

**KIT CARSON ELECTRIC COOPERATIVE
QUESTA HYDROGEN FACILITY AND
SOLAR ARRAY**

Taos County, New Mexico

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List of Acronyms

AOI	Area of Influence
APE	Area of Potential Effect
BISON-M	Biota Information System of New Mexico
BMP	Best Management Practices
CEQ	Council of Environmental Quality
CR	County Road
CWA	Clean Water Act
dB	Decibels
EA	Environmental Assessment
ENE	EN Engineering
EPA	Environmental Protection Agency
FPPA	Farmland Protections Policy Act
HWY	Highway
IPaC	Information for Planning and Consultation
KCEC	Kit Carson Electric Cooperative
KW	Kilowatts
LOI	Letter of Interest
MBTA	Migratory Bird Treaty Act
MW	Megawatts
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NM	New Mexico
NMAA	New Mexico Acequia Association
NMDGF	New Mexico Department of Game and Fish
NMDOT	New Mexico Department of Transportation
NMMMD	New Mexico Mining and Minerals Division
NOFO	Notice of Funding Opportunity
NPA	Nationwide Programmatic Agreement
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
OAHP	Office of Archaeology and Historic Preservation
O&M	Operations and Maintenance
PACE	Powering Affordable Clean Energy
PEM	Polymer Electrolyte Membrane
PPA	Power Purchase Agreement
RD	Rural Development
RER	Renewable Energy Resource
SCADA	Supervisory Control and Data Acquisition
SHPO	State Historic Preservation Office
SPCC	Spill Prevention Control and Countermeasure
SWCD	Soil and Water Conservation District
TDAT	Tribal Directory Assessment Tool
THPO	Tribal Historical Preservation Officer
USFWS	United States Fish and Wildlife Service

1.0. Introduction

Kit Carson Electric Cooperative (KCEC) is proposing to install a hydrogen production facility with an associated substation, as well as a solar array in Questa, New Mexico (NM) to implement comprehensive sustainable energy strategies for the surrounding service area. The proposed facility will be referred to as the KCEC Questa Hydrogen Facility Project (Project).

To support this initiative, KCEC is seeking financial assistance from the New ERA Program. The United States Department of Agriculture's (USDA) Rural Utilities Service (RUS), pursuant to the Notice of Funding Opportunity (NOFO) published in the Federal Register May 16, 2023. KCEC submitted a Letter of Interest (LOI) and received from RUS on September 13, 2023. Funding provided by the RUS is proposed to be utilized exclusively for the hydrogen facility and substation. Funding for the development of the integrated solar array is proposed to be provided by the State of New Mexico.

EN Engineering (ENE) has prepared this environmental assessment (EA) in accordance with 7 CFR 1b and guidance from RUS in order to fully comply with the National Environmental Policy Act (NEPA) of 2025. The purpose of this EA is to determine existing environmental resources that may or may not exist within the Project scope, assess potential impacts associated with the proposed Project, and evaluate the Project's potential impact on these resources. Alternatives to the proposed action, as well as the chosen action, have been considered and evaluated in the following sections of the EA. The chosen alternative was analyzed using guidelines established in 7 CFR 1b as well as those established in the United States Department of Agriculture (USDA) Rural Development (RD) EA preparation instructions (7 CFR 1b.5).

Due to the separation of federal and state funding for this Project, impacts assessed throughout this report are associated with the hydrogen facility and substation exclusively. Impacts associated with the proposed solar array are not assessed herein.

The proposed hydrogen facility is to be located within the Village of Questa boundary. KCEC will site the facility within an area consisting of a former tailing site for the Chevron Questa Mine (parcel number 1072169138284), as well as land owned by the Village of Questa (parcel number 1072170452494). The exact location and site characteristics for the Project can be found in **Appendix A**. The proposed site is located almost entirely within a Superfund site associated with the Chevron Questa molybdenum mine.

1.1. Project Purpose and Need

The USDA's Rural Development program, specifically RUS, provides funding in an effort to expand crucial utility infrastructure in rural communities and develop new infrastructure where it is needed. The goal of this funding program is to help provide economic opportunity and increase accessibility to local utilities in rural areas.

KCEC is seeking financial assistance from RUS to remain at the forefront of renewable energy innovation. The Project will help achieve KCEC's strategic goal of building solar capacity over time. In 2016, KCEC created the goal of 100% daytime solar by 2022. The Project will also be an extension of its partnership with the Village of Questa to promote energy independence. This Project will provide more affordable, sustainable, and renewable energy throughout KCEC's service area, thereby improving the natural and human environment.

The goal of the project is to reduce the reliance on fossil fuels specifically the heavy dependence on coal, a declining industry in New Mexico. Under the 2019 Energy Transition Act, New Mexico has been moving away from coal and more towards renewable options. This will allow for the recycling of more natural materials such as hydrogen and oxygen. Comparatively, the footprint of hydrogen plants is smaller than that of larger gas stations.

The implementation of a hydrogen facility with state-of-the-art infrastructure aims to directly lower the dependence and usage of fossil fuels and the associated maintenance of such systems. The power generated from a hydrogen fuel cell offers zero emissions due to heat and water being the only byproducts. Due to this, hydrogen storage facilities are not subject to fuel spill containment and air quality reporting requirements (Plug, 2024). When compared to the maintenance of combustion generators from coal, hydrogen storage systems can be monitored remotely and require little upkeep. This would drastically decrease the operational and maintenance costs in the long term. Shifting to a more environmentally responsible source of energy for a region.

2.0 Alternatives Evaluated and Proposed Action

2.1. Alternatives Considered but Dismissed

The push for the establishment of clean hydrogen development is backed by two executive orders made by the State of New Mexico in 2021 and 2022. In response, KCEC initiated research into alternative energy solutions that align with these directives. As part of this effort, KCEC engaged with the Communities Local Energy Action Pilot (C-LEAP) program to deepen its understanding of clean hydrogen technologies and explore viable renewable energy options.

Several alternatives were evaluated including wind energy and long-duration storage solutions such as biofuels, natural gas, and hydropower. However, in comparison to hydrogen facilities, these options were found to be either overly reliant on fossil fuels or dependent on limited natural resources, making them less suitable for long-term resilience (Mai et al., 2022).

KCEC is currently in the process of purchasing the land described in Section 1.0 from Chevron for the construction of proposed Project. Siting the proposed Project elsewhere would necessitate additional long-term negotiation pertaining to land rights and water rights.

2.2. No Action Alternative

Under the “No Action” alternative, funding would not be obtained, and work would not be completed to develop and construct the Project. This no-action alternative would not take advantage of the environmental benefit of the hydrogen facility, and KCEC would not complete its goal for this community to reach energy independence. The Village of Questa would not be provided with sustainable and consistent energy from the hydrogen facility. This no-action alternative would also not take advantage of the economic benefit of job creation associated with construction of the facility. Therefore, the no-action alternative does not achieve the Project’s purpose and need. This alternative has been assessed regarding each environmental resource but will not have any impact on them.

2.3. Proposed Action

The proposed 25 MW hydrogen facility and 69-34.5 kV substation will have a combined footprint of approximately 25 acres. This 25-acre area will hereafter be referred to as the “Project Area.” KCEC plans to site both the hydrogen facility and substation within the larger area as described in Section 1.0. This larger area is made up mostly by the northern 298-acre portion of the Chevron Questa Mine tailings facility site and also includes a 23-acre parcel of land owned by the Village of Questa. This larger 321-acre area in which the Project Area is situated will be referred to as the “Study Area.”

The hydrogen facility is proposed to be sited in the west of the Study Area and the substation will be located just to the north of the facility. Although the hydrogen facility and substation will impact only a small portion of it, desktop research and field work were conducted for the entirety of the Study Area. The site layout of the hydrogen facility and substation, as well as their locations within the Study Area can be found in **Appendix A**.

A 57 MW electrolyzer is planned to be installed at the hydrogen facility, with water to be provided one of Chevron’s tailings facility wells. The well proposed to be the water source is located approximately 0.7 miles to the south of the hydrogen facility. Hydrogen gas produced in the facility is to be stored within a 29-ton hydrogen gas storage tank system. A 25 MW fuel cell is also proposed to be located onsite in order to convert stored hydrogen into electricity when solar cannot meet the local power demand. The usage of hydrogen gas storage tanks allows for energy captured by photovoltaics to be stored for longer periods of time in comparison to batteries. This allows for energy demand to be met even in prolonged periods of limited sunlight. Year-round consistent and resilient energy availability will be provided to the surrounding communities as a result.

The proposed substation will feed to the proposed hydrogen facility via a 34.5 kV sub transmission feed and will follow all typical RUS substation guidelines. It will be unmanned and will utilize remote annunciation and supervisory control and data acquisition (SCADA) systems.

2.3.1. Operations, Maintenance and Decommissioning

Ongoing operations and Maintenance (O&M) activities for the hydrogen facility will primarily consist of preventative maintenance, safety inspections and scheduled equipment inspections, calibrations, recertifications, and parts replacements depending on manufacturer specifications (monthly, quarterly, annual, etc.) Examples include leak surveys of hydrogen-carrying components at regular intervals, annual calibrations of hydrogen sensing equipment, and inspections plus recertifications of hydrogen storage vessels. Additionally, personnel will receive regular training on hydrogen hazards, leak detection, and emergency procedures, and the facility will coordinate with local fire departments and emergency responders to conduct joint drills and ensure readiness. Less consistent routine maintenance will include software updates, staff training, and emergency response plan updates.

Water for hydrogen production will be sourced from an existing well in Chevron’s tailings facility and will be piped to the hydrogen production facility. Any reject water (purified excess water) from the hydrogen production process and water generated from hydrogen fuel cells will be piped back to nearby natural waterways. Oxygen that will be a byproduct of the hydrogen production process and is proposed to be vented to atmosphere in a safe and compliant manner.

O&M for the substation will follow all required RUS guidelines including regular maintenance and inspection. Spill prevention, control and countermeasure (SPCC) reviews will also be conducted at the substation.

The anticipated lifecycle of the core hydrogen equipment is over 20 years. Likewise, the substation lifecycle is anticipated to be similar to that of the other KCEC distribution stations. Decommissioning of the Project can be reevaluated after the Project's lifecycle.

3.0 Affected Environments

According to 7 CFR 1b, EAs are to include all potential environmental resources which may be impacted by the proposed Project. ENE has established that several resources as listed in 7 CFR 1b do not apply to the Project. These resources will be discussed in Section 3.1. Each affected resource has been examined as it relates to the Proposed Action and "No-Action" alternatives and has been given an impact rating depending on severity. The impact ratings are as follows:

Negligible – Resource will be minimally impacted, or impacts will be a non-factor because of the alternative.

Minor – Resource will be impacted enough to cause a noticeable change to existing conditions or the resource itself.

Major – Resource will be substantially changed or impacted by the alternative.

It is important to note that some effects will have varying degrees within these categories, but overall impacts were averaged to best describe the site impacts.

3.1. Methodology and Resources Eliminated from Consideration

ENE performed comprehensive research using publicly available information and mapping to develop a categorical list of potentially affected environmental resources consistent with 7 CFR 1b. A list of references and sources used to supplement research can be found in Section 6.0.

Several environmental resources listed in the 7 CFR 1b document were considered but dismissed because the Proposed Action had no impact on them. Resource areas that were eliminated from further study and the rationale for elimination are presented below:

- **Floodplains** – The Federal Emergency Management Agency (FEMA) maintains a web database of national flood hazard layers (NFHL) throughout the U.S. According to the NFHL viewer, there are no floodplains that exist within the Study Area (see **Appendix A**). The area is listed as Zone X, or area of minimal flood hazard, according to FEMA. The closest FEMA regulated floodplain borders the southeastern corner of the Study Area. Both the No-Action alternative and Proposed Action will have no impact on floodplains.
- **Coastal Resources** – New Mexico has no coastal zones or barrier reefs. Both the No-Action alternative and Proposed Action will have no impact on coastal resources.
- **Corridor Analysis** – The proposed Project includes the installation of a hydrogen plant within a defined and limited parcel. Therefore, no corridor analysis is necessary.

- **Formally Classified Lands** – Composite GIS datasets of formally classified federal lands (USA Federal Lands, n.d.) including Bureau of Land Management (BLM), Bureau of Reclamation, Department of Defense (DOD), Fish and Wildlife Service (USFWS), Forest Service, and National Park Service managed lands was assessed in relation to the Study Area. According to available mapping and site resources, there are no formally classified lands within the Study Area, therefore, no impacts are expected. The closest formally classified land to the Study Area is the Rio Grande del Norte National Monument, (BLM, n.d.) which borders the Study Area to the west. The Project will not expand beyond the limits under the ownership of KCEC.

3.2. Land Use

3.2.1. General Land Use

Affected Environment

The USDA promotes adherence to existing site uses where possible so that development or work on a site does not change the land use and, as a result, negatively impact important land resources. National Land Cover Database mapping (USGS, n.d.) shows the Study Area parcels are designated as shrub/scrub, with some small areas of developed open space and low intensity development. Based on Google Earth historical aerial imagery, no development was present within the Study Area going back to 1997 (Google Earth, 2025).

The majority of the 321-acre Study Area is located within the Chevron Questa Mine Site tailings impoundment site which was added to the National Priorities List (NPL) of Superfund sites in 2011 by the Environmental Protection Agency (EPA). Tailings were piped the approximately 2.9 miles to the site from the main Chevron mining facility. The locations of the tailings impoundment site and main mining facility in relation to the Study Area can be seen in the map in **Appendix A**. The EPA's Superfund site profile page records that over 100 million tons of tailings were collected on the site. The Human Health Risk Assessment (HHRA) conducted by the EPA for the tailings facility indicated that contaminated groundwater and exposure to sediment onsite poses a risk to human health. Similarly, the Baseline Ecological Risk Assessment (BERA) states that molybdenum accumulated onsite by plants poses a health risk to grazing animals. In addition to molybdenum, other heavy metals have also contaminated the surface water, groundwater, leachate, sediment, and soil on the tailings impoundment site.

The Study Area is located in the northern portion of the tailings facility. Consultation with Chevron and the New Mexico Mining and Minerals Division (NMMMD) of the NM Energy, Minerals, and Natural Resources Department indicated that the extent of the historic tailings deposition does not overlap with the Study Area (**Appendix K**). However, contamination as a result of the tailings process is likely present throughout the extent of the Superfund site to some degree.

Contamination from mining operations has left the Study Area largely unproductive and unsafe for agricultural, recreation, and most other utilization by humans. The EPA's BERA also indicates that the site may pose a health risk to local wildlife.

A small portion (23 acres) of the Study Area is located on land owned by the Village of Questa (parcel number 1072170452494). This property is classified as undeveloped land.

Environmental Consequences – No Action

The no action alternative will not impact or change land use within the Study Area.

Environmental Consequences – Proposed Action

Site grading may be required where the hydrogen facility and substation are proposed to be constructed. Select fill may be imported in order to fulfill grading requirements. Vegetation onsite may be affected due to proposed Project. The hydrogen facility may be decommissioned after the equipment's lifecycle and the site left to naturalize. Due to the relatively unproductive status of the current land use, impacts associated with the proposed Project are considered negligible.

3.2.2. Important Farmland

Affected Environment

The Farmland Protection Policy Act (FPPA) outlines requirements and limitations set forth to protect important farmland from irreversible conversion to non-agricultural uses (USDA, NCRS, 1981). The presence or absence of listed important farmland within the Study Area was assessed using the Natural Resource Conservation Service's (NRCS) Web Soil Survey. The Study Area is comprised of seven soil types, which are listed in **Table 1**.

Map Unit Name	Map Unit Symbol	Rating	Percentage of Study Area
Fernando cobbly loam, 1 to 7% slopes	FaC	Not prime farmland	20.4%
Fernando clay loam, 3 to 5% slopes	FeC	Prime farmland if irrigated	14.5%
Fernando Clay loam, 5 to 7% slopes	FfC	Farmland of statewide importance	16.2%
Manzano clay loam, 3 to 5% slopes	MnC	Prime farmland if irrigated	1.2%
Rock outcrop-Raton, very stony complex, 15 to 30% slopes	RRE	Not prime farmland	0.2%
Sedillo-Silva association, 0 to 25% slopes	SED	Not prime farmland	20.3%
Silva loam, 0 to 2% slopes	SmB	Prime farmland if irrigated	27.1%

Three of the soil types within the Study Area (Fernando clay loam, 3 to 5% slopes, Manzano clay loam, 3 to 5% slopes, and Silva loam, 0 to 2% slopes) are considered Prime Farmland if irrigated, meaning that the soil does not normally receive sufficient rainfall to be considered prime farmland. One other soil, (Fernando Clay loam, 5 to 7% slopes) is not listed as prime farmland, but is considered "Farmland of Statewide Importance" and may be significant for agricultural production. All other soils within the Study Area are listed as Not Prime Farmland. Locations of the above tabulated soils within the Study Area can be found in **Appendix A**.

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural use. It

assures that to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland.

Environmental Consequences – No Action

The no action alternative will have no impact on important farmland within the Study Area.

Environmental Consequences – Proposed Action

On August 22nd, 2025 ENE initiated consultation with Richard Strait, the State Soil Scientist for the USDA in New Mexico. ENE received confirmation that no AD-1006 form is needed to be submitted for the Project, due to the Study Area including a Superfund site.

For the purpose of the FPPA, all aspects of this Project will occur without the permanent conversion of farmland and is not subject to the FPPA. Impacts are therefore determined to be negligible.

3.3. Water Resources

3.3.1. Wetlands and Waterways

Affected Environment

According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, several environmental resources are mapped within the Study Area (see **Appendix A** for mapping). Numerous branching riverine structures and a freshwater emergent wetland (PEM) are mapped within the Study Area.

Table 2		
USFWS NWI Classifications within Study Area		
Structure	Wetland Classification code	Quantity
Freshwater Emergent Wetland	PEM1Ch	1
Riverine Channels	R5UBH	2
	R4SBJ	9
	R4SBC	3
	R4SBJx	3

An on-site investigation was performed on September 18th and 19th of 2025 by ENE's environmental scientists to determine the presence or absence of wetlands or Waters of the United States (WOTUS) within the Study Area.

Historical aerial imagery of the area mapped as a freshwater emergent wetland shows greener vegetation in 2010 and earlier, potentially indicating a wetter condition in the past. However, the site visit determined wetland conditions are not currently present at that location. No wetlands were found anywhere on the Study Area during the September site visit. Further information including wetland sample point datasheets and photos can be found in the wetland report in **Appendix H**.

ENE's environmental scientists found a total of 20 channels within the Study Area during the September site visit. All channels were determined to be ephemeral. According to U.S. Geological Survey (USGS) mapping, Swanks Run, a blue line stream runs through the Study Area. ENE's environmental scientists confirmed the presence of an ephemeral channel in this location. This channel was recorded as channel E13 in the wetland report. The Sunshine Canal is also mapped in northeastern corner of the Study Area by the USGS. However, the Sunshine Canal could not be field verified during the site visit.

Table 3 Field Verified Channels				
Identifier	Stream Flow Classification	Average Width (ft)	Average Height (ft)	Additional Notes
E1	Ephemeral	2-5	2-3	E1 is intersected by road and outfalls into 100-year diversion channel (E9).
E2	Ephemeral	1-2	1-2	
E3	Ephemeral	2-3	2-3	
E4	Ephemeral	2-3	3-6	Channel has multiple branches
E5	Ephemeral	8-10	1-2	Channel is heavily vegetated and branches out into a second smaller channel, channel outfalls into diversion channel
E6	Ephemeral	8-9	3-6	Channel terminates due to man-made berm, E6 is no longer connected to E10. Channel is fed by culvert under Cornelio Cisneros Road to the east
E7	Ephemeral	1-2	2-3	Channel is very overgrown
E8	Ephemeral	1-2	1-2	Small channel that outfalls into diversion channel
E9	Ephemeral	10	0-15	100-year diversion channel
E10	Ephemeral	.5-1	.5	Channelization is almost nonexistent
E11	Ephemeral	4-5	2-3	Channel has been diverted due to man-made berm
E13	Ephemeral	5-6	4-5	Channel is fed by culvert under Cornelio Cisneros Road to the east. Likely aligns with USGS mapped Swanks Run.
E16	Ephemeral	2-3	1-2	Likely man-made parallel branched channel. Possible former road.
E17	Ephemeral	4-12	3-6	
E18	Ephemeral	1-2	1-3	Outfalls into diversion channel
E19	Ephemeral	2-3	1	Branched below diversion into two channels
E20	Ephemeral	1-2	2-3	Located south of diversion channel

More information about field observed channels and mapping can be found in the wetland report in **Appendix H**.

The no action alternative will have no impact on wetland or waterways within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

Due to a lack of jurisdictional waterways and wetlands within the boundaries of the Study Area, no impacts to wetlands or intermittent/perennial waterways are proposed. Impacts have therefore been determined to be negligible.

3.3.2. Acequias

Affected Environment

According to information made available online by the Acequia Mapping Project from the New Mexico Office of the State Engineer (NM OSE), multiple acequias are present within the Study Area. Acequias are irrigation channels that were typically dug, but sometimes constructed out of logs in order to provide local stakeholders with water. Acequias function as a shared resource for the members (parciantes) who maintain them. According to the NM OSE Acequia Mapping Project, four acequias are located within the Study Area.

Table 4			
OSE Mapped Acequias within Study Area			
Acequia Identifier	Type	Total Length (mi)	Length Within Study Area (L.F.)
Sunshine Canal	Canal	9.87	658
Lateral from Llano	Ditch	0.94	1,168
Unnamed Acequia 1	Unknown	2.59	5,960
Unnamed Acequia 2	Ditch	0.76	1,584

Mapping shows that the Sunshine Canal and Llano Lateral intersect the northwest portion of the Study Area, and two unnamed acequias are located in the west and south of the area. See **Appendix A** for mapping.

Per Taos County land use regulations, any proposed development on a parcel containing acequias (or any parcel within 20 feet of an acequia) must be reviewed by the responsible acequia commission before construction can proceed (Taos County Planning Department, 2018). Parcels in which acequias have been in use for at least five years are considered to have active easements for access to water in said acequia according to New Mexico state law (New Mexico Legislature, 2005). Access to water onsite must be granted and interference with acequia easements is unlawful.

During the September site visit and through previous contact with Chevron, it was determined that the Acequia mapped by the NM OSE as Unnamed Acequia 1, is in fact the western diversion channel of the tailings facility, which was created in order to divert flood water from the tailings pond during 100-year storms. Unnamed Acequia 2 which is mapped in the southeastern corner, could not be located during the site visit. A large depression with steep slopes cuts perpendicularly across the location of the reported acequia, which would make conveyance impossible under the current conditions. The Lateral from Llano could also not be located. Channel E17 is near the area mapped as the Lateral from Llano, however the channel does not continue outside of the Study Area, and the two do not perfectly align. As mentioned in Section 3.3.1., Sunshine Canal also could not be field verified.

Reliance on acequia mapping provided by the NM OSE was deemed inadvisable due to the misclassification of Chevron's western diversion channel as an acequia and observations in the field. ENE reached out to the New Mexico Acequia Association (NMAA), New Mexico Acequia Commission (NMAC), NM OSE, and the Taos Soil and Water Conservation District in order to confirm the existence of mapped acequias. However, the presence of acequias could not be confirmed by the correspondence, and no local acequia contacts in Questa could be provided by any of the organizations or agencies. A record of correspondence can be found in **Appendix G**.

ENE received information from the mayor of Questa John Ortega via KCEC that no acequias exist within the Study Area. Written documentation of this information will be provided in **Appendix G** once available.

Environmental Consequences – No Action

The no action alternative will have no impact on acequias within or adjacent to the Study Area.

Environmental Consequences- Proposed Action

ENE's field investigation as well as correspondence with KCEC and the mayor of Questa has indicated that none of the acequias mapped by the NM OSE are in fact present or currently active within the Study Area. Due to the lack of concretely identified acequias within the Study Area, the overall impacts to this resource are deemed to be negligible.

3.3.3. Other Water Resources

Affected Environment

No currently permitted and active wells are present on site. One inactive well is located within the Study Area. This well was permitted for domestic use in July of 2002, but the permit has since expired. A map of well locations can be found in **Appendix A**. The USDA Web Soil Survey (WSS) indicates that the depth to water table is greater than 80 inches for all soil units in the Study Area (**Appendix B**). Additionally, no sole source aquifers (SSAs) exist under the Study Area (EPA, 2025). Mapping from the New Mexico OSE also shows no underground storage tanks (USTs) within the Study Area (**Appendix A**).

Environmental Consequences – No Action

The no action alternative will have no impact on these water resources within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

The proposed hydrogen facility will make use of a pre-existing well currently within Chevron's tailings facility. No new wells are proposed within the Study Area. The proposed project will not affect any existing USTs. The Study Area is not situated above an SSA, and groundwater resources will not be affected by the Project. Overall impacts to these resources are therefore deemed to be negligible.

3.4. Biological Resources

3.4.1. Fish, Wildlife, and Vegetation Resources

Affected Environment

New Mexico's Department of Game and Fish (NMDGF) maps fishing waters within the state of New Mexico. No listed fishing waters are present within the Study Area. The nearest listed waterway is the Red River, 1.7 miles to the south of the Study Area. The Red River provides habitat for both rainbow trout and brown trout.

The NMDGF states that mule, elk, and other various animals migrate through New Mexico seasonally in search for plant growth as a food source. Animals move from higher to lower elevations during the colder months and the opposite during the warmer months. Based on data from The United States Geological Survey's (USGS) "Ungulate Migrations of the Western United States, Volume 5, animals that may be present in or around the Study Area include mule deer, elk, and black bear. During the September site visit, ENE's environmental scientists observed a number of prairie dog burrows within the Study Area, particularly on the 23-acre portion belonging to the Village of Questa. The NMDGF indicated in their review of the Project (**Appendix L**) that black-tailed prairie dogs (*Cynomys ludovicianus*) and Gunnison's prairie dogs (*Cynomys gunnisoni*) colonies may be present on site. As a designated Species of Great Conservation Need (SGCN) in New Mexico, the department recommends a survey be conducted by a qualified biologist. If colonies are present, relocation may be recommended.

Common herbaceous and succulent plants in this area include sagebrush, switchgrass, and agave (Tucker, 2024). The Study Area is located in the mountainous north according to the NMDGF. Common trees within this region include pinon and juniper trees. Given that some ephemeral channels are present within the Study Area, cottonwood and willow trees may also be present (Gardenia, n.d.). The New Mexico State Forestry Division provides mapping for Important Plant Areas (IPAs), which displays potential habitat for sensitive or endangered plants in New Mexico. IPAs contain plants that are listed as threatened or endangered by the New Mexico Energy, Minerals, and Natural Resources Department or by the USFWS. The Study Area is located mostly within IPA 21, which is classified as B1, the highest conservation priority ranking. IPAs have no legal designation in New Mexico, but the NMDGF recommends the USFWS's IPaC system for further consultation.

Environmental Consequences – No Action

The no action alternative will have no impact on fish, wildlife, or vegetation within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

Potential impacts due to this Project stem partly from the clearing of vegetation. The vegetation onsite that is proposed to be cleared may have a slight effect on wildlife in terms of reducing potential food source. However, based on the EPA's BERA report, vegetation onsite may be unsafe for consumption.

Vulnerable prairie dog populations could be present within the Study Area, and the construction of the proposed project may necessitate relocation.

Fencing of the Study Area may interfere with terrestrial wildlife movements. However, this can be mitigated by employing the fencing recommendations of the NMDGF. These include the construction of unfenced corridors and 6–8 inch gaps at fence bottoms. See **Appendix L** for a complete description of fencing recommendations.

Overall, given the proper BMPs are followed, surveys are conducted, and expert recommendations are adhered to, impacts to native wildlife and vegetation as a result of the proposed Project are considered negligible.

3.4.2. Threatened and Endangered Species (ESA Section 7)

Affected Environment

ENE utilized the United States Fish and Wildlife Services (USFWS) Information for Planning and Consultation (IPaC) interactive mapper to determine if any Endangered Species Act (ESA) listed species could be within the Study Area. The report identified seven species which might be found within the Study Area. **Table 5** below summarizes the IPAC results and the potential impact on the species. Each species possesses and effect determination based on USFWS criteria. The determinations are listed below:

No Effect: project will have no impact on species and/or habitat

May Affect, Not Likely to Adversely Affect (NLAA): suitable habitat may exist, but project will not significantly impact species

May Affect, Likely to Adversely Affect: species, critical and/or suitable habitat will be significantly impacted by project.

The official IPaC report can be found in **Appendix C**. Reasoning for effect determinations are based on final critical habitat, species profiles included in the IPaC, and ENE's site visit observations.

Table 5					
IPAC Results					
Common Name	Species	Presence/Absence	Effect Determination	Species ESA Status	Reasoning for Effect
<u>Mammals</u>					
New Mexico Meadow Jumping Mouse	<i>Zapus hudsonius luteus</i>	Unknown	No Effect	Endangered	No critical habitat exists on site. No suitable habitat exists (permanent waterbody edges, wetlands).
<u>Birds</u>					
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	Unknown	No Effect	Threatened	Site is not designated critical habitat. Potential habitat also not present (old growth mature forests, canyon habitat).
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Unknown	No Effect	Threatened	Site does not overlap the critical habitat. No suitable habitat exists

					(cottonwoods/willows alongside intermittent/perennial streams).
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	Unknown	No Effect	Endangered	Site does not overlap the critical habitat. Possible habitat does not exist onsite (dense vegetation along permanent waterbodies).
<u>Insects</u>					
Monarch Butterfly	<i>Danaus plexippus</i>	Unknown	N/A	Proposed Threatened	Because the Monarch butterfly is not federally protected, a formal determination of effect has not been made. The project will not jeopardize the continued existence of the species.
Silverspot	<i>Speyeria nokomis nokomis</i>	Unknown	No Effect	Threatened	Proposed critical habitat does not overlap Study Area. Habitat does not exist on site (obligate bog violet, moist open meadows).
Suckley's Cuckoo Bumble Bee	<i>Bombus suckleyi</i>	Unknown	N/A	Proposed Endangered	Because the Suckley's cuckoo bumble bee is not federally protected, a formal determination of effect has not been made. The project will not jeopardize the continued existence of the species.

Environmental Consequences – No Action

The no action alternative will have no impact on endangered or other Section 7 listed species within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

According to the IPaC endangered and threatened species list, this Study Area does not contain any critical habitat for the above listed species. A formal field survey for remaining rare, threatened, and endangered mammal, bird and insect species has not been completed and definitive information has not been gathered. A qualified professional biologist should complete such a survey at a future date.

ENE's site visit indicated that suitable habitat is not present for any of the ESA Section 7 listed species. Considering the lack of ESA Section 7 species critical habitat, it has been determined the proposed Project would have no effect on these species.

3.4.3. Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act

Affected Environment

The USFWS Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA) outlines requirements for the protection and prohibitions associated with migratory bird species. The USFWS IPaC Official Species report lists a total of 17 different species under the MBTA, which can be found the official IPaC report. The USFWS IPaC Official Species report also lists two Species under the BGEPA, the bald eagle (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*), the official IPaC report can be found in **Appendix C**.

The probability of presence and the breeding season for each of the 17 MBTA species listed can be found in the official IPaC report, the species that is most likely to be present is the evening grosbeak which has a breeding season from May 15th to August 10th and has a chance of being present for a large majority of the year. The pinyon jay, Lewis's woodpecker, and broadtail hummingbird are also not unlikely to be present in the area.

According to the IPaC report, both bald eagles and golden eagles may be present in the Study Area. The Study Area is located approximately 3.7 miles away from the upper Rio Grande gorge, which is designated as an Important Bird Area by the Audubon Society (Audubon, n.d.). This Important Bird Area includes high cliff walls and canyon faces that provide habitat for various hawks and eagle species. The IPaC Official Species List (OSL) indicates that golden eagles are more likely to be present than bald eagles, however, according to Cornell's eBird resource, at least two bald eagles have been spotted in Questa since 2022 (Cornell, 2025). Although vegetation and potential nesting locations appear limited in the Study Area, ENE recommends a survey of bald and golden eagle nests be conducted by a qualified biologist before construction begins.

The burrowing owl (*Athene cunicularia*) is protected under the MBTA and was specifically noted in the NMDGF Project Review. In order to determine if burrowing owls are present, the NMDGF recommends a survey to be conducted by a qualified biologist. In the event that burrowing owls are located within the Study Area, further consultation with the department will be required, and additional avoidance measures or possible relocation may be required.

Environmental Consequences – No Action

The no action alternative will have no impact on migratory birds within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

Due to a general lack of tree cover, there are few viable locations for most of the listed species to nest within the Study Area. Research suggests that eagles and burrowing owls may be found near the site. Therefore, ENE recommends that prior to construction a qualified biologist confirms that there are no bald eagle, golden eagle, or burrowing owl nesting sites within or

near the Study Area. Overall impacts to migratory birds, bald and golden eagles due to the proposed Project are considered negligible.

3.5. Historical and Cultural Resources (HPA Section 106)

3.5.1. State Historic Preservation Office (SHPO) Tribal Historic Preservation Office (THPO)

Affected Environment

As a federally funded project, the Proposed Action is subject to compliance with the National Historic Preservation Act of 1966, as amended, and its implementing regulations found in 36 CFR §800, which require federal agencies to consider the effects of their undertakings on historic properties.

The New Mexico Cultural Resources Information System (NM CRIS) database was reviewed to identify previously conducted archaeological projects and previously recorded archaeological sites in the Study Area, as well as within a 1-mile buffered Study Area surrounding the Study Area. The National Park Service's (NPS's) database for properties listed on the National Register of Historic Places (NRHP) was also reviewed.

Environmental Consequences – No Action

The no action alternative will have no impact on historical or cultural resources within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

In order to verify analysis, ENE reached out to the Environmental and Historic Preservation Division of RUS in order to begin consultation with SHPO and THPO. Section 106 for this project was conducted in accordance with 36 CFR § 800.12 and two comments were received during the seven-day notification period. This project facilitates the production and generation of domestic energy resources and expands the integrity and reliability of the Nation's energy infrastructure to more adequately meet the Nation's needs and therefore responds to the National Energy Emergency formally declared by the President of the United States on January 20, 2025, Executive Order 14156, Declaring a National Energy Emergency. In accordance with this Executive Order, this project is an emergency undertaking which was submitted for expedited review consistent with 36 CFR § 800.12(b).

On 9/16/25 RUS notified the Advisory Council on Historic Preservation (ACHP Apache Tribe of Oklahoma, Comanche Nation, Oklahoma, Jicarilla Apache Nation, New Mexico, Navajo Nation, Arizona, New Mexico & Utah, Pueblo of Picuris, New Mexico, and the Pueblo of Taos, New Mexico. The above listed parties were provided an opportunity to comment within seven days of the notice per 36 CFR § 800.12(b)(2). The NM SHPO submitted comments on 9/17/25, and the ACHP submitted comments on 9/22/25. No other responses were received during the 7-day comment period. On September 8, 2025, ENE received Section 106 approval dependent on submission of an Inadvertent Discovery Clause (Appendix I) and immediate pause of construction within 100 feet in the event of a discovery of historic significance.

3.6. Aesthetics

Affected Environment

Bordering the northern edge of the Study Area is the Punto de Coyote Vista Trail and trailhead parking (Alltrails, n.d.). Although this part of the trail is not within the borders of the Rio Grande del Norte National Monument, it does lead into it (BLM, n.d.). The trail runs parallel to the edge of the proposed site for about 0.7 miles before it enters the BLM managed national monument. At the nearest point, the trail is approximately 15 feet away from the border of the Study Area. Within the Rio Grande del Norte National Monument, the Punto de Coyote Vista trail overlaps with the Las Vistas de Questa trail. This trail leads to a scenic overlook across the town of Questa at the base of the Sangre de Cristo Mountain Range.

Within the Village of Questa, multiple residences have views of the area of the proposed facility. Additionally, Alta Vista Elementary School is located about 0.2 miles from the east border of the Study Area.

The Village of Questa itself is relatively developed with mixed residential and industrial usage. The Study Area itself is mostly located on a Superfund site. Past usage as a tailings facility and remediation efforts have significantly altered the natural landscape of the Study Area.

Environmental Consequences – No Action

The no action alternative will have no impact on aesthetic resources within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

Because the Village of Questa is already relatively developed, the construction of the proposed project will not be significantly transformative of existing viewsheds. Photos of the existing view from the scenic overlook alongside the Study Area are available in **Appendix H**.

The hydrogen facility and substation are expected to be surrounded by a fence with a minimum height of 8 feet and have a combined footprint of approximately 25 acres. The usage of vegetative buffers is currently unknown due to possible ventilation and flammability issues. Due to the mountainous nature of the national monument and the relative low profile of the hydrogen facility and substation. It was determined that sightlines would not be significantly impacted.

Given the current development of the Village of Questa and the nature of the facility, the visual impact was determined to be negligible.

3.7. Air Quality

Affected Environment

The Clean Air Act (CAA) (1970) provides regulatory guidelines and thresholds which establish National Ambient Air Quality Standards (NAAQS) in the U.S. It authorizes the EPA to uphold these standards to protect public health and safety. The EPA's NEPAassist tool provides comprehensive mapping for areas designated as nonattainment areas i.e. those areas that do not meet NAAQS criteria. According to the NEPAassist mapping, there are no nonattainment

areas within or adjacent to the Study Area. The closest maintenance area for NAAQS is approximately 27 miles to the east (Archuleta County) and is associated with PM-10 pollutants, or inhalable particles 10 micrometers and smaller. Other local sources of air quality impacts include vehicle emissions from State Highway 522 and local road travel.

Environmental Consequences – No Action

The no action alternative will have no impact on air quality within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

Proposed construction during the initial phases of the Project is anticipated to contribute the most air pollution. Specifically, construction will lead to disturbance of dust and particulate matter as well as temporarily increased vehicle emissions. Use of construction vehicles will be limited to periods where emissions and dust will be least influenced by local weather and climate i.e., average temperatures and rainfall. Although construction timelines are yet to be decided, construction of the hydrogen facilities are expected to have the longest lead times due to segmented deliveries as products come off the manufacturer's assembly line, resulting in prolonged use of construction and passenger vehicles. The operation and maintenance phase of the Project will have varying impact on criteria pollutants in the area depending on the selected hydrogen fuel cell technologies.

Additionally, intended hydrogen releases (venting) are expected for routine maintenance that require depressurizing hydrogen carrying components. Unintentional hydrogen releases have the potential to occur as well, including from pressure relief valves in the event of over pressure system or components, and leakage through failed components or materials. Other sources of pollutants during this phase will be associated with passenger vehicle access into the site and potential dust created for access during drier periods, which are expected to have minimum impact. Any technology implemented for this Project that will produce criteria pollutants will comply with state and/or local air permitting requirements.

Proposed construction during the initial phases of the Project is anticipated to produce the greatest quantity of criteria pollutants. In the long-term, air quality is expected to improve as this will be a renewable energy source reducing overall dependence on fossil fuels. Short term impacts are expected to be negligible to minor depending on the conditions at the time of construction. Any technology implemented for this Project that will produce air quality pollutants will comply with state and/or local air permitting requirements. Long-term impacts are also considered to be negligible.

3.8. Socioeconomic

Affected Environment

ENE performed a desktop analysis of socioeconomic data by reviewing information from the U.S. Census Bureau for Taos County, New Mexico in the year 2020. Based on the data, ENE found that roughly 36% of the population is white, 56.3% of the population is Hispanic, 5.2% of the population is Native, 0.8% is Asian, and 0.5% is Black. The census data shows that the median household income for Taos County, New Mexico is approximately \$58,904. The approximate percentage of the population that has earned a bachelor's degree or higher is 31.6%. According to US Census Bureau statistics, approximately 14.4% of all residents of Taos

County live below the poverty line. The Study Area is located almost entirely within a Superfund site associated with the Chevron molybdenum mine. There are no housing or commercial properties that exist within the Study Area.

Environmental Consequences – No Action

The no action alternative will have no impact on socioeconomic conditions in Questa and the surrounding area.

Environmental Consequences – Proposed Action

The Project is not expected to have any negative social or economic environmental impacts to the surrounding communities. This Project intends to provide renewable energy while also lowering greenhouse gas emissions with the addition of hydrogen energy. No housing or commercial property exists within the Study Area; therefore, no displacement of people or property will be required. Construction of the proposed Project is expected to create numerous job opportunities for the population of Questa. Once the hydrogen facility is operational, a more resilient and independent system of energy infrastructure will be established for the area. The construction and maintenance of this hydrogen facility will create many temporary and permanent jobs. Impacts to socioeconomic conditions due to the proposed Project are considered negligible.

3.9. Noise

Affected Environment

The Study Area is situated on multiple parcels of land bordered by New Mexico State Road 522 and local roads to the east, Chevron's southern portion of the tailings facility to the south, and the Río Grande del Norte National Monument to the west. Noise affecting the area is typically associated with highway travel and intermittent construction activities. The closest airport is approximately four miles north of the Study Area. According to online resources from Purdue University, Noise levels associated with highway traffic are expected to be at or greater than 70 dB on average, with large freight trucks reaching at or above 80 dB and motorcycles reaching at or above 100 dB. Noise levels associated with the nearest airport and construction activities are expected to be at or greater than 130 dB on average (Purdue University, 2000).

Environmental Consequences – No Action

The no action alternative will have no impact on noise levels within or adjacent to the Study Area.

Environmental Consequences - Proposed Action

During the construction phase of the Project the noise level for this project is expected to be around 80dB due to the heavy construction machinery and vehicles moving material. The construction will occur during typical work hours and will quiet down towards the end of the day.

Once the hydrogen facility is operational, the loudest equipment is anticipated to be the hydrogen compressors which are estimated to produce noise levels at approximately 85 dBA from a distance of 1 meter. However, the Project will be designed to account for any state,

county, and/or local sound ordinances and implement sound attenuation if required for compliance. Based on the described above both short- and long-term noise impacts at the Study Area are anticipated to be negligible.

3.10. Transportation

Affected Environment

Cornelio Cisneros Road runs north to south along the eastern edge of the Study Area. Other nearby roads including Don Martinez Road and Gonzales Road run perpendicular to Cornelio Cisneros Road to the north and south respectively. Traffic on these roads is primarily local in nature. The nearest major road is New Mexico State Road 522 which lies approximately 2,500 feet to the east of the Study Area.

Questa Municipal Airport is located approximately 3.7 miles to the north of the Study Area.

Environmental Consequences – No Action

The no action alternative will have no impact on transportation in Questa and the surrounding area.

Environmental Consequences – Proposed Action

ENE reached out to New Mexico's Department of Transportation (DOT) regarding construction near State Highway 522 on 8/26/25. NMDOT confirmed that no further consultation was needed from their office due to the distance to State Road 552 from the Study Area. NMDOT also reached out to Kathleen Garcia the District 5 Traffic Engineer, as well as Nelson Terrazas the Questa Maintenance Patrol Supervisor, in order to confirm no additional reviews are required. Neither official indicated a review was necessary. See **Appendix J** for a record of the correspondence.

In 2019 the Federal Aviation Administration reviewed the installation of a KCEC solar array approximately 0.38 miles to the east of the municipal airport. The FAA determined that the solar project posed no hazard to air navigation. Due to the increased distance from the airport of the proposed hydrogen project in comparison to the solar array, the hydrogen facility will likely have no impact on air navigation.

The Project is not expected to create any increase in traffic or impediments to transportation. Impacts to transportation associated with the Project are considered negligible.

3.11. Health and Human Safety

Affected Environment

Hydrogen production and storage facilities present several human health and safety considerations due to the nature of hydrogen as a flammable and high-pressure gas. Hydrogen's physical properties—such as its wide flammability range, low minimum ignition energy, and low relative vapor density as compared to other common gaseous fuels—require careful planning and engineering controls to mitigate risks. Additionally, hydrogen burns with a nearly invisible flame, which can complicate fire detection and response efforts. The facility's

design and operational protocols will incorporate multiple layers of safety to address these hazards and protect both personnel and the surrounding community.

Safety measures will be implemented to prevent unintended releases of hydrogen, the facility will be equipped with hydrogen-compatible leak detection systems. These include fixed and portable sensors capable of detecting low concentrations of hydrogen in ambient air, as well as optical flame detectors—commonly referred to as “fire eyes”—that can identify hydrogen flames even when they are not visible to the human eye. Routine leak surveys will be conducted using specialized equipment to ensure early identification and remediation of any potential leaks. In the event of a detected leak or abnormal pressure condition, automated emergency shutoff valves will isolate affected systems to prevent escalation. Pressure relief devices will also be installed to safely vent excess pressure and protect storage infrastructure.

Ventilation systems will play a critical role in preventing the accumulation of hydrogen in enclosed or confined spaces. These systems will be designed to maintain continuous airflow and will be supplemented by purge systems that can safely remove hydrogen from piping and equipment during maintenance or shutdown procedures. Confined spaces will be continuously monitored for hydrogen presence, and strict entry protocols—including pre-entry gas testing and ventilation—will be enforced to ensure worker safety.

Emergency response planning will be an important part of the facility’s safety strategy. Personnel will receive regular training on hydrogen hazards, leak detection, and emergency procedures, and the facility will coordinate with local fire departments and emergency responders to conduct joint drills and ensure readiness. Alarms will be utilized to alert staff in the event of a gas leak or fire, and clearly marked evacuation routes and assembly points will be maintained.

Advanced safety technologies will be integrated into the facility’s operations to enhance monitoring and control. Real-time monitoring systems, such as SCADA, will track key parameters including pressure, temperature, and gas concentrations, to identify potential failures before they occur. All equipment in hydrogen-handling areas will be explosion-proof and compliant with relevant standards such as NFPA 2. Redundant safety systems, including dual-layer containment and fail-safe designs, will be employed for critical components, and backup power systems will ensure that safety controls remain operational during power outages.

Blast mitigation and impact radii will be considered as part of the safe design of this Project. The Project will be designed based upon competitively selected equipment, equipment specific hazards and necessary mitigations. Designs to reduce impacts to personnel and the public will be prioritized. This Project will use a process hazard analysis (PHA) process to systematically work through possible impacts under normal and abnormal operating conditions. If required safeguards to protect people, public, and property are determined, they will be designed into the system.

Environmental Consequences – No Action

The no action alternative will have no impact health and human safety within or adjacent to the Study Area.

Environmental Consequences – Proposed Action

The hydrogen facility's approach to human health and safety is comprehensive and proactive, combining engineering controls, advanced detection technologies, emergency preparedness, and rigorous operational protocols to minimize risk and ensure safe handling of hydrogen throughout its lifecycle. The hydrogen facility and storage tanks have been sited to minimize impacts in the unlikely event of an explosion.

Additionally, the proposed substation will also follow all typical RUS/NESC safeguards for personnel and equipment.

Given these considerations, the impacts to health and human safety proposed by this Project are considered to be negligible.

4.0 Summary of Mitigation

KCEC intends to mitigate all proposed impacts to the maximum extent practicable. During the construction phase, perimeter and interior sediment controls will be installed before site grading or earth moving can occur. These controls are meant to prevent stormwater runoff leaving the site and filter any material that may enter the nearby waterways.

During the operational phase, safety and environmental protocols in line with all federal and state regulation will be implemented. The siting of the hydrogen facility and storage tanks will further reduce any possible impacts to health and human safety or the environment.

5.0 Coordination, Consultation, and Correspondence

The following agencies or groups were consulted to provide documentation or confirmation of data for the Project:

- United States Department of Agriculture, Rural Utilities Service
- United States Department of Agriculture, Natural Resources Conservation Service
- United States Fish and Wildlife Service
- New Mexico Department of Transportation
- New Mexico Office of Archaeology and Historic Preservation
- New Mexico Historic Preservation Division
- New Mexico Department of Game and Fish
- New Mexico Mining and Minerals Division
- New Mexico Office of the State Engineer
- New Mexico Acequia Association
- New Mexico Acequia Commission
- Taos County Soil and Water Conservation District
- Chevron Corporation

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