

# Environmental and Social Impact Assessment: Executive Summary

South West Arkansas Project

PREPARED FOR  
SWA Lithium LLC

DATE  
March 2026

REFERENCE  
0761567



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CLIENT: SWA Lithium LLC

PROJECT NO: 0761567

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## EXECUTIVE SUMMARY

SWA Lithium LLC's (SWA) proposed South West Arkansas Project (SWA Project, or Project) is a commercial-scale lithium extraction and processing project in Lafayette County, Arkansas. The Project will extract lithium-rich brine from the Smackover Formation, convert it into battery-grade lithium carbonate using a Direct Lithium Extraction (DLE) technology, and reinject treated brine back into the formation. At full operation, the Project will extract up to 200,000 barrels of brine per day and produce approximately 22,500 metric tons per year of battery-quality lithium carbonate over an estimated 20-year operating life, contributing significantly to domestic lithium supply. Environmental Resources Management, Inc. (ERM) prepared this Environmental and Socioeconomic Impact Assessment (ESIA) to document the potential environmental, socioeconomic, and community health impacts associated with the Project.

## PROJECT DESCRIPTION

### PROJECT FACILITIES

Project facilities include a Central Processing Facility (CPF) and a supporting wellfield that consists of five well pads (A through E) that contain brine supply and injection wells and pipelines for carrying produced brine, lithium-depleted brine, and sour gas (gas containing some hydrogen sulfide [ $\text{H}_2\text{S}$ ]) (Figure 1). The entire Project footprint will cover approximately 408 acres. The CPF will be situated on a 118-acre parcel roughly 20 miles west of Magnolia, Arkansas that was cleared for silviculture prior to SWA ownership. The wellfield lies east of the CPF and is also dominated by active and historic silviculture interspersed with agriculture and early herbaceous habitats associated with utility corridors. Each well pad will house two to four brine production wells and two to four brine injection wells, for a total of 14 production wells and 12 injection wells across the five well pads. Each well pad will also include a freshwater well required for drilling and periodic maintenance. Freshwater supply for CPF operations will come from the Sparta aquifer via four groundwater wells located on the CPF site (three active, one backup). Supporting infrastructure will include ~15 miles of pipeline that will carry brine to/from the CPF and sour gas to an existing third-party gas processing plant. Electrical distribution lines to power the wellfield will be collocated within the pipeline corridors or other existing right-of-way (ROW).

### OVERVIEW OF THE LITHIUM EXTRACTION PROCESS

Brine extracted from the Smackover Formation contains lithium along with dissolved gases (methane [ $\text{CH}_4$ ], carbon dioxide [ $\text{CO}_2$ ],  $\text{H}_2\text{S}$ ) and trace hydrocarbons. At the well pads, brine, gas, and hydrocarbons will be separated before the brine enters the pipeline to be transferred to the CPF. Sour gas will be delivered to a third-party facility, while trace hydrocarbons will be disposed of.

At the CPF, the brine will undergo four major processing stages:

- Brine Receiving and Pretreatment: Remaining sour gas will be stripped, converted to sodium hydrosulfide, and either neutralized or disposed of in an accredited disposal facility. Brine will be cooled and treated with sodium hydroxide and hydrogen peroxide, then filtered for solids and hydrocarbon removal.



- DLE: SWA will utilize Aquatech International LLC's (formerly Koch Technology Solutions) LiPro™ Lithium Select Soption technology to extract the lithium from the brine. This technology selectively adsorbs lithium chloride (LiCl), and then recovers it as a LiCl solution, while lithium-depleted brine is recycled for reinjection.
- Purification and Concentration: The LiCl solution will undergo chemical softening, ion-exchange polishing, and evaporation/concentration to remove impurities and recover water for reuse.
- Conversion to Lithium Carbonate: The LiCl solution will be processed through crystallizers, purification steps, and bicarbonate conversion to produce high-purity battery-quality lithium carbonate. The finished product will be dried, micronized, stored, and shipped to market by truck.

Process waste streams that are generated from the brine will be conditioned and returned to the lithium depleted brine stream for reinjection. Any process water that is not recovered for recycling/reuse will be combined with the lithium-depleted brine stream and reinjected into the Smackover Formation.

## CONSTRUCTION, OPERATION, WORKFORCE, AND UTILITIES

Construction activities will include site preparation, grading, installation of equipment and foundations, and stormwater management. Work will occur mainly during daylight, though 24-hour work periods may occur when needed. The CPF and wellfield combined will require approximately 40 megawatts of power. The Project plans to self-generate power using natural-gas-fueled generators, consuming roughly 3,000 million standard cubic feet of gas per year. Process water demands will be mostly achieved through internal water recycling via the use of reverse osmosis systems, which are expected to achieve an 85 percent recycling rate. The remaining freshwater demand will be 1,600 to 1,700 gallons per minute. The Project will be expected to support 300 full-time construction jobs on average (with peaks up to 800) and 106 operational jobs, providing economic benefits to surrounding communities.

## PROJECT ALTERNATIVES

SWA considered potential technical, environmental, and siting options for the Project, and concluded that the proposed design, centered on DLE, reverse osmosis, and on-site wastewater treatment and power production, offers the most efficient, sustainable, and lowest-impact approach for producing lithium from Smackover brine. A No Project scenario would leave brine resources unused while increasing reliance on more environmentally harmful lithium extraction elsewhere. Multiple technology and design options were compared, with selected alternatives providing benefits such as reduced land and water use, improved performance, lower waste generation, fewer emissions, and minimized wetland and waterbody impacts. SWA is also considering additional refinements, including an alternate sour gas pipeline route using existing ROW and alternative freshwater sources pending aquifer testing.

## POLICY AND LEGAL FRAMEWORK

The policy and regulatory framework governing the Project consists of a comprehensive set of federal, Arkansas state, and international requirements. Key United States (U.S.) laws include but



are not limited to the National Environmental Policy Act (NEPA), which requires an Environmental Assessment (EA) for U.S. Department of Energy-funded actions (Draft EA submitted for 30-day public review on March 11, 2026); the Clean Air Act and Clean Water Act, which govern air emissions, water quality, and jurisdictional wetland and waters impacts; the Endangered Species Act (ESA), requiring consultation with the U.S. Fish and Wildlife Service for listed species; the Safe Drinking Water Act, regulating groundwater protection and the Underground Injection Control (UIC) program; the Occupational Safety and Health Act, covering worker safety; and the National Historic Preservation Act (NHPA), including Section 106 review for cultural resources, including Tribal engagement.

The Project must obtain a wide suite of state-level construction and operating permits, including Minor Source Air Permits, National Pollutant Discharge Elimination System (NPDES) wastewater and stormwater permits, Underground Injection Control / Class V permits, drilling permits, and hydrostatic testing permits. State-level oversight of the Project will be led by the Arkansas Department of Environmental Quality, which manages air, water, wastewater, and stormwater permitting; Arkansas Department of Health, which manages the public water system; and the Arkansas Oil and Gas Commission, which regulates drilling, brine production, and injection wells under the Arkansas Brine Conservation Act. Additional requirements stem from the Emergency Planning and Community Right-to-Know Act and Arkansas public health and drinking water regulations.

The Project will be partially financed by Equator Principles Financial Institutions, so it must also align with the Equator Principles IV (2020), referred to hereafter as EP4. EP4 consists of 10 separate principles related to management of environmental and social risks. Principles 2 through 6 are directly applicable to the Project's environmental and social risks, which are assessed in this ESIA. Principle 1 (Review and Categorization), Principle 7 (Independent Review), Principle 8 (Covenants), Principle 9 (Independent Monitoring and Reporting), and Principle 10 (Reporting and Transparency) are under the purview of the Equator Principles Financial Institutions. Per EP4 Principle 3, the Project, which is in a Designated Country, may also be required to align with the Internal Finance Corporation (IFC) Performance Standards (PS) on Environmental and Social Sustainability (IFC 2012) at the discretion of the lenders. This ESIA covers topics of interest pursuant to EP4 and relevant IFC PS. Lastly, the U.S. is party to multiple environmental treaties—such as the United Nations Framework Convention on Climate Change, Montreal Protocol, Ramsar Convention, and Vienna Convention, which provide additional context for climate, emissions, and wetland protection.

Collectively, these frameworks define the environmental, social, permitting, and compliance obligations that will govern development and operation of the Project.

## ESIA METHODOLOGY

In accordance with the applicable IFC good international industry practice (2012), this ESIA applies a structured, science-based approach to identify, predict, and evaluate potential environmental, biological, socioeconomic, and community health impacts from the Project's construction, operation, and future decommissioning. The ESIA process began with scoping, which defined Project activities, unplanned events, assessment boundaries, and baseline data needs. It established both an Environmental Area of Influence (EAoI; including the area within a 1-mile



buffer around the Project footprint) and a Social Area of Influence (SAoI; including directly affected communities in Lafayette County and indirectly affected regional centers such as Magnolia and Texarkana).

SWA began early stakeholder engagement activities in 2018. The Project has prepared a Stakeholder Engagement Plan and mapped stakeholders, including government entities, community representatives, local businesses, Tribal nations, and vulnerable groups. Stakeholder engagement specific to the ESIA was conducted during a May 2025 site visit. ERM met with key local government representatives and community institutions in Magnolia and Lewisville, including county judges, emergency response officials, chambers of commerce, school district staff, and the Mayor of Lewisville, to gather insights on socioeconomic conditions, challenges, and opportunities within the Project area. Refer to Section 4.3.1 ESIA Engagement Activities, for further information.

Baseline conditions were characterized using desktop studies, field surveys, and findings from the May 2025 site reconnaissance visit and stakeholder engagement. Key resources assessed include air quality, greenhouse gas (GHG) emissions, noise, soils, surface and ground water resources, ecological setting, terrestrial fauna and flora, aquatic habitats and species, protected areas, land use, economy and workforce, community health and safety, services and infrastructure, visual landscape, cultural heritage, and ecosystem services.

Project-related impacts were assessed using a standardized framework that considers magnitude (a combination of impact intensity, frequency, duration) and sensitivity of resources to determine impact significance, and describes significance on a scale of Negligible to Major.

In addition to Project-related impacts, the ESIA also assessed risks from unplanned events. The unplanned events assessment addressed potential accidental or low-probability incidents (such as spills or accidents) that could occur during construction, operations, and decommissioning of the Project. Unlike planned impacts, unplanned events were evaluated using a risk-based method that considers consequence severity (Small, Medium, Large) and likelihood (Unlikely, Possible, Likely), with risk ratings determined by combining both factors.

A cumulative impact assessment (CIA) was also conducted based on IFC's 2013 guidance, focusing on Valued Environmental and Social Components (VECs) affected by both Project and non-Project activities.

## ENVIRONMENTAL AND SOCIAL BASELINE

### PHYSICAL RESOURCES BASELINE

Key physical resources assessed in the ESIA include air quality, GHGs, geology and soils, surface water and wetlands, groundwater, noise, and natural hazards. Key data sources used to inform the baseline included Trinity Consulting and Terracon field study reports (2023–2025), Arkansas Department of Agriculture groundwater datasets, Climate Trace GHG inventories, ThinkHazard! natural hazard assessments, and ERM's Global Climate Database.

Air quality within the Project area is good, as the airshed is in attainment for all criteria pollutants and the undeveloped site contains no stationary emissions sources. GHG emissions data indicate



that Lafayette County contributed approximately 203 kilotons carbon dioxide equivalents (CO<sub>2</sub>e) in 2024, with no large-reporting facilities in the EAoI.

The Project is underlain by the Smackover geologic formation, a Jurassic limestone and dolomite reservoir that hosts lithium and bromine bearing brines. Soils at both the CPF and wellfield include silt loams and sandy loams with varying farmland classifications and erodibility. Many soils in the Project area are hydric and approximately 36 percent of CPF soils and 43 percent of wellfield soils exhibit moderate to high erosion risk. Surface water assessments identified one perennial stream (Bodcau Creek) and numerous intermittent streams, ephemeral drainages, and wetlands in the Project area. Many of the intermittent and ephemeral streams and wetlands were determined by the USACE to be non-jurisdictional, based on a Jurisdictional Determination issued in 2025.

While most wetlands at the CPF site are hydrologically isolated and non-jurisdictional, the wellfield contains just under 20 acres of jurisdictional wetlands as well as multiple jurisdictional streams including a perennial stream, Bodcau Creek (impact avoidance and minimization measures specific to these features are described in the physical resources impacts summary below). Most of the wetlands and streams in both the CPF site and wellfield are highly disturbed due to historic and ongoing silviculture operations. The wellfield area also contains areas of farming that disrupt the natural landscape. The only exceptions where more natural wetlands and stream features remain are the forested wetlands located along intermittent streams and Bodcau Creek, which have been less impacted by human activity. Portions of both the CPF site and pipeline ROW fall within the 100-year floodplain.

Groundwater beneath the Project area lies within the Sparta aquifer. The Sparta aquifer is an important aquifer in Arkansas and is regularly used as a source of public, agricultural, and industrial water supply for many parts of the state. Over 120 municipalities, including those in Lafayette County, rely on the Sparta aquifer for public water supply. Increasing agricultural use of the overlying Red River aquifer, particularly in areas where the Red River and Sparta aquifers are hydrologically connected, has been linked to declining water levels in portions of the Sparta aquifer. However, no noticeable decline in water levels in the Sparta aquifer in the vicinity of the Project area has been observed. Overall, the 1-year, 5-year, and 10-year trends in groundwater elevations across the Sparta aquifer in Lafayette County generally show evidence of increasing water levels. Hydraulic properties within the Sparta aquifer are highly variable. The Arkansas Department of Agriculture has designated three areas within the state as Critical Groundwater Areas. This is a non-regulatory designation intended to help focus attention and resources on areas most in need of conservation efforts. The South Arkansas Critical Groundwater Area lies east of, but does not overlap with, the Project area.

Existing noise levels are characteristically low given the rural, silviculture-dominated landscape, with residences located over a mile from the CPF and over 0.4 mile from any well pad. Natural hazard screening indicates high risk for tornadoes, river flooding, wildfire, and extreme heat; low risk for earthquakes; and very low risk for landslides and water scarcity. Future climate projections suggest increases in extreme heat, wildfire-permissive conditions, and storm intensity, with comparatively stable outlooks for drought and river flooding.

## BIOLOGICAL RESOURCES BASELINE

The ecology of the area surrounding the Project site is characteristic of heavily managed commercial timber landscapes, which are common across Lafayette County. Dominant habitats include commercial pine plantations, mixed pine-hardwood forests, riparian hardwood corridors, and widespread emergent, scrub-shrub, and forested wetlands. The CPF site and wellfield areas have undergone decades of silviculture, involving clear-cuts, surface ripping, and other logging activities, resulting in moderate to high disturbance and a vegetation assemblage characteristic of varied age silviculture. Wetlands are common and often associated with depressions created by timber operations, while more intact natural habitats persist in narrow riparian zones, forested wetlands, and mature hardwood pockets, especially along Bodcau Creek.

Vegetation communities documented across the Project site include recent clear-cut uplands, emergent wetlands, forested wetlands, riparian forests, commercial pine stands, pine-hardwood forests, and constructed openings such as roads and log landings. Wildlife surveys documented typical southeastern U.S. fauna, including white-tailed deer, feral hogs, wild turkey, small mammals, reptiles such as cottonmouth and box turtle, and a diverse bird community.

Aquatic habitat is limited in the Project area. The only perennial stream in the Project area, Bodcau Creek, traverses the wellfield and supports fish, aquatic amphibians and reptiles, macroinvertebrates, crayfish, and generalist mussel species. Intermittent streams and drainages within the Project area provide minimal habitat value due to low flow, sandy substrates, and limited structure.

Several federally listed or candidate species potentially occur within the EAoI based on their known range, including Indiana bat, northern long-eared bat, tricolored bat, eastern black rail, red-cockaded woodpecker, piping plover, Rufa red knot, alligator snapping turtle, and monarch butterfly. Of these species listed above, the three bat species (Indiana bat, northern long-eared bat, and tricolored bat) have the highest potential to occur based on habitat conditions. Acoustic bat surveys conducted in summer 2025 confirmed the presence of Indiana bat (Federal Endangered) and tricolored bat (Proposed Federal Endangered) at the CPF site. Habitat suitable for alligator snapping turtle and bald eagle exists along Bodcau Creek and associated waterways, though neither species was observed in the Project area. Isolated locations of state-tracked plant species, including blueberry hawthorn, silky oat-grass, and Sebastian bush, were documented in and around the Project area.

Under IFC Performance Standard 6 (PS6), the EAoI is classified primarily as modified habitat, with small patches of natural habitat in riparian corridors and forested wetlands. A screening-level Critical Habitat Assessment determined that no areas meet IFC PS6 critical habitat thresholds despite the presence of federally-listed bat species and state-tracked plant occurrences. Ecosystem services are present in the EAoI but are of low importance to local beneficiaries: the EAoI is not used for subsistence, traditional practices, or freshwater supply, and recreational uses (e.g., hunting) are limited and informal. No federally protected areas or Endangered Species Act-designated critical habitat occur within the EAoI; the nearest protected area is Falcon Bottoms Wildlife Management Area (WMA), located approximately 4.7 miles north of the CPF site.

## SOCIAL RESOURCES BASELINE

The social baseline describes the socioeconomic context of the SAoI, with a focus on the towns of Lewisville, Stamps, Bradley, and Buckner in Lafayette County. Important regional economic hubs in neighboring Columbia and Miller counties are also described in the baseline. The southwest Arkansas region is predominantly rural, with small towns historically shaped by forestry and agriculture. Across the Direct SAoI, population decline and an aging population, coupled with sustained out-migration, are key demographic trends. Lafayette County has a resource-based economy with few industrial and service sector employers compared to neighboring Columbia and Miller counties. This is reflected in a low median household income and higher poverty rates compared to the surrounding counties.

Access to healthcare and social amenities, including grocery stores, is limited in Lafayette County, and residents typically commute to the regional economic hubs of Magnolia and Texarkana for access to these services. Similarly, Lafayette County has limited rental housing and short-term accommodations. Hotels, RV Parks and rental accommodation are available in Texarkana and Magnolia. While commuting between small towns in Lafayette County and larger towns in surrounding counties is common, and towns are well-connected by highways, there is limited public transport to support such commutes.

## CULTURAL RESOURCES BASELINE

Archaeological surveys for the Project identified no significant cultural resources at the CPF or well pads, and only disturbed, low-significance historic scatters along the pipeline corridor. None of these resources are considered eligible for the National Register of Historic Places. Tangible cultural resources in the broader community include historic buildings in Lewisville and Stamps, and cemeteries such as Mars Hill Cemetery. Intangible heritage is present, but has limited documentation. Local residents highlighted sites such as Spirit Lake (4.5 miles west of the CPF) and the historic Foster High School in Lewisville as culturally meaningful gathering spaces. Broader intangible values may emerge through ongoing tribal consultation under Section 106 of the NHPA.

The SAoI is located within the ancestral lands of Caddoan-speaking peoples, with Indigenous heritage reflected in the region through archaeological sites such as Battle Mound and Crenshaw Mounds. Although no federally recognized tribes reside in the SAoI today, several tribes including the Caddo Nation, Quapaw Nation, Osage Nation, Coushatta Tribe, and others, hold historical and cultural ties to the area. Government-led consultation under Section 106 of the NHPA in association with the NEPA EA is ongoing.

## ENVIRONMENTAL AND SOCIAL IMPACTS

### PROJECT-RELATED IMPACTS ON PHYSICAL RESOURCES

The Project's impacts on physical resources will derive from a range of activities during construction and operations including site preparation, well drilling, foundation installation, equipment operation, groundwater extraction, stormwater management, and waste handling. Key impacts will include emissions of air pollutants and GHGs, disturbance of geologic formations, soil horizon disruption and loss of agricultural soils, temporary disturbance of and permitted



discharges to surface water features, localized groundwater drawdown, and noise emissions. The Project has incorporated numerous embedded controls into their Project development plans such as dust suppression, erosion and sediment control measures, low-nitrogen oxides (NO<sub>x</sub>) burners, dust collectors, revegetation of disturbed areas, pipeline installation using horizontal directional drill (HDD) techniques at certain water crossings, and adherence to Clean Air Act, NPDES, and state regulatory requirements to avoid or reduce physical resource impacts at the impacts' source.

Air quality impacts will initially arise from emissions from construction equipment, and later from CPF stationary sources including generators, boilers, tanks, and cooling towers. Estimated emissions are predicted to remain below major source thresholds, resulting in a negligible impact rating. GHG emissions during operation—primarily from natural-gas-powered electricity generation—are estimated at 219,000 tonnes CO<sub>2e</sub> annually, with an intensity of 9.68 tonnes CO<sub>2e</sub> per tonne lithium carbonate produced, which is lower than equivalent emissions from hard-rock lithium production. Climate impacts are considered negligible, with ongoing public GHG emissions reporting required under EP4. Geologic impacts from drilling and brine extraction are expected to be localized, and received a negligible rating due to the geologic stability of the Smackover Formation and regulated reinjection pressures.

Soil impacts will occur due to vegetation clearing, grading, trenching, and compaction, and will include impacts to prime farmland and erodible soils in some locations. Soils classified as prime farmland and farmland of statewide importance occur within the Project footprint and consultation conducted as part of the NEPA EA with the United States Department of Agriculture Natural Resource Conservation Service confirmed the Project's compliance with the U.S. Farmland Protection Policy Act. Management measures such as implementation of a stormwater pollution prevention plan, staged clearing, reseeding, HDD at specific stream crossings, dewatering best practices, and erosion control measures, will help manage impacts on soils and surface water to a negligible significance. Impacts to jurisdictional streams and wetlands during construction will be minimized to the extent practicable through ongoing design optimization. Unavoidable impacts will be permitted and mitigated in accordance with USACE requirements. Operational discharges will be regulated through an NPDES permit, which will provide an additional layer of management of impacts on surface water resources.

Impacts on groundwater resources from freshwater extraction from the Sparta aquifer (1,600 to 1,700 gallons per minute) to support operation of the CPF involve minor localized drawdowns. Modeling predicts up to 15 feet of drawdown at a distance of 1 mile from the Project site (an area within which no public wells occur), with drawdowns diminishing to under 1 foot at 3 miles from the Project site. This analysis indicates that the water needs of the CPF can be sustainably supported by the Sparta aquifer. Additional testing to be conducted in 2026 will provide further information about the potential for impacts on groundwater availability, and there is the potential to use an alternative source of water from the Red River Alluvium if additional analyses suggest impacts on the Sparta aquifer would be significant. Impacts on groundwater quality from the Project will be negligible given the depth of operations and isolation of aquifers.

Noise from construction and operations is predicted to stay below U.S. Environmental Protection Agency / World Bank Group thresholds at all sensitive receptors (>1 mile from CPF), resulting in negligible significance after standard management measures are implemented.

## PROJECT-RELATED IMPACTS ON BIOLOGICAL RESOURCES

Vegetation clearing for the Project will cause the loss or conversion of 408 acres of previously disturbed vegetation communities that are common in the region (mostly commercial pine forest and pine-hardwood forest or recent clearcut). Permanent loss of vegetation will be mainly confined to the well pads and the CPF footprint, with the remaining area along the pipeline and distribution line ROW restored following construction and maintained as early successional herbaceous habitat. Impact management measures such as avoidance of known locations of state-tracked plant species, revegetation with native species to the extent practicable, erosion control, dust management, and minimized emissions from construction equipment will reduce the significance of these impacts. Residual impacts on vegetation will be negligible to minor.

Impacts on wildlife will primarily occur during the land clearing and construction phase of the Project and include habitat loss, disturbance, and possible injury or mortality. Protected species that will be impacted include federally-listed bat species and state-tracked plants, but management measures including seasonal tree-clearing restrictions, HDD at select stream crossings, and mitigation through the Arkansas Bat Fund to compensate for loss of federally-listed bat species habitat will result in residual impacts to these species of negligible to minor significance. Operation of the CPF and wellfield will not result in additional or ongoing habitat loss or degradation. Impacts during operation will be limited to anthropogenic disturbance (noise, human activity, traffic, etc.) and will be limited in nature given the size and nature of the Project.

No impacts are anticipated to protected areas, and IFC PS6 habitat requirements will be met through impact avoidance, minimization, and compensatory mitigation, resulting in an exceedance of no net loss requirements for natural habitat. Ecosystem services dependences in the EAoI are low, and the Project will not impact the availability or quality of ecosystem services. Impacts to the Falcon Bottoms Wildlife Management Area, located approximately 4.7 miles north of the CPF site, are not anticipated due to the distance and position upstream from the Project.

## PROJECT-RELATED IMPACTS ON SOCIAL RESOURCES

Employment and economic benefits are expected to be positive Project impacts: construction will require an average of 300 workers (peaking at 600 to 800), and operations will support more than 100 permanent jobs. Additional indirect benefits will include demand for local goods and services, tax revenues (including corporate, state, and federal taxes) estimated at roughly \$1.15 billion over the life of the Project, and substantial property tax contributions to Lafayette County. Lafayette County's small workforce, limited social infrastructure, and lack of short-term accommodation may reduce its ability to capture near-term economic gains. Local hiring initiatives, worker training partnerships, and targeted engagement to address structural barriers will help to maximize Project benefits within Lafayette County.

As there is no short-term accommodation available in Lafayette County, temporary construction workers will be housed in the regional economic hubs of Texarkana and Magnolia. Depending on Project's ability to meet construction workforce needs with hires from within the Indirect SAoI, some pressure on short-term accommodation may be experienced in these towns. After the implementation of mitigation measures, residual impacts are expected to be Minor.

The accommodation of temporary construction workers in larger towns serves to mitigate the Project's potential impacts on community services and infrastructure, such as healthcare and local utilities, in Lafayette County during the construction phase. Heavy-vehicle traffic and worker commutes during construction may increase delays and minor road deterioration on AR 29, AR 53, and US 82, especially near Lewisville. The Arkansas Department of Transportation reported that the roads are under-utilized and have the capacity to absorb project-related traffic. The implementation of a traffic management plan will reduce the significance of impacts on transportation infrastructure to Minor. Related to the increase in traffic, emergency services may experience increased demand from traffic incidents during construction, but impacts will remain Minor with the application of appropriate management measures such as coordination with local emergency services and the effective implementation of the Traffic Management Plan.

During the operation phase, workers will integrate into communities that meet their needs and the small workforce is not expected to have significant impacts on the cost or availability of accommodation, or place strain on community infrastructure and services.

The ESIA concludes that noise or air emissions from the Project are not expected to adversely impact the health of people living in the SAoI, however, construction activities and increased traffic may cause frustration, nuisance, and disruption for residents in the SAoI, which may have an impact on wellbeing. Similarly, during the operation phase, concerns and anxiety around lithium extraction and perceived environmental impacts may increase anxiety and affect people's wellbeing. Transparent communication and the effective implementation of the environmental and social mitigation measures will help manage these impacts. Residual impacts on community health, safety, and wellbeing are expected to be Negligible to Minor.

Impacts on groundwater resources from freshwater extraction from the Sparta aquifer to support the operation of the CPF involve minor localized drawdowns, and are not expected to impede access to water for domestic consumption or agricultural use.

Overall, the potential social impacts associated with the Project are expected to be Negligible to Minor with the effective implementation of management measures discussed in the ESIA and incorporated into Project's overarching Environmental and Social Management System.

## PROJECT-RELATED IMPACTS ON CULTURAL RESOURCES

The SAoI contains limited intact cultural heritage resources and has low overall sensitivity due to decades of alteration from commercial timber production. The Arkansas Division of Archaeology issued two Determinations of Effect in 2025, stating that no historic properties would be affected by either the CPF or the wellfield. Built heritage structures in Lewisville and Stamps lie outside the area of visual influence, so the Project will not affect their setting. At Mars Hill Cemetery, located 0.6 miles from Pad B, construction noise could cause temporary disturbance to visitors. Impacts on archaeological resources during construction are therefore expected to be Negligible to Minor, with Negligible impacts during operations.

The inadvertent discovery of unmarked burials, particularly those associated with enslaved African Americans or Indigenous peoples, remains a risk with any greenfield project. Damage to human remains would be irreversible should it occur. The Project will adopt several measures to manage impacts on cultural resources, including the implementation of a Chance Finds Procedure and



cultural resources training for workers (as applicable). With these measures in place, the residual significance of an inadvertent disturbance of unmarked burials would be Moderate.

## CUMULATIVE IMPACTS

The CIA evaluated how the Project's residual environmental and social effects may combine with those from past, current, and foreseeable future activities in the region, particularly other lithium and bromine extraction projects, major industrial facilities, transportation infrastructure improvements, and land-use practices. The CIA adopts IFC's 2013 cumulative impact methodology and focuses on VECs rather than Project-specific activities, identifying spatial boundaries largely aligned with the SAoI—Miller, Lafayette, and Columbia counties—and temporal boundaries that include planned, operational, and foreseeable activities across the life of the Project.

Eight non-Project developments were identified as relevant contributors to potential cumulative effects, including Albemarle's bromine plants and expansion, ExxonMobil's planned lithium project, EnergyX's brine extraction program, the Evergreen Brine Unit, the Commercial Metals Company steel mill, Arkansas Department of Transportation highway improvements, SWA's future Phase 2 expansion, and Chevron's lithium development initiative. These projects share similar resource dependencies as the Project, particularly brine extraction, water demand, land clearing, workforce requirements, and transportation use, which create potential intersections with the SWA Project's own impacts. Several external stressors such as climate change (heat, precipitation variability), agriculture and its runoff, and ongoing silviculture activities further compound cumulative risks.

After applying screening criteria related to stakeholder value, Project-specific residual impacts, and susceptibility to external drivers, seven VECs were scoped into the CIA: water resources, groundwater availability, housing and accommodation, habitat and wildlife, transportation infrastructure, emergency response services, and employment/economy. Key cumulative impact trends related to these VECs include:

- increased sedimentation and pollutant loading in already impaired water bodies;
- mounting stress on the Sparta Aquifer due to overlapping industrial, agricultural, and climate pressures;
- constraints on the availability and condition of accommodations;
- ecological fragmentation from widespread land clearing associated with multiple extraction projects; and
- congestion, longer travel times, and accelerated road wear on rural highways, while emergency services may experience declining response times due to workforce influxes and heightened industrial activity.

Housing and temporary accommodation constraints are especially acute among these impact trends, given limited housing inventory, an aging housing stock, and escalating worker demand tied to potential simultaneous construction phases in the cumulative impact area of analysis. Cumulative effects on employment and the economy are largely positive, with regional economic growth expected from industry expansion.

Priority ratings were assigned to each cumulative impact. Housing and accommodation was identified as a high-priority issue due to the likelihood of significant regional constraints and

potentially inequitable effects on low-income residents. Medium-priority cumulative impacts were identified for water availability, habitat and wildlife, soil erosion and contamination, transportation, emergency services, and the local economy; water quality impacts were rated Low priority due to existing mitigation and limited additive contribution from the Project. Managing cumulative impacts will require shared responsibility across developers and governmental authorities, emphasizing collaboration, information sharing, coordinated housing solutions, and consistent communication to stakeholders.

## UNPLANNED EVENTS

The ESIA identifies five low-probability event scenarios, or categories of unplanned event scenarios, that could occur as a result of the Project:

- Vehicular or equipment accidents,
- Release of drilling, wellbore, completion, and HDD fluids,
- Gas leaks, including hydrogen-sulfide-containing sour gas,
- Surface brine releases, and
- Fuel or chemical spills at the CPF.

Each scenario has the potential to affect soil, water resources, biodiversity, community services, and community health.

Vehicular and equipment accidents pose the highest-priority risk. During peak construction (600 to 800 workers) and routine operations (400 to 500 round trips per week), traffic incidents could cause injury or death, environmental contamination, or short-term disruptions to services. The Project will implement several management measures including a Traffic Management Plan, emergency response coordination with local agencies, spill response planning, and use of multi-person transport where feasible to manage these risks to an acceptable level. With the application of these measures, the risks from accidents range from Minor to Major—with Major applying only to rare, life-threatening accidents.

The remaining risks from unplanned events are all associated with an unplanned release of various types. Releases of drilling, wellbore, completion, and HDD fluids (frac-outs) are considered unlikely, as drilling methods, geotechnical data, and monitoring minimize the probability of loss-of-circulation events. Any releases would likely be small, localized, and short-term. The resulting risk from unplanned releases is assessed as Minor. Gas leaks, including sour gas, could occur at well pads, pipelines, or the CPF. Although unlikely due to continuous monitoring, pipeline marking, corrosion control, alarms, PPE requirements, and emergency procedures, such leaks may pose serious risks to community health if high concentrations accumulate. For all receptors except human health, consequences are Small; for community health they may reach the Medium to Large range under extreme scenarios, giving gas leaks a Moderate risk rating for health impacts and Minor for all other resources.

Brine releases from pipeline or vessel failure are also unlikely, but high-salinity brine could temporarily affect soils, wetlands, vegetation, aquatic species, and nearby land uses. With the application of appropriate measures such as leak detection, maintenance, and emergency spill

response planning, the consequences of such a release range from Small to Medium depending on spill volume and location, yielding an overall Minor risk rating.

Fuel or chemical spills at the CPF or during transport are similarly unlikely but could introduce contaminants to soil or water. With secondary containment installed at chemical storage locations, spill kits, worker training, and compliance with a Spill Prevention and Control Plan, the overall risk rating associated with this category of spill scenarios is Minor.

## IMPACT MANAGEMENT AND MONITORING

The ESIA includes an Environmental and Social Management and Monitoring Plan (ESMMP), which defines how the Project will manage, mitigate, and monitor environmental and socioeconomic impacts across the full Project lifecycle—from construction through operation and eventual decommissioning. It establishes SWA's commitment to regulatory compliance and alignment with applicable international standards. The document is designed to be iterative, updated as the Project evolves, and supported by clear roles, responsibilities, and procedures for SWA and its Engineering, Procurement and Construction Contractors.

SWA and its contractors will develop complementary management systems, with SWA retaining oversight. The ESMMP includes frameworks for all standalone SWA-owned and contractor-owned management plans referenced in the ESIA. SWA-owned plans will cover stakeholder engagement, grievance mechanisms (community and worker), emergency response, spill prevention and control, and community, health, safety and security, and shared value. Contractor specific plans will cover traffic management, workforce accommodation, stormwater pollution prevention during construction, chance find procedures for cultural heritage, and construction phase health and safety. SWA or its contractors will validate personnel competency and provide targeted Health, Safety, Security, and Environment and ESMMP training, and ensure that contractors maintain programs that are aligned with SWA's standards.

The Project will implement numerous management measures designed to manage its impacts. The ESMMP identifies the measures that will be implemented during each Project stage. Pre-construction measures focus on minimizing ecological impacts (e.g., micrositeing to minimize impacts to jurisdictional wetlands and streams, reduced ROW widths). Construction and operational measures include time-of-year restrictions for bat habitat clearing, soil conservation measures, erosion control, dust suppression, invasive species prevention, safe chemical handling, groundwater protection, and construction vehicle speed limits. Additional social measures address workforce behavior, local employment, economic development partnerships, emergency response coordination, and community infrastructure considerations. Many of these measures are linked directly to stand-alone plans, such as the Traffic Management Plan, Workforce Accommodation Plan, Spill Prevention and Control Plan, and Health, Safety, Security, and Environment Program.

The ESMMP also includes measures intended to strengthen resilience to unplanned events such as vehicular collisions, gas leaks, drilling fluid releases, or brine spills. These measures include equipment transport restrictions, emergency services coordination, protective equipment requirements, aboveground pipeline markers, non-hazardous drilling fluids, spill kits, and training. These measures are tied closely to emergency response procedures designed to protect both workers and surrounding communities.

To ensure accountability for effective implementation of these measures, the ESMMP includes a monitoring framework. Monitoring will encompass air quality (e.g., H<sub>2</sub>S alarms, regulatory emissions monitoring, operational GHG emissions monitoring), groundwater levels, stormwater and soil conditions, noise, flora, drilling fluids. Monitoring frequencies range from continuous (air monitoring for H<sub>2</sub>S) to annual (groundwater) to daily or weekly, depending on activity type.

## SUMMARY OF IMPACTS

Residual Project-related impacts on physical resources (air quality, quality greenhouse gas emissions, water quality and quantity, noise, soils) were all assigned a Negligible significance. Residual Project-related impacts on biological resources (habitats and species) ranged from Negligible to Minor, with the most significant impacts occurring during construction in relation to habitat loss. Robust application of the mitigation hierarchy resulted in avoidance and minimization of impacts to jurisdictional wetlands and streams and protected species and remaining unavoidable impacts will be mitigated in accordance with U.S. federal regulations resulting in exceedance of no net loss requirements under IFC PS6. The Project is expected to have positive impacts on employment and livelihoods. Negative socioeconomic impacts on community health, infrastructure, and services received residual ratings of Negligible to Minor. The Project will implement a robust ESMMP to manage and monitor environmental and social impacts throughout the life of the Project. Further, SWA has a robust Stakeholder Engagement Plan and Grievance Mechanism to ensure ongoing effective engagement with a broad range of stakeholders throughout the life of the Project.

Risks associated with most potential unplanned events were rated as Minor, but risks associated with accidents involving a vehicle or piece of construction equipment were rated Moderate to High due to their potential severity/consequence. Management measures to minimize the potential for and respond to accidents are in place through the implementation of numerous complementary plans and procedures including Traffic Management, Health and Safety, and Emergency Response Plans that will be implemented by SWA and its contractors.

CIA identified eight VECs as having the potential to be cumulatively impacted due to the combined effects of the Project and other stressors. The cumulative impact with the highest priority for management was stress on housing and accommodation, which was identified as a high-priority issue due to the likelihood of significant regional constraints and potential inequitable effects on low-income residents. All other cumulative impacts were rated as medium or low priority for management. Managing cumulative impacts will require shared responsibility across companies and governmental authorities, emphasizing collaboration, information sharing, coordinated housing solutions, and consistent communication to stakeholders.