United States Government Accountability Office

Report to Congressional Requesters

March 2020

OIL AND GAS PERMITTING

Actions Needed to Improve BLM's Review Process and Data System

This Report Is Temporarily Restricted Pending Official Public Release.

GAO-20-329

GAO Highlights

Highlights of GAO-20-329, a report to congressional requesters

March 2020

OIL AND GAS PERMITTING

Actions Needed to Improve BLM's Review Process and Data System

Why GAO Did This Study

BLM has key responsibilities in managing the development of oil and gas resources on federal lands, including processing APDs. Each year, BLM receives more APDs than it can review. At the same time, BLM approves more APDs than operators use in a given year. In 2015, BLM redesigned its data system, in part to address ongoing challenges with the permit process.

GAO was asked to review BLM's APD review process. This report examines: (1) APDs received and factors stakeholders say influence the use of permits; (2) changes in APD review times and related factors; and (3) BLM's APD data management system. GAO reviewed relevant laws and regulations, agency documents, and BLM data on APDs. GAO also interviewed agency officials and oil and gas operators, and conducted site visits to six BLM field offices that account for about 79 percent of the APD processing workload.

What GAO Recommends

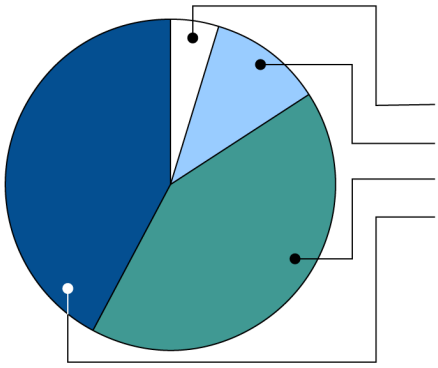
GAO is making three recommendations to BLM: (1) develop a documented process to consistently implement the APD prioritization process, (2) document change management processes for its data system, and (3) document and implement corrective actions for the data system based on lessons learned. BLM disagreed with our first two recommendations and agreed with our third. GAO continues to believe our recommendations are valid.

View GAO-20-329. For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

What GAO Found

From fiscal years 2014 through 2019, the Bureau of Land Management (BLM) received 23,706 applications for permit to drill (APDs) from oil and gas operators. Various factors—including economics, infrastructure, and lease terms—influenced operators' decisions to apply for and use APDs.

Figure: Status of Applications for Permit to Drill (APD) by Well Status (Fiscal Years 2014-2019)



Status of APD	Number of APDs
Unapproved	1,137
Under review	2,628
Approved, not in use	9,950
Approved, in use	9,991
Total	**23,706**

Source: GAO analysis of Bureau of Land Management data. | GAO-20-329

For APDs BLM received from May 2016 through June 2019, overall review times decreased from 196 days to 94 days, or by more than half. Various factors—including the practice in some BLM field offices of working with oil and gas operators to prioritize APDs for review—may have affected this change. Working with operators to prioritize APDs for review provides an opportunity for regular communication between BLM field office officials and operators, allowing both parties to focus on APDs for wells operators actually plan to drill. However, BLM officials said that field offices handle APD review prioritization differently and there is no documented process for whether or how to prioritize applications, despite an agency memorandum encouraging prioritization. More consistent prioritization would allow operators to signal which APDs are likely to be used soonest and therefore allow BLM offices to use its limited staff more efficiently.

Changes to BLM's data management system resulted in some improvements to the APD review process, but users—including BLM officials and selected operators—cited challenges. The redesigned system consists of multiple modules—BLM implemented the APD module first and plans to implement the remaining modules in calendar year 2020. BLM field office officials and operators reported that the redesigned system created a more streamlined process and greater transparency. However, users also reported challenges with system design and rollout, including lost APD records and supporting documents and difficulty following the APD review process. Further, BLM did not follow certain leading information technology practices in implementing the new data system—including documenting change management processes and an action plan to take corrective action based on lessons learned—in part because it has been focused on the rollout of the new system. Documenting these processes and plans could help BLM mitigate the risk of challenges associated with future investments and upgrades, including the rollout of the remaining modules.

Contents

Letter		1
	Background	4
	BLM Received About 24,000 APDs from Fiscal Year 2014 through Fiscal Year 2019, and Various Factors Influenced Operators' Decisions to Apply for and Use APDs	11
	APD Review Times Decreased from May 2016 through June 2019, and Various Factors, Including Prioritization, May Have Affected the Change	20
	BLM's New Data System Improved Some Aspects of the APD Review Process, but Users Reported Challenges and BLM Has Not Followed Certain Leading IT Practices	28
	Conclusions	35
	Recommendations for Executive Action	36
	Agency Comments and Our Evaluation	37
Appendix I	Objectives, Scope, and Methodology	39
Appendix II	Comments from the Department of the Interior	42
Appendix III	GAO Contact and Staff Acknowledgments	46
Tables		
	Table 1: Top 20 Operators by Number of Applications for Permit to Drill (APD) Submitted, Fiscal Years 2013 through 2019	13
	Table 2: Average Application for Permit to Drill (APD) Review Times, in Days, by Selected Field Office, May 2016 through June 2019	22
Figures		
	Figure 1: Location of Bureau of Land Management (BLM) Offices That Process Applications for Permit to Drill (APD) and Number of APDs Received from October 2013 through September 2019	5
	Figure 2: BLM's APD Review Process	8

Figure 3: Status of Applications for Permit to Drill (APD) by Well Status, Fiscal Years 2013 through 2019 12
Figure 4: Average Number of Days to Review Applications for Permit to Drill (APD) for Each Phase of the Process, Fiscal Years 2016 through 2019 21
Figure 5: Example of a Well that Drills from a Nonfederal Location into Federal Minerals 24
Figure 6: Average Number of Days from Application Received Date to Application Accepted Date, by Selected BLM Field Offices 26

Abbreviations

AFMSS	Automated Fluid Minerals Support System
APD	Application for Permit to Drill
BLM	Bureau of Land Management
Interior	Department of the Interior
IT	Information Technology
NEPA	National Environmental Policy Act of 1969
NOS	Notice of Staking

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

March 30, 2020

The Honorable Raúl M. Grijalva
Chairman
Committee on Natural Resources
House of Representatives

The Honorable Alan S. Lowenthal
Chairman
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
House of Representatives

The Department of the Interior's (Interior) Bureau of Land Management (BLM) oversees the federal government's onshore subsurface mineral estate, which lies under about 700 million acres of land—about 30 percent of the United States.[1] This land may be owned by the federal government and managed by BLM, the U.S. Forest Service, and other federal agencies, or it may be owned by nonfederal entities, such as states and private landowners. BLM also manages some aspects of oil and gas developed on lands owned by Indian tribes and individual tribal members. Oil and gas operators produced oil and gas from about 96,000 wells on about 26 million acres of leased federal land in fiscal year 2018, according to BLM.

Oil and gas operators that want to develop oil and gas resources on federal or Indian lands must first procure a lease for the lands and then submit an application for permit to drill (APD) to BLM. BLM field offices review APDs submitted by oil and gas operators who want to drill on federal and Indian leases using a team of specialists who consider the technical aspects of drilling and opportunities to mitigate environmental impacts. Some of these specialists may have other oil and gas management responsibilities, including inspecting wells and enforcing compliance. Other federal agencies, including the Bureau of Indian Affairs and the U.S. Forest Service, and other relevant entities, such as state

[1]Interior is responsible for ensuring that federal energy resources are safely and responsibly developed and manages those resources pursuant to a congressional declaration of policy that the United States receives a fair market value for their use. Federal oil and gas are important sources of revenue that are shared among federal and state governments. These revenues consist of, among other things, a percentage of the value of production paid to the federal government, or royalties.

agencies and private landowners, may be involved in the APD review process. Approved APDs are valid for 2 years from the date of approval, as long as the associated lease does not expire during that time, and may be extended once for up to 2 years at the discretion of the BLM. Each year, BLM receives more APDs than it can review. At the same time, BLM approves more APDs than operators use.

In 2011, based in part on BLM's challenges with hiring, training, and retaining sufficient staff to meet its responsibilities, we added Interior's management of federal oil and gas resources to our list of programs and operations that are high risk due to their vulnerabilities to fraud, waste, abuse, and mismanagement, or that need transformation. In our 2019 high-risk update, we found that while Interior has taken some steps to strengthen how it manages federal oil and gas resources, it has not satisfied our criteria for removal from the high-risk list. For example, in an August 2013 report on BLM's APD review process, we found that BLM's central oil and gas data management system, the Automated Fluid Minerals Support System (AFMSS), was missing certain data needed to assess BLM's compliance with the time frame for processing APDs outlined in the Energy Policy Act of 2005, and it contained inaccurate data. In 2015, BLM redesigned AFMSS, in part, to address these deficiencies. In May 2016, BLM began encouraging oil and gas operators to use the redesigned system, AFMSS II, for all APDs. BLM officials we interviewed stated that the agency expected AFMSS II to reduce the number of APD submissions with deficiencies (missing or incomplete information) and reduce the time it takes operators to correct deficiencies that BLM identified in their submissions.

You asked us to review BLM's APD review process. This report examines (1) APDs received from October 2013 through September 2019 and factors that may affect operators' decisions to apply for or use APDs; (2) BLM's review times for APDs and factors that may have affected changes in review time frames for the period from May 2016 through June 2019; and (3) BLM's APD data management system.

To review APDs received from October 2013 through September 2019 and BLM's APD review time frames for the period from May 2016 through

June 2019,[2] we obtained and analyzed data from BLM's AFMSS I and AFMSS II systems, including information on the operator, surface management agency or landowner, field office, and milestone dates for each APD. To assess the reliability of these data, we interviewed knowledgeable agency officials and conducted electronic testing, and we found the data to be sufficiently reliable for the purposes of our reporting objectives.[3]

To examine factors influencing the use of permits and changes in review time frames, we interviewed agency officials in headquarters, the National Operations Center, and six selected field offices; we refer to these officials collectively as BLM officials throughout this report. We also interviewed representatives from 18 oil and gas operators that submitted APDs to those field offices, four state commissions, and three nongovernmental organizations.[4] Because we selected a nonprobability sample of field offices and oil and gas operators, their views are not generalizable but provide illustrative examples of the views of such field office staff and operators. We conducted a content analysis of these interviews to identify and report on the most commonly cited factors influencing operators' decisions to apply for and use APDs. We selected six of the 32 BLM field offices that process APDs because these six received the highest number of APD submissions for the period of our

[2]We chose to examine APDs for the period from October 2013 through September 2019 because GAO's most recent report about BLM's APD process reviewed APD data through fiscal year 2012. See GAO, *Oil and Gas Development: BLM Needs Better Data to Track Permit Processing Times and Prioritize Inspections,* GAO-13-572 (Washington, D.C.: Aug. 23, 2013. In December 2019, BLM provided us the APD data, on which this report is based, covering fiscal years 2014 through 2019. To examine BLM's APD review time frames, we reviewed and analyzed AFMSS II data for the period from May 2016 through June 2019, as BLM officials told us that tracking of milestone dates (e.g., date accepted, date complete, etc.) is more reliable in AFMSS II than in AFMSS I, and all field offices were mandated to use AFMSS II beginning in May 2016. BLM provided data on APD review time frames, which we analyzed for the period of May 20, 2016, through June 12, 2019.

[3]We note later in this report that we identified some challenges with BLM's data management systems, including some instances of lost APD records. However, these instances did not significantly affect our ability to report on the number of APDs received from October 2013 through September 2019, or the average APD review time frames for the period from May 2016 through June 2019.

[4]We initially interviewed 24 operators, either individually or as part of several group interviews. To gather additional information on operators' views of BLM data systems and the factors affecting operators' decisions to apply for and use APDs, we attempted to conduct individual interviews with the operators initially interviewed in group settings. Six of these operators either declined to be interviewed individually or were not responsive to our follow-up attempts. Ultimately, we interviewed 18 operators individually.

review. These six offices—Buffalo, Casper, Carlsbad, North Dakota, Pinedale, and Vernal—accounted for 79 percent of the APDs BLM received during this period. To examine BLM's APD data management systems, we reviewed agency documentation on those systems and interviewed knowledgeable agency officials and system users, specifically BLM field office officials and oil and gas operators. We also reviewed relevant leading industry practices on information technology (IT) acquisitions.

We conducted this performance audit from June 2018 to March 2020 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

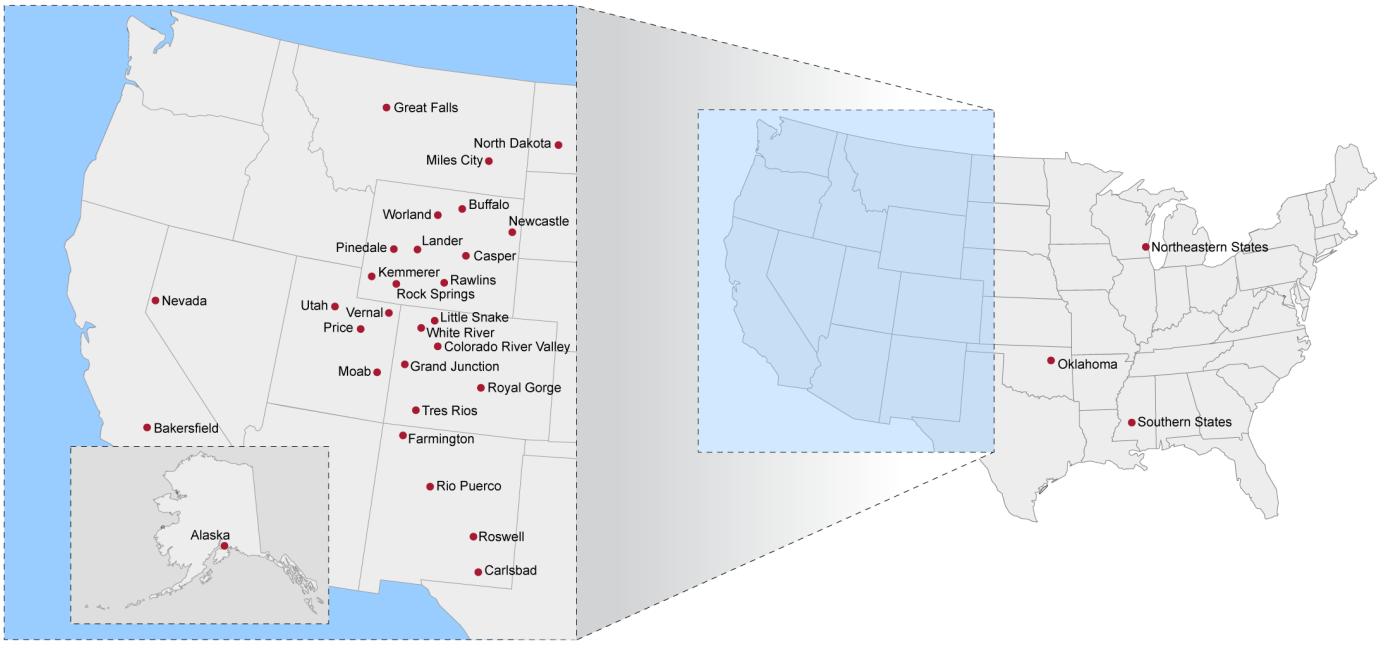
This section provides information on BLM's organizational structure for managing oil and gas development, BLM's processes for reviewing APDs for oil and gas development, and BLM data management systems for managing APDs.

BLM's Organizational Structure for Managing Oil and Gas Development

BLM's organizational structure for managing the development of oil and gas resources on federal and Indian lands includes headquarters, state, and district offices that oversee and provide guidance and support to the field offices that are primarily responsible for implementing BLM's oil and gas program, including processing APDs and conducting well inspections. Thirty-two BLM offices, primarily located in the Mountain West, perform the majority of BLM's responsibilities related to managing oil and gas resources on federal and Indian lands.[5] Figure 1 shows the locations and APD workload of BLM field offices from October 2013 through September 2019.

[5]The Carlsbad Field Office processes APDs for the Hobbs Field Station. Therefore, we included APDs received by the Hobbs Field Station in the data presented for the Carlsbad Field Office.

Figure 1: Location of Bureau of Land Management (BLM) Offices That Process Applications for Permit to Drill (APD) and Number of APDs Received from October 2013 through September 2019



BLM office name (location)	Number of APDs
Carlsbad Field Office (NM)	7,273
North Dakota Field Office (ND)	3,648
Casper Field Office (WY)	2,151
Vernal Field Office (UT)	2,115
Pinedale Field Office (WY)	1,610
Buffalo Field Office (WY)	1,370
Bakersfield Field Office (CA)	809
Colorado River Valley Field Office (CO)	705
Farmington Field Office (NM)	662
Royal Gorge Field Office (CO)	640
Oklahoma Field Office (OK)	547
Rawlins Field Office (WY)	460
White River Field Office (CO)	367
Grand Junction Field Office (CO)	164
Newcastle Field Office (WY)	159
Tres Rios Field Office (CO)	155
Roswell Field Office (NM)	131

BLM office name (location)	Number of APDs
Rock Springs Field Office (WY)	99
Miles City Field Office (MT)	89
Price Field Office (UT)	80
Moab Field Office (UT)	69
Worland Field Office (WY)	66
Southern States District Office (MS)	61
Lander Field Office (WY)	57
Rio Puerco Field Office (NM)	48
Alaska State Office (AK)	45
Little Snake Field Office (CO)	31
Nevada State Office (NV)	27
Northeastern States District Office (WI)	19
Kemmerer Field Office (WY)	18
Utah State Office (UT)	17
Great Falls Field Office (MT)	14
Total	**23,706**

Sources: GAO analysis of BLM data; Map Resources (map). | GAO-20-329

Note: Staff from the Carlsbad field office provide support to the Hobbs field station for some oil and gas management activities, including processing APDs.

BLM's Process for Reviewing APDs for Oil and Gas Development

The Federal Land Policy and Management Act of 1976 requires the Secretary of the Interior to develop land use plans that, among other things, identify federal lands and mineral resources that will be available for oil and gas development and other activities, and which, per BLM policy, are to be evaluated and potentially revised at least every 5 years. These resource management plans may designate lands to be opened or closed to future oil and gas leasing and the conditions under which development should occur. Consistent with these designations, BLM may offer mineral rights for lease through lease sales. However, a lease does not by itself entitle an operator to drill for oil or gas. Before drilling any new oil or gas wells, an operator must submit an APD for BLM's approval.[6]

At the land use planning stage and before it issues leases and APDs, BLM will take one or more of several actions, as appropriate, to satisfy its obligations under the National Environmental Policy Act of 1969 (NEPA), as amended:

- BLM may prepare an environmental impact statement—which is, among other things, a detailed statement of the likely environmental effects of the action and a consideration of alternatives to the proposed action. An environmental impact statement is required when an agency proposes a major federal action significantly affecting the quality of the human environment.
- BLM may use an environmental assessment—a more concise analysis—to determine whether the action is likely to significantly affect the environment. Based on the results of the environmental assessment, BLM may then move to prepare an environmental impact statement or conclude its analysis in a Finding of No Significant Impact, if appropriate.
- Alternatively, if the agency determines that the activities of a proposed action fall within a category of activities that the agency has previously determined to have no significant environmental impact, individually or cumulatively—what is known as a categorical exclusion—and no extraordinary circumstances exist, then the agency generally does not

[6]BLM also requires, and processes, APDs for oil and gas development of Indian minerals and lands—including resources and lands held by the United States in trust for tribes or individual Indians, Indian lands and resources subject to a restriction against alienation imposed by the United States, and allotted lands—with some exceptions. Indian minerals are also subject to leasing. However, these lands and resources are not first designated in resource management plans, as is the case with federal mineral resources.

need to prepare an environmental assessment or an environmental impact statement.

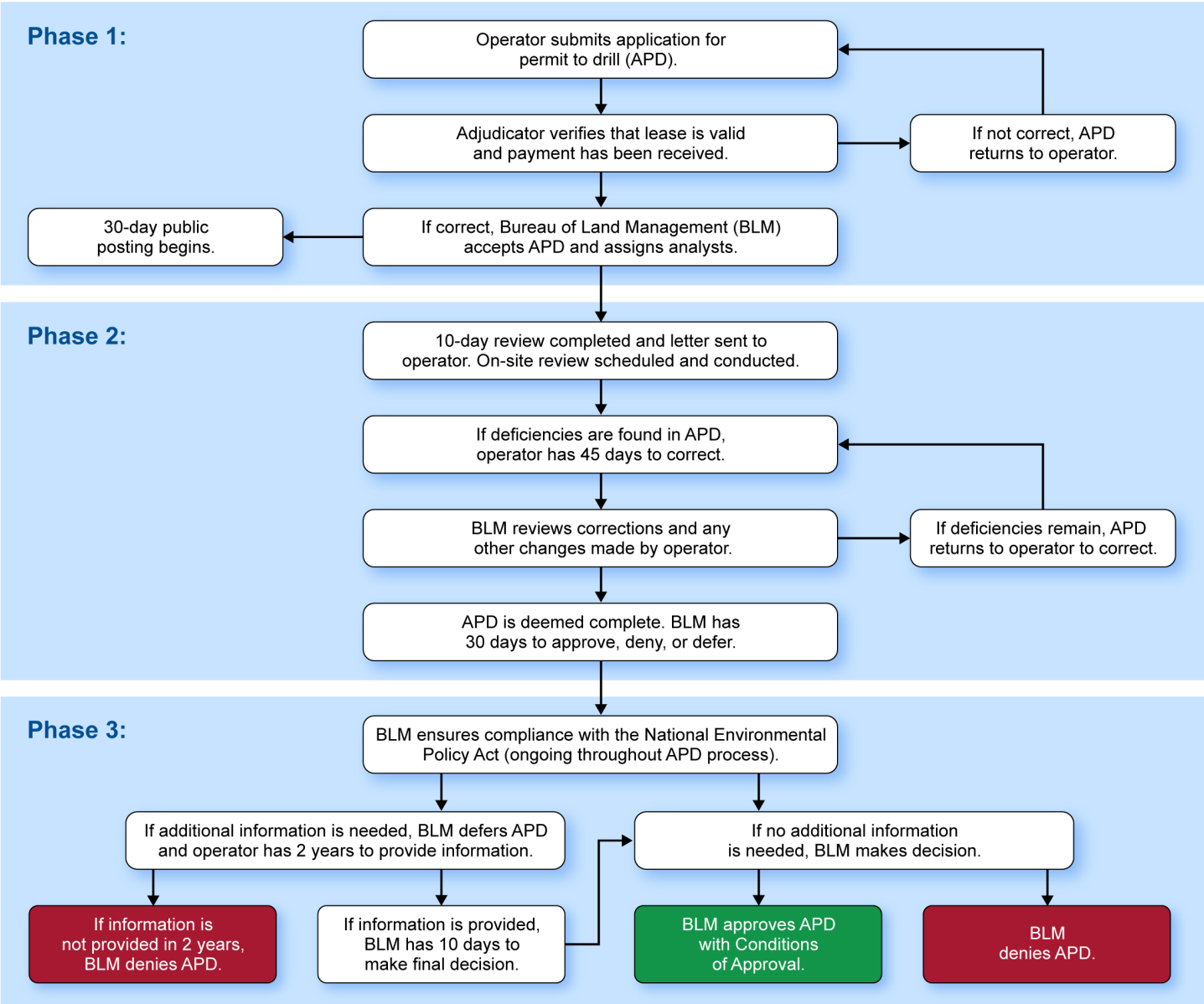
- In lieu of an environmental impact statement, environmental assessment, or a categorical exclusion, BLM may use a Determination of NEPA Adequacy, where it determines that an action is adequately analyzed in an existing NEPA document and is in conformance with the underlying land use plan.

Beginning in fiscal year 2008, Congress directed BLM to collect a filing fee from operators for the submission of each new APD. Congress has raised the APD filing fee several times, and as of October 2019, the fee was $10,230. A complete APD must include a Surface Use Plan of Operations that outlines the operator's plan for reclaiming lands disturbed both during production (known as interim reclamation) and upon final abandonment of the well site (known as final reclamation), which may include recontouring the well site to better match the surrounding landscape, redistributing topsoil, and revegetating the site with native plant species.

BLM field office staff responsible for reviewing and approving APDs follow the same general process, outlined in Onshore Order 1.[7] This review process has three broad phases. (See fig. 2.)

[7]U.S. Forest Service and BLM, Onshore Oil and Gas Order Number 1—joint final order, 72 Fed. Reg. 10308 (Mar. 7, 2007); as amended by BLM, Onshore Oil and Gas Order Number 1—final order, 82 Fed. Reg. 2906 (Jan. 10, 2017).

Figure 2: BLM's APD Review Process



Source: GAO analysis of BLM data and interviews with BLM officials. | GAO-20-329

Specifically:

- **Phase 1:** Once an operator submits an APD to BLM, an adjudicator—a legal instruments examiner or a land law examiner—conducts an initial review and validates lease and payment information, among other things.[8] During this phase, BLM reviews the APD for all points outlined in Onshore Order 1. The legal instruments examiner also checks proposed well plats and the locations of well bores to ensure the information submitted by the operator is complete. Within 10 days of receiving an APD, BLM must notify the operator whether additional information must be submitted. Once this initial review is complete, BLM formally accepts the APD and sends the operator a 10-day letter that outlines any deficiencies in the application or indicates that the application is complete. During phase 1, BLM must also schedule an on-site review of the proposed well site, if one has not already been completed as part of a Notice of Staking (NOS) option.[9]
- **Phase 2:** BLM assigns a team of specialists who begin conducting assessments relevant to their reviews. In addition to an adjudicator, the team of specialists may include an engineer, a geologist, a natural resources specialist, a cultural specialist or archeologist, and other specialists such as wildlife biologists and soil experts, as necessary, based on the specific aspects of the application. If the specialist team identifies any deficiencies (missing or incomplete information) in the APD, BLM sends the operator a deficiency letter. After receiving a deficiency letter, an operator has 45 days to correct the deficiencies BLM identified in the APD, per Onshore Order 1. This process is repeated until the operator has addressed all the deficiencies identified by BLM and made any changes requested by the agency.

[8]According to Onshore Order 1, APD submissions must include a complete Form 3160-3 (Application for Permit to Drill or Reenter), a well plat certified by a registered surveyor, a drilling plan, a Surface Use Plan of Operations, evidence of bond coverage, and an operator certification. A 2017 revision to Onshore Order 1 legally required that all APDs and Notices of Staking (NOS) be submitted electronically, with some limited exceptions. The BLM field office with jurisdiction is then to publicly post any nonproprietary information about any APD for federal minerals for at least 30 days before the APD can be approved. This public posting and comment period is for informational purposes only, to alert any interested parties that a federal minerals operation was initiated. If another federal agency, such as the Forest Service, has jurisdiction over the surface lands related to the proposed project/operation, that agency must also post the notice. BLM field office staff we interviewed said that public comments in response to these postings are rare.

[9]An APD for onshore oil and natural gas is not deemed complete until BLM conducts an on-site inspection of the proposed well site.

Following this process, BLM deems the APD complete and has 30 days to approve, deny, or defer the APD.[10]

- **Phase 3:** BLM ensures that an APD complies with all relevant laws—including NEPA, the Endangered Species Act, and the National Historic Preservation Act—and completes its review.[11] Once BLM completes its review, it issues a decision to: (1) approve the APD, subject to reasonable Conditions of Approval; (2) deny the APD if there is nothing the operator can do that would allow BLM to approve it; or (3) defer the APD.

BLM's Data System for Managing Oil and Gas Activities and Processing APDs

AFMSS is BLM's fluid minerals support system for oil, natural gas, and geothermal. It is used to facilitate the collection, management, and sharing of permits, reports, and field inspection and enforcement data related to managing oil and gas activities across the federal government. More specifically, AFMSS includes key data covering leases, agreements, wells, production, operations approvals, bond and surety information, and operator compliance. BLM officials and oil and gas operators use AFMSS for a variety of purposes, including submitting APDs and tracking the APD review process. BLM staff who use AFMSS include adjudicators, geologists, natural resource specialists, and managers responsible for signing off on APDs.

BLM recently began a multiyear effort to redesign AFMSS with a newer version known as AFMSS II. BLM is completing its AFMSS II rollout in phases, starting with the deployment of an APD/NOS module in October 2015. System users, including BLM field office officials and oil and gas operators, may submit development requests to BLM's AFMSS help desk if they identify system defects or to request additional features. BLM

[10]If BLM anticipates that an APD review will take much longer than 30 days, BLM will place the APD in deferred status and send a deferral notice to the operator. The deferral notice must specify any actions the operator can take that would enable BLM to make a final decision, and/or any actions that BLM or the U.S. Forest Service need to take to review the APD, and a schedule for completing these actions. If BLM defers an APD, the operator has 2 years to take the action specified in the notice, which may include providing BLM with any information the agency determines is necessary to approve the APD. Once BLM receives any outstanding environmental reviews or other required information, the agency has 10 days to make a final decision on the APD. If the operator fails to supply the required information in 2 years, BLM will deny the permit.

[11]Except in the case of lands managed by the U.S. Forest Service, BLM has the lead responsibility for the environmental reviews of APDs. Under Onshore Order 1, BLM cannot approve an APD until it determines that the APD complies with relevant laws, such as NEPA.

reviews these development requests and, in some cases, fixes the defects or develops additional features. In May 2016, BLM began encouraging electronic filing (or "e-filing") of all APDs and NOSs.[12] In July 2019, BLM implemented an upgrade to the APD/NOS module in AFMSS II. This upgrade was called APDx. BLM expects to rollout the four remaining AFMSS II modules from April 2020 through November 2020, according to BLM officials we interviewed. BLM plans to replace AFMSS with AFMSS II once AFMSS II is fully implemented and operational.

BLM Received About 24,000 APDs from Fiscal Year 2014 through Fiscal Year 2019, and Various Factors Influenced Operators' Decisions to Apply for and Use APDs

From fiscal year 2014 through fiscal year 2019, BLM received 23,706 APDs from operators. Of these APDs, as of the end of fiscal year 2019, 2,628 were under review; 9,991 were approved and in use; 9,950 were approved and unused; and 1,137 were unapproved, cancelled, or rescinded.[13] Based on interviews with BLM field office and headquarters officials and selected operators, we found that the three primary factors influencing operators' decisions to apply for or use APDs were economic factors, infrastructure availability, and lease terms.

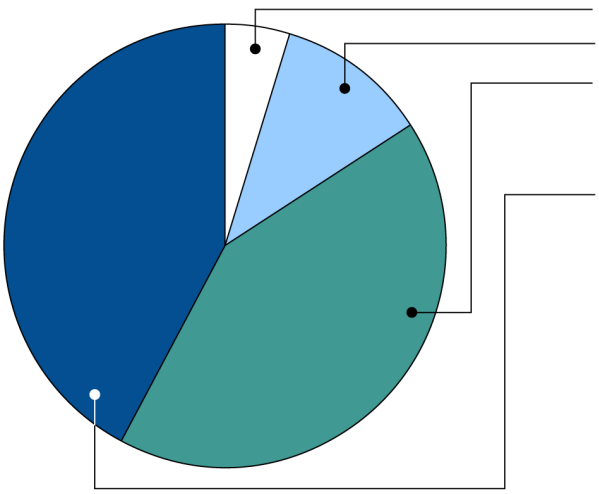
[12]E-filing became mandatory in March 2017 after a revision to Onshore Order 1 required e-filing, with a few exceptions.

[13]APDs under review are those that an operator has submitted to BLM but that have not yet been approved. In-use APDs indicate that the operator is the process of drilling, that the well is in production, the well is shut-in (that is, capable of producing but not currently producing), or the well is plugged (permanently closed). Unused APDs have been approved by BLM, but the operator has not yet begun drilling. Unapproved APDs include APDs that have been rejected, returned, or expired; cancelled APDs have been withdrawn by the operator; and rescinded APDs have been approved, but BLM has determined that no further action will be taken. The operator must submit another APD if it wishes to continue pursuing this well. In addition to the 23,706 APDs that fall into these four categories, BLM received an additional 50 APDs during this period that we could not categorize due to anomalies in the data.

Of the Roughly 24,000 APDs, 2,628 Were Under Review, 9,991 Were In Use, and 9,950 Were Unused

We reviewed data from BLM's AFMSS I and II and found that from October 2013 through September 2019, BLM received 23,706 APDs. Of these, as of the end of fiscal year 2019, 2,628 were under review; 9,991 were approved and in use; 9,950 were approved and unused; and 1,137 were unapproved, cancelled, or rescinded. (See fig. 3.) BLM considers APDs to be in use once drilling has begun at the relevant leased location. In-use APDs can therefore involve wells that are: still being drilled, currently producing oil and gas, performing support services such as disposing of waste or enhancing production, temporarily not producing or servicing (known as shut-in wells), in drill shut-in status awaiting completion operations, and either temporarily incapable of economically producing oil or gas or have been closed permanently (known as plugged wells). BLM data indicate that 418 of the 9,532 unused APDs are in preparation, meaning the operator has done some construction at the relevant location but has not yet begun drilling.[14]

Figure 3: Status of Applications for Permit to Drill (APD) by Well Status, Fiscal Years 2014 through 2019



Status of APD	Number of APDs
Unapproved	**1,137**
Under review	**2,628**
Approved, not in use	**9,950**
Other unused	9,532
In preparation	418
Approved, in use	**9,991**
Producing	7,100
Drilling	2,290
Plugged	266
Shut-in	179
Other well	156
Total	**23,706**

Source: GAO analysis of Bureau of Land Management (BLM) data. | GAO-20-329

Note: In-use APDs indicate that: the operator is in the process of drilling, the well is in production or acting as a service well, the well is shut-in (that is, capable of producing but not currently producing), or the well is plugged (permanently closed). Unused APDs have been approved by BLM, but the operator has not yet begun drilling. Some APDs that are unused are in preparation, meaning the operator has done some construction at the relevant location but has not yet begun drilling.

[14]The remaining unused APDs are either approved with no further action taken, approved but since expired without action being taken, or for locations where a well was never drilled and any surface disturbance has been reclaimed.

Unapproved APDs include APDs that have been rejected, returned, or expired; cancelled APDs have been withdrawn by the operator; and rescinded APDs have been approved, but BLM has determined that no further action will be taken. The operator must submit another APD if it wishes to continue the well. APDs under review are those that an operator has submitted to BLM but that have not yet been approved. In addition to the 23,706 APDs that fall into these four categories, BLM received an additional 50 APDs during this period that we could not categorize due to anomalies in the data.

If an APD remains unused at the end of the original 2-year permit period, the operator can apply for an extension. About 20 percent (4,847) of the APDs included in our review had received a 2-year extension. Our analysis of the BLM data indicates that APDs that received an extension are likely to remain unused during the extension period. Specifically, about 40 percent (3,965) of APDs that were approved and unused were past the initial 2-year period and had received extensions, whereas only 8 percent (792) of APDs that were in use had been drilled after they received a 2-year extension. According to BLM officials at several field offices, processing an extension requires significantly less work than processing a new APD. BLM officials at one of the six field offices we visited said that as long as both the lease and NEPA analysis associated with an APD remain valid, BLM generally approves extensions. Officials at one field office we visited stated that an extension request is almost always approved if an operator submits it before the APD expires.

During the period of our review, 505 oil and gas operators submitted these 23,706 APDs to BLM. Of these 505 operators, 20 accounted for almost half of the APDs received by BLM. These operators also accounted for about half of the unused APDs and half of the APDs with extensions from October 2013 through September 2019. See table 1 below.

Table 1: Top 20 Operators by Number of Applications for Permit to Drill (APD) Submitted, Fiscal Years 2013 through 2019

Operator	Submitted APDs	Under review APDs	Approved and in use APDs	Approved and unused APDs	Unapproved APDs	Extensions
EOG Resources Incorporated	1,544	341	484	643	76	306
Devon Energy Production Company	1,495	194	527	644	130	327
TEP Rocky Mountain LLC	727	3	358	360	6	253
Jonah Energy LLC	704	3	510	181	10	39
Ultra Resources Incorporated	676	5	548	118	5	33
XTO Energy Incorporated	645	58	360	193	34	48
Oxy USA Incorporated	554	149	262	132	11	7
Cog Operating LLC	550	35	294	198	23	124

Operator	Submitted APDs	Under review APDs	Approved and in use APDs	Approved and unused APDs	Unapproved APDs	Extensions
Mewbourne Oil Company	489	105	201	176	7	87
Newfield Production Company	474	8	156	299	11	259
Berry Petroleum Company	442	13	226	166	37	114
XTO Permian Operating LLC	442	55	130	257	0	46
Anschutz Oil Company LLC	430	37	39	351	3	168
Chesapeake Operating LLC	388	33	129	208	18	164
Crescent Point Energy	387	22	69	249	47	140
Continental Resources Incorporated	345	20	228	72	25	16
Matador Production Company	345	145	69	126	5	27
Whiting Oil & Gas Corporation	334	6	167	148	13	102
Cimarex Energy Company	322	73	100	144	5	40
Marathon Oil Company	298	21	214	53	10	27
Total	**11,591**	**1,326**	**5,071**	**4,718**	**476**	**2,327**

Source: GAO analysis of Bureau of Land Management data I GAO-20-329

According to BLM field office officials we interviewed, some of the potential effects of operators applying for APDs that they do not use include contributing to the queue of APDs under review, creating additional demands on staff time, and interfering with certain BLM staff's ability to fulfill other job responsibilities, including conducting well inspections. Specifically, officials at three of the six BLM field offices we visited said that APD workload demands may mean that some staff have less time to conduct well inspections.[15] Officials at two field offices explicitly stated that BLM prioritizes reviewing APDs over other duties, and officials at a third field office told us that natural resources specialists in their office spent the majority of their time processing APDs.[16] Officials at this field office also said that during prior oil and gas boom periods, natural resources specialists were unable to keep up with APDs

[15]This is consistent with the findings presented in prior GAO work. In our June 2005 report on oil and gas development, we found that BLM policy changes placed greater emphasis on processing APDs, which caused field office staff to spend more time processing APDs and less time performing environmental mitigation activities. See GAO, *Oil and Gas Development: Increased Permitting Activity Has Lessened BLM's Ability to Meet Its Environmental Protection Responsibilities,* GAO-05-418 (Washington, D.C.: June 17, 2005).

[16]Interior has a priority performance goal to eliminate the APD backlog, but BLM clarified that it is not agency policy to prioritize the review of APDs over other duties, such as well inspections.

submitted, resulting in a backlog of APDs under review. Officials at two field offices stated that some office specialists spend the bulk of their time on oil and gas activities such as APDs, leaving little time to attend to their other job responsibilities outside the oil and gas portfolio. However, officials we interviewed at one BLM field office said that reviewing APDs, even those that are ultimately unused, had no significant effects in terms of staff workload. Evaluating the reasons for these differences was not in the scope of this engagement, but a recent GAO report found mismatches in the workload of BLM inspections and enforcement staff and the levels of such staff in BLM field offices.[17]

BLM does not impose a penalty on operators, or use other disincentives beyond the limited number of years in which an unused APD is valid, for not using approved APDs. In addition, the APD filing fee is not a disincentive to operators applying for APDs. To cover the cost of processing APDs, BLM charges a filing fee of $10,230 per APD. Of the 18 operators we interviewed, none said the fee was a top deciding factor in whether to apply for an APD, and 13 of them said the fee was not a factor at all. Operators told us that drilling a well can cost millions of dollars. One operator said that when compared to drilling costs, the filing fee is insignificant. Officials at one of the six BLM field offices we visited said that a greater filing fee probably would not reduce APD submissions, given that the fee is a small fraction of the total cost of drilling a well.

Three Main Factors Influence Operators' Decisions: Economics, Infrastructure, and Lease Terms

BLM field office and headquarters officials and representatives from selected oil and gas operators, state oil and gas commissions, and nongovernmental organizations we interviewed (referred to as representatives) identified various factors that can influence operators' decisions to apply for and use APDs, including three main factors: economic factors, infrastructure availability, and lease terms.

Economic Factors

According to the BLM field office and headquarters officials and representatives we interviewed, economic factors—including oil and gas prices, drilling success and geologic attributes, and technological

[17]See GAO, *Oil and Gas Development: Actions Needed to Improve Oversight of the Inspections and Enforcement Program,* GAO-19-7 (Washington, D.C.: Feb. 14, 2019).

changes—influence operators' decisions to apply for and use APDs.[18] Specifically:

- **The price of oil and natural gas.** Oil and natural gas prices affect the return an operator can expect to earn from a well. Fourteen of the 18 operators we interviewed said that oil and gas prices are a factor in their decision-making. For example, one operator said that if the price of oil were to go up, the operator would add a drilling rig, and if the price were to go down, it may suspend a rig. Another operator noted that a permit may go unused if oil and gas prices drop. In addition, officials from five of the six BLM field offices we visited, as well as BLM headquarters officials, said operators consider the price of oil and natural gas in their decisions to apply for and use APDs. For example, officials in one field office we visited said that operator decisions are based primarily on the prices of oil and gas, and officials in another field office we visited said that when the price of oil is high, operators will drill everywhere. Representatives of two of the three nongovernmental organizations we interviewed also reported that oil and gas prices play a role in operators' decisions.
- **Drilling success and geological attributes.** Some potential well locations are capable of producing more oil and gas than others. Twelve of the 18 operators we interviewed said that drilling success and geological attributes of an area affect their decisions to drill. Four of these operators said that drilling success and geological attributes are the biggest factors behind their decisions to drill, and two other operators said these factors were very significant in their decision-making. In addition, officials from three of six field offices we visited and BLM headquarters officials cited drilling success and geological attributes as important factors. BLM officials in one field office we visited said that drilling success in an area will lead to greater use of APDs in that area, but drilling that ends up being unprofitable would cause operators to cease drilling in that area.
- **Technological changes.** Technological changes, such as advancements in horizontal drilling, can alter the appeal of a particular drill plan between applying for an APD and beginning drilling. Five of the 18 operators we interviewed, along with BLM headquarters

[18]Representatives from four of the 18 operators we interviewed also reported that drilling costs are a factor in their decisions to drill. For example, one operator said that lower drilling costs make drilling more economic, and if costs are high, it cannot pursue projects it would otherwise pursue. Another operator reported that due to the high costs of operating a drilling rig, the company needs to make sure the rigs are drilling every day.

officials, cited technological changes and advances as a factor affecting operators' decisions to apply for and use APDs. For example, one operator said that it considers new technological advances when considering plans to drill, and two operators cited changes associated with the advent of horizontal drilling technology as affecting their decisions.[19] In particular, one operator said that it had older approved APDs for vertical drilling technology but has since moved most of its operations to horizontal wells and is not allowed to drill horizontally on a vertical permit, so it is unlikely to use those APDs.

Infrastructure Availability

Representatives we interviewed also reported that factors related to infrastructure—including access to pipelines and drilling rig schedules—influence operators' decisions. Specifically:

- **Access to infrastructure, including pipelines.** Access to infrastructure may include pipeline availability, rail transport, and oil and gas processing facilities, among other things. Seven of the 18 operators we interviewed said that factors related to infrastructure affected their decisions to apply for and use APDs. One operator cited the lack of adequate infrastructure in the Permian Basin as a major impediment to moving oil and gas out of the basin in a timely fashion. Another operator reported that it must consider waiting for new pipeline installations or gas plant capacity in its decisions to submit an APD, and a third referenced the need for gas processing and takeaway infrastructure in order to avoid having to burn natural gas as a byproduct of oil development—known as flaring gas. Officials in one of the six BLM field offices we visited also reported infrastructure as a factor. In addition, a representative from one of the three nongovernmental organizations we interviewed said that infrastructure is a huge factor in operators' decisions about when and whether to drill once they obtain a permit from BLM.
- **Drilling rig schedules.** Operators have a limited number of drilling rigs, which need to be in use at all times to remain profitable, thus necessitating coordinated drilling rig schedules. Five of 18 operators we interviewed and officials at two of the six BLM field offices we visited reported that drilling rig schedules affect operators' decisions. For example, one operator said that rig schedules are the primary driver of the company's priorities; it costs around $60,000 per day to have a rig on site, so the company needs to make sure the rigs are

[19]Horizontal drilling technology allows an operator to penetrate resources laterally, once the initial vertical well is drilled. In contrast to traditional vertical wells, horizontal wells can extract resources from up to several miles away from the surface location.

working every day to justify this cost. Another operator said that the company needs to be sure it has enough APDs to be able to keep rigs moving. In addition, officials at one state oil and gas commission noted that rig availability influences operators' use of APDs.

Lease terms

Representatives we interviewed also reported that factors related to lease terms—including lease expirations and wildlife stipulations—influence operators' decisions.[20] Specifically:

- **Lease expiration.** If an operator has not drilled on a lease parcel before the lease expires, the operator may lose the lease. Twelve of the 18 operators we interviewed said that lease expirations are a factor in their decisions to apply for APDs and to drill on federal lands. For example, one operator said that it never wants to lose a lease and, consequently, it may drill before the lease is set to expire, even if the rate of return is lower than on other leases. In addition, officials at three of the six BLM field offices we visited reported that lease expirations play a role in operators' business decisions. Officials at one field office we visited said it is common for the office to receive an APD submission in the 9th year of a 10-year lease term and that, generally, the office receives fewer APDs early in a lease term.
- **Lease terms and APD stipulations.** Leases and APDs can include stipulations related to factors such as threats to wildlife and cultural resources. Five of the 18 operators we interviewed reported that lease and APD stipulations related to the presence of wildlife and other environmental factors could influence drilling decisions. For example, one operator noted that BLM and other federal agencies have requirements to consider wildlife or cultural concerns, which may affect operators' timing for drilling. Another operator said it may shift its proposed drilling site if endangered or threatened species are found during the on-site review. In addition, representatives of one of the four state oil and gas commissions we interviewed said that air emissions standards affect oil and gas operations and that operators must consider wildlife migration when submitting APDs.

[20]Two of the 18 operators we interviewed also cited communitization or unit agreements as influencing operator decisions to apply for and use APDs. A communitization agreement allows operators to pool together federal, Indian, state, and/or private oil and gas resources that could not otherwise be independently developed and defines how the oil and gas production will be allocated among the operators and how revenue will be shared between the operators and mineral owners. One operator said that in Wyoming, the first operator to obtain a permit for a spacing unit has the right to control the operations in that unit. Thus, there is a race among operators to obtain permits in order to control operations.

Other factors

Other factors can influence operators' decisions to apply for and use APDs, including the following:

- **Federal approval times.** There is a perception in the industry that the permitting process can take longer for APDs on federal lands than on state or private lands. Six of the 18 operators we interviewed cited federal approval time frames as a factor affecting decisions to apply for and use APDs. One operator said that because the federal permitting process takes so long, the company has to project far into the future and thus is more likely to have approved APDs that ultimately go unused. However, another operator said that it factors the longer federal approval times into its plans, and yet another stated that the APD approval times are not long enough that there would be significant changes in factors influencing permit decisions.
- **Differences between federal and state permitting processes.** State agencies responsible for reviewing APDs for drilling on state lands must comply with different laws and regulations than BLM and may use different review processes. For example, state agencies do not have to comply with NEPA, as BLM must. Four of the 18 operators we interviewed said that the permitting process associated with developing federal oil and gas resources is more time-consuming than for state- or privately owned oil and gas resources. One operator said that, given the chance to apply for APDs for similar mineral resources on either state or federal lands, the operator would choose the state lands. BLM officials at one of the six field offices we visited said that state APD review processes are typically less complex than BLM's processes. These officials also noted that the Wyoming state fee of $500 is much lower than BLM's fee of $10,230.
- **Speculative holding of APDs.** Some operators may obtain APDs to increase the value of the company without using the APD to drill, according to officials from one of the six BLM field offices we visited and representatives from two of the three nongovernmental organizations we interviewed. The representatives of these two nongovernmental organizations cited some factors that make it easier for an operator to obtain an APD, whether or not the APD would result in actual drilling. For example, they stated that the ability of operators to lease federal lands with relatively low rental rates contributes to the number of APDs obtained for this speculative purpose.
- **Operator preference.** Another factor affecting operators' decisions to apply for and use APDs, reported by selected operators we spoke with, is whether an operator prefers to keep an inventory of APDs on hand. One operator we interviewed told us that its business practices

had shifted to applying for APDs in a more focused way in order to be more efficient. Most operators we spoke with stated that they kept some unused APDs on hand to ensure drill rigs were kept busy, and one operator stated that having several APDs was useful to provide operators with options.

APD Review Times Decreased from May 2016 through June 2019, and Various Factors, Including Prioritization, May Have Affected the Change

Review times for APDs received from May 2016 through June 2019 decreased by more than half, and various factors may have affected the change. Specifically, the amount of time it took BLM field offices to review APDs decreased in the second and third phases of the review process, which may be attributed to streamlining and the practice in some BLM field offices of working with oil and gas operators to prioritize APDs for review. However, review time frames for the first phase of the process increased, which may be attributed to staffing challenges in one field office responsible for processing almost one-third of all APDs received.

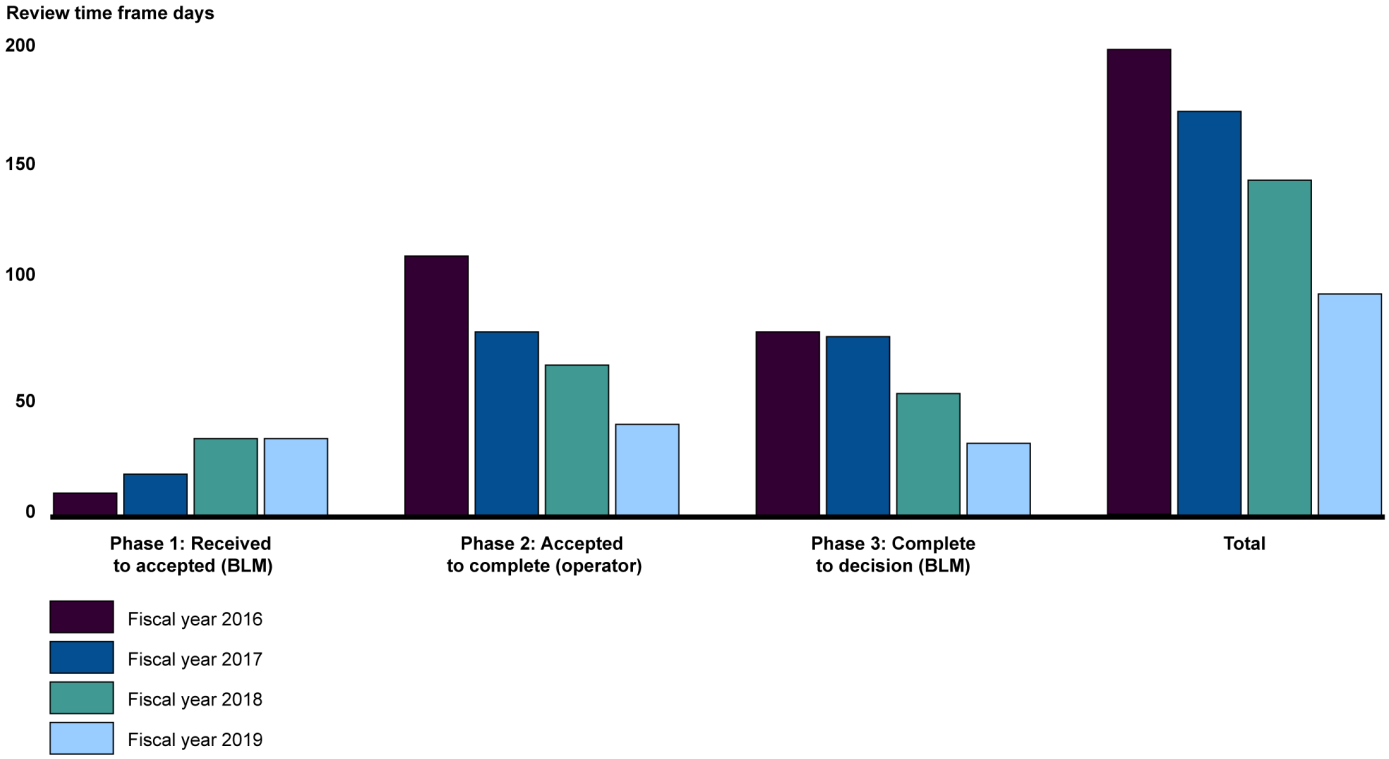
Overall APD Review Times Decreased, Which May Be Attributed to Streamlining and Prioritization Efforts

For APDs received from May 2016 to June 2019, overall review times—from the date the APD was received to the date BLM issued a decision—decreased. This may be attributed to streamlining and prioritization efforts at some BLM field offices.[21] For the period we reviewed, APD review times decreased 52 percent, from 196 days in fiscal year 2016 to 94 days in fiscal year 2019. More specifically, there was a decrease in the amount of time it took to review APDs in the second and third phases of the review process.[22] The average time it took to review APDs in the second phase of the process decreased from 110 days in fiscal year 2016 to 39 days in fiscal year 2019. Additionally, the average review times for the third phase decreased from 78 days in fiscal year 2016 to an average of 31 days in fiscal year 2019—bringing decisions in the third phase closer to meeting the 30-day regulatory time frame outlined in Onshore Order 1. Figure 4 shows the average review times for completing each phase of the APD review process, along with average total review times, by fiscal year.

[21]In commenting on a draft of this report, BLM stated that it believes there are many factors that have led to the decrease in APD review times. For example, BLM stated that the agency has been able to streamline the review of APDs for the same well pad.

[22]Review times for the first phase of the review process increased, which we discuss in the next section.

Figure 4: Average Number of Days to Review Applications for Permit to Drill (APD) for Each Phase of the Process, Fiscal Years 2016 through 2019



Source: GAO analysis of Bureau of Land Management (BLM) data. | GAO-20-329

We found that two primary factors may have affected the decrease in review times for the second and third phases of the review process.[23] First, BLM took steps to streamline certain aspects of its APD review process, including NEPA reviews. For example, in response to Secretarial Order 3355 and Executive Order 13807, BLM issued a report that included recommendations for streamlining the NEPA review process through the use of categorical exclusions and determinations of NEPA adequacy.[24] As of September 2019, according to BLM, the agency had implemented several of the report's recommendations. For example, BLM said it provided training for (1) expediting the NEPA process, including the

[23]In commenting on a draft of this report, BLM cited two additional factors—staffing and the agency's new data system—that BLM believes have influenced review times. We discuss these factors later in this report.

[24]Department of the Interior, *BLM Report in Response to Secretarial Memorandum on Improving Planning and NEPA Processes and Secretarial Order 3355* (Sept. 27, 2017).

appropriate use of categorical exclusions and determinations of NEPA adequacy; (2) determining when to use environmental assessments rather than environmental impact statements; and, (3) using programmatic analyses to address several similar actions in one analysis to support site-specific decision-making. In addition, according to BLM's website, AFMSS II made processing APDs more efficient and helped reduce the time it took field offices to review and approve APDs.[25]

While the effect of the steps taken by the agency on processing times is unknown, the use of categorical exclusions may shorten BLM's NEPA review process and, in turn, reduce overall APD review times. For example, the use of categorical exclusions may be one reason why average review times in the Pinedale field office are lower than in the other field offices we reviewed. (See table 2.)

Table 2: Average Application for Permit to Drill (APD) Review Times, in Days, by Selected Field Office, May 2016 through June 2019

Field office	Average review time frame (days)
Buffalo	204
Carlsbad	186
Casper	220
North Dakota	134
Pinedale	49
Vernal	179
All other field offices	106

Source: GAO analysis of Bureau of Land Management data I GAO-20-329

Note: BLM officials we interviewed said that the higher review times in Buffalo, Casper, and Vernal field offices may be attributed to these offices having a high level of APDs to drill into and produce federal minerals from nonfederal locations. They said that the guidance issued by the agency in 2018 has helped reduce APD review times for APDs on private surface locations where the wells are accessing federal minerals using horizontal drilling technology.

The Pinedale field office primarily oversees three oil and gas fields—the Anticline, the Jonah Field, and the Normally Pressured Lance— all of which have programmatic environmental impact statements in place. According to a BLM official we interviewed in the Pinedale field office, the potential environmental impacts of oil and gas drilling in these three oil

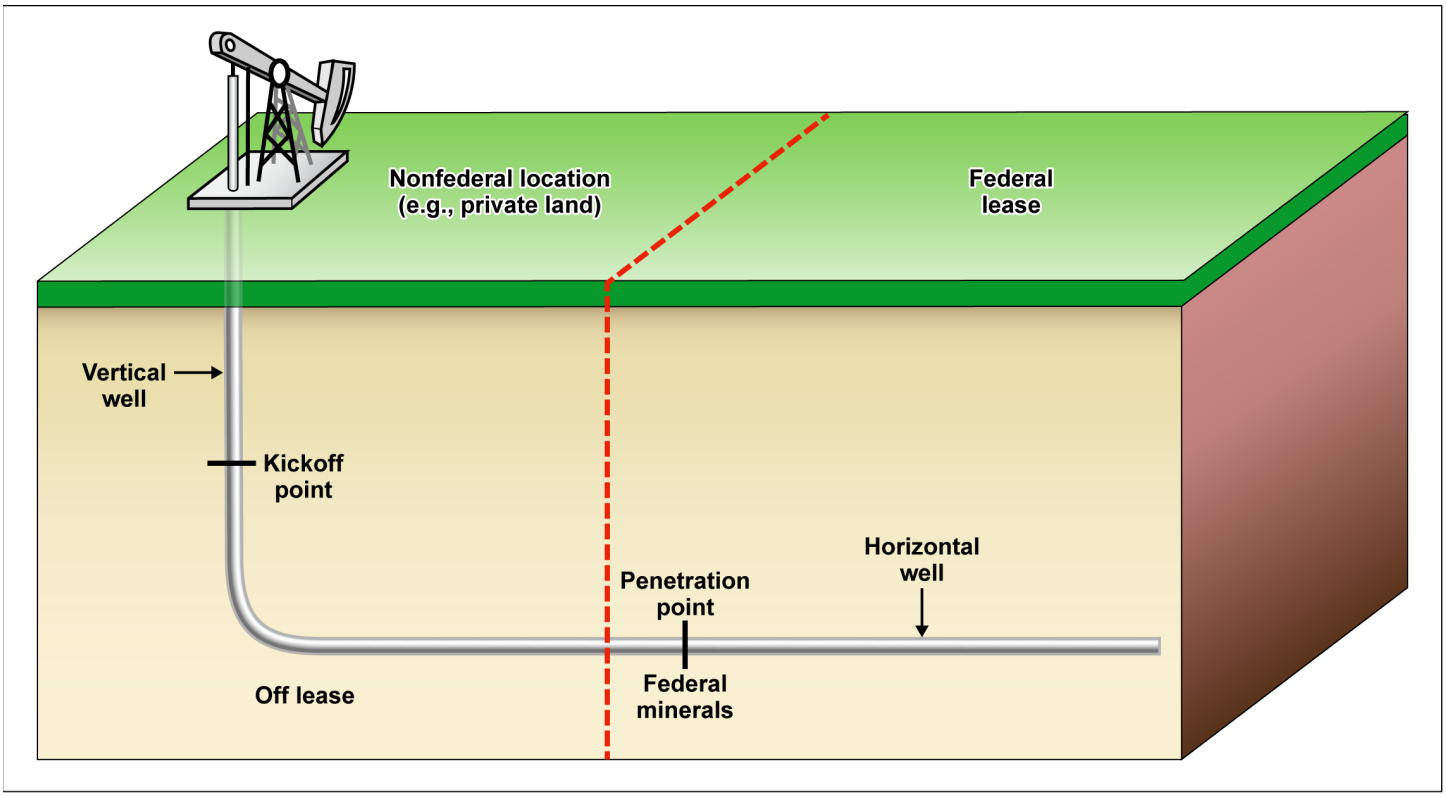
[25]Bureau of Land Management, "Well Permitting and Development," accessed November 15, 2019, https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/operations-and-production/permitting. We discuss AFMSS II in more detail in the next section of this report.

and gas fields are well understood based on existing environmental impact statements, thereby allowing BLM to use categorical exclusions that may expedite the review of new APDs. According to this official, the Pinedale field office leads BLM field offices in using categorical exclusions to determine NEPA sufficiency when reviewing APDs.

In addition to using categorical exclusions, in 2018, BLM issued a Permanent Instruction Memorandum that provided guidance for evaluating compliance with NEPA and other environmental laws when reviewing APDs to drill into and produce federal minerals from nonfederal locations.[26] (See fig. 5.) Officials we interviewed from two of the BLM field offices, as well as several of the selected oil and gas operators, said that the 2018 guidance has improved the APD review process by reducing APD review times and creating more consistent reviews, particularly for APDs on private surface locations where the wells are accessing federal minerals using horizontal drilling technology. More specifically, our analysis of BLM APD data indicates that review times for the second and third phases for APDs accessing federal minerals from a private surface location decreased from 217 days in fiscal year 2016 to 84 days in fiscal year 2019.

[26]Bureau of Land Management, *Permanent Instruction Memorandum 2018-014* (June 12, 2018). For the purposes of this Instruction Memorandum, BLM defines the term nonfederal to refer to lands where both the surface and mineral estate are not owned or managed by the United States and defines the term federal to also include Indian trust surface or minerals; the term fee refers to surface or mineral ownership other than federal—for example, state or privately owned.

Figure 5: Example of a Well that Drills from a Nonfederal Location into Federal Minerals



Source: GAO. | GAO-20-329

The second factor that may have resulted in the decrease in review times for the second and third phases of the APD review process is the practice in some BLM field offices of working with oil and gas operators to prioritize APDs for review. Working with operators to prioritize APDs for review provides an opportunity for regular communication between BLM field office officials and operators, allowing both parties to focus on APDs for wells that operators actually plan to drill. BLM Instruction Memorandum 2013-104 encourages BLM field offices to meet frequently with operators to identify the highest priority APDs, but some offices do not do so.[27] Four of the six field offices we reviewed reported prioritizing APDs based on operators' priorities. Officials from one of the remaining

[27]Bureau of Land Management, *Instruction Memorandum 2013-104* (Apr. 15, 2013). We confirmed with BLM officials that this Instruction Memorandum is still active policy, despite its September 2014 expiration date. These officials said that BLM plans to update the memorandum to reflect changes with AFMSS II, but they had no expected date for the update.

two BLM field offices said that they discussed operators' priorities during booms in APD submissions, when they had a heavier workload, but are no longer doing so.

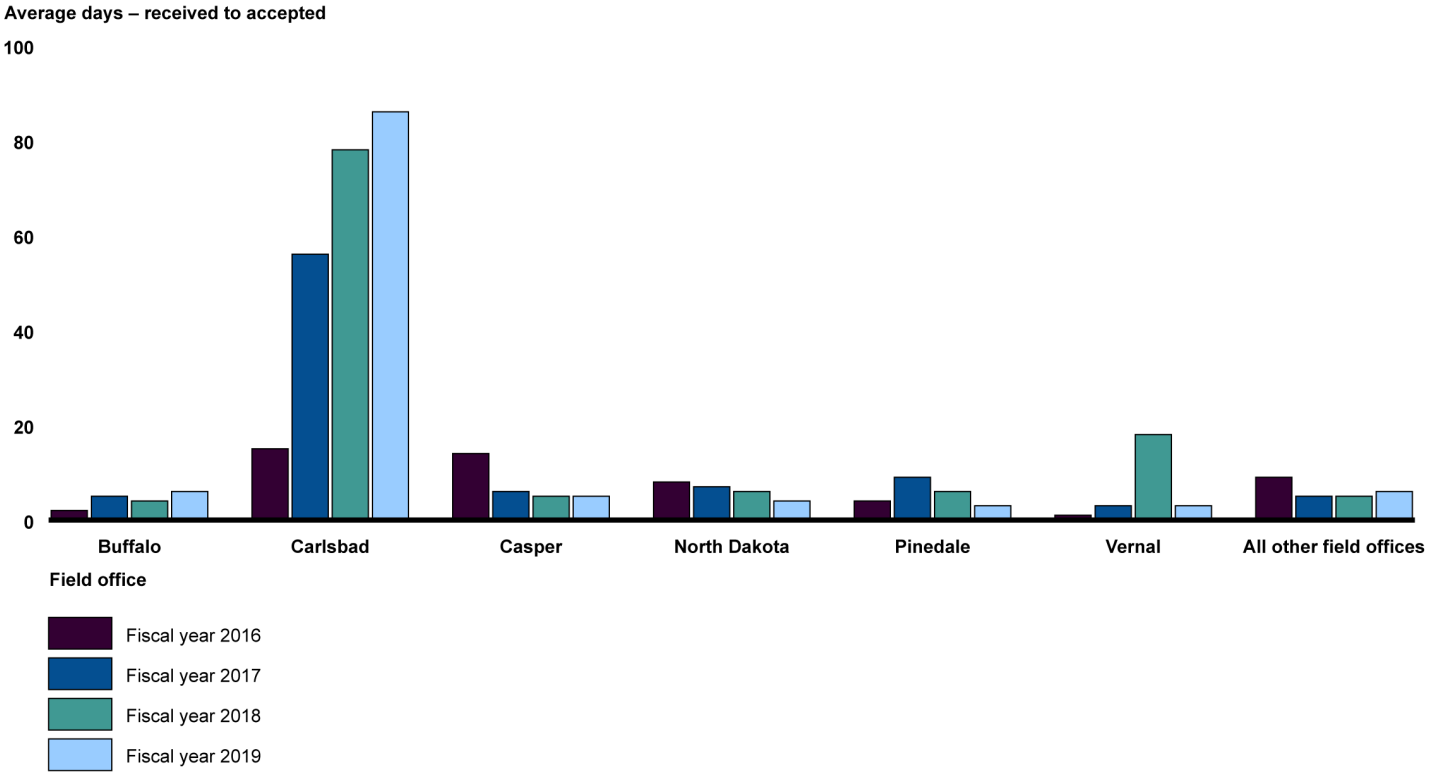
Officials from the second field office said that they did not prioritize APDs for review and stated that their general policy is "first in, first out." Nevertheless, officials from the same field office told us that they work with operators to reduce the submission of APDs that are less likely to be used and to submit higher-priority APDs first. These officials said that they believe such efforts help reduce APD submissions to a more manageable load that can be reviewed more quickly. Most of the operators we interviewed told us that they worked with BLM field offices to prioritize among the APDs they submitted to focus on those that they planned to use first. One operator told us that working with field office staff to prioritize APD reviews based on operator priorities is the most effective way to receive approval in a timely manner.

BLM does not have a documented process for how to prioritize APD reviews, which may be why some BLM field offices do not consistently work with operators to identify highest-priority APDs, as encouraged in Instruction Memorandum 2013-104. According to some of the operators we interviewed, attitudes toward prioritization vary by field office and among BLM officials, making the practice subject to the preferences of the field office manager or other BLM staff. By developing a documented process to prioritize APDs for review, BLM could better ensure that it uses its limited staff resources to process APDs that are most likely to be used. In addition, greater consistency across BLM field offices' efforts to work with oil and gas operators to identify their highest-priority APDs could allow operators to better focus on APD submissions that are most likely to be used, thus reducing the overall APD workload for BLM.

Review Time Frames for the First Phase of the Review Process Increased, Which May Be Attributed to Staffing Challenges in One Field Office

While overall APD review time frames decreased over the period of our review, the average review time frame for the first phase of the APD review process—the period from the time the application was received by BLM to the time it was accepted—increased. Specifically, this time frame increased from an average of 10 days for APDs received in fiscal year 2016 to an average of 33 days for APDs received in fiscal year 2019. Of the six BLM field offices we reviewed, three offices—Buffalo, Carlsbad, and Vernal—saw an overall increase in average review time frames for the first phase of review. The other three saw an overall decrease, with the Pinedale field office experiencing an initial increase, followed by a decrease. (See fig. 6.)

Figure 6: Average Number of Days from Application Received Date to Application Accepted Date, by Selected BLM Field Offices



Source: GAO analysis of Bureau of Land Management data. | GAO-20-329

The first phase of the APD review process involves an initial review of the APD by adjudicators who, among other things, validate lease information and payment of the APD filing fee. The Carlsbad field office, which processed almost a third (31 percent) of all APDs submitted during the period of our review, experienced an increase of 473 percent in the time frames for the first phase of the review process—from 15 days in fiscal year 2016 to 86 days in fiscal year 2019. The increase in the time it took to review APDs in the first phase of the process at the Carlsbad field office may be attributed to an insufficient number of staff due to challenges including hiring and retaining adjudicators. When we visited the Carlsbad field office in April 2019, the office was looking to fill six adjudicators, including five legal instruments examiners. Officials told us that BLM's New Mexico state office had advertised openings for 30 to 40 positions in the Carlsbad field office but was able to fill just a handful of positions. The officials cited a variety of reasons why the office was able

to fill so few positions, including the high cost of living in the Carlsbad area and the focus on processing APDs versus other job functions.[28]

The Carlsbad field office has taken a number of steps to improve the review time frames for the first phase of the APD review process. First, a senior Carlsbad field office official told us that Carlsbad field office staff prioritize APDs that have been submitted but not yet accepted into the system during this first phase of review. In other words, once an APD is submitted, staff will enter the data into the tracking system used by the Carlsbad field office, allowing the specialists to begin their NEPA review even before BLM formally accepts the application. By beginning the NEPA review before BLM formally accepts the application, field office staff may be able to more efficiently assess certain aspects of the APD and facilitate a more timely overall review. In addition, as of September 2019, the Carlsbad field office had made offers to eight legal instruments examiner candidates and hired one land law examiner for its adjudication group. A senior Carlsbad field office official we interviewed said that once all new officials are on board, the office will be fully staffed, which the official expected would reduce the office's review time frames.[29]

[28]We have previously reported on human capital challenges, including hiring and retention, at BLM. See GAO, *Oil and Gas: Interior Has Begun to Address Hiring and Retention Challenges but Needs to Do More,* GAO-14-205 (Washington, D.C.: Jan. 31, 2014). In 2011, we added Interior's management of federal oil and gas resources to our High Risk List due, in part, to these challenges. As of 2019, Interior's management of federal oil and gas resources remains on our High Risk List. See GAO, *High-Risk Series: Substantial Efforts Needed to Achieve Greater Progress on High-Risk Areas,* GAO-19-157SP (Washington, D.C.: Mar. 6, 2019).

[29]During fiscal year 2019, the Carlsbad field office accepted an average of 143 APDs per month, according to BLM field office officials. With the addition of three legal instruments examiners in September 2019, the office accepted 251 APDs, and with the further addition of two legal instruments examiners in October 2019, the office accepted 451 APDs.

BLM's New Data System Improved Some Aspects of the APD Review Process, but Users Reported Challenges and BLM Has Not Followed Certain Leading IT Practices

Changes to BLM's data system resulted in some improvements to the APD review process, according to system users, but users also reported challenges. Specifically, system users—officials from BLM field offices and operators—reported that the new system, AFMSS II, allows for a more streamlined review process and greater transparency. However, system users also reported challenges with the system's design and rollout. Further, BLM has not followed certain leading IT practices in implementing AFMSS II.

Changes to the Data System Helped Streamline the Review Process and Improve Transparency and Consistency, According to System Users

BLM officials and representatives from selected oil and gas operators we interviewed reported that the changes to BLM's data system from the implementation of AFMSS II helped streamline APD reviews and improve transparency and consistency in the review process. Specifically:

- **Streamlining.** As noted previously, according to BLM's website, AFMSS II made processing APDs more efficient and helped reduce the time it took field offices to review and approve APDs.[30] The website states that APDs approved through AFMSS II required an average of 121 days to process in fiscal year 2017, representing a 99-day decrease compared to fiscal year 2015, the year before AFMSS II came online. Officials from three of the six BLM field offices we visited stated that AFMSS II created a more streamlined review process. For example, AFMSS II allows multiple BLM specialists to simultaneously review an APD and generates electronic correspondence letters between BLM and the operators who submitted the APD. Representatives from four of the 18 operators we interviewed reported that the new system improved APD review time frames.
- **Transparency.** Officials from four of the six BLM field offices we visited and representatives from five of the 18 operators we interviewed told us that AFMSS II provides more transparency, including the ability to track APDs throughout the process. Most APDs are submitted electronically in AFMSS II, and the system automatically creates a date stamp for each milestone in the APD

[30]Bureau of Land Management, "Well Permitting and Development," accessed November 15, 2019, https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/operations-and-production/permitting.

review process. This allows for a reliable analysis of review time frames, including whether BLM is meeting the processing time frames outlined in Onshore Order 1. Specifically, Onshore Order 1 requires BLM to (1) notify an operator of whether its APD is complete within 10 days of receiving the application, and (2) approve, deny, or defer an APD, subject to certain conditions, within 30 days of receiving a complete application. All the milestone dates needed to track these time frames—including the dates an APD is received, deemed complete, and approved—are automatically date stamped in AFMSS II.

- **Consistency.** According to BLM officials we interviewed, AFMSS I was comprised of individual field office systems whereas AFMSS II is a centralized data system used by all field offices, thereby creating greater consistency across field offices. Specifically, BLM officials from two field offices and two of the 18 operators we interviewed reported that AFMSS II has made the review process more consistent across field offices by, among other things, automating steps in the process and standardizing the information entered into the system. This helps ensure that operators provide the information BLM needs to approve an APD. A representative from one operator said that implementing AFMSS II has significantly reduced variability among field offices in the APD review process because it standardized information required to be submitted with the APD. This representative said that before AFMSS II, APDs from various field offices did not resemble one another.

BLM Officials and Operators Reported Challenges with System Design and Rollout

BLM officials and operators we interviewed reported challenges with the design of the AFMSS II system and the rollout of the APD/NOS module, as well as its 2019 upgrade, APDx. Reported challenges with the design and rollout of the system include that the system does not reflect BLM's APD review processes, requires unnecessary data fields, is cumbersome and slow, and resulted in lost data and documents. Specifically:

- **Not reflecting APD review processes.** Officials from all six of the BLM field offices we visited reported that the AFMSS II system is linear and does not follow the flow of work in the APD review process. For example, officials from one field office said that it is difficult or impossible in AMFSS II to move back and forth between review items in the APD review process. A senior BLM IT official stated that while the system has improved, it is still inflexible. In addition, operators may submit multiple APDs for one well pad, using the same surface-use plan of operations and master development plan. However,

AFMSS II was not designed with the ability to review multiple APDs for a single well pad.

- **Unnecessary data fields.** BLM officials in one of the six field offices we visited told us that AFMSS II requires operators to provide information for all data fields, even though many of the data fields may not be relevant to an operator's APD. Representatives from five of the 18 operators we interviewed said they are required to provide information for data fields even if they are not relevant for the circumstances of their APDs—for example, data fields related to Indian affairs must be completed even for APDs that do not involve Indian minerals or disturbances on Indian surface lands. One operator said that it would be beneficial if each field office had the ability to decide which data fields operators were required to complete to better reflect the particular circumstances of that office and lease sites within their purview.
- **Cumbersome and slow.** Several operators we interviewed reported that submitting an APD using AFMSS II is much more time consuming and labor intensive than submitting an APD using the Well Information System or submitting a paper application, as they did with AFMSS I, because it requires entering a great deal of information into the system. One operator stated that it can take a very long time to upload attachments with the information required to support their APD, and another operator said that operators must upload various attachments, such as surface-use plans, on multiple screens. In addition, officials from three of the six BLM field offices we visited said that all BLM specialists must review an APD every time an operator returns an APD to address a deficiency, which can happen several times during the review process. Officials from one BLM field office told us that they try to limit multiple reviews by using the track changes feature available in AFMSS II, but that this feature does not always work. Further, AFMSS II does not allow BLM field office staff to make changes to an APD, such as to fix a typographical error. Rather, all changes—regardless of how small—must be made by the operator, which can create a cycle of multiple reviews. In addition, several operators reported issues with the rollout of APDx, during which they were unable to access the system for several days or weeks. One BLM official we interviewed told us that during the first week of APDx's operation, the system was down about 40 percent of the time during business hours, but by the fourth week, it was operational 98 percent of the time. Another official we interviewed from one BLM field office told us that several months after the initial rollout, APDx was still significantly slower than its predecessor. For example, the official said it could take several minutes to load

attachments, creating delays for the office, which processes hundreds of APDs per month.

- **Lost data and documents.** Officials from three of the six BLM field offices we visited reported losing APDs and supporting documents in the AFMSS II system. Officials in one field office explained that APDs that return to active status after being deferred can get lost in the system and make it difficult to locate the record. One operator said that he was sometimes kicked out of the system while entering information, and when he got back in the data he had entered was no longer there, requiring that he start over and re-enter the information. Another operator described issues with ghost attachments—an attachment that appears blank after it is uploaded by an operator—and lost data associated with the APD. Issues with records that were hidden from the system user persisted with the APDx upgrade, according to BLM officials we interviewed.[31] While the majority of these records were found and ultimately restored, according to one of these officials, this led to significant confusion for BLM field office officials and operators.

BLM officials and oil and gas operators we interviewed cited different reasons for the challenges associated with the design and rollout of the APD/NOS module and its upgrade, APDx. Several BLM field office officials, as well as oil and gas operators, stated that BLM did not solicit input from system users on the system's design. BLM officials in one field office also told us that the agency did not conduct sufficient testing of AFMSS II because the agency was in a rush to deploy the new data system. Senior BLM IT and project officials we interviewed disagreed with such statements and said that rather than concerns about user input and testing, communication and expectation management shortcomings affected the design and rollout of AFMSS II. One BLM IT official we interviewed specifically said that communication issues among decision-makers and system users drove dissatisfaction with the new system.

BLM Did Not Follow Certain Leading IT Practices in Implementing Its New Data System

BLM did not follow certain leading IT practices in implementing AFMSS II, which likely contributed to the challenges discussed above. Specifically, BLM has not documented its change management procedures—its process for how change requests for AFMSS II were to be accepted, recorded, evaluated, prioritized, and communicated to stakeholders—related to implementing AFMSS II. Interior's September 2005 IT Solution

[31]While we found some challenges with these data systems, the instances of lost APD records did not significantly affect our ability to report on the number of APDs or the average APD review time frames earlier in this report.

Development Lifecycle Guide states that large, complex, or mission-critical projects should include formal change management procedures to ensure that standards are in place to manage requests for additions or modifications to system functionality and minimize disruptions to the development process.[32] Additionally, the Software Engineering Institute recommends that change management procedures include establishing measures for tracking and controlling change by, among other things, (1) initiating and recording change requests, (2) analyzing the impact of changes and fixes proposed in change requests, (3) categorizing and prioritizing change requests, (4) reviewing change requests to be addressed in the future with relevant stakeholders and obtaining their agreement, and (5) tracking the status of change requests to closure.[33] Such steps are important because they help ensure that changes made to resolve an immediate issue do not cause problems in other applications, the results of changes are reported to relevant stakeholders, and approved changes are implemented as soon as practicable to avoid a large number of open actions that may lead to confusion.

The lack of documented procedures for how the AFMSS II project team was managing changes to the system likely exacerbated the issues BLM experienced related to the system's design, communication, and user acceptance of the new system. According to BLM's May 2019 AFMSS Operational Analysis, the AFMSS Project Change Management Board—which provided feedback on and prioritized changes to AFMSS from representative users on a quarterly basis—had not met quarterly, nor published the minutes of its meetings since June 2016.[34] One BLM official we interviewed told us that the board stopped meeting because it was unable to address the volume of change requests it received. This official said that, in place of the board, AFMSS team leads have been managing

[32]Department of the Interior, *Information Technology Solution Development Lifecycle Guide (Version 1.0)* (Washington, D.C.: September 2005).

[33]Carnegie Mellon Software Engineering Institute, Capability Maturity Model® Integration for Development (CMMI-DEV), Version 1.3 (November 2010); and Carnegie Mellon Software Engineering Institute, Capability Maturity Model® Integration for Acquisition (CMMI-ACQ), Version 1.3 (November 2010).

[34]Bureau of Land Management, *AFMSS Operational Analysis FY2019*, DIRM: AFMSS_OA_DV9.00_ (Denver, CO: May 13, 2019). According to the operational analysis, the stated purpose and goals of the AFMSS Project Change Management Board are to, among other things, represent all users, make decisions for the benefit of the program, approve and prioritize system changes, and notify system users and management about changes.

their respective modules' development tickets and corresponding design, development, and testing of the application using a tool called Jira. This official said that BLM's new process for developing the system is consistent with the principles of Agile software development, which call for developing and implementing software in small, short increments.[35] Under BLM's development process, each AFMSS team lead makes initial priority decisions based on the change requests related to their respective modules; these priorities are then discussed at meetings, which include the AFMSS team leads, contractor staff, BLM program officials, and senior BLM leadership. AFMSS team leads also have weekly meetings with several of the high-activity field offices—Carlsbad, Casper, North Dakota, and Vernal—to discuss issues and progress in addressing system challenges.

However, BLM had not documented the process it was following for how change requests are to be accepted, recorded, evaluated, prioritized, and communicated to AFMSS stakeholders. As a result, it is unclear whether these new practices are consistent with BLM's existing process for designing, developing, and testing the system. According to BLM's Associate Chief Information Officer, BLM headquarters, field offices, and oil and gas operators believed that AFMSS II would improve the quality and speed of oil and gas activities on federal lands and the AFMSS team felt pressure to roll out AFMSS II modules as quickly as possible. Therefore, BLM officials are now focused on the plan to complete the implementation of AFMSS II rather than documenting its processes, according to the same BLM official. However, in the absence of such documentation, BLM is not meeting its own policy to develop formal change management procedures for AFMSS II—a mission-critical project. By documenting and implementing a formal change management process for AFMSS II, BLM could better ensure that changes are being evaluated, prioritized, and communicated to stakeholders appropriately, which could

[35]Agile software development supports the practice of shorter software delivery. Specifically, Agile calls for the delivery of software in small, short increments rather than in the typically long, sequential phases of a traditional waterfall approach. More a philosophy than a methodology, Agile emphasizes early and continuous software delivery, as well as using collaborative teams, and measuring progress with working software. The Agile approach was first articulated in a 2001 document called the Agile Manifesto, which is still used today. The manifesto has four values: (1) individuals and interactions over processes and tools, (2) working software over comprehensive documentation, (3) customer collaboration over contract negotiation, and (4) responding to change over following a plan. The Agile Manifesto was written by a group of methodologists called the Agile Alliance. For more information on the creation of the Agile Manifesto, go to http://agilemanifesto.org.

increase the likelihood that major system changes are accepted and ensure consistency in the process. The agency could also better mitigate the risks associated with managing expectations related to communicating with system users about how and why decisions are made.

In addition, BLM has not developed a plan to implement corrective actions based on lessons learned from its post-implementation review of the rollout of the 2016 APD/NOS module. Interior's September 2005 IT Solution Development Lifecycle Guide calls for a post-implementation review to determine the success of a project after implementation.[36] The purpose of this review is to document implementation experiences, recommend system enhancements, and provide guidance for future projects. In this context, leading practices for IT acquisitions call for (1) analyzing the causes of unexpected outcomes—such as when there are deviations from requirements and more system defects than anticipated, (2) documenting and implementing a plan of action to prevent a future occurrence of similar outcomes, and (3) maintaining a record of the causal analysis and resolution steps for use across other projects and process improvement.[37]

After the rollout of the APD/NOS, BLM conducted a post-implementation review of the module and identified 17 enhancements needed to improve the system for users. According to BLM officials we interviewed, all of these enhancements were implemented in late 2017. One BLM field office official we interviewed said that there were noticeable improvements to the system after these enhancements were implemented. In November 2017, BLM program and field office officials met to discuss AFMSS II and APD workload issues. At that meeting, participants identified remaining technical and policy issues related to fully implementing the AFMSS II system as well as lessons learned from the APD/NOS module rollout. BLM officials told us they are taking steps to mitigate risks during the next rollout—including implementing the next module in incremental stages rather than all at once, including field offices in the process earlier and in greater depth, and conducting additional testing for defects prior to the software release.

[36]Department of the Interior, *Information Technology Solution Development Lifecycle Guide*.

[37]Carnegie Mellon Software Engineering Institute, Capability Maturity Model® Integration for Acquisition (CMMI-ACQ), Version 1.3 (November 2010).

If implemented correctly, these steps could help ensure that the rollout of future AFMSS II modules—which BLM expects to implement beginning in April 2020—goes more smoothly. However, when asked, BLM officials could not provide evidence that the agency had documented or implemented an action plan to ensure that lessons learned are considered in the rollout of the remaining AFMSS II modules. According to one senior BLM IT official, BLM has not documented such a plan because officials do not want to distract from the implementation of the remaining AFMSS II modules. This official agreed that documenting lessons learned would be beneficial after the rollout is complete.

By documenting and implementing a plan to incorporate lessons learned into the rollout of future AFMSS II modules, BLM can help ensure it has identified actions needed to address the root causes of issues related to the APD/NOS module and APDx rollouts as discussed in this report and mitigate risks for future investments and upgrades.[38] For example, one BLM official acknowledged issues with communication management and another with expectations management. However, BLM has not developed a plan to address the underlying causes of those issues, thereby risking that such issues can create challenges for the planned implementation of the remaining AFMSS II modules. Conducting a systematic analysis of lessons learned and developing an action plan to implement corrective actions could help BLM ensure that agency management and IT staff have a sufficient understanding of the technical and non-technical problems that led to the unintended outcomes associated with the rollout.

Conclusions

One of BLM's key responsibilities in managing the development of federal oil and gas resources is processing federal APDs. BLM has taken various steps in recent years to improve the processing of these APDs, including implementing recommendations for streamlining the NEPA review process, issuing guidance for evaluating APDs' compliance with NEPA, and issuing an Instruction Memorandum to encourage field offices to work with oil and gas operators to prioritize APDs for review. However, BLM does not have a documented process for how field offices are to prioritize APDs, and some field offices do not routinely work with operators to prioritize APDs. Given the heavy APD workload of some BLM field offices, an institutionalized practice of prioritization across all field offices

[38]One BLM IT official we interviewed told us that BLM plans to apply lessons learned from the design and rollout of AFMSS II to modernize its leasing system. This accentuates the need for a disciplined consideration of lessons learned.

could help operators focus on submitting APDs that are most likely to be used, thus reducing the workload of BLM field offices.

In addition, BLM is in the process of redesigning its central oil and gas data system, in part to address data and processing deficiencies. In 2015, BLM released the first AFMSS II module, the APD/NOS module, providing some improvements over the previous system. However, users of the system reported challenges with the module's design and rollout, and we determined that this was in part because BLM did not follow certain leading IT practices. BLM has taken steps to improve the rollout of future AFMSS II modules—including implementing new software development practices, conducting a post-implementation review of the APD/NOS module rollout, and implementing subsequent modules in stages. However, BLM has not formalized some of these practices, in part because the agency is focused on the implementation of the remaining AFMSS II modules. By formally documenting its change management processes and developing an action plan to incorporate lessons learned from its post-implementation review, BLM could better mitigate the risks associated with future IT investments and upgrades, including those beyond AFMSS II.

Recommendations for Executive Action

We are making the following three recommendations to BLM:

The Acting Director of BLM should develop a documented process to consistently implement the APD prioritization process outlined in Instruction Memorandum 2013-104 at all field offices. (Recommendation 1)

The Acting Director of BLM should instruct agency staff to document formal change management processes for the rollout of future AFMSS II modules consistent with leading software development practices. (Recommendation 2)

The Acting Director of BLM should document and implement an action plan that identifies potential corrective actions based on previous lessons learned to address any challenges with the rollout of future AFMSS II modules. (Recommendation 3)

Agency Comments and Our Evaluation

We provided a draft of this report for review and comment to the Department of the Interior. Interior provided comments on behalf of the Bureau of Land Management (BLM). BLM did not concur with our first two recommendations, but concurred with our third recommendation that BLM should document and implement an action plan that identifies potential corrective actions based on previous lessons learned to address any challenges with the rollout of future AFMSS II modules.

In commenting on our first recommendation that BLM should develop a documented process to consistently implement the APD prioritization process outlined in Instruction Memorandum 2013-104 at all field offices, BLM stated that many field offices communicate regularly with operators to identify highest priority APDs, as outlined in the memorandum. BLM further stated that repeated re-prioritizing of APDs may hinder the ability of some offices to meet departmental goals for eliminating pending APDs. For this reason, among others, we believe there is value in documenting how field offices are to implement prioritization processes to ensure consistency within a given field office and across field offices, and to ensure that offices are implementing processes in a way that is in line with meeting departmental goals. If, in fact, operators repeatedly change their prioritizations, adding to BLM field office workload, this is precisely the reason why BLM would benefit from a documented process they all follow.

In commenting on our second recommendation that BLM should instruct agency staff to document formal change management processes for the rollout of future AFMSS II modules, BLM did not agree that additional documentation of the process was needed. In its response, BLM provided a list of documents that it said constitute agency-wide change management processes. However, based on our review of these documents, we found that they do not fully describe the steps the AFMSS project team is taking to manage changes for AFMSS II. For example, BLM officials told us they use a software development tool called Jira to track change requests, but none of BLM's agency-wide change management documents mention this tool. BLM also stated that instead of having a documented process to manage changes to AFMSS II, it follows industry practices. While it is clear that BLM is following a process for AFMSS II change management, the agency has not documented this process. We continue to believe that documenting change management processes could help ensure consistency in the process and the successful rollout of future modules. As we reported above, these processes should include how change requests are to be accepted, recorded, evaluated, prioritized, and communicated to stakeholders.

These actions could help mitigate the risks associated with managing expectations related to communication with system users about how and why decisions are made.

Finally, BLM asked that we note that the APD filing fee covers the agency's cost to process APDs, and the agency uses the collected fees to support a range of oil and gas permitting activities. We believe our description of APD fees is sufficient for the purpose and scope of this report. The Department of the Interior also provided technical comments, which we incorporated throughout our report, as appropriate. The Department of the Interior's letter can be found in appendix II.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the appropriate congressional committee and the Secretary of the Interior. In addition, the report will be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or ruscof@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix III.

Frank Rusco
Director, Natural Resources and Environment

Appendix I: Objectives, Scope, and Methodology

This appendix details the methods we used to review the Department of the Interior's (Interior) Bureau of Land Management's (BLM) Application for Permit to Drill (APD) review process. Specifically, this report examines (1) APDs received from October 2013 through September 2019 and factors that may affect operators' decisions to apply for or use APDs; (2) BLM's review times for APDs and factors that may have affected changes in review time frames for the period from May 2016 through June 2019; and (3) BLM's APD data management system.

To conduct our work, for all three objectives, we reviewed relevant laws, regulations, and BLM guidance. We also interviewed officials in BLM headquarters, BLM's National Operations Center, and officials from a nongeneralizable sample of six BLM field offices. We received preliminary data from BLM on APDs received that covered the period through October 2018. We selected field offices based on the number of APDs received by each field office for this time period. Specifically, we visited and interviewed officials in the following field offices: Carlsbad, New Mexico[1]; Dickinson, North Dakota; Vernal, Utah; and Pinedale, Casper, and Buffalo, Wyoming. These six offices in four states accounted for 79 percent of all APDs in the data through October 2018. We received updated data from BLM for the period from October 2013 through September 2019, and these six field offices still accounted for the highest APD processing activity and in total accounted for about 77 percent of all APDs received by BLM during that period.

To obtain additional perspective on our three objectives, we selected a nongeneralizable sample of oil and gas operators actively submitting APDs to one of the six BLM field offices noted above. We selected these operators based on BLM 2018 data on APDs and referrals by the BLM field offices based on activity level. Specifically, we selected operators with relatively high levels of APD submissions in their respective field offices. Ultimately, we spoke with representatives of 24 of those operators. In our interviews with all of these groups, including our interviews with BLM officials, we used semi-structured interview questions. For each group of interviewees (BLM officials, other federal government officials, nongovernmental organizations, and oil and gas operators), we used similar questions based on our three objectives. We conducted a series of individual and group interviews with a total of 24

[1]The Carlsbad Field Office processes APDs for the Hobbs Field Station. Therefore, we included APDs received by the Hobbs Field Station in the data presented for the Carlsbad Field Office.

operators using a standard set of questions. Ultimately, we had complete responses from 18 operators on our key questions, which we report in the aggregate. We used other responses from interviews we conducted as examples in our report.[2] In addition, we interviewed representatives from the Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, three nongovernmental organizations, one trade association, and four state commissions. To select the nongovernmental organizations, we asked government officials and oil and gas operators who we interviewed to identify nongovernmental organizations with subject matter knowledge of the APD review process.[3] We selected the oil and gas commissions based on the states we visited when conducting BLM field office site visits. We contacted the commissions in all four states, but the Utah Division of Oil, Gas, and Mining was ultimately unresponsive. We also contacted and interviewed officials from the Colorado Oil and Gas Conservation Commission, as Colorado also has a high volume of drilling operations.

To examine the inventory of APDs received from October 2013 through September 2019, we reviewed and analyzed data from BLM's Automated Fluid Minerals Support System (AFMSS) I and AFMSS II systems. We chose this time frame because GAO's most recent report examining BLM's APD process reviewed APD data through fiscal year 2012.[4] We obtained information on the operator, field office, surface management agency, well status, and milestone dates for each APD. To examine BLM's APD review time frames, we also reviewed and analyzed AFMSS II data from May 2016 through June 2019, as BLM officials told us that tracking of milestone dates (e.g., date accepted, date complete, etc.) is more reliable in AFMSS II than in AFMSS, and all field offices began using AFMSS II beginning in May 2016. To assess the reliability of the data, we interviewed knowledgeable agency officials, reviewed previous

[2]Because we selected a nonprobability sample of field offices and oil and gas operators, their views are not generalizable beyond these groups but provide illustrative examples of the views of such field office staff and operators.

[3]This methodology is known as snowball sampling. In snowball sampling, the unit of analysis is a person, and the methodology begins with an initial list of people to interview. When interviewed, each of the initially identified people is asked to refer the interviewer to additional cognizant persons. The group of referred cases (or "snowball") grows larger and then narrows as a group of individuals who are most frequently identified, along with those initially identified, become the pool of potential interviewees.

[4]See GAO, *Oil and Gas Development: BLM Needs Better Data to Track Permit Processing Times and Prioritize Inspections,* GAO-13-572 (Washington, D.C.: Aug. 23, 2013.

GAO assessments of AFMSS I data, and conducted electronic testing. We also reviewed related documentation, including software user guides, data element dictionaries, and training manuals. We obtained information from BLM officials on a series of data reliability questions covering issues such as data entry, access, quality control procedures, and the accuracy and completeness of the data. We asked follow-up questions when necessary. As noted in the report, we identified some challenges with BLM's data management systems, including some instances of lost APD records. However, these instances did not significantly affect our ability to report on the number of APDs received from October 2013 through September 2019 or the average APD review time frames for the period from May 2016 through June 2019. As such, on the basis of our analysis, we found the data to be sufficiently reliable for the purposes of our reporting objectives.

To examine BLM's data management systems for APDs, we reviewed agency documentation related to these systems, including Interior's Solution Development Lifecycle Guide and BLM's AFMSS Operational Analysis. We also interviewed knowledgeable agency officials and system users, which consist of BLM field office officials and oil and gas operators. In addition, we reviewed leading industry practices on information technology (IT) acquisitions, such as the Software Engineering Institute's Capability Maturity Model® Integration for Acquisition.

We conducted this performance audit from June 2018 to March 2020, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Comments from the Department of the Interior

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, DC 20240

MAR 16 2020

Mr. Frank Rusco
Director, Natural Resources and Environment
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Mr. Rusco:

Thank you for giving the Department of the Interior the opportunity to review and comment on the Government Accountability Office (GAO) Report entitled, *Oil and Gas Permitting: Actions Needed to Improve BLM's Review Process and Data System* (GAO-20-329).

The Department would like to note that Applications for Permit to Drill (APDs) are cost recovery. On page 2 of the report, please add that in Fiscal Year (FY) 2019 operators paid a non-refundable fee of $10,050 per APD, regardless of whether the permits are used. The APD fee is adjusted annually for inflation and the FY 2020 APD fee is $10,230. In FY 2019, the Bureau of Land Management (BLM) collected almost $51 million in APD fees. The unused APDs over the time period of FY 2016 through FY2019 generated over $23.5 million, all of which went to the BLM to support oil and gas permitting, streamlining permit review processes, reducing permitting times, and inspection and enforcement. The BLM project field offices receive a significant portion of their funding in response to the number of APDs they receive. The BLM has continued to co-locate and fund partner agencies (e.g., U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and U.S. Forest Service) to work with Project Offices to review oil and gas permits.

The GAO made three recommendations to the BLM based on its overall findings. While the BLM agrees with the underlying premise of the three recommendations, the Department proposes an alternative approach to GAO's findings.

The Department is committed to improving the oversight of the BLM's oil and gas permitting program and identified the following Agency Priority Goals for FY 2020 - 2021:

- By September 30, 2020, the BLM will eliminate its backlog of fluid minerals APDs pending for 3 years or more that are within the BLM's control to process;
- By September 30, 2020, the BLM will process 90 percent of fluid minerals APDs within 90 days at the top five high activity State Offices; and
- By September 30, 2021, the BLM will process 90 percent of fluid minerals APDs within 90 days.

Recommendation 1: The Acting Director of BLM should develop a documented process to consistently implement the APD prioritization process outlined in Instruction Memorandum 2013-104 at all field offices.

Response: Non-concur. The BLM is committed to improving the oversight of the oil and gas permitting program and meeting the Department's newly established goals for eliminating pending APDs for FY 2020 - 2021. Recognizing there is no "one size fits all" approach, the BLM encourages each office to coordinate with operators and seek input/feedback to enhance the overall APD processing to best reach those goals.

As previously noted, operators pay a non-refundable fee of $10,050 per APD, regardless of whether the permits are used. Those funds are used solely for the processing of APDs. Therefore, in offices receiving a high number of APDs, paid for entirely by the operator, the BLM ensures the processing of APDs is prioritized.

The current BLM process has resulted in decreased overall review times by more than 50 percent (from 196 days to 94 days) from May 2016 through June 2019. Numerous factors have contributed to the increased efficiencies for APD processing times during this period including NEPA streamlining, electronic APD submissions, and improved tracking. As noted in GAO's report, both the BLM staff and operators indicated they regularly work together to focus on APDs planned for near term use. In fact, all six BLM Offices reviewed by GAO indicated they discussed operators' priorities. As a result, the BLM has seen the intended effect of Instruction Memorandum 2013-104, requiring offices to communicate regularly with operators to identify highest priority APDs when appropriate. Furthermore, it is BLM's belief that repeated prioritizing (e.g., re-prioritizing) of APDs may hinder some offices in their ability to meet the Departmental goals.

Currently, the BLM does not see a need to further mandate how BLM Offices prioritize their processing of APDs given the uniqueness of many areas, on-going collaboration with operators, and the processing time improvements already experienced. The BLM and the Department track APD processing monthly and will continue to monitor this performance and work individually with the State and Field Offices if concerns arise.

Recommendation 2: The Acting Director of BLM should instruct agency staff to document formal change management processes for the rollout of future AFMSS II modules consistent with leading software development practices.

Response: Non-concur. While the BLM agrees with the underlying premise of the need to further improve formal change management, it does not agree that there was no documented change management process in place. The BLM's Division of Information Resources Management (DIRM) Branch of Enterprise Engineering & Infrastructure Operations, Section of Configuration & Change Management (OC381) manages a robust, rigorous, and well-documented IT Change and Configuration Management program. The program includes manuals, handbooks, standard operating procedures, and request for change libraries to name a few of its primary features. In addition, the BLM is committed to continual service improvements in the areas of software and systems development. For software development, the

2

BLM uses an industry standard method called Agile development that involves an iterative development process that adapts lessons learned to future development. In addition to the system development change management process, the BLM is adopting and maturing additional measures (specific to project level change management and implementation of lessons learned from prior modules) to ensure successful implementation of further AFMSS II Modules. Consistent with these leading software development practices, the BLM plans to rollout AFMSS II modules in an agile manner with phased releases. The BLM's implementation/roll out plan will utilize a Field Office by Field Office phased implementation approach that includes subject matter experts (fluid program/module team leads and software/technical engineers) physically onsite during each implementation. The implementation of new modules is scheduled to begin April 2020 and conclude by the end of 2020. After each Field Office implementation, the team will review project lessons learned and requests for changes, adjusting as needed. After this phased release of the AFMSS II modules, the BLM will conduct a review to determine if continued one by one implementation is necessary or if BLM Field Offices can be migrated in batches.

To achieve maximum efficiency and value from its software development, efforts such as AFMSS II, the BLM and DIRM will continue to advance the integration of OC381 efforts of formal IT Change and Configuration Management, systems development change management, and project specific change management.

Recommendation 3: The Acting Director of BLM should document and implement an action plan that identifies potential corrective actions based on previous lessons learned to address any challenges with the rollout of future AFMSS II modules.

Response: Concur. The BLM agrees lessons learned are an important part of maturing and advancing any business line or project, hence the BLM has taken steps toward ensuring changes to the AFMSS II project implementation plan for rollout of the remaining modules as presented in the response to Recommendation 2. In addition to those lessons already learned from the APDx module rollout, the BLM AFMSS Team plans to gather lessons learned (both programmatic and technical) throughout the phased release plan after each Field Office visit.

Based on the collected lessons learned, the AFMSS Team will implement adjustments and improvements consistent with continual service improvement (ITIL CSI) models to ensure the smoothest implementation possible. Upon completion of the last Field Office implementation and conversion to AFMSS II, the BLM will conduct a formal program review as required by the Capital Planning and Investment Control (CPIC) guidelines and its Information Technology Investment Board (ITIB). Upon AFMSS II implementation, the BLM will also conduct an annual Operational Assessment (OA) which will also present opportunities for annual corrective actions and additional lessons learned considerations.

If you have any questions or concerns regarding this response, please contact Nicholas Douglas,

3

Assistant Director – Energy, Minerals and Realty Management at (202) 208-4201 or Barbara Eggers, Assistant Director – Business and Fiscal Resources at (202) 208-4864.

Sincerely,

Casey B. Hammond
Acting Assistant Secretary
Land and Minerals Management

4

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

Frank Rusco at (202) 512-3841 or ruscof@gao.gov

Staff Acknowledgments

In addition to the contact named above, Christine Kehr (Assistant Director), Marissa Dondoe (Analyst in Charge), John Delicath, Marissa Esthimer, Jaci Evans, Philip Farah, Glenn Fischer, William Gerard, Cindy Gilbert, Josh Leiling, Mollie Lemon, Greg Marchand, Caroline Prado, Dan C. Royer, Jerry Sandau, and Daniel Will made key contributions to this report.

GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through our website. Each weekday afternoon, GAO posts on its website newly released reports, testimony, and correspondence. You can also subscribe to GAO's email updates to receive notification of newly posted products.

Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's website, https://www.gao.gov/ordering.htm.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

Connect with GAO

Connect with GAO on Facebook, Flickr, Twitter, and YouTube.
Subscribe to our RSS Feeds or Email Updates. Listen to our Podcasts.
Visit GAO on the web at https://www.gao.gov.

To Report Fraud, Waste, and Abuse in Federal Programs

Contact FraudNet:

Website: https://www.gao.gov/fraudnet/fraudnet.htm

Automated answering system: (800) 424-5454 or (202) 512-7700

Congressional Relations

Orice Williams Brown, Managing Director, WilliamsO@gao.gov, (202) 512-4400, U.S. Government Accountability Office, 441 G Street NW, Room 7125, Washington, DC 20548

Public Affairs

Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, DC 20548

Strategic Planning and External Liaison

James-Christian Blockwood, Managing Director, spel@gao.gov, (202) 512-4707
U.S. Government Accountability Office, 441 G Street NW, Room 7814,
Washington, DC 20548

Please Print on Recycled Paper.