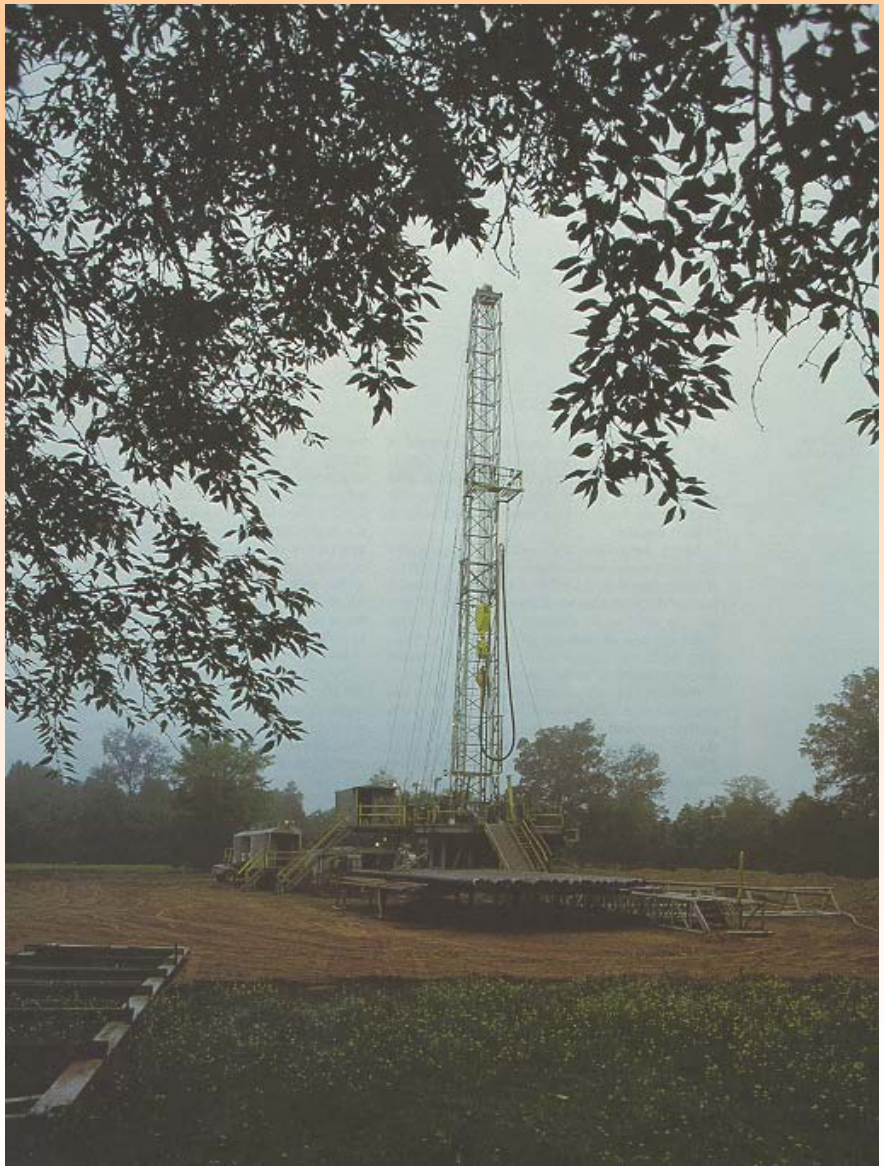
Lease Operations

Welcome to the module titled *Lease Operations*. In a previous class this section was called BLM at Work. We changed the title because we covered the basics of processing post lease actions or applications, namely Applications for Permit to Drill and Sundry Notices. My objective is to give you some basic understanding of "Lease Operations", the processes and who does what and why. At any time, please feel free to contact me (Steve Salzman) if you do not understand something or just have basic questions.

You probably already know or have learned in a prior lesson what authority gives the BLM the jurisdiction to regulate lessees and operators of Federal oil and gas leases. And that is the regulations at 43 CFR 3160. This set of regulations governs most aspects of the conduct of operations on Federal oil and gas leases and provide for protection of the environment, conservation of resources, public health and safety and production accountability.

I will begin be reiterating what you have already learned in "Planning and NEPA", Module 1, and that is that until a Federal oil and gas lease, a legal and binding contract, is issued by the BLM, the decision to lease is discretionary. Once the lease is issued and in effect, the BLM cannot then tell the lessee or operator that they may not develop their lease. Generally speaking, that would be a "takings" issue. We can only tell them where, when and how an oil or gas well can be drilled, for the most part.



We will first focus on how a Federal oil an gas Lessee or Operator obtains permission to drill the oil or gas well on his or her leasehold. There are two ways to begin the process, via the Notice of Staking (NOS) option, followed by submission of an Application for Permit to Drill (APD), or directly to the APD process. The preferred option is for an operator to submit a NOS simply telling the BLM where he or she has surveyed and staked the drilling location for the well, the access road and ancillary facilities. The operator does not need prior permission to enter upon a Federal leasehold for surveying and staking the location but does on split estate situations (private surface/Federal minerals), on Indian leases or on Military reservations.

The reason the NOS option is preferred is that the BLM, and other involved surface management agencies (SMA's), have the opportunity to conduct an on-site inspection before the APD package is submitted. If the well's staked location needs to be moved or reoriented, then the necessary re-surveying and re-staking can be performed before all the necessary paperwork is submitted. However, this would necessitate changing a lot of documents. Some of the reasons for moving a staked location are to avoid steeply sloping locations, cut and fill mitigation, cultural resource avoidance or for safety considerations such as drilling in known hydrogen sulfide areas. It is best for the BLM, the SMA or surface owner, and the operator to know these factors prior to submission of an actual APD.

Who participates at the on-site inspection? Generally it is the Resource Protection Specialist or Natural Resource Specialist, the Archaeologist (either BLM or contract), perhaps the BLM Geologist or Petroleum Engineer and the SMA, if other than BLM, the operator's representative and any other appropriate party. That way, when the on-site inspection is conducted, most impacts to the surface and surface resources can be identified and, hopefully, mitigated prior to submitting the APD for review and approval.

Notice of Staking (NOS)

- Optional
- Surveying and Staking
- prior approval not needed for Fed
- prior approval needed for Indian or Military
- Notice submitted
- Onsite inspection
- Still must file APD

So, let us assume for the moment that the on-site inspection went well, any slight modifications were noted and impacts to cultural resources were avoided, and now the operator submits the actual APD incorporating the recommended modifications and all it's accompanying attachments. The APD is divided into two main parts; the surface use plan, or 13-point plan as it is customarily called, and the drilling plan, or 8-point plan. There are usually other documents accompanying the surface use plan, such as the cultural clearance and the surface owner agreement certification to name a couple, and there may be additional attachments to the drilling plan, such as a Hydrogen Sulfide Drilling Plan (H2S Plan), required when drilling into zones known to contain H2S of 100 parts per million (ppm), or more, in the gas stream.

To begin with, the BLM is reviewing the document to determine if the surface use plan and the drilling plan are in compliance with Federal regulations. The standards which apply are found in Onshore Oil and Gas Order No. 1: Approval of Operations on Federal and Indian Oil and Gas Leases, Onshore Oil and Gas Order No. 2: Federal and Indian Oil and Gas Leases; Drilling Operations, and Onshore Oil and Gas Order No. 6: Federal and Indian Oil and Gas Leases; Hydrogen Sulfide Operations.

Who Ya' Gonna' Call?

Who looks at this document and what are they looking for? The BLM staff who reviews the document are usually a Land Law Examiner, a Petroleum Engineer, a Petroleum Geologist, perhaps a Mining Engineer, certainly an Archaeologist, a Surface Protection Specialist, a Wildlife Biologist, a Realty Specialist and perhaps other BLM professional staff, as warranted.

These People Can Help You!

Who Touches an APD?

- Legal Instruments Examiner
- Petroleum Engineer
- Geologist
- Surface Protection Specialist
- Archeologist
- Wildlife Biologist
- Realty Specialist
- Mining Engineer

Normally, the BLM requires the operator to submit three copies of the APD. The mail room is generally the first stop where the APD's are logged in and date stamped when received. The original is usually given to the Land Law Examiner and the other two are distributed to other specialists to begin the review process. The Land Law Examiner will:

1) "Post" the APD for the mandatory 30 day public inspection period (not necessary for wells to be drilled on Indian Trust lands),
2) check for basic completeness (check for necessary attachments, not necessarily for content), if not, will issue a "Seven Day Letter",
3) conduct an administrative review to determine the lease status (effective date, ownership, etc.) and
4) determine if the operator is bonded.

Oil and gas bonds are considered a performance or "good faith" bond and are not meant to cover all of the potential liabilities like the bonding requirements of 43 CFR 3809. Oil and gas bonds are (currently) $10,000 for an individual lease, which covers multiple wells and operations on a single lease, $25,000 for a Statewide bond , which covers operations in a single BLM state, or $150,000 for a Nationwide bond, which covers operations on all BLM administered subsurface mineral estate. These bond amounts are currently under consideration for increasing the basic amounts as one of the National Energy Plan tasks.

Legal Instrument Examiner

- Post or log APD
- Completeness of application
- Administrative review
- 7-day letter
- Update AFMSS and Case Recordation

Administrative Review

- Lease status
- Lease ownership
- Well location and spacing
- Bonding
- Operator certification

Bonds

- Individual - $10,000
- Statewide - $25,000
- Nationwide - $150,000

The land Law Examiner will check to see if the operator has included the "operator certification" statement and check the well location, the registered surveyors plat and review the well spacing for conformance to approved spacing orders. Usually at this point it will also be determined if the proposed well will be completed on a lease basis, will require a Communitization Agreement (CA), or is part of a Unit Agreement (you will learn more about this in Module 2, Reservoir Management). Also, it will be noted if this is could the first productive well on the lease and, if so, a first production memo will need to be sent to the MMS if and when the well is completed for production. Also, at this time, the proposed new well information will be entered into LR 2000 Case Recordation and AFMSS. Normally, the BLM requires the operator to submit three copies of the APD, and the other two are distributed to the other specialists when received and logged or stamped in.

Surface Protection Specialists

- Land use plan
- NEPA compliance
- Inspections
- Rights-of-way

The statutes and regulations do not offer guidance on how BLM will authorize operations. There is no regulatory cookbook or required list of things to look for in justifying approval for a well permit. Remember from the end of the lesson on Planning for Oil and Gas that we look to regulation in 43 CFR 3161.2 to see what BLM is directed to do. As to environmental protection, the regulation merely states that BLM must determine the proposed operation is sound from an environmental standpoint.

Oil & Gas Operations: Environmental Protection

43 Part 3161.2:

The authorized officer is directed to …. determine that the proposed plan of operations is sound both from a technical and environmental standpoint.

Therefore, our objective is to find out how we make the determination as to whether a proposed oil and gas operation is environmentally sound. Environmental protection laws in the 1960's and early 1970's , including NEPA, compelled Federal agencies to consider the "environmental soundness" of their actions. Approval of lease operations was no different. Departmental directives in October 1971 required Interior agencies to determine environmental soundness by performing impact assessments in compliance with NEPA. In May of 1972, the USGS Conservation Division determined that the best way to facilitate this assessment was to require a surface use plan as part of a permit to drill (APD). Working with BLM counterparts, USGS officials developed data requirements for surface use plans, and published them in a Notice to Lessees and Operators, which became effective as NTL-6, *Approval of Operations*, on June 1, 1976.

Objective:

Managers will know how to determine whether a proposed oil & gas operation is environmentally sound

Thus the foundation for determinations as to environmental soundness began with NTL-6.

The NTL-6 was revised once and renamed Onshore Oil and Gas Order No. 1 in November of 1983. Order No.1 tells applicants how to submit their well permits and how to prepare drilling plans, including the surface use plan. It also serves as a guidance document for BLM in reviewing the applications. If you do not have a copy, the complete text of Onshore Order 1 can be found online.

In addition to instructions for preparing surface use plans, these are salient provisions of Order No.1:

- requires well sites to be located by survey,

- allows a Notice of Staking to jump start the process prior to filing a formal APD,

- onsite pre-drill inspections would occur within 15 days of filing the NOS or APD,

- the authorized officer may waive the requirement for an archaeological survey,

- BLM will consider the concerns of other surface managing agencies,

- BLM will base its impact assessment on the content of the drilling plan,

More salient provisions of Order No.1:

- the surface managing agency is responsible for identifying species concerns,
- BLM must lead the NEPA process and the development of mitigation measures,
- surface owner agreements are preferred, but not mandatory,
- the environmental review process will apply to other surface disturbing proposals, and
- the authorized officer may require information not specified in Order No.1

Oil & Gas Order No. 1
highlights

- Minimum survey requirements
- Pre-APD Notice of Staking
- Onsite inspection within 15 days
- Archeological survey discretionary
- Other SMA's may identify concerns
- Impacts based on drilling plan

Oil & Gas Order No. 1
highlights

- SMA identifies T&E concerns
- BLM leads NEPA & COA development
- Surface owner agreement optional
- Environmental review for other operations
- AO may require more in SUP's

The 13 points required in a surface use plan (SUP) can be divided into three simple categories of information. The first of these is maps. The Order requires that a map or maps be provided to BLM showing existing surface features and the location of proposed well facilities. Specifically, the maps must show existing and proposed facilities, well locations in the area, and the location of water sources. The SUP is adequate if the map is sufficient so that the EPS can find proposed sites in the field. Also, these maps should be in enough detail and scale that your interdisciplinary team can judge whether the proposed drilling action has any potential to affect environmentally sensitive areas and other natural resources due to their proximity.

Surface Use Plan

map(s) showing:

1) Existing roads
2) Roads to be constructed
3) Location of existing wells
4) Location of proposed facilities
5) Location and type of water supply
6) Any ancillary facilities

The second category of information is in the form of lists of information. These lists provide the basic information on what the applicant intends to do, and how they will do it. Reviewed together with the drilling program (see lesson on Engineering operations), these points in the SUP will allow the EPS to evaluate the magnitude of surface disturbance, and begin assessing the impacts of the proposed action. Specifically, the Order requires lists of intended construction materials, methods for handling waste (including produced water if known), intended reclamation procedures, and information on surface ownership.

Surface Use Plan
list:

7) Construction material used
8) Methods for handling waste
9) Plans for reclamation
10) Type of surface ownership

The last category is “miscellaneous” information. The Order requires a diagram of the proposed well site layout. This plat, and its orientation with respect to the location the ground, is useful for determining safety aspects, and other small scale impact issues. The plat must show any intended surface cuts and fills, which is very important in the assessment of surface disturbance. The Order provides that any other information, deemed useful by the BLM Authorized Officer, must be included in the SUP as well. The Order requires the applicant to sign the SUP certifying that the information is true and correct.

Surface Use Plan

11) Plat showing well site layout

12) Other information

13) Operator's signed certification

Order No 1. requires that there be a field inspection as part of the review of an APD. The Order specifies the participants in the field inspection. At a minimum, these are, a representative from:

1) BLM (usually the EPS),
2) the applicant,
3) the applicants construction contractor (if known), and
4) a representative of any other surface managing organization (if other than BLM).

Having these parties together during the EPS's field inspection is very important. The inspection becomes a meeting between the parties to explain and clarify the proposed action. If the inspection is conducted prior to filing the APD, then the applicant is more likely to submit a complete surface use plan without the need for subsequent amendments of one sort or another. Also, a field meeting works to assure that the location is built as intended in the SUP, and as intended by the parties to the APD. A suggested checklist for the onsite pre-drill inspection is included with this lesson. Course participants are expected to go over this checklist in the field with a knowledgeable EPS to gain an understanding of what the EPS must learn and do during the field inspection. Please review the file in Module 3, Field Trip called "field trip_checklist", print and take a copy with you on your trip to the oil patch.

Field Review
(Onsite or Pre-drill Inspection)

- BLM, operator, other SMA, dirt contractor
- Exception for infill wells
- Demonstrated on field tour

Now that the EPS has accumulated all this information on the proposed well operation, just how will he or she use it to protect the environment? First, the EPS must determine whether the surface use plan needs to be supplemented with additional impact mitigation measures. We call these measures conditions of approval (COA) to distinguish them from mitigation measures (stipulations) attached to lease instruments (see lesson on Planning for Oil and Gas). There is a process ready made to develop and justify additional COA's. This process is called the NEPA compliance process. Remember from the beginning of this lesson, that the surface use plan concept arose from the need to comply with the then new NEPA back in the early 1970's.

The NEPA process provides a written documentation of the environmental review, and the development of additional mitigation. Within BLM this process begins with a Plan conformance review to make sure the proposed action conforms to the current RMP for the area. Based on the Plan conformance review, the EPS may decide to document NEPA compliance with a determination of NEPA adequacy (DNA), an EA, or an EIS. Which document is appropriate is the subject of other training and the BLM NEPA Handbook (H-1790-1). Generally, an EIS would not be needed unless the action did not conform to the RMP, <u>and</u> the impacts were going to be highly controversial. An EA would not be needed unless additional mitigation needs to be justified and/or the action did not conform to the Plan. In the latter case, the proposed EA must undergo public scoping. And, lastly, if the surface use plan is just right, and the action conforms to the Plan, a DNA is all that should be required.

Environmental Review

- Plan conformance
- NEPA compliance
- D N A
- EA
- EIS

If the surface use plan needs to be supplemented with other appropriate impact mitigation requirements, the EPS should assure these requirements are attached to all copies of the APD before it is returned to the applicant. The COA's must be reasonable. This means they must be technically possible to accomplish, <u>and they must allow the exercise of lease rights</u>. If a COA prevents an applicant from proceeding with development for either economic or the above mentioned technical reasons, then it is not a COA. Remember the "A" stands for approval. There is no such thing as a condition of denial. This does not mean that the EPS should dismiss appropriate mitigation. It does mean that, if required mitigation renders development impossible, then consideration must be given to denying the action.

Be advised that permit denial has other ramifications beyond the scope of this training. If a Manager believes there is a need to deny lease rights, they should consult with the Field Solicitor's Office prior to issuing a decision. All COA's must be the least restrictive to accomplish the task If an applicant proposes other (cheaper ?) mitigation, the EPS must assess whether the applicant's proposal will accomplish the intended mitigation. Lastly, COA's must be plainly worded. Included with this lesson is a file called "COA_ex". At the end of this lesson, launch this file and proceed with the exercise.

Conditions of Approval

- Reasonable
- Justified by RMP or NEPA analysis
- Plainly worded
- Accomplish the objective
- Allow exercise of lease rights

Right-of-Way (ROW)

- Roads
- Oilfield facilities

The Geologist will review the APD to determine if the formation tops, geologic marker beds, and sources and depths of fresh or useable water are identified . He or she will also determine if potential oil, gas and other mineral bearing zones are identified, check for potential subsurface hazards such as abnormally pressured zones or those that may contain hydrogen sulfide, identify potential lost circulation zones, pick surface casing set points and determine the cement tops. He or she may also provide input regarding formations to be tested or logged for other minerals identification. This information that the operator has supplied is found in the drilling, or 8-point plan as it is sometimes called, part of the APD. There is usually a brief Geologic Review Report that is made part of the BLM file copy (original) APD. The geologic review of this specific APD is also documented in AFMSS.

Geologist

- Geologic Markers and Formation Tops
- Fresh water sources & depths
- Oil, Gas, and Mineral bearing zones
- Potential Hazards

Geologist, cont.

- Abnormal Pressure, H2S
- Casing Set Points
- Cement Tops
- Update AFMSS

The Petroleum Engineer will review the drilling, or 8-point plan, as it is sometimes called, to ensure the operator is in compliance the Bureau's national standards when conducting drilling operations on Federal or Indian lands. As I mentioned before, these standards for minimum levels of performance expected, are found in Order No.2, Drilling Operations and, if applicable, Order No. 6, Hydrogen Sulfide Operations.

A review of the casing and cementing program that the operator has indicated for the well will be conducted. The engineer checks to see if the proposed casing has sufficient strength, after applying accepted safety factors, to withstand the collapse, burst and tensional loads it will be subjected to. He or she will also determine if the proposed cementing program provides for the proper types and quantities to support the casing, protect useable subsurface water and prevent hydrocarbon and fluid migration between zones.

Petroleum Engineer

- Casing and Cement program
- Drilling Fluids program
- Pressure control system
- Testing, Coring, and Logging
- Update AFMSS

The Petroleum Engineer will review the drilling fluid program, commonly called the mud program, to determine whether the mud system is water based or oil based . If an oil based mud system is specified, proper disposal methods must also be identified. The mud weight, viscosity, ph and water loss properties are reviewed for each casing and cementing phase for the ability to control the subsurface pressures expected to be encountered. There is also a requirement for a mud monitoring system to be employed to signal when the active mud volume has increased or decreased. One may indicate a well "kick" and the other may signal lost circulation.

If air is the circulating medium to be employed there are additional requirements that come into play. Compressor size, direction and distance from the well bore, use of flame arresters, blooie line and distance to the sand/flare pit are all reviewed for compliance with minimum standards.

Mud Program

- Type of circulating medium:
- Water based
- Oil based
- Air
- Characteristics:
- Weight
- Water Loss
- Sufficient Quantity on Hand or Backup
- Monitoring Equipment

In concert with the mud program, the pressure control system, or blow out prevention equipment (BOPE), is reviewed to ensure it is sized appropriately to control the anticipated surface pressure it may be subjected to. The BOPE must be of the proper pressure rating to contain subsurface pressures and provide for complete closure of the well bore. Blowout preventers and associated systems are rated in thousands of pounds of working pressure; 2M, 3M, 5M, 10M and 15M, and the requirements for each escalate. For example, on systems rated for 3M and above, an annular preventer is required as well as pipe and blind rams. The requirement for remote control chokes instead of manual chokes, as well as the number of chokes, changes as the pressure rating for the system increases.

Pressure Control

- Blowout Prevention Equipment (BOPE)
- Pipe and Blind Rams
- Annular Preventer
- Upper Kelly Cock
- Stabbing Valve
- Chokes; Manual/Remote

- Sizes:
- 2M, 3M, 5M, 10M, 15M

What is this pressure control equipment, or BOPE, all about? Maybe a brief discussion about hydrostatic pressure and subsurface pressure is warranted. You will want to think back to the discussion on formation pressures in the Geology 101 module. So....let's assume for a moment that we have column of water 10,000 feet high. How much downward force does that column have at the bottom? Fresh water weighs about 8.33 pounds per gallon (ppg) or, if you convert it, about .434 psi per foot of depth. So our 10,000 ft. high column of water exerts a downward force of 10,000 ft. X .434 psi/ft. = 4,340 psi. If we were using fresh water as our drilling fluid, we could contain a bottom hole pressure of 4,340 psi at 10,000 ft. true vertical depth.

What would happen if, while drilling, we broke into a high pressure gas zone that we did not expect? If the weight of the drilling fluid, or the downward force it exerts, is not enough to counter the upward force of the gas pressure, the drilling fluid will start to move up the well bore and be displaced at the surface, and as it does, the hydrostatic pressure at the bottom of the well is reduced even further, allowing more gas to enter the well bore. This scenario is called a gas "kick" and if not controlled, could lead to what is called a blowout. That is what all the BOPE is for. It serves to control the well bore pressure at the surface and to contain it. The preventers are designed to close off the well bore at the surface and the choke system allows for bleeding off the high pressure slowly so "weighted' drilling fluid can be placed at the bottom of the hole. When enough of the heavier drilling fluid is circulated down the well bore, the pressures are equalized, the well bore becomes static and the "kick" is controlled.

A look at the next slide will show what could happen if the formation pressure is more than the drilling fluid hydrostatic pressure and the BOPE could not contain the formation fluids!

When all of the BLM staff specialists have reviewed the APD and determined that the surface use plan and the drilling plan are in compliance with BLM regulations, and all other impacts to the are addressed, the APD is ready for approval, providing that the mandatory 30 day posting period has elapsed. This is usually the case. There are instances that the APD is ready for approval prior to the expiration of the 30 day posting period, but the APD cannot be approved until the 30 days have elapsed (except in the case of Trust APD's). At that point, any conditions of approval (which were discussed earlier), as appropriate, are attached to the APD, the APD is signed and dated, and returned approved to the applicant. No surface disturbing activities, such as location building, may take place prior to the approval of the APD and a copy of the APD must be on location at all times during construction and drilling operations. It is OK to fax a copy of the approved APD to the operator in those cases where they want to start construction of the access road and drilling pad prior to actual receipt of the signed copy of the APD.

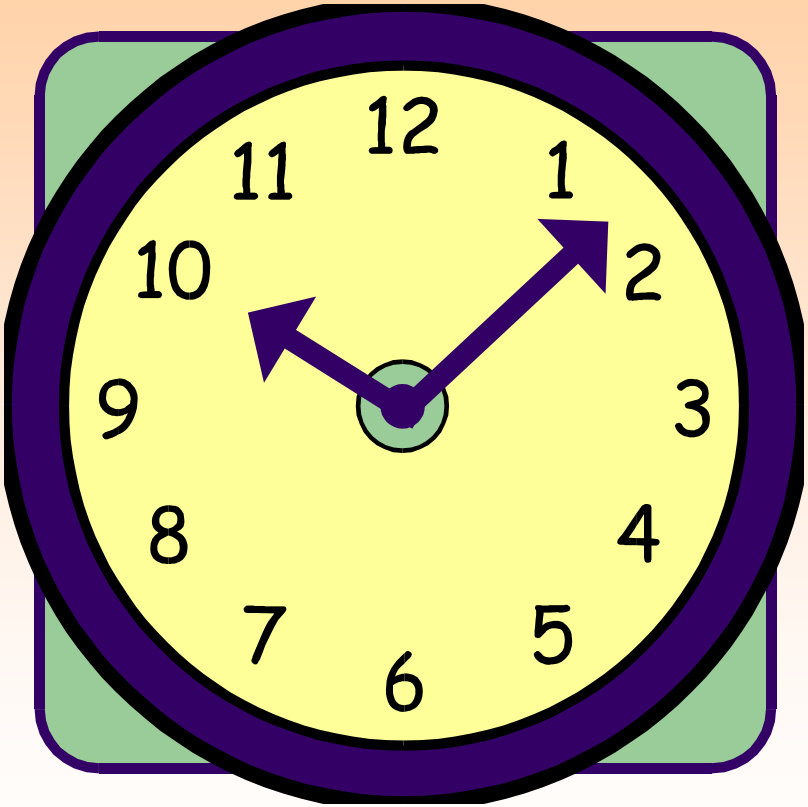
The approved APD is valid for one year, with a one time extension of up to a one year, if so requested. This policy is generally accepted by the majority of the BLM offices. However, it is not regulation.

Conditions of Approval

- Changes to APD
- Clarification of local requirements
- Attached by resource specialists

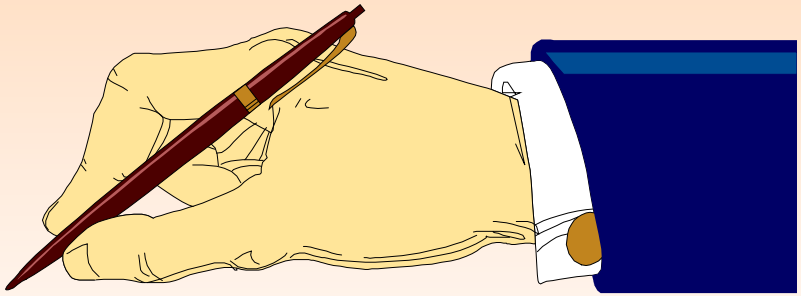
Timing

- 30 days minimum
- 45 days average



Approved APD

- May start work immediately
- Good for one year
- May be renewed



Delays

- Lose available rig
- Lose lease

When the operator starts the actual drilling of the well, within 24 hours, they must notify the BLM jurisdictional office. This is called the "Spud Notice". Usually, this is called in to the office or, on a weekend or holiday, to a BLM representative or answering service listed in information attached to the approved APD. If the drilling of the well takes 30 days, or longer, the operator is required to submit a progress report every 30 days, usually on a Sundry Notice, Form 3160-5. When drilling operations are completed, a Well Completion Report, Form 3160-4 is required to be submitted within 30 days.

Many times a well will not be successful in testing formations that are capable of production in paying quantities. Usually, at this time the well will be plugged and abandoned. The operator must have prior BLM approval to plug the well. If the drilling rig is still being utilized, the operator will most likely call in for verbal approval because rig time is valuable and they will not want to wait until a written request is prepared, submitted to the proper BLM jurisdictional office, reviewed, modified if necessary, approved and mailed back to the operator. Usually, the Petroleum Engineer will be called by the operator and will give the plugging procedures to the operator based on information obtained during the drilling, logging and testing of the well. Usually all zones that may contain hydrocarbons or fluids that have a tendency to migrate will be cemented off and all fresh or useable water zones will be protected by a cement plug. Any other zones penetrated that could be a potential problem later, such as any lost circulation zones encountered during drilling if not already covered by surface or intermediate casing, will also be covered by a cement plug. The surface location will also be identified with a dry hole marker.

If the well is completed as a producer, the drilling rig is moved off after production casing is cemented and a smaller rig, called a completion or work over rig, is moved in and utilized for running casing identification logs, perforating and for running down hole pumps, if necessary, running production tubing in the well bore and setting the wellhead valves and controls. The rest of the fluid treating and handling systems will also be installed at this time. These are items like production and storage tanks, dehydrators, separators, measuring systems, sales meters and flow lines. You will learn more about these items and their functions in the Inspection and Enforcement discussions.

All of the drilling, testing, plugging record (if a dry hole), or completion information (if a producer) will be entered into AFMSS. This is the electronic well record that the engineers, geologists and technicians will refer to for the life of the well.

In addition, not later than the 5th business day after any well begins production on which royalty is due, the operator is required to notify the BLM by letter or sundry notice, or orally to be followed by letter or sundry notice, of the date on which production began. If the well makes oil or gas, or a combination of oil and gas, during any testing operation, this is considered actual production and must be reported within 5 business days.

Sometime during the life of the well, it may require service, repair or may be re-completed to another formation or converted to another beneficial use. Some of these actions do not require prior BLM approval. This is any well bore cleanout operation, routine well maintenance or running bottom hole pressure surveys. These actions do not require a subsequent report of operations either. Re-drilling, deepening, plug backs, altering or repairing casing, non-routine fracturing operations, re-completion to different intervals, water shut-off treatments, commingling of production between formations, and/or conversion to injection all require prior BLM approval and reports when completed. These requests for approval and subsequent reports are to be filed on Sundry Notice Form 3160-5. If there is any additional surface disturbance associated with any subsequent well operation, prior BLM approval is also required. There are some routine operations that do not require prior BLM approval but do require a subsequent report to be filed. These are routine fracturing or acidizing operations, or for re-completions in the same intervals.

The main reason we are concerned about these subsequent well operations is for production accountability reasons. If a well is re-completed to another formation, for example, the new formation may be in a different drilling and spacing pattern that may require the oil or gas to be communitized with another lease, or that formation may be unitized. This will affect production accountability and the BLM needs to be aware of this, as does the MMS.

Sundry Notice

- Notice of Intent - NOI
- Subsequent Report - SR

Examples of Actions

- Casing repair
- Perforate and/or acidize
- Recomplete to a new zone
- Convert to water disposal
- Change in drilling plans
- Commingling
- Abandonment - SRA
- Final Abandonment - FAN

We will shift gears a little here and talk about wells that are not producing. These are wells that are in a shut-in or temporarily abandoned status. The official definition of a shut-in well is "a completion that is physically and mechanically capable of production in paying quantities or capable of service use". In other words, a well that is capable of producing oil or gas in sufficient quantities to pay out day-to-day expenses, but is not actually producing. A good example of this is a gas well that has not been connected to a sales line or the line is too far away and it is not economical to connect to at this time. Operators do not need official BLM approval to shut-in a well. Operators do need prior BLM approval if a well is to be temporarily abandoned however. The official definition of a temporarily abandoned well is "a completion which is not capable of production in paying quantities but which may value as a service completion". The BLM can grant approval for temporarily abandonment for up to 1 year. The operator must apply annually for continued approval.

We have many wells in a TA status that do not have current approvals and have been TA'd for many years. This is an ongoing issue for BLM. The real problem is that as ownership of wells and leases pass from larger to smaller operators, the smaller operators may not have the necessary resources to effect the permanent abandonment of the wells. Oil and gas bonds are in many cases not sufficient to cover the total abandonment and reclamation costs. And the BLM has been lax in requiring timely abandonment of wells that have no future value. Keeping on top of this issue is a continual process.

Non-Producing Wells

- Shut-In - SI
- Temporarily Abandoned - TA

Shut-In

- Definition:
  "A completion which is physically and mechanically capable of production in paying quantities or capable of service use".

- Source: IM No. WO88-8, 10/2/87

TA, Continued

- Limited period
- Justification required
- Casing integrity test

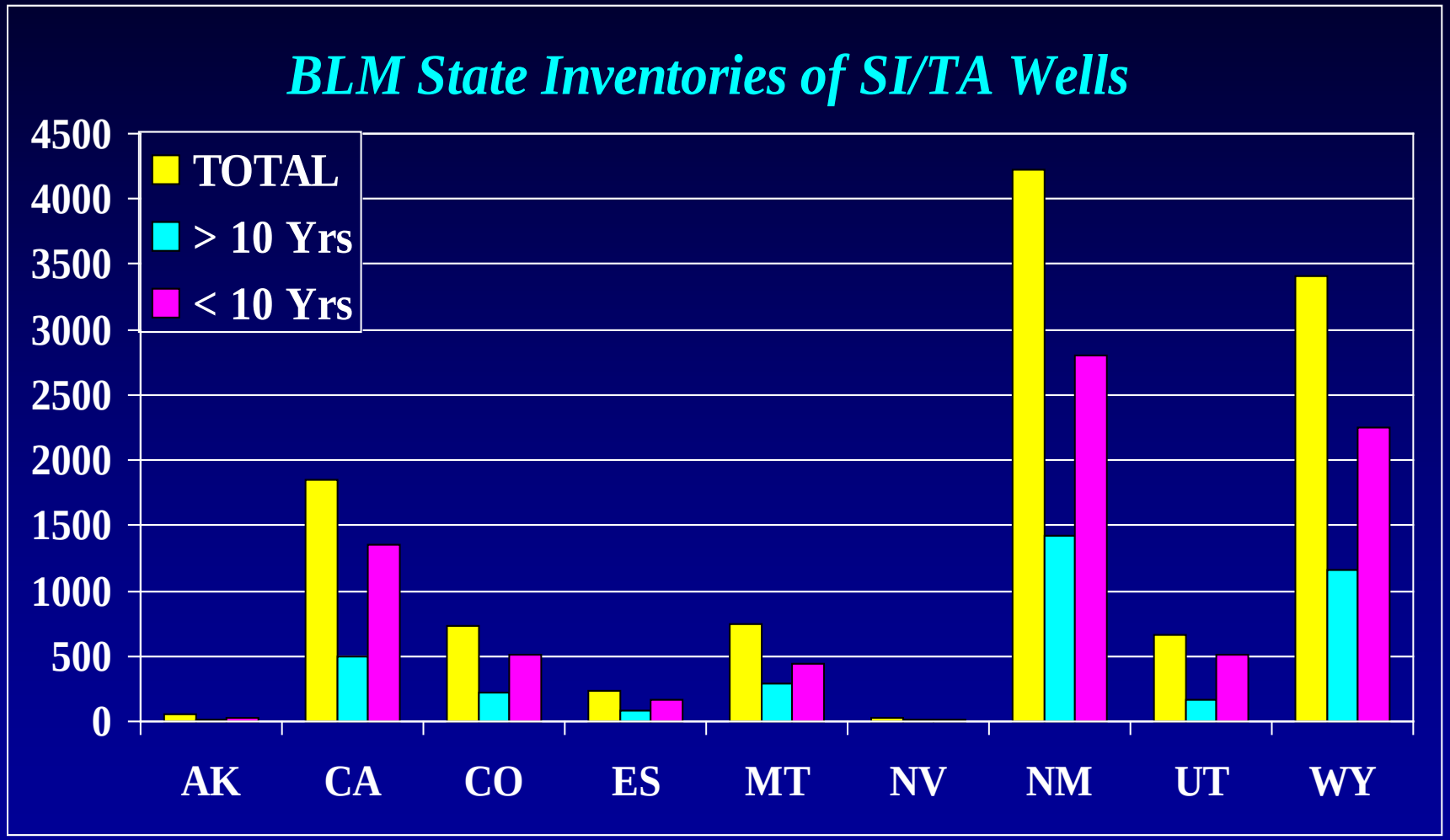
Temporarily Abandoned

- Definition:
  "A completion that is not capable of production in paying quantities but which may have value as a service completion".

- source: IM No. WO88-8, 10/2/87

The next slide shows the magnitude of the problem as it existed about 2-3 years ago. You can clearly see that there was a significant number of long term shut-in (SI) or temporarily abandoned (TA) wells and that many of them have been so for 10 years or longer. The last couple of years the Oil and Gas Program budgets have included centrally funded monies specifically for dealing with our backlog of long term SI and TA wells. We have made progress but there is still a significant number that have not been resolved.

Extent of Idle/Inactive Well Problem (Cont'd)



Usually, the last evolution in the life of an oil or gas well is when it is depleted and cannot produce in paying quantities any longer and has no further value. At this stage, the well is permanently plugged and abandoned and the surface location is reclaimed. Prior approval from the BLM is required. The operator submits a plug and abandonment plan and it is reviewed and, if necessary, modified by the Engineer and approved. When the down hole plugging is completed the operator submits a Subsequent Report of Abandonment. This report, called a SRA, is also reviewed by the Engineer, approved by the BLM and a copy is returned to the operator. When the surface reclamation is completed and the vegetation has had a chance to establish itself, usually 2 to 3 growing seasons, the operator will submit another subsequent report, called a Final Abandonment Notice (FAN), the BLM will inspect the location to determine if it was reclaimed properly and, if so, will approve the FAN.

If this was the last well on the lease, and the lease is beyond it's primary term, that is "held by production", the lease will terminate. The operator will usually get his operating bond released unless he has a statewide or nationwide bond and operates on other Federal leases.

This is the final stage in what we call the "cradle to grave" life cycle of oil and gas operations on Federal and Trust oil and gas leases.

Plug and Abandon

- End of life cycle
- Plugging requirements - OO #2
- Reclamation
- Restoration

We will now talk a little about the Automated Fluid Minerals Support System, or what we affectionately call AFMSS. It is the official BLM electronic well record system and it has many useful features. We have referred to it several times in this lesson but have not really said what it is and what it can provide to you.

All of an individual well's life history is recorded in AFMSS from when it is first permitted and drilled, re-worked, repaired, re-completed and finally plugged and abandoned. Wells are tied to leases, unit agreements or communitization agreements. It is also tied to the MMS Monthly Report of Operations, Form 3160, which contains all the well's production history. Inspection activities associated with these wells are also recorded in AFMSS. It is the best source of APD tracking information available and several reports are included in the next few slides. You, as a manager, should become familiar with these canned reports as they will give you an immediate status of all the APD's your office has processed or is currently processing.

One of the most recent upgrades of AFMSS is the online NOS, APD, Well Completion, and Sundry Notice electronic submission feature. It allows operators to submit these applications, including all attachments, electronically from a workstation in their own office. It notifies the BLM that an application is incoming and even populates the basic well header information screen for APD's. As it is refined further in the future it will be of even more utility and value.

APDs Approved from 10/01/2000 to 04/30/2001 for CUBA FIELD STATION

CASE NUMBER	OPERATOR	WELLNUM	WELL NAME	DOCNUM	TWP	RGE	SEC	QTR	SME	APPROVED
JIC94	ENERGEN RESOURCES CORP	6C	JICARILLA	00AMJ0837S	27N	3W	27	SWSE	BIA	10/31/2000
JIC95	ENERGEN RESOURCES CORP	3B	JICARILLA 95	00AMJ0834S	27N	3W	35	SESW	BIA	10/31/2000
JIC95	ENERGEN RESOURCES CORP	3C	JICARILLA 95	00AMJ0836S	27N	3W	35	SWNW	BIA	10/31/2000
JIC95	ENERGEN RESOURCES CORP	8B	JICARILLA 95	00AMJ0835S	27N	3W	26	NWSE	BIA	10/31/2000
JIC96	ENERGEN RESOURCES CORP	2B	JICARILLA	00AMJ0812S	26N	3W	2	NESE	BIA	10/31/2000
JIC96	ENERGEN RESOURCES CORP	6B	JICARILLA	00AMJ0813S	26N	3W	2	NESW	BIA	10/31/2000
JIC96	ENERGEN RESOURCES CORP	6C	JICARILLA	00AMJ0817S	26N	3W	2	NENW	BIA	10/31/2000
JIC119	ENERGEN RESOURCES CORP	10M	JIC 119N	00AMJ0870S	26N	4W	7	SWSW	BIA	11/22/2000
JIC152	ENERGEN RESOURCES CORP	2M	JIC 152W	00AMJ0869S	26N	5W	5	NWSE	BIA	11/22/2000
JIC152	ENERGEN RESOURCES CORP	7	JIC 152W	00AMJ0868S	26N	5W	5	SENE	BIA	11/22/2000
JIC95	ENERGEN RESOURCES CORP	6B	JICARILLA 95	00AMJ0833S	27N	3W	36	NWSW	BIA	11/22/2000
JIC96	ENERGEN RESOURCES CORP	1B	JICARILLA	00AMJ0134S	26N	3W	11	NWNE	BIA	11/22/2000
JIC96	ENERGEN RESOURCES CORP	7B	JICARILLA	00AMJ0815S	26N	3W	1	SWNW	BIA	11/22/2000
JIC96	ENERGEN RESOURCES CORP	8B	JICARILLA	00AMJ0814S	26N	3W	12	SWNW	BIA	11/22/2000
JIC94	ENERGEN RESOURCES CORP	6B	JICARILLA	01AMJ0077S	27N	3W	27	SENE	BIA	11/29/2000
JIC95	ENERGEN RESOURCES CORP	1C	JICARILLA 95	01AMJ0078S	27N	3W	35	NWNE	BIA	11/29/2000
JIC96	ENERGEN RESOURCES CORP	1C	JICARILLA	01AMJ0071S	26N	3W	11	NWSE	BIA	11/29/2000
JIC96	ENERGEN RESOURCES CORP	5B	JICARILLA	01AMJ0075S	26N	3W	11	SENW	BIA	11/29/2000
701980013	MALLON OIL COMPANY	2	29-03-02	01AMJ0165S	29N	3W	2	NWNE	BIA	01/05/2001
701980013	MALLON OIL COMPANY	1	29-02-35	00AMJ0832S	29N	2W	35	NWSW	BIA	01/12/2001
701980013	MALLON OIL COMPANY	2	30-03-35	01AMJ0162S	30N	3W	35	SENW	BIA	01/26/2001
701980013	MALLON OIL COMPANY	1	29-02-07	01AMJ0171S	29N	2W	7	NWSW	BIA	02/02/2001
701980013	MALLON OIL COMPANY	SJ 2	29-02-05	01AMJ0164S	29N	2W	5	SWSE	BIA	02/05/2001
701980013	MALLON OIL COMPANY	1	29-02-04	01AMJ0160S	29N	2W	4	NWSW	BIA	02/06/2001
701980013	MALLON OIL COMPANY	1	29-03-01	01AMJ0166S	29N	3W	1	NWSE	BIA	02/06/2001
701980013	MALLON OIL COMPANY	1	29-03-13	01AMJ0168S	29N	3W	13	SENE	BIA	02/06/2001
701980013	MALLON OIL COMPANY	SJ 2	29-02-08	01AMJ0159S	29N	2W	8	NWSE	BIA	02/06/2001
701980013	MALLON OIL COMPANY	SJ 2	29-02-17	01AMJ0163S	29N	2W	17	SENW	BIA	02/06/2001
JIC150	BURLINGTON RESOURCES	5B	JIC 150	01AMJ0239S	26N	5W	12	NWNW	BIA	03/06/2001
JIC150	BURLINGTON RESOURCES	6C	JIC 150	01AMJ0251S	26N	5W	2	SENW	BIA	03/06/2001
JIC151	BURLINGTON RESOURCES	4B	ARIZONA JIC B	01AMJ0269S	26N	5W	4	SENW	BIA	03/06/2001
701980013	MALLON OIL COMPANY	1	29-03-14	01AMJ0323S	29N	3W	14	NWNE	BIA	03/26/2001
701980013	MALLON OIL COMPANY	2	29-03-11	01AMJ0321S	29N	3W	11	SENE	BIA	03/28/2001
701980013	MALLON OIL COMPANY	2	29-03-13	01AMJ0322S	29N	3W	13	NWNW	BIA	03/28/2001
701980013	MALLON OIL COMPANY	SJ 2	29-02-07	01AMJ0320S	29N	2W	7	NWSE	BIA	03/28/2001
701980013	MALLON OIL COMPANY	4	30-03-34	01AMJ0340S	30N	3W	34	NWSE	BIA	04/06/2001

Total Approved APDs: 36

APD Workload Tracking Report

Office: CUBA FIELD STATION **State:**

Start Date: 10/01/2000 **End Date:** 04/30/2001

	APPLICATIONS ON HAND AT START	APPLICATIONS RECEIVED	APPLICATIONS RETURNED	APPLICATIONS INCOMPLETE	APPLICATIONS COMPLETE AND PENDING	APPLICATIONS APPROVED	APPLICATIONS CLOSED BUT NOT APPROVED
FEDERAL	3	1	0	4	0	0	0
INDIAN	22	24	0	10	0	36	0
TOTAL	25	25	0	14	0	36	0

APDs over 30 days old and Still Awaiting Disposition

CASE NUMBER	OPERATOR	WELLNUM	WELL NAME	TWP	RGE	SEC	QTR	SME	RECEIVED	APD CMPLT
JIC457	MALLON OIL COMPANY	SJ8	JICARILLA 457	30N	3W	10	NESW	BIA	08/09/1999	
JIC147	CONOCO INCORPORATED	21C	AXI APACHE J	25N	5W	5	NWSW	BIA	05/18/2000	
JIC115	ENERGEN RESOURCES CORP	14B	JICARILLA	26N	3W	10	SENE	BIA	10/23/2000	
701980013	MALLON OIL COMPANY	SJ 2	29-02-06	29N	2W	6	NESE	BIA	02/12/2001	
NMNM01804	WESTERN MINERALS & OIL, LLC	5 2	COUGAR COM	25N	2W	5	NWSE	FEE	03/26/2001	

APDs 30 - 60 days old: 1
APDs 60 - 90 days old: 1
APDs over 90 days old: 3

Wells in Temporary Abandonment for CUBA FIELD STATION

Include Wells: Federal Indian
Cases Like: All
Operators Like: All
States Like: All
Township Like: All
Range Like: All
Sections Like: All

CASE NUMBER	OPERATOR	API	WELL-ID	STAT-DATE	APPR-DATE	EXPIRES	TYPE	ST	COUNTY	TWP	RGE	SEC	QTR	FED/IND
701980013	MALLON OIL COMPANY	300392603800S1	1 28-02-11	02/07/1999				NM	RIO ARRIBA	28N	2W	11	NENW	F
701980013	MALLON OIL COMPANY	300392603800S2	1 28-02-11	02/07/1999				NM	RIO ARRIBA	28N	2W	11	NENW	F
JIC451	MALLON OIL COMPANY	300392605700S1	1 JICARILLA 451	10/26/1999				NM	RIO ARRIBA	29N	3W	4	SWNE	F
JIC458	MALLON OIL COMPANY	300392575700S1	6 JICARILLA 458	04/10/2001	02/05/1998	02/05/1999	NOI	NM	RIO ARRIBA	30N	3W	8	NENW	F
JIC460	MALLON OIL COMPANY	300392586700S1	2 JICARILLA 460	03/29/1999	03/15/2001	03/15/2002	NOI	NM	RIO ARRIBA	30N	3W	21	SENE	F
NMA71	ORYX ENERGY COMPANY	300392318200C1	1 MOTHER LODE	02/18/1997				NM	RIO ARRIBA	24N	2W	3	SENE	F
NMNM 105185	HIGH PLAINS PETROLEUM CORP	300432071900S1	10 SAN ISIDRO 1	09/01/2000				NM	SANDOVAL	20N	3W	16	NWSE	F
NMNM36096	PRIDE ENERGY COMPANY	300432091200X1	12-11 SAN ISIDR	05/02/1994				NM	SANDOVAL	20N	3W	12		F
NMNM37548	PRIDE ENERGY COMPANY	300432060100S1	16 SAN ISIDRO 1	04/21/1997				NM	SANDOVAL	20N	3W	1	SESE	F
NMNM40645	MALLON OIL COMPANY	300392355400D1	2-16 RIBEYOWIDS	12/23/1984				NM	RIO ARRIBA	25N	2W	2	SESE	F
NMNM40645	MALLON OIL COMPANY	300392355400D2	2-16 RIBEYOWIDS	07/21/1997				NM	RIO ARRIBA	25N	2W	2	SESE	F
NMNM76252	N M & O OPERATING COMPANY	300392319200D1	1E GAVILAN	09/05/1996				NM	RIO ARRIBA	25N	2W	26	SWNW	F
NMNM76315	ORYX ENERGY COMPANY	300392330700D1	2 NATIVE SON	12/02/1994				NM	RIO ARRIBA	25N	2W	27	SESW	F
NMNM76321	N M & O OPERATING COMPANY	300392346600T1	1 BROWN	01/01/1980				NM	RIO ARRIBA	25N	2W	17	SESW	F
NMNM76321	N M & O OPERATING COMPANY	300392346600T2	1 BROWN	01/01/1980				NM	RIO ARRIBA	25N	2W	17	SESW	F
NMNM76342	N M & O OPERATING COMPANY	300392331200S1	1 GAVILAN-HOWAR	11/21/1991				NM	RIO ARRIBA	25N	2W	23	SENW	F
NMNM78389X	BENSON MONTIN GREER DRILLING	300390672200S1	21(B-5) EPCMU	01/20/1960				NM	RIO ARRIBA	26N	1E	5	NWNE	F
NMNM78389X	BENSON MONTIN GREER DRILLING	300390817900S1	22(C-5) EPCMU	10/14/1964				NM	RIO ARRIBA	26N	1E	5	NENW	F
NMNM78389X	BENSON MONTIN GREER DRILLING	300392321300S1	33(P-5) EPCMU	06/18/1991				NM	RIO ARRIBA	26N	1E	5	SESE	F
NMNM78389X	BENSON MONTIN GREER DRILLING	300392321400S1	35(M-9) EPCMU	06/18/1991				NM	RIO ARRIBA	26N	1E	9	SWSW	F
NMNM78389X	BENSON MONTIN GREER DRILLING	300392320900S1	37(C-8) EPCMU	09/17/1992				NM	RIO ARRIBA	26N	1E	8	NENW	F
NMNM78389X	BENSON MONTIN GREER DRILLING	300392322600S1	34(K-5) EPCMU	09/17/1992				NM	RIO ARRIBA	26N	1E	5	NESW	F
NMNM84664	PRIDE ENERGY COMPANY	300432087300X1	5-14 SAN ISIDRO	02/05/1997				NM	SANDOVAL	20N	2W	5	SESW	F
NMSF078908	CONOCO INCORPORATED	300392517800S1	84 LINDRITH B	01/22/2001	03/05/2001		SR	NM	RIO ARRIBA	24N	2W	16	SWSW	F
NMSF079352A	RIO CHAMA PETROLEUM INC.	300392436300S1	1Y HARRINGTONFE	01/01/1980				NM	RIO ARRIBA	24N	1W	28	SWNE	F
NMSF080565	ENERGEN RESOURCES CORP	300392286500D1	8A FLORANCE FED	08/09/1983				NM	RIO ARRIBA	25N	3W	5	SWNW	F
NMSF080565A	MINEL INCORPORATED	300390618800S1	1 H A YAFFEE	08/28/1997	05/04/1999	09/03/1999	NOI	NM	RIO ARRIBA	25N	3W	6	NENE	F
NMSF081160F	REYNOLDS NOEL	300438799600S1	13 SAN LUIS FED	01/01/1980				NM	SANDOVAL	18N	3W	21	NWSE	F
NMSF081160F	REYNOLDS NOEL	300432081900S1	18 SAN LUIS FED	03/21/1995				NM	SANDOVAL	18N	3W	21	NWSE	F
NMSF081160F	REYNOLDS NOEL	300438799500S1	12 SAN LUIS FED	03/21/1995				NM	SANDOVAL	18N	3W	21	NWSE	F
NMSF081161A	REYNOLDS NOEL	300432037900S1	2 SAN LUIS FED	08/05/1978				NM	SANDOVAL	18N	3W	21	NESW	F
NMSF081161A	REYNOLDS NOEL	300432037800S1	1 SAN LUIS FED	03/21/1995				NM	SANDOVAL	18N	3W	21	NESW	F
NMSF081171A	COULTHURST MGT & INVST INC	300432024700S1	16 DARLA	04/21/1997	11/19/1998		SR	NM	SANDOVAL	18N	3W	33	SENE	F
NMSF081171A	COULTHURST MGT & INVST INC	300438799000S1	1 DARLA	11/19/1998	11/19/1998		SR	NM	SANDOVAL	18N	3W	33	SENE	F
NMSF081171A	COULTHURST MGT & INVST INC	300438799100S1	7 DARLA	11/19/1998	11/19/1998		SR	NM	SANDOVAL	18N	3W	33	SENE	F
NMSF081171K	COULTHURST MGT & INVST INC	300438798800S1	5 ANN	09/16/1965				NM	SANDOVAL	18N	3W	33	NENE	F
NMSF081171K	COULTHURST MGT & INVST INC	300438798900S1	6 ANN	10/18/1965				NM	SANDOVAL	18N	3W	33	NENE	F
NMSF081171K	COULTHURST MGT & INVST INC	300432024800S1	15 ANN	12/20/1976				NM	SANDOVAL	18N	3W	33	NENE	F
NMSF081171K	COULTHURST MGT & INVST INC	300432086100S1	1 ERIN	03/07/1995				NM	SANDOVAL	18N	3W	33	NENW	F
NMSF081171K	COULTHURST MGT & INVST INC	300438798700S1	3 ANN	03/07/1995				NM	SANDOVAL	18N	3W	33	NENE	F
NMSF081171K	COULTHURST MGT & INVST INC	300432081100S1	19 ANN	03/21/1995				NM	SANDOVAL	18N	3W	33	NENW	F

Wells in Temporary Abandonment for CUBA FIELD STATION

CASE NUMBER	OPERATOR	API	WELL-ID	STAT-DATE	APPR-DATE	EXPIRES	TYPE	ST	COUNTY	TWP	RGE	SEC	QTR	FED/IND
JIC117	ENERGEN RESOURCES CORP	300390619800S1	1 JICARILLA E	01/01/1980				NM	RIO ARRIBA	26N	3W	33	SESW	I
JIC117	ENERGEN RESOURCES CORP	300390619800S2	1 JICARILLA E	10/18/1999				NM	RIO ARRIBA	26N	3W	33	SESW	I
JIC118	APACHE CORP	300392355600S1	10 JAT A 118	10/27/1993				NM	RIO ARRIBA	26N	3W	35	SENE	I
JIC145	CONOCO INCORPORATED	300392042800C1	16 JICARILLA K	10/20/1994	06/11/1991		SR	NM	RIO ARRIBA	25N	5W	12	NWNW	I
JIC145	CONOCO INCORPORATED	300392042800D3	16 JICARILLA K	10/17/1997	06/11/1991		SR	NM	RIO ARRIBA	25N	5W	12	NWNW	I
JIC145	CONOCO INCORPORATED	300392042800C2	16 JICARILLA K	10/18/1999				NM	RIO ARRIBA	25N	5W	12	NWNW	I
JIC148	AMOCO PRODUCTION COMPANY	300392368000S1	36 JIC APACHE	04/14/2000				NM	RIO ARRIBA	25N	5W	23	SENE	I
JIC148	AMOCO PRODUCTION COMPANY	300392371300S1	43(17Y) JIC APA	04/14/2000				NM	RIO ARRIBA	25N	5W	15	SESE	I
JIC154	MARATHON OIL COMPANY	300392181900D1	20 JIC APACHE	11/27/2000	12/05/2000		SR	NM	RIO ARRIBA	26N	5W	27	SWSW	I
JIC154	MARATHON OIL COMPANY	300392181900D2	20 JIC APACHE	11/27/2000				NM	RIO ARRIBA	26N	5W	27	SWSW	I
JIC167	ELM RIDGE RESOURCES INC	300392138400S1	5 JIC APACHE I	10/06/1992	06/07/1999	06/07/2000	NOI	NM	RIO ARRIBA	23N	3W	14	SWNE	I
JIC41	CONOCO INCORPORATED	300392046000S1	5 JIC 30	02/12/2001	04/06/2001	04/06/2002	SR	NM	RIO ARRIBA	25N	4W	32	NWNE	I
JIC451	MALLON OIL COMPANY	300392334200D1	1 JICARILLA 451	01/01/1980				NM	RIO ARRIBA	29N	3W	4	NESW	I
JIC458	MALLON OIL COMPANY	300392408600S1	2 JICARILLA 458	04/10/2001				NM	RIO ARRIBA	30N	3W	7	SWSE	I
JIC458	MALLON OIL COMPANY	300392416700S1	3 JICARILLA 458	04/10/2001				NM	RIO ARRIBA	30N	3W	7	SENE	I
JIC459	MALLON OIL COMPANY	300392408700S1	1 JICARILLA 459	04/10/2001				NM	RIO ARRIBA	30N	3W	18	NESE	I
JIC459	MALLON OIL COMPANY	300392415700S1	2 JICARILLA 459	04/10/2001				NM	RIO ARRIBA	30N	3W	20	SWNW	I
JIC459	MALLON OIL COMPANY	300392430500S1	8 JICARILLA 459	04/10/2001				NM	RIO ARRIBA	30N	3W	17	NWNW	I
JIC459	MALLON OIL COMPANY	300392430700S1	4 JICARILLA 459	04/10/2001				NM	RIO ARRIBA	30N	3W	19	NWNE	I
JIC459	MALLON OIL COMPANY	300392434400S1	5 JICARILLA 459	04/10/2001				NM	RIO ARRIBA	30N	3W	19	SESE	I
JIC460	MALLON OIL COMPANY	300392411200S1	2 JICARILLA 460	10/23/1997				NM	RIO ARRIBA	30N	3W	21	SWSW	I
JIC462	MALLON OIL COMPANY	300392411000C1	1 JIC 462	04/18/2000				NM	RIO ARRIBA	30N	3W	22	SWSW	I
JIC464	MALLON OIL COMPANY	300392415800S2	2 JICARILLA 464	10/29/1987				NM	RIO ARRIBA	30N	3W	32	NWNW	I
JIC464	MALLON OIL COMPANY	300392415800S1	2 JICARILLA 464	06/13/1997	03/15/2001	03/15/2002	NOI	NM	RIO ARRIBA	30N	3W	32	NWNW	I
JIC464	MALLON OIL COMPANY	300392430900S1	5 JICARILLA 464	12/12/1997	03/15/2001	03/15/2002	NOI	NM	RIO ARRIBA	30N	3W	31	NWNE	I
JIC464	MALLON OIL COMPANY	300392415800S3	2 JICARILLA 464	06/17/1998				NM	RIO ARRIBA	30N	3W	32	NWNW	I
JIC464	MALLON OIL COMPANY	300392430900S2	5 JICARILLA 464	07/14/1998				NM	RIO ARRIBA	30N	3W	31	NWNE	I
JIC464	MALLON OIL COMPANY	300392578900S1	9 JICARILLA 464	07/24/1998	03/15/2001	03/15/2002	NOI	NM	RIO ARRIBA	30N	3W	30	SWSW	I
JIC464	MALLON OIL COMPANY	300392578900S2	9 JICARILLA 464	07/24/1998				NM	RIO ARRIBA	30N	3W	30	SWSW	I
JIC464	MALLON OIL COMPANY	300392576200S1	11 JICARILLA 46	12/05/1998				NM	RIO ARRIBA	30N	3W	32	NWNE	I
JIC464	MALLON OIL COMPANY	300392425300S1	8 JICARILLA 464	04/10/2001				NM	RIO ARRIBA	30N	3W	29	NESW	I
JIC464	MALLON OIL COMPANY	300392430100S1	7 JICARILLA 464	04/10/2001				NM	RIO ARRIBA	30N	3W	29	NWNW	I
JIC491	ELM RIDGE RESOURCES INC	300392380400Q1	1 JICARILLA 491	01/01/1980				NM	RIO ARRIBA	28N	2W	32	NWSE	I
JIC97	CHATEAU	300392251400C1	4E TRIBAL C	05/18/2000				NM	RIO ARRIBA	26N	3W	6	SENE	I
JIC97	CHATEAU	300392251400C2	4E TRIBAL C	06/01/2000				NM	RIO ARRIBA	26N	3W	6	SENE	I
JIC98	CONOCO INCORPORATED	300392018500D2	2 APACHE	01/01/1980				NM	RIO ARRIBA	26N	3W	18	NWSW	I
JIC98	ENERGEN RESOURCES CORP	300390648600D1	6 JIC B	01/01/1980				NM	RIO ARRIBA	26N	3W	17	NENE	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300390706000S1	15(M-21) EPCMU	07/20/1962				NM	RIO ARRIBA	27N	1E	21	SWSW	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300390681500S1	3(D-29) EPCMU	10/02/1962				NM	RIO ARRIBA	27N	1E	29	NENW	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300390690500S1	17(O-17) EPCMU	06/13/1963				NM	RIO ARRIBA	27N	1E	17	SWSE	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300390682900S1	11(P-20) EPCMU	10/15/1963				NM	RIO ARRIBA	27N	1E	20	SESE	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300390682500S1	8(P-19) EPCMU	09/16/1992				NM	RIO ARRIBA	27N	1E	19	SESE	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300398226800S1	19(H-25) EPCMU	09/16/1992				NM	RIO ARRIBA	27N	1W	25	SENE	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300398226900S1	42(O-21) EPCMU	09/16/1992				NM	RIO ARRIBA	27N	1E	21	SWSE	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300390676200S1	4(K-29) EPCMU	09/17/1992				NM	RIO ARRIBA	27N	1E	29	NESW	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300390681600S1	16(C-28) EPCMU	09/17/1992				NM	RIO ARRIBA	27N	1E	28	NENW	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300392259200S1	40(E-19) EPCMU	09/17/1992				NM	RIO ARRIBA	27N	1E	19	SWNW	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300392259300S1	41(F-20) EPCMU	09/17/1992				NM	RIO ARRIBA	27N	1E	20	SENW	I
NMNM78389X	BENSON MONTIN GREER DRILLING	300398227400S1	18(P-13) EPCMU	09/17/1992				NM	RIO ARRIBA	27N	1W	13	SESE	I

TOTAL WELLS: 90

The last item we will discuss briefly is LR 2000 and case recordation. All official Federal oil and gas lease information is contained in LR 2000. Some of the more useful information contained in the database is the lease number, legal description, state and county, case type (public domain or acquired), number of acres in the lease, the date the lease became effective, who is the lessee or has multiple lessees, their address(s), who has operating rights, if it is in it's primary term or is held by production, if it is committed to a unit agreement or a communitization agreement and if it receives actual or allocated production.

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CASE RECORDATION
(LIVE) Serial Register Page

RunDate/Time: 05/04/01 09:19 AM

01 08-07-47;30USC360 (PL 102-486)
Case Type 310112: O&G PRIVATE LEASES-ACQ
Commodity 459: OIL & GAS L
Case Disposition: AUTHORIZED

Total Acres 160.000

Serial Number KSNM-- - 082999

Serial Number: KSNM-- - 082999

Name & Address			Int Rel	% Interest
ANADARKO PROD CORP	PO BOX 351	LIBERAL KS 679050351	LESSEE	100.000000000

Serial Number: KSNM-- - 082999

Mer	Twp	Rng	Sec	STyp	SNr	Suf	Subdivision	District/Resource	County	Mgmt Agency
06	0350S	0430W	010	ALIQ			SW;	AMARILLO	MORTON	CIMARRON NG

Serial Number: KSNM-- - 082999

Act Date	Code	Action	Action Remarks	Pending Office
11/29/1951	387	CASE ESTABLISHED		
11/30/1951	237	LEASE ISSUED	PRIVATE	
11/30/1951	868	EFFECTIVE DATE		
03/28/1989	246	LEASE COMMITTED TO CA	KSNM75171;	
03/28/1989	496	FUND CODE	723;125896.5 1403	
03/28/1989	501	REFERENCE NUMBER	CA-NM041A2086C1117;	
03/28/1989	651	HELD BY PROD - ALLOCATED	KSNM75171;	
03/28/1989	660	MEMO OF 1ST PROD-ALLOC	KSNM75171;	
09/28/1989	974	AUTOMATED RECORD VERIF	BTM/BTM	
09/30/1992	817	MERGER RECOGNIZED	APX/ANADARKO PETRO	
09/30/1992	974	AUTOMATED RECORD VERIF	MRR/JS	

Serial Number: KSNM-- - 082999

Line Nr	Remarks
0002	3/28/1989 FUND CODE 723;125896.5 1403

This concludes the module called Lease Operations. I hope you have asked some questions along the way and if you have remaining questions now or in the future please feel free to call me at (775) 861-6566 or Gary Stephens at (505) 438-7451. We will be happy to discuss any thoughts or quandaries to you care to share. Thank You!

Summary

- APD's
- Sundry Notices
- TA/SI
- AFMSS
- LR2000 (LRIS)