DEPARTMENT OF THE INTERIOR

MINERALS MANAGEMENT SERVICE (MMS)

FIELD OPERATIONS REPORTER'S HANDBOOK

Revision 01 (November 4, 2002)

GENERAL GUIDELINES

For Use With Outer Continental Shelf (OCS) Reporting Forms:

Form MMS-123, Application for Permit to Drill (APD)

Form MMS-123S, Supplemental APD Information Sheet

Form MMS-124, Application for Permit to Modify (APM)

Form MMS-125, End of Operations Report (EOR)

Form MMS-133, Well Activity Report (WAR)

Form MMS-144, Rig Movement Notification Report

Foreword

This Field Operations Reporter's Handbook is designed to aid the person filling out the above forms which are required for requesting approval and reporting upon certain operations addressed in the operating regulations at 30 CFR Part 250. The forms and this handbook are oriented toward the automated processing of data both by the reporting companies and the agency. Use of computer generated forms by the reporter is encouraged.

NOTE: Forms with an issue date of **October 1, 2002** are the most current and are to be used. The character length and format as given in this handbook is to be followed. Copies of the forms will be distributed separately for inclusion into the handbook. Users are cautioned to read carefully the data definitions in this handbook. The definitions used in this handbook are often the same as those in the Production Auditing and Accounting System (PAAS) Reporters Handbook, but not in all cases.

Each specific form has it's own reporting guidelines set up in the following manner:

Application for Permit to Drill (APD)(Form MMS-123)

- Form Overview
- Completion of Form with a Description of Data Elements

Supplemental APD Information Sheet (Form MMS-123S)

- Form Overview
- Completion of Form with a Description of Data Elements

Application for Permit to Modify (APM)(Form MMS-124)

- Form Overview
- Completion of Form with a Description of Data Elements

End of Operations Report (EOR)(Form MMS-125)

- Form Overview
- Completion of Form with a Description of Data Elements

Well Activity Report (WAR)(Form MMS-133)

- Form Overview
- Completion of Form with a Description of Data Elements

Rig Movement Notification Report (Form MMS-144)

- Form Overview
- Completion of Form with a Description of Data Elements

APPENDICES

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FIELD OPERATIONS REPORTER'S HANDBOOK

INTRODUCTION

All activities in the Federal OCS related to the exploration for, and development and production of, oil, gas, and sulphur resources are conducted under the authority of MMS of the Department of the Interior pursuant to the provisions of the OCS Lands Act, as amended. To ensure that these operations are conducted within a framework of sound engineering and conservation practices, the Secretary of the Interior vests in the Director of MMS the authority to regulate such operations.

These operations are conducted under a regulatory system that requires a lessee or operator to obtain approval prior to initiating operations and report the results of the operations as conducted. This is accomplished through the set of forms that are the subject of this handbook.

This enables MMS to:

- a. Provide an objective review of proposals to ensure that operations are to be conducted in a safe and workmanlike manner.
- b. Provide a review of the impact on hydrocarbon and other resources based on a more complete knowledge of the geologic and reservoir parameters than that of any single lessee, operator, or consortium.
- c. Provide a balance of the competing interests for the use of the ocean surface and seafloor.
- d. Track activities on the Federal OCS and provide a contact for all operations conducted under Federal oil and gas leases.
- e. Conduct inspections of the various equipment and procedures utilized in each of the operations to ensure adherence to the proposals as submitted by the lessee or operator and approved by MMS.
- f. Maintain an accurate inventory of hydrocarbon resources and reserves on the Federal OCS.

GENERAL USE AND SEQUENCE OF FILING

There are six forms used for requesting approval of proposed operations and reporting the results of those completed operations. The forms, and the usual sequence in which they are filed, are as follows:

a. Form MMS-123, Application for Permit to Drill (APD)

• Filed to obtain approval for the initial drilling of a new well, sidetrack, bypass or deepening.

b. Form MMS-123S, Supplemental APD Information Sheet

• Filed simultaneously with Form MMS-123, Application for Permit to Drill, to provide required engineering data in a standardized format.

c. Form MMS-124, Application for Permit to Modify (APM)

- Filed as a Notice to obtain approval on any operation to be performed upon a wellbore or zone, other than "routine operations". A generalized listing of those operations that must be permitted is outlined on the form.
- Filed as a Notice to obtain approval for modifications from previous approvals given on Forms MMS-123 and 124.
- Filed as a Subsequent Report to report the results of the approved operations as conducted.

d. Form MMS-125, End of Operations Report (EOR)

- Filed to report any type of completion, abandonment, workover, or modification done within a wellbore.
- Filed to report information on any change in well status or configuration of the wellbore due to drilling, completion, or abandonment. This report must be submitted within 30 days of completing or abandoning the permitted wellbore. This form may also be used to collect or correct pertinent well data entered into our database.

e. Form MMS-133, Well Activity Report (WAR)

• Filed to report weekly activities on drilling operations that were approved under the MMS-123/123S or MMS-124. The form provides MMS with prescribed operational data in a timely manner

f. Form MMS-144, Rig Movement Notification Report

• Filed prior to mobilization or demobilization of a rig or primary unit (e.g. snubbing unit, coil tubing unit, etc.) onto or off of a well.

AUTOMATION OF PROCEDURES

The forms have been designed to facilitate use in manual typewriters and word-processing equipment. For those lessees with computerized well files, information can be taken directly from that file to the form. Information may be submitted on a facsimile form generated by computer or other means, as long as the information submitted is in the same format and order, and is accurate and complete. These forms were also designed to facilitate data entry into MMS computerized files. Field lengths and character types are given to aid in formatting of files to fit the structure of the required reports. Both reports and applications for approval will ultimately be accomplished via data transfer over telephone lines, where feasible.

GENERAL INSTRUCTIONS

All spaces should contain an entry unless otherwise indicated in the handbook. If the data is not applicable to the proposal being submitted, the appropriate entry is NA (Not Applicable). All measurements are entered in English units, e.g., miles, feet and inches; lb/ft, cu. ft., bbls.

PROPRIETARY INFORMATION

Proprietary information concerning geological and geophysical data will be protected in accordance with 43 U.S.C. 1352. Each of the forms is required to be submitted in two versions, one with the full information specified on the form, and the other a public information copy with the proprietary information deleted.

SUMMARY CHART

| Form No. | Form Title | Purpose of Filing | When to File |
|----------|---|---|---|
| MMS-123 | Application for Permit to Drill (APD) | Approval to initially drill a well, sidetrack/bypass, or deepening. | With or subsequent to the appropriate exploration or development and production plan. |
| MMS-123S | Supplemental APD Information Sheet | To provide required engineering data in a standardized format. | File with each copy of APD. |
| MMS-124 | Application for Permit to Modify (APM) | a.) Approval to perform a completion, abandonment, workover, or to modify an operation on a wellbore that is not listed as "routine".b.) Report results of operations as actually conducted. | a.) Prior to commencement of the operation.b.) Upon conclusion of the operation. |
| MMS-125 | End of Operations Report (EOR) | To report a change in the wellbore status or its configuration due to operations being performed on the well. | Upon conclusion of the operations. |

| MMS-133 | Well Activity Report (WAR) | a. To ensure operations are being conducted in accordance with approved plans.b. To maintain an updated wellbore status (ST, BP, etc.) | Within one week of the end of the week being reported. |
|---------|-------------------------------------|---|---|
| MMS-144 | Rig Movement Notification Report | To alert the MMS of impending work operations on a well. | 24 hours prior to moving a rig or primary unit onto or off of a well. |

DEPARTMENT OF THE INTERIOR MINERALS MANAGEMENT SERVICE (MMS)

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APPLICATION FOR PERMIT TO DRILL (APD) (Form MMS-123)

The reporting guidelines for this form are described in the following manner:

- Form Overview (also see General Guidelines)
- Completion of Form with a Description of Data Elements

FORM OVERVIEW

INTRODUCTION

The purpose of a Application for Permit to Drill (APD) form is for the applicant to provide to the appropriate MMS district office sufficient data to uniquely identify a wellbore that is to be drilled on Federal lands in the OCS under an approved exploration or development and production plan.

WHO MUST FILE

Any operator of a lease or unit on the Federal OCS who proposes to drill a well for the purposes of exploration for, or development of, oil, gas or sulphur resources, whether such well is located on or off such lands.

WHEN TO FILE

The APD form is filed only to permit the initial drilling of a well, for a sidetrack or bypass off of the wellbore, or the deepening of a wellbore.

An APD form is submitted with, or subsequent to, an exploration or development and production plan which describes the number and pattern of individual wells necessary or desirable to fully explore or develop, as appropriate, the leased or unitized lands.

HOW AND WHERE TO FILE

Submit original plus three copies of Form MMS-123 with one copy marked "Public Information" to the appropriate district office as shown in <u>Appendix A.12</u>. In accordance with 30 CFR 250.196, Items 13, 14, and 22 shall not be available for public inspection without the consent of the lessee for the same periods as those provided in paragraph (b) of this section or until the well goes on production, whichever is earlier. See <u>Appendix A.11</u>.

COMPLETION OF FORM WITH A DESCRIPTION OF DATA ELEMENTS

This section identifies the information which is required to complete the APD form. The section is divided into four topics organized as follows:

GENERAL INFORMATION contains information used by MMS for identification of the operator and reported well.

LOCATION INFORMATION contains lease, area, and block information along with latitude and longitude measurements. Locations include well at total depth and the well at surface.

LIST OF SIGNIFICANT MARKERS ANTICIPATED contains information with regard to important seismic, pale ontological or correlation markers and their location in measured depth.

OPERATOR AND MMS AUTHORIZATION INFORMATION identifies the authorizing representative and title, the date the proposal was authorized, and MMS approval information.

The following section contains a detailed description of the data elements found on an Application for Permit to Drill form. The numbering of the data elements corresponds to the numbered blocks on the form. (**NOTE**: The "A" represents Alpha Code, and the "N" represents Number Code.)

GENERAL INFORMATION

1. PROPOSAL TO DRILL

Check the appropriate intent for the submission of the form. Choose from new well, sidetrack, bypass, or deepening.

2. MMS OPERATOR NO. (5 characters - NNNNN)

Enter MMS's assigned identification number for the lease, unit, or agreement operator. See **Appendix A.2**.

3. OPERATOR NAME and ADDRESS (Submitting Office)

Enter the legal company name as given by the lease documents or approved Designation of Operator form (Form MMS-1123) on file with MMS and the complete address of the submitting office.

4. WELL NAME (5 characters - AANNN)

Enter the **current** MMS/operator identification name/number for the well. The term "**current**" means entering the present status of the well prior to approval. See <u>Appendix A.8</u>.

5. SIDETRACK NO. (2 characters - NN)

Enter the **current** Sidetrack number for the well. The term **current** means entering the present Sidetrack No. of the well prior to approval. See <u>Appendix A.8</u>.

6. BYPASS NO. (2 characters – NN)

Enter the **current** Bypass number for the well. The term **current** means entering the present Bypass No. of the well prior to approval. See <u>Appendix A.8</u>.

7. PROPOSED START DATE (8 characters - YYYYMMDD)

Enter the proposed start of drilling operations.

8. PLAN CONTROL NUMBER (NEW WELL ONLY)

For a new well application enter the applicable plan control number which cited this well (location parameters) in the plan. This number is assigned by the Plans Unit in the Field Operations Regional Office.

9. API WELL NO. (CURRENT SIDETRACK/BYPASS)(12 characters - NNNNNNNNNNNNN)

For a new well this field is left blank. In the case of a sidetrack, bypass or deepening enter the **current** 12 digit API Well No. The MMS will supply the adjusted API Well No. upon approval of the APD.

(**NOTE**: After an API Well Number is assigned to a well, it should be used on all further documentation for that well.)

LOCATION INFORMATION

WELL AT TOTAL DEPTH (PROPOSED)

10. LEASE NO. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the proposed total depth. See **Appendix A.1**.

11. AREA NAME (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the proposed total depth of the well. See **Appendix A.4**.

12. BLOCK NUMBER (5 characters - ANNNN)

Enter the number of the block at the proposed total depth of the well.

13. LATITUDE (9 characters - NN-NN-NN.NNN or 10 characters - NN.NNNNNNNN) (□ NAD 27/□ NAD 83)

Enter the bottom hole latitude in degrees, minutes, and seconds to three decimal places or degrees to eight decimal places. The prevailing format for the Gulf of Mexico Region is in NAD 27. The Pacific and Alaska Regions require the entry to be in NAD 83 format.

14. LONGITUDE (10 characters - NNN-NN-NN.NNN or 11 characters - NNN.NNNNNNNN)

(□ NAD 27/□ NAD 83)

Enter the bottom hole longitude in degrees, minutes, and seconds to three decimal places or degrees to eight decimal places. The prevailing format for the Gulf of Mexico Region is in NAD 27. The Pacific and Alaska Regions require the entry to be in NAD 83 format. **NOTE:** Degree readings for Pacific and Alaska Region require three digits while the Gulf of Mexico Region requires two.

WELL AT SURFACE

15. LEASE NO. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the surface. See **Appendix A.1**.

16. AREA NAME (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the surface of the well. See Appendix A.4.

17. BLOCK NUMBER (5 characters - ANNNN)

Enter the number of the block at the surface of the well.

18. LATITUDE (9 characters - NN-NN-NN.NNN or 10 characters - NN.NNNNNNNN) (□ NAD 27/□ NAD 83)

Enter the surface latitude in degrees, minutes, and seconds to three decimal places or degrees to eight decimal places. The prevailing format for the Gulf of Mexico Region is in NAD 27. The Pacific and Alaska Regions require the entry to be in NAD 83 format.

19. LONGITUDE (10 characters - NNN-NN-NN.NNN or 11 characters - NNN.NNNNNNNNN)

(□ NAD 27/□ NAD 83)

Enter the surface longitude in degrees, minutes, and seconds to three decimal places or degrees to eight decimal places (see Note on number 14 above). The prevailing format for the Gulf of Mexico Region is in NAD 27. The Pacific and Alaska Regions require the entry to be in NAD 83 format.

NOTE: In the Gulf of Mexico Region the proposed location plat submitted with Form MMS-123 must contain a minimum 3 location references: block offsets, X, Y values

(with projection and zone), and latitude-longitude values for both the proposed surface and bottomhole locations. Upon submittal of the final location plat (submitted with Form MMS-124, Application for Permit to Modify) the operator must include the final surveyed location in the references listed above. Additionally, the surface location measured with a Global Positioning System device and reported in NAD 83 must be included on the plat.

LIST OF SIGNIFICANT MARKERS ANTICIPATED

20. NAME

Enter the significant markers that are expected to be penetrated by the borehole. These markers are anticipated to be encountered in the borehole through the interpretation of seismic, stratigraphic, structural, and/or correlation data. Significant markers include, but are not limited to, drilling objectives.

21. TOP (MD)

Enter the estimated measured depth to the top of **each** significant marker.

22. LIST ALL ATTACHMENTS

Attach a complete well prognosis and the following attachments required by 30 CFR 414 (b) through (g) or 30 CFR 250.1617 (c) and (d), as appropriate.

30 CFR 414 (b) through (g):

- (b) The APD's for wells to be drilled from mobile drilling units shall include the following:
- (1) An identification of the maximum environmental and operational conditions the rig is designed to withstand
- (2) Applicable current documentation of operational limitations imposed by the American Bureau of Shipping classification or other appropriate classification society and either a U.S. Coast Guard Certificate of Inspection or a U.S. Coast Guard Letter of Compliance.
- (3) For frontier areas, the design and operating limitations beyond which suspension, curtailment, or modification of drilling or rig operations are required (e.g., vessel motion, offset, riser angle, anchor tensions, wind speed, wave height, currents, icing or ice-loading, settling, tilt or lateral movement, resupply capability) and the contingency plans which identify actions to be taken prior to exceeding the design or operating limitations of the rig.
- (4) A program which provides for safety in drilling operations where a floating or semisubmersible type of drilling vessel is used and formation competency at the structural and/or conductor casing setting depth(s) is (are) not adequate to permit circulation of drilling fluids to the vessel while drilling the conductor and/or surface hole. This program shall include all known pertinent information including seismic and geologic data, water depth, drilling-fluid hydrostatic pressure, a schematic diagram indicating the equipment to be installed from the rotary table to the proposed conductor and/or surface casing seat(s), and the contingency plan for moving off location.

- (c) The APD's shall include rated capacities of the proposed drilling unit and of major drilling equipment.
- (d) In those areas which are subject to subfreezing conditions, the lessee shall furnish evidence that the drilling equipment, BOP system and components, drilling safety systems, diverter systems, and other associated equipment and materials are suitable for drilling operations under subfreezing conditions.
- (e) After a drilling unit has been approved for use in an MMS District, the information listed in paragraphs (b)(1), (2), and (3), (c), and (d) of this section need not be resubmitted unless required by the District Supervisor or there are changes in equipment that affect the rated capacity of the unit.
- (f) An APD shall include the following in addition to a fully completed Form MMS-123:
- (1) A plat, drawn to a scale of 2,000 feet to the inch, showing the surface and subsurface location of the well to be drilled and of all the wells previously drilled in the vicinity from which information is available. Locations shall be indicated in feet from the block line.
- (2) The design criteria considered for the well and for well control, including the following:
 - (i) Pore pressures.
 - (ii) Formation fracture gradients.
 - (iii) Potential lost circulation zones.
 - (iv) Mud weights.
 - (v) Casing setting depths.
 - (vi) Anticipated surface pressures (which for purposes of this section are defined as the pressure which can reasonably be expected to be exerted upon a casing string and its related wellhead equipment). In the calculation of an anticipated surface pressure, the lessee shall take into account the drilling, completion, and producing conditions. The lessee shall consider mud densities to be used below various casing strings, fracture gradients of the exposed formations, casing setting depths, total well depth, formation fluid type, and other pertinent conditions. Considerations for calculating anticipated surface pressure may vary for each segment of the well. The lessee shall include as a part of the statement of anticipated surface pressures the calculations used to determine these pressures during the drilling phase and the completion phase, including the anticipated surface pressure used for production string design.
 - (vii) If a shallow hazards site survey is conducted, the lessee shall submit with or prior to the submittal of the APD, two copies of a summary report describing the geological and manmade conditions present. The lessee shall also submit two copies of the site maps and data records identified in the survey strategy.
 - (viii) Permafrost zones, if applicable.
 - (3) A BOP equipment program including the following:
 - (i) The pressure rating of BOP equipment.
 - (ii) A well-control procedure for use of the annular preventer for those wells where the anticipated surface pressure exceeds the rated working pressure of the annular preventer.

- (iii) A description of subsea BOP accumulator system or other type of closing system proposed for use.
- (iv) A schematic drawing of the diverter system to be used (plan and elevation views) showing spool outlet internal diameter(s); diverter-line lengths and diameters, burst strengths, and radius of curvature at each turn; valve type, size, working pressure rating, and location; the control instrumentation logic; and the operating procedure to be used by lessee or contractor personnel.
- (v) A schematic drawing of the BOP stack showing the inside diameter of the BOP stack, and the number of annular, pipe ram, variable-bore pipe ram, blind ram, and blind-shear ram preventers.
- (4) A casing program including the following:
 - (i) Casing size, weight, grade, type of connection, and setting depth;
 - (ii) Casing design safety factors for tension, collapse, and burst with the assumptions made to arrive at these values; and
 - (iii) In areas containing permafrost, casing programs that incorporate setting depths for conductor and surface casing based on the anticipated depth of the permafrost at the proposed well location and which utilize the current state-of-the-art methods to safely drill and set casing. The casing program shall provide protection from thaw subsidence and freezeback effect, proper anchorage, and well control.
- (5) The drilling prognosis including the following:
 - (i) Projected plans for coring at specified depths;
 - (ii) Projected plans for logging;
 - (iii) Estimated depths to the top of significant marker formations; and
 - (iv) Estimated depths at which encounters with significant porous and permeable zones containing fresh water, oil, gas, or abnormally pressured water are expected.
- (6) A cementing program including type and amount of cement in cubic feet to be used for each casing string.
- (7) A mud program including the minimum quantities of mud and mud materials, including weight materials, to be kept at the site.
 - (8) A directional survey program for directionally drilled wells.
- (9) A plot of the estimated pore pressures and formation fracture gradients and the proposed mud weights and casing setting depths on the same sheet.
 - (10) A H₂S Contingency Plan, if applicable, and not submitted previously.
- (11) Such other information as may be required by the District Supervisor. (g) Public information copies of the APD shall be submitted in accordance with 250.17 of this part.

30 CFR 250.1617 (c) and (d):

- (c) An APD shall include a fully completed Form MMS-123 and the following:
- (1) A plat, drawn to a scale of 2,000 feet to the inch, showing the surface and subsurface location of the well to be drilled and of all the wells previously drilled in the vicinity from which information is available. For development wells on a lease, the wells

previously drilled in the vicinity need not be shown on the plat. Locations shall be indicated in feet from the nearest block line;

- (2) The design criteria considered for the well and for well control, including the following:
 - (i) Pore pressure;
 - (ii) Formation fracture gradients;
 - (iii) Potential lost circulation zones;
 - (iv) Mud weights;
 - (v) Casing setting depths;
 - (vi) Anticipated surface pressures (which for purposes of this section are defined as the pressure that can reasonably be expected to be exerted upon a casing string and its related wellhead equipment). In the calculation of anticipated surface pressure, the lessee shall take into account the drilling, completion, and producing conditions. The lessee shall consider mud densities to be used below various casing strings, fracture gradients of the exposed formations, casing setting depths, and cementing intervals, total well depth, formation fluid type, and other pertinent conditions. Considerations for calculating anticipated surface pressure may vary for each segment of the well. The lessee shall include as a part of the statement of anticipated surface pressure the calculations used to determine this pressure during the drilling phase and the completion phase, including the anticipated surface pressure used for production string design; and
 - (vii) If a shallow hazards site survey is conducted, the lessee shall submit with or prior to the submittal of the APD, two copies of a summary report describing the geological and manmade conditions present. The lessee shall also submit two copies of the site maps and data records identified in the survey strategy.
 - (3) A BOP equipment program including the following:
 - (i) The pressure rating of BOP equipment,
 - (ii) A schematic drawing of the diverter system to be used (plan and elevation views) showing spool outlet internal diameter(s); diverter line lengths and diameters, burst strengths, and radius of curvature at each turn; valve type, size, working-pressure rating, and location; the control instrumentation logic; and the operating procedure to be used by personnel, and
 - (iii) A schematic drawing of the BOP stack showing the inside diameter of the BOP stack and the number of annular, pipe ram, variable-bore pipe ram, blind ram, and blind-shear ram preventers.
 - (4) A casing program including the following:
 - (i) Casing size, weight, grade, type of connection and setting depth, and
 - (ii) Casing design safety factors for tension, collapse, and burst with the assumptions made to arrive at these values.
 - (5) The drilling prognosis including the following:
 - (i) Estimated coring intervals,
 - (ii) Estimated depths to the top of significant marker formations, and

- (iii) Estimated depths at which encounters with fresh water, sulphur, oil, gas, or abnormally pressured water are expected.
- (6) A cementing program including type and amount of cement in cubic feet to be used for each casing string;
- (7) A mud program including the minimum quantities of mud and mud materials, including weight materials, to be kept at the site;
 - (8) A directional survey program for directionally drilled wells;
 - (9) An H₂S Contingency Plan, if applicable, and if not previously submitted; and
 - (10) Such other information as may be required by the District Supervisor.
- (d) Public information copies of the APD shall be submitted in accordance with 250.117 of this part.

OPERATOR AUTHORIZATION INFORMATION

23. AUTHORIZING OFFICIAL (Type or print name)

Enter the name of the individual who is authorizing the form.

24. TITLE

Enter the title of the individual who is authorizing the form.

25. AUTHORIZING SIGNATURE

Provide the signature or facsimile signature of the individual authorizing the form.

26. DATE (8 characters - YYYYMMDD)

Enter the date that the form is signed.

MMS AUTHORIZATION INFORMATION (THIS SPACE FOR MMS ONLY)

APPROVED (with attached conditions or without conditions) by

Signature of MMS approving official.

TITLE

Title of MMS approving official.

API WELL NO. ASSIGNED TO THIS WELL

The MMS assigns API well number after approval.

DATE (8 characters - YYYYMMDD)

Date signed by MMS approving official.

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SUPPLEMENTAL APD INFORMATION SHEET (Formerly MMS SUPPLEMENTAL INFORMATION SHEET) (Form MMS-123S)

The reporting guidelines for this form are described in the following manner:

- Form Overview (also see **General Guidelines**)
- Completion of Form with a Description of Data Elements

FORM OVERVIEW

INTRODUCTION

The purpose of filing the Supplemental APD Information Sheet is to provide required engineering data in a standardized format. It is always included as a supplement to the APD and some cases when necessary, it is included with the Application for Permit to Modify (APM)(Form MMS-124).

WHO MUST FILE

Any operator of a lease or unit on the Federal OCS who proposes to drill a well for the purposes of exploration for, or development of, oil, gas, or sulphur resources, whether such well is located on or off such lands.

WHEN TO FILE

File simultaneously with each copy of APD and including one copy marked "Public Information". Additionally, it can be used as a supplement to the APM when modifications to the original engineering data are warranted. As with the APD, file simultaneously with the APM and include one copy marked "Public Information".

HOW AND WHERE TO FILE

Attach a copy of the Supplemental APD Information Sheet with each copy of Form MMS-123 or Form MMS-124 when submitting to the appropriate district office. See **Appendix A.12**. As qualified, Item Nos. 4, 13, 14, 15, 19 and 20 on this form shall not be available for public inspection without the consent of the lessee for the same periods as those provided in 30 CFR 196 (b) of the regulations or until the well goes on production, whichever is earlier. See **Appendix A.11**.

COMPLETION OF FORM WITH A DESCRIPTION OF DATA ELEMENTS

This section identifies the information that is required to complete a Supplemental APD Information Sheet. This section is divided into 2 topics organized as follows:

GENERAL AND IDENTIFICATION INFORMATION contains information used by MMS for identification of the operator and reported well.

ENGINEERING DATA contains the parameters and assumptions of the program that has been developed to drill the well.

The following section contains a detailed description of the data elements found on a Supplemental APD Information Sheet. The numbering of the data elements corresponds to the numbered blocks on the form. (NOTE: The "A" represents Alpha Code, and the "N" represents Number Code.)

GENERAL AND IDENTIFICATION INFORMATION

1. OPERATOR NAME

Enter the legal company name as given by the lease documents or approved Designation of Operator form (Form MMS-1123) on file with MMS.

For a new well this field is left blank. In the case of a sidetrack, bypass or deepening enter the **proposed** 12 digit API Well No.

NOTE: After an API Well Number is assigned to a well, it should be used on all further documentation for that well.)

3. **BOTTOM LEASE NO. (Proposed)**(6 characters – ANNNNN)

Enter MMS's assigned identification number for the lease at the proposed total depth of the well. See **Appendix A.1**.

4. TOTAL DEPTH (Proposed)

(MD) - measured depth (5 characters - NNNNN)

Enter the total measured depth, in feet, to which the well is to be drilled, measured along the wellbore from the kelly bushing to the bottom of the wellbore.

(TVD) - true vertical depth (5 characters - NNNNN)

Enter the total true vertical depth, in feet, to which the well is to be drilled, measured as the vertical distance from the plane of the kelly bushing to the plane of the bottom of the wellbore.

NOTE: This location must be verified by means of a directional-well survey and submitted as a final location when the End of Operations Report (EOR)(Form MMS-125) is filed.

5. WELL NAME (Proposed)(5 characters - AANNN)

Enter the **proposed** MMS/operator identification name/number for the well. The term **"proposed"** means entering the subsequent status of the well after approval. See **Appendix A.8**.

6. TYPE WELL

Mark the box to indicate the reason for drilling the well.

An **Exploratory** well is a well drilled in unproven or semi-proven territory for the purpose of ascertaining the presence underground of a commercial petroleum deposit.

A **Development** well is a well drilled with the expectation of producing from a known productive formation.

7. SIDETRACK NO. (Proposed) (2 characters - NN)

Enter the **Proposed** Sidetrack number for the well. See **Appendix A.8**.

8. BYPASS NO. (Proposed) (2 characters – NN)

Enter the **Proposed** Bypass number for the well. See **Appendix A.8**.

9. RIG NAME

Enter the name of the drilling rig to be used to drill the well.

10. RIG TYPE (2 characters - AA)

Enter the 2-character alpha code that indicates the type of rig that is named in Item 9 above. See **Appendix A.5**.

11. WATER DEPTH (5 characters – NNNNN)

Enter the approximate distance, in feet, from the mean sea level to the seafloor mud line at the well location.

12. ELEVATION AT KB (3 characters – NNN)

Enter the approximate elevation of the well, in feet, measured from the rotary kelly bushing to mean sea level.

(**NOTE**: The corrected rotary kelly bushing elevation and water depth shall be submitted on an APM (Form MMS-124) once a final survey has been made at the well site.)

13. H₂S DESIGNATION

Mark the box to indicate the designation of the well with regard to the presence of H_2S . In accordance with 30 CFR 250.417 (a)(1) you must follow the requirements of this section when the presence of H_2S is known or unknown. This includes the submittal of an H_2S Contingency Plan in accordance with 30 CFR 250.417 (f). If the presence of H_2S is absent, then you need not follow requirements of 30 CFR 250.417 (f).

14. H₂S DESIGNATION PLAN DEPTH FT (TVD)

For H₂S designations of "known" or "unknown", enter the total vertical depth (TVD) of the well, in feet, where the H₂S Contingency Plan would be activated. This depth should be at least 1000 feet above the elevation where H₂S is anticipated to be encountered.

15. ENGINEERING DATA

Hole Size (in) (6 characters – NN.NNN)

Enter nominal diameter (in inches) of the borehole to be drilled.

Casing (Indicate if liner)

Enter type of casing or liner (e.g. Drive, Conductor, Surface, Drilling Liner, Intermediate, Production, Production Liner, etc.)

Casing Size (in) (6 characters – NN.NNN)

Enter the nominal diameter (in inches) of the casing.

Weight (#/ft) (5 characters – NNN.N)

Enter the nominal casing weight in pounds per foot.

Grade (7 characters AAA-NNN)

Enter the casing grade in API standard designation, e.g., J-55.

Burst Rating (psi) (5 characters – NNNNN)

Enter the casing burst pressure in pounds per square inch (psi).

Collapse Rating (psi) (5 characters – NNNNN)

Enter the casing collapse rating pressure in pounds per square inch (psi).

Type of Connection (4 characters – AAAA)

Enter the casing connection type (e.g. ltc, stc, butt, etc.)

MASP (psi) (5 characters – NNNNN)

Enter the calculated Maximum Anticipated Surface Pressure (MASP) in pounds per square inch (psi) that the casing may be exposed to while drilling the next hole section. For Production Casing or Liner calculate the MASP from the production zone with overburden a fixed as column of gas.

Safety Factors – B (6 characters – NN.NNN)

Enter the Burst design safety factor for each string.

Safety Factors – C (6 characters – NN.NNN)

Enter the Collapse design safety factor for each string.

Safety Factors – T (6 characters – NN.NNN)

Enter the Tension design safety factor for each string.

Top of Liner – MD (5 characters – NNNNN)

Enter the proposed measured depth (in feet) at which the top of the liner will be set.

Casing Depth (ft) – MD (5 characters – NNNNN)

Enter the proposed measured depth (in feet) at which the casing/liner will be set.

Casing Depth (ft)– TVD (5 characters – NNNNN)

Enter the proposed true vertical depth (in feet) at which the casing/liner will be set.

Casing Shoe (ppg) – PP (4 characters – NN.N)

Enter the maximum anticipated pore pressure in pounds per gallon (ppg) anticipated while drilling the hole section.

Casing Shoe (ppg) – MW (4 characters – NN.N)

Enter the anticipated mud weight at the casing shoe in pounds per gallon (ppg) while drilling the hole section.

Casing Shoe (ppg) – FG (4 characters – NN.N)

Enter the anticipated fracture gradient at the casing shoe in pounds per gallon (ppg).

Well-head Rating (psi) (5 characters – NNNNN)

Enter the rated pressure in pounds per square inch (psi) of the wellhead that the BOP's are nippled up to while drilling this hole section.

BOP Size (in) (6 characters – NN.NNN)

Enter the size in inches (nominal inside diameter) of the BOP Stack/Diverter that is nippled up while drilling this hole section.

Rated BOP Working Pressure – Annular/Diverter (psi) (5 characters – NNNNN)

Enter the working pressure of the annular BOP or diverter in pounds per square inch (psi).

Rated BOP Working Pressure – Ram (psi) (5 characters – NNNNN)

Enter the working pressure of the ram BOPs in pounds per square inch (psi).

Test Pressures – Annular/Diverter (psi) (5 characters – NNNNN)

Enter the high pressure test of the annular BOP or diverter in pounds per square inch (psi).

Test Pressures – Ram (psi) (5 characters – NNNNN)

Enter the high pressure test of the ram BOPs in pounds per square inch (psi).

Test Pressures – Casing Test (psi) (5 characters – NNNNN)

Enter the proposed test pressure of the casing in pounds per square inch (psi).

Test Pressures – MW Used for Test (ppg) (4 characters – NN.N)

Enter the proposed mud weight used for testing casing in pounds per gallon (ppg).

Test Pressures – Casing Shoe (ppg) (4 characters – NN.N)

Enter the pressure or formation integrity test (PIT/FIT) or leak off test (LOT) of the casing shoe in equivalent mud weight pounds per gallon (ppg).

Cement (ft³)

Enter the total volume (in cubic feet) of cement used in cementing the string of casing.

Drilling Fluid Type (oil base, water base, synthetic)

Indicate which type of drilling mud is used in drilling the hole section.

16. CONTACT NAME

Enter the name of the company representative for MMS to contact in case a question or problem arises concerning data on the form.

17. CONTACT PHONE NO.

Enter the telephone number, including area code, of the company contact.

18. CONTACT E-MAIL ADDRESS

Enter the e-mail address of the company contact.

19. Will you maintain quantities of mud material (including weight and additives) sufficient to raise the entire system mud weight ½ ppg or more?

 \Box YES \Box NO

Indicate yes or no to the stated question. If the answer is no, please explain the circumstances in Item 20, "REMARKS".

20. REMARKS

Enter any explanations or comments with regard to the application.

DEPARTMENT OF THE INTERIOR MINERALS MANAGEMENT SERVICE (MMS)

FIELD OPERATIONS REPORTER'S HANDBOOK

Revision 01 (November 4, 2002)

APPLICATION FOR PERMIT TO MODIFY (APM) (Formally SUNDRY NOTICES AND REPORTS ON WELL) (Form MMS-124)

The reporting guidelines for this form are described in the following manner:

- Form Overview (also see **General Guidelines**)
- Completion of Form with a Description of Data Elements

FORM OVERVIEW

INTRODUCTION

The purpose of the Application for Permit to Modify (APM) form is for the applicant to request approval for all operations conducted after the initial filing of an Application for Permit to Drill (APD). This may include but is not limited to, completions, utility or workover procedures, abandonment operations and modifications from an approved APD or APM.

When operations are completed, a subsequent APM form is to be submitted detailing the operations that were actually performed and how those operations differ from the proposal. Additionally, after a final survey is completed, the final plat must be submitted with this form

WHO MUST FILE

Any operator of a lease or unit on the Federal OCS who proposes to perform an operation other than a "routine operation" upon a wellbore or zone completion within a wellbore. For a definition of "routine operation," refer to the oil, gas, and sulphur operating regulations at **30 CFR 250.102** and **250.601**.

250.102

Routine operations, for the purposes of subpart F, means any of the following operations conducted on a well with the tree installed: (1) cutting paraffin; (2) removing and setting pump-through-type tubing plugs, gas-lift valves, and subsurface safety valves that can be removed by wireline operations; (3) bailing sand; (4) pressure surveys; (5) swabbing; (6) scale or corrosion

treatment; (7) caliper and gauge surveys; (8) corrosion inhibitor treatment; (9) removing or replacing subsurface pumps; (10) through-tubing logging (diagnostics); (11) wireline fishing; (12) setting and retrieving other subsurface flow-control devices; and (13) acid treatments.

250.601 Definitions.

When used in this subpart, the following terms shall have the meanings given below: "Routine operations" mean any of the following operations conducted on a well with the tree installed:

- (a) Cutting paraffin;
- (b) Removing and setting pump-through-type tubing plugs, gas-lift valves, and subsurface safety valves which can be removed by wireline operations;
- (c) Bailing sand;
- (d) Pressure surveys;
- (e) Swabbing;
- (f) Scale or corrosion treatment:
- (g) Caliper and gauge surveys;
- (h) Corrosion inhibitor treatment;
- (i) Removing or replacing subsurface pumps;
- (j) Through-tubing logging (diagnostics);
- (k) Wireline fishing; and
- (1) Setting and retrieving other subsurface flow-control devices.

Any operator of a lease or unit on the Federal OCS who proposes to abandon a wellbore temporarily or permanently or to plugback for sidetrack/bypass. This includes wells currently drilling, previously drilled and temporarily abandoned, or previously drilled and completed.

WHEN TO FILE

An APM form is submitted for approval of a proposed operation (Request Approval) prior to the initiation of the operation. A report of operations (Subsequent Report), as conducted, is to be submitted after the operation is finished. The general usage of this form with regard to different types of operations include the following:

- Correct previously submitted data that was wrong or that has changed from a previous submittal of an APD or APM.
 - Modify plans from a previously submitted APD or APM.

[&]quot;Workover operations" mean the work conducted on wells after the initial completion for the purpose of maintaining or restoring the productivity of a well.

• Request approval for operations, to include but not limited to:

Initially complete (or multi-complete) a well

Recomplete

Modify Perforations

Change Zones

Acidize (w/coil tubing)/Fracture formations

Artical Lift (initial)

Pull or alter casing

Repair well

Permanent plugging and abandonment

Temporary plugging and abandonment

Plug back a formation or the wellbore

Other (state the intended operation)

• Report the results of an operation, as conducted, including:

Submit Final Location Plat
Repair/Workover a well
Modify Perforations
Change Zones
Permanent plugging and abandonment
Temporary plugging and abandonment
Plug back a formation or the wellbore
Other

Note: This form is <u>NOT</u> used to request approval to drill a new well or to sidetrack/bypass a well. The results of some of the above operations also require the filing of a separate End of Operations Report (EOR)(Form MMS-125).

HOW AND WHERE TO FILE

Submit original plus three copies of Form MMS-124 with one copy marked "Public Information" to the appropriate district office as shown in <u>Appendix A.12</u>. In accordance with 30 CFR 250.196, Item 22, "Describe Proposed or Completed Operations" shall not be available for public inspection without the consent of the lessee for the same periods as those provided in paragraph (b) of this section or until the well goes on production, whichever is earlier. See <u>Appendix A.11</u>.

COMPLETION OF FORM WITH A DESCRIPTION OF DATA ELEMENTS

This section identifies the information which is required to complete the Application for Permit to Modify form. The section is divided into three topics organized as follows:

GENERAL INFORMATION contains information used by MMS for identification of the operator and reported well.

LOCATION INFORMATION contains lease, area, and block information. Locations include well at total depth and the well at surface.

ENGINEERING INFORMATION contains the parameters and assumptions of the operations plan that has been developed to alter the well.

OPERATOR AND MMS AUTHORIZATION INFORMATION identifies the authorizing representative and title, the date the proposal was authorized, and MMS approval information.

The following section contains a detailed description of the data elements found on an Application for Permit to Modify form. The numbering of the data elements corresponds to the numbered blocks on the form. (**NOTE**: The "A" represents Alpha Code and the "N" represents Number Code.)

GENERAL INFORMATION

1. TYPE OF SUBMITTAL

Indicate in the appropriate box whether the application is a Request Approval, Subsequent Report or a Correction.

2. MMS OPERATOR NO. (5 characters - NNNNN)

Enter MMS's assigned identification number for the lease, unit, or agreement operator. See **Appendix A.2**.

3. OPERATOR NAME and ADDRESS (Submitting Office)

Enter the legal company name as given by the lease documents or approved Designation of Operator form (Form MMS-1123) on file with MMS and the complete address of the submitting office.

4. WELL NAME (5 characters - AANNN)

Enter the **current** MMS/operator identification name/number for the well. See **Appendix A.8**. The term "**current**" means entering the present status of the well prior to approval.

5. SIDETRACK NO. (2 characters - NN)

Enter the current Sidetrack number for the well. See **Appendix A.8**.

6. BYPASS NO. (2 characters – NN)

Enter the current Bypass number for the well. See **Appendix A.8**.

7. API WELL NUMBER (12 characters - NNNNNNNNNNNN)

Enter the 12-character API composite Well Number assigned by MMS on the approved APD, Form MMS-123, in accordance with API Bulletin D12A.

8. START DATE (Proposed) (8 characters - YYYYMMDD)

Enter the proposed start of the operations.

9. PROD. INTERVAL CODE (3 characters – ANN)

Enter the production interval code for the current completion. For a multiple completion enter all of the interval codes. See **Appendix A.3**.

10. WELL STATUS (3 characters - AAA)

Enter the current well status of the wellbore. See **Appendix A.6**.

11. WATER DEPTH (Surveyed) (5 characters – NNNNN)

Enter the distance, in feet, from the mean sea level to the seafloor mud line at the well location.

12. ELEVATION AT KB (3 characters – NNN)

Enter the elevation of the well, in feet, measured from the rotary kelly bushing to mean sea level.

LOCATION INFORMATION

WELL AT TOTAL DEPTH

13. LEASE NO. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the proposed total depth. See **Appendix A.1**.

14. AREA NAME (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the proposed total depth of the well. See **Appendix A.4**.

15. BLOCK NUMBER (5 characters - ANNNN)

Enter the number of the block at the proposed total depth of the well.

WELL AT SURFACE

16. LEASE NO. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the surface. See **Appendix A.1**.

17. AREA NAME (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the surface of the well. See Appendix A.4.

18. BLOCK NUMBER (5 characters - ANNNN)

Enter the number of the block at the surface of the well.

ENGINEERING INFORMATION

19. PROPOSED OR COMPLETED WORK (Describe in item 22)

Indicate in the appropriate box with regard to the type of operation that will or has been performed on the well. The following is a brief description of each type of operation listed on the form:

INITIAL COMPLETION The first single completion performed on a new wellbore or sidetrack/bypass wellbore. Refer to 30 CFR 250, Subpart E, "Oil and Gas Well-Completions Operations".

MULTI-COMPLETION The first multiple completion (dual, triple, etc.) performed on a new wellbore or sidetrack/bypass wellbore. Refer to 30 CFR 250, Subpart E, "Oil and Gas Well-Completions Operations".

RECOMPLETION The re-perforation of the existing zone. This operation does not increase or decrease the perforation interval.

MODIFY PERFORATIONS The re-perforation of the existing zone. This operation's intent is to increase or decrease the perforation interval, i.e., change the perforated interval within the database. Squeezing off the lower portion of a zone to eliminate water production would be an example of this type operation.

CHANGE ZONE This operation incorporates the moving of production from one zone to another generally due to depletion of the original zone. The operation would involve squeezing the original zone with cement or setting plugs with cement on top to abandon the zone and perforating a new zone.

NOTE: All abandonments of producing or formerly producing intervals must include the most recent well test information. This should include oil, gas, and water rates as well the choke size and flowing tubing pressure.

PERMANENT PLUGGING This operation describes the permanent plugging and abandonment of a well. Regulations with regard to this operation are found In Subpart Q, 30 CFR 250.1710 - 1717. In this case the lessee/operator has determined that there is no future utility for the well. For this request, enter the reason for the abandonment including a description and schematic of proposed work depicting depths, type, location, length of plugs, the plans for mudding, cementing, shooting, testing, casing removal, and other pertinent information. The schematic should also show all junk in the hole, such as stuck tools and dropped tubing. For casing removal enter the method, e.g., explosive, mechanical or chemical, used to cut the casing.

For a subsequent report of abandonment, enter the manner in which the abandonment or plugging work was accomplished, including the nature and quantities of materials used in the plugging, with revised schematic. It should also provide a record of clearance of the seafloor and the surrounding area. This report of operations documents the final state of the wellbore and serves to establish for the record that the wellbore has been properly abandoned by the lessee/operator.

TEMPORARY ABANDONMENT This operation describes the temporary plugging and abandonment of a well. Regulations with regard to this operation are found in Subpart Q, 30 CFR 250.1721 - 1723. In this case some future action remains to be taken upon the wellbore. This will range from re-entry of the well to complete the well for production or to permanently abandon the wellbore. This report of operations serves to document the existing state of the wellbore during this intermediate period.

PLUGBACK TO SIDETRACK / BYPASS This operation describes the permanent plugging of a wellbore with the intent of sidetracking or bypassing. Regulation with regard to this operation are the same as "Permanent Plugging" without the requirement of a surface plug.

ACIDIZE WITH COIL TUBING This operation incorporates the use of a coil tubing unit to acidize a well. Acidizing a well by utilizing pumps from the surface (bullheading) does not require a permit.

ARTIFICIAL LIFT (INITIAL) The initial operation that involves the removal of dummy valves and replacing them with live gaslift valves requires approval. Further modifications to the gaslift system do not require approval.

WORKOVER This type of operation incorporates repairs done to wells, modifications made to equipment within the wellbore, or any operation which changes the well configuration other than a zonal change. Refer to 30 CFR 250, Subpart F, "Oil and Gas Well-Workover Operations".

CHANGE IN APPROVED PROCEDURE This application is submitted when changes or modifications are made from an original submittal of an APD or APM.

FINAL LOCATION PLAT As required in 30 CFR 250.415 (c), a final location plat must be submitted and be certified by a registered land surveyer. All locations and elevations must be shown including the surface location which is submitted in North American Datum (NAD) 83. All other locations are to be in NAD 27.

OTHER All other operations not listed above should be included under this category along with a brief description.

20. RIG NAME OR PRIMARY UNIT (e.g., snubbing, wireline unit, coil tubing unit, etc.)

Enter the name of the rig or primary unit to be used to complete, workover, or abandon a well. For snubbing, wireline and coil tubing work simply state "snubbing", "wireline" or "coil tubing".

21. RIG TYPE (2 characters - AA)

Enter the 2-character alpha code that indicates the type of rig that is named in Item 20 above. If a rig is not used, then enter NA. See **Appendix A.5**.

22. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Attach prognosis or summary of completed work, as appropriate.)

Since this form is for miscellaneous use, there are many types of operations and combinations of operations that may be submitted for approval and/or subsequently reported. Leaving this section in a textual format allows the operator to describe in words, and where appropriate in diagrams, all of the activities that are proposed or reported upon. Complete engineering details are to be submitted with the form. An entry of "See attached prognosis or attachments" may be made and submitted with the form.

OPERATOR AUTHORIZATION INFORMATION

23. CONTACT NAME

Enter the name of the company representative for MMS to contact in case a question or problem arises concerning data on the form.

24. CONTACT TELEPHONE NO.

Enter the telephone number, including area code, of the company contact.

25. CONTACT E-MAIL ADDRESS

Enter the e-mail address of the company contact.

26. AUTHORIZING OFFICIAL (Type or print name) Enter the name of the individual who is authorizing the form.

24. TITLE

Enter the title of the individual who is authorizing the form.

25. AUTHORIZING SIGNATURE

Provide the signature or facsimile signature of the individual authorizing the form

26. DATE (8 characters - YYYYMMDD) Enter the date that the form is signed.

DEPARTMENT OF THE INTERIOR MINERALS MANAGEMENT SERVICE (MMS)

FIELD OPERATIONS REPORTER'S HANDBOOK

Revision 01 (November 4, 2002)

END OF OPERATIONS REPORT (EOR) (Formally WELL SUMMARY REPORT) (Form MMS-125)

The reporting guidelines for this form are described in the following manner:

- Form Overview (also see **General Guidelines**)
- Completion of Form with a Description of Data Elements

FORM OVERVIEW

INTRODUCTION

The purpose of the End of Operations Report (EOR) is for the applicant to provide to the appropriate MMS district office a means for submitting accurate data and information on the wells under their jurisdiction and to ensure compliance with approved plans.

WHO MUST FILE

Any operator of a lease or unit on the Federal OCS who drills, completes, performs a workover, or abandons a well pursuant to a properly approved exploration or development and production plan.

WHEN TO FILE

The EOR form is filed within 30 days after commencement of a well operation. This includes the initial completion of a new zone, completion to a different zone (change zone), plugback, permanent or temporary abandonment of a wellbore, or any such operation which changes the well status, completion code, or completion interval in the well. Additionally, if necessary, correctional changes to the database must also be filed.

NOTE: A separate EOR must be submitted for each active completion in the wellbore (e.g., one for the D001 and another for the D002).

HOW AND WHERE TO FILE

Submit original plus two copies of Form MMS-125 with one copy marked "Public Information" to the appropriate district office as shown in <u>Appendix A.12</u>. In accordance with 30 CFR 250.118 (d), Items 12, 13, 23, 19, 20, 17, 18, and all entries under titles "Perforated Interval(s) this Completion", shall not be available for public inspection without the consent of the lessee for the same periods as those provided in paragraph (b) for this section or until the well goes on production, whichever is earlier. Additionally, those entries under "Hydrocarbon Bearing Intervals", and "List of Significant Markers Penetrated", shall not be released when the well goes on production unless the period of time specified in paragraph (b) of this section has expired. See <u>Appendix A.11</u>.

COMPLETION OF FORM WITH A DESCRIPTION OF DATA ELEMENTS

This section identifies the information that is required to complete the EOR. The section is divided into four topics organized as follows:

GENERAL INFORMATION contains information used by MMS for identification of the operator and reported well.

LOCATION INFORMATION contains lease, area, and block information along with latitude and longitude measurements. Locations include well at total depth and the well at producing zone.

ENGINEERING INFORMATION contains the parameters and assumptions of the program that has been developed to drill the well. This would include:

- 1. Well Status Information
- 2. Perforated Interval(s) This Completion
- 3. Subsea Completion
- 4. Hydrocarbon Bearing Intervals
- 5. List of Significant Markers Penetrated
- 6. Abandonment History of Well

OPERATOR AUTHORIZATION INFORMATION identifies the company contact, the authorizing representative, and the date the proposal was authorized.

The following section contains a detailed description of the data elements found on an EOR. The numbering of the data elements corresponds to the numbered blocks on the form. (**NOTE**: The "A" represents Alpha Code and the "N" represents Number Code.)

GENERAL INFORMATION

1. COMPLETION / WORKOVER / ABANDONMENT / CORRECTION / OTHER

Check the appropriate block to indicate that the type of operation being reported on.

2. API WELL NUMBER (12 characters - NNNNNNNNNNNN)

Enter the 12-character API composite Well Number assigned by MMS on the approved APD, Form MMS-123, in accordance with API Bulletin D12A.

3. PROD. INTERVAL CODE (3 characters – ANN)

Enter the production interval code for the current completion. For a multiple completion enter all of the interval codes. See <u>Appendix A.3</u>.

4. OPERATOR NAME and ADDRESS (Submitting Office)

Enter the legal company name as given by the lease documents or approved Designation of Operator form (Form MMS-1123) on file with MMS and the complete address of the submitting office.

5. WELL NAME (5 characters - AANNN)

Enter the **current** MMS/operator identification name/number for the well. The term "**current**" means entering the present status of the well. See <u>Appendix A.8</u>.

6. SIDETRACK NO. (2 characters - NN)

Enter the appropriate Sidetrack number for the well after the operation has been completed. See **Appendix A.8**.

7. **BYPASS NO.** (2 characters – NN)

Enter the appropriate Bypass number for the well after the operation has been completed. See **Appendix A.8**.

8. MMS OPERATOR NO. (5 characters - NNNNN)

Enter MMS's assigned identification number for the lease, unit, or agreement operator. See **Appendix A.3**.

LOCATION INFORMATION

WELL AT TOTAL DEPTH

9. LEASE NO. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the proposed total depth. See **Appendix A.1**.

10. AREA NAME (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the proposed total depth of the well. See **Appendix A.4**.

11. **BLOCK NUMBER** (5 characters - ANNNN)

Enter the number of the block at the proposed total depth of the well.

12. LATITUDE (9 characters - NN-NN-NN.NNN or 10 characters - NN.NNNNNNNN) (□ NAD 27/□ NAD 83)

Enter the bottom hole latitude in degrees, minutes, and seconds to three decimal places or degrees to eight decimal places. The prevailing format for the Gulf of Mexico and Pacific Region is in NAD 27. The Alaska Regions require the entry to be in NAD 83 format.

13. LONGITUDE (10 characters - NNN-NN-NN.NNN or 11 characters - NNN.NNNNNNNN)

(□ NAD 27/□ NAD 83)

Enter the bottom hole longitude in degrees, minutes, and seconds to three decimal places or degrees to eight decimal places. The prevailing format for the Gulf of Mexico and Pacific Region is in NAD 27. The Alaska Regions require the entry to be in NAD 83 format. **NOTE:** Degree readings for Pacific and Alaska Region require three digits while the Gulf of Mexico Region requires two.

WELL AT PRODUCING ZONE

14. LEASE NO. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the producing zone of the well. See **Appendix A.1**.

15. AREA NAME (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the producing zone of the well. See **Appendix A.4**.

16. BLOCK NUMBER (5 characters - ANNNN)

Enter the number of the block at the producing zone of the well.

17. LATITUDE (9 characters - NN-NN-NN.NNN or 10 characters - NN.NNNNNNNN) (□ NAD 27/□ NAD 83)

Enter the bottom hole latitude in degrees, minutes, and seconds to three decimal places or degrees to eight decimal places. The prevailing format for the Gulf of Mexico and Pacific Region is in NAD 27. The Alaska Region requires the entry to be in NAD 83 format.

18. LONGITUDE (10 characters - NNN-NN-NN.NNN or 11 characters - NNN.NNNNNNNN)

(□ NAD 27/□ NAD 83)

Enter the bottom hole longitude in degrees, minutes, and seconds to three decimal places or degrees to eight decimal places. The prevailing format for the Gulf of Mexico and Pacific Region is in NAD 27. The Alaska Region requires the entry to be in NAD 83 format. **NOTE:** Degree readings for Pacific and Alaska Region require three digits while the Gulf of Mexico Region requires two.

ENGINEERING INFORMATION

WELL STATUS INFORMATION

19. WELL STATUS (3 characters - AAA)

Enter the current well status of the wellbore. See **Appendix A.6**.

20. TYPE CODE ((3 characters - AAA)

If the wellbore well status is listed as "COM", then enter the current completion type code of the wellbore. If the wellbore status is not "COM", then enter "NA" under Type Code. See **Appendix A.7**.

21. WELL STATUS DATE (8 characters - YYYYMMDD)

Enter the date upon which the current well status became effective.

22. KOP (MD) ST/BP (5 characters - NNNNN)

Enter the measured depth where a Sidetrack (ST) or Bypass (BP) borehole begins. This point is defined as being where a window has been cut in the casing of a preexisting borehole, or where a "kick off plug" is set in any preexisting borehole. This depth is the shallowest measured depth for the borehole. There is no KOP for any borehole with an API that has 00 as its 11th and 12th numbers. Indicate the appropriate type (ST or BP) of the borehole.

23. TOTAL DEPTH (Surveyed)

MD - measured depth (5 characters - NNNNN)

Enter the total measured depth (in feet) of the well as drilled, measured along the wellbore from the kelly bushing to the bottom of the wellbore.

TVD - true vertical depth (5 characters - NNNNN)

Enter the total true vertical depth (in feet) of the well as drilled, measured as the vertical distance from the plane of the kelly bushing to the plane of the bottom of the wellbore.

NOTE: The total depth of the well must be the actual total depth value, and not just the measurement at the last survey point. The survey can be extrapolated from the last survey point to obtain the bottom hole depth.

PERFORATED INTERVAL(S) THIS COMPLETION

24. TOP (MD)(5 characters - NNNNN)

Enter the measured depth (in feet) to the top of the perforated interval.

25. BOTTOM (MD)(5 characters - NNNNN)

Enter the measured depth (in feet) to the bottom of the perforated interval.

26. TOP (TVD)(5 characters - NNNNN)

Enter the true vertical depth (in feet) to the top of the perforated interval.

27. BOTTOM (TVD)(5 characters - NNNNN)

Enter the true vertical depth (in feet) to the bottom of the perforated interval.

29. NAME(S) OF PRODUCING FORMATION(S) THIS COMPLETION

Enter the names(s) of the producing formation(s) associated with this completion.

SUBSEA COMPLETION

30. PROTECTION PROVIDED

State whether or not a dome or similar type structure is provided to protect the subsea tree. For a surface completion then leave the field blank.

31. BUOY INSTALLED

State whether or not a buoy is installed to mark the location of the subsea completion. For a surface completion then leave the field blank

32. TREE HEIGHT ABOVE MUDLINE

Enter the height of the tree above the mudline in feet.

HYDROCARBON BEARING INTERVALS

33. INTERVAL NAME

Enter **all** intervals in the borehole that encountered hydrocarbons that meet or exceed the qualifying criteria of 30 CFR 250.115 or 116. The Hydrocarbon Bearing Intervals should include, but not necessarily be limited to, the Perforated Interval(s) This Completion (Items 24-29) identified above.

34. TOP (MD)(5 characters - NNNNN)

Enter the measured depth to the top of **each** hydrocarbon interval.

35. BOTTOM (MD)(5 characters - NNNNN)

Enter the measured depth of the bottom of **each** hydrocarbon interval.

36. TYPE OF HYDROCARBON

Identify the type of hydrocarbon(s) for **each** interval:

Oil (\mathbf{O}) , Gas (\mathbf{G}) , or Oil and Gas (\mathbf{O}/\mathbf{G}) .

Note: Report any condensate as oil.

LIST OF SIGNIFICANT MARKERS PENETRATED

37. NAME

Enter the name of each significant marker penetrated. These markers may be identified in the borehole through the interpretation of seismic, stratigraphic, structural, and/or correlation data. Significant markers include, but are not limited to, drilling objectives. The significant markers correspond to the ones listed on the APD, Form MMS-123. Include any unanticipated significant markers encountered.

38. TOP (MD)(5 characters - NNNNN)

Enter the measured depth to the top of **each** significant marker penetrated.

ABANDONMENT HISTORY OF WELL

39. CASING SIZE

Enter the casing size(s) being severed.

40. CASING CUT DATE (8 characters - YYYYMMDD)

Enter the date the casing was cut.

41. CASING CUT METHOD

Enter the method, e.g., explosive, mechanical, or chemical used to cut the casing.

42. CASING CUT DEPTH (BML)(5 characters - NNNNN)

Enter the depth in feet below the mudline at which the casing was cut.

43. TYPE OF OBSTRUCTION

Enter the type of obstruction, e.g., subsea tree, template, casing stub, etc., if obstruction cannot be removed. Enter "NA" if no obstruction exists.

44. PROTECTION PROVIDED

State whether or not a dome or similar type structure is provided to protect the obstruction. Enter "NA" if no obstruction exists.

45. BUOY INSTALLED

State whether or not a buoy is installed to mark the location of the obstruction. Enter "N/A" if no obstruction exists.

46. OBSTRUCTION HEIGHT ABOVE MUDLINE

Enter the height of the obstruction above the mudline in feet. Enter "NA" if no obstruction exists.

OPERATOR AUTHORIZATION INFORMATION

47. CONTACT NAME

Enter the name of the company representative for MMS to contact in case a question or problem arises concerning data on the form.

48. CONTACT TELEPHONE NUMBER

Enter the telephone number, including area code, of the company contact.

49. CONTACT E-MAIL ADDRESS

Enter the E-Mail address, including area code, of the company contact.

50. AUTHORIZING OFFICIAL (Type or print name)

Enter the name of the individual who is authorizing the form.

51. TITLE

Enter the title of the individual who is authorizing the form.

52. AUTHORIZING SIGNATURE

Provide the signature or facsimile signature of the individual authorizing the form.

53. DATE (8 characters - YYYYMMDD)

Enter the date that the form is signed.

DEPARTMENT OF THE INTERIOR MINERALS MANAGEMENT SERVICE (MMS)

FIELD OPERATIONS REPORTER'S HANDBOOK

Revision 01 (November 4, 2002)

WELL ACTIVITY REPORT (WAR) (Formally WEEKLY ACTIVITY REPORT) (Form MMS-133)

The reporting guidelines for this form are described in the following manner:

- Form Overview (also see **General Guidelines**)
- Completion of Form with a Description of Data Elements

FORM OVERVIEW

INTRODUCTION

The purpose of the Well Activity Report (WAR) is for the applicant to provide to the appropriate MMS district office a means for submitting the actual work procedures and relevant well information for ongoing well operations to ensure compliance with an approved application(s).

WHO MUST FILE

Any operator of a lease or unit on the Federal OCS who drills, completes, performs a workover, or abandons a well pursuant to a properly approved exploration or development and production plan.

WHEN TO FILE

The WAR form is filed on a weekly work interval basis or when the operation has been completed. If the operation is completed, then checkmark the last well activity report box at the top on the first page. The form should be submitted within 7 days of the conclusion of the prior weekly work interval.

HOW AND WHERE TO FILE

Submit original copy of Form MMS-133 to the appropriate district office as shown in **Appendix A.12**. As qualified, in accordance with 30 CFR 250.196, items on this form shall not be available for public inspection without the consent of the lessee for the same periods

as those provided in paragraph (b) of this section or until the well goes on production, whichever is earlier. See **Appendix A.11**.

COMPLETION OF FORM WITH A DESCRIPTION OF DATA ELEMENTS

This section identifies the information which is required to complete the WAR. The section is divided into two topics organized as follows:

GENERAL INFORMATION contains information used by MMS for identification of the operator and reported well.

ENGINEERING INFORMATION contains the parameters and procedures encountered while performing operations on the well. This would include:

Current Wellbore Information Wellbore Historical Information Casing / Liner / Tubing Record Open Hole Tools, Mudlogs, and Directional Surveys Identity Other Open Hole Data Collected Well Activity Summary

GENERAL INFORMATION

1. API WELL NUMBER (10 characters - NNNNNNNNNN)

Enter the basic 10-character API composite Well Number assigned by MMS on the approved APD, Form MMS-123, in accordance with API Bulletin D12A.

2. OPERATOR NAME

Enter the legal company name as given by the lease documents or approved Designation of Operator form (Form MMS-1123) on file with MMS.

3. WELL NAME (5 characters - AANNN)

Enter the **current** MMS/operator identification name/number for the well. See **Appendix A.8**. The term "**current**" means entering the present status of the well prior to approval.

4. SIDETRACK NO. (2 characters - NN)

Enter the current Sidetrack number for the well at the end of the reporting period. See <u>Appendix A.8</u>.

5. BYPASS NO. (2 characters - NN)

Enter the current Bypass number for the well at the end of the reporting period. See **Appendix A.8**.

6. CONTACT NAME/CONTACT TELEPHONE NUMBER

Enter the name and telephone number, including area code, of the company representative for MMS to contact in case a question or problem arises concerning data on the form.

7. RIG NAME OR PRIMARY UNIT (e.g., wireline unit, coil tubing unit, etc.)

Enter the name of the rig or primary unit to be used to complete, workover, or abandon a well. For wireline and coil tubing units simply state "wireline" or "coil tubing".

8. WATER DEPTH (Surveyed) (5 characters – NNNNN)

Enter the distance, in feet, from the mean sea level to the seafloor mud line at the well location

9. ELEVATION AT KB (Surveyed) (3 characters – NNN)

Enter the elevation of the well, in feet, measured from the rotary kelly bushing to mean sea level

ENGINEERING INFORMATION

10. CURRENT WELLBORE INFORMATION

SURFACE

Lease No. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the surface location. See **Appendix A.1**.

Area Name (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the surface location of the well. See **Appendix A.4**.

Block No. (5 characters - ANNNN)

Enter the number of the block at the surface location of the well

BOTTOM

Lease No. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the actual/proposed bottom location. See **Appendix A.1**.

Area Name (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the actual/proposed bottom location of the well. See **Appendix A.4**.

Block No. (5 characters - ANNNN)

Enter the number of the block at the actual/proposed bottom location of the well.

Wellbore (2 characters - NN)

The original hole is identified using a wellbore code (the 11th and 12th digit of the API No.) of "00". For every sidetrack or bypass wellbore drilled after the original hole (except well deepening to the original intended target), the WB code is incremented by 1 and assigned sequentially. The last existing wellbore is designated as the Current Wellbore.

(Example: 00; 01; 02; etc.)

Start Date (8 characters - YYYYMMDD)

Enter the date that the wellbore was started/spud. For the original wellbore (00), the start date is the spud date, i.e. the date that drilling begins below the drive pipe. For sidetrack and/or bypass wellbores (01, 02, etc.), the start date is the date that drilling begins after kicking off a cement plug or exiting casing.

TD Date (8 characters - YYYYMMDD)

For wellbores that were previously drilled to Total Depth (TD), enter the TD Date from the prior drilling operation. If you are currently drilling the wellbore, then this field is only to be filled out when TD is reached and you have finished "making hole"

OP Status (3 characters - AAA)

Enter the status of the current wellbore at the ending date of the reporting period.

Operational Status Type Codes

Note: Operational Status Type Codes utilized in Item 10 "Current Wellbore Information" of this form are not the same status codes outlined in Appendix A.6, Borehole Status Codes, which are utilized when filing the End of Operations Report, (EOR) Form MMS-125. These operational codes only indicate the temporary status of the wellbore during the intended operation.

The following are Operational Status code entries along with the definitions of the each:

PND (Pending to Drill) indicates that pre-spud operations are being carried out. This code is utilized during rigging up operations on a new wellbore, sidetrack or bypass. When the wellbore is spudded, then the status should be changed DRL.

DRL (Drilling) indicates that drilling operations on the wellbore are in progress. When total depth is reached, enter TD Date and change status to the next planed operation.

DSI (Drilling Shut-in) indicates that drilling operations on the wellbore have been interrupted **prior to reaching total depth**. Operator plans to return for further operations. A TD Date is not entered.

ST (Plug back to Sidetrack) indicates that the wellbore is being plug backed or was plugged back for sidetrack or bypass operations.

TA (Temporarily Abandoned) indicates that the wellbore has been drilled to total depth and is being temporarily abandoned and the operator plans to return at a later date.

PA (Permanently Abandoned) indicates that permanent abandonment operations on the well are being conducted or have been finished. This operation may or may not include casings being cut.

COM (Initially Completed) indicates that the wellbore is being or has been **initially completed** for production.

WO (Workover) indicates that the wellbore is being worked over or has been worked over. This status is used for operations that **do not change the configuration** of the wellbore, i.e. casings perforations are not changed. This would include tubing changes, washing sand from wellbore, acidizing, etc. Upon finishing a workover, the status remains as an operational WO and **does not** revert to **COM**. After performing this operation, a Form MMS-125 **is not required.**

REC (Recompletion) indicates that the wellbore is being recompleted or has been recompleted. This status **does not changes the configuration** of the wellbore, i.e. the existing perforations remain the same. This would include reperfortating the existing interval without extending the existing perforations. Upon finishing a recompletion, the status remains REC and **does not** revert to **COM**. After performing this operation, a Form MMS-125 **is not required.**

MPF (Modify Perforations) indicates that the wellbore perforations are being modified or has been modified. This status **does change the configuration** of the wellbore, i.e. changes to the existing perforations are modified. This would include adding additional perforations to an existing interval or squeezing (abandoning) a portion of an existing interval. Upon finishing this operation, the status remains MPF and **does not** revert to **COM**. After performing this operation, a Form MMS-125 **is required**. The Status Code entry on the MMS-125 form would be **COM** as taken from **Appendix A.6**.

CHZ (Change Zones) indicates that a zone change is being performed or has been performed on a wellbore. This status **changes the configuration** of the wellbore by adding a new zone(s) (perforated interval) to the wellbore and/or abandoning a zone. Generally, this status changes the completion code of the wellbore, e.g. S1 to S2 or D1/D2 to D1/D3. Operations conducted under this status would include changing tubing completions in a wellbore, e.g. dual to single and visa-versa. Upon changing zones, the status remains CHZ and **does not** revert to COM. After performing this operation, a Form MMS-125 **is required**. The Status Code entry on the MMS-125 form would be **COM** as taken from **Appendix A.6**.

End Date (8 characters - YYYYMMDD)

Enter the date that the wellbore operation was finished. This date will be used as the official concluding date of the operational status. This date is left blank if any operations on the wellbore are still in progress.

MD (Measured Depth) (5 characters - NNNNN)

Enter the measured depth (in feet) of the well **at the close of the reporting period**, measured from the kelly bushing to the bottom of the wellbore. When the well is drilled to total depth, a TD Date is then entered.

TVD (True Vertical Depth) (5 characters - NNNNN)

Enter the true vertical depth (in feet) of the well **at the close of the reporting period,** measured as the vertical distance from the kelly bushing to the horizontal plane of the bottom of the wellbore. When the well is drilled to total depth, a TD Date is then entered.

MW (Mud Weight, PPG) (4 characters - NN.N)

Enter the weight of the drilling mud or completion fluid expressed in pounds per U.S. gallon (ppg) at the end of the reporting period.

Last BOP Test Date (8 characters – YYYYMMDD)

Enter the date of the last BOP test performed.

Last BOP Test Pressure Low/High (3 characters - NNN/5 characters - NNNNN) Enter the Low/High ram test pressure (annular pressure need not be indicated). When the Stump Test is the last test, indicate that in Item 15, "Well Activity Summary".

11. WELLBORE HISTORIAL INFORMATION

Wellbore (2 characters - NN)

Wellbores previous to the current wellbore listed in Item 10 are contained within this section. The original hole is identified using a wellbore code (the 11th and 12th digit of the API No.) of "00". For every sidetrack or bypass wellbore drilled after the original hole (except well deepening to the original intended target), the WB code is incremented by 1 and assigned sequentially. (Example: 00; 01; 02; etc.)

Bottom Lease (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the bottom location. See **Appendix A.1**.

Start Date (8 characters - YYYYMMDD)

Enter the date that the wellbore was started/spud. For the original wellbore (00), the start date is the spud date, i.e. the date that drilling begins below the drive pipe. For sidetrack and/or bypass wellbores (01, 02, etc.), the start date is the date that drilling begins after kicking off a cement plug or exiting casing.

TD Date (8 characters - YYYYMMDD)

Enter Date the wellbore was drilled to total depth (TD).

Plugback Date (8 characters - YYYYMMDD)

Enter Date the wellbore was permanently abandoned.

Final MD (5 characters - NNNNN)

Enter the measured depth that the wellbore was drilled to total depth (TD).

Final TVD (5 characters - NNNNN)

Enter the true vertical depth that the wellbore was drilled to total depth (TD).

12. CASING / LINER / TUBING RECORD

Note: This section need only be filled out in the case of a new drill or sidetrack/bypass operation. Additionally, tubing changes on existing wellbores must be entered. Entries in this section should reflect the tubular arrangement of the current wellbore listed in Item 10 at the end of the reporting period. If a wellbore is created and abandoned within a weekly interval, then a supplemental page should be attached showing the Tubular entries for that wellbore.

Tubular Type

Indicate the type of tubular, i.e., casing, liner, or tubing utilized.

Hole Size (IN)(6 characters – NN.NNN)

Enter nominal diameter (in inches) of the borehole drilled.

Size (IN)(6 characters – NN.NNN)

Enter the nominal diameter (in inches) of the casing.

Weight (#/Feet)(5 characters – NNN.N)

Enter the nominal casing weight in pounds per foot.

Grade (7 characters AAA-NNN)

Enter the casing grade in API standard designation.

Test Pressures (psi)(5 characters – NNNNN)

Enter the test pressure of the casing/liner/tubing test in pounds per square inch (psi).

Shoe Test (EMW)(4 characters – NN.N)

Enter the pressure or formation integrity test (PIT/FIT) or leak off test (LOT) of the shoe in equivalent mud weight pounds per gallon (ppg).

Setting Depth Top/Bottom (MD)(5 characters – NNNNN)

Enter the top/bottom measured depth (in feet) at which the casing/liner is set.

Cement Quantity (Cubic Feet)

Enter the total volume (in cubic feet) of cement used in cementing the string of casing/liner.

13. OPEN HOLE TOOLS, MUDLOGS, AND DIRECTIONAL SURVEYS

List all open hole logging tools, lithologic description logs (i.e. mudlogs, lithologs, formation evaluation logs), and directional surveys run in the borehole. See <u>Appendix A.9</u> to complete Items 13 and 14.

Service Company – Enter the full name of the Service Company (for example Baker Atlas INTEQ, Pathfinder, Schlumberger, Gyro Data, Ramco) that performed the open hole activity.

Date Operations Completed – Enter the date operations were <u>completed</u> for each tool run during the course of the well operations. (8 characters - YYYYMMDD)

Tool Logging Method – Enter either W for wireline or MWD/LWD for measurement while drilling and logging while drilling.

Log Tool Code – Also known as Log Tool Model. Please provide the Tool Code or Tool Model for each tool or combination of tools run in the borehole for every logging run completed this reporting period. This code must be consistent with the Petroleum Open Software Corporation (POSC) Practical Well Log Standard Version 1 (see **Appendix A.10**). If a Tool Code is not listed, please supply the Tool Code. Be sure to list the Tool Codes associated with any formation tests. If no logging operations (wireline or MWD/LWD) were conducted this reporting period put "**NO LOGS RUN**".

Directional Surveys should be identified as "Dir". Lithologic description logs and mudlogs should be identified as "Mud". No Tool Logging Method needs to be identified for mudlogs.

Interval Depth (MD) Top Bottom – Enter the measured depth of the top and bottom of each tool run reported this period. Top will be the shallowest interval measured and Bottom will be the deepest interval measured.

14. IDENTIFY OTHER OPEN HOLE DATA COLLECTED

Place a check or "X" in the appropriate box. All Vertical Seismic Profile run during the reporting period should be reported as a Velocity Survey.

15. WELL ACTIVITY SUMMARY

Provide a brief report describing daily operations completed including any significant well problems and associated remedies. Also include verbals given by the MMS with time and personnel data involved in the exchange. If appropriate, include date rig, wireline unit or coil tubing unit moved on and off location. Kickoff points (MD) for STs and BPs are extremely useful and are critical to resolving problems with directional surveys. Test pressure of equipment should be noted with a brief description of operations, i.e. RU/RD equipment, setting plugs, displacing fluids, perforating, bailing sand, fishing, acidizing, etc.

DEPARTMENT OF THE INTERIOR MINERALS MANAGEMENT SERVICE (MMS)

FIELD OPERATIONS REPORTER'S HANDBOOK

Revision 01 (November 4, 2002)

RIG MOVEMENT NOTIFICATION REPORT (Form MMS-144)

The reporting guidelines for this form are described in the following manner:

- Form Overview (also see General Guidelines)
- Completion of Form with a Description of Data Elements

FORM OVERVIEW

INTRODUCTION

The purpose of this report is for operators to inform the appropriate MMS district office about rig or other operational equipment movement onto or off of a well on the Outer Continental Shelf (OCS). This would entail the movement (including skids, stacking, and moving in or out of the Gulf of Mexico OCS) of all drilling rigs, workover rigs, and coiled tubing and snubbing units.

WHO MUST FILE

Any operator of a lease or unit on the Federal OCS who proposes to drill, complete or workover a well for the purposes of exploration on, or development of oil, gas, or sulphur resources.

WHEN TO FILE

The Form MMS-144 is filed 24 hours prior to mobilization onto or demobilization off of a well on the OCS.

HOW AND WHERE TO FILE

The operators must submit a copy of Form MMS-144 by e-mail to the appropriate district office. If e-mail capabilities are not existent or system is temporarily inoperative, then the form can be faxed. The e-mail addresses and fax numbers for each district are listed on page two of the form. Page two is for informational purposes only and should not be submitted when filing the form.

COMPLETION OF FORM WITH A DESCRIPTION OF DATA ELEMENTS

This section identifies the information, which is required to complete Form MMS-144, Rig Movement Notification Report. The section is divided into three parts organized as follows:

GENERAL INFORMATION contains information used by the MMS for identification of the operator, rig name and other pertinent rig data.

RIG ARRIVAL INFORMATION contains information with regard to date of anticipated rig arrival, well identification and surface location and work scheduled to commence on the well.

RIG DEPARTURE INFORMATION contains information with regard to date of rig departure, well identification and surface location, and status of the well that operations were completed on.

The following section contains a detailed description of the data elements found on Form MMS-144. The numbering of the data elements corresponds to the numbering blocks on the form. (Note: The "A" represents Alpha Code and the "N" represents Number Code. Additionally, "Y", "M", and "D" represents Year, Month, and Day, respectively.

GENERAL INFORMATION

REPORT DATE (8 characters – YYYYMMDD)

Enter the date that the form is transmitted to the MMS.

LEASE OPERATOR

Enter the legal company name as given by the lease documents or approved Designation of Operator form (Form MMS-1123) on file with MMS.

RIG NAME OR PRIMARY UNIT (e.g., snubbing, coil tubing unit, etc.)

Enter the name of the rig or primary unit to be used to complete, workover, or abandon a well. For snubbing and coil tubing work simply state "snubbing" or "coil tubing".

RIG TYPE (2 characters - AA)

Enter the 2-character alpha code that indicates the type of rig that is named above. If a rig is not used, then enter NA. See **Appendix A.5**.

RIG REPRESENTATIVE

Enter the name of the individual that will be responsible for onsite supervision of operations.

RIG TELEPHONE NUMBER (10 characters - (NNN) NNN-NNNN)

Enter the phone number for the rig at the designated well location.

RIG ARRIVAL INFORMATION

RIG ARRIVAL DATE (8 characters – YYYYMMDD)

Enter the date that the rig will arrive on location.

WORK SCHEDULED

Check the scheduled operation to be performed on the well.

| Drilling | TA |
|------------|-----------------|
| Workover | PA |
| Completion | Other (specify) |

API WELL NUMBER (10 characters - NNNNNNNNNN)

Enter the basic 10-character API composite Well Number assigned by MMS on the approved Form MMS-123, Application for Permit to Drill, in accordance with API Bulletin D12A.

WELL NAME (5 characters - AANNN)

Enter the MMS/operator identification name/number for the well. See <u>Appendix A.8</u>.

EXPECTED DURATION OF WELL OPERATIONS (3 characters - NNN)

Enter number of days expected to complete well operations.

WELL SURFACE LOCATION INFORMATION

Lease No. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the surface location. See **Appendix A.1**.

Area Name (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the surface location of the well. See **Appendix A.4**.

Block No. (5 characters - ANNNN)

Enter the number of the block at the surface location of the well.

Latitude (optional - may be included to assist in dual reporting to other agencies) (9 characters - NN-NN-NN.NNN or 10 characters - NN.NNNNNNNN) Enter the latitude (NAD 27) location in degrees, minutes, and seconds to three decimal places, degrees to eight decimal places, or as specified by that agency.

Longitude (optional - may be included to assist in dual reporting to other agencies)(9 characters - NN-NN-NN.NNN or 10 characters - NN.NNNNNNNN) Enter the longitude (NAD 27) location in degrees, minutes, and seconds to three decimal places, degrees to eight decimal places, or as specified by that agency.

STRUCTURAL LOCATION INFORMATION (optional - may be included to assist in dual reporting to other agencies)

Is well adjacent to structure?

Designate "yes" if the well is on or adjacent to a fixed structure. Designate "no" if it is not.

If yes, identify structure

Enter the platform or well designation, e.g., Platform A, Well No. 3, etc.

Distance from structure

If adjacent to structure, enter distance in feet

REMARKS (optional - may be included to assist in dual reporting to other agencies)

Enter the remarks regarding the subject rig move to include size and extent of the mooring system and number of lighted and unlighted buoys deployed. Certificate of Financial Responsibility Number may also be included.

RIG DEPARTURE INFORMATION

RIG DEPARTURE DATE (8 characters – YYYYMMDD)

Enter the date that the rig leaves location.

WELL STATUS (3 characters - AAA)

Enter the current well status of the wellbore. Choose from the list provided (Completed; DSI; TA; PA)

API WELL NUMBER (10 characters - NNNNNNNNNNNN)

Enter the basic 10-character API composite Well Number assigned by MMS on the approved Form MMS-123, Application for Permit to Drill, in accordance with API Bulletin D12A.

WELL NAME (5 characters - AANNN)

Enter the MMS/operator identification name/number for the well. See **Appendix A.8**.

IS RIG BEING SKIDDED ON THE PLATFORM?

Enter "yes" if the rig move is from one well to another on the same platform. If not, enter "no".

WELL SURFACE LOCATION INFORMATION

Lease No. (6 characters - ANNNNN)

Enter MMS's assigned identification number for the lease at the surface location. See **Appendix A.1**.

Area Name (2 characters - AA or NA)

Enter the alpha code of the Operating Area at the surface location of the well. See **Appendix A.4**.

Block No. (5 characters - ANNNN)

Enter the number of the block at the surface location of the well.

Latitude (optional - may be included to assist in dual reporting to other agencies) (9 characters - NN-NN-NN.NNN or 10 characters - NN.NNNNNNNN) Enter the latitude (NAD 27) location in degrees, minutes, and seconds to three decimal places, degrees to eight decimal places, or as specified by that agency.

Longitude (optional - may be included to assist in dual reporting to other agencies) (9 characters - NN-NN-NN.NNN or 10 characters - NN.NNNNNNNN) Enter the longitude (NAD 27) location in degrees, minutes, and seconds to three decimal places, degrees to eight decimal places, or as specified by that agency.

AREA CLEARANCE INFORMATION

(optional - may be included to assist in dual reporting to other agencies)

Is area clear of obstructions?

Enter "yes" if no obstructions are left on the seafloor.

Enter "no" if obstructions exist.

If no, Explain

If the previous answer is "No", then Enter an explanation the obstruction that exists on the seafloor, e. g., well stub, debris, etc.

REMARKS (optional - may be included to assist in dual reporting to other agencies) Enter the remarks regarding the subject rig move to include any significant en route movements.

MMS LEASE NUMBER

The MMS Lease Number is a six-character number assigned by MMS to all lease instruments identifying each Federal OCS mineral lease agreement. The number consists of a single character alpha prefix indicating the region within which the lease is located and a five-digit number. The number is obtained from the applicable lease document. (**NOTE**: The "A" represents Alpha Code and the "N" represents Number Code.)

| MMS Region | Lease |
|-------------------|-------------------|
| <u>Identifier</u> | <u>Identifier</u> |
| A | NNNNN |

MMS Region Identifier:

The prefix is: Blank - for older Gulf of Mexico OCS leases (OCS 0880 and below)

A - for Atlantic OCS leases

G - for recent Gulf of Mexico OCS leases (OCS-G0897 and above)

P - for Pacific OCS leases

Y - for Alaska OCS leases

MMS OPERATOR NUMBER

The MMS Operator Number is a five-character number, unique to each reporter, issued by MMS for use in reporting. Under normal circumstances, the MMS Operator Number for a given operator, once assigned, does not change. Operators may obtain an MMS Operator Number by contacting MMS at the address or telephone number provided in Appendix A.12. (NOTE: The "N" represents Number Code.)

The format is: NNNNN

PRODUCING INTERVAL CODE

The Producing Interval Code is a three-character code and is identical with the Producing Interval Code in the PAAS system. The numeric portion is uniquely and permanently related to a specific completion zone within a wellbore.

- The first character of the code is assigned based upon the number of tubing strings in the wellbore which are capable of production.
- The second and third characters of the code are numeric and are assigned sequentially beginning with the number "01" for the first completion zone within a wellbore, followed by consecutively higher numbers assigned to successive completion zones regardless of the tubing string within which the completion zone is located.

The components of the Producing Interval Code are as follows:

| 1 st Character | 2 nd and 3 rd Characters |
|---------------------------|--|
| Completion | <u>Zone</u> |
| | |
| Borehole - X | 01 |
| Single - S | 01 |
| Dual - D | 01, 02 |
| Triple - T | 01, 02, 03 |
| Quadruple - Q | 01, 02, 03, 04 |
| Quintuple - V | Etc. |

OCS OPERATING AREA CODE

Prior to the change to the Universal Transverse Mercator (UTM) grid system in 1974, maps were constructed as an extension of the Lambert (state plane) Coordinate system. At that time, lease blocks were grouped into an Operating Area. Use of the term for those areas has continued into the present. Extension of the mapping system into the OCS since 1974 has used Official Protraction Diagrams. For such areas, there is often no OCS area code, and, if none is found in this appendix, "NA" should be entered on the form.

OCS OPERATING AREA CODE

| Area Code | Area Name |
|------------|---------------|
| | |
| 0A | OPD NS04-07 |
| 0B | OPD NS04-08 |
| 0C | Barrow Canyon |
| 0D | OPD NS05-08 |
| 0E | OPD NS07-08 |
| 0F | Hanna Shoal |
| 0G | OPD NR05-02 |
| 0H | OPD NR06-01 |
| OI | OPD NR06-02 |
| 0J | OPD NR07-02 |
| 0K | OPD NR07-04 |
| 0L | OPD NR07-06 |
| 0M | OPD NS02-06 |
| 0N | OPD NS03-04 |
| 0P | OPD NS03-06 |
| 0Q | OPD NS04-03 |
| 0R | OPD NS04-04 |
| 0S | OPD NS04-05 |
| OT | OPD NS04-06 |
| 0 U | OPD NS05-03 |
| 0V | OPD NS05-04 |
| 0W | OPD NS05-05 |
| 0X | OPD NS05-06 |
| 0Y | OPD NS06-03 |
| 0Z | OPD NS06-05 |
| 1A | OPD NP60-08 |
| | |

OCS OPERATING AREA CODE

| Area Code | Area Name |
|-----------|-------------|
| 1B | OPD NO60-02 |
| 1C | OPD NO60-03 |
| 1D | OPD NO60-04 |
| 1E | OPD NO60-05 |
| 1F | OPD NO60-06 |
| 1G | OPD NO01-05 |
| 1H | OPD NO59-08 |
| 1I | OPD NO60-07 |
| 1J | OPD NO60-08 |
| 1K | OPD NO01-07 |
| 1L | OPD NO01-08 |
| 1M | OPD NS06-06 |
| 1N | OPD NS07-05 |
| 1P | OPD NS08-05 |
| 1Q | OPD NS08-07 |
| 1R | OPD NL01-01 |
| 1S | OPD NL60-03 |
| 1T | OPD NM01-05 |
| 1U | OPD NM01-06 |
| 1V | OPD NM01-07 |
| 1W | OPD NM01-08 |
| 1X | OPD NM02-05 |
| 1Y | OPD NM02-06 |
| 1Z | OPD NM02-07 |
| 2A | OPD NN59-05 |
| 2B | OPD NN59-07 |
| 2C | OPD NN03-07 |
| 2D | OPD NM58-02 |
| 2E | OPD NM59-01 |
| 2F | OPD NM59-02 |
| 2G | OPD NM03-01 |
| 2H | OPD NM58-04 |
| 2I | OPD NM59-03 |
| 2J | OPD NM59-04 |
| 2K | OPD NM60-03 |
| 2L | OPD NM60-04 |
| 2M | OPD NM01-04 |
| 2N | OPD NM02-03 |

OCS OPERATING AREA CODE

| Area Code | Area Name |
|-----------|-----------------|
| 2O | OPD NM02-04 |
| 2P | OPD NM03-03 |
| 2Q | OPD NM02-08 |
| 2R | OPD NM03-05 |
| 2S | OPD NM59-05 |
| 2T | OPD NM59-06 |
| 2U | OPD NM60-05 |
| 2V | OPD NM60-06 |
| 2W | OPD NM60-07 |
| 2X | OPD NM60-08 |
| 2Y | OPD NS03-05 |
| 2Z | OPD NS07-06 |
| 3A | Portlock Bank |
| 3B | Chirikof Island |
| 3C | OPD NN05-02 |
| 3D | OPD NN06-01 |
| 3E | OPD NN05-04 |
| 3F | OPD NN06-03 |
| 3G | OPD NN05-05 |
| 3Н | OPD NN05-06 |
| 3I | OPD NN06-05 |
| 3J | OPD NN05-07 |
| 3K | OPD NN05-08 |
| 4A | OPD NO07-03 |
| 4B | OPD NO06-06 |
| 4C | OPD NO07-05 |
| 4D | OPD NO07-06 |
| 4E | OPD NO07-08 |
| 4F | OPD NN06-02 |
| 4G | OPD NN07-01 |
| 4H | OPD NN07-02 |
| 4I | OPD NN06-04 |
| 4J | OPD NN07-03 |
| 4K | OPD NN07-04 |
| 4L | OPD NN08-03 |
| 4M | OPD NN06-06 |
| 4N | OPD NN07-05 |
| 4O | OPD NN07-06 |

OCS OPERATING AREA CODE

| Area Code | Area Name |
|-----------|----------------------|
| 4P | OPD NN08-05 |
| A0 | OPD N004-05 |
| A1 | Bristol Bay |
| AA | Attu |
| AB | Albatross Bank |
| AD | Adak |
| AF | Afognak |
| AK | Amlia Knoll |
| AM | Amukta Pass |
| AN | Akutan North |
| AP | Amchitka Pass |
| AT | Atka |
| AU | Akutan |
| AV | Alsek Valley |
| BA | Baird Inlet |
| BB | Bowers Bank |
| BE | Beaufort Basin |
| BF | Baker Fan |
| BI | Barter Island |
| BL | Black |
| BN | Bristol Bay North |
| BO | Barrow |
| BP | Beechey Point |
| BR | Bowers Ridge |
| BS | Blying Sound |
| BT | Beaufort Terrace |
| BW | Bowers Seamount |
| CA | Cape Seppings |
| CB | Cold Bay |
| CC | Chagulak Canyon |
| CD | Cordova |
| CH | Chignik |
| CI | Canada Basin |
| CM | Cape Mendenhall |
| CN | Cape Newenham |
| CP | Cape Denbigh |
| CR | Craig |
| | |

OCS OPERATING AREA CODE

| Area Code | Area Name |
|-----------|--------------------------|
| CS | Chirikof Seamount |
| CW | Cape Newenham West |
| DI | Dease Inlet |
| DL | De Long Mountains |
| DP | Demarcation Point |
| DR | Derikson Seamount |
| DS | Dall Seamount |
| DX | Dixon Entrance |
| ES | Ely Seamount |
| FI | Flaxman Island |
| FP | False Pass |
| GA | Gambell |
| GI | Gareloi Island |
| GN | Good News |
| GO | Goddard |
| H0 | Cape Seppings West |
| H1 | Bering Strait |
| HB | Harrison Bay |
| HI | Hagemeister Island |
| НО | Hooper Bay |
| IB | Icy Bay |
| IL | Iliamna |
| IS | Shishmaref |
| JU | Juneau |
| KA | Karluk |
| KB | Kanaga Basin |
| KC | Korovin Canyon |
| KI | Kwiguk |
| KN | Kenai |
| KO | Kodiak |
| KP | Kresta Point |
| KR | Karo |
| KS | Kodiak Seamount |
| | |
| | |

OCS OPERATING AREA CODE

| Area Code | Area Name |
|-----------|-----------------------|
| KT | Ketchikan |
| KV | Kiska Volcano |
| KW | Kuskokwim Bay |
| KZ | Kotzebue |
| LD | Little Diomede Island |
| LI | Solivik Island |
| M0 | OPD NP02-03 |
| M1 | OPD NP02-05 |
| M2 | OPD NP02-06 |
| M3 | OPD NP02-08 |
| M4 | OPD NO02-01 |
| M5 | OPD NO02-02 |
| MA | Mackenzie Canyon |
| MC | Murray Canyon |
| MD | Maury Deep |
| MF | Mt. Fairweather |
| MI | Middleton Island |
| MK | Mt. Katmai |
| MR | Meade River |
| MT | Mitrofania Island |
| N0 | OPD NP01-02 |
| NA | Noatak |
| NI | Nunivak Island |
| NN | Naknek |
| NO | Nome |
| NS | Norton Sound |
| OC | Okmuk Canyon |
| PA | Port Alexander |
| PC | Pribilof Canyon |
| PH | Point Hope |
| PL | Point Lay |
| PR | Prince Rupert |
| PS | Pratt Seamount |
| PT | Pochnoi Trough |
| RC | Rude Canyon |

OCS OPERATING AREA CODE

| Area Code | Area Name |
|-----------|---------------------|
| RI | Rat Islands |
| S0 | Aleutian Trench |
| S1 | OPD NN04-08 |
| S2 | OPD NM03-02 |
| S3 | OPD NM04-01 |
| S4 | OPD NM04-02 |
| S6 | OPD NM04-03 |
| SA | St. Paul East |
| SB | Unimak Seamount |
| SC | St. George Canyon |
| SE | Seldovia |
| SF | Surveyor Seachannel |
| SG | St. George Island |
| SH | Shumagin Bank |
| SI | Samalga Island |
| SJ | St. Lawrence |
| SK | Sitka |
| SL | St. Paul Spur |
| SM | St. Michael |
| SN | Simeonof Island |
| SO | Solomon |
| SP | St. Paul |
| SQ | Sumdum |
| SR | St. Paul North |
| SS | Sirius Seamount |
| ST | STepovak Bay |
| SU | Seguam |
| SW | Sutwik Island |
| SX | St. George East |
| SY | Shemya Island |
| SZ | Southeast Cape |
| TE | Teshekpuk |
| TH | St. Matthew |
| TI | Trinity Islands |
| TL | Teller |

OCS OPERATING AREA CODE

| Area Code | Area Name |
|-----------|-----------------------|
| TS | Tison |
| TU | Studds |
| U0 | OPD NS02-08 |
| U1 | OPD NS03-07 |
| U2 | OPD NS03-08 |
| U3 | OPD NR03-02 |
| U4 | OPD NR03-03 |
| U5 | Chukchi Sea |
| U6 | Point Lay West |
| U7 | Point Hope West |
| UG | Ugashik |
| UL | Unallakleet |
| UM | Umnak |
| UN | Unalaska |
| UP | Ulm Plateau |
| UV | Ukivok |
| UW | Ukivok |
| V0 | OPD NP01-03 |
| V1 | OPD NP01-04 |
| V2 | OPD NP01-05 |
| V3 | OPD NP01-06 |
| V4 | OPD NP01-07 |
| V5 | OPD NP01-08 |
| V6 | Pervenets Canyon |
| V7 | Pervenets Canyon East |
| V8 | St. Matthew Canyon |
| W0 | OPD NN59-02 |
| W1 | OPD NN60-01 |
| W2 | OPD NN60-02 |
| W3 | OPD NN01-01 |
| W4 | OPD NN01-02 |
| W5 | OPD NN02-01 |
| W6 | OPD NN59-03 |
| W7 | OPD NN59-04 |
| W8 | OPD NN60-05 |
| | |

OCS OPERATING AREA CODE

| WA Wainwright WK Walls Knoll YA Yakutat ZC Zhemchug Canyon ZG Zhemchug Gully ZS Zhemchug Spur | Area Code | <u>Area Name</u> |
|---|-----------|------------------|
| YA Yakutat ZC Zhemchug Canyon ZG Zhemchug Gully | WA | Wainwright |
| ZC Zhemchug Canyon ZG Zhemchug Gully | WK | Walls Knoll |
| ZG Zhemchug Gully | YA | Yakutat |
| | ZC | Zhemchug Canyon |
| ZS Zhemchug Spur | ZG | Zhemchug Gully |
| | ZS | Zhemchug Spur |

OCS OPERATING AREA CODE

Gulf of Mexico OCS Region

| Area Code | Area Name |
|-----------|-------------------------|
| AC | Alaminos Canyon |
| AP | Apalachicola |
| AT | Atwater |
| BA | Brazos |
| BM | Bay Marchand |
| BS | Breton Sound |
| CA | Chandeleur Area |
| CC | Corpus Christi |
| СН | Charlotte Harbor |
| CS | Chandeleur Sound |
| DC | DeSoto Canyon |
| DD | Destin Dome |
| DT | Dry Tortugas |
| EB | East Breaks |
| EC | East Cameron |
| EI | Eugene Island |
| EL | The Elbow |
| EW | Ewing Bank |
| FM | Floridian Middle Ground |
| GA | Galveston |
| GB | Garden Banks |
| GC | Green Canyon |
| GI | Grand Isle |
| GV | Gainesville |
| HE | Henderson |
| НН | Howell Hook |
| HI | High Island |
| KC | Keathley Canyon |
| KW | Key West |
| LL | Lloyd |
| LU | Lund |
| MC | Mississippi Canyon |
| MI | Matagorda Island |

OCS OPERATING AREA CODE

Gulf of Mexico OCS Region

| Area Code | Area Name |
|-----------|-----------------------|
| MO | Mobile |
| MP | Main Pass |
| MQ | Marquesas |
| MU | Mustang Island |
| PB | St. Petersburg |
| PE | Pensacola |
| PI | Port Isabel |
| PL | South Pelto |
| PN | North Padre Island |
| PR | Pulley Ridge |
| PS | South Padre Island |
| SA | Sabine Pass Louisiana |
| SM | South Marsh Island |
| SP | South Pass |
| SS | Ship Shoal |
| ST | South Timbalier |
| SX | Sabine Pass Texas |
| TP | Tarpon Springs |
| VK | Viosca Knoll |
| VN | Vernon |
| VR | Vermilion |
| WC | West Cameron |
| WD | West Delta |
| WR | Walker Ridge |
| | |

OCS OPERATING AREA CODE

Pacific OCS Region

| Area Code | Area Name |
|-----------|----------------------------|
| AC | Astoria Canyon |
| AR | Arguello Fan |
| AS | Astoria Fan |
| BC | Barcley Canyon |
| BG | Bodega Canyon |
| BK | Bushnell Knoll |
| BS | Blanco Saddle |
| CB | Cape Blanco |
| CC | Cascadia Basin |
| CD | Cape Disappointment |
| CF | Cape Flattery |
| CI | Channel Islands |
| CO | Copalis Beach |
| CR | Crescent City |
| CS | Coos Bay |
| DB | Daisy Banks |
| DF | Delgada Fan |
| ER | Escanaba Ridge |
| ET | Escanaba Trough |
| EU | Eureka |
| НВ | Heceta Bank |
| HS | Hake Seamount |
| JS | Jasper Seamount |
| KR | Klamath Ridge |
| MB | Monterey Bay |
| MF | Monterey Fan |
| NA | Navarro Canyon |
| NC | Noyo Canyon |
| NF | Nitinat Fan |
| NP | Newport |
| PE | Pioneer Escarpment |
| PJ | President Jackson Seamount |
| PS | Parks Seamount |
| RA | The Rampart |
| SA | Santa Cruz |

OCS OPERATING AREA CODE

Pacific OCS Region

| Area Code | Area Name |
|-----------|----------------------|
| SC | San Clemente |
| SF | San Francisco |
| SI | Santa Rosa Island |
| SL | San Luis Obispo |
| SM | Santa Maria |
| SR | Santa Rosa |
| SS | Stoddard Seamount |
| SU | Sur Canyon |
| TA | Taney Seamount |
| TB | Tillamook Bay |
| TS | Thompson Seamount |
| UK | Ukiah |
| VG | Vancouger Gap |
| VS | Vance Seamount |
| WS | Westfall Seamount |
| 6A | Channel Islands Area |
| 6B | Channel Islands Area |
| 6C | Channel Islands Area |
| 6D | Channel Islands Area |
| 6E | Channel Islands Area |
| | |

RIG TYPE CODE

The Rig Type Code is a two-character alpha code indicating the type of rig that is used to drill the well.

| Rig Code | Rig Type |
|----------|--------------------------|
| AG | Artificial Gravel Island |
| AI | Artificial Ice Island |
| BR | Barge |
| DS | Drillship |
| JU | Jack up |
| PF | Platform |
| PS | Platform self-contained |
| PT | Platform with tender |
| SS | Semi-submersible |
| SU | Submersible |

WELL STATUS CODE

The Well Status Code is a three-character alpha code. It describes the status of a wellbore on the date that the applicable permit/report is filed.

| Code | <u>Description</u> |
|------|--|
| COM | Borehole Completed. |
| | The borehole has been drilled to total depth, and the well has been perforated for production. |
| DRL | Actively Drilling. |
| | Drilling of the borehole is in progress and has not been suspended. |
| DSI | Drilling Suspended. |
| | Drilling operations upon the borehole have been interrupted prior to reaching total depth. |
| PA | Permanently Abandoned. |
| | All perforations through the casing capable of communication with a zone have been plugged with cement or other means, and all casing and other plugs required for abandonment of the borehole have been emplaced. |
| TA | Temporarily Abandoned. |
| | The wellbore has not been permanently plugged and abandoned, but all of the completions have been rendered incapable of production either by squeezing the zones or by isolation. |
| VCW | Volume Chamber Well. |
| | A wellbore used for temporary storage of hydrocarbons. |

COMPLETION TYPE CODE

The Completion Type Code is a three-character alpha code that describes the condition of completion that is being reported on.

| Code | <u>Name</u> |
|------|--------------------------------|
| CAP | Capacity string |
| FSI | Sulphur shut in |
| GIO | Oil well turnaround |
| GIW | Gas injection well |
| GLO | Gas lift oil |
| GSI | Gas shut in |
| IDS | Disposal or field service well |
| LIW | Liquid injection well |
| OSI | Oil shut in |
| PFW | Producing sulphur well |
| PGW | Producing gas well |
| POW | Producing oil well |
| PSW | Producing salt well |
| SSI | Salt shut in |
| WBW | Sulphur bleed water well |
| WDW | Salt water disposal well |
| WIW | Water injection well |
| WSW | Water source well |

WELL NAME/NUMBER

The purpose of this appendix is to provide detailed guidance regarding the well name/number to aid the OCS designated operator in preparing Forms MMS-123, 123S, 124, 125, 133 and 144. The well name/number is characterized as a fourteen-character data element. The first six characters are associated with the well name/number and the remaining eight are associated with the well name/number suffix. Note: Forms MMS-123, 123S, 124, 125, and 133, effective October 2002, have separated the well name/number field into three distinct data fields, Well Name, Sidetrack No., and Bypass No. (Form MMS-144, effective May 2002, still represents the well name/number data as one field but does not require the suffix). The well name/number suffix is reported in the Sidetrack No. and Bypass No. fields. Therefore, the following directions for reporting well name/number data should be adapted to either the one-field or three-field format.

The format is: AANNNAAANNAANN

A = Alpha character

N = Numeric character

The first two alpha characters indicate whether or not the well exists on a platform or is a subsea completion.

The next three numeric characters indicate the well number.

The next alpha character indicates a distinct completion or tubing string name.

The next two alpha and numeric characters indicate the wellbore sidetrack number. The two alpha characters will always be reported as ST for sidetrack.

The last two alpha and numeric characters indicate the wellbore bypass number. The two alpha characters will always be reported as BP for bypass.

The well name/number suffix should be reported in its entirety on all MMS forms as of the effective date (May 1, 2001) of Notice To Lessees and Operators (NTL) No. 2000-N07.

1.) The first two alpha characters indicate whether or not the well exists on a platform. The next three numeric characters indicate the well number.

Major Platform Wells

If a well is drilled (or tied back and completed) from a multi-well, multi-pile structure with extensive production processing equipment (commonly referred to as a major platform), and this is the first structure of its type in this lease or field (the field is named and defined by MMS and can contain multiple leases exploiting a distinct geologic structure), and it is the first well, it would normally be named Well A001. If the well is associated with the second

major platform existing in the field, it would normally be named Well B001 (Note: There may be a special reason why an operator would want to name a platform contrary to a rigid ascending alphabetic sequence. MMS would normally accept individual conventions, so long as they did not result in a duplication of platform names (hence well names/numbers) in a particular lease or field (there may be multiple designated operators within a lease or field). If the aforementioned Well A001 is originally drilled from the platform, it would be named as such from the beginning of the permitting process, i.e. proposed on Form MMS-123, Application for Permit to Drill (APD). If the well is drilled prior to setting of the platform, then tied back with a surface tree on the platform, it would originally be permitted only as a well number (for example, Well No. 003 if it was the third well drilled (bottom-holed) on a lease), then renamed via a Form MMS-124, Application for Permit to Modify (APM)(Request Approval) to indicate it now existed on a platform, for example, Well A001 if it was the first well tied back to Platform A.

Satellite Wells

There are numerous occasions when a platform is named with two letter designations. One common case involves what is commonly referred to in the oilfield as a satellite platform. A satellite platform is usually associated with a major platform. It is usually a multi-well, multi-pile structure with limited production processing equipment such as a test separator, but its well fluid is processed at the associated major platform. These satellite platforms commonly support four wells and include a helideck.

Examples of names/numbers of wells drilled from or completed and tied back to satellite platforms are CB013 and SG026. In many cases, the number associated with the satellite platform well is indicative of the sequentially numbered non-major platform wells on a particular lease. For example, Wells Nos. 001 through 004 are drilled and bottom-holed on a single lease from four different surface locations. Wells Nos. 001, 002, and 003 are all dry. Well No. 004 is temporarily plugged and abandoned (Platform A installed at its surface location) then later completed, tied back and renamed as Well A001. Nine additional wells are drilled from Platform A (Wells A002 through A010). Then a four-well template is installed on the same lease (to be named AB). An operator may propose the first well as AB005 indicative of the fifth non-major platform well drilled on the lease. The next well drilled from this satellite platform may be named AB006.

Caisson Wells (Completed wells)

In water depths up to a couple of hundred feet, single well structures sometimes are used after a well is determined productive and completed. Most often these structures are a single pile (caisson) driven over the well, support a boat landing with navigational aids, and contain no production equipment. In these cases, the well is given only a number with no alpha characters proceeding it. For example, Well No. 007 could indicate the seventh drilled non-major platform well that was completed and has a caisson over it (not a satellite platform). However, if this single caisson well is braced or bridge-connected to a multi-well structure, it will be given the platform letter prefix.

Subsea Wells

For subsea completions not associated with a template, wells should be named SS001, SS002, etc. The SS would designate a single subsea well (Figure 1).

For subsea completions associated with a template, wells should be named TA001, TA002, etc. for unique seafloor location A, then TB001, TB002, etc. if another template is placed on the seafloor for the same lease or field at unique location B (Figure 2).

2.) The next alpha character indicates a distinct completion or tubing string name.

Well Completion Name

The sixth character in the well name/number gives an operator the opportunity to uniquely identify each of its completed zones in a particular wellbore up to a maximum of 26 different zones. Most operators do not use this feature but a few do. For those who do, generally, the first completed zone is identified by the alpha character A with subsequent zones named B, C, etc. For example, a well is originally proposed on the APD as Well A004. While drilling the well, a request to alter the casing program is submitted via an APM (Request Approval) for this same Well A004. After the well is drilled and logged, a request to initially complete it is submitted via an APM (Request Approval) for the A004 wellbore. Once the wellbore is completed, Forms MMS-124, APM (Subsequent Report) and MMS-125, End of Operations Report (EOR) are submitted for the A004 well. The well completion character is left blank on all forms until the wellbore is actually completed. Note: Again, in this example, the distinct completion name is optional. The Producing Interval Code (S01, S02, S03, D01, D02, etc.), Item 9 on the APM (Subsequent Report) and Item 3 on the EOR, is the MMS required method of distinguishing between completed zones.

Tubing String Name

The sixth character in the well name/number is also used to uniquely identify each of its tubing strings in wells with multiple completions. If more than one tubing string exists and both completions were performed during the same operation, MMS requires the tubing string differentiation since its database system will not allow the existence of two completion records with the same well completion name on the same date. The most common convention for this distinction is to leave the tubing string identifier off the long string (the tubing string which produces the deepest zone at the time of original completion) and to identify the short string with the alpha character D. For example, if an APM (Request Approval) is submitted for a Well A004, the well name/number block on the form should be

filled out as A004 since the completion has not occurred at this point. Once the well is dually completed, the APM (Subsequent Report) should have the data element in Item 4 filled out as A004/A004D since the report is being submitted for both completions. A separate End of Operations Report should be submitted for each completion (A004 and A004D) since the current form only allows the reporting of one completion zone.

Note: Currently, MMS forms provide a block of space to propose or report the well name/number. An operator may represent a well drilled from an "A" Platform as A-3 or A003. Either is acceptable, however the MMS stores the well name/number in its database as bA003b where "b" is a blank alpha character. In the future, after electronic form submittal is instituted, operators will be required to submit all data fields in a rigid format, for example, the well name/number for the aforementioned well would have to be submitted as bA003b to be accepted.

- 3.) The next two alpha and numeric characters indicate the wellbore sidetrack number. The two alpha characters will always be reported as ST for sidetrack.
- 4.) The next two alpha and numeric characters indicate the wellbore bypass number.

 The two alpha characters will always be reported as BP for bypass.

Well Name/Number Suffix

Per the definitions included in NTL No. 2000-N07, wellbores drilled for the primary purpose of a new geologic target will be given a sidetrack increment. Wells drilled for the primary purpose of regaining or repairing previously drilled unusable hole (even if a secondary purpose may be that the proposed bottom-hole location is different from originally proposed) will be given a bypass increment. The specific definitions from NTL No. 2000-N07, with additional language to better differentiate borehole type, are as follows:

Bypass - a remedial drilling effort in which portions of a hole are redrilled around junk (i.e., lost tools, pipe, or other material blocking the hole), "lost holes" are redrilled, or directional corrections are made ("key seats" or "crooked holes" are straightened, etc). In general, the proposed bottom-hole location of the new borehole is within 100 feet of the proposed bottom-hole location of the previous borehole. This is also called a mechanical sidetrack.

Sidetrack - a drilling effort in which an additional hole is drilled by leaving a previously drilled hole at some depth below the surface and above the total depth. A whipstock or cement plug is set in the previously drilled hole, which is the starting point for the sidetracking operations. The drilling of a well after a slot reclamation (which previously had a well) is considered a sidetrack. This section of the hole is directionally drilled to a new

objective bottom-hole location (target), which is generally more than 100 feet from the previously proposed bottom-hole location. This is also called a geologic sidetrack.

Bypass numbers are not indicative of the total for the well but are associated with each geologic target. For example, Well A002 ST01BP03 is indicative of the third bypass of the first sidetrack wellbore. It's not necessarily the third bypass of the well. The original wellbore (00 as 11th and 12th digits of the API Number) may have had two bypasses associated with it. Also, there may a second sidetrack with an associated bypass. If that were the case, the well names/numbers for each wellbore would be as follows (**Figure 3**):

| API S/T Code | Conventional Well Name/Number | Description | Proposed BHL | MMS Forms |
|-----------------|----------------------------------|--------------------------|--------------|---------------|
| 00 | A-2 | Original hole (OH) | Target 1 | A002 ST00BP00 |
| 01 | A-2 BP1 | Bypass of OH | Target 1 | A002 ST00BP01 |
| 02 | A-2 BP2 | Bypass of OH | Target 1 | A002 ST00BP02 |
| 03 | A-2 ST1 | Geologic sidetrack (ST1) | Target 2 | A002 ST01BP00 |
| 04 | A-2 ST1BP1 | Bypass of ST1 | Target 2 | A002 ST01BP01 |
| 05 | A-2 ST1BP2 | Bypass of ST1 | Target 2 | A002 ST01BP02 |
| 06 | A-2 ST1BP3 | Bypass of ST1 | Target 2 | A002 ST01BP03 |
| 07 | A-2 ST2 | Geologic sidetrack (ST2) | Target 3 | A002 ST02BP00 |
| 08 | A-2 ST2 BP1 | Bypass of ST2 | Target 3 | A002 ST02BP01 |
| | | | | |

Note: Currently, MMS Forms provide a block of space to propose or report the well name/number. MMS district offices request that operators report the first bypass of the original borehole of a Well A002 as "A002 ST00BP01" rather than "A002 BP1" in the block of space provided. Although it may be common to name this bypass A-2 BP1 by many groups, MMS feels this requirement should help alleviate confusion. Also, the second sidetrack should be reported as "A002 ST02BP00" rather than "A002 ST2.

What is the operator's responsibility for researching and submitting the appropriate well name/number suffix when proposing work on a new or existing well?

The well name/number suffix should be reported in its entirety on all MMS forms as of the effective date (May 1, 2001) of NTL No. 2000-N07. However, if an operator chooses to report a well name/number suffix before the mandatory compliance date, MMS' database system will be capable of accepting it.

Wellbores Crossing Lease Lines Requiring Name Changes

If the system was set up with the surface lease as the primary key, the problem of well name changes would never arise, but MMS' system has (and plans to continue having) bottom-hole lease as its primary key. This system results in well name/number changes on occasion. For example, if Well No. 001 is drilled with its surface and bottom-hole in Lease OCS-G 2500 and is sidetracked a bottom-hole location in Lease OCS-G 2501, but Lease OCS-G 2501 already has Wells Nos. 001, 002, and 003 bottom-holing in it, the well name/number must be changed. MMS would generally require the new well name/number to be Well No. 004 since it's the next ascending number bottom-holing in that lease (Figure 4). Well name

changes are always confusing; therefore it is general MMS district office policy to change a well name/number only if necessary to avoid duplication; otherwise, it is left alone. For example, if Well No. 007, which surfaces and bottom-holes in Lease OCS-G 2500, is sidetracked to Lease OCS-G 2501, which has no wells bottom-holing in it, instead of renaming/renumbering the well as No. 001 to indicate the first well to bottom-hole in that lease, the well name will remain as No. 007 (Figure 5).

A better example of this situation is where there is a Platform A with multiple wells. There is a good chance one or more of the wells will be sidetracked to or was originally bottomholed in an adjacent lease. Even though these "A" wells are named by bottomhole lease, they are numbered by surface lease. For example, Wells A001 through A005 surface and bottomhole in Lease OCS-G 2500. The next Platform A well proposed to bottomhole in the adjacent Lease OCS-G 2501 would be named/numbered Lease OCS-G 2501 Well A006 (Figure 6). It would not be named Lease OCS-G 2501 Well A001 to indicate that this is the first "A" well to bottomhole in Lease OCS-G 2501. Likewise, if Well A005 is sidetracked to a bottomhole location in Lease OCS-G 2501, the bottomhole lease indicator would change, but the well name/number would not, i.e. the well would change from Lease OCS-G 2500 Well A005 to Lease OCS-G 2501 Well A005 (Figure 7).

The well name/number suffix will always remain consistent no matter what changes with the six-character portion of the well name/number. For example, in the above example of the well name/number change from Lease OCS-G 2500 Well No. 001 to Lease OCS-G 2501 Well No. 004, the well name/number suffix would change from ST00BP00 for the original hole to ST01BP00 for the sidetrack hole. Therefore, on the APD to sidetrack Lease OCS-G 2500 Well No. 001, Items 4-6 should be filled out as 001 ST00BP00. After successfully sidetracking to a bottom-hole location in Lease OCS-G 2501, then temporarily plugging and abandoning the well, the APM (Subsequent Report) and the End of Operations Report would be submitted with 004 ST01BP00 reported for Items 4-6 on the APM (Items 5-7 on the EOR) and Lease OCS-G 2501 reported for Item 13 on the APM (Item 9 on the EOR). This may be confusing in that there is no No. 004 original hole (Figure 8). If a second sidetrack is performed to bottom-hole back in Lease OCS-G 2500, MMS recommends the well name/number revert back to No. 001 and its suffix would be ST02BP00. This seems contrary to the policy of never changing the well name/number unless absolutely necessary but, in this case, since there is the opportunity to restore the original well name/number, that should be done. This also may be confusing in that there is no No. 001 ST01BP00, but this is the way it must be reported given a system which names wells by bottom-hole location (Figure 9).

| API S/T Code | Conventional Well Name/Number | Description | Proposed BHL | MMS Forms |
|-----------------|----------------------------------|--------------------|--------------|--------------|
| 00 | OCS-G 2500 No. 1 | Original hole | Target 1 | 001 ST00BP00 |
| 01 | OCS-G 2501 No. 4 ST1 | Geologic sidetrack | Target 2 | 004 ST01BP00 |
| 02 | OCS-G 2500 No. 1 ST2 | Geologic sidetrack | Target 3 | 001 ST02BP00 |

Another example of the suffix remaining consistent is the case where a well was previously sidetracked and renamed. In the past, MMS allowed operators to rename sidetrack wells

even though the sidetrack bottom-hole location remained on the same lease as the original hole. For example, Well B006 was drilled with a surface and bottom-hole location in Lease OCS-G 2500. The well was subsequently sidetracked (and the API S/T Code incremented) beneath surface casing to a bottom-hole location still in Lease OCS-G 2500 and renamed Lease OCS-G 2500 Well B013. If this is how the well currently exists and an APD is proposed to sidetrack, Items 4-6 should be filled out (voluntary before and mandatory after the effective date of NTL No. 2000-N07) as B013 ST01BP00 (Figure 10).

WEII ACTIVITY REPORT FOR OPEN HOLE DATA INVENTORY FORM MMS-133 ITEMS 13-14

Scenario

Well Activity Report PERIOD: 08-JUL-2002-14-JUL-2002

Operator A spuds a directional well on June 1, 2002 with a projected total depth (TD) of 24,000' MD and 20,000' TVD. The operator's reporting period is Monday through Sunday for the Well Activity Report (WAR)(Form MMS-133).

For the reporting period ending July 14, 2002, the operator drilled from 17,000' MD to a depth of 19,500' MD and conducted several activities that require reporting them on the WAR for Items 13 and 14. During the week of July 8th Operator A took four Conventional Cores between 17,200-17,500 ft MD, used Service Company Z for MWD/LWD services and obtained Directional, Gamma, Resistivity, Density, Neutron and Sonic information while drilling. Cuttings samples were collected by Service Company W for mudlog litho analysis and paleo analysis. At TD of the well, which was reached on Friday July 12th, the operator had Service Company X run a multishot gyro Directional Survey from 19,000-12,000 ft MD. On Saturday July 13th and into early hours of Sunday July 14th wireline Service Company Y ran two sets of logs. The first combo was Resistivity, Gamma, Density, Neutron, and Sonic over the interval 19,500-15,000ft MD. The second was a Nuclear Magnetic Resonance tool combined with a Dipmeter over the same interval. The logging operation was completed on Sunday, the 14th, with a velocity survey comprised of a VSP from 19,500-14,000 ft MD and checkshots from 14,000-6,000 ft MD.

Items 13 and 14 of Form MMS-133 would be completed in the following fashion:

13. OPEN HOLES TOOLS, MUDLOGS, AND DIRECTIONAL SURVEYS

| SERVICE COMPANY | DATE OPERATIONS | TOOL LOGGING | LOG TOOL | INTERVAL DEPTH (MD) | |
|--------------------|--------------------|-----------------|-------------------------------|------------------------|--------|
| | COMPLETED | METHOD | CODE | TOP | BOTTOM |
| Z | 12-JUL-2002 | MWD/LWD | GR/DPR/SLD/ ADN/ISONIC/Dir | 17,000 | 19,500 |
| X | 12-JUL-2002 | W | Dir | 12,000 | 19,000 |
| Y | 14-JUL-2002 | W | AIT/NGRT/CDL/CN/AC | 15,000 | 19,500 |
| Y | 14-JUL-2002 | W | CMR/OBDT | 15,000 | 19,500 |
| W | 14-JUL-2002 | | Mud | 17,000 | 19,500 |

14. IDENTIFY OTHER OPEN HOLE DATA COLLECTED

| | YES NO | | YES NO | | YES NO |
|--------------------|--------|---------------|--------|------------------|--------|
| VELOCITY SURVEYS | X | PALEO SAMPLES | X | SIDEWALL SAMPLES | X |
| CONVENTIONAL CORES | X | LITHO SAMPLES | X | GEOCHEM SAMPLES | X |

TOOL CODE LIST

Company Name Tool Code Tool Description

| BAKER ATLAS WIRELINE | 3DEX | 3D Induction Logging Service |
|----------------------|---------|---------------------------------------|
| BAKER ATLAS WIRELINE | AC | BHC Acoustilog |
| BAKER ATLAS WIRELINE | CAL | Caliper |
| BAKER ATLAS WIRELINE | CBIL | Circumferential Borehole Imaging Log |
| BAKER ATLAS WIRELINE | CDL | Compensated Density Log |
| BAKER ATLAS WIRELINE | CN | Compensated Neutron Log |
| BAKER ATLAS WIRELINE | DAC | Digital Array Acoustilog |
| BAKER ATLAS WIRELINE | DAL | Digital Acoustilog |
| BAKER ATLAS WIRELINE | DEL2 | Dielectric Log - 200 Mhz |
| BAKER ATLAS WIRELINE | DEL4 | Dielectric Log - 47 Mhz |
| BAKER ATLAS WIRELINE | DIFL | Dual Induction Focused Log |
| BAKER ATLAS WIRELINE | DIP | High Resolution 4-Arm Diplog |
| BAKER ATLAS WIRELINE | DLL | Dual Laterolog |
| BAKER ATLAS WIRELINE | DPIL | Dual Phase Induction Log |
| BAKER ATLAS WIRELINE | EI | Earth Imager |
| BAKER ATLAS WIRELINE | FMT | Formation Multi-Tester |
| BAKER ATLAS WIRELINE | GR | Gamma Ray |
| BAKER ATLAS WIRELINE | HDIL_BA | High-Definition Induction Log |
| BAKER ATLAS WIRELINE | HDIP | Hexagonol Diplog |
| BAKER ATLAS WIRELINE | HDLL | High-Definition Lateral Log |
| BAKER ATLAS WIRELINE | ICAL | Imaging Caliper |
| BAKER ATLAS WIRELINE | IEL | Induction Electrolog |
| BAKER ATLAS WIRELINE | ISSB | Isolation Sub - Spontaneous Potential |

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| Company Name | Tool Code | Tool Description |
|----------------------|-----------|--|
| BAKER ATLAS WIRELINE | MAC | Multipole Array Acoustilog |
| BAKER ATLAS WIRELINE | MAC2 | Multipole Array Acoustilog |
| BAKER ATLAS WIRELINE | MFC | Multi-Finger Caliper |
| BAKER ATLAS WIRELINE | ML | Minilog |
| BAKER ATLAS WIRELINE | MLL | Micro Laterolog |
| BAKER ATLAS WIRELINE | MREX | Magnetic Resonance Explorer Imaging Log |
| BAKER ATLAS WIRELINE | MRIL | Magnetic Resonance Imaging Log |
| BAKER ATLAS WIRELINE | MSL | Micro Spherical Laterolog |
| BAKER ATLAS WIRELINE | PDK | PDK-100 |
| BAKER ATLAS WIRELINE | PROX | Proximity Log |
| BAKER ATLAS WIRELINE | RCI | Reservoir Characterization Instrument |
| BAKER ATLAS WIRELINE | RCOR | Rotary Sidewall Coring Tool |
| BAKER ATLAS WIRELINE | RPM | Reservoir Performance Monitor |
| BAKER ATLAS WIRELINE | SBT | Segmented Bond Tool |
| BAKER ATLAS WIRELINE | SL | Spectralog |
| BAKER ATLAS WIRELINE | SP | Spontaneous Potential |
| BAKER ATLAS WIRELINE | STAR | Simultaneous Acoustic and Resistivity Imager |
| BAKER ATLAS WIRELINE | SWC | Sidewall Coregun |
| BAKER ATLAS WIRELINE | SYST | Surface System |
| BAKER ATLAS WIRELINE | TBRT | Thin-Bed Resistivity |
| BAKER ATLAS WIRELINE | TTRM | Temperature/Tension/Mud Resistivity Sub |
| BAKER ATLAS WIRELINE | VS | Velocity Survey |
| BAKER ATLAS WIRELINE | VSP | Vertical Seismic Profile |
| BAKER ATLAS WIRELINE | WTS | ECLIPS WTS Downhole Common Remote |
| BAKER ATLAS WIRELINE | XMAC | Cross-Multipole Array Acoustilog |
| BAKER ATLAS WIRELINE | XMAC-E | XMAC Elite (Next generation XMAC) |
| BAKER ATLAS WIRELINE | ZDL | Compensated Z-Densilog |
| BAKER INTEQ | AP | Annular Pressure |
| | | |

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| Company Name | Tool Code | Tool Description |
|--------------|-----------|--------------------------------------|
| BAKER INTEQ | APX | Accoustic Porosity Explorer |
| BAKER INTEQ | CCN | Caliper Corrected Neutron |
| BAKER INTEQ | DIR | Directional |
| BAKER INTEQ | DPRT | Deep Propagation Resistivity |
| BAKER INTEQ | FMT | Formation Multi-Tester |
| BAKER INTEQ | GR | Gamma Ray |
| BAKER INTEQ | MPR | Multiple Propogation Resistivity |
| BAKER INTEQ | MRT | Magnetic Resonance |
| BAKER INTEQ | ORD | Compensated Bulk Density |
| BAKER INTEQ | RIT | Resistivity Imaging |
| BAKER INTEQ | VSS | Vibration and Stick Slip |
| COMPUTALOG | AZD | Azimuthal Density |
| COMPUTALOG | BCS | Borehole Compensated Sonic |
| COMPUTALOG | CAL | Caliper |
| COMPUTALOG | CDT | Compensated Density |
| COMPUTALOG | CNT | Compensated Neutron |
| COMPUTALOG | DAR | Digital Acoustic Tool |
| COMPUTALOG | DLL | Dual Laterolog |
| COMPUTALOG | DTD | Tension Compression |
| COMPUTALOG | FED | Four Electrode Dipmeter |
| COMPUTALOG | GR | Gamma Ray |
| COMPUTALOG | GRN | Gamma Ray Neutron |
| COMPUTALOG | HADR | High Temperature Azimuthal Gamma Ray |
| COMPUTALOG | HBC | High Resolution Borehole Sonic |
| COMPUTALOG | HMI | High Resolution Micro Imager |
| COMPUTALOG | IEL | Induction Electric Log |
| COMPUTALOG | MAN | Multi Array Neutron |
| COMPUTALOG | MDA | Monopole Dipole Acoustic |
| | | |

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| Company Name | Tool Code | Tool Description |
|--------------|-----------|--|
| COMPUTALOG | MEL | Micro Eletric Log |
| COMPUTALOG | MFR | Multi Frequency Resistivity |
| COMPUTALOG | MRT400 | Micro Resistivity Tool |
| COMPUTALOG | MSC | Multi Sensor Caliper |
| COMPUTALOG | MSFL | Micro Spherically Focused Log |
| COMPUTALOG | NMRT | Nuclear Magnetic Resonance Tool |
| COMPUTALOG | NTT | Single Detector Neutron |
| COMPUTALOG | PND | Pulsed Neutron Decay |
| COMPUTALOG | RSCT | Rotary Sidewall Coring Tool |
| COMPUTALOG | SAGR | Spectral Azimuthal Gamma Ray |
| COMPUTALOG | SED | Six Electrode Dipmeter |
| COMPUTALOG | SFT | Selective Formation Tester |
| COMPUTALOG | SGR | Spectral Gamma Ray |
| COMPUTALOG | SP | Spontaneous Potential |
| COMPUTALOG | SPeD | Spectral Pe Density |
| COMPUTALOG | STI | Simultaneous Triple Induction |
| COMPUTALOG | TEN | Tension |
| COMPUTALOG | TNP | Thermal Neutron Porosity |
| HALLIBURTON | BCS | Borehole Compensated Sonic |
| HALLIBURTON | BHPT | Borehole Properties Tool |
| HALLIBURTON | CAST | Circumferential Acoustic Scanning |
| HALLIBURTON | CDL | Compensated Density Log |
| HALLIBURTON | CSNG | Compensated Spectral Natural Gamma Ray |
| HALLIBURTON | DIL | Dual Induction Log |
| HALLIBURTON | DLLT | Dual Laterolog |
| HALLIBURTON | DSN | Dual Spaced Neutron |
| HALLIBURTON | EMI | Electrical Micro Imaging |
| HALLIBURTON | FIAC | Four Independent Arm Caliper |
| | | |

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| Company Name | Tool Code | Tool Description |
|------------------------|-----------|---|
| HALLIBURTON | FWS | Full Wave Sonic |
| HALLIBURTON | GR | Gamma Ray |
| HALLIBURTON | HDIL_HAL | Hostile Dual Induction |
| HALLIBURTON | HDTD | Hostile Downhole Tension |
| HALLIBURTON | HFDT | High Frequency Dielectric |
| HALLIBURTON | HRI | High Resolution Induction (includes HRAI) |
| HALLIBURTON | HSN | Hostile Short Normal |
| HALLIBURTON | LL3 | Laterolog 3 |
| HALLIBURTON | LSS | Long Spaced Sonic |
| HALLIBURTON | MACT | Multi-Arm Caliper Tool |
| HALLIBURTON | MICLOG | Microlog |
| HALLIBURTON | MRIL | Magnetic Resonance Imaging Log |
| HALLIBURTON | MSFL | Micro-Spherically Focused Log |
| HALLIBURTON | NGRT | Gamma Ray Tool |
| HALLIBURTON | RDT | Reservoir Description Tool |
| HALLIBURTON | RSCT | Rotary Sidewall Coring |
| HALLIBURTON | SDL | Spectral Density Log |
| HALLIBURTON | SED | Six Arm Dipmeter |
| HALLIBURTON | SFT | Sequential Formation Tester |
| HALLIBURTON | SGR | Spectral Gamma Ray |
| HALLIBURTON | SP | Spontaneous Potential |
| HALLIBURTON | TMD-L | Thermal Multigate Decay-Lithology |
| HALLIBURTON | WSD | WaveSonic Dipole |
| HALLIBURTON | XYC | XY Caliper Log |
| HALLIBURTON SPERRY SUN | ACAL | AcoustiCaliper |
| HALLIBURTON SPERRY SUN | AGR | Azimuthal Gamma Ray |
| HALLIBURTON SPERRY SUN | ALD | Azimuthal Litho Density |
| HALLIBURTON SPERRY SUN | ASLD | Azimuthal Stabilized Litho Density |

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| Company Name | Tool Code | Tool Description |
|------------------------|-----------|---|
| HALLIBURTON SPERRY SUN | BAT | Bi-Modal Acoustic Tool |
| HALLIBURTON SPERRY SUN | CNP | Compensated Neutron Porosity |
| HALLIBURTON SPERRY SUN | CTN | Compensated Thermal Neutron |
| HALLIBURTON SPERRY SUN | DDS | Drilling Dynamics Sensor |
| HALLIBURTON SPERRY SUN | DGR | Dual Gamma Ray |
| HALLIBURTON SPERRY SUN | DIR | Directional |
| HALLIBURTON SPERRY SUN | EWP4 | EWR - Phase 4 |
| HALLIBURTON SPERRY SUN | EWR-M5 | EWR-M5 Resistivity |
| HALLIBURTON SPERRY SUN | EWR-P4 | EWR-Phase 4 Resisitivity |
| HALLIBURTON SPERRY SUN | EWR-P4D | EWR-Phase 4D Resistivity |
| HALLIBURTON SPERRY SUN | EWRS | Electromagnetic Wave Resistivity (Shielded) |
| HALLIBURTON SPERRY SUN | GeoTap | GeoTap Formation Tester |
| HALLIBURTON SPERRY SUN | GM | Gamma Module |
| HALLIBURTON SPERRY SUN | GPGR | Geo-Pilot Azimuthal Gamma Ray |
| HALLIBURTON SPERRY SUN | IVSS | Insert Vibration Severity Sensor |
| HALLIBURTON SPERRY SUN | MRIL-WD | Magnetic Resonance Image Logging |
| HALLIBURTON SPERRY SUN | NGP | Natural Gamma Probe |
| HALLIBURTON SPERRY SUN | NUCP | Smoothed Neutron Porosity |
| HALLIBURTON SPERRY SUN | PCG | Pressure Case Gamma |
| HALLIBURTON SPERRY SUN | PPFG | Pore Pressure/Fracture Gradient |
| HALLIBURTON SPERRY SUN | PWD | Pressure While Drilling |
| HALLIBURTON SPERRY SUN | S175 | Solar 175 |
| HALLIBURTON SPERRY SUN | SFD | Simultaneous Formation Density |
| HALLIBURTON SPERRY SUN | SLD | Stabilized Litho Density |
| HALLIBURTON SPERRY SUN | SSEWR-P4 | SuperSlim EWR-Phase 4 |
| HALLIBURTON SPERRY SUN | SVSS | Sonde Vibration Severty Sensor |
| PATHFINDER LOGGING | AWR | Array Wave Resistivity/Gamma Ray |
| PATHFINDER LOGGING | CLSSM | Compensated Long Spaced Sonic MultiLink |

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| Company Name | Tool Code | Tool Description |
|--------------------|-----------|--|
| PATHFINDER LOGGING | CWRGM | Compensated Wave Resistivity Gamma MultiLink |
| PATHFINDER LOGGING | DFT | Dynamic Formation Tester |
| PATHFINDER LOGGING | DIR | Directional |
| PATHFINDER LOGGING | DNSCM | Density Neutron Standoff Caliper MultiLink |
| PATHFINDER LOGGING | DPM | Dynamic Pressure Module |
| PATHFINDER LOGGING | GAM | Gamma Ray Sonde |
| PATHFINDER LOGGING | GyroHDS1 | Gyro High-Speed Directional Survey |
| PATHFINDER LOGGING | HDS1L | High-Speed Directional Survey |
| PATHFINDER LOGGING | HDS1R | High-Speed Directional Survey Retrievable |
| PATHFINDER LOGGING | HDSM | High-Speed Directional Survey MultiLink |
| PATHFINDER LOGGING | PWD | Pressure While Drilling |
| PATHFINDER LOGGING | PZIG | At-Bit Inclination and Gamma Ray |
| PATHFINDER LOGGING | QPM | Survivor Dynamic Pressure Module |
| PATHFINDER LOGGING | SAWR | Slim Array Wave Resistivity/Gamma Ray |
| PATHFINDER LOGGING | SCLSS | Slim Compensated Long Spaced Sonic |
| PATHFINDER LOGGING | SCWR | Slim Compensated Wave Resistivity |
| PATHFINDER LOGGING | SDNSC | Slim Density Neutron Standoff Caliper |
| PRECISION ENERGY | AZD | Azimuthal Density |
| PRECISION ENERGY | BAP | Bore/Annular Pressure |
| PRECISION ENERGY | BCS | Borehole Compensated Sonic |
| PRECISION ENERGY | CALI | General Caliper |
| PRECISION ENERGY | CNS | Compensated Neutron Service |
| PRECISION ENERGY | CNT | Compensated Neutron Tool |
| PRECISION ENERGY | DLL | Dual Laterolog |
| PRECISION ENERGY | ESM | Environmental Severity Measurement |
| PRECISION ENERGY | FCAL | Single Axis Caliper |
| PRECISION ENERGY | FRT | Flow Rate Tester |
| PRECISION ENERGY | GR | Gamma Ray |
| | | |

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| Company Name | Tool Code | Tool Description |
|------------------|-----------|--|
| PRECISION ENERGY | HAGR | High Temperature Azimuthal Gamma Ray |
| PRECISION ENERGY | HBC | High Resolution Borehole Sonic |
| PRECISION ENERGY | НМІ | High Resolution Micro Imager |
| PRECISION ENERGY | IDS | Integrated Directional Sonde |
| PRECISION ENERGY | MCG | Compact Gamma |
| PRECISION ENERGY | MDA | Monopole Dipole Array |
| PRECISION ENERGY | MDN | Compact Dual Neutron Sonde |
| PRECISION ENERGY | MFR | Multi-Frequency Resistivity |
| PRECISION ENERGY | MFT | Compact Repeat Formation Pressure Tester |
| PRECISION ENERGY | MGS | Auxiliary Gamma Sub |
| PRECISION ENERGY | MPD | Compact PhotoDensity Sonde |
| PRECISION ENERGY | MRT | Micro Resistivity Tool |
| PRECISION ENERGY | MSFL | Micro Spherically Focused Log |
| PRECISION ENERGY | NMRT | Nuclear Magnetic Resonance Tool |
| PRECISION ENERGY | RSCT | Rotary Sidewall Coring Tool |
| PRECISION ENERGY | SED | Six Electrode Dipmeter |
| PRECISION ENERGY | SFT | Selective Formation Tester |
| PRECISION ENERGY | SGR | Spectral Gamma Ray |
| PRECISION ENERGY | SGS-C | Spectral Gamma Sonde |
| PRECISION ENERGY | SPeD | Spectral Pe Density |
| PRECISION ENERGY | STI | Simultaneous Triple Induction |
| PRECISION ENERGY | SWC | Sidewall Coring Gun |
| PRECISION ENERGY | TNP | Thermal Neutron Porosity |
| PRECISION ENERGY | UGR | Universal Gamma Ray |
| PRECISION ENERGY | VSP | Vertical Seismic Profile |
| PROTECHNICS | SpectraS | SpectraScan - spectral gamma ray |
| REEVES WIRELINE | MAI | Compact Array Induction |
| REEVES WIRELINE | MBN | Compact Borehole Navigator |
| | | |

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| Company Name | Tool Code | Tool Description |
|-----------------|-----------|--|
| REEVES WIRELINE | MDL_R | Compact Dual Laterolog Sonde |
| REEVES WIRELINE | MDN | Compact Dual Neutron |
| REEVES WIRELINE | MFE | High Resolution Shallow Focused Electric |
| REEVES WIRELINE | MFT | Compact Repeat Formation Pressure Tester |
| REEVES WIRELINE | MGS | Auxilary Gamma Sub |
| REEVES WIRELINE | MML | Compact Microlog |
| REEVES WIRELINE | MMR | Compact Microlaterolog |
| REEVES WIRELINE | MPD | Compact PhotoDensity |
| REEVES WIRELINE | MSS | Compact Sonic Sonde |
| REEVES WIRELINE | MTC | Compact Two Arm Caliper |
| REEVES WIRLEINE | MCG | Compact Gamma |
| SCHLUMBERGER | AACT | Aluminium Activation Clay Tool |
| SCHLUMBERGER | ACT | Geochemical Logging Tool |
| SCHLUMBERGER | ADN | Azimuthal Density Neutron |
| SCHLUMBERGER | AGS | Aluminium Gamma Ray Spectroscopy Sonde |
| SCHLUMBERGER | AIT | Array Induction Imager |
| SCHLUMBERGER | ALAT | Azimuthal Laterolog |
| SCHLUMBERGER | AMS | Auxiliary Measurement Sonde |
| SCHLUMBERGER | APS | Accelerator Porosity Sonde |
| SCHLUMBERGER | APWD | Annular Pressure While Drilling |
| SCHLUMBERGER | ARC | Array Compensated Resistivity |
| SCHLUMBERGER | BHTV | Borehole Televiewer |
| SCHLUMBERGER | BSP | Bridle Spontaneous Potential |
| SCHLUMBERGER | CALI | Generalized Caliper |
| SCHLUMBERGER | CBTT | Combinable Borehole Televiewer Tool |
| SCHLUMBERGER | CDN | Compensated Density Neutron |
| SCHLUMBERGER | CDR | Compensated Dual Resistivity |
| SCHLUMBERGER | CHFR | Cased Hole Formation Resistivity |
| | | |

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| Company Name | Tool Code | Tool Description |
|--------------|-----------|---|
| SCHLUMBERGER | CHFT | Cased Hole Dynamics Tester |
| SCHLUMBERGER | CMR | Combinable Magnetic Resonance |
| SCHLUMBERGER | CNL | Compensated Neutron Log |
| SCHLUMBERGER | CNT | Compensated Neutron Tool |
| SCHLUMBERGER | CNTS | Slim Compensated Neutron Tool |
| SCHLUMBERGER | CST | Core Sample Taker; Chronological Sample Taker |
| SCHLUMBERGER | DGR | Dual Gamma Ray |
| SCHLUMBERGER | DIR | Directional |
| SCHLUMBERGER | DIT | Dual Induction |
| SCHLUMBERGER | DLT | Dual Laterolog |
| SCHLUMBERGER | DPT | Deep Propagation Tool |
| SCHLUMBERGER | DSI | Dipole Shear Sonic Imager |
| SCHLUMBERGER | DSLT | Digitizing Sonic Logging |
| SCHLUMBERGER | DSST | Dipole Shear Sonic Imager |
| SCHLUMBERGER | DST | Dual Laterolog with SRT |
| SCHLUMBERGER | DWST | Digital Waterform Sonic |
| SCHLUMBERGER | ECO | Ecoscope |
| SCHLUMBERGER | ECS | Elemental Capture Spectroscopy Sonde |
| SCHLUMBERGER | EDTC | Telemetry Cartridge |
| SCHLUMBERGER | EMS | Environmental Measurement Sonde |
| SCHLUMBERGER | EPT | Electromagnetic Propagation (ADEPT) |
| SCHLUMBERGER | ES | Electrical Survey Tool |
| SCHLUMBERGER | FBST | Fullbore Formation Micro Imager |
| SCHLUMBERGER | FGT | Formation Gamma Gamma |
| SCHLUMBERGER | FMI | Fullbore Formation Micro Imager |
| SCHLUMBERGER | FMS | Formation Micro Scanner |
| SCHLUMBERGER | FPWD | Formation Pressure While Drilling |
| SCHLUMBERGER | GFA | Formation Tester Gamma Ray Detector |
| | | |

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| Company Name | Tool Code | Tool Description |
|--------------|-----------|--|
| SCHLUMBERGER | GFT | Formation Tester Gamma Ray |
| SCHLUMBERGER | GNT | Gamma Neutron Tool |
| SCHLUMBERGER | GPIT | General Purpose Inclinometry Tool |
| SCHLUMBERGER | GR | Gamma Ray |
| SCHLUMBERGER | GRA | Geochemical Reservoir Analyzer |
| SCHLUMBERGER | GRST | Gamma Ray Spectrometry Tool |
| SCHLUMBERGER | GRT | Gamma Ray Tool |
| SCHLUMBERGER | GST | Geo-Steering Tool |
| SCHLUMBERGER | HALS | High Resolution Azimuthal Laterlog Sonde |
| SCHLUMBERGER | HAPS | HPHT Accelator Porosity Sonde (aka XAPS) |
| SCHLUMBERGER | HDT | High Resolution Dipmeter |
| SCHLUMBERGER | HGNS | HILT Gamma Ray Neutron Sonde |
| SCHLUMBERGER | HILT | High Integrated Logging Tool |
| SCHLUMBERGER | HIT | Hostile Array Induction Tool (aka XAIT) |
| SCHLUMBERGER | HLDS | Hostile Litho-Density Sonde |
| SCHLUMBERGER | HLDT | Hostile Environment Litho-Density |
| SCHLUMBERGER | HNGS | Hostile Gamma Ray Neutron Sonde |
| SCHLUMBERGER | HNGT | Hostile Natural Gamma Ray Spectrometry |
| SCHLUMBERGER | HRCC | High Resolution Control Cartridge |
| SCHLUMBERGER | HRDD | HILT High Resolution Density Device |
| SCHLUMBERGER | HRGD | HILT High Resolution Resitivity Gamma Ray Density Device |
| SCHLUMBERGER | HRLT | High-Resolution Laterolog Array Tool |
| SCHLUMBERGER | HRMS | High Resolution Measurement Sonde |
| SCHLUMBERGER | HSGT | Hostile Environment Gamma Ray |
| SCHLUMBERGER | HSLT | HPHT Digial Sonic Logging Tool (aka XSLT) |
| SCHLUMBERGER | IMPA | IMPulse Array Compensated Resistivity |
| SCHLUMBERGER | IPL | Integrated Porosity Lithology |
| SCHLUMBERGER | IRT | Induction Resistivity Tool |
| | | |

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| Company Name | Tool Code | Tool Description |
|--------------|-----------|--|
| SCHLUMBERGER | ISONIC | LWD Sonic |
| SCHLUMBERGER | LDS | Litho Density Sonde |
| SCHLUMBERGER | LDT | Litho Density |
| SCHLUMBERGER | LSS | Long Spaced Sonic |
| SCHLUMBERGER | MCFL | Micro-Cylindrically Focused Log |
| SCHLUMBERGER | MDLT | Medium Dual Laterolog |
| SCHLUMBERGER | MDT | Modular Formation Dynamics Tester |
| SCHLUMBERGER | MLT | Microlog |
| SCHLUMBERGER | MRPS | Modular Formation Dynamics Tester Single-Probe |
| SCHLUMBERGER | MRSC | Modular Formation Dynamics Tester Sample Chamber |
| SCHLUMBERGER | MRWD | Magnetic Resonanace While Drilling |
| SCHLUMBERGER | MSCT | Mechanical Sidewall Coring Tool |
| SCHLUMBERGER | MSIP | Modular Sonic Imaging Platform |
| SCHLUMBERGER | MWD | Measurement While Drilling |
| SCHLUMBERGER | NGS | Natural Gamma Ray Sonde |
| SCHLUMBERGER | NGT | Natural Gamma Ray Spectrometry |
| SCHLUMBERGER | NMT | Nuclear Magnetism |
| SCHLUMBERGER | NPLC | Nuclear Porosity Lithology |
| SCHLUMBERGER | NPLT | Nuclear Porosity Lithology |
| SCHLUMBERGER | OBDT | Oil Base Mud Dipmeter |
| SCHLUMBERGER | OBMI | Oil Base Micro Imager |
| SCHLUMBERGER | OBMT | Oil Base Mud Formation Imager |
| SCHLUMBERGER | PERI | Periscope |
| SCHLUMBERGER | PGT | Compensated Density |
| SCHLUMBERGER | PMIT | PS Platform Multifinger Imaging Tool |
| SCHLUMBERGER | PNT | Sidewall Neutron Tool |
| SCHLUMBERGER | QAIT | Slim Hostile Array Inducation Tool |
| SCHLUMBERGER | QCNT | Slim Hot Compensated Neutron Tool |
| | | |

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| SCHLUMBERGER QCS Slimhole Power Caliper Sonde SCHLUMBERGER QSCS Slimhole Power Caliper Sonde SCHLUMBERGER QSLT Slim Xtreme Sonic Logging Tool SCHLUMBERGER QGC SlimXtreme Telemetry and Gamma Ray SCHLUMBERGER RAB Resistivity at Bit;Azimuthal Laterolog - Gamma Ray (aka GVR) SCHLUMBERGER RFT Repeat Formation Tester SCHLUMBERGER RST Reservoir Saturation Tool SCHLUMBERGER SAIT Slimhole Array Induction SCHLUMBERGER SCHLUMBERGER SDT Sonic Digital SCHLUMBERGER SCHLUMBERGER SHARP Slim Hole Retrievable MWD Tool SCHLUMBERGER SHAPP Slimhole Litho-Density SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLDT Slimhole Compensated Sonic Logging Tool SCHLUMBERGER SLT Borehole Compensated Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER SMRT Slim Micro Resistivity Tool SCHLUMBERGER SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SP SP Spontaneous Potential SCHLUMBERGER SP SP Spontaneous Potential SCHLUMBERGER SCHLUMBERGER SP SP Spontaneous Potential SCHLUMBERGER SCHLUMBERGER SP SP SP Statender SCHLUMBERGER SP SP SP STANDER SCHLUMBERGER SP SP SP STANDER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER SCHLUMBERGER TELE Telescope SCHLUMBERGER SCHLUMBERGER TILD Three-Detector Lithology Density | Company Name | Tool Code | Tool Description |
|--|--------------|-----------|---|
| SCHLUMBERGER QSLT SIm Xtreme Sonic Logging Tool SCHLUMBERGER QTGC SlimXtreme Telemetry and Gamma Ray SCHLUMBERGER RAB Resistivity at Bit;Azimuthal Laterolog - Gamma Ray (aka GVR) SCHLUMBERGER RFT Repeat Formation Tester SCHLUMBERGER RST RESERVOIR Saturation Tool SCHLUMBERGER SAIT Slimhole Array Induction SCHLUMBERGER SCHLUMBERGER SOT Sonic Digital SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SHARP SIm Hole Retrievable MWD Tool SCHLUMBERGER SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Sorievole Compensated Sonic Logging Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SPE SPE Spentaneous Potential SCHLUMBERGER SCHLUMBERGER SPE SPE Extender SCHLUMBERGER SPE SPE Extender SCHLUMBERGER SPE SPE Extender SCHLUMBERGER SPILSE Slim Pulse MWD Directional Microspherically Focused Resistivity SCHLUMBERGER SCHLUMBERGER SPILSE Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Thermal Decay Time SCHLUMBERGER SCHLUMBERGER TDT Thermal Decay Time | SCHLUMBERGER | QLDT | Slim Xtreme Litho-Density Tool |
| SCHLUMBERGER SCHLUMBERGER RAB Resisitivity at Bit:Azimuthal Laterolog - Gamma Ray SCHLUMBERGER RFT Repeat Formation Tester SCHLUMBERGER SCHLUMBERGER SAIT Slimhole Array Induction SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SOT Sonic Digital SCHLUMBERGER SCHLUMBERGER SGT SCHLUMBERGER SGT SCHLUMBERGER SHARP Slim Hole Retrievable MWD Tool SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP SP Spontaneous Potential SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPLUSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPLUSE SIm Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPLUSE SIm Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER STETHO ST | SCHLUMBERGER | QSCS | Slimhole Power Caliper Sonde |
| SCHLUMBERGER RAB Resistivity at Bit;Azimuthal Laterolog - Gamma Ray (aka GVR) SCHLUMBERGER RFT Repeat Formation Tester RSCHLUMBERGER RST Reservoir Saturation Tool SCHLUMBERGER SAIT Slimhole Array Induction SCHLUMBERGER SDT Sonic Digital SCHLUMBERGER SGT Scintillation Gamma Ray SCHLUMBERGER SHARP Slim Hole Retrievable MWD Tool SCHLUMBERGER SHDT Stratigraphic High Resolution Dipmeter Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP SP Spontaneous Potential SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPLUSE SIm Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope | SCHLUMBERGER | QSLT | Slim Xtreme Sonic Logging Tool |
| SCHLUMBERGER SCHLUMBERGER RST Reservoir Saturation Tool SCHLUMBERGER SAIT Slimhole Array Induction SCHLUMBERGER SCHLUMBERGER SDT Sonic Digital SCHLUMBERGER SGT Scintillation Gamma Ray SCHLUMBERGER SHARP Slim Hole Retrievable MWD Tool SCHLUMBERGER SCHLUMBERGER SHDT Stratigraphic High Resolution Dipmeter Tool SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SCHLUMBERGER SP SP Spontaneous Potential SCHLUMBERGER SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPILSE Slim Pulse MWD Directional SCHLUMBERGER SPLUSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPILSE SIE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TDT Thermal Decay Time | SCHLUMBERGER | QTGC | SlimXtreme Telemetry and Gamma Ray |
| SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SDT Sonic Digital SCHLUMBERGER SCHLUMBERGER SGT Scintillation Gamma Ray SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SHARP Slim Hole Retrievable MWD Tool SCHLUMBERGER SCHLUMBERGER SHDT Stratigraphic High Resolution Dipmeter Tool SCHLUMBERGER SLIMT Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIMT Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SPLUSE SIm Pulse MWD Directional SCHLUMBERGER SPLUSE SIm Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPLUSE SIm Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPLUSE SIm Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TDT Thermal Decay Time | SCHLUMBERGER | RAB | Resisitivity at Bit;Azimuthal Laterolog - Gamma Ray (aka GVR) |
| SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SCHLUMBERGER SLT Borehole Compensated Sonic Logging Tool SCHLUMBERGER SMRT Slim Micro Resistivity Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP SP Spontaneous Potential SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SPULSE SIm Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPL SCHLUMBERGER SPL SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TDT Thermal Decay Time | SCHLUMBERGER | RFT | Repeat Formation Tester |
| SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPULSE SIIM Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER TDT Thermal Decay Time Telescope | SCHLUMBERGER | RST | Reservoir Saturation Tool |
| SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SPLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SPULSE SIm Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Steinschope SCHLUMBERGER SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER | SCHLUMBERGER | SAIT | Slimhole Array Induction |
| SCHLUMBERGER SHARP Slim Hole Retrievable MWD Tool SCHLUMBERGER SHDT Stratigraphic High Resolution Dipmeter Tool SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SPULSE SIm Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SDT | Sonic Digital |
| SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLT Borehole Compensated Sonic Logging Tool SCHLUMBERGER SMRT Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SCHLUMBERGER SONVIS SonicVISION SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SRT Microspherically Focused Resistivity SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time | SCHLUMBERGER | SGT | Scintillation Gamma Ray |
| SCHLUMBERGER SLDT Slimhole Litho-Density SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLT Borehole Compensated Sonic Logging Tool SCHLUMBERGER SMRT Slim Micro Resistivity Tool SCHLUMBERGER SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SRT Microspherically Focused Resistivity SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SHARP | Slim Hole Retrievable MWD Tool |
| SCHLUMBERGER SLIM1 Slim Hole Retrievable MWD Tool SCHLUMBERGER SLT Borehole Compensated Sonic Logging Tool SCHLUMBERGER SMRT Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SonicVISION SCHLUMBERGER SPE SP Extender SCHLUMBERGER SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPE SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SHDT | Stratigraphic High Resolution Dipmeter Tool |
| SCHLUMBERGER SCHLUMBERGER SMRT Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SRT Microspherically Focused Resistivity SCHLUMBERGER SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SLDT | Slimhole Litho-Density |
| SCHLUMBERGER SMRT Slim Micro Resistivity Tool SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SONICVISION SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SRT Microspherically Focused Resistivity SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER | SCHLUMBERGER | SLIM1 | Slim Hole Retrievable MWD Tool |
| SCHLUMBERGER SNPD Sidewall Neutron Tool SCHLUMBERGER SONVIS SonicVISION SCHLUMBERGER SP Spontaneous Potential SCHLUMBERGER SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SCHLUMBERGER SRT Microspherically Focused Resistivity SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SLT | Borehole Compensated Sonic Logging Tool |
| SCHLUMBERGERSONVISSonicVISIONSCHLUMBERGERSPSpontaneous PotentialSCHLUMBERGERSPESP ExtenderSCHLUMBERGERSPULSESlim Pulse MWD DirectionalSCHLUMBERGERSRTMicrospherically Focused ResistivitySCHLUMBERGERSSLTSlim Array Sonic Logging ToolSCHLUMBERGERSTETHOStethoscopeSCHLUMBERGERSVWDSeismic Vision While DrillingSCHLUMBERGERTDTThermal Decay TimeSCHLUMBERGERTELETelescope | SCHLUMBERGER | SMRT | Slim Micro Resistivity Tool |
| SCHLUMBERGERSPSpontaneous PotentialSCHLUMBERGERSPESP ExtenderSCHLUMBERGERSPULSESlim Pulse MWD DirectionalSCHLUMBERGERSRTMicrospherically Focused ResistivitySCHLUMBERGERSSLTSlim Array Sonic Logging ToolSCHLUMBERGERSTETHOStethoscopeSCHLUMBERGERSVWDSeismic Vision While DrillingSCHLUMBERGERTDTThermal Decay TimeSCHLUMBERGERTELETelescope | SCHLUMBERGER | SNPD | Sidewall Neutron Tool |
| SCHLUMBERGER SPE SPE SP Extender SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SRT Microspherically Focused Resistivity SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SONVIS | SonicVISION |
| SCHLUMBERGER SPULSE Slim Pulse MWD Directional SCHLUMBERGER SRT Microspherically Focused Resistivity SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SP | Spontaneous Potential |
| SCHLUMBERGERSRTMicrospherically Focused ResistivitySCHLUMBERGERSSLTSlim Array Sonic Logging ToolSCHLUMBERGERSTETHOStethoscopeSCHLUMBERGERSVWDSeismic Vision While DrillingSCHLUMBERGERTDTThermal Decay TimeSCHLUMBERGERTELETelescope | SCHLUMBERGER | SPE | SP Extender |
| SCHLUMBERGER SSLT Slim Array Sonic Logging Tool SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SPULSE | Slim Pulse MWD Directional |
| SCHLUMBERGER STETHO Stethoscope SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SRT | Microspherically Focused Resistivity |
| SCHLUMBERGER SVWD Seismic Vision While Drilling SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SSLT | Slim Array Sonic Logging Tool |
| SCHLUMBERGER TDT Thermal Decay Time SCHLUMBERGER TELE Telescope | SCHLUMBERGER | STETHO | Stethoscope |
| SCHLUMBERGER TELE Telescope | SCHLUMBERGER | SVWD | Seismic Vision While Drilling |
| · · | SCHLUMBERGER | TDT | Thermal Decay Time |
| SCHLUMBERGER TLD Three-Detector Lithology Density | SCHLUMBERGER | TELE | Telescope |
| | SCHLUMBERGER | TLD | Three-Detector Lithology Density |

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| Company Name | Tool Code | Tool Description |
|--------------|-----------|--|
| SCHLUMBERGER | UBI | Ultrasonic Borehole Imager |
| SCHLUMBERGER | USIT | Ultrasonic Imager Tool |
| SCHLUMBERGER | VIPER | VIPER Slimhole Coiled Tubing MWD Tool |
| SCHLUMBERGER | VISP | Vertical Incident Seismic Profile |
| SCHLUMBERGER | VSI | Borehole Seismic Acquisition Tool |
| SCHLUMBERGER | VSP | Vertical Seismic Profile |
| SCHLUMBERGER | WAVSP | Walk Away Vertical Seismic Profile |
| SCHLUMBERGER | XPT | Pressure Express |
| WEATHERFORD | AZD | Azimuthal Density |
| WEATHERFORD | BAP | Bore/Annular Pressure |
| WEATHERFORD | BCS | Borehole Compensated Sonic |
| WEATHERFORD | CAL | Caliper |
| WEATHERFORD | CALI | Generalized Caliper |
| WEATHERFORD | CDT | Compensated Density |
| WEATHERFORD | CNS | Compensated Neutron Service |
| WEATHERFORD | CNT | Compensated Neutron Tool |
| WEATHERFORD | DAR | Digital Acoustic Tool |
| WEATHERFORD | DIR | Directional Survey |
| WEATHERFORD | DLL | Dual Laterolog Log |
| WEATHERFORD | DTD | Tension Compression |
| WEATHERFORD | ESM | Environmental Severity Measurement |
| WEATHERFORD | FCAL | Single Axis Caliper |
| WEATHERFORD | FED | Four Electrode Dipmeter |
| WEATHERFORD | FRT | Flow Rate Tool |
| WEATHERFORD | GR | Gamma Ray |
| WEATHERFORD | GRN | Gamma Ray Neutron |
| WEATHERFORD | HAGR | High Temperature Azimuthal Gamma Ray |
| WEATHERFORD | HBC | High Resolution Borehole Compensated Sonic Log |
| | | |

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| Company Name | Tool Code | Tool Description |
|--------------|-----------|--|
| WEATHERFORD | НМІ | High Resolution Micro Imager |
| WEATHERFORD | IDS | Integrated Directional Sonde |
| WEATHERFORD | IEL | Induction Electrolog |
| WEATHERFORD | MAI | Compact Array Induction |
| WEATHERFORD | MAN | Multi Array Neutron |
| WEATHERFORD | MBN | Compact Borehole Navigation |
| WEATHERFORD | MCG | Compact Gamma |
| WEATHERFORD | MDA | Monopole Dipole Acoustic |
| WEATHERFORD | MDL_R | Compact Dual Laterolog Sonde |
| WEATHERFORD | MDN | Compact Dual Neutron |
| WEATHERFORD | MEL | Micro Electric Log |
| WEATHERFORD | MFE | High Resolution Shallow Focused Electric |
| WEATHERFORD | MFR | Multi Frequency Resistivity |
| WEATHERFORD | MFT | Compact Repeat Formation Pressure Tester |
| WEATHERFORD | MGS | Auxilary Gamma Sub |
| WEATHERFORD | MMR | Compact Microlaterolog |
| WEATHERFORD | MPD | Compact PhotoDensity |
| WEATHERFORD | MRT400 | Micro Resistivity Tool |
| WEATHERFORD | MRT-P | Micro Resistivity Tool |
| WEATHERFORD | MSFL | Micro-Spherically Focused Log |
| WEATHERFORD | MSS | Compact Sonic Sonde |
| WEATHERFORD | MTC | Compact Two Arm Caliper |
| WEATHERFORD | NMRT | Nuclear Magnetic Resonance Tool |
| WEATHERFORD | NTT | Single Detector Neutron |
| WEATHERFORD | RSCT | Rotary Sidewall Coring (HRSCT) |
| WEATHERFORD | SAGR | Spectral Azimuthal Gamma Ray |
| WEATHERFORD | SED | Six Arm Dipmeter Survey |
| WEATHERFORD | SFT | Sequential Formation Tester |
| | | |

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| Company Name | Tool Code | Tool Description |
|--------------|-----------|-------------------------------|
| WEATHERFORD | SGR | Spectral Gamma Ray |
| WEATHERFORD | SGS-C | Spectral Gamma Sonde |
| WEATHERFORD | SP | Spontaneous Potential |
| WEATHERFORD | SPED | Spectral Pe Density |
| WEATHERFORD | SST | Shock Wave Sonic Tool |
| WEATHERFORD | STI | Simultaneous Triple Induction |
| WEATHERFORD | SWC | Sidewall Coregun |
| WEATHERFORD | TEN | Tension |
| WEATHERFORD | TNP | Thermal Neutron Porosity |
| WEATHERFORD | UGR | Universal Gamma Ray |
| WEATHERFORD | VSP | Vertical Seismic Profile |
| | | |

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APPENDIX A.11

PUBLIC INFORMATION REGULATIONS

NOTE: These regulations have been modified to reflect the names and Item nos. on the new forms.

§ 250.196 Data and information to be made available to the public.

MMS will protect data and information you submit under this part, as described in this section. The tables in paragraphs (a) and (b) of this section describe what data and information will be made available to the public without the consent of the lessee and under what circumstances and in what time period.

(a) MMS will disclose data and information you submit on MMS forms according to the following table:

| Data and information that you submit on form | In the following items | Will be released | And |
|--|--|-----------------------------------|---|
| (1) MMS-123, Application for Permit to Drill (APD). | All entries except items 13 14, and 22. | At any time | The data and information in items 13, 14, and 22 will be released according to the table in paragraph (b) of this section or when the well goes on production, whichever is earlier. |
| (2) MMS-124, Application for Permit to Modify (APM). | All entries except item 22 | At any time | The data and information in item 22 will be released according to the table in paragraph (b) or when the well goes on production, whichever is earlier. |
| (3) MMS-125, End of Operations Report (EOR). | All entries except items 12, 13, 17, 18, 24 through 29, 33 through 38. | At any time | The data and information in the excepted items will be released according to the table in paragraph (b) of this section or when the well goes on production, whichever is earlier. However, items 33 throug 38 will not be released when the well goes on production unless the period of time in the table in paragraph (b) has expired. |
| (4) MMS-126, Well Potential Test Report. | All entries except item 101. | When the well goes on production. | The data and information in item 101 will be released 2 years after you submit it. |
| (5) MMS-127, Request for Reservoir Maximum Efficient Rate (MER). | All entries except items 124 through 168. | At any time | The data and information in items 124 through 168 will be released according to the time periods in the table in paragraph (b) of this section. |
| (6) MMS-128, Semiannual Well Test Report. | All entries | At any time | |

(b) MMS will disclose lease data and information that you submit, but that are not usually submitted on MMS forms, according to the following table:

| If | MMS will release | At this time | Special provision |
|---|---|--|---|
| (1) The Director determines that data and information are needed to unitize operations on two or more leases, to determine whether a reservoir is competitive to ensure proper plans of development for competitive reservoirs, or to promote operational safety or protect the environment | Geophysical data, Geological data, Interpreted (G&G) information, Processed G&G information, Analyzed geological information. | At any time | Data and information will be shown only to persons with an interest in the issue. |
| (2) The Director determines that data and information are needed for specific scientific or research purposes for the Government. | Geophysical data, Geological data, Interpreted (G&G) information, Processed G&G information, Analyzed geological information. | At any time | MMS will release data and information only if release would further the national interest without unduly damaging the competitive position of the lessee. |
| (3) Data or information is collected with high-resolution systems (e.g., bathymetry, side-scan sonar, subbottom profiler, and magne-tometer) to comply with safety or environmental protection requirements. | Geophysical data, Geological data, Interpreted (G&G) information, Processed G&G information, Analyzed geological information | 60 days after MMS receives the data or information, if the Regional Supervisor deems it necessary. | MMS will release data and information earlier than 60 days if the Regional Supervisor determines it is needed by affected States to make decisions under subpart B. The Regional Supervisor will reconsider earlier release if you satisfy him/her that it would unduly damage your competitive position. |
| (4) Your lease is no longer in effect. | Geophysical data, Geological data, Processed G&G information, Analyzed geological information | When your lease terminates. | This release time applies only if the provisions in this table governing high-resolution systems and the provisions in § 252.7 do not apply. The release time applies to the geophysical data and information only if acquired postlease for a lessee's exclusive use. |
| (5) Your lease is till in effect | Geophysical data, Processed geophysical information, Interpreted G&G information. | 10 years after you submit the data and information. | This release time applies only if the provisions in this table governing high-resolution systems and the provisions in § 252.7 do not apply. The release time applies to the geophysical data and information only if acquired postlease for a lessee's exclusive |

| | | use. |
|---|---|---|
| | | |
| Geological data, Analyzed geological information. | 2 years after the required submittal date or 60 days after a lease sale if any portion of an offered lease is within 50 miles of a well whichever is later. | These release times apply only if the provisions in this table governing high-resolution systems and the provisions in § 252.7 do not apply. If the primary term specified in the lease is extended under the heading of "Suspensions" in this subpart, the extension applies to this provision. |
| Geological data, Analzyed geological information. | 2 years after the required submittal date. | None. |
| Directional survey data. | If the lessee from whose lease the directional survey was taken consents. | None. |
| Any data or information obtained. | At any time. | None. |
| Geophysical data Processed geophysical information, Interpreted geophysical information | Geophysical data: 50 years, Geophysical information: 25 years after you submit it. | None. |
| | Geological data, Analzyed geological information. Directional survey data. Any data or information obtained. Geophysical data Processed geophysical information, Interpreted geophysical | geological information. geological information. required submittal date or 60 days after a lease sale if any portion of an offered lease is within 50 miles of a well whichever is later. Geological data, Analzyed geological information. Directional survey data. Directional survey data. If the lessee from whose lease the directional survey was taken consents. Any data or information obtained. Geophysical data Processed geophysical information, Interpreted geophysical information: 25 years after you |

APPENDIX A.12

CONTACT INFORMATION

MMS Regional and District Offices for the Outer Continental Shelf (OCS)

ALASKA OCS REGION

Minerals Management Service Regional Director, Alaska OCS Region 949 East 36th Avenue, Room 308 Anchorage, AK 99508-4363 (907) 271-6010

GULF OF MEXICO OCS REGION

Minerals Management Service Regional Director, Gulf of Mexico OCS Region 1201 Elmwood Park Boulevard New Orleans, LA 70123-2394 (504) 736-2589

GULF OF MEXICO DISTRICT OFFICES

New Orleans District 990 N. Corporate Dr., Suite 100 New Orleans, LA 70123-3392 (504) 736-2505

Lake Charles District 620 Esplanade Street, Suite 104 Lake Charles, LA 70605-2984 (337) 437-7216

Lake Jackson District 102 Oak Park Drive, Suite 200 Clute, TX 77531 (409) 265-7147 Houma District 325 Country Drive P.O. Box 760 Bourg, LA 70343 (504) 868-4033

Lafayette District 201 Energy Pkwy., Suite 410 Lafayette, LA 70508 (337) 262-6632

Corpus Christi Subdistrict Campus Box 418, CCSU 6300 Ocean Drive Corpus Christi, TX 78412 (512) 888-3241

PACIFIC OCS REGION

Minerals Management Service Regional Director, Pacific OCS Region Attention: Regional Supervisor, Office of Field Operations (MS 7200) 770 Paseo Camarillo Camarillo, CA 93010-6064 (805) 389-7502

PACIFIC OCS DISTRICT OFFICES

Camarillo District Office 770 Paseo Camarillo Camarillo, CA 93010-6064 (805) 389-7775 Santa Maria District Office 222 West Carmen Lane Santa Maria, CA 93454 (805) 922-7958

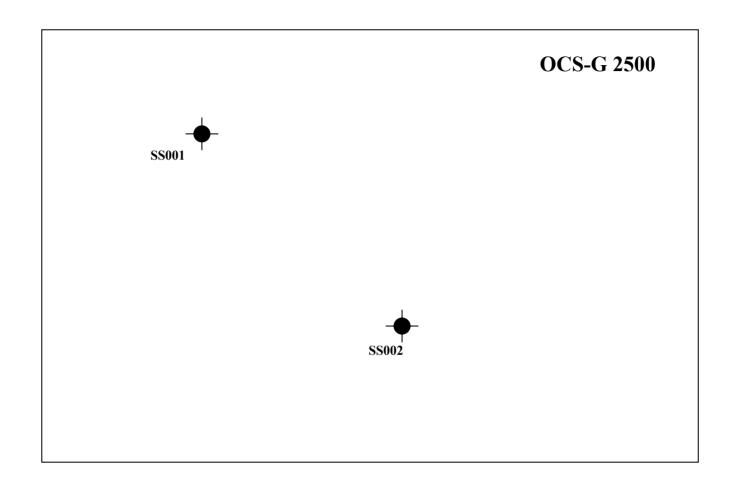


Figure 1 - Naming of Single Subsea Wells

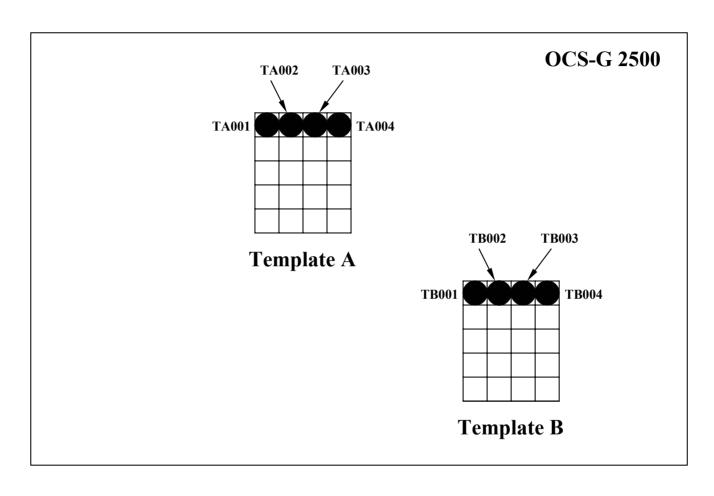


Figure 2 - Naming of Subsea Wells From Template(s)

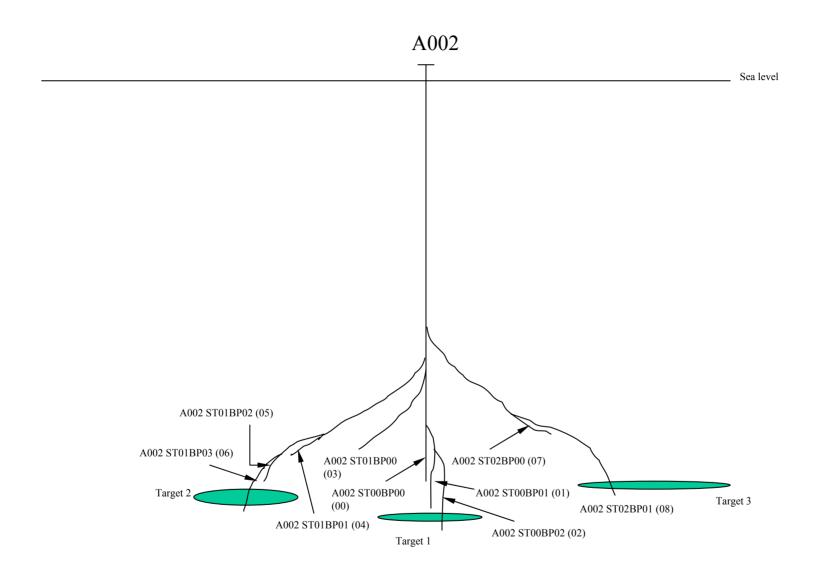


Figure 3 - Well Name/Number Suffix

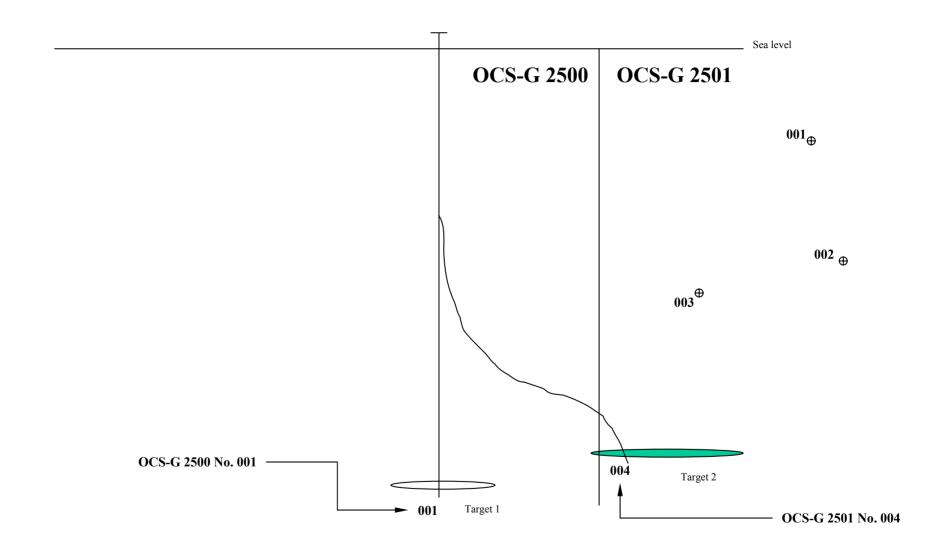


Figure 4 - Wellbore Crossing Lease Line Requiring Name/Number Change

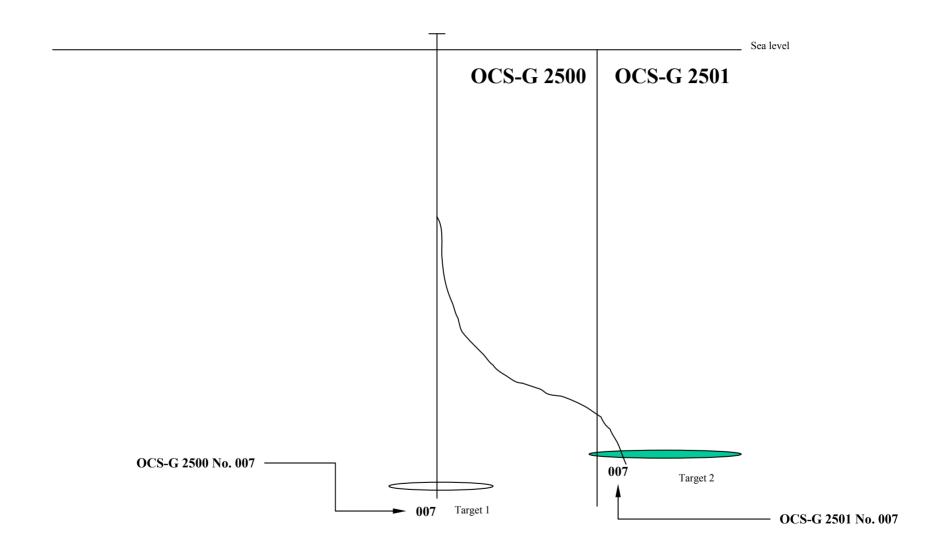


Figure 5 - Wellbore Crossing Lease Line Not Requiring Name/Number Change

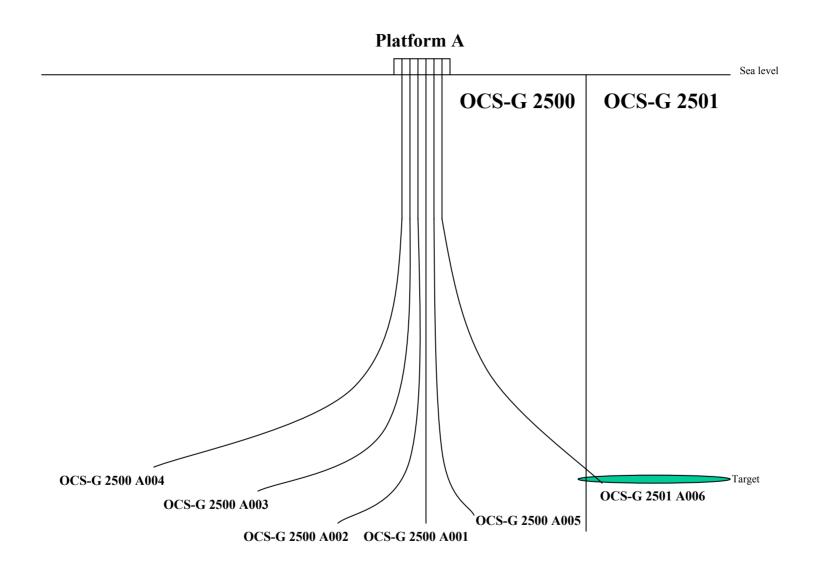


Figure 6 - Wellbore Crossing Lease Line Not Requiring Name/Number Change

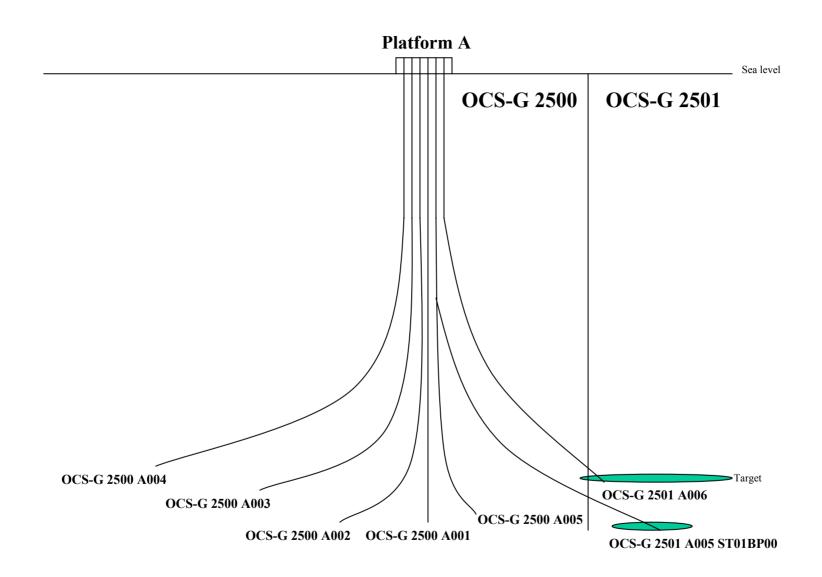


Figure 7 - Wellbore(s) Crossing Lease Line Not Requiring Name/Number Change Well Name/Number Suffix Referenced from Original Hole

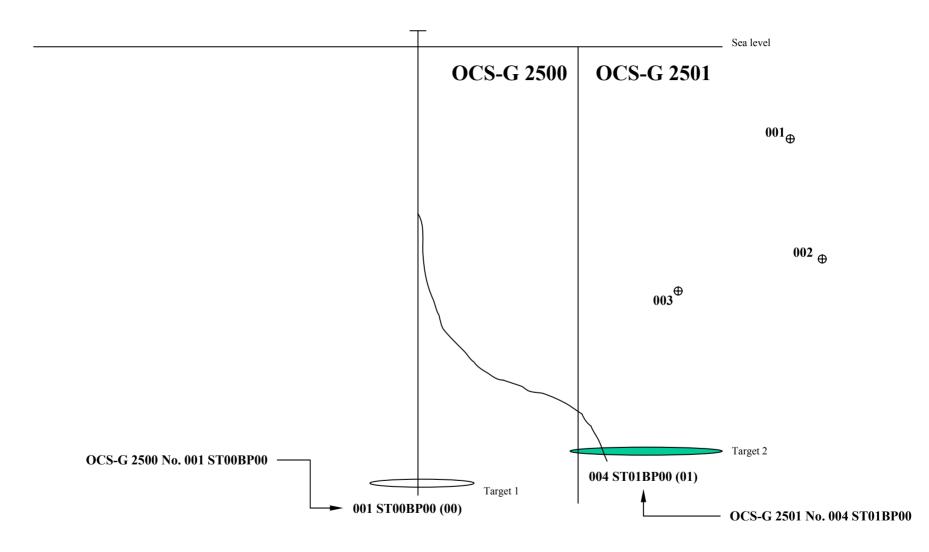


Figure 8 - Wellbore Crossing Lease Line Requiring Name/Number Change Well Name/Number Suffix Referenced to Original Wellbore, Not to Current Well Name/Number

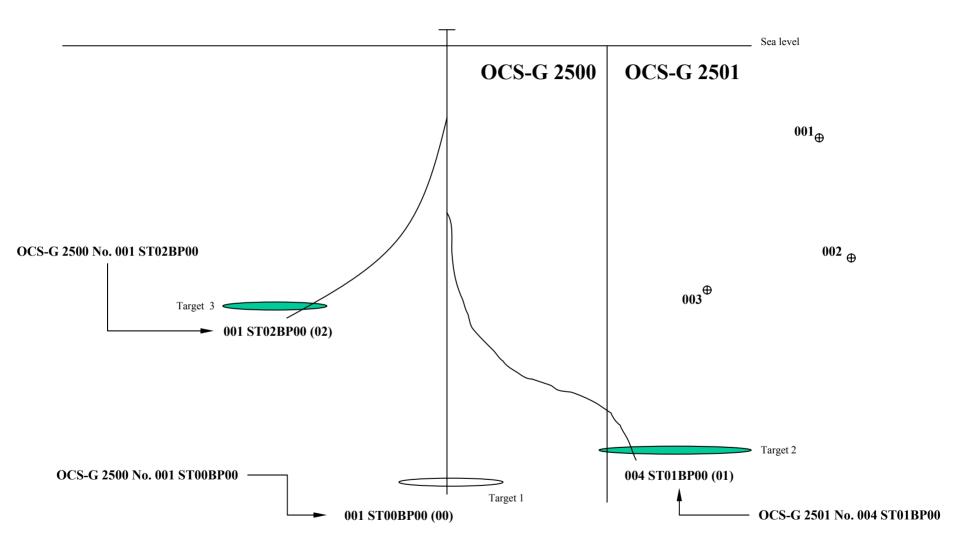


Figure 9 - Wellbore Crossing Lease Line Requiring Name/Number Change Well Name/Number Suffix Referenced to Original Wellbore, Not to Current Well Name/Number

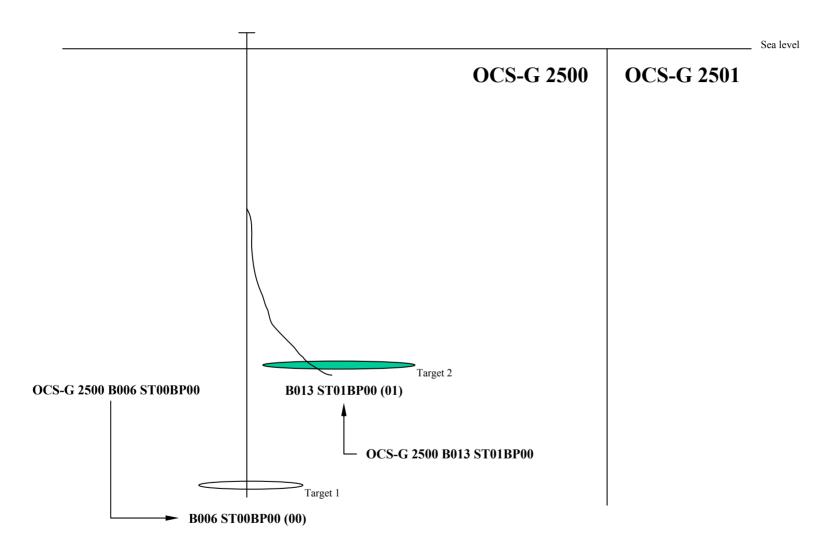


Figure 10 - Historic Wellbore Which Had Name/Number Change Well Name/Number Suffix Referenced to Original Wellbore, Not to Current Well Name/Number