

EXECUTIVE SUMMARY

ES.1. EXECUTIVE SUMMARY

ES.1.1. Background

In November 2004, a lease by application (LBA) was filed by Alton Coal Development, LLC (ACD) to mine federal coal, using primarily surface-mining methods, near the town of Alton, Utah (Case Number UTU 081895). This application was filed under the regulations at 43 Code of Federal Regulations (CFR) 3425, Leasing on Application. This application includes nearly 2,683 surface acres and approximately 38 million tons of recoverable coal. The Bureau of Land Management (BLM) reconfigured the tract to exclude approximately 40 acres and to include approximately 898 additional acres. Acreage added to the tract during tract reconfiguration was based on the identification of additional recoverable coal reserves not included in the original LBA and on additional surface acreage deemed necessary for mine operations. The Alton Coal Tract LBA (hereafter the Alton Coal Tract or tract), as reconfigured, contains approximately 3,581 surface acres and 44.9 million tons of recoverable coal reserves.

To process an LBA, the BLM must establish the fair market value of the coal in the tract by evaluating many factors, including the quantity and quality of the coal reserves. Any subsequent mining plan must achieve maximum economic recovery of the tract's coal resources in the context of applicable laws, regulations, and lease stipulations. In addition, before the BLM can issue a decision to offer a tract for lease, the BLM must fulfill the requirements of the National Environmental Policy Act (NEPA) by evaluating the potential environmental impacts of leasing and mining federal coal. If the tract is leased, the successful lessee would also have to obtain a permit from the Utah Division of Oil, Gas, and Mining (DOGM). The DOGM permitting process is described in the following paragraphs.

On November 28, 2006, a notice of intent (NOI) to prepare an EIS for the Alton Coal Tract was published in the *Federal Register* (*Federal Register* 71:68834–64435). This was followed on November 4, 2011, with a notice of availability (NOA) for the *Alton Coal Tract Lease by Application DRAFT Environmental Impact Statement* (DEIS) (*Federal Register* 76: 68501–68502). Based on comments received on the DEIS, the BLM decided to prepare this SDEIS for public review prior to preparing and distributing an FEIS. For a summary of comments received on the DEIS, see Section 5.1.2.1. Substantive comments received on the DEIS resulted in changes presented in this SDEIS. However, formal responses to substantive comments on the DEIS will be provided in the FEIS, along with responses to comments on this SDEIS.

This EIS has been prepared to evaluate the potential direct, indirect, and cumulative environmental impacts of leasing and recovering the federal coal included in the tract, based on ACD's preliminary plan and reasonable alternatives. The BLM will use the analysis in this EIS to decide whether to a) hold a competitive, sealed-bid lease sale for the tract; b) hold a competitive, sealed-bid lease sale for a modified tract; or c) reject the lease application and not offer the tract for sale at this time. However, the final BLM-accepted mine plans could be different. The impacts of mining the coal are considered in this EIS because mining the coal is a logical consequence of issuing a lease. A record of decision (ROD) will be issued, and if the decision is to offer the tract for lease, a sale would be held. If a lease sale is held, the bidding at the sale would be open to any qualified bidder; it would not be limited to the applicant. A lease would be issued to the highest bidder at the sale, provided that the high bid meets or exceeds the fair market value of the coal, as determined by BLM's economic evaluation and if the U.S. Department of Justice (DOJ) determines that there would be no antitrust violations.

In return for receiving a lease, the successful lessee must pay the federal government a bonus equal to the amount it bids at the time the lease sale is held (the bonus can be paid in five yearly installments), make annual rental payments to the federal government, and make royalty payments to the federal government

when the coal is sold. Federal bonus, rental, and royalty payments are nearly equally divided with the state in which the lease is located. A federal coal lease grants the lessee the exclusive right to seek a mining permit for, and to mine coal on, the leased tract. The lessee is subject to the terms of the lease, the mining permit, and applicable state and federal laws. Before a new leased tract can be mined, the lessee must have their detailed plans approved (in the permit application package) to conduct mining and reclamation operations.

Given known technology and technological and demographic trends overall, United States' demand for coal is expected to increase by approximately 0.1% per year through the year 2040 (DOE/EIA 2013a). Though coal-fired power plants are projected to account for less electricity generation in 2040 compared to 2011 (down from 42% in 2011 to 35% in 2040), in the United States, approximately 90% of coal consumption is in the electric power sector (DOE/EIA 2013b), and between 2011 and 2040, total electricity demand in the United States is expected to increase by 42% (DOE/EIA 2010). Furthermore, in Utah, approximately 82% of electrical energy is generated from coal (VandenBerg 2010). Although most (approximately 90%) coal consumption in the United States is in the electric power sector, coal is also used (approximately 10% of total demand) in the industrial sector. In the industrial sector, coal is used in the manufacture or production of cement, paper, chemicals, food, primary metals, and coal-based synthetic fuels (coal-to-liquids). It is also used in the industrial sector as a direct source of heat, as a feed stock, as boiler fuel for the production of process steam and electricity, and in the production of coke, which is used as an energy source and as a raw material in steel production. Nonelectric power sector demand for coal is expected to slightly decline by 2040, though demand for coal in the emerging coal-to-liquids industry is expected to increase. Most of the projected increase in overall United States' demand for coal, therefore, is expected from the electric power sector (DOE/EIA 2010). Additionally, coal exports are expected to increase.

According to the Utah Geological Survey (VandenBerg et al. 2012), coal production in Utah decreased by 3.8 million tons (17.3%) between 2008 and 2011 due to reserve depletion and difficult mining conditions. Utah's long-term (50 years and beyond) coal future is shifting because currently accessible coal reserves are being depleted in the Book Cliffs and Wasatch Plateau coal fields. This makes it necessary for the coal industry to look to other Utah coal fields to meet future demands for coal. Further, most Utah mining companies have leased coal reserves for approximately 10–15 years of production; however, they are having difficulty adding new leases to extend their reserves. As a result, Utah coal production is outpacing tonnage leased (Utah Geological Survey 2012b, 2012c; VandenBerg 2010).

All coal reserves in the Alton Coal Tract are federally owned, though surface ownership is mixed. Under Alternative B (the Proposed Action; discussed in greater detail in Chapter 2), approximately 2,280 surface acres of the tract are in federal (BLM) ownership and 1,296 surface acres are in private ownership (eight different private surface owners). Private surface owners may be qualified to give consent to mine federal minerals under the private surface owner's estate¹ according to 43 CFR 3400.0-5. Surface ownership under Alternative A (No Action Alternative), Alternative C, and Alternative K1 is also discussed in greater detail in Chapter 2. If this EIS process results in a competitive lease sale for the tract, a final determination of private surface-owner qualification and private surface-owner consultation would take place after a ROD is

¹ Under the regulations under 43 CFR 3400.0-5(gg)(1), (2), and (3) qualified surface owner means the natural person or persons (or corporation, the majority stock of which is held by a person or persons otherwise meeting the requirements of this section) who: 1) hold legal or equitable title to the surface of split estate lands; 2) have their principal place of residence on the land, or personally conduct farming or ranching operations upon a farm or ranch unit to be affected by surface-mining operations; or receive directly a significant portion of their income, if any, from such farming and ranching operations; and 3) have met the above conditions for a period of at least three years, except for persons who gave written consent less than three years after they met the above requirements. In computing the three-year period the authorized officer shall include periods during which title was owned by a relative of such person by blood or marriage if, during such periods, the relative would have met the requirements of this section. A qualified private surface owner is legally qualified to give consent to mine federal minerals under the private surface owner's estate.

issued, but prior to leasing. All surface owners have been notified of the Proposed Action. Further, both hardcopy and electronic versions of this EIS have been distributed to surface owners.

ES.1.2. Purpose and Need for Action

The purpose of the federal action is to respond to an LBA for federal coal reserves on up to 3,581 acres of BLM-administered and private surface in Kane County, Utah, near the town of Alton. The need for the federal action is established by the BLM's responsibilities under the Federal Land Policy and Management Act (FLPMA) and the Mineral Leasing Act (MLA), as amended by the Federal Coal Leasing Act Amendments of 1976. Private development of federal coal reserves is integral to the BLM coal leasing program under authority of the FLPMA and MLA. The MLA requires that all public lands not specifically closed to leasing be open to lease for the exploration and development of mineral resources. Further, a primary goal of the Energy Policy Act of 2005 is to add energy supplies from diverse sources, including domestic oil, gas, and coal, as well as hydropower and nuclear power.

ES.1.3. Public Involvement

ES.1.3.1. Public Scoping

The public scoping process was initiated on November 28, 2006, when the BLM published an NOI to prepare an EIS to offer the tract for competitive leasing. Five public scoping meetings followed. Each meeting was conducted in an open house format with BLM and ACD personnel present to answer questions and provide information. Other resources available at the public scoping meetings included informational display boards; one video explaining the conceptual mining and reclamation sequence; one video explaining a potential transportation route, including truck details; and comment forms on which to submit comments at the meetings. Informational display boards and comment forms are available in the *Alton Coal Tract LBA EIS Public Scoping Report* (SWCA Environmental Consultants [SWCA] 2007b), which was prepared following completion of the scoping process. Copies of the videos are available at the BLM Kanab Field Office (BLM-KFO). The 90-day scoping period closed on February 26, 2007.

ES.1.3.2. The Comment Process on the Draft Environmental Impact Statement

The comment process on the DEIS was initiated on November 4, 2011, when the BLM published an NOA of the Alton Coal Tract LBA EIS. Five public meetings, including one public hearing, followed. Each meeting was conducted in an open house format, with BLM personnel present to answer questions and provide information. Other resources available at the public meetings included informational display boards, hard copies of the DEIS, and compact disc copies of the DEIS. The Fair Market Value Hearing was conducted to comply with the BLM's coal leasing regulations at 43 CFR 3425.1. The Fair Market Value Hearing was part of the Cedar City meeting. The public comment period on the DEIS was scheduled for 60 days. However, the public requested an extension of the public comment period. Ultimately, the 85-day public comment period on the DEIS closed on January 27, 2012.

ES.1.3.3. Summary of Issues

Issues and concerns raised during the public scoping process were divided into three categories: 1) those to be addressed through implementation and documentation of certain elements of the NEPA process; 2) those to be addressed through analysis of direct, indirect, and cumulative impacts; and 3) those to be addressed through the formulation of alternatives. The substantive issues and concerns are outlined below.

The public and agencies provided substantive comments on the DEIS. Per the BLM NEPA Handbook (BLM 2008c) definition, *substantive* comments do one or more of the following:

- Question, with reasonable basis, the accuracy of information in the EIS
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis
- Present new information relevant to the analysis
- Present reasonable alternatives other than those analyzed in the EIS
- Cause changes or revisions in one or more of the alternatives

Substantive comments on the DEIS have been addressed in this SDEIS. Formal responses to comments on the DEIS will be published, along with formal responses to comments on the SDEIS, in the FEIS.

ES.1.3.3.1. LEASING TIMELINE

When is the appropriate time to begin the analysis of the EIS and consideration of leasing? Is it following submission of a detailed mining plan, or following a commitment to mine and sell coal?

ES.1.3.3.2. PREVIOUS DECISIONS AND LEGISLATION AND NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT

Previous studies of coal mining at Alton have been completed. Why is additional environmental analysis required? How would the proposed lease meet the suitability requirements of Surface Mining Control and Reclamation Act (SMCRA) of 1977?

ES.1.3.3.3. BUREAU OF LAND MANAGEMENT'S ROLE AND POLICIES REGARDING PUBLIC LAND USE

What is BLM's responsibility to protect the public lands, while providing for their use and sustainability?

ES.1.3.3.4. SCOPE

Is coal mining on private lands and public (BLM) lands a connected action under NEPA, which would require an analysis in a single EIS?

ES.1.3.3.5. PURPOSE AND NEED

What are the public purposes and needs for this action and how will they affect the eventual decision to offer the tract for leasing or not? How will energy demand affect BLM's decision to lease the tract?

ES.1.3.3.6. ALTERNATIVES

What reasonable alternatives to the applicant's proposal to lease and mine federal coal reserves in the tract should BLM consider?

ES.1.3.3.7. AFFECTED ENVIRONMENT AND IMPACTS ANALYSIS

What would be the effects of the coal mine on the natural and cultural environment in and near the tract and on the human values connected to those resources and their uses?

ES.1.3.3.8. DATA AND EXPERTISE FOR IMPACTS ANALYSIS

What data and scientific literature must be collected and analyzed to ensure an adequate analysis of the effects of the Proposed Action and alternatives?

ES.1.3.3.9. COOPERATING AND CONSULTING AGENCIES

What role will BLM's partners play in the EIS analysis of the Proposed Action and the alternatives?

ES.1.3.3.10. PUBLIC INVOLVEMENT

What opportunities for public involvement should BLM provide to ensure disclosure of information and informed decision making?

ES.1.3.3.11. NATIONAL ENVIRONMENTAL POLICY ACT DECISIONS

What role will local residents play in the decision-making process? How will impacts to Bryce Canyon National Park affect the Alton LBA tract leasing decision?

ES.1.3.3.12. AESTHETIC RESOURCES

What effect would noise created by coal mining and coal truck traffic have on the relative noise levels existing in the area, including the town of Alton, adjacent public lands, and nearby parks and monuments? What effect would the coal mining operation, coal truck traffic, and dust and smoke caused by mining have on the local landscape (scenic quality) and surrounding viewshed? How would lighting for nighttime mining operations affect the darkness of the night sky from key nighttime-sky viewing points such as Bryce Canyon National Park?

ES.1.3.3.13. AIR RESOURCES

How would the development and operation (e.g., construction, heavy equipment use, and transportation of coal) of the coal mine affect local and regional air quality? What effect would deposition of dust and other pollutants produced by mining have on water, wildlife, vegetation, recreation uses, and structures in and adjacent to the mining operations? What contribution would emissions produced from the mining operation, transportation of coal, and ultimate use of the coal add to the cumulative effect of carbon emissions on global warming?

ES.1.3.3.14. CULTURAL RESOURCES

What impact would coal mining and transporting coal have on prehistoric and historic cultural resources in the tract and along transportation routes? How would coal mining and transporting coal impact existing and eligible National Register sites and traditional cultural properties?

ES.1.3.3.15. FIRE MANAGEMENT

What impact would coal mining, including truck traffic to transport coal, have on air quality; and how would those changes in air quality affect BLM's ability to conduct prescribed burning in wildland-urban interface areas to reduce threats of wildfire? What impact would revegetation required for tract reclamation have on wildland fire frequency and severity?

ES.1.3.3.16. GEOLOGY AND MINERALS

How would coal mining on the tract affect geologic and mineral resources present there? What geologic hazards exist on and near the tract and how would they be affected by mining operations and vice versa? What is the potential for underground coal fires and what are the environmental consequences of an underground fire?

ES.1.3.3.17. HAZARDOUS MATERIALS

What impact would generation, temporary storage, and disposal of hazardous materials (such as those regulated under the Comprehensive Environmental Response, Compensation, and Liability Act, the Superfund Amendments and Reauthorization Act, the Resource Conservation and Recovery Act, and the Toxic Substances Control Act) have on people and the environment?

ES.1.3.3.18. LAND USE AND ACCESS

What impact would development and operation of a coal mine have on local private property values and future development potential of those lands? What effect would coal truck traffic have on private property values along transportation routes (e.g., KFO Route 116 and U.S. Route 89 [US-89])? What impact would development and operation of a coal mine have on the town of Alton (e.g., air quality, aesthetics, water quality, and public health and safety)? How would public lands be used and managed following reclamation of the coal mine?

ES.1.3.3.19. LIVESTOCK GRAZING

How would coal development, mining, and reclamation affect grazing and pasturelands around Alton (e.g., removal of vegetation and restricted access to grazing land for ranchers), and how would that affect short-term and long-term livestock grazing and production? How would road dust and exhaust from passing coal truck traffic affect vegetation growth and palatability of the vegetation for livestock forage?

ES.1.3.3.20. PALEONTOLOGY

How would surface disturbance (e.g., surface mining, road construction, and facilities construction) created by coal mining impact fossils in the tract?

ES.1.3.3.21. PUBLIC HEALTH AND SAFETY

How would coal truck traffic through towns along potential transportation routes affect public safety in those towns and along the travel routes? What risk of injury and adverse health effects would the mine workers and local public face as a result of mine development? (Public Health and Safety issues are addressed in the socioeconomics section of Chapter 4.)

ES.1.3.3.22. SPECIAL DESIGNATIONS

How would coal mining impact the air quality, viewshed, and nighttime sky of Bryce Canyon National Park? How would coal mining impact the resources (air quality, viewsheds, recreation, etc.) of other nearby parks and monuments, including the Grand Staircase-Escalante National Monument; Arches, Canyonlands, and Zion national parks; Kodachrome State Park; and Red Canyon and other public lands? How would the noise and presence of coal truck traffic affect the visitor experience at these parks, monuments, and public lands? (Issues related to special designations are addressed in the aesthetic resources, air resources, and recreation sections of Chapter 4.)

ES.1.3.3.23. SPECIAL STATUS SPECIES

How would development and operation of a coal mine impact special status species and their habitat, including Greater Sage-Grouse (*Centrocercus urophasianus*), Utah prairie dog (*Cynomys parvidens*), Burrowing Owl (*Athene cunicularia*), Bald Eagle (*Haliaeetus leucocephalus*), Golden Eagle (*Aquila chrysaetos*), pygmy rabbit (*Brachylagus idahoensis*), Northern Goshawk (*Accipiter gentilis*), Ferruginous Hawk (*Buteo regalis*), Bonneville cutthroat trout (*Oncorhynchus clarkii utah*), and Utah Physa? What effect would noise from coal truck traffic have on special status species? How would wildlife mortality from vehicle collisions affect wildlife populations? (Special status species issues are addressed in the special status species section of Chapter 4.)

ES.1.3.3.24. SOCIOECONOMICS

What opportunities for employment would development and operation of the coal mine create? How would development and operation of a coal mine affect local businesses and tourism? How would development and operation of a coal mine affect tax revenues to Kane and Garfield counties? What, if any, additional county services (ambulance, firefighting, sheriff, etc.) would be required to support the mine? What effect would coal truck traffic have on tourism and local businesses along potential transportation routes? What are the economic benefits of development and operation of a coal mine? How would development of the tract contribute to the supply of coal available for use in the region?

ES.1.3.3.25. SOILS

What impact would development and operation of a coal mine (including final reclamation) have on productivity of soils, including biological soil crusts? How would coal mining affect farmland productivity? What impact would development and operation of a coal mine have on soil stability and rates of erosion? What effect would road and coal dust and exhaust from mine-related traffic have on soil productivity in proximity to roads in the tract and along potential transportation routes?

ES.1.3.3.26. VEGETATION

How would coal development, mining, and reclamation affect vegetation communities in the tract? What effect would coal mining, including truck traffic to transport coal, have on the introduction and spread of exotic vegetation? What effect would road and coal dust and exhaust from mine-related traffic have on the health and growth of vegetation adjacent to roads in the tract and along potential transportation routes?

ES.1.3.3.27. WATER RESOURCES

What effect would development and operation of a coal mine have on surface-water and groundwater quality and quantity? How would mining operations impact riparian areas and wetlands? How would coal mining affect the possible existence of an alluvial valley floor (AVF) near the town of Alton? How would road and coal dust and vehicle exhaust, resulting from operation of coal trucks, impact the quality of water bodies adjacent to transportation routes?

ES.1.3.3.28. WILDLIFE

What effect would development and operation of a coal mine, including reclamation and coal truck traffic, have on wildlife and their habitat, including nocturnal wildlife?

ES.1.3.3.29. ALTERNATIVES

This section summarizes the comments provided in the public scoping process and comment process on the DEIS that specifically refer to or specifically indicate the need for the development of alternatives to the Proposed Action. Issues summarized above were also considered in the alternatives development process along with past, present, and reasonably foreseeable future actions.

Chapter 2 provides a complete description of the alternatives analyzed in detail and those alternatives considered but eliminated from detailed analysis. A brief rationale for the dismissal of alternatives is provided there.

Decision to Lease

- Should the BLM delay offering the tract for lease until less-impacting extractive processes are developed?
- The BLM should consider leasing all known recoverable coal resources rather than just the tract in question for which an LBA was received.
- Based on the analyses in the DEIS, the BLM should update their coal unsuitability determinations in the KFO RMP and reconfigure the tract to match these updated determinations.

Mining Methods and Coal Production

- What are practical alternatives to surface mining in the tract?

Energy Conservation and Alternative Sources of Energy

- The BLM should consider foregoing the coal lease and instead promote energy conservation and the development of alternative forms of energy such as solar, wind, and natural gas.

Air Quality

- How would operations be designed and controlled to prevent the release of unsafe levels of nitrogen dioxide?
- How would operations be designed and controlled to ensure no violations of National Ambient Air Quality Standards (NAAQS)?

Special Designations

- Coal mining should be designed, and modified if needed, to reduce impacts to Bryce Canyon National Park.
- Is it feasible and reasonable to consider alternative locations for leasing rather than the LBA tract currently under consideration?

Transportation

- What methods of coal transportation (e.g., slurry, rail, and truck) should be considered to reduce impacts to the environment, nearby communities, and public safety?
- Construction of a power plant next to the mine should be considered as a way to eliminate impacts from coal truck traffic.
- Restrictions on coal truck traffic before sunrise and after sunset should be considered to improve public safety and reduce transportation-related impacts to wildlife.

Cultural Resources

- The BLM should consider an alternative tract configuration that excludes all cultural resources sites eligible for the National Register of Historic Places.

Wildlife and Special Status Species

- The BLM should consider an alternative that places seasonal timing restrictions on the entire tract.

ES.1.4. Alternatives

Four alternatives are analyzed in detail in this EIS: Alternative A (No Action), Alternative B (the Proposed Action), Alternative C (Reduced Tract Acreage and Seasonal Restrictions), and Alternative K1 (Reduced Tract Acreage).

Department of Interior regulations (43 CFR 46.425) suggest that departmental agencies should identify preferred alternatives in draft EISs but do not require them to do so. The BLM did not identify a preferred alternative or preferred alternatives in the Alton Coal Tract LBA DEIS published in November 2011, because no such preference existed at that time. That continues to be the case now. In developing this SDEIS, the BLM has conducted extensive consultation and coordination activities with its cooperating agencies and other agencies with special expertise (see Section 1.3 and Chapter 5). The BLM has also expanded the range of alternatives analyzed in detail, with the inclusion of Alternative K1 for detailed analysis.

ES.1.4.1. Alternative A: No Action

Under the No Action Alternative, ACD's application to lease the coal included in the Alton Coal Tract under the Proposed Action, Alternative C, or Alternative K1 would not be approved, the LBA tract would not be offered for competitive lease sale, and the coal included in the LBA tract would not be mined.

Rejection of the application would not affect mining activities on private land adjacent to the tract (i.e., the Coal Hollow Mine). The Coal Hollow Mine consists of approximately 635 acres of land and approximately 5 million short tons of recoverable coal leased from private surface and mineral owners. Average annual coal production is anticipated to be approximately 2 million tons and mining activities are expected to employ approximately 160 persons (100 at the tract and 60 for coal trucking operations); though initial operations and startup would employ much less (approximately 16 employees). Rejection of the application would also not affect an anticipated permit application from ACD to mine fee coal on private lands adjacent to the tract to the north.

To compare the economic and environmental consequences of mining these lands versus not mining them, this EIS was prepared under the assumption that the tract would not be mined in the near future if the No Action Alternative is selected. Under the No Action Alternative, the public lands within the tract would continue to be managed in accordance with the *Kanab Field Office Record of Decision and Approved Resource Management Plan* (RMP) (BLM 2008b), hereafter referred to as the KFO RMP. The area would be managed for livestock grazing, recreation (primarily hunting and off-highway vehicle [OHV] use), and wildlife habitat. Vegetation treatments (wildlife habitat treatments, watershed treatments, livestock rangeland treatments, wildland fire use, fuels treatments, and stewardship contracting) would occur in support of the BLM's Healthy Lands Initiative. Private lands within the tract would continue to be used for livestock grazing, farming, and dispersed recreation (especially hunting).

ES.1.4.2. Alternative B: Proposed Action

Under the Proposed Action, recoverable portions of in-place coal reserves would be mined over approximately 25 years using 1) surface-mining methods where the depth of overburden would be less than approximately 200 feet, and 2) underground methods (development mining, auger mining, highwall mining, longwall mining, and/or room and pillar mining) where the depth of overburden would exceed approximately 200 feet. The choice of mining method, however, can vary from the 200-foot overburden threshold depending on the coal thickness, overburden type, overburden (highwall) stability, underground mining techniques available, operating and capital costs, and coal market economics. (The analysis considers surface disturbance for surface mining up to approximately 200 feet of overburden removal.) Approximately 2 million tons of coal per year would be mined once topsoil stockpiling and initial overburden removal have occurred. Reclamation would be concurrent with mining over the course of the estimated 25-year life of the mine and would be followed by a minimum 10-year reclamation and revegetation monitoring period.

BLM independently evaluated the coal resources in the tract. BLM estimates that the tract under the Proposed Action consists of approximately 59.6 million tons of in-place coal and that an estimated 44.9 million tons of coal would be recoverable from the tract. BLM estimates that in areas where coal would be mined by surface-mining methods, approximately 90% of the estimated in-place coal reserves could be recoverable. However, in those portions of the tract that must be mined by underground mining methods, approximately 50% of the in-place coal reserves could be recoverable. These percentage recovery estimates are based on assumptions about the depth to which the use of surface-mining methods is feasible and the extent of the no-coal zone.

Details on mining methods, facilities, reclamation, and operations can be found in Chapter 2 of the EIS.

ES.1.4.3. Alternative C: Reduced Tract Acreage and Seasonal Restrictions

Under Alternative C, the Alton Coal Tract would be modified to exclude the northwest portion (Block NW) of the tract near the town of Alton. Further, certain mining activities in the southern portion of the tract (Block S) would be subject to seasonal restrictions to reduce impacts to the local Greater Sage-Grouse population. Under Alternative C, the modified tract would be offered for lease at a sealed-bid, competitive lease sale, subject to lease stipulations developed for the tract.

Consistent with the purpose and need for the federal action, the intent of Alternative C is to resolve, in part or in full, the following: issues related to the local sage-grouse population, noise, and visual impacts to the town of Alton, and issues related to conflicting land uses (agriculture versus surface mining). Alternative C may also reduce impacts to other resources such as springs and surface waters, wildlife, soils, public health and safety, paleontological resources, cultural resources, and vegetation.

Under Alternative C, the tract would be modified to exclude Block NW. The modified tract would encompass approximately 3,173 acres, of which approximately 2,280 acres are federal surface and mineral estate and 893 acres are split estate; private surface estate and federal mineral estate. As under the Proposed Action, not all surface estates, private or federal, have coal reserves underlying them.

Under Alternative C, recoverable portions of in-place coal reserves would be mined over approximately 21 years using surface-mining methods where the depth of overburden is approximately 200 feet or less, and using underground methods (development mining, auger mining, highwall mining, longwall mining, and/or room and pillar mining) where the depth of overburden exceeds approximately 200 feet. The choice of mining method, however, can vary from the 200-foot overburden threshold depending on the

coal thickness, overburden type, overburden (highwall) stability, underground mining techniques available, operating and capital costs, and coal market economics. Approximately 2 million tons of coal per year would be mined once topsoil stockpiling and initial overburden removal have occurred. Reclamation would be concurrent with mining over the course of the estimated 21-year life of the mine and would be followed by a potential 10-year reclamation and revegetation monitoring period. Although reclamation would be concurrent with mining, due to seasonal timing restrictions required under Alternative C for Block S of the tract, the length of time between initiation of the mining process and concurrently occurring reclamation activities would be extended for some pits.

BLM estimates that the tract configuration under Alternative C includes approximately 52.1 million tons of in-place coal and that an estimated 38.1 million tons of coal would be recoverable from the tract. Percentage coal recovery estimates for surface versus underground mining are the same under Alternative C as they are under the Proposed Action.

Details on mining methods, facilities, reclamation, and operations can be found in Chapter 2 of the EIS.

ES.1.4.4. Alternative K1: Reduced Tract Acreage

In the DEIS, the BLM eliminated Alternative K1 from detailed analysis. However, based on public comments on the DEIS, the BLM has decided to consider Alternative K1 in detail in this SDEIS. Under Alternative K1, the Alton Coal Tract would be modified to exclude Block NW and Block S. Under this alternative, the modified tract would be offered for lease at a sealed-bid, competitive lease sale, subject to lease stipulations developed for the tract.

Consistent with the purpose and need for the federal action, the intent of Alternative K1 is to resolve, in part or in full, the following: issues related to the local Greater Sage-Grouse population; noise and visual impacts to the town of Alton; and issues related to conflicting land uses (agriculture versus surface mining). Alternative K1 may also reduce impacts to other resources such as springs and surface waters, wildlife, soils, public health and safety, paleontological resources, cultural resources, vegetation, and air quality.

Under Alternative K1, recoverable portions of in-place coal reserves would be mined over approximately 16 years using surface-mining methods where the depth of overburden is approximately 200 feet, and using underground methods (development mining, auger mining, highwall mining, longwall mining, and/or room and pillar mining) where the depth of overburden exceeds approximately 200 feet. The choice of mining method, however, can vary from the 200-foot overburden threshold depending on the coal thickness, overburden type, overburden (highwall) stability, underground mining techniques available, operating and capital costs, and coal market economics. Approximately 2 million tons of coal per year would be mined once topsoil stockpiling and initial overburden removal have occurred. Reclamation would be concurrent with mining over the course of the estimated 16-year life of the mine and would be followed by a potential 10-year reclamation and revegetation monitoring period.

BLM estimates that the tract configuration under Alternative K1 includes approximately 40.9 million tons of in-place coal and that an estimated 30 million tons of coal would be recoverable from the tract. Percentage coal recovery estimates for surface versus underground mining are the same under Alternative K1 as they are under the Proposed Action.

ES.1.4.5. Reasonably Foreseeable Coal Loadout Location and Transportation Route

Future foreseeable transportation of mined coal reserves from the tract to market would be dictated by existing roads and market conditions at the time of sale of mined coal. The applicant (ACD) is currently planning on moving mined coal from the tract to market via development of a rail loadout at Iron Springs, approximately 11 miles west of Cedar City, Utah. To access this loadout, coal transportation would occur via KFO Route 116 continuing north through the town of Alton, north on US-89, west on State Road 20 (SR-20), and finally south on Interstate 15 exiting at exit number 59 in Cedar City. For analysis in this EIS, the construction and use of the rail loadout at Iron Springs would be the reasonably foreseeable loadout location associated with the tract, and the approximately 110-mile route would be the reasonably foreseeable transportation route linking the tract and the loadout. Map 2.6 shows the rail loadout location and the transportation route.

If the BLM decides to hold a competitive lease sale and a lease is issued to ACD, it is reasonably foreseeable that they would use this rail loadout and transportation route, as conditions dictate, to transport and market the federal coal reserves in the tract. A successful bidder other than ACD may identify a different loadout location, transportation route, or both, to move mined coal from the tract to market. Given that BLM cannot predict the plans of a successful bidder other than ACD, the following would be speculative: attempting to guess at loadout location (or locations), transportation route (or routes), or both, that may be used by a successful bidder other than ACD. Therefore this EIS gives no consideration to other potential loadout locations and transportation routes.

Though transportation of mined coal reserves would not be regulated under the leasing action, all coal haul trucks used for transporting mined coal reserves from the tract would be operated as per federal and Utah Department of Transportation (UDOT) requirements. For analysis of all actions alternatives in this EIS, it is anticipated that in addition to the operation of permitted and regulated haulage from the tract to a reasonably foreseeable rail loadout, the use of best available control measures to minimize and/or eliminate fugitive coal dust along the transportation route would be installed on all coal haul vehicles. Operation of the rail loadout facility would be regulated by DOGM (under their coal regulatory program). In addition to various federal, state, and local regulatory requirements for its operation, it is also anticipated that best available control measures for fugitive coal dust would be implemented at the associated loadout facility.

ES.1.4.6. Permits, Approvals, Regulatory Compliance, Mitigation, and Monitoring

There are certain permits, approvals, and regulatory compliance, mitigation, and monitoring measures that would be required under the action alternatives. These are related to 1) compliance with existing local, state, and federal rules and regulations with respect to surface coal mining and 2) special requirements (i.e., design features) developed for the tract. See Table 1.5.1 in Chapter 1 and Table 2.6.1 in Chapter 2 for a summary of permits, approvals, and regulatory compliance requirements for the successful bidder.

ES.1.4.7. Alternatives Eliminated from Detailed Analysis

Aside from the Proposed Action, Alternative C, and Alternative K1, 19 alternatives were considered during the course of alternatives development and following publication of the DEIS. Each of these was eliminated from detailed analysis in the EIS. Chapter 2, Section 2.7.1 provides descriptions of these alternatives along with the rationale for eliminating each of them from detailed analysis.

In addition to the alternatives eliminated, certain components of the federal action would be independent of the elements of any alternative. In the EIS, these were considered options, any one of which could be chosen in combination with any alternative and would not necessitate changes in the alternative, or vice versa. Those options that were considered but not carried forward for detailed analysis are described in Chapter 2, Section 2.7.2 of the EIS.

ES.1.5. Affected Environment

ES.1.5.1. General Setting

The tract is in Kane County, Utah, approximately 0.10 mile south of the town of Alton and 2.9 miles east of US-89. The tract occurs at approximately 6,900 feet above sea level in the semiarid foothills of the Colorado Plateau Semidesert Province (Woods et al. 2001) of south-central Utah. The tract is in the Alton Amphitheater between the Paunsaugunt Plateau to the northeast, Long Valley (Virgin River) to the west, and approximately 5.0 miles north and northwest of the Grand Staircase-Escalante National Monument. Mean annual precipitation in the town of Alton was approximately 16 inches from 1928 to 2006, and mean annual temperature for this same time period was 60.2°F (2006). The Colorado Plateau province receives most of its precipitation in the form of snow during the winter months; summers are generally hot and dry with a mid- to late-summer monsoon period when frequent thunderstorms occur (2006). The tract is characterized by a series of low-rising hills and benches cut by the north-south-running Kanab Creek and by long diagonal washes that flow from the surrounding mountain ranges. Vegetation in the tract is typical of the Great Basin and includes large open areas of bunchgrass, perennial grasses, and sagebrush interspersed with dense stands of juniper and pinyon pine (*Pinus edulis*). Tall fir trees are apparent on the more rugged mountains to the northwest of the tract. Generally, the vegetation cover is continuous across most of the tract, broken by two-track dirt roads and fence lines.

Under the Proposed Action, the tract includes approximately 3,576 acres of land. All coal resources within the tract are federally (BLM) owned and managed. Approximately 2,280 surface acres of the tract are under BLM management, and the remaining 1,296 surface acres are under private ownership. Under Alternative C and Alternative K1, the tract includes approximately 3,173 acres and 2,114 acres of land, respectively. As under the Proposed Action, all coal resources under these tract configurations are federally (BLM) owned and managed. Surface ownership under Alternative C and Alternative K1 is split between the BLM (2,280 acres under Alternative C and 1,235 acres under Alternative K1) and private owners (893 acres under Alternative C and 880 acres under Alternative K1). Coal reserves are known to occur beneath approximately 1,750, 1,454, and 869 acres of the tract under the Proposed Action, Alternative C, and Alternative K1, respectively.

The entirety of the reasonably foreseeable coal haul transportation route also occurs in southern Utah, more specifically in Kane, Garfield, and Iron counties near Alton, Hatch, Panguitch, and Cedar City. The total length of the route is approximately 115 miles. Existing vehicle traffic consists of local residents; tourists to Bryce Canyon National Park, Dixie National Forest, and BLM-administered lands; and commercial truck traffic. Transportation infrastructure associated with the tract and the coal haul transportation route includes numerous unimproved, dirt roads, KFO Route 116, US-89, SR-20, Interstate 15, and SR-56. The Union Pacific Railroad 21-mile branch to the Salt Lake City-Los Angeles line is west of Cedar City, Utah, and is the nearest railroad facility to the tract.

ES.1.6. Environmental Consequences

Table 2.8.1 in Chapter 2 of this EIS summarizes the potential impacts to each element of the environment under each alternative. Detailed descriptions of the impacts are provided in Chapter 4, along with a

discussion of potential mitigation measures, residual impacts, short-term uses versus long-term productivity, and irretrievable and irreversible commitments of resources that would result from implementation of the alternatives. Cumulative impacts to resource values and uses of the tract that would result from implementation of the alternatives are also discussed in Chapter 4. A summary describing the general conclusions of the effects analysis is presented below.

ES.1.6.1. Aesthetic Resources

Increased ambient noise levels, short-term modifications to visual resources, and perceptible increase in nighttime skyglow would occur from the implementation of the action alternatives. The town of Alton would experience the greatest increases in ambient noise levels from the mining activities in Block NW under Alternative B. An initial lumens cap of 3.15 million lumens would be applied to all action alternatives to limit nighttime skyglow effects. Full cut-off shielding would also be required under all action alternatives for fixed position lighting at centralized facilities.

ES.1.6.2. Air Resources

Under the action alternatives, emissions of criteria air pollutants (PM₁₀, PM_{2.5}, nitrogen oxides, volatile organic compounds, carbon monoxide, and sulfur dioxide) and hazardous air pollutants (benzene, toluene, xylenes, formaldehyde, acetaldehyde, and acrolein) would occur as a result of mining and transporting coal. Based on the near-field modeling results, all air pollutant concentrations resulting from emissions would be within NAAQS under the Proposed Action and Alternative K1 for the 200-foot overburden removal scenario. Air pollutant concentrations resulting from emissions under Alternative C would also be within NAAQS for all pollutants except PM₁₀ (24-hour standard), which would be violated under the 200-foot overburden removal scenario.

Air quality impacts in the far-field (for criteria pollutants as well as visibility) would be within regulatory limits for the three action alternatives. Nitrogen and sulfur deposition would likewise be below threshold values.

ES.1.6.3. Cultural Resources

Archaeological sites eligible for the National Register would be adversely impacted from the implementation of the action alternatives due to surface-disturbing activities associated with mining operations. Underground mining may impact unidentified archaeological sites. Native American traditionally cultural properties would be subject to adverse effects for the life of the mine under the action alternatives. The Panguitch Historic District and Utah Heritage Highway 89/Mormon Pioneer Heritage Area (US-89) would be subject to adverse effects for the life of the mine under the action alternatives. Sites that are not directly impacted by surface mining or facilities construction would be subject to a greater degree of threat for vandalism, looting, or unintentional destruction due to an increased human presence in the area.

ES.1.6.4. Fire Management

Under the action alternatives, vegetation would be removed during mining and construction activities. The revegetation of the disturbed areas would lead to reduced Fire Regime Condition Class ratings. Increased movement to and from the tract by construction equipment and coal haul trucks would increase the risk of fuel leakage and/or sparking that could lead to wildfires in the tract and adjacent transportation corridors. Construction of centralized and dispersed facilities could lead to an increased risk of human-caused wildfires from construction activities in undisturbed vegetation on and adjacent to the tract

ES.1.6.5. Geology and Minerals

The action alternatives would result in long-term adverse effects to topography, physiography, and stratigraphy. Removal of coal by underground mining methods would cause subsidence on portions of the tract overlying the area of coal removal. There would be a slight fault hazard from underground mining, and a risk to structures occurring on landslide deposits. Impacts to coal resources would occur from the production of recoverable coal over the life of the mine. Oil and gas resources would be unavailable for extraction for the life of the mine.

Because most of the burnt shale deposits in the tract have been or would be mined by the time a decision is made by the BLM on this EIS, direct impacts to burnt shale resources are unlikely. However, if mining operations expose burnt shale in the tract, they would likely be lost as economically recoverable resources because they would be mixed with other overburden during reclamation. If segregated from other overburden sufficiently, they may remain usable.

Salable pediment gravels in the tract would be directly impacted under the Proposed Action due to mixing with other overburden following surface mining.

It is not known how common septarian nodules are in the tract, or if they are present in sufficient density to be economically viable for development. However, any nodules present at or near the surface in areas that would be surface mined would be at risk of burial during reclamation, and therefore may be less accessible for development. The nodules would not be removed and would therefore still be available as a resource, but their development would likely be less economically viable and their concentration in any area would likely be reduced.

ES.1.6.6. Hazardous Materials

Movement to and from the tract by service vehicles and coal haul trucks has the potential to increase the risk of fuel leakage or solid waste spills in the tract and adjacent transportation corridors. Accidental or inadvertent leakages from storage tanks would also be possible. Spills would have adverse effects on soil, water, vegetation, and wildlife resources. Potential impacts would be mitigated through standard operating procedures and through the creation of other plans and policies that relate to hazardous materials disposal, transport, and emergency response.

ES.1.6.7. Land Use and Access

Under the action alternatives, lands within the tract would be unavailable for grazing and recreation access during mining activities (life of mine). Agriculture, tourism, and recreation activities would also be prohibited or restricted during the life of the mine.

ES.1.6.8. Livestock Grazing

The action alternatives would result in the temporary loss of forage as a result of restricted access, spread of noxious weeds, and/or decreased palatability from construction dust and the temporary loss of water sources and range improvements, such as fences and cattle guards. In addition, the action alternatives would result in a loss of animal unit months within allotments over the life of the mine and reclamation period. Impacts to livestock could occur from mortality from vehicle collisions.

ES.1.6.9. Paleontology

The coal extraction process would result in the permanent removal of fossils from the Dakota Formation and from the Tropic Shale in the tract, resulting in a long-term decrease in the productivity of paleontological resources in the area. It is anticipated that a large number of significant fossils would be destroyed or removed from context, particularly in the Tropic Shale.

ES.1.6.10. Recreation

The action alternatives would have some adverse effects to recreation resources. Lands available for dispersed recreation would be lost from mining over the life of the mine. Some designated OHV routes would be temporarily removed over the life of the mine. In addition, there would be some indirect adverse effects from displacement of recreational users onto adjacent public lands, which would affect recreational experiences of users on those lands.

ES.1.6.11. Socioeconomics

Implementation of the action alternatives would result in an increase to the number of jobs, income, and additional taxes, fee, and payments. There would be an adverse impact to recreation, and adverse impacts to sense of community, social well-being, and tourism-related businesses. There would be impacts to population, housing, public health, safety, and environmental justice populations. The environmental justice impacts would result from noise and visual impacts to the town of Alton from mining activities under all action alternatives. Environmental justice impacts to the town of Alton would also occur from potential exceedances of the NAAQS for PM₁₀ under Alternative C.

ES.1.6.12. Soils

Implementation of the action alternatives would result in disturbance of soil resources through large-scale removal, stockpiling, and replacement of soils during mining. The disturbance (impact) caused by removing and replacing soils would be long term. Most of the impacts (caused by facilities, some roads, etc.) would be long-term impacts, persisting for the life of the mine.

ES.1.6.13. Transportation

The action alternatives would result in an increase in commuter traffic and coal truck traffic through Cedar City, Hatch, and Panguitch. However, levels of service are not expected to change under any of the action alternatives.

ES.1.6.14. Vegetation

Vegetation would be removed for surface mining, construction, and road relocation under the action alternatives. Lands would be susceptible to weed invasion. All disturbed acres would be reclaimed and revegetated after the life of the mine.

ES.1.6.15. Water Resources

Robinson Creek would be relocated, potentially affecting stream function, the associated riparian corridor, and water quality.

The action alternatives would result in the diversion of runoff to retention ponds, and an associated loss of surface water from evaporation and infiltration would occur. There would be small sediment load into

streams from dispersed facilities and road relocation. The loss of instream dilution could increase concentrations of total dissolved solids over the state water quality standard of 1,200 milligrams per liter. Reduced instream flows could result in less water available for irrigation downstream. There would be a small risk of surface-water contamination from accidental spills on 13.8 miles of stream that are within 100 feet of the reasonably foreseeable coal haul transportation route. There would also be a small increase in fine particles in streams associated with deposition of fugitive dust and coal dust.

Groundwater would be affected by the action alternatives through the use of groundwater for dust suppression, the removal of groundwater as moisture contained in coal, and the evaporation of groundwater exposed in pits.

There would be a direct removal and loss of function of wetlands and impacts to riparian areas due to surface mining and construction of dispersed facilities. Impact to wetlands and riparian areas would include the loss of habitat, loss of water filtration, and destabilization of streambanks.

Because probable AVFs occur only within the tract's no coal zone there would be no direct impacts to these water-related features from pits. Both floodplains and AVFs would be adversely affected by the construction of dispersed facilities. Approximately 60,565 linear feet of ephemeral and intermittent drainages are within the surface-mining areas of the coal zone associated with this alternative. Approximately 17,102 linear feet of perennial (including 96 linear feet of Kanab Creek), intermittent, and ephemeral drainages are within the underground mining area. Floodplain functions that could be lost include some degree of flood storage and attenuation, groundwater recharge, and erosion prevention. Although ground disturbance would occur in probable AVFs, the essential hydrologic functions of these areas would not be impacted and the physical capability of the land to be irrigated would not be changed.

ES.1.6.16. Wildlife: General

Direct and indirect impacts from the action alternatives would include habitat fragmentation, alteration, loss, and displacement due to surface disturbance, noise, ground vibration, night lighting, and increased risk of vehicle mortality associated with coal haul trucks. Potential mule deer habitat disturbance under the action alternatives would include approximately 29 acres of crucial summer habitat and approximately 920.1–1,803.3 acres of substantial value summer habitat. Potential elk habitat disturbance under the action alternatives would include approximately 920.1–1,807.5 acres of substantial value summer habitat and approximately 24.8 acres of year-long substantial value habitat. Raptors, migratory birds, and amphibians are also expected to experience potential habitat loss under the action alternatives.

ES.1.6.17. Wildlife: Special Status Species

Direct and indirect impacts common to all action alternatives would be the same as those described above for general wildlife. Special status species that are expected to experience habitat disturbance under the action alternatives include Utah prairie-dog, pygmy rabbit, kit fox (*Vulpes macrotis*), certain bat species, certain raptor species, certain migratory bird species, certain amphibian species, Bonneville cutthroat trout, and Greater Sage-Grouse. The action alternatives would disturb approximately 1,012–1,992 acres of occupied Greater Sage-Grouse habitat. Vegetation treatments and other actions described in the *Alton Coal Tract LBA Greater Sage-Grouse Mitigation Plan* (Appendix E) are designed to mitigate impacts to Greater Sage-Grouse habitat and would be applied to all action alternatives as design features. Vegetation treatments would be required to outpace surface disturbance caused by mining activities at an acreage ratio of 4 to 1.

ES.1.6.18. Potential Mitigation Measures

Potential mitigation measures are also proposed for individual resources in Chapter 4 of the EIS. Residual impacts that would persist following implementation of mitigation measures are also addressed for each resource in Chapter 4. The selection of these proposed mitigation measures will be decided in the ROD.

ES.1.7. Consultation and Coordination

Initial involvement with respect to BLM's receipt and review of ACD's LBA and details on the public notification, public scoping process, and the cooperating agencies are described above. Chapter 5, Consultation and Coordination, provides further detail on consultation and coordination for the proposed tract and preparation of this EIS.

ES.1.8. Next Steps

The comment period on this EIS will extend for 60 days following the U.S. Environmental Protection Agency's publication of the NOA in the *Federal Register*. The BLM is also publishing an NOA in the *Federal Register*. All timely comments on the EIS will be considered in the preparation of the FEIS. All substantive comments and information submitted will be summarized and addressed in the FEIS. The FEIS will then be completed and an NOA published in the *Federal Register*. After a 30-day waiting period, a ROD will be prepared and signed. The ROD, which will be signed by the authorized officer, will document the decisions made regarding the Proposed Action and alternatives. The BLM decision will apply only to public lands.

This EIS is not a decision document. Rather, it is a document that will inform the BLM's final decision on whether to hold a competitive lease sale for the tract and, in the event that the BLM decides to offer the tract for competitive leasing, what lease stipulations would be attached to the lease. The EIS is being released to inform the public and interested parties of the potential impacts associated with implementing one of the action alternatives.