of America as surety. The principal automatically changes by operation of law from AEC Oil & Gas (USA) Inc. to EnCana Oil & Gas (USA) Inc. on the following bonds:

Bond No. SLRC6413968 (BLM Bond No. WY1380) - The American Insurance Company as surety.
Bond No. RLB0002901 (BLM Bond No. CO1384) - RLI Insurance Company as surety.
BLM Bond No. UT1005 backed by a Letter of Credit.

We updated the oil and gas lease files identified on the enclosed exhibits A, B and C to reflect the new names. We compiled the exhibit from leases shown on our automated records system and the list you submitted. We are notifying the Minerals Management Service and applicable Bureau of Land Management offices of the change so they can update their records. If our field offices require additional documentation for changes of operator, they will contact you.

If you identify additional leases affected by the name change, please contact this office and we will document the files under our jurisdiction with a copy of this notice. If the leases are under the jurisdiction of another State Office, we will notify them.

If you have any questions, please contact Elaine at (406) 896-5108, or FAX (406) 896-5292.

/s/ Karen L. Johnson

Karen L. Johnson, Chief
Fluids Adjudication Section

3 Enclosures

- 1-Exhibit A - BLM automated records report
- 2-Exhibit B - List of leases submitted by PanCanadian Energy Res.
- 3-Exhibit C - BLM automated records report for AEC OG (USA), AEC O&G (USA) INC, AEC OIL & GAS (USA) INC, AEC OIL & GAS USA INC,

cc: (w/encl)

Travelers Casualty & Surety Company of America, One Tower Square, Hartford,
CT 06183-6014

RLI Insurance Company, 9025 N. Lindbergh Drive, Peoria, IL 61615

The American Insurance Company, 777 San Marin Drive, Novato, CA 94998

MMS, MRM, Attn: Gail Ryer, P.O. Box 5760, MS357B1, Denver, CO 80217

FM, North Dakota

FM, Miles City

Great Falls Oil & Gas Field Station

MT-922 (RM&O Section)

MT-930 (Cashier)

SMA

Merger/Name Change File

cc:(without enclosure)

All State Offices (electronic)

MT-921

MT-924

Bureau of Indian Affairs, Regional Director Rocky Mountain Region, Real
Estate Services, 316 North 26th Street, Billings, MT 59101
Bureau of Indian Affairs, Regional Director Great Plains Regional Office, 115
4th Ave. S.E. Aberdeen SD 57401

922.Ekaufman:cs:5/10/02:X5108:pancanadian.elk.doc



MAY 17 2002

DIVISION OF
OIL, GAS AND MINING

EnCana Oil & Gas (USA) Inc.
950 17th Street
Suite 2600
Denver CO USA 80202

tel: (303) 623-2300
fax: (303) 623-2400

www.encana.com

To Whom It May Concern:

⇒US E&P Notice

On April 5, 2002 the Canadian merger transaction between PanCanadian Energy Corporation (PanCanadian) and Alberta Energy Company Ltd. (AEC) took effect and we began operating as **EnCana Corporation** on April 8, 2002.

As a result of the merger, several former PanCanadian affiliates have changed their names:

- PanCanadian Energy Corporation has become **EnCana Corporation**
- PanCanadian Resources has become **EnCana Resources**
- PanCanadian Heritage Lands has become **EnCana Heritage Lands**
- PanCanadian Energy Services Inc. has become **EnCana Energy Services Inc.**
- PanCanadian Energy Resources Inc. has become **EnCana Energy Resources Inc.**
- PanCanadian Gulf of Mexico Inc. has become **EnCana GOM Inc.**
- PanCanadian Midstream Inc. has become **EnCana Midstream Inc.**
- PanCanadian Midstream Limited has become **EnCana Midstream Limited**
- PanCanadian Energy Holdings Inc. has become **EnCana Energy Holdings Inc.**

Also, as a result of the merger AEC became an indirect subsidiary of EnCana Corporation. *AEC's name has not changed and if you dealt with AEC in the past you should continue to deal with AEC in the normal fashion.* The following AEC affiliates have, however, changed their names:

- ⇒ **AEC Gathering Services (USA) Inc. has become EnCana Gathering Services (USA) Inc.**
 - AEC Gulf of Mexico Inc. has become **EnCana Gulf of Mexico Inc.**
 - AEC International (USA) Inc. has become **EnCana International (USA) Inc.**
 - AEC Marketing (USA) Inc. has become **EnCana Marketing (USA) Inc.**
- ⇒ **AEC Oil & Gas (USA) Inc. has become EnCana Oil & Gas (USA) Inc.**
 - AEC Oil & Gas Co. Ltd. has become **EnCana Oil & Gas Co. Ltd.**
 - AEC Oil & Gas Partnership has become **EnCana Oil & Gas Partnership**
 - AEC Pipelines (USA) Inc. has become **EnCana Pipelines (USA) Inc.**
 - AEC Storage and Hub Services Inc. has become **EnCana Gas Storage Inc.**
 - AEC West Ltd. has become **EnCana West Ltd.**
 - AEC Pipelines Ltd. has become **EnCana Pipelines Ltd.**

Please address all future notices, invoices, payments, correspondence and other communications to the appropriate EnCana entity. The mailing address for the entity you have been dealing with will remain the same until you are notified otherwise.

If you have outstanding contract(s) with any of the above-noted entities, no changes or amendments are required at this time.

⇒If you are dealing with any other former PanCanadian or AEC affiliates which are not listed above, **such as McMurry Oil Company and Fort Collins Consolidated Royalties, Inc.**, you may assume that such affiliate's name has not changed and you should continue to do business with that affiliate in the normal fashion until further notice.

If you require the *Proof of Filing* or the effective date of the respective name changes, you can download them from our web site at www.encana.com/Doing business with us.

EnCana Corporation and its affiliates look forward to a continued business relationship with you.

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

FORM 9

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.

		5. LEASE DESIGNATION AND SERIAL NUMBER:
		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
		7. UNIT or CA AGREEMENT NAME:
1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <u>NAME CHANGE</u>		8. WELL NAME and NUMBER:
2. NAME OF OPERATOR: EnCana Oil & Gas (USA) Inc.		9. API NUMBER:
3. ADDRESS OF OPERATOR: 950 17th Street, #2600 <small>CITY</small> Denver <small>STATE</small> CO <small>ZIP</small> 80202		10. FIELD AND POOL, OR WILDCAT:
4. LOCATION OF WELL FOOTAGES AT SURFACE:		COUNTY:
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:		STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input 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"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<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: <u>Name Change</u>
	<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.

Effective 4-8-02 the name of AEC Oil & Gas (USA) Inc. was changed to EnCana Oil & Gas (USA) Inc. A copy of the Bond No. RLB0002902 is enclosed. The name of the Principal has been changed under this bond to read EnCana Oil & Gas (USA) Inc.

Attached is a list of Utah wells affected by this name change. It is requested the Operator Name be changed from AEC Oil & Gas (USA) Inc. to EnCana Oil & Gas (USA) Inc.

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JUN 19 2002

DIVISION OF
OIL, GAS AND MINING

NAME (PLEASE PRINT) <u>RUTHANN MORSS</u>	TITLE <u>PERMITTING AGENT</u>
SIGNATURE	DATE _____

(This space for State use only)

API	WELL NAME	LEASE	QUARTER: QUARTER	SEC- TOWNSHIP- RANGE	COUNTY	WELL STATUS
43-037-30909	HORSEHEAD POINT 18-44	UTU40754	SESE	18-36S-25E	SAN JUAN	SI
43-037-31293	DEADMAN CANYON 1-20	UTU57469	NWSE	20-37S-24E	SAN JUAN	INJ
43-037-31303	DEADMAN CANYON 2-20	UTU57469	SESE	20-37S-24E	SAN JUAN	PROD
43-037-31304	DEADMAN CANYON 3-20	UTU57469	SESE	20-37S-24E	SAN JUAN	P&A
43-037-31306	DEADMAN CANYON 1-28	UTU49678	SESE	20-37S-24E	SAN JUAN	SI
43-037-31403	1-15 CABALLO UNIT	UTU62953	NWNW	28-37S-24E	SAN JUAN	PROD
43-047-31795	NORTH CHAPITA 1-36	UTU56590	NWNW	15-36S-23E	SAN JUAN	PROD
43-037-31857	BADLANDS 1-31	UTU61401	SWSW	36-8S-22E	UINTAH	PROD
43-047-31869	BADLANDS 1-32	UTU56965	SESE	31-8S-23E	UINTAH	P&A
43-047-33451	NORTH CHAPITA 24-31	UTU61401	SESE	32-8S-23E	UINTAH	PROD
43-047-33452	NORTH CHAPITA 44-30	UTU61400	SESE	31-8S-23E	UINTAH	PROD
43-047-33454	NORTH CHAPITA 44-36	UTU56960	SESE	30-8S-23E	UINTAH	PROD
43-049-30018	OIL HOLLOW 5-1	UTU77275	NWSW	35-8S-22E	UINTAH	P&A
43-047-34084	FEDERAL 22-36	UTU56960	SESE	5-11S-5E	UTAH	PROD
43-047-34085	FEDERAL 32-30	UTU61400	SESE	36-8S-22E	UINTAH	PROD
43-047-33453	FEDERAL 44-31	UTU61401	SESE	30-8S-23E	UINTAH	PROD
43-047-34128	FEDERAL 24-36	UTU56960	SESE	31-8S-23E	UINTAH	APD
43-047-34180	FEDERAL 33-20	UTU77300	SESE	36-8S-22E	UINTAH	APD
43-047-34182	FEDERAL 42-25	UTU65471	SESE	20-8S-24E	UINTAH	APD
43-047-34130	FEDERAL 41-36	UTU56960	SESE	25-8S-22E	UINTAH	APD
43-047-34016	FEDERAL 22-32	UTU56965	SESE	36-8S-22E	UINTAH	APD
43-047-34132	FEDERAL 43-36	UTU56960	SESE	32-8S-23E	UINTAH	APD
43-047-34181	FEDERAL 33-25	UTU65472	SESE	36-8S-22E	UINTAH	APD
43-047-34179	FEDERAL 24-30	UTU61400	SESE	25-8S-22E	UINTAH	APD
43-047-34131	FEDERAL 43-31	UTU61401	SESE	30-8S-23E	UINTAH	APD
43-047-34127	FEDERAL 23-36	UTU56960	SESE	31-8S-23E	UINTAH	APD
43-047-34125	FEDERAL 22-36E	UTU78025	SESE	36-8S-22E	UINTAH	APD
43-047-34126	FEDERAL 23-31	UTU61401	SESE	36-8S-23E	UINTAH	APD
43-047-34178	FEDERAL 22-26	UTU76042	SESE	31-8S-23E	UINTAH	APD
43-047-34129	FEDERAL 41-31	UTU61401	SESE	26-8S-23E	UINTAH	APD
			SESE	31-8S-23E	UINTAH	APD

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**DIVISION OF
OIL, GAS AND MINING**

APR-05-2002 FRI 02:09 PM WSM&T

FAX NO. 3038322366
STATE OF DELAWARE
SECRETARY OF STATE 02
DIVISION OF CORPORATIONS
FILED 04:12 PM 04/05/2002
020221516 - 2137895

**CERTIFICATE OF AMENDMENT
OF CERTIFICATE OF INCORPORATION
OF AEC OIL & GAS (USA) INC.**

AEC Oil & Gas (USA) Inc., a Delaware corporation (the "Corporation") hereby certifies as follows:

1. The Board of Directors and Sole Stockholder of the Corporation have adopted the following resolution in accordance with Section 242 of the General Corporation Law of the State of Delaware, as amended:

RESOLVED, that the Corporation's Certificate of Incorporation is hereby amended by deleting the FIRST paragraph of said certificate in its entirety and by substituting the following therefor:

"FIRST. The name of the Corporation is EnCana Oil & Gas (USA) Inc."

2. The capital of the Corporation shall not be reduced under or by reason of said amendment.

AEC OIL & GAS (USA) INC.

By: Mary A. Viviano
Mary A. Viviano, Secretary

Date: 4-5-02

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DIVISION OF
OIL, GAS AND MINING

BOND RIDER NO. 3

Attaching to and forming part of Oil and Gas or Geothermal Lease Bond, Bond No. RLB0002902, effective February 20, 2001, on behalf of AEC Oil & Gas (USA) Inc. as Principal, in favor of the United States of America as Obligee, in the amount of Fifty Thousand and No/100 Dollars (\$50,000.00).

It is understood and agreed that effective June 1, 2002, the name of the Principal has been changed under this bond to read:

EnCana Oil & Gas (USA) Inc.

All other conditions and terms to remain as originally written.

Signed, Sealed and dated this 31st day of May, 2002.

EnCana Oil & Gas (USA) Inc.

Principal

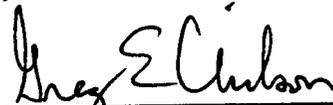
By


Eric D. Marsh, Vice President

RLI Insurance Company

Surety

By


Greg E. Chilson, Attorney-in-Fact
8 Greenway Plaza, Suite 400
Houston, Texas 77046

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JUN 19 2002

DIVISION OF
OIL, GAS AND MINING



9025 North Lindbergh Dr. • Peoria, IL 61615
(309) 692-1000 or (800) 645-2402

RLB0002902

POWER OF ATTORNEY

RLI Insurance Company

Know All Men by These Presents:

That the RLI INSURANCE COMPANY, a corporation organized and existing under the laws of the State of Illinois, and authorized and licensed to do business in all states and the District of Columbia does hereby make, constitute and appoint: GREG E. CHILSON

in the City of HOUSTON, State of TEXAS, as Attorney-in-Fact, with full power and authority hereby conferred upon him to sign, execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, all of the following classes of documents to-wit:
\$50,000.00

Indemnity, Surety and Undertakings that may be desired by contract, or may be given in any action or proceeding in any court of law or equity; policies indemnifying employers against loss or damage caused by the misconduct of their employees; official, bail and surety and fidelity bonds. Indemnity in all cases where indemnity may be lawfully given; and with full power and authority to execute consents and waivers to modify or change or extend any bond or document executed for this Company, and to compromise and settle any and all claims or demands made or existing against said Company.

The RLI INSURANCE COMPANY further certifies that the following is a true and exact copy of a Resolution adopted by the Board of Directors of RLI Insurance Company, and now in force to-wit:

"All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys-in-Fact or Agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile."

(Blue shaded areas above indicate authenticity)

IN WITNESS WHEREOF, the RLI Insurance Company has caused these presents to be executed by its PRESIDENT with its corporate seal affixed this

ATTEST:

Camille J. Hensey
Corporate Secretary



By: Jonathan E. Michael
President

State of Illinois)
) SS
County of Peoria)

On this 31 day of May 2002 before me, a Notary Public, personally appeared Jonathan E. Michael and Camille J. Hensey, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as President and Corporate Secretary, respectively, of the said RLI INSURANCE COMPANY, and acknowledged said instrument to be the voluntary act and deed of said corporation.

Cherie L. Montgomery
Notary Public



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JUN 19 2002

DIVISION OF
OIL, GAS AND MINING

OPERATOR CHANGE WORKSHEET

ROUTING

1. GLH
2. CDW
3. FILE

Change of Operator (Well Sold)

Designation of Agent

Operator Name Change

X Merger

The operator of the well(s) listed below has changed, effective: 04-08-2002	
FROM: (Old Operator):	TO: (New Operator):
AEC OIL & GAS USA INC	ENCANA OIL & GAS INC
Address: 950 17TH STREET, STE 2600	Address: 950 17TH STREET, STE 2600
DENVER, CO 80202	DENVER, CO 80202
Phone: 1-(406)-628-4164	Phone: 1-(303)-623-2300
Account No. N2085	Account No. N2175

CA No. Unit: BADLANDS

WELL(S)						
NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
NORTH CHAPITA FEDERAL 1-36	36-08S-22E	43-047-31795	10745	FEDERAL	GW	P
FEDERAL 24-36	36-08S-22E	43-047-34128	99999	FEDERAL	GW	APD
FEDERAL 43-36	36-08S-22E	43-047-34132	99999	FEDERAL	GW	APD
FEDERAL 24-30	30-08S-23E	43-047-34179	99999	FEDERAL	GW	APD
BADLANDS FEDERAL 1-31	31-08S-23E	43-047-31857	10960	FEDERAL	GW	TA
FEDERAL 23-31	31-08S-23E	43-047-34126	99999	FEDERAL	GW	APD
FEDERAL 24-31	31-08S-23E	43-047-33451	13138	FEDERAL	GW	P
FEDERAL 43-31	31-08S-23E	43-047-34131	99999	FEDERAL	GW	APD
BADLANDS FEDERAL 1-32	32-08S-23E	43-047-31869	11627	FEDERAL	GW	P

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 06/19/2002
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 05/17/2002
- The new company has been checked through the **Department of Commerce, Division of Corporations Database** on: 06/20/2002
- Is the new operator registered in the State of Utah: YES Business Number: 5053175-0143
- If **NO**, the operator was contacted on: N/A
- (R649-9-2) Waste Management Plan received on: IN PLACE

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: 05/10/2002

7. Federal and Indian Units:

The BLM or BIA has approved the successor of unit operator for wells listed on: 05/10/2002

8. Federal and Indian Communization Agreements ("CA"):

The BLM or BIA has approved the operator for all wells listed within a CA on: N/A

9. Underground Injection Control ("UIC") The Division has approved UIC Form 5, **Transfer of Authority to Inject,**

for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

1. Changes entered in the Oil and Gas Database on: 06/20/2002
2. Changes have been entered on the Monthly Operator Change Spread Sheet on: 06/20/2002
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: N/A

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: UT1005

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: N/A

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number N/A
2. The **FORMER** operator has requested a release of liability from their bond on: N/A
The Division sent response by letter on: N/A

LEASE INTEREST OWNER NOTIFICATION:

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

COMMENTS:

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

FORM 9

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.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER:
2. NAME OF OPERATOR: ENCANA OIL & GAS (USA) INC <i>N2175</i>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NA
3. ADDRESS OF OPERATOR: 370 17th St., Suite 1700 CITY Denver STATE CO ZIP 80202		7. UNIT or CA AGREEMENT NAME:
4. LOCATION OF WELL FOOTAGES AT SURFACE: SEE ATTACHED EXHIBIT "A"		8. WELL NAME and NUMBER: See attached Exhibit "A"
PHONE NUMBER: (303) 623-2300		9. API NUMBER:
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:		10. FIELD AND POOL, OR WILDCAT:
COUNTY: UINTAH		
STATE: UTAH		

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input 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"/> 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 checked="" 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 checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<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 type="checkbox"/> OTHER: _____
	<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.

Effective Date: May 1, 2006

New Operator: EOG Resources, Inc. *N9550*
600 17th St., Suite 1000N EOG Resources, Inc.'s contact is Sheila Singer.
Denver, CO 80202

EOG RESOURCES, INC.

Name Kurt D. Doerr

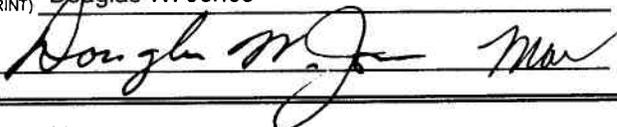
Title Agent or Attorney-in-Fact

Signature 

Date 7/11/2006

NAME (PLEASE PRINT) Douglas W. Jones

TITLE Attorney-in-Fact

SIGNATURE 

DATE 7/11/2006

(This space for State use only)

APPROVED 7/19/2006

(5/2000)

Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(See Instructions on Reverse Side)

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JUL 13 2006

DIV. OF OIL, GAS & MINING

EXHIBIT "A"

Attached to State of Utah Form 9 - Sundry Notices and Reports on Wells

UINTAH COUNTY, UTAH

Lease Serial Number	Encana's Well ID	API No.	Unit or CA Agreement Name	Well Name	Field and Pool	Twp	Rng	Sec	Qtr	Footages at Surface
UTU 56960	765010	047-34084		NORTH CHAPITA FEDERAL 22-36(W)	NATURAL BUTTES	8S	22E	36	SENW	1980 N 1750 W
	764998	047-31795	BADLANDS UNIT-UTU-60917A	NORTH CHAPITA FEDERAL 1-36	NATURAL BUTTES	8S	22E	36	SWSW	600 S 640 W
	765005	047-33454		FEDERAL 44-36	NATURAL BUTTES	8S	22E	36	SESE	836 S 738 E
UTU 56965	764997	047-31869	BADLANDS UNIT-UTU-60917B	BADLANDS FEDERAL 1-32	NATURAL BUTTES	8S	23E	32	SESE	613 S 704 E
	765009	047-34016		NORTH CHAPITA FEDERAL 22-32	NATURAL BUTTES	8S	23E	32	SENW	1416 N 1601 W
UTU 61400	765008	047-33452		FEDERAL 44-30	NATURAL BUTTES	8S	23E	30	SESE	900 S 500 E
	765011	047-34085		NORTH CHAPITA FEDERAL 32-30	NATURAL BUTTES	8S	23E	30	SWNE	1986 N 2148 E
UTU 61401	764996	047-31857	BADLANDS UNIT-UTU-60917A	BADLANDS FEDERAL 1-31	NATURAL BUTTES	8S	23E	31	SENW	2110 N 1910 W
	765006	047-33453		FEDERAL 44-31	NATURAL BUTTES	8S	23E	31	SESE	478 S 712 E
	765007	047-33451	BADLANDS UNIT UTU-60917A	FEDERAL 24-31	NATURAL BUTTES	8S	23E	31	SESW	508 S 2036 W
	765017	047-34131	BADLANDS UNIT UTU-60917A	NORTH CHAPITA FEDERAL 43-31	NATURAL BUTTES	8S	23E	31	NESE	1987 S 753 E
	765018	047-34126	BADLANDS UNIT UTU-60917A	NORTH CHAPITA FEDERAL 23-31	NATURAL BUTTES	8S	23E	31	NESW	2062 S 2006 W

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

RECEIVED

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.

JUL 13 2006

5. Lease Designation and Serial No.	See attached Exhibit "A"
6. If Indian, Allottee or Tribe Name	NA
7. If Unit or CA, Agreement Designation	N/A
8. Well Name and No.	See attached Exhibit "A"
9. API Well No.	
10. Field and Pool, or Exploratory Area	Natural Buttes
11. County or Parish, State	Uintah, UT

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

1. Type of Well Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input type="checkbox"/>	
2. Name of Operator ENCANA OIL & GAS (USA) INC.	
3a. Address 370 17TH STREET SUITE 1700, DENVER CO 80202	3b. Phone No. 303-623-2300
4. Location of Well (Footage, Sec., T., R., M., or Survey) See attached Exhibit "A"	

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA	
TYPE OF SUBMISSION <input type="checkbox"/> Notice of Intent <input checked="" type="checkbox"/> Subsequent Report <input type="checkbox"/> Final Abandonment Notice	TYPE OF ACTION <input type="checkbox"/> Acidize <input type="checkbox"/> Deepen <input type="checkbox"/> Production (Start/Resume) <input type="checkbox"/> Water Shut-Off <input type="checkbox"/> Alter Casing <input type="checkbox"/> Fracture Treat <input type="checkbox"/> Reclamation <input type="checkbox"/> Well Integrity <input type="checkbox"/> Casing Repair <input type="checkbox"/> New Construction <input type="checkbox"/> Recomplete <input checked="" type="checkbox"/> Other: <input type="checkbox"/> Change Plans <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Temporarily Abandon Change of Operator <input type="checkbox"/> Convert to Injection <input type="checkbox"/> Plug Back <input type="checkbox"/> Water Disposal

13. Describe Proposed or Completed Operations (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 recomplate 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 shall be filed within 30 days following completion of the involved operations. If the operations result in a multiple complete or recompletion in a new interval, a Form 3160-4 shall be filed on the day testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has

Effective Date: 5/1/2006

New Operator: EOG Resources, Inc.
600 17th St., Suite 1000N
Denver, CO 80202
EOG Contact is Sheila Singer
EOG Bond No. NM-2308

Sheila Singer 7/11/06
Regulatory Supervisor

SEE ATTACHMENT

RECEIVED
SEP 01 2006

14. I hereby certify that the foregoing is true and correct Name (Printed/Typed) Douglas W. Jones	Title DIV. OF OIL, GAS & MINING Attorney-in-Fact
Signature <i>Douglas W. Jones</i>	Date 7/11/06

Approved by <i>[Signature]</i>	RETURNED TO OPERATOR	Title	Date AUG 14 2006
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, makes 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.

UDOGM

EXHIBIT "A"

Attached to BLM Form 3160-5 - Sundry Notices and Reports on Wells

UINTAH COUNTY, UTAH

Lease Serial Number	Encana's Well ID	API No.	Unit or CA Agreement Name	Well Name	Field and Pool	Twp	Rng	Sec	Qtr	Footages at Surface
UTU 56960	765010	047-34084		NORTH CHAPITA FEDERAL 22-36(W)	NATURAL BUTTES	8S	22E	36	SENW	1980 N 1750 W
	764998	047-31795	BADLANDS UNIT-UTU-60917A	NORTH CHAPITA FEDERAL 1-36	NATURAL BUTTES	8S	22E	36	SWSW	600 S 640 W
	765005	047-33454		FEDERAL 44-36	NATURAL BUTTES	8S	22E	36	SESE	836 S 738 E
UTU 56965	764997	047-31869	BADLANDS UNIT-UTU-60917B	BADLANDS FEDERAL 1-32	NATURAL BUTTES	8S	23E	32	SESE	613 S 704 E
	765009	047-34016		NORTH CHAPITA FEDERAL 22-32	NATURAL BUTTES	8S	23E	32	SENW	1416 N 1601 W
UTU 61400	765008	047-33452		FEDERAL 44-30	NATURAL BUTTES	8S	23E	30	SESE	900 S 500 E
	765011	047-34085		NORTH CHAPITA FEDERAL 32-30	NATURAL BUTTES	8S	23E	30	SWNE	1986 N 2148 E
UTU 61401	764996	047-31857	BADLANDS UNIT-UTU-60917A	BADLANDS FEDERAL 1-31	NATURAL BUTTES	8S	23E	31	SENW	2110 N 1910 W
	765006	047-33453		FEDERAL 44-31	NATURAL BUTTES	8S	23E	31	SESE	478 S 712 E
	765007	047-33451	BADLANDS UNIT UTU-60917A	FEDERAL 24-31	NATURAL BUTTES	8S	23E	31	SESW	508 S 2036 W
	765017	047-34131	BADLANDS UNIT UTU-60917A	NORTH CHAPITA FEDERAL 43-31	NATURAL BUTTES	8S	23E	31	NESE	1987 S 753 E
	765018	047-34126	BADLANDS UNIT UTU-60917A	NORTH CHAPITA FEDERAL 23-31	NATURAL BUTTES	8S	23E	31	NESW	2062 S 2006 W

Reason for Return

The Sundry Notice for Change of Operator has been reviewed and returned for the following reasons.

1. Wells that are on Lease Basis Only will need to be submitted one well per Original Sundry with two copies by the New Operator (EOG) which will include the following Self-Certification Statement:

"Please be advised that EOG Resources, Inc. is considered to be the operator of Well No. _____; ___ 1/4 ___ 1/4, Section ___, Township ___, Range ___; Lease _____; _____ County,; and is responsible under the terms and conditions of the lease for the operations conducted upon the leased lands. Bond coverage is provided by _____."

2. The remainder of the wells are in the Badlands Unit (UTU-60917X), a Federal Unit. Therefore, EOG Resources, Inc. will need to submit a change in operator, in triplicate, for the unit to Teresa Thompson, Bureau of Land Management State Office, P O Box 45155, Salt Lake City, Utah 84145-0155, and receive approval to become the new operator.

Please be aware that EnCana Oil & Gas (USA), Inc. is still considered the unit operator and is held responsible for the wells until approval is given to EOG Resources, Inc. from the Utah State Office of the Bureau of Land Management.

If you have any questions concerning this matter, please contact Leslie Wilcken of this office at (435) 781-4497.

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9 5. LEASE DESIGNATION AND SERIAL NUMBER: U-61401
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: BADLANDS
1. TYPE OF WELL Gas Well	8. WELL NAME and NUMBER: BADLANDS FED 1-31
2. NAME OF OPERATOR: EOG Resources, Inc.	9. API NUMBER: 43047318570000
3. ADDRESS OF OPERATOR: 600 17th Street, Suite 1000 N , Denver, CO, 80202	PHONE NUMBER: 435 781-9111 Ext
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2110 FNL 1910 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW Section: 31 Township: 08.0S Range: 23.0E Meridian: S	9. FIELD and POOL or WILDCAT: NATURAL BUTTES COUNTY: UINTAH STATE: UTAH

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

TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> CASING REPAIR
<input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 1/14/2002	<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 checked="" 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 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.

On 1/14/2002, Ballard Petroleum LLC plugged and abandoned the referenced well as follows: Plug 1: Plug set from 4950' to 4350' with 70 sks class G, type II cement. Plug 2: Plug set from 3601' to 3000' with 70 sks class G, type II cement. Plug 3: Plug set from 1715' to 2215' with 50 sks class G, type II cement. Plug 4: Plug set from 320' to surface with 150 sks class G, type II cement. The well head cut off and a dry hole marker installed on 1/17/2002 as witnessed by Randy Bywater and Jamie Sparger Vernal BLM Field Office. Please see the attached United States Department of Interior - Bureau of Land Management inspection report dated 1/14-1/15/2002.

Accepted by the
 Utah Division of
 Oil, Gas and Mining
FOR RECORD ONLY
 June 10, 2009

NAME (PLEASE PRINT) Mary Maestas	PHONE NUMBER 303 824-5526	TITLE Regulatory Assistant
SIGNATURE N/A		DATE 6/9/2009

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

INSPECTION RECORD - ABANDONMENT

DATE: 1-14-15-02 DISTRICT: Vernal
 LOCATION(S-T-R): See 31 T&SR 232 OPERATOR: Ballard
 WELL: Ballard-1-31 CONTRACTOR & RIG: Key
 IID NUMBER: UTU-61401 LEASE NUMBER: _____
 INSPECTOR: Bywater
 WELL TYPE(CIRCLE ONE): DRY HOLE DEPLETED PRODUCER
 OTHER(EXPLAIN) _____

1. Plugs spotted across perforations if casing set?
2. Plugs spotted across casing stubs?
3. Open hole plugs spotted as specified?
4. Retainers, bridge plugs, or packers as specified?
5. Cement quantities as specified?
6. Method of verifying and testing plugs as specified?
7. Pipe withdrawal rate satisfactory?
8. All annular spaces plugged to surface?

YES	NO	NA
	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>		
		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>		

PLUG 1: REQUIRED DEPTH: 5550 ' TO 4950, ACTUAL: 4950 ' TO 4350
 PLUG SPOTTING METHOD: BALANCED RETAINERS BAILER OTHER(EXPLAIN) on CIRBP
 PLUG TESTED: NO PRESSURED TAGGED OTHER(EXPLAIN)

CEMENT INFORMATION:
 CLASS: A type II ADDITIVES: _____ SACKS: 70 SCS
 WATER REQUIRED: 15.8 Gal/SK YIELD: 1.18 CuFt/SK
 WEIGHT 15.8 PPG SLURRY VOLUME: 82.6 CuFt
 VOLUME REQUIRED FOR PLUG: 82.6 CuFt

REMARKS: Pres test 400 PSI after setting Bridge Plug

Please see notes attached

Plugged moved by R from P. eng
spaced out with 9" poz

PLUG 2: REQUIRED DEPTH: 3600 ' TO 3000 ' ACTUAL: 3601 ' TO 3000
 PLUG SPOTTING METHOD: BALANCED RETAINERS BAILER OTHER(EXPLAIN)
 PLUG TESTED: NO PRESSURED TAGGED OTHER(EXPLAIN)

CEMENT INFORMATION:
 CLASS: II ADDITIVES: _____ SACKS: 70
 WATER REQUIRED: 5.2 Gal/SK YIELD: 1.18 CuFt/SK
 WEIGHT 15.8 PPG SLURRY VOLUME: 82.6 CuFt
 VOLUME REQUIRED FOR PLUG: Same CuFt

REMARKS: _____

PLUG 3: REQUIRED DEPTH: 2200 ' TO 1700 ' ACTUAL: 1715 ' TO 2215 '
PLUG SPOTTING METHOD: BALANCED RETAINERS BAILER OTHER (EXPLAIN)
PLUG TESTED: NO PRESSURED TAGGED OTHER (EXPLAIN)
CEMENT INFORMATION:
CLASS: SAME ADDITIVES: _____ SACKS: 50 SK.
WATER REQUIRED: _____ Gal/SK YIELD: _____ CuFt/SK
WEIGHT _____ PPG SLURRY VOLUME: 48.7 CuFt
VOLUME REQUIRED FOR PLUG: _____ CuFt
REMARKS: _____

PLUG 4: REQUIRED DEPTH: 320 ' TO Surface ACTUAL: 320 ' TO Surface '
PLUG SPOTTING METHOD: BALANCED RETAINERS BAILER OTHER (EXPLAIN)
PLUG TESTED: NO PRESSURED TAGGED OTHER (EXPLAIN)
CEMENT INFORMATION:
CLASS: _____ ADDITIVES: _____ SACKS: 150
WATER REQUIRED: _____ Gal/SK YIELD: _____ CuFt/SK
WEIGHT _____ PPG SLURRY VOLUME: 177 CuFt
VOLUME REQUIRED FOR PLUG: _____ CuFt
REMARKS: Perf @ 320' Cir down 5 1/2 up 8 5/8
17 RBBS good returns

Start cement pumped 150 SKS good cement
to surface shut down watch cement
only fell 8' to 10'
cut well off next day

PLUG 5: REQUIRED DEPTH: _____ ' TO _____ ' ACTUAL: _____ ' TO _____ '
PLUG SPOTTING METHOD: BALANCED RETAINERS BAILER OTHER (EXPLAIN)
PLUG TESTED: NO PRESSURED TAGGED OTHER (EXPLAIN)
CEMENT INFORMATION:
CLASS: _____ ADDITIVES: _____ SACKS: _____
WATER REQUIRED: _____ Gal/SK YIELD: _____ CuFt/SK
WEIGHT _____ PPG SLURRY VOLUME: _____ CuFt
VOLUME REQUIRED FOR PLUG: _____ CuFt
REMARKS: _____

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9			
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.		5. LEASE DESIGNATION AND SERIAL NUMBER: U-61401			
		6. IF INDIAN, ALLOTTEE OR TRIBE NAME:			
		7. UNIT or CA AGREEMENT NAME: BADLANDS			
1. TYPE OF WELL Gas Well		8. WELL NAME and NUMBER: BADLANDS FED 1-31			
2. NAME OF OPERATOR: EOG Resources, Inc.		9. API NUMBER: 43047318570000			
3. ADDRESS OF OPERATOR: 600 17th Street, Suite 1000 N , Denver, CO, 80202		9. FIELD and POOL or WILDCAT: NATURAL BUTTES			
4. LOCATION OF WELL FOOTAGES AT SURFACE: 2110 FNL 1910 FWL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SENW Section: 31 Township: 08.0S Range: 23.0E Meridian: S		COUNTY: UINTAH			
		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: 10/7/2013 <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input type="checkbox"/> SPUD REPORT Date of Spud: <input type="checkbox"/> DRILLING REPORT Report Date:	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION </td> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input checked="" type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER </td> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/> </td> </tr> </table>		<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input checked="" type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>
<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input checked="" type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>			
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc. Location will be treated with roundup in the spring of 2014 to kill the cheat grass. Monitoring will be done later in the growing season to assess herbicide effectiveness and desirable plant growth.					
		Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY October 07, 2013			
NAME (PLEASE PRINT) Vail Nazzaro		PHONE NUMBER 303 824-5590			
		TITLE Sr. Regulatory Assistant			
SIGNATURE N/A		DATE 10/7/2013			