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Regulatory  
Commission

**Office of  
Energy Projects**

June 2018

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Sierrita Gas Pipeline LLC

Docket Nos. CP18-37-000 and  
CP18-38-000

# **Sierrita Compressor Expansion Project**

## **Environmental Assessment**

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:  
OEP/DG2E/Gas 4  
Sierrita Gas Pipeline LLC  
Sierrita Compressor Expansion Project  
Docket Nos. CP18-37-000 and  
CP18-38-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared an environmental assessment (EA) for the Sierrita Compressor Expansion Project, proposed by Sierrita Gas Pipeline LLC (Sierrita) in the above-referenced dockets. Sierrita filed an application in Docket No. CP18-37-000 requesting a Certificate of Public Convenience and Necessity pursuant to Section 7(c) of the Natural Gas Act to construct and operate certain natural gas pipeline facilities. Specifically, Sierrita requests authorization to construct a new 15,900 horsepower natural gas compressor station on its existing Line No. 2177 pipeline system in Pima County, Arizona. Additionally, in Docket No. CP18-38-000, Sierrita is requesting an amendment to its Section 3 authorization and its Presidential Permit.

The EA assesses the potential environmental effects of the construction and operation of the Sierrita Compressor Expansion Project in accordance with the requirements of the National Environmental Policy Act. The FERC staff concludes that approval of the proposed project, with appropriate mitigating measures, would not constitute a major federal action significantly affecting the quality of the human environment.

The proposed Sierrita Compressor Expansion Project includes the following facilities:

- one new 15,900 horsepower compressor station (“Sierrita Compressor Station”);
- approximately 1,000 feet of suction and discharge piping and various station yard auxiliary facilities to connect the Sierrita Compressor Station with Sierrita’s existing Line No. 2177;
- one new 10-inch Ultrasonic meter at the existing San Joaquin Meter Station on Line No. 2177; and
- the relocation of the existing “Mainline Valve 2” and an associated inspection tool launcher and receiver from milepost 1.2 to milepost 6.5 on Line No. 2177.

The FERC staff mailed copies of the EA to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the project area. In addition, the EA is available for public viewing on the FERC's website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. A limited number of copies of the EA are available for distribution and public inspection at:

Federal Energy Regulatory Commission  
Public Reference Room  
888 First Street NE, Room 2A  
Washington, DC 20426  
(202) 502-8371

Any person wishing to comment on the EA may do so. Your comments should focus on the EA's disclosure and discussion of potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this project, it is important that we receive your comments in Washington, DC on or before 5:00pm Eastern Time on **July 13, 2018**.

For your convenience, there are three methods you can use to file your comments with the Commission. In all instances please reference the applicable project docket number (CP18-37 and/or CP18-38) with your submission. The Commission encourages electronic filing of comments and has staff available to assist you at (866) 208-3676 or [FercOnlineSupport@ferc.gov](mailto:FercOnlineSupport@ferc.gov).

- (1) You can file your comments electronically using the [eComment](#) feature located on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [Documents and Filings](#). Using eComment is an easy method for submitting brief, text-only comments on a project;
- (2) You can also file your comments electronically using the [eFiling](#) feature located on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [Documents and Filings](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "[eRegister](#)." You must select the type of filing you are making. A comment on a particular project is considered a "Comment on a Filing"; or
- (3) You can file a paper copy of your comments by mailing them to the following address:

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.214). Only intervenors have the right to seek rehearing or judicial review of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number in the "Docket Number" field, excluding the last three digits (i.e., CP18-37). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at [FercOnlineSupport@ferc.gov](mailto:FercOnlineSupport@ferc.gov) or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to [www.ferc.gov/docs-filing/esubscription.asp](http://www.ferc.gov/docs-filing/esubscription.asp).

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## TECHNICAL ACRONYMS AND ABBREVIATIONS

ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AGFD	Arizona Game and Fish Department
AMA	Active Management Area
AQRV	air quality related values
ASLD	Arizona State Lands Department
AZBOR	Arizona Board of Regents
BCC	Birds of Conservation Concern
BMP	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFE	Comisión Federal de Electricidad
CFEi	CFE International LLC
CFR	Code of Federal Regulations
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2e</sub>	carbon dioxide equivalent
Commission	Federal Energy Regulatory Commission
dBA	decibels on the A-weighted scale
DOT	U.S. Department of Transportation
Dth/day	Dekatherms per day
ECMP	Sierrita's Environmental Compliance Management Plan
EI	environmental inspector
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLAG	Federal Land Managers' Air Quality Related Values Work Group
Flood District	Pima County Regional Flood Control District
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutant
HDMS	the AGFD's Heritage Data Management System
HUC	Hydrologic Unit Code
IMPROVE	Interagency Monitoring of Protected Visual Environments

L <sub>eq</sub>	24-hour equivalent sound level
L <sub>dn</sub>	day-night sound level
MBTA	Migratory Bird Treaty Act
MLV 2	Mainline Valve 2
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NNSR	Nonattainment New Source Review
NO <sub>2</sub>	nitrogen dioxide
NOI	<i>Notice of Intent to Prepare an Environmental Assessment for the Proposed Sierrita Compressor Expansion Project and Request for Comments on Environmental Issues</i>
NO <sub>x</sub>	nitrogen oxides
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	noise sensitive area
NSPS	New Source Performance Standards
NSR	New Source Review
OEP	Office of Energy Projects
OHV	off-highway vehicle
Pima County DEQ	Pima County Department of Environmental Quality
Plan	<i>FERC's Upland Erosion Control, Revegetation, and Maintenance Plan</i>
PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 microns in aerodynamic diameter
PM <sub>10</sub>	particulate matter less than or equal to 10 microns in aerodynamic diameter
Procedures	<i>FERC's Wetland and Waterbody Construction and Mitigation Procedures</i>
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
SDCP	Sonoran Desert Conservation Plan
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Office
SO <sub>2</sub>	sulfur dioxide
SWPP Plan	<i>Sierrita's Stormwater Pollution Prevention Plan</i>
tpy	tons per year
Tucson Water	City of Tucson Water Department
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USGS	U.S. Geological Survey
VOC	volatile organic compounds

## **A. PROPOSED ACTION**

### **1. Introduction**

The staff of the Federal Energy Regulatory Commission (FERC or Commission) prepared this environmental assessment (EA) to address the environmental impacts of the construction and operation of the proposed Sierrita Compressor Expansion Project (Project). On December 21, 2017, Sierrita Gas Pipeline LLC (Sierrita) filed an application with the Commission in Docket No. CP18-37-000 under Section 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission's regulations. Sierrita seeks to obtain a Certificate of Public Convenience and Necessity (Certificate) to construct and operate a new compressor station and associated facilities and to modify an existing meter station in Pima County, Arizona.

Additionally, in Docket No. CP18-38-000, Sierrita is requesting an amendment to its Section 3 authorization under the NGA and its Presidential Permit for increased design capacity to 627,000 thousand cubic feet per day at its existing border crossing into Mexico near the town of Sasabe, Arizona, also in Pima County. Sierrita proposes no construction or modification to its border crossing facilities as part of this Presidential Permit application. Therefore, the Section 3 amendment application is not addressed further in this EA.

We<sup>1</sup> prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality's regulations for implementing NEPA (Title 40 Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508]); and the Commission's regulations at 18 CFR 380. The EA is an integral part of the Commission's decision-making process on whether to issue Sierrita a Certificate to construct and operate the proposed facilities. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that could result from implementation of the proposed action;
- identify and recommend reasonable alternatives and specific mitigation measures, as necessary, to avoid or minimize Project-related environmental impacts; and
- facilitate public involvement in the environmental review process.

Sierrita has requested a Certificate by July 31, 2018, to meet an in-service date of April 1, 2020.

### **2. Project Purpose and Need**

Under Section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so,

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<sup>1</sup> "We," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects (OEP).

## A. PROPOSED ACTION

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grants a Certificate to construct and operate them. The Commission bases its decisions on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed project.

Sierrita states that the original 200,846 dekatherms per day (Dth/day) delivered by Line No. 2177 was contracted to its customer CFE International LLC (CFEi) in Mexico.<sup>2</sup> The Project would expand the delivery capability of the existing Sierrita natural gas pipeline (Line No. 2177)<sup>3</sup> by an additional 430,543 Dth/day to a total 631,389 Dth/day (627,000,000 cubic feet per day). Sierrita states that it would need to begin construction of the Project by summer 2019 in order to meet its executed precedent agreement and meet additional demand for natural gas requested by its customer CFEi.

Sierrita also states that the Project would provide the added benefits of:

- increasing flexibility and reliability to Sierrita's existing customer CFEi by providing additional compression and mainline capacity for several power plant facilities served by CFEi, in instances where upstream delivery pressures at the existing San Joaquin Meter Station fall below 650 pounds per square inch gauge (psig);
- replacing outdated coal and oil technologies at several power plant facilities owned by the Comisión Federal de Electricidad with new natural gas-fired power generation technologies; and
- furthering the current U.S. policy of reducing foreign trade barriers, which will serve to stimulate the flow of goods and services between the United States and Mexico which is consistent with the North American Free Trade Agreement between the United States, Mexico, and Canada.

### 3. Scope of this Environmental Assessment

The resources and topics addressed in this EA include geology, soils, groundwater, surface waters, wetlands, fisheries, wildlife, vegetation, species of special concern, land use, recreation, visual impacts, socioeconomics, cultural resources, air quality, noise, reliability and safety, cumulative impacts, and alternatives. This EA describes the affected environment as it currently exists and the anticipated environmental consequences of the Project, and compares the Project's potential impact with that of various alternatives. This EA also presents our recommended mitigation measures.

As the lead federal agency for the Project, FERC is required to comply with Section 7 of the Endangered Species Act, as amended (ESA) and Section 106 of the National Historic Preservation Act. These statutes have been considered in the

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<sup>2</sup> CFEi is a wholly-owned affiliate of the Comisión Federal de Electricidad (CFE) owned by the Mexican Government. CFE is the state-owned electric utility of Mexico. CFEi manages all of CFE's U.S. natural gas business.

<sup>3</sup> On June 6, 2014, the Commission issued an *Order Issuing Certificate and Granting Presidential Permit* for the Sierrita Pipeline Project in Docket Nos. CP13-73-000 and CP13-74-000.

preparation of this EA. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing any permits necessary for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.10 of this EA.

#### **4. Proposed Facilities**

Sierrita’s proposed Project would consist of the following:

- one new compressor station (“Sierrita Compressor Station”) including one new 15,900 horsepower Solar Mars 100 turbine/compressor unit;
- approximately 960 feet of suction and discharge piping (one 36-inch-diameter and the other 30-inch-diameter) and various station yard auxiliary facilities to connect the Sierrita Compressor Station with Line No. 2177;
- one 10-inch Ultrasonic meter at the existing San Joaquin Meter Station on Line No. 2177; and
- the relocation of an existing mainline valve “Mainline Valve 2” (MLV 2) and an associated inspection tool (i.e., “pig”)<sup>4</sup> launcher and receiver (also identified by Sierrita as “pig traps”) from milepost 1.2 to the site of the proposed Sierrita Compressor Station (milepost 6.5) on Line No. 2177.

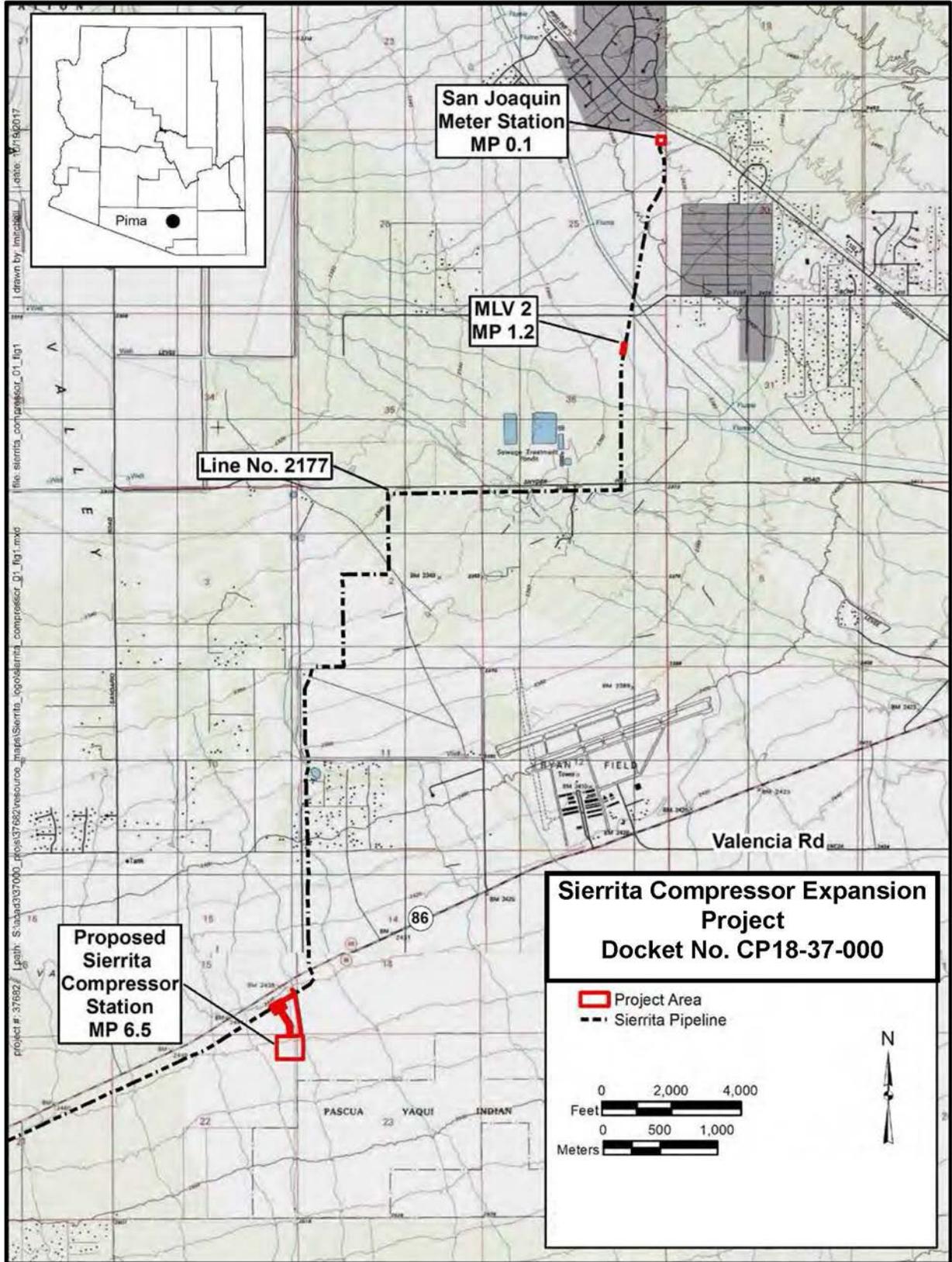
Figure 1 illustrates the general Project location.

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<sup>4</sup> A “pig” is a tool that the pipeline company inserts into and pushes through the pipeline for cleaning the pipeline, conducting internal inspections, or other purposes.

A. PROPOSED ACTION

Figure 1: Project Overview Map



## 5. Construction and Operation Procedures

During construction and restoration of the Project, Sierrita would implement the measures contained in the following plans, in addition to other federal, state, and local permit requirements:

- FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan);<sup>5</sup>
- FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures);<sup>6</sup>
- Spill Prevention, Control, and Countermeasure Plan;
- Stormwater Pollution Prevention Plan (SWPP Plan);
- Fugitive Dust Control Plan;
- Hydrostatic Testing Best Management Practices Plan;
- Reclamation Plan;
- Noxious Weed Control Plan;
- Environmental Compliance Management Plan (ECMP);<sup>7</sup> and
- Unanticipated Discovery Plan for Cultural Resources and Human Remains.

Our Plan and Procedures are a set of baseline construction and mitigation measures developed to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies.

Sierrita would employ an environmental inspector (EI) to oversee and document environmental compliance and prepare inspection reports during the construction phase to be submitted to the FERC. All Project-related construction personnel would be informed of the EI's authority and would receive job-appropriate environmental training prior to commencement of work on the Project. Depending on the progress of the construction, additional EIs may be added as necessary. FERC staff would also conduct inspections of the Project facilities during construction and restoration to determine compliance with any conditions attached to any Certificate that FERC may issue.

All Project construction, staging, equipment and material storage, and parking would occur within the proposed compressor station site, the existing Line No. 2177 permanent easement, new permanent easement, and temporary workspaces as described further in sections A.7 and B.5. Sierrita has not identified any additional contractor yards, or staging and laydown areas that would be required as part of the Project. As needed for construction, Sierrita would obtain clean gravel and fill material from local

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<sup>5</sup> The FERC Plan can be viewed on the FERC website <http://www.ferc.gov/industries/gas/enviro/plan.pdf>.

<sup>6</sup> The FERC Procedures can be viewed on the FERC website <https://www.ferc.gov/industries/gas/enviro/procedures.pdf>.

<sup>7</sup> Sierrita's ECMP consists of the FERC Plan and Procedures, and Sierrita's Spill Prevention, Control, and Countermeasure, Fugitive Dust Control, Hydrostatic Testing Best Management Practices, Reclamation, Noxious Weed Control, and Reclamation Plans.

## A. PROPOSED ACTION

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commercial sources. Construction and general debris, and other wastes generated during construction would be disposed of at existing licensed commercial disposal facilities and in accordance with Sierrita's ECMP.

The Project would be constructed, tested, operated, and maintained according to all applicable federal, state, and local laws, regulations, and requirements. These laws and regulations include the Natural Gas Pipeline Safety Act of 1968, as amended, the U.S. Department of Transportation's (DOT) *Transportation of Natural Gas or Other Gas by Pipeline, Minimum Federal Safety Standards* contained in 49 CFR 192, and the Commission's regulations at 18 CFR 380.15, *Siting and Maintenance Requirements*. In accordance with 49 CFR 192, the Sierrita Compressor Station, associated suction and discharge pipeline, modified San Joaquin Meter Station, relocated MLV 2, and launcher/receiver would be inspected for leaks as part of scheduled operations and maintenance.

### 5.1 Aboveground Facility Construction

Prior to the start of construction, Sierrita would conduct a kick-off meeting to coordinate lines of communication and scheduling. All construction personnel would receive site-specific, safety and environmental training prior to mobilizing to the construction site. Prior to beginning any construction-related activities, survey crews would stake the limits of the construction work areas. Approved access routes would be clearly delineated using conspicuous temporary signage.

Prior to ground-disturbing or vegetation-clearing activities, Sierrita would contact the national 811 "one-call" system so that utility companies have the opportunity to identify and mark their respective buried facilities for avoidance.

Following surveying, Sierrita would remove vegetation at all permanent workspaces and in those areas necessary to support safe installation and operational activities. Any woody vegetation that requires removal would be disposed of in accordance with local regulations. Sierrita would retain removed vegetation in temporary workspaces to the maximum extent practicable. Sierrita would then grade the construction work areas to create level surfaces for the safe movement and operation of construction vehicles. The MLV 2 and pig traps removal site at Line No. 2177 milepost 1.2 and the existing San Joaquin Meter Station site are previously disturbed sites with no vegetation; therefore, construction at those sites would not impact vegetation.

Within the new Sierrita Compressor Station construction site (as well as within the construction right-of-way for the suction and discharge pipeline further described in section A.5.2), any available topsoil as practicable (up to 12 inches) would be graded, separated, and stored away from the subsoil (i.e., topsoil segregation). Installation of temporary erosion and sediment control measures would occur following initial ground disturbance, in accordance with the Project ECMP further described in section B.2. The ECMP provides typical construction details for erosion and sediment control measures.

## A. PROPOSED ACTION

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Sierrita would also use construction equipment necessary to remove MLV 2 and pig traps at milepost 1.2 of Line No. 2177 and relocate these facilities at the point of connection of the Sierrita Compressor Station suction and discharge piping at Line No. 2177 milepost 6.5. Construction at the existing San Joaquin Meter Station would add a metering facility to the station and involve limited ground disturbance within its 1.1-acre previously cleared, graded, graveled, and fenced site.

Excavation of reinforced concrete foundations would be required for the new compressor unit and buildings. The need for blasting is not anticipated. The foundation and piling/pier excavation depths would be determined upon completion of the geotechnical evaluations. Forms would be set, rebar installed, and concrete poured into the foundation settings. Random sampling of concrete pours would verify compliance with minimum strength requirements. Backfill placed against the foundations would be compacted in place, and excess soil would be used elsewhere around the site.

Once the concrete foundation has been determined to meet the design requirements, installation of the buildings and machinery for the compressor station would begin. Compression equipment would be manufactured off-site and shipped to the site by truck; the compressor equipment offloaded and positioned on the foundation, leveled, grouted, and secured. Modularized, skid-mounted buildings would house utilities supporting the operation of the gas compressor and cooling equipment.

Before start up, Sierrita would inspect and test all compressor station controls and safety equipment and systems, including emergency shutdown, relief valves, gas and fire detection, and vibration.

### **5.2 Station Suction/Discharge Piping Construction**

New compressors and pumps would require flanged, screwed, or welded pipe connections to tie into the existing pipeline. All welders and welding procedures for the Project would be qualified in accordance with DOT requirements (49 CFR 192). A non-destructive testing method to ensure compliance with code requirements would verify all piping system welds.

Excavation of the suction and discharge pipeline trenches between the compressor station and Line No. 2177 would follow clearing and grading of the new easement. In general, excavation would be accomplished using ditching machines, backhoes, or rippers. Sierrita would excavate to a sufficient depth to comply with DOT regulations for depth of cover (49 CFR 192), which would range from 18 to 36 inches depending on soil conditions. Trench spoil (subsoil) would be stockpiled separately from salvaged topsoil on the spoil side of the trench. Separation between subsoil and topsoil stockpiles would be maintained throughout construction.

Procurement of the steel pipe for the suction and discharge pipelines would be in nominal 40- to 80-foot-long lengths (joints). Stringing trucks would transport pipe joints

## A. PROPOSED ACTION

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to the right-of-way, where they would be strung along the working side of the trench on temporary supports (skids) in preparation for subsequent bending, line-up, and welding. The pipeline would be welded and inspected in conformance with 49 CFR 192, Subpart E, “Welding of Steel in Pipelines,” American Petroleum Institute Standard 1104, “Standard for Welding Pipelines and Related Facilities” (latest edition), and DOT requirements. All welds would be visually and mechanically inspected, and coating defects would be repaired prior to lowering the pipe into the trench.

Side-boom tractors would be used to lift the welded pipe, position it over the trench, and lower it in to place. The pipeline and trench would be inspected to verify that the trench is free of rock or debris, that external pipe coating is not damaged, that the pipe is properly fitted and installed into the trench, and that minimum pipe cover depth can be achieved.

After the pipe is lowered into the trench, the trench would be backfilled. Previously excavated materials would be pushed back into the trench using bladed equipment, backhoes, or auger-type backfilling machines.

In areas where topsoil has been segregated (e.g., the ditch and working side of the right-of-way, contractor/staging areas), trench subsoil would be placed in the trench first and the topsoil placed on top of the trench subsoil. To account for future soil settling, a small crown of material would be left over the trench line after backfilling.

Hydrostatic pressure testing would be required for all new facility piping for the final tie-in with the existing Line No. 2177, and would comply with DOT regulations specified in 49 CFR 192, American Society of Mechanical Engineers Gas Transmission and Distribution Piping Systems Code B31.8, and applicable state and local regulations, in order to verify mechanical integrity and to ensure that the suction and discharge piping can safely operate at the designed maximum allowable operating pressure.

Sierrita would obtain hydrostatic test water discharge permits as required by the Arizona Department of Environmental Quality (ADEQ), obtain the water from a municipal or commercial source, and truck the water to the site for storage in temporary tanks until needed. Sierrita estimates about 175,000 gallons of water to conduct hydrostatic pressure testing of the suction and discharge piping systems. See EA section B.3.2 for specific hydrostatic test water discharge details and discussion.

Once the new suction and discharge pipe segments have been successfully tested, dewatered, and dried, the test cap and manifold removed, the Line No. 2177 and Sierrita Compressor Station facilities would be connected.

### **5.3 Project Restoration and Operation**

Restoration would include grading of disturbed construction work areas to match pre-construction contours and drainage patterns. Stabilization would include seeding

## **A. PROPOSED ACTION**

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disturbed temporary work areas within six working days of final grading, in accordance with the Project ECMP. Sections B.3.2 and B.4.1 of this EA discuss seedbed preparation and agency recommendations for seed mixes, rates, and dates. Restoration for areas that are not occupied by buildings, structures, or gravel/asphalt would include placing the segregated topsoil back onto the area and reseeded with the agency-recommended native seed mix. The seed mix would mimic that used for the restoration of the existing Line No. 2177 right-of-way.

Sierrita would leave temporary erosion controls in place or replace them with interim erosion control measures until sufficient vegetation cover has been reestablished. Excess materials would be disposed of at a licensed commercial disposal facility in accordance with applicable laws. Construction equipment and all remaining construction debris would be removed and transported to a licensed commercial disposal facility.

Following removal of MLV 2 and pig traps at their current location at Line No. 2177 milepost 1.2, all aboveground appurtenances and structures would be removed and the site would be restored. Over the long-term, native vegetation would be allowed to return to the site.

Sierrita would own, operate, and maintain the Sierrita Compressor Station. All proposed Project facilities would be operated, inspected, and maintained together with Sierrita's existing facilities in compliance with DOT regulations specified in 49 CFR 192, as well as applicable conditions of any Certificate that may be issued for the Project, and all other applicable federal, state, and local laws and regulations.

### **6. Construction Schedule**

Sierrita anticipates beginning the clearing of worksites for the Project by June 29, 2019, in order to have all new and modified facilities in service by April 1, 2020. Construction activities would likely occur up to 10 hours per day, 6 days per week for approximately 9 months. A limited number of personnel may be required for extended hours during hydrostatic testing or weather-related events.

### **7. Land Requirements**

The Project would disturb a total of about 18.7 acres of land during construction. During operation, about 15.7 acres would be required for the Sierrita Compressor Station and associated suction and discharge pipelines, relocated MLV 2 and pig traps, and access roads. Approximately 0.9 acre consists of temporary workspaces, and approximately 2.1 acres consists of work within the permanent easements of the San Joaquin Meter Station and existing locations of the MLV 2 and pig traps. All disturbed areas not used for operation of the Project facilities would be returned to pre-construction conditions.

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The 15.7 acres of land required for operation of the Sierrita Compressor Station, suction and discharge lines, and relocated MLV 2 and pig traps would consist of an 11.5-acre parcel owned by Sierrita and a 4.2-acre permanent easement obtained from the Arizona Board of Regents (AZBOR). Removing MLV 2 and pig traps at milepost 1.2 of Line No. 2177 would require approximately 0.1 acre of temporary workspace on land owned by the Arizona State Lands Department (ASLD). Relocating MLV 2 and pig traps to milepost 6.5 of Line No. 2177 would require 0.7 acre of new permanent easement (included in the 4.2 acre AZBOR easement total) as well as an additional 0.8 acre of temporary construction easement from AZBOR.

Although Sierrita has identified areas where extra workspace would be required, additional or alternative areas could be identified in the future due to changes in site-specific construction requirements. Sierrita would be required to file information on each of those areas for our review and approval prior to use.

Further discussion of land requirements for the Project is provided in section B.5, below.

### **Access Roads**

To access the new compressor station, Sierrita would use existing public roadways, including State Route 86 (a paved two-lane highway) and an existing City of Tucson Water Department (Tucson Water) water well access road (a graded dirt road, requiring minor improvements).

At milepost 6.5 (at the site of the proposed Sierrita Compressor Station), Sierrita proposes to construct a new 420-foot-long permanent access road (approximately 0.2 acre in area) within the Line No. 2177 permanent right-of-way, which would tie the new road into the existing Tucson Water water well access road. This permanent access road would also be used to install MLV 2 and the pig traps at the Sierrita Compressor Station site (milepost 6.5), after being removed from their previous location at milepost 1.2.

Sierrita would use an existing approximately 300-foot-long access road from San Joaquin Road to perform proposed modifications to the existing San Joaquin Meter Station, and an existing approximately 800-foot-long access road from Bopp Road within the Sierrita Line No. 2177 permanent easement to remove MLV 2 and the pig traps at milepost 1.2.

## **8. Non-Jurisdictional Facilities**

Under Section 7 of the NGA, the Commission is required to consider, as part of its decision to authorize jurisdictional facilities, all factors bearing on the public convenience and necessity. The primary jurisdictional facility for the Project is the proposed compressor station, including the compressor unit, compressor and auxiliary buildings,

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inlet and outlet piping, and other supporting facilities necessary to operate the compressor station.

Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These non-jurisdictional facilities may be integral to the need for the proposed facilities (e.g., a gas-fueled power plant at the end of a jurisdictional pipeline) or they may be minor, non-integral components of the jurisdictional facilities that would be constructed and operated as a result of the proposed facilities.

The new compressor station facilities would require installation of a new approximately 110-foot-long electric power line and telephone line within a 20-foot-wide permanent easement collocated with existing Trico Electric Cooperative, Inc. power line poles and a graded dirt road that provides access to the Tucson Water well site and the Sierrita Compressor Station parcel. Based on the utility routes and site conditions, Sierrita anticipates that no environmental permits would be required for the installation/extension of these non-jurisdictional facilities to the new compressor station site. Trico Electric Cooperative, Inc. would permit, construct, own, and operate the new electric power line to the City of Tucson's well site to service the Sierrita Compressor Station and the new MLV 2 sites. A third-party communications company would permit, construct, own, and operate the telephone line.

Trico Electric Cooperative, Inc. would, at its discretion, also remove the non-jurisdictional telephone lines and poles parallel and adjacent to the Line No. 2177 easement from Bopp Road to the pig traps and MLV 2 at Line No. 2177 milepost 1.2. The removal of these lines would occur within the telephone line's 20-foot-wide easement.

Impacts associated with the non-jurisdictional facilities are further discussed below, in section B.11.

## 9. Public Review and Comment

On February 2, 2018, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Sierrita Compressor Expansion Project and Request for Comments on Environmental Issues* (NOI). The NOI was sent to affected landowners; federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; other interested parties; and local libraries and newspapers.

In response to the NOI, the Commission received comments from Pima County (Office of Sustainability & Conservation, Regional Flood Control District, Development Services Department, and Regional Wastewater Reclamation Department); the Altar Valley Conservation Alliance; and the U.S. Environmental Protection Agency (EPA). Table 1 summarizes the comments received and indexes the section within this EA that each comment is addressed.

<b>Table 1 Summary of Comments Received during Scoping for the Project</b>	
<b>Comment/Concern</b>	<b>Section addressing Comment</b>
Project purpose and need	A.2
cultural resources and Tribal consultations	B.7
impacts on native vegetation and habitat	B.4.1
impacts on native wildlife and species	B.4.2
invasive species and how the Project would comply with Executive Order 13112	B.4.1
impacts of Project wastewater discharges/quantity of water used	B.3.2
yard lighting impacts	B.5.3
need for a "Long-Term Monitoring Plan"	B.4.1
off-road vehicle use prevention	B.5
impacts on air quality and public health and mitigation measures	B.8.5
recommendation that the FERC coordinate with the U.S. Fish and Wildlife Service and Arizona Game and Fish Department	B.4.3
recommendation that the EA be distributed for public comment	see letter included with this EA
a Floodplain Use Permit is required	B.3.2
determination of a Base Flood Elevation shall be required for development within Federal Emergency Management Agency Special Flood Hazard Area Zone A	B.1.3
all critical facilities shall be protected to a 500-year flood standard	B.1.3
minimize the disturbance on undeveloped lands	B.2; B.5; C.2
provide landscape for screening of facilities where practicable	B.5.3
landscaping around the compressor station should use xeric native plants	B.5.3
replant/restore temporary construction easements	B.4.1
waste management and hazardous materials handling and disposal	A.5; B.3.1
safety (including pipeline capacity and design criteria considered in the existing Presidential Permit)	B.10
noise, vibration, dust, and related disturbance near established neighborhoods	B.8; B.9
avoid any utility crossing conflict with existing public sewer line C-097-B	B.5
cumulative impacts (including impacts on groundwater)	B.11
system (e.g., "export capacity") alternatives; site alternatives	C.2; C.3

**10. Permits**

A number of federal, state, and local regulatory agencies have permit or approval authority or consultation associated with the proposed Project. Table A-1 in appendix A provides a list of permits and consultations necessary for the Project, the applicable local, state, and federal agencies, as well as any responses received to date. Sierrita would be responsible for obtaining all permits and approvals required for construction and operation of the Project, regardless of whether or not they appear in the table.

## **B. ENVIRONMENTAL ANALYSIS**

The following sections discuss the Project's potential direct and indirect impacts on environmental resources. When considering the environmental consequences of the proposed Project, the duration and significance of any potential impacts are described below according to the following four levels: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately. Short-term impacts could continue for up to three years following construction. Long-term impacts would require more than three years to recover, but eventually would recover to pre-construction conditions. Permanent impacts could occur because of activities that modify resources to the extent that they may not return to pre-construction conditions during the life of the Project, such as with the construction of an aboveground facility. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

### **1. Geology**

#### **1.1 Physiographic Setting and Geologic Conditions**

The Project is within the Mexican Highland section of the Basin and Range physiographic province, a geologic region characterized by broad valleys and basins separated by isolated mountains and mountain ranges. Many of the basins are deep, containing up to 8,000 feet of poorly lithified, porous and permeable, sand and gravel (Spencer 2011).

The Project is within the Avra Valley basin, a broad, north-draining alluvial basin that is bound on the south by the Sierrita Mountains; on the east by the Tucson Mountains; and on the west by the Roskrige, Waterman, and Silver Bell Mountains. The underlying geology of the Avra Valley basin consists of coarser-grained stratified gravel fining to sand near the source areas in the mountains, and finer-grained silt, clay, and mudstone in the basin centers.

The Sierrita Compressor Station is on the lower piedmont of the Sierrita Mountains, which consist of a core of Late Cretaceous to Early Tertiary in age (ca. 50 to 80 million years old) granite that intrudes a heavily faulted, metamorphosed terrain of Jurassic period volcanic rocks and their intrusive granitic equivalents. The surficial geology underlying the Sierrita Compressor Station is Holocene (0 to 10,000 years old) piedmont alluvium (Jackson 1989).

The San Joaquin Meter Station and the existing MLV 2 facilities at Line No. 2177 milepost 1.2 are on the lower piedmont of the Tucson Mountains, which are Jurassic in age (ca. 150 to 180 million years old) and are the remains of a large Cretaceous period volcanic caldera complex. They consist primarily of rhyolitic and dacitic volcanic units (Lipman 1993). The surficial geology underlying the San Joaquin Meter Station is Late

Pleistocene (10,000 to 130,000 years old) piedmont alluvium. The surficial geology underlying the to-be-relocated facilities at milepost 1.2 is Holocene piedmont alluvium (Pearthree and Biggs 1999).

## **1.2 Mineral and Non-Mineral Resources**

Based on a literature review, no mineral or non-mineral resources, active or inactive mines, sand/gravel pits, or quarries were identified within 0.5 mile of the Project (USGS 2003). No known oil and gas extraction wells were identified within 1 mile of the Project areas (Rauzi 2012). Therefore, construction and operation of the Project is not expected to impact these resources.

## **1.3 Geologic Hazards**

Geologic hazards are natural physical conditions that can, when present, result in damage to land and structures or injury to people. Potential geologic hazards in the Project area were determined through database searches, literature and topographic map reviews, and include seismicity (earthquakes and faults), slope stability and landslides, subsidence, flooding/scour, soil liquefaction, soil expansion, and volcanism. The proposed Project sites are not characterized by volcanic or karst conditions, or susceptible to landslides; thus, the Project would not be affected by such hazards. Seismic hazards, soil expansion, and flooding are discussed below.

### Seismic Hazards

Seismic hazards include earthquakes, ground faulting, and secondary effects such as liquefaction. The Santa Rita Fault, located approximately 26 miles southeast of the Project, is the nearest potentially active fault (U.S. Geological Survey [USGS], 2017a). The most recent rupture event occurred between 60,000 and 100,000 years ago, with repose approaching 100,000 years between major events. No large and only a few small earthquakes have occurred within 100 miles of the Project since 1850 (Arizona Geological Survey 2017), and the Project area is considered to be a “Low” to possibly “Moderate” Earthquake Hazard Zone with little historical seismicity and very few young (Quaternary) faults (Arizona Geological Survey 2017). In addition, saturated soils that could contribute to soil liquefaction are not likely to be present in the Project vicinity. As such, we do not anticipate seismic-related impacts on the Project.

### Expansive Soil

Soil expansion occurs when soils consisting primarily of clay and silt expand as a result of increased moisture content, and shrink upon drying. Expansion and shrinking of soils due to moisture fluctuations can cause damage to concrete slabs, foundations, and other confining structures. Shrink-swell potential is the relative change in volume to be expected with changes in moisture content (Natural Resources Conservation Service [NRCS] 2017). The soils at the Sierrita Compressor Station and MLV 2 sites are

## B. ENVIRONMENTAL ANALYSIS

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characterized by moderate shrink-swell potential. Soils with moderate shrink-swell potential could cause foundations to crack.

Sierrita would design the aboveground facilities to ensure proper drainage to assist in the minimization of “swell” of soils following a rain event. Additionally, Sierrita would construct the aboveground facilities in accordance with all applicable federal, state, and local building codes and standards. Therefore, we conclude the presence of shrink-swell soils would not adversely impact the Project facilities.

### Flooding

According to the Federal Emergency Management Agency (FEMA), an area subject to a 1 percent chance of flooding in any given year is classified as a 100-year floodplain. The FEMA Flood Map Service Center (FEMA 2011) shows the entire Sierrita Compressor Station site is within the designated 100-year floodplain (Zone A). Sierrita would obtain a Floodplain Use Permit from the Pima County Regional Flood Control District (Flood District), and comply with the Flood District’s regulations for design, construction, and operations of the compressor stations, where applicable, including stormwater conveyance and detention/retention, flood damage prevention measures (e.g., freeboard), and adherence to the Pima County Floodplain Ordinance.

The Flood District requested that a base flood elevation be determined for the Project, and inquired about what measures Sierrita would take to minimize potential erosion or channel mitigation. The Flood District also recommended that a Determination of Base Flood Elevation be required for development of the Project within FEMA Special Flood Hazard Area Zone A. Sierrita responded that it would work with an engineering design firm and local hydrologist to develop a design for the Sierrita Compressor Station consistent with the Flood District’s requirements. Sierrita would determine a base flood elevation for the station as required for development within Zone A, and would design all critical facilities associated with the Project to meet the Flood District’s 500-year flood building codes. Sierrita would work with its hydrologist to minimize any erosion or sediment movement from Project construction work areas, consistent with the FERC Plan. As a result of Sierrita’s adherence to the Flood District’s requirements for construction in the floodplain, any impacts from the compressor station on the 100-year floodplain would not be significant. The San Joaquin Meter Station and MLV 2 project areas are not within any known floodplain; therefore, these facilities would not have any impacts on floodplains.

Executive Order (EO) 11988 on Floodplain Management directs federal agencies to demonstrate a comprehensive approach to floodplain management. EO 11988 establishes avoidance of actions on the base of the floodplain, or the 100-year floodplain, as the preferred method for meeting these requirements. In compliance with EO 11988, we analyzed one alternative site location for the Sierrita Compressor Station outside the 100-year floodplain (see section C.3).

## **1.4 Paleontology**

No known fossil locations were identified within the Project area based on a review of known paleontological sites. The identified fossil location nearest to the Project is in the Avra Valley (Brawley Wash), approximately 15 miles north of the Project (Scarborough 2003). The likelihood of encountering and disturbing paleontological resources such as vertebrate fossils or scientifically significant invertebrate or plant fossils during Project construction is considered to be low due to the type of deposits (i.e., geologically young, fluvially deposited sand, gravel, and conglomerate) that underlie the Project area. Thus, we conclude that significant paleontological resources are unlikely to be affected by construction or operation of the Project.

## **2. Soils**

Information regarding the soil types and characteristics occurring in the Project area was obtained from the NRCS Soil Survey Geographic database (NRCS 2017) which provides detailed information useful for natural resource planning and management.

Construction activities such as clearing, grading, excavation, backfilling, heavy equipment traffic, and restoration activities could result in adverse impacts on soil resources in temporary workspaces, on access roads, and at aboveground facilities. Clearing would remove protective vegetation cover and would expose soils to the effects of wind, sun, and precipitation, which could increase soil erosion and the transport of sediment to sensitive areas such as waterbodies or dry washes (also referred to as ephemeral washes). Grading and equipment traffic could compact soil, reducing porosity and percolation rates, which could result in increased runoff potential. Soil contamination from equipment spills and/or leakage of fuels, lubricants, and coolants could also impact soils. Certain practices, such as the use of Sierrita's Plan, Procedures, and ECMP would help adequately minimize impacts on soils.

The Project's construction activities would impact about 18.7 acres of undeveloped, open land. Approximately 11.5 acres would be permanently impacted by construction and operation of the Sierrita Compressor Station and would be graveled to minimize soil loss. No prime farmland soils would be impacted by Project activities. The soils within the Project areas are well drained, and have low compaction and wind erosion potential. Soils at the Sierrita Compressor Station site have high water erosion potential. Project-area soils also appear to have low revegetation potential.

Soil erosion would be mitigated through temporary erosion and sedimentation control measures and implementation of permanent measures in accordance with the Sierrita's Plan and approved Project-specific ECMP. Due to the nature of aboveground facilities, revegetation is not a primary concern; however, Sierrita's ECMP and the FERC Plan contain measures to facilitate revegetation of those disturbed areas that would revert to pre-construction condition. As described in section A.5, Sierrita would perform topsoil

stripping, where applicable, to aid in topsoil conservation and revegetation of temporary work areas and thereby minimize the disturbance of undeveloped lands. Given the Project areas' soil characteristics and the impact minimization and mitigation measures described in Sierrita's ECMP and the FERC Plan, we conclude that soils would not be significantly affected by Project construction and operation.

### 3. Water Resources and Wetlands

#### 3.1 Groundwater Resources

Groundwater resources within the Project areas are found primarily in the Basin and Range aquifer system, a large-scale (multi-state) regional aquifer system formed in sediments and bedrock in the Basin and Range physiographic province (Robson and Banta 1995). Within the Project areas, two groundwater sub-basins are mapped: the Upper Santa Cruz and Avra Valley sub-basins within Arizona's Tucson Active Management Area (AMA) (Arizona Department of Water Resources [ADWR] 2016a).

##### Basin and Range Aquifer System

The principal aquifers in the Basin and Range aquifer system occur in thick deposits of basin fill in valleys bounded by mountain ranges. The basin fill material primarily consists of unconsolidated to semi-consolidated sediments of gravel, sand, silt, and clay deposited on alluvial fans, pediments, flood plains, and playas (Robson and Banta 1995). Basin-fill aquifers generally have higher overall permeability (both unsaturated and saturated) relative to the surrounding bedrock, which allows for rapid infiltration of water directly from the surface.

Groundwater in the basin-fill aquifers occurs under unconfined to semi-confined conditions. Groundwater recharge is derived from precipitation in the mountains surrounding the basins, along the margins of the basin and to a lesser extent over the valleys. Aquifer discharge is by evapotranspiration, discharge to streams, inter-basin flow, and groundwater withdrawal by wells. Inter-basin flow and evapotranspiration can be significant components of groundwater discharge as many basins are connected by basin fill in narrow valleys between basins, and due to the arid climate (high summer temperatures) of the region.

In Arizona, groundwater withdrawal from wells is the largest component of discharge from the Basin and Range aquifer system (Robson and Banta 1995). In some areas the rate of withdrawal is about 200 times the rate of recharge, half of which is returned to the system through surface infiltration over irrigated lands and along ephemeral stream beds, and the other half lost to the atmosphere by evapotranspiration. Large groundwater withdrawals for irrigation, industrial use, mining activities, and residential supply have caused large water-level declines in some of the basin-fill aquifers. A result of declining water level is subsidence of the land surface and the development of earth fissures (cracks) at the surface where unconsolidated sediments

## B. ENVIRONMENTAL ANALYSIS

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overlie uneven bedrock in the subsurface. Within the Tucson AMA groundwater is a depleting resource (City of Tucson 2017a, ADWR 2016a). Due to the relatively higher permeability of the basin-fill material and the rapid rate of infiltration, these aquifers can also be susceptible to surface sources of contamination.

Bedrock aquifers generally underlie the basin-fill aquifers and consist of limestone, dolomite, and marble with some quartzite, shale, siltstone, and sandstone in formations that are thousands of feet thick. However, construction and operation of the Project would not impact bedrock aquifers.

The Upper Santa Cruz and Avra Valley sub-basins are composed of Tertiary to Quaternary-age volcanic deposits and unconsolidated to consolidated sediments consisting of gravel, sand, silt, and clay with a small percentage of gypsiferous and anhydrous sediments (Robson and Banta 1995). The sediments of the sub-basins have been divided into lower and upper basin-fill units based on their hydrogeologic characteristics. The upper and lower basin-fill sediments are saturated at depth and form the regional aquifer system. Groundwater to depths of 1,000 feet can be found in unconfined to semi-confined conditions.

### Sole-Source Aquifers and Protected Aquifers

In 1984, the Upper Santa Cruz and Avra Valley sub-basins were designated as sole-source aquifers by the EPA in accordance with the Safe Drinking Water Act (EPA 2017a). An aquifer must supply more than 50 percent of a community's drinking water to be designated as sole source. These areas tend to have no alternative drinking water sources that could physically, legally, and/or economically supply those who depend upon the aquifer for drinking water.

The state of Arizona also manages groundwater resources (ADWR 2016a). Areas with heavy reliance on mined or depleting groundwater resources were identified and designated as AMAs, including the Tucson AMA in which the Project would be located. These areas are subject to regulation pursuant to the Arizona Groundwater Code. Regulatory and conservation programs are currently mandated for agricultural, municipal, and industrial groundwater users.

Sierrita would not use groundwater from the adjacent or nearby groundwater wells for Project activities and, therefore, the Project would not be subject to the EPA and ADWR regulatory and conservation programs regarding groundwater appropriation. However, as the entire Project is in an area underlain by basin-fill aquifers designated as a sole source and the Tucson AMA, the discharge of hydrostatic test water would be in an area with managed groundwater resources that are susceptible to contamination. The discharge of hydrostatic test water is further discussed in section B.3.2.

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### Water Supply Wells and Springs

Based on a review of state databases for water supply wells, springs, or seeps and field surveys to verify the database findings, no private groundwater wells, springs, or seeps were identified within 150 feet of the Project work area (ADWR 2016b, 2017; USGS 2017b).

One active public water supply well was identified approximately 100 feet from the Sierrita Compressor Station work area and adjacent to the access road. Sierrita would coordinate with the well owner (Tucson Water) regarding the potential for Project activities to adversely impact the nearby well. Well owners use groundwater in the Altar Valley primarily for ranching and agriculture activities.

### Wellhead Protection Areas

Wellhead Protection Areas are regions where states manage the land use above groundwater used to supply public drinking water. Generally, states do not disclose specifics regarding these plans, such as pumping centers and protection area limits, due to their critical nature. It appears probable that Wellhead Protection Areas are proximate to the Project because Tucson Water owns an adjacent public water supply well. However, as further discussed in sections A.5.4 and B.3.2, while Sierrita would obtain water for hydrostatic testing and dust control from Tucson Water, the required water would be delivered to the Project areas via trucks. Therefore, it is unlikely that water appropriation would directly impact a Wellhead Protection Area.

### Groundwater Contamination

According to the ADWR, no wells, springs, or mine sites with drinking water standard exceedances known contaminants are within 1 mile of the Project (ADWR 2015). Therefore, no impact from contaminated groundwater is anticipated.

Pipeline and related infrastructure construction necessitates the use of heavy equipment and associated fuels, lubricants, and other potentially hazardous substances that, if spilled, could affect shallow groundwater and/or aquifers. Accidental spills or leaks of hazardous materials associated with vehicle fueling, vehicle maintenance, and material storage would present the greatest potential contamination threat to groundwater resources. Soil contamination resulting from these spills or leaks could continue to add pollutants to the groundwater long after a spill had occurred.

Implementation of proper storage, containment, and handling procedures would effectively minimize the chance of such releases. Sierrita's Project-specific ECMP addresses preventative and mitigative measures that would be used to avoid or minimize the potential impacts of hazardous material spills during construction. Measures outlined in Sierrita's ECMP, Plan, and Procedures include, but are not limited to:

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- spill prevention and response training for construction personnel;
- regular inspection of construction equipment for leaks;
- prohibition of fueling and lubricating activities and hazardous material storage in or adjacent to sensitive areas;
- secondary containment for storage of fuels, oils, hazardous materials, and equipment;
- collection and disposal procedures for wastes generated during equipment maintenance;
- emergency response procedures; and
- standard procedures for excavation and offsite disposal of any soils contaminated by spillage.

We reviewed Sierrita's ECMP, Plan, and Procedures, and find that implementation of these plans adequately address the storage and transfer of fuels and hazardous materials as well as the response to be taken in the event of a spill.

### Groundwater Impacts and Mitigation

Construction activities, including clearing, trench excavation, dewatering, and fuel handling, could affect groundwater in several ways. Clearing and grading would remove vegetation that provides filtration and slows surface runoff. Trenching and soil stockpiling activities would temporarily alter overland flow and groundwater recharge and could alter near-surface groundwater flows where shallow groundwater is encountered. Heavy equipment used for construction could compact the soil along the right-of-way and slow groundwater recharge rates. Shallow groundwater could also affect the buoyancy of the pipe, increase the potential for pipe corrosion, and cause sidewall instability during construction. However, based on groundwater data mapping by the ADWR, it is unlikely that construction activities would encounter groundwater. In the unlikely event groundwater was to infiltrate into the excavated areas, dewatering could result in localized, minor changes in the water table. Effects from construction would likely be temporary, and the groundwater system would recover to equilibrium within a period of days to a few months. Other groundwater impacts during construction would be effectively minimized or avoided by implementing construction practices outlined in Sierrita's ECMP, Plan, and Procedures.

In addition to the above construction practices, in order to document water quality and flow and to establish a baseline for comparison in the event of inadvertent construction impacts on the adjacent Tucson Water well, **we recommend that:**

- **Prior to construction, Sierrita should file with the Secretary of the Commission (Secretary), for review and approval by the Director of the Office of Energy Projects (OEP), documentation confirming that it will offer pre- and post-construction testing to Tucson Water for the well identified within 100 feet of the construction work area. If testing reveals that impacts**

**on the well occurred as a result of Project construction, Sierrita should provide a temporary source of water and repair or replace the well to its former capacity in coordination with Tucson Water.**

### **3.2 Surface Water**

The Project area is within the Lower Brawley Wash subwatershed (USGS Hydrologic Unit Code [HUC] 10 – 1505030405), which is part of the larger Brawley Wash Watershed (HUC 8 – 15050304). Project activities would take place in two smaller subdivisions (HUC 12) of the Lower Brawley Wash subwatershed – the proposed new Sierrita Compressor Station in an unnamed watershed (HUC 150503040501) and the San Joaquin Meter Station and MLV 2 in the Golden Gate Mountain Watershed (HUC 150503040503).

Sierrita conducted a survey of surface waterbodies within the Project area in June 2017. The compressor station site only contains an ephemeral drainage that is crossed by the existing access road. This drainage is approximately 0.12 acre, with banks approximately 2-3 feet high, and contains stormwater flows from precipitation events (typical of small-sized arid ephemeral channels found in southern Arizona). The existing access road is a graded dirt road that Sierrita would make minor improvements (e.g., grading) to for its use to access the construction work areas and the permanent compressor station facility. The San Joaquin Meter Station and MLV 2 sites do not contain any surface waterbodies. The proposed Project would not cross or otherwise impact any waterbodies considered or designated as sensitive (National Park Service 2017; National Wild and Scenic Rivers System 2017a; U.S. Army Corps of Engineers [USACE] 2007).

According to the EPA’s Clean Water Act section 303(d) List of Impaired Waters (EPA 2017b), the only impaired waterbody within the Brawly Wash watershed is Arivaca Lake. Its cause of impairment is mercury in fish tissue. Project activities are more than 40 miles north of Arivaca Lake; therefore, the Project would not have impacts on impaired waters.

During construction, clearing vegetation cover and grading could increase erosion. Compaction of soils by heavy equipment near the ephemeral drainage at the compressor station may accelerate erosion and the transportation of sediment carried by stormwater runoff into the drainage. To minimize erosion, Sierrita would implement its ECMP, which includes standard measures to protect water resources, including:

- installing erosion and sediment controls immediately following initial soil disturbance where required;
- inspecting and maintaining erosion and sediment controls throughout the duration of construction and restoration;

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- repairing or replacing erosion and sediment controls within 24 hours of identifying deficiencies; and
- restoring temporary disturbance areas to pre-construction contours and drainage patterns.

Sierrita's Spill Prevention, Control, and Countermeasure Plan contains measures to prevent and, if necessary, control any inadvertent spill of hazardous materials such as fuels, lubricants, or solvents that could affect water quality, as well as identifies specific actions to be taken should any spills occur, including emergency notification procedures. Fuel and other hazardous materials would not be stored within 100 feet of dry washes and ephemeral streams. No equipment would be parked and/or refueled within 100 feet of dry washes and ephemeral streams.

Once construction is completed, Sierrita would restore disturbed construction work areas to match pre-construction contours and drainage patterns. Temporary work areas would be seeded in accordance with Pima County requirements. Temporary erosion controls would remain in place until sufficient vegetation re-establishes on the Project sites. Sierrita would also implement its approved site-specific ECMP, and SWPP and Spill Prevention, Control, and Countermeasure Plans during construction and restoration of the Project. As a result, we conclude that impacts on surface waters would be short-term and not significant.

### Hydrostatic Testing

In accordance with DOT regulations, Sierrita would conduct hydrostatic testing for all new facility piping prior to placing it into service to ensure it is capable of operating at the design pressure. Hydrostatic test water for the proposed facilities would be obtained from a municipal or commercial source and trucked to the project site for storage in temporary tanks until use. Sierrita would use approximately 175,000 gallons of water for hydrostatic testing of the piping systems. The water in the pipe would be pressurized and held for a minimum of 8 hours and would not contain any chemical additives. If any leaks are detected Sierrita would repair the piping segments and retest. Upon completion of the hydrostatic test, water would be discharged into an upland area in accordance the hydrostatic test water discharge permits issued by the ADEQ, to include discharge of test water using energy dissipation devices to reduce the velocity of the discharged water, thereby reducing the potential for erosion where the water is discharged. Alternatively, Sierrita may discharge test water into a new evaporation pond constructed on the compressor station site.

Impacts from the withdrawal and discharge of test water would be minimized by following the requirements specified in the state hydrostatic test water discharge permits. Impacts from the withdrawal and discharge of hydrostatic test water would be short-term and not significant.

### **3.3 Wetlands**

The USACE defines wetlands as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of wetland vegetation typically adapted for life in saturated soil conditions.” We define wetlands as any area that is not actively cultivated or rotated cropland and that satisfies the requirements of the current federal methodology for identifying and delineating wetlands.

Sierrita conducted a wetland delineation in June 2017, in accordance the USACE 1987 *Wetlands Delineation Manual* (USACE 1987) and 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008). Sierrita also accessed the U.S. Fish and Wildlife Service’s (FWS) National Wetlands Inventory to determine if wetlands were present within the project sites.

No wetlands were identified during the June 2017 survey or from the search of the National Wetlands Inventory data. Because no wetlands exist at any of the Project sites, no impacts to wetlands would result from construction and operation of the Project.

## **4. Vegetation and Wildlife**

### **4.1 Vegetation**

The Sierrita Compressor Station site, the San Joaquin Meter Station site, and the MLV 2 and pig traps relocation site all occur within the Arizona Upland subdivision of the Sonoran Desertscrub biotic community (Brown 1994). The San Joaquin Meter Station and existing MLV 2 sites do not contain vegetation, as they are fenced facilities with gravel, having been previously cleared and graded during the original installation of the Sierrita Line No. 2177. The Sierrita Compressor Station site contains mostly shrub/scrub vegetation cover type, mostly of undisturbed native vegetation typical of the Sonoran Desertscrub biotic community, including mesquite, creosote, and cholla cactus. A small area of the compressor station site, near State Highway 86, also contains Semidesert Grassland. A portion of the compressor station site associated with the proposed relocation of MLV 2 and the pig traps occurs within the Sierrita pipeline right-of-way and was restored and reseeded following Line No. 2177 installation and includes species such as fourwing saltbush. No vegetation resources of special concern were identified in any of the Project sites.

Vegetation observed in the compressor station site during the June 2017 surveys include triangle bur ragweed, fourwing saltbush, needle grama, Arizona pencil cholla, jumping cholla, Christmas cactus, threadleaf snakeweed, burroweed, and velvet mesquite.

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Construction of the Sierrita Compressor Station would temporarily impact 16.5 acres of mostly Sonoran Desertscrub. Operations of the station would result in a permanent conversion of 13.5 acres of native vegetation to natural gas use. Since the San Joaquin Meter Station and MLV 2 sites are developed and do not contain vegetation, no adverse impacts on vegetation would occur from these Project components. However, once the MLV 2 and facilities are removed, the site would be reseeded and restored, resulting in approximately 1.1 acre of newly vegetated area.

Following construction, areas cleared or otherwise disturbed and not needed for operation of the aboveground facilities would be stabilized and restored as close to pre-construction conditions as practicable. These areas would also be seeded in accordance with Pima County requirements, to include an approved, weed-free seed mix. Sierrita's Reclamation Plan prepared for this Project outlines the reclamation process that would be implemented to mitigate temporary construction impacts within the Project area. Upland reclamation of non-agriculture land would be considered successful when vegetation within the reclaimed area supports non-noxious plants that are similar in density and cover to those growing on adjacent, undisturbed lands.

The Pima County Office of Sustainability and Conservation – Environmental Planning commented providing recommendations that Sierrita follow the “Long-Term Monitoring Plan” within the 2014 *Mitigation Agreement and Agreement for Easements* between Sierrita and Pima County for the existing Sierrita pipeline. Pima County states that this monitoring plan “dovetails” with the 2013 FERC Plan, in that it includes “monitoring procedures that will be implemented over a 20-year period following the in-service date of the pipeline,” and “continued noxious weed monitoring and management, surveys of the monitoring sites established during post-construction monitoring, erosion monitoring through annual overflights of the right-of-way, as well as remediation to ensure successful environmental restoration of impacts from the construction of the pipeline.” Pima County recommended that the proposed Project be included within the purview of the Long-Term Monitoring Plan. Sierrita responded, noting that the sites associated with the proposed modifications to the San Joaquin Meter Station, and the relocation of MLV 2 and pig traps are within the existing Sierrita Line No. 2177 pipeline corridor and already included in the monitoring plan. Sierrita would include the approximately 960-foot-long right-of-way required for the proposed suction and discharge piping connecting the proposed Sierrita Compressor Station to Line No. 2177 to the areas covered by the existing Long-Term Monitoring Plan to ensure its successful reclamation.

One invasive non-native plant species, buffelgrass, was observed during field surveys of the compressor station site. Buffelgrass is listed as a Prohibited and Regulated noxious weed by the Arizona Department of Agriculture. “Prohibited” species are noxious weed species and are prohibited from entry into the state. “Regulated” species are noxious weed species that, if found within the state, are regulated through control measures or quarantine to prevent further infestation or contamination. To minimize the

potential for invasive species to spread in areas where they are present and construction would occur, Sierrita would implement invasive and noxious weed Best Management Practices (BMPs), including the following measures:

- ensuring all construction equipment is cleaned prior to beginning work on the Project, as well as equipment and vehicles used to move vegetation and topsoil during Project clearing and restoration phases would be cleaned of seeds, roots, and rhizomes prior to being moved off site;
- requiring the construction contractor to use weed-free straw or hay bales for sediment barrier installations and/or mulch;
- controlling weeds within the permanently maintained right-of-way using manual, mechanical, or herbicide application;
- marking weed-infested stockpiles and returning topsoil and vegetative material from infested sites to areas from where they were stripped; and
- using weed-free seed mixes for post-construction revegetation.

The EPA commented that the EA should ensure that Sierrita complies with EO 13112 (February 3, 1999, amended December 5, 2016), which mandates that federal agencies, whose actions may affect the introduction, establishment, or spread of invasive species, act to prevent these species from being introduced, established, or spread, and provide for their control. We expect that Sierrita's adherence to the above noxious weed BMPs, and its ECMP, Reclamation Plan, Noxious Weed Control Plan, and the FERC Plan, would meet the requirements of EO 13112.

With the exception of noxious weed control, vegetation maintenance (including mowing of nonagricultural lands) is not anticipated. However, Sierrita may selectively remove large brush from the permanent right-of-way for the new suction and discharge piping to facilitate aerial surveillance and inspection.

Construction and operation of the compressor station, including new piping, would result in permanent, long-term, and short-term adverse impacts on vegetation. Conversely, removal of the MLV 2 facilities would result in long-term beneficial impacts on vegetation. Sierrita would reduce impacts on vegetation by following its ECMP and implementing restoration methods outlined in its Reclamation Plan. As a result, impacts on vegetation are not expected to be significant.

### **4.2 Wildlife**

Sierrita performed field surveys in January and June 2017 to document the existing resources present within the Sierrita Compressor Station site. The San Joaquin Meter Station site and the MLV 2 sites were previously cleared of vegetation and other potential wildlife habitats during the original installation of the Sierrita Line No. 2177.

As noted above (section 4.1), the vegetation communities identified in the compressor station site include Sonoran Desertscrub and Semidesert Grassland. The site

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contains suitable habitat for a variety of terrestrial wildlife species, including birds, small mammals, and reptiles. Wildlife species observed during the field surveys include those commonly found in the Sonoran Desertscrub and Semidesert Grassland habitats, such as coyote, antelope jackrabbit, woodrat, desert cottontail, common raven, mourning dove, black-throated sparrow, and Say's phoebe. No wildlife resources of special concern such as refuges, sanctuaries, or preserves; wildlife management or viewing areas; rookeries; or migration routes were identified within 3 miles of the compressor station site (Arizona Heritage Geographic Information System 2017), although it is within 3 miles of the Coyote-Ironwood-Tucson Linkage Design wildlife corridor (AZHGIS 2017). Likewise, the San Joaquin Meter Station and MLV 2 sites are about 2 miles and 2.5 miles southeast, respectively, of the wildlife corridor (Arizona Game and Fish Department [AGFD] 2012a). No raptor or other migratory bird nests were observed during the field surveys. Pima County developed a Sonoran Desert Conservation Plan (SDCP) to provide guidance for preserving and protecting the county's natural resources while maintaining economic growth. The scope of the SDCP covers 5.9 million acres of land in Pima County. The county uses the conservation approaches contained in the SDCP to guide regional land use decisions. In 2001, the Pima County Board of Supervisors adopted the Conservation Lands System Regional Policy Plan as part of its updated Pima County Comprehensive Plan Initiative (Pima County 2015). This Policy Plan categorizes and identifies lands of priority biological resources within Pima County necessary to achieve the SDCP's biological goals, while delineating areas suitable for development. The Sierrita Compressor Station site is within a planned growth area (see section B.5).

The compressor station site would cross portions of Game Management Unit 38M, managed by the AGFD. Huntability species in Game Management Unit 38M include javelina, mule deer, mountain lion, doves, quail, and predators/furbearers.

The southern portion of the compressor station site is within the Claves Grazing Allotment (23-103589) (Pima County 2017c). No evidence of livestock grazing was observed during Sierrita's field visits to the site.

Construction and operation of the Project would result in short- and long-term impacts on wildlife. Short-term impacts include the displacement of wildlife from construction areas and adjacent habitats as a result of construction activities, dust, and noise. It is expected that most wildlife, such as birds and large mammals, would temporarily relocate to adjacent available habitat during construction activities. Construction could result in the mortality of less mobile animals such as rodents, reptiles, and invertebrates, which may be unable to escape the immediate construction area. While wildlife species are expected to recolonize habitats, the increase in ambient noise in the immediate vicinity during construction and operation may result in a decrease in wildlife use of adjacent habitat. Sierrita would implement measures to limit noise exposure during both construction and operation of the Project.

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Sierrita would also implement BMPs to minimize the potential for impacts on wildlife, including:

- allowing wildlife that has entered the work area to leave the area on their own;
- providing environmental awareness training to all construction personnel working on the Project;
- checking for wildlife under vehicles and equipment that have been stationary for more than 1 hour and each morning prior to moving or operation;
- complying with posted speed limits; and
- prohibiting firearms or pets at Project work sites.

A security fence and property fences would be installed around the compressor station, which could alter wildlife movement across the area. However, wildlife would still be able to move around in the general area with minor impacts on their movement. Additionally, the site is not within any designated wildlife corridor, and therefore, minor impacts on wildlife movement would be expected.

Construction of the compressor station would also permanently remove a small amount of livestock grazing area. During construction, if livestock is present, Sierrita would install temporary fencing to minimize any impacts on livestock.

Project activities would result in short and long-term impacts on mostly the Sonoran Desertscrub vegetation community. Clearing at the compressor station site would decrease the amount of this type of wildlife habitat and reduce protective cover and foraging habitat in the immediate Project area. During operation, 13.5 acres of previously shrub/scrub and grassland/herbaceous habitat would be permanently converted to the Project facilities. Sierrita would minimize impacts on wildlife habitat by minimizing vegetation clearing to only those areas needed to safely and efficiently construct the compressor station; and revegetating work areas that would not be permanently converted to graveled, paved, or footprints of buildings or other aboveground facilities.

In conclusion, construction and operation of the compressor station and new piping would result in long- and short- term impacts on wildlife and wildlife habitat. While Project activities would have short- and long-term impacts on the Sonoran Desertscrub, it would not alter long-term planning, conservation, or management activities for management of this habitat as outlined in the SDCP. Additionally, the compressor station site is not in an area deemed crucial to the conservation of any special species of concern. We conclude that with the implementation of restoration methods outlined in Sierrita's ECMP and Reclamation Plan, impacts on wildlife and wildlife habitat would not be not significant.

### Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act ([MBTA] – 16 U.S. Code 703-711) and EO 13186, which serve to protect migratory birds from adverse impacts. The MBTA, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The executive order was enacted, in part, to ensure that environmental analyses of federal actions evaluate the impacts of actions and agency plans on migratory birds. It also states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and it prohibits the take of any migratory bird without authorization from the FWS. The intentional destruction or disturbance of a migratory bird nest that results in the loss of eggs or young is also a violation of the MBTA.

The FWS established Birds of Conservation Concern (BCC) lists for various regions in the country in response to the 1988 amendment to the Fish and Wildlife Conservation Act, which mandated the FWS to identify migratory nongame birds that, without additional conservation actions, were likely to become candidates for listing under the ESA. The Project falls within Bird Conservation Region (BCR) 33 – Sonoran and Mojave Deserts. No Important Bird Areas or Important Overwintering Areas have been identified or designated within or near the Project area.

The FWS' Information for Planning and Consultation system identified 36 migratory BCC that may be potentially present in the Project vicinity (FWS 2017). Habitat for migratory birds, including some BCC, may occur within or adjacent to the Project area. Sierrita's field surveys identified six avian species during field surveys – black-throated sparrow, common raven, Albert's towhee, Say's phoebe, mourning dove, and white-crowned sparrow. None of these species are BCC.

No active bird nests were observed during the field surveys; however, suitable bird nesting substrate (e.g., trees, snags, cacti, and saguaros with nest cavities, etc.) occurs at the compressor station site. The compressor station site may also support suitable breeding/nesting, roosting, and stopover habitat for migratory birds and BCC. The San Joaquin Meter Station and MLV 2 sites have been previously cleared of vegetation; therefore, no nesting habitat exists.

Removal of vegetation that provides migratory bird habitat could potentially result in inadvertent effects to nesting adults and nests, including those with eggs and/or young, if present. If an active nest is located before or during construction, Sierrita would take measures to avoid destroying the nest. Construction would be performed outside of the breeding season (February – August), and all trees, snags, cacti, or other suitable nest sites would be inspected for birds' nests by a qualified personnel prior to clearing. To the best extent possible, Sierrita would remove vegetation prior to the nesting season to discourage birds from establishing nests in those areas. Should construction occur during the nesting season, Sierrita would conduct nesting surveys prior to any ground

disturbance. If active nests are identified, Sierrita has committed to consulting with the FWS to develop procedures to minimize impacts on the nesting birds. Therefore, we conclude the Project's impacts on migratory birds would not be significant.

No bald or golden eagles or their nests were observed during field surveys. Additionally, there are no records of occurrence of these species within 3 miles of the Project site. Marginally suitable foraging habitat for golden eagles is located within and adjacent to the Project area, and suitable breeding habitat is present within about 10 miles of the Project area. Habitat requirements for bald eagles (e.g., areas close to large bodies of water that provide a food source) are not present within or in the vicinity of the Project. No breeding, nesting, foraging, or wintering habitat for bald eagles is present within the Project sites. We do not anticipate the Project would adversely impact bald or gold eagles.

### 4.3 Special Status Species

Special status species are those species for which state or federal agencies provide an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the ESA, species considered as candidates for such listing by the FWS, and those species that are state-listed as threatened, endangered, or state species of special concern.

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed species protected under Section 7 of the ESA, species proposed or candidates for listing by the FWS, and those species that are state-listed as threatened, endangered, or otherwise considered sensitive.

Section 7(a)(2) of the ESA requires the Commission to ensure that any action it authorizes, funds, or carries out would not jeopardize the continued existence of federally listed or proposed listed species, or result in the adverse modification or destruction of critical habitat for federally listed and proposed species. As the lead federal agency for the Sierrita Compressor Expansion Project, FERC is responsible for ESA consultation with the FWS to determine whether any proposed or federally listed species, or critical or proposed critical habitat may occur in the Project area, and to determine the proposed action's potential impacts on these species and critical habitat. Species classified as candidates for listing under the ESA do not currently carry regulatory protection but are typically considered during our assessments as they may be listed in the future. Similarly, species protected under state statutes do not carry regulatory protection under the ESA, but impacts are reviewed if the applicable agency indicates its potential presence in the Project area during consultation.

### Federally Listed Species

Sierrita utilized the FWS' Information for Planning and Conservation system and the AGFD's Heritage Data Management System (HDMS), both online environmental review tools, to determine whether any federally or state-listed threatened or endangered species, species of concern, or designated critical habitats occur in the Project area. Twenty-two species listed by the FWS with protection under the ESA have the potential to occur within Pima County; however, only one species has the potential to occur within the compressor station site – the endangered Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*). Portions of the site include Sonoran Desertscrub, which is within the known range of the Pima pineapple cactus. The San Joaquin Meter Station and MLV 2 site are fenced and graveled facilities that do not contain suitable habitat for any of these species. Results from the HDMS search also identified the Pima pineapple cactus as the only federally listed species to occur within 3 miles of the Project area.

Sierrita conducted a survey for the Pima pineapple cactus in January and June 2017 in the Project. No occurrences of the species were located and no critical habitat for this species has been designated within the Project area. As a result, the Project would have *no effect* on the Pima pineapple cactus. In a letter dated September 26, 2017, the Arizona Ecological Services Office of the FWS determined that the Project would not affect any species or critical habitats listed under the ESA, including the Pima pineapple cactus. As such, Section 7 consultation is complete.

### State-Listed Species

The HDMS search identified four occurrence records for Arizona's Species of Greatest Conservation Need within 3 miles of the Project area: the western narrow-mouthed toad (*Gastrophryne olivacea*), Sonoran desert tortoise (*Gopherus morafkai*), reticulate Gila monster (*Heloderma suspectum suspectum*), and California leaf-nosed bat (*Macrotus californicus*).

The California leaf-nosed bat has the potential to occur in the Project area; however, no suitable bat roost sites (e.g., natural caves, bridges, or mines) are present. The Project area is beyond the known geographic or elevational range or does not contain vegetation or landscape features known to support three of the four Arizona-ranked species. While Sierrita did not conduct species-specific surveys on non-federally listed species, field surveys conducted in January and June 2017 did not find occurrences of state-listed or Pima County concern species. As a result, the Project would have no impacts on state-listed species, or species of concern to Pima County, including species of concern as noted by Pima County in its scoping comments.

The EPA commented that the FERC should coordinate with the AGFD, in addition to the FWS, to ensure that current and consistent surveying, monitoring, and reporting protocols are applied in all species protection and mitigation efforts. The AGFD's

HDMS search output provided suggested mitigation measures for state-listed species. Suggested mitigation measures include considering wildlife habitat connectivity needs, minimizing introduction or spread of exotic invasive species, minimizing impacts on wildlife by minimizing impacts on springs or washes, and conducting project activities outside of breeding season. Sierrita would implement these measures to the extent possible, as discussed in the previous section of this EA.

The Pima County Office of Sustainability & Conservation - Environmental Planning commented that the EA should assess Project impacts on the Pima pineapple cactus and the Tumamoc globeberry (a species protected under the Arizona Native Plant Law). Neither species was identified within the Project sites during field surveys; therefore, these species would not be impacted.

### 5. Land Use, Recreation, and Visual Resources

Project construction would impact land use at the Sierrita Compressor Station, San Joaquin M&R Station, and the relocated MLV 2 and pig traps as described below. Land use descriptions are based on land cover types derived from the National Land Cover Dataset, observations made from aerial imagery, geographic information system technology, and ground-truthing during biological and cultural resource surveys. Other types of land uses discussed in this section include zoning, planned development, recreation, and special land uses.

No designated Coastal Zone Management Areas, registered national natural landmarks (National Park Service 2017), designated Wilderness Areas (Wilderness Connect 2017), Wild and Scenic Rivers (National Wild and Scenic Rivers System 2017b), or designated National Trails (National Park Service 2017) are within 0.25 mile of proposed Project activities.

Land use types affected by the Project include:

**Shrub/Scrub.** Includes areas dominated by shrubs less than 5 meters tall with a shrub canopy typically greater than 20 percent of total vegetation. Also includes young trees in an early successional stage, or trees stunted from environmental conditions.

**Developed, Low Intensity.** Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20 to 49 percent of total cover.

**Grassland/Herbaceous.** Includes areas dominated by graminoid or herbaceous vegetation, generally greater than 80 percent of total vegetation. These areas are not subject to intensive management such as tilling, but can be used for grazing.

**Developed, Open Space.** Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include

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large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.

Temporary and permanent land cover impacts are summarized in table 2.

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Table 2 Land Use Impacts a/						
Land Use Type	San Joaquin Meter Station		MLV 2/pig traps (removal at milepost 1.2)		Sierrita Compressor Station (including relocation of MLV 2/pig traps to milepost 6.5)	
	Temporary Construction Impacts (acres)	Permanent / Operational Impacts (acres)	Temporary Construction Impacts (acres)	Permanent / Operational Impacts (acres)	Temporary Construction Impacts (acres)	Permanent / Operational Impacts (acres)
Shrub / Scrub	0.2	0.0	0.1	0.0	3.0	2.6
Grassland / Herbaceous	0.0	0.0	0.0	0.0	13.5	13.1
Developed, Low Intensity	0.9	1.1	1.0	0.0		0.0
<b>Total b/</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>	<b>0.0</b>	<b>16.5</b>	<b>15.7</b>

a/ Temporary impacts include the permanent impacts plus temporary workspaces.  
b/ Note: the National Land Cover Database reports values for San Joaquin Meter Station and MLV 2 as primarily shrub/scrub. However, both these areas were graded, graveled, and fenced during the installation of the Line No. 2177 facilities under Docket No. CP13-73-000.

Sierrita Compressor Station

Land cover at the Sierrita Compressor Station site is mostly Shrub/Scrub and Grassland/Herbaceous. There are minor areas of Developed, Open Space and Developed, Low Intensity uses along Ajo Highway. The compressor station site is mostly native species with areas of human disturbance. The compressor station is within a planned growth area in unincorporated Pima County (Pima County 2015), and the site is zoned as Rural Homestead. Pima County Planning and Zoning (2016) has stated a compressor station is an allowed use in a Rural Homestead zoned district. A building permit would be required, but a Special Use Permit and/or Board of Supervisor’s approval is not required.

The nearest residence is located approximately 1.1 mile north of the Sierrita Compressor Station site, near the corner of Postvale Road and West Valencia Road. There are no churches, hospitals, cemeteries, or schools within 0.25 mile. Lands required for the compressor station were acquired, either by easement or in fee, from AZBOR, and do not include Native American reservations or lands owned or controlled by private preservation/conservation groups or federal, state, or local agencies. There are no orchards, nurseries, specialty crops, conservation lands, lands held in trust, operating

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mines, remnant prairies, or old-growth forests within 0.25 mile of the compressor station site (Pima County 2017a). There are no hazardous waste sites or landfills within 0.25 mile of the compressor station site (ADEQ 2017). Regulated riparian habitats were identified within 0.25 mile (Pima County Regional Flood Control District 2011), but are not within the Project footprint and would not be impacted by Project activities. The compressor station site is within a planned growth area, the Southwest Focused Development Investment Area; however, no planned or future residential or commercial developments were identified within 0.25 mile of the site (Pima County 2017a).

Project construction activities for the Sierrita Compressor Station would involve 16.5 acres, 0.7 acre of which is currently used as an access road for other purposes. The construction of the compressor station would require the clearing of 15.7 acres of which 2.6 acres is undisturbed or previously restored shrub-scrub land while and 13.1 acres is grassland-herbaceous vegetation.

Of the 15.7 acres cleared for the compressor station site, approximately 3.0 acres would be used for temporary workspaces and the suction and discharge lines and would be restored following construction. The restored areas would be reseeded with a native seed mix, allowed to naturally revegetate, and would not be fenced. Therefore, use of these temporary workspaces would not constitute a permanent conversion of land use or land cover, thereby minimizing the Project's impacts on undeveloped lands. In total, Project work would permanently convert approximately 12.7 acres to graded and graveled work areas. Construction improvements planned for the existing access road (0.7 acre) would not alter the existing land use or land cover.

The Pima County Regional Wastewater Reclamation Department commented that construction of a segment of the proposed Sierrita Compressor Station suction/discharge pipeline may impact an existing 24-inch-diameter public sewer line (C-097B), within the Snyder Hill Road right-of-way. Pima County requested that Sierrita take the steps necessary to avoid this sewer line during Project construction. Sierrita indicated in response that no Project-related construction work is planned in or near the areas occupied by public sewer line C-097B.

The Pima County Office of Sustainability & Conservation – Environmental Planning comments that efforts should be made to discourage off-highway vehicle (OHV) use in and around the new Sierrita Compressor Station, including closing and fully revegetating temporary access roads and installing signage. As discussed in section A.7, Sierrita would utilize only existing access roads and public roadways for construction and operation of the compressor station, for modifications to the meter station, and for removal of MLV 2 and the pig traps. Sierrita would construct one new permanent access road for the new MLV 2 and pig traps site at milepost 6.5. Sierrita states that the City of Tucson well access road in the vicinity of the new compressor station site is already gated and locked to prevent unauthorized access to the well site. An existing privately-owned fence exists south of the proposed suction and discharge

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pipeline right-of-way, which would also deter access to the right-of-way. To further aid in the deterrence of OHV use in the Project area, and minimize OHV impacts on areas affected by Project construction and operation, **we recommend that:**

- **Prior to construction, Sierrita should file with the Secretary, for the review and approval by the Director of OEP, the descriptions and locations of signage and any additional measures it will actively employ and maintain to deter unauthorized OHV use during construction and operation of Project facilities.**

### Mainline Valve 2 and San Joaquin Meter Station

The site of MLV 2 was previously cleared, graded, graveled, and fenced for the installation of Line No. 2177 and MLV 2 under Docket No. CP13-73-000. Land in and adjacent to the San Joaquin Meter Station consists of graded and graveled work areas. Both sites consist of graded and gravel work areas and are regularly maintained to be free of vegetation. Both sites are within unincorporated Pima County and zoned as Rural Homestead (Pima County 2017a). The nearest residence to MLV 2 is approximately 0.25 mile east, and the nearest residence to the meter station is about 264 feet (0.05 mile) northwest. There are no churches, hospitals, cemeteries, or schools within 0.25 mile of either site. Both are on existing right-of-way obtained from the ASLD, and are not on a Native American reservation or lands owned or controlled by private preservation/conservation groups (National Conservation Easement Database 2017) or federal, state, or local agencies.

A review of recent aerial imagery and the Pima County MapGuide (Pima County 2017a) shows that there are no orchards, nurseries, specialty crops, conservation lands, lands held in trust, operating mines, remnant prairies, or old-growth forests within 0.25 mile of MLV 2 or the San Joaquin Meter Station. Regulated riparian habitat is within 0.25 mile of MLV 2 (Pima County Regional Flood Control District 2011); however, impacts on this resource were mitigated when MLV 2 was installed under Docket No. CP13-73-000. There are no hazardous waste sites or landfills located within 0.25 mile of either location (ADEQ 2017).

Neither site is within a planned growth area (Pima County 2015), and no planned or future residential or commercial developments were identified within 0.25 mile (Pima County 2017a).

The Project would convert the MLV 2 site (1.1 acres) from its existing Developed, Low Intensity state back into Shrub/Scrub, similar to native conditions. Operational activities at MLV 2 would be reduced to the level of regular right-of-way maintenance conducted along the rest of Line No. 2177; therefore, land use impacts from the aboveground appurtenances would be reduced from current conditions.

For the San Joaquin Meter Station, Sierrita would construct a new access driveway from San Joaquin Road (0.2 acre) and install a new gas meter within the existing station facility. The access road would affect an area of shrub-scrub vegetation, while the construction and operation of the new gas meter would be within the existing, graveled station.

Project activity at the two sites would be short-term and would not alter the existing land uses in or near the facilities, and no long-term impacts on land use or vegetation cover would result at either site.

### **5.1 Residential Land and Commercial Areas**

No residential land is crossed by the proposed Project; however, construction could result in short-term impacts on nearby residential areas. Such impacts could include increased construction-related traffic on local roads, as well as increased dust and noise. Overall, impacts from construction of the Project would be minimal and consistent with existing surrounding facilities. There are no existing residences or planned future residential or commercial developments within 1 mile of the compressor station site. The nearest residence from the San Joaquin Meter Station is approximately 265 feet northwest.

Sierrita would minimize impacts on residential or commercial uses through implementation of mitigation measures which include:

- construction activities would generally occur during daylight hours;
- Sierrita would take all measures necessary to ensure that utilities are not disrupted during construction. If the need to disrupt utilities arises, Sierrita would provide as much notice as possible to the landowner prior to the disruption; and
- traffic flow and emergency vehicle access would be maintained on public roadways, and traffic detail personnel and/or detour signs would be used where appropriate.

No direct impacts on residential land or planned development are expected.

### **5.2 Public Land and Other Designated Areas**

None of the following designated areas are within the proposed Project area:

- lands owned or controlled by private preservation/conservation groups;
- lands owned or controlled by federal or local agencies;
- natural, recreational, or scenic places; or
- Coastal Zone Management areas.

Therefore, no impacts on public land or other designated areas are expected.

### **5.3 Visual Resources**

Impacts on visual and/or aesthetic resources would primarily occur during construction as a result of the presence of construction equipment. Most impacts on visual resources would be temporary; however, the construction of the new compressor station would create some minor permanent impacts on visual resources.

Residential developments and public roadways are within view of the San Joaquin Meter Station and MLV 2 Project sites. The addition of a new meter at the San Joaquin Meter Station would not affect views of the Project area. The removal of MLV 2 would improve the visual character of the area around the MLV site. The Sierrita Compressor Station site is more than 1 mile from the nearest residence, and has limited visibility from State Route 86, a public highway. Passing motorists may see the compressor building, but views would be partially obscured by existing vegetation. Plus, the view would be of short duration at highway speeds. Sonoran Desert Scrub habitat, characterized by open stands of mesquite trees and shrubs up to 10 feet tall, and about 1,200 feet of distance between the highway and the compressor station site would provide some natural visual screening. As such, Sierrita does not propose additional landscape screening.

The Pima County Development Services Department commented that Sierrita should provide landscape for screening of Project facilities where practicable. Sierrita would implement BMPs to avoid, minimize, or mitigate potential negative effects on visual character during construction and operation. These BMPs would comply with the ECMP, and include, but are not limited to:

- maintaining the existing desert scrub vegetation buffer along the compressor station site boundaries to the extent feasible;
- painting buildings and equipment to blend into the existing natural environment; and
- placing and installing downward-facing, shielded lights to mitigate off-site exposure.

The Pima County Office of Sustainability & Conservation – Environmental Planning recommended that Sierrita avoid or minimize nighttime yard lighting. In addition to the mitigation above, Sierrita would comply with the Pima County Dark Sky Ordinance, and utilize an approved shaded type lighting at the Sierrita Compressor Station that would only be illuminated when personnel are on site or an intrusion is detected. Sierrita would not utilize any continuously illuminated external lighting at the station.

With Sierrita’s mitigation summarized above, visual impacts from construction and operation are expected to be minimal.

## **6. Socioeconomics and Environmental Justice**

All Project activities would occur within an unincorporated area of Pima County, in a rural setting where low- to medium-density, single-family detached dwellings and a mix of desert and open spaces dominate the surrounding landscapes. The nearest major city and community near the Project is the city of Tucson, about 9 miles away, also in Pima County.

The following sections provide the socioeconomic setting for the county, cities, and communities that may be affected by development of the proposed Project.

### **6.1 Population, Employment, and Housing**

Pima County is approximately 9,189 square miles and has an approximate population of 1,016,206 (U.S. Census Bureau [USCB] 2010, 2016). Population density is about 56.3 people per square mile (USCB 2010). The city of Tucson lies approximately 9.2 miles northeast of the Project area and is the closest community to the proposed compressor station site. Tucson is the largest city in Pima County, with a population of 530,706 on approximately 236 square miles (City of Tucson 2017b; USCB 2016). Population density is about 2,294 people per square mile (USCB 2010).

Table 3 provides civilian labor force statistics, unemployment rates, and major industries in the communities in the area surrounding the Project. Pima County has an average civilian labor force of 469,365, representing approximately 58.4 percent of the population (USCB 2015). The average unemployment rate in Pima County is 10 percent, compared to Arizona's statewide unemployment rate of 8.9 percent (USCB 2015). The city of Tucson has an average civilian labor force of 262,188, representing approximately 60.7 percent of the population (USCB 2015). The average unemployment rate in Tucson is approximately 11.2 percent, compared to Arizona's statewide unemployment rate of 8.9 percent (USCB 2015).

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<b>Table 3 Population and Employment a/</b>						
<b>Community</b>	<b>2016 Population Estimate a/</b>	<b>2010 Population Density (people/sq/mi) b/</b>	<b>2011–2015 Per Capita Income (USD) c/</b>	<b>2011–2015 Civilian Labor Force (percent) c/</b>	<b>2011–2015 Unemployment Rate (Percent) c/</b>	<b>Major Industries d/, e/, f/</b>
State of Arizona	6,931,071	56.3	\$25,848	59.3	8.9	Aerospace and Defense; Technology; Renewable Energy; Bioscience and Healthcare; Education; Optics; Advanced Manufacturing; Government
Pima County	1,016,206	106.7	\$25,729	58.4	10.0	Aerospace and Defense; Retail; Arts; Manufacturing; Healthcare; Optics; Mining; Government
City of Tucson	530,706	2,294.2	\$20,481	60.7	11.2	Arts; Tourism; Advanced Manufacturing; Government
a/ USCB 2016 b/ USCB 2010 c/ USCB 2015 d/ Arizona Commerce Authority 2017 e/ City-Data 2017 f/ Pima County 2017a						

Impacts on the local population would primarily result from the short-term influx of temporary employees during construction. Sierrita anticipates that over 90 percent of the workforce could come from outside of Pima County, based on the makeup of the construction workforce in nearby communities as referenced in table 4 below. Temporary increases in population levels would occur as workers with specialized skills move into the area. Even if the entire construction workforce for the Project comes from outside the local area, this would represent a negligible increase in the population of the communities surrounding the Project site.

Sierrita anticipates an average workforce of 55 people for the Project throughout the duration of construction. Sierrita would hire local and regional construction workers to the extent feasible, provided these workers possess the necessary skills for compressor station construction. However, if the local workforce does not possess the skills required, specialized workers would be brought in from outside the local area. During construction, the hiring of local labor would have a net positive impact on employment in the Project area, where county and city unemployment rates range from 10 to 11 percent. Outside of Tucson, the influx of construction workers may also have the added benefit of generating increased work opportunities in local service industries (e.g., restaurants,

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drop-off laundry services, cleaning services). Construction period impacts on population and employment are expected to be negligible.

<b>Table 4 Population Impacts a/</b>						
<b>Community</b>	<b>2016 Population Estimate</b>	<b>Construction Personnel</b>			<b>Additional Operations Personnel</b>	
		<b>Average Number</b>	<b>Peak Number</b>	<b>Percent Change</b>	<b>Number</b>	<b>Percent Change</b>
State of Arizona	6,931,071	55	100	0.0014	1	0.00001
Pima County	1,016,206	55	100	0.0098	1	0.00001
City of Tucson	530,706	55	100	0.019	1	0.0001

a/ Source: UCSB 2016.

Because only a small number of permanent employees would be hired, permanent or long-term impacts on employment are expected to be negligible.

Housing

Table 5 provides an overview of the housing characteristics within the community. Pima County has approximately 12,542 vacant housing units for rent out of 57,111 vacant houses (USCB 2010, 2015). The vacancy rate for Pima County is 8.5 percent, compared to Arizona’s statewide vacancy rate of 8.6 percent (USCB 2015). The city of Tucson has approximately 17,708 vacant housing units for rent out of 27,391 vacant houses (USCB 2010, 2015). The vacancy rate for Tucson is 8.7 percent and is similar to Arizona’s statewide vacancy rate of 8.6 percent (USCB 2015).

During construction of the Project, it is anticipated that a portion of the incoming workforce would reside in temporary housing in the towns/cities surrounding the Project sites. The remaining workers would likely commute daily to the construction site from nearby communities. Temporary accommodations may include short-term rental units (hotels, motels, and apartments), trailers, RVs, and campgrounds. Availability would vary based on location and distance of the project areas to the temporary housing areas. Additionally, availability of temporary housing would vary based on seasonal use and the discretion of individual unit owners to rent units to the temporary workers associated with the Project.

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<b>Table 5 Housing Characteristics</b>						
<b>Community</b>	<b>2011–2015 Housing Units a/</b>	<b>2011–2015 Vacant Housing Units a/</b>	<b>2010 Vacant Housing Units for Rent b/</b>	<b>2010 For Seasonal, Recreational, or Occasional Use b/</b>	<b>2011–2015 Rental Vacancy Rate (percent) a/</b>	<b>Number of Hotels and Motels c/</b>
State of Arizona	2,890,664	476,452	120,490	184,327	8.6	806
Pima County	446,769	57,111	12,542	3,465	8.5	260
City of Tucson	233,733	27,391	17,708	14,862	8.7	259
a/ USCB 2015. b/ USCB 2010. c/ Yellowbook 2017 (number of “Hotels and Motels” as advertised on <a href="http://www.yellowbook.com">www.yellowbook.com</a> ). Some of these hotels and motels may be in adjacent counties.						

Impacts on available housing and lodging would be temporary and would last only for the duration of construction activities, which would last approximately 9 months. As shown in table 5, the communities in the Project area have multiple housing options to accommodate the estimated non-resident construction workforce and any additional permanent personnel hired to operate the facilities. Temporary and long-term/permanent impacts on housing are expected to be negligible.

**6.2 Economy**

Major industry sectors in Pima County include aerospace and defense, retail, arts, manufacturing, healthcare, optics, mining, and government (see table 6-1). Within the City of Tucson major industries include arts, tourism, advanced manufacturing, and government. The per capita incomes for the City of Tucson and Pima County respectively are \$20,481, and \$25,729. State, County, and community tax rates and tax revenues for 2017 are provided in table 6.

Construction Payroll and Material Purchases

Construction activities would have a net positive impact on local and regional businesses, based on our assumption that construction workers would spend as much as 20 to 30 percent of their paychecks on goods, services, and entertainment, in addition to money spent on temporary housing by non-local workers. Based on information for projects of similar size, Sierrita estimates that during construction Sierrita contractor workers would spend between approximately \$1,400,000 to \$2,100,000 on goods, services, and entertainment. Local and/or regional businesses would also see increased revenues from construction material and equipment fuel purchases.

Tax Revenues

Construction and operation of the Project would result in increased tax revenues for the State of Arizona and Pima County, in addition to other local taxing authorities.

## B. ENVIRONMENTAL ANALYSIS

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Once in operation, Sierrita estimates that annual sales tax revenues associated with the Project would be approximately \$21,500 based on an annual operation and maintenance budget of \$250,000 and a sales tax rate of 8.60 percent. Sierrita estimates an annual property tax to Pima County of approximately \$1,191,000.

<b>Table 6 State Tax Rates and Revenues</b>			
<b>Community</b>	<b>2017 Sales Tax Rate (Percent)</b>	<b>2017 Projected Sales Tax Revenues (USD)</b>	<b>2017 Projected Property Tax Revenues (USD)</b>
State of Arizona	5.6 <b>a/</b> , <b>b/</b>	\$7,773,127,691 <b>c/</b>	N/A <b>d/</b>
Pima County	0.5 <b>a/</b>	\$722,614,331 <b>c/</b>	\$481,058,504 <b>e/</b>
City of Tucson	2.5 <b>b/</b>	\$197,630,160 <b>f/</b>	\$47,700,970 <b>f/</b>

a/ Avalara 2017.  
b/ University of Arizona 2017.  
c/ Arizona Department of Revenue 2016.  
d/ The statewide property tax in Arizona was repealed in 1996.  
e/ Pima County 2017b.  
f/ City of Tucson 2017b.  
USD = U.S. dollar

### 6.3 Public Services

Medical, fire, and police services are readily available in the Project area and have the capacity to manage the temporary influx of Project personnel with negligible impacts on public services. Pima County has three fire and rescue departments, the Pima County Sheriff's Department is approximately 4.5 miles northeast of the Project, and there are 20 hospitals with 2,627 hospital beds within the county. Table 7 identifies the public service facilities within the Project area.

Construction of the Project could result in a temporary increased demand on public services. Potential temporary impacts on services could include traffic-related incidents, medical emergencies, increases in traffic violations, and issuances of permits for vehicles subject to load and width restrictions.

Although the potential for police, fire, and medical services may increase slightly during construction activities, adequate public services exist in the Project area to handle a civil, criminal, or emergency event. Furthermore, there would be no large influx of workers. It is anticipated that the limited number of non-local construction workers would not relocate with school-age children due to the relatively short duration of construction activities. For these reasons, impacts on public services during construction are expected to be negligible.

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<b>Municipality</b>	<b>Number of Public Schools a/</b>	<b>Number of Sheriff's Departments b/</b>	<b>Number of Police Departments b/</b>	<b>Number of Fire and Rescue Departments c/</b>	<b>Number of Hospitals (Beds) d/</b>
Pima County	347	1	7	3	20 (2,627)
City of Tucson	312	1	2	1	19 (2,567)

a/ National Center for Education Statistics 2017.  
b/ USA Cops 2017.  
c/ USA Fire and Rescue 2017.  
d/ U.S. Hospital Info 2017.

Safety design measures and emergency response protocols are addressed in section B.10.

### **6.4 Traffic and Transportation**

Transportation systems in the Project area include a network of local, state, and federal roadways. The existing San Joaquin Meter Station is on San Joaquin Road, off State Highway 86, Ajo Highway. San Joaquin Road is a County-maintained, paved, two-lane, northwest-to-southeast road with an unnamed dirt and gravel access road leading to the San Joaquin Meter Station.

Ajo Highway is a paved, two-lane, east-to-west highway maintained by the Arizona Department of Transportation. The Average Annual Daily Traffic for San Joaquin Road in this area was 2,930 in 2014. The Sierrita Compressor Station would be located off Ajo Highway, which is a paved, two-lane, east-to-west highway with an Average Annual Daily Traffic level of 16,552 in 2009 (Pima Association of Governments 2014).

MLV 2 is on Bopp Road, which is off San Joaquin Road. Bopp Road is a County-maintained, paved, two-lane, east-to-west road that turns to graded dirt within 0.25 mile of its crossing of the Line No. 2177 right-of-way. An unnamed dirt and gravel road provides access to the MLV 2 removal site. The Average Annual Daily Traffic for Bopp Road was 5,846 in 2014.

These transportation routes would provide general access during construction and operation. Before construction commences, Sierrita would contact local officials regarding the minimization of short-term, localized impacts on roadways.

The movement of construction personnel, equipment, and materials to the work areas may slightly impact the transportation system in the Project area. Traffic associated with the Project is expected to be temporary and minimal, as construction working hours and commuting time to work are typically scheduled during off-peak hours. It is anticipated that workers would also be carpooling to the worksite in order to keep traffic

to a minimum. Appropriate traffic control measures, such as flagmen and signs, would be used as necessary to ensure safety of local traffic.

Sierrita would direct its construction contractors to comply with local weight limitations and restrictions on area roadways and to remove any soil that falls from equipment onto roadway surfaces. Additionally, Sierrita would coordinate with state and county officials to obtain all necessary permits for temporary construction-related impacts on roadways in the area. As a result of these measures, traffic is not expected to be significantly impacted by construction of the Project. Based on the temporary and short-term potential traffic interruptions, we conclude that impacts from Project-related construction traffic would be minor.

Sierrita estimates that only one new worker would be hired to operate the new facilities. However, occasional site visits by operations personnel would be required for routine maintenance. The impacts on traffic and transportation routes from personnel commuting to the new compressor station facility and occasional maintenance site visits would be negligible.

## **6.5 Environmental Justice**

EO 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires that environmental analyses of federal actions address any disproportionately high and adverse human health or environmental effects on minority and low-income communities.

In its guidance for the consideration of environmental justice under NEPA, the Council on Environmental Quality (CEQ) defines a “minority” as an individual who is American Indian or Alaskan Native, Black or African American, Asian, Native Hawaiian or Pacific Islander, or Hispanic or Latino. The CEQ characterizes a “minority population” as existing in an affected area where the percentage of defined minorities exceeds 50 percent of the population, or where the percentage of defined minorities in the affected area is meaningfully greater (10 percent higher) than the percentage of defined minorities in the general population or other appropriate unit of geographic analysis (CEQ 1997a, EPA 2016). Table 8 presents the population characteristics of the Project area. Project facilities would be in Census Tracts 44.24 and 44.34.

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Table 8 Project Area Demographics a/								
Community	Total Population (count)	White	African American	Native American and Alaskan Native	Asian	Native Hawaiian and Pacific Islander	Hispanic or Latino Origin b/	Total Minority
State of Arizona	6,641,928	78.4	4.2	4.4	3.0	0.2	30.3	21.5
Pima County	996,537	77.9	3.6	3.3	2.8	0.1	35.7	22.2
City of Tucson	528,374	3.9	5.1	2.7	2.9	0.2	42.5	26.2
Census Tract 44.24	4,185	1.2	1.3	1.4	0.0	0.0	48.2	18.8
Census Tract 43.34	8,735	5.1	4.1	3.8	1.2	0.3	69.9	44.8

a/ USCB 2015.  
b/ People who identify their origin as Hispanic or Latino may be of any race. Thus the percentage Hispanic or Latino should not be added to the race as percentage of population categories.

Neither of the census block groups within 0.25 mile of the Project have a minority population that exceeds the 50 percent minority threshold identified by EO 12898. Census Tract 43.34, does however, have a meaningfully greater (at least 10 percent higher) minority population than the state or the County, therefore would be considered to contain a minority population.

The CEQ guidance further recommends that low-income populations in an affected area should be identified using data on income and poverty from the U.S. Census Bureau (CEQ 1997b). Low-income populations are populations where households have an annual household income below the poverty threshold, which is currently \$24,600 for a family of four. Table 9 provides the percentage of population living below the poverty level in the Project area. The percentage of population living below the poverty level in Census Tract 43.34 was less than the state and county levels while only slightly above the state and county levels in Census Tract 44.24, so no low-income populations are present in the Project area.

As described throughout this EA, the proposed Project would not have a significant adverse impact on the environment or on individuals living in the Project area. While a new compressor station would be constructed and operated in Census Tract 43.34, the facility would be located in an open, undeveloped area more than one mile from the nearest residence. Therefore, the Project would not have a disproportionately high adverse environmental or human health impact on minority or low-income residents.

<b>Community</b>	<b>Percent of Population Below Poverty Level</b>
State of Arizona	18.2
Pima County	19.3
City of Tucson	25.3
Census Tract 44.24	20.3
Census Tract 43.34	15.6
a/ USCB 2015.	

## **7. Cultural Resources**

Section 106 of the National Historic Preservation Act, as amended, requires the FERC to take into account the effect of its undertakings on properties listed, or eligible for listing, on the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation an opportunity to comment. Sierrita, as a non-federal party, is assisting the FERC in meeting our obligations under Section 106 and the FERC’s implementing regulations at 36 CFR 800.

Sierrita completed a cultural resources survey for the compressor station portion of the Project, and provided the resulting survey report to the FERC and Arizona State Historic Preservation Office (SHPO). The survey employed surface inspection, and included both archaeological and architectural resources. The survey covered the compressor station and the access road. The San Joaquin Meter Station and MLV 2 were previously surveyed as part of the Sierrita Pipeline Project (Docket No. CP13-73-000) and were not resurveyed.

As a result of the survey, no new or previously recorded archaeological sites were identified. One isolated occurrence (consisting of a scatter of cans) was identified and recommended as not eligible for the NRHP. State Route 86, previously determined eligible for the NRHP, was identified immediately north of the proposed Sierrita Compressor Station site. This segment of the road has been maintained and upgraded and was therefore recommended as a non-contributing portion. Further, it lies outside the construction area and would not be impacted. On September 5, 2017, the Arizona SHPO indicated that no historic properties would be affected by the Project. We agree with the SHPO and find that the Project would not affect historic properties.

Sierrita contacted the following Native American tribes, providing a Project description, mapping, and a summary of the survey results: Ak-Chin Indian Community; Fort McDowell Yavapai Nation; Gila River Indian Community; Hopi Tribe; Pascua Yaqui Tribe; Salt River Pima-Maricopa Indian Community; Tohono O’odham Nation; Yavapai Apache Nation; and Zuni Pueblo. Sierrita also followed-up with the tribes.

In a letter dated August 24, 2017, the Gila River Indian Community concurred with a finding on no historic properties affected. In letters dated August 24 and October 11, 2017, the Ak-Chin Indian Community deferred to the Tohono O’odham Nation. On September 29, 2017, the Yavapai-Apache Nation indicated it had no concerns or comments. On October 13, 2017, the Tohono O’odham Nation indicated it had no concerns, but requested additional information, which Sierrita provided. On October 4, 2017, the Salt River Pima-Maricopa Indian Community provided information on faunal remains. On August 30, 2017, the Hopi Tribe concurred with the Project. No other comments have been received. We sent our NOI to these same tribes. No responses to our NOI have been received from the tribes.

Sierrita also provided the survey report to the Arizona State Museum, City of Tucson, and Pima County. No comments on the report have been received.

In response to our NOI, Pima County (letter dated March 5, 2018) indicated that no county-owned land or NRHP-eligible cultural resources would be affected by the Project. The EPA (letter dated March 5, 2018) recommended the EA discuss tribal consultation and the outcome of consultation. No other responses have been received.

Sierrita provided a plan to address the unanticipated discovery of cultural resources and human remains during construction. We requested a minor revision to the plan. Sierrita provided a revised plan which we find acceptable. On October 10, 2017, the SHPO indicated it had no comments on the plan.

### **8. Air Quality**

The term “air quality” refers to relative concentrations of pollutants in the ambient air. The subsections below describe air quality concepts that are applied to characterize air quality and to determine the significance of increases in air pollution resulting from construction and operation of the Project.

#### **8.1 Existing Environment**

The Project area is within Pima County, Arizona, approximately 9 miles southwest of Tucson. The climate in Pima County is characterized by hot summers (average high of 99 °F in June) and generally mild to cool winters (average low of 33 °F in December). The Project region experiences an average annual precipitation of around 11.4 inches of rain, much of which falls within short time spans during thunderstorms accompanied by strong wind events (National Climatic Data Center 2017).

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA oversees the implementation of the CAA and establishes National Ambient Air Quality Standards (NAAQS) to protect human health and welfare.<sup>8</sup>

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<sup>8</sup> The current NAAQS are listed on EPA's website at <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

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NAAQS have been developed for seven “criteria air pollutants” including nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), ozone, sulfur dioxide (SO<sub>2</sub>), particulate matter less than or equal to 2.5 microns in aerodynamic diameter (PM<sub>2.5</sub>), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM<sub>10</sub>), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (EPA 2017e). At the state level, the State of Arizona has adopted the NAAQS by reference and does not have any additional standards. Additional pollutants, such as volatile organic compounds (VOC) and hazardous air pollutants (HAP), are emitted during fossil fuel combustion. These pollutants are regulated through various components of the CAA that are discussed further in section 8.2, below.

The EPA and state and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the United States. The data are then averaged over a specific time period and used by regulatory agencies to determine compliance with the NAAQS and to determine if an area is in attainment (criteria pollutant concentrations are below the NAAQS), nonattainment (criteria pollutant concentrations exceed the NAAQS) or maintenance (area was formerly nonattainment and is currently in attainment). Pima County is designated as being in attainment for all criteria pollutants (EPA 2017g).

Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. Carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide are GHGs that are emitted during fossil-fuel combustion. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHGs under the CAA. GHG emissions due to human activity are the primary cause of increased atmospheric concentration of GHGs since the industrial age and are the primary contributor to climate change. The primary GHGs that would be emitted by the Project are CO<sub>2</sub>, methane, and nitrous oxide. During construction and operation of the Project, these GHGs would be emitted from the majority of construction and operational equipment, as well as from fugitive methane leaks from the pipeline and aboveground facilities.

Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents (CO<sub>2</sub>e). The CO<sub>2</sub>e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG’s ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO<sub>2</sub>. Thus, CO<sub>2</sub> has a

GWP of 1, methane has a GWP of 25, and nitrous oxide has a GWP of 298 (EPA 2017c).<sup>9</sup>

## **8.2 Regulatory Requirements**

The provisions of the CAA that are applicable to the Project are discussed below. See section B.8.5 for estimated potential operational emissions for the Sierrita Compressor Station, and comparison with the major regulatory thresholds.

### Prevention of Significant Deterioration and Nonattainment New Source Review

Proposed new or modified air pollutant emission sources must undergo a New Source Review (NSR) prior to construction or operation. Through the NSR permitting process, state and federal regulatory agencies review and approve project emissions increases or changes, emissions controls, and various other details to ensure air quality does not deteriorate as a result of new or modified existing emission sources. The two basic groups of NSR are major source NSR and minor source NSR. Major source NSR has two components: Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR). PSD, NNSR, and minor source NSR are applicable to projects depending on the size of the proposed project, the projected emissions, and if the project is proposed in an attainment area or nonattainment/maintenance area. The Pima County Department of Environmental Quality (Pima County DEQ) administers the PSD and NNSR permitting programs in Arizona. PSD regulations define a major source as any source type belonging to a list of 28 specifically listed source categories that have a potential to emit 100 tons per year (tpy) or more of any regulated pollutant or 250 tpy for sources not among the listed source categories (such as natural gas compressor stations). These emission rate levels are referred to as the PSD major source thresholds.

The Sierrita Compressor Station would not exceed the PSD major source thresholds for any pollutants and is considered a minor source located in an attainment area. Therefore, the proposed construction and operation of the Sierrita Compressor Station does not trigger PSD or NNSR Review.

### Title V Permitting

Title V is an operating air permit program run by each state for each facility that is considered a “major source.” The major source threshold for an air emission source is 100 tpy for criteria pollutants, 10 tpy for any single HAP and 25 tpy for total HAPs. The

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<sup>9</sup> These GWPs are based on a 100-year time period. We have selected their use over other published GWPs for other timeframes because these are the GWPs the EPA has established for reporting of GHG emissions and air permitting requirements. This allows for a consistent comparison with these regulatory requirements.

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proposed Sierrita Compressor Station does not meet the definition of a major source and would therefore not require a Title V permit.

### New Source Performance Standards

The EPA promulgates New Source Performance Standards (NSPS) for new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology for stationary source types or categories as specified in the applicable provisions discussed below. NSPS also establishes fuel, monitoring, notification, reporting, and recordkeeping requirements.

NSPS Subpart OOOOa sets emission standards and compliance schedules for VOC and SO<sub>2</sub> emissions for new, modified, or reconstructed wet seal centrifugal compressor and reciprocating compressors; limits for bleed rates for natural-gas driven pneumatic controllers; requires work practice standards for compressor rod packing compressor units; and sets fugitive leak monitoring and repair requirements for compressor stations. Portions of Subpart OOOOa would apply to the Sierrita Compressor Station, further discussed in section B.8.5, below.

NSPS Subpart JJJJ sets emissions standards for nitrogen oxides (NO<sub>x</sub>), CO, and VOC for emergency and non-emergency engines. Subpart JJJJ would apply to the proposed emergency generator at the Sierrita Compressor Station.

NSPS Subpart KKKK applies to stationary combustion turbines with a heat input at peak load equal to or greater than 10 million British thermal units per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005. The new turbine at the Sierrita Compressor Station would have a heat input value of greater than 50 million British thermal units per hour and thus is subject to Subpart KKKK.

Sierrita would comply with the all applicable NSPS standards and requirements, as necessary and as stated in the air permit issued by the Pima County DEQ for the Sierrita Compressor Station.

### National Emission Standards for Hazardous Air Pollutants

The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of National Emission Standards for Hazardous Air Pollutants. The National Emission Standards for Hazardous Air Pollutants regulate HAP emissions from specific source types at major or area sources of HAPs by setting emission limits, monitoring, testing, record keeping, and notification requirements. The Sierrita Compressor Station would have the potential to emit less than the combined HAP total

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threshold of 25 tpy and single HAP threshold of 10 tpy, and is therefore considered an area (and not major) source of HAPs.

Subpart ZZZZ applies to all reciprocating internal combustion engines at area sources and would therefore apply to the emergency generator at the Sierrita Compressor Station. Sierrita would comply with Subpart ZZZZ by meeting the requirements of NSPS JJJJ.

### General Conformity

The lead federal agency must conduct a conformity analysis if a federal action would result in the generation of emissions that would exceed the conformity threshold levels of the pollutant(s) for which a county is designated nonattainment or maintenance. Estimated emissions for the Project are not subject to review under the general conformity thresholds because the Project is in an area classified as attainment/unclassifiable for all criteria pollutants (EPA 2017g).

### Mandatory Greenhouse Gas Reporting Rule

The EPA's Mandatory Reporting of Greenhouse Gases Rule requires reporting from applicable sources of GHG emissions if they emit greater than or equal to 25,000 metric tons of GHG (as CO<sub>2</sub>e) in 1 year. The Mandatory Reporting Rule does not require emission control devices and is strictly a reporting requirement for stationary sources based on actual emissions. Although the rule does not apply to construction emissions, we have provided GHG construction emission estimates, as CO<sub>2</sub>e, for accounting and disclosure purposes in table 10 below. Operational GHG emission estimates for the Project are presented, as CO<sub>2</sub>e, in section B.8.5. Based on the emission estimates presented, actual GHG emissions from operation of the Sierrita Compressor Station would likely exceed the 25,000 tpy reporting threshold and reporting requirements for the Mandatory Reporting Rule would therefore be applicable to the Project.

### Methane Challenge Program

Kinder Morgan Inc. (Kinder Morgan), the operating partner of Sierrita, is a charter member of Our Nation's Energy Future (ONE Future). In August 2016, the EPA officially approved the ONE Future Commitment Option under the Natural Gas STAR Methane Challenge Program. Sierrita is among the Kinder Morgan pipeline companies participating in the Methane Challenge Program through the ONE Future Option. As part of this program, Sierrita would comply with all applicable requirements of NSPS Subpart OOOOa (further discussed in section B.8.5 below), and implement techniques and practices found in Kinder Morgan's Methane Challenge Implementation Plan to reduce

transmission pipeline blowdown (methane) emissions, to the extent feasible while maintaining pipeline safety and integrity and minimizing adverse customer impacts.

### **8.3 State Air Quality Regulations**

In addition to federal standards, the Pima County DEQ establishes additional standards for odors, visible emissions, fugitive dust, particulate materials, off-road machinery, roadway and site cleaning machinery, organic solvents and other organic materials, and new source performance standards (Pima County 2017d). Prior to commencing construction, the Arizona Revised Statutes (ARS) 49-402 and 49-112 require issuance of a state air permit. Sierrita submitted its state air permit for the proposed Sierrita Compressor Station to the Pima County DEQ on July 24, 2017. The Pima County DEQ issued an Air Quality Permit for the station on November 14, 2017.

Pursuant to the Air Quality Permit issued by the Pima County DEQ, the Project would be subject to the following requirements under the Pima County Code Section 17.16: odor limiting standards; visibility limiting standards; fugitive dust producing activities; vacant lots and open spaces; roads and streets; particulate materials; off-road machinery; roadway and site cleaning machinery; and organic solvents and other organic materials. Sierrita would also be required to obtain a separate Pima County DEQ-issued Fugitive Dust Activity Permit.

### **8.4 Construction Emissions Impacts and Mitigation**

Project construction would result in temporary, localized emissions that would last the duration of construction activities (estimated at 9 months). Exhaust emissions would be generated by the use of heavy equipment and trucks powered by diesel or gasoline engines. Exhaust emissions would also be generated by delivery vehicles and construction workers commuting to and from work areas.

Construction activities would also result in the temporary generation of fugitive dust due to land clearing and grading, ground excavation, and driving on unpaved roads. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic and types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity.

Construction emission estimates are based on the fuel type and anticipated frequency, duration, capacity, and levels of use of various types of construction equipment. Construction emissions were estimated using AP-42 data (EPA 2017d), composite off-road emission factors from the California Air Resources Board's Off-Road Model, the South Coast Air Quality Management District's EMFAC 2007 (v2.3) model emission factors, the Western Regional Air Partnership Fugitive Dust Handbook, the Resources Board and Air Quality Management District's GHG emission estimation methodologies and/or models, and GWP factors found in 40 CFR 98.

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Table 10 below provides the total Project construction emissions, including exhaust emissions and fugitive dust from on-road and off-road construction equipment and vehicles, exhaust emissions from construction worker vehicles for commuting and vehicles used to deliver equipment/materials to the site.

<b>Table 10 Construction Emissions (tons per construction duration)</b>								
<b>Activity</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>Total HAP a/</b>	<b>CO<sub>2e</sub></b>
Construction equipment (off-road)	0.76	0.42	0.10	0.03	0.03	<0.01	0.10	97
Worker and on-road construction equipment commuting	0.19	2.03	0.23	1.94	0.27	<0.01	0.23	379
Equipment/material delivery	0.20	0.08	0.01	0.01	0.03	0.02	0.01	46
Fugitive dust from construction operations	-	-	-	0.82	0.08	-	-	-
<b>Total</b>	<b>1.16</b>	<b>2.52</b>	<b>0.34</b>	<b>2.90</b>	<b>0.40</b>	<b>&lt;0.03</b>	<b>0.34</b>	<b>522</b>
a/ All estimated VOC is assumed to be HAP.								

Construction emissions shown in table 10 are not expected to result in a violation or degradation of ambient air quality standards. Sierrita would minimize construction exhaust emissions by maintaining vehicles and equipment in accordance with manufacturers’ specifications and complying with applicable vehicle emission standards, In order to mitigate and minimize fugitive dust, Sierrita would implement measures contained in the Fugitive Dust Activity Permit issued by the Pima County DEQ.

Sierrita would also employ the following measures within its Fugitive Dust Control Plan to mitigate air-related impacts during Project construction (some or all of which may also be included in its Fugitive Dust Activity Permit):

- using water to control dust from construction operations, grading of roads, or land clearing;
- applying water on dirt access roads, material stockpiles and other surfaces that may give rise to airborne dusts;
- maintaining access roads;
- promptly removing earth or other material from paved streets onto which earth or other material has been transported by trucking or earthmoving equipment, erosion by water, or other means;
- covering open hauling trucks with tarps, as necessary;

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- using paved roads for construction vehicle traffic, wherever practical;
- limiting vehicle speeds as required to reduce dust generation;
- maintaining vehicles and equipment per manufacturers' specifications; and
- complying with applicable vehicle emissions standards.

Additionally, Sierrita would comply with all Fugitive Dust Requirements specified within Section 6 of its Air Quality Permit for the Sierrita Compressor Station.

The above measures and requirements that Sierrita would employ during Project construction and operation would ensure that impacts of fugitive dust would be minimized, including dust that may be transported into established neighborhoods. Due to the distance between Project construction sites and the nearest residences, we anticipate that dust impacts on these residences, combined with the above-proposed mitigation, would be minimal.

Construction emissions would occur over the duration of construction activity and would be emitted at different times throughout the Project area. Construction emissions would be relatively minor and would result in short-term, localized impacts in the immediate vicinity of construction work areas. With the mitigation measures proposed by Sierrita, we conclude air quality impacts from construction would be temporary and would not result in a significant impact on local or regional air quality.

### **8.5 Operational Emissions Impacts and Mitigation**

The Project would generate air emissions during operation of the Sierrita Compressor Station and modified San Joaquin Meter Station. Operation of the compressor station and modified meter station would result in fugitive emissions from minor leaks associated with piping components and valves. Operation of the Sierrita Compressor Station would result in emissions associated with the following equipment:

- compressor turbine;
- emergency generator engine;
- fugitive emission releases; and
- emergency shutdown and other maintenance events.

Table 11 provides estimates of the potential annual emissions at the Sierrita Compressor Station. These estimated emissions are based on manufacturers' data, AP-42 emission factor data (EPA 2017d), GRI-HAPCalc version 3.01, 40 CFR 98, and assumptions that the station turbine operates at full capacity for an entire year (i.e., 8,760 hours per year). The Sierrita Compressor Station would not likely operate at full load every day; therefore, table 11 provides conservative, worst-case estimates of emissions.

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Table 11 Potential Operational Emissions for the Sierrita Compressor Station (tons per year)								
Emission Source	NO <sub>x</sub>	CO	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	Total HAP	CO <sub>2e</sub>
Turbine	31.01	31.49	18.05	3.55	3.55	1.83	0.52	62,923
Emergency engine	1.23	2.46	0.61	0.095	0.095	<0.01	0.16	230
Fugitive emissions <i>a/</i>	-	-	1.28	-	-	-	0.10	775 <i>b/</i>
Compressor unit blowdowns	-	-	0.63	-	-	-	<0.01	1,085
<b>Total <i>b/</i></b>	<b>32.2</b>	<b>34.0</b>	<b>20.6</b>	<b>3.65</b>	<b>3.65</b>	<b>1.83</b>	<b>0.78</b>	<b>65,009</b>
<i>Permitting Thresholds (tons per year)</i>								
<i>PSD Major Source</i>	250	250	250	250	250	250	<i>n/a</i>	100,000
<i>Title V Major Source (for areas in attainment)</i>	100	100	100	<i>n/a <b>d/</b></i>	<i>n/a <b>d/</b></i>	100	25	100,000
<i>a/</i> These fugitive emission totals also include minor releases from the valves and connections associated with the proposed new meter installation at the San Joaquin Meter Station; however, fugitive releases from the existing meter station are not included. <i>b/</i> Chiefly consisting of methane emissions. <i>c/</i> Figures are rounded; columns may not sum to total. <i>d/</i> The Title V major source regulatory threshold for total suspended particulate (total PM, including PM <sub>10</sub> and PM <sub>2.5</sub> ) is 100 tons per year.								

Compressor unit blowdowns (gas venting) can occur during initial construction/testing, operational startup and shutdown, maintenance activities, and during emergency purposes. Emission estimates of compressor unit blowdowns are provided in table 11 above. During normal operations, blowdowns resulting from compressor startup/shutdown and during maintenance activities would be infrequent.

Fugitive emissions are minor leaks that would occur at valves, seals, and other piping components, and from operation and maintenance activities at the Sierrita Compressor Station. Fugitive emission estimates are provided in table 11 above. As specified in detail within the air quality permit issued by the Pima County DEQ on November 14, 2017 for the proposed Sierrita Compressor Station, Sierrita must comply with the standards in 40 CFR 60 Subpart OOOOa, which specify leak detection and repair programs for various components within the compressor station. Since the centrifugal compressor would use dry seals, the compressor is not subject to Subpart OOOOa. The condensate tank at the Sierrita Compressor Station would emit VOC at rates less than the threshold triggering Subpart OOOOa requirements and would not be subject to this subpart.

### Air Quality Modeling

Sierrita completed an air quality dispersion model (model) to determine the impacts of emissions from the Sierrita Compressor Station on regional air quality. The analysis was conducted using the EPA AERMOD model version 16216R and methodology outlined in EPA and ADEQ guidance. The analysis assumed that the facilities would be running at full capacity (i.e., 8,760 hours per year at maximum

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emission rates). The model estimates the maximum predicted concentrations of criteria pollutants emitted from the compressor station using conservative assumptions. Background concentrations from the nearest air monitors were then added to the maximum predicted concentrations from the model and the total was compared to the NAAQS. The model results are provided in table 12 below.

<b>Pollutant</b>	<b>Averaging Period</b>	<b>Existing Ambient Background Concentration <i>a/</i></b>	<b>Maximum Modeled Concentration</b>	<b>Combined Background and Maximum Modeled</b>	<b>NAAQS</b>
CO	1-hour	1.00	1,917	1,918	40,000
	8-hour	0.80	1,263	1,264	10,000
NO <sub>2</sub> <i>b/</i>	1-hour	36.33	51.55	87.88	188
	Annual	11.23	4.07	15.30	100
PM <sub>2.5</sub>	24-Hour	11.00	21.25	32.25	35
	Annual	5.07	0.30	5.37	12
PM <sub>10</sub>	24-Hour	72.00	24.93	96.93	150
SO <sub>2</sub>	1-Hour	4.00	0.38	4.38	196
	3-hour	9.60	0.80	10.40	1,300

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
*a/* Background concentrations obtained from the Children's Park National Core monitor ID 04-019-1028 and the South Tucson monitor ID 04-019-1001, both registered as state and local ambient air quality monitoring stations (Pima County Department of Environmental Quality 2016, EPA 2017f).  
*b/* NO<sub>2</sub> is converted from total nitrogen oxides (NO<sub>x</sub>) by multiplying the modeled emission rate by 0.8 in accordance with EPA's Ambient Ratio Method (EPA 2011).

The results in table 12 indicate that the combined total of existing background and maximum modeled concentrations are less than the applicable NAAQS for all pollutants. Therefore, the Project would not cause or significantly contribute to a degradation of ambient air quality. The Project would result in continued compliance with the NAAQS, which are established to be protective of human health, including sensitive populations such as children, the elderly, and asthmatics.

### Class I Areas

Under the PSD program, 156 mandatory federal Class I areas are currently designated by the EPA to protect certain areas (e.g., wilderness areas, national parks, national forests) to ensure that deterioration of existing air quality-related values, such as visibility, is minimized in these areas. Relative to Class II and III areas, Class I areas have the most restrictive allowable PSD air quality increments. For a new major source or major modification located within 62 miles (100 kilometers) of Class I area, the

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facility is required to notify the appropriate federal land manager and assess the impacts of that project on the nearby Class I area.

Federal land managers are required under the CAA Amendments of 1977 to “protect the natural and cultural resources of Class I areas from the adverse impacts of air pollution.” In order to do so, federal land managers must identify or define the air quality related values (AQRV) within their jurisdiction. An AQRV is a resource that may be adversely affected by a change in air quality. The resource may include visibility or a specific scenic, cultural, physical, biological, ecological, or recreational resource identified by the federal land manager for a particular area. Federal agency actions must not adversely affect AQRVs at any nearby Class I area. Currently, all federal land managers use Interagency Monitoring of Protected Visual Environments (IMPROVE) monitoring data to determine conditions for visibility in federal land manager areas.

According to the National Park Service, Saguaro National Park’s AQRVs are known to be or are likely to be sensitive to air pollution and maintains an IMPROVE monitor within the park to record standard visual range, or visibility, which is the distance that can be seen on a given day. The specific sensitive AQRVs listed for Saguaro National Park are visibility, vegetation, surface waters, and soils (National Park Service 2015). From 2002 to 2015, the standard visual range for the Saguaro National Park West IMPROVE monitor ranged between 181 and 202 miles (291 – 325 kilometers) on the best visibility days, between 100 and 160 miles (161 – 257 km) on intermediate visibility days, and less than 70 miles (113 kilometers) on the worst visibility days (IMPROVE 2017).

In 2010, the U.S. Forest Service, National Park Service, and FWS collaborated on the publication of the Federal Land Managers’ Air Quality Related Values Work Group (FLAG) Report, which offers guidance on the protection of AQRVs and addresses assessments for sources proposed near Class I airsheds (U.S. Forest Service et al. 2010). The primary focus of FLAG is the NSR program, particularly PSD. In accordance with the FLAG report, the Project is regarded as being near a Class I area by virtue of being within 9 miles (14.5 kilometers) of Saguaro National Park.

The Sierrita Compressor Station would be a minor source of emissions well below PSD major source thresholds as shown in table 11 above. In addition to Saguaro National Park discussed above, other Class I areas within 150 kilometers of the proposed Sierrita Compressor Station are the Superstition and Galiuro Wilderness Areas, approximately 140 and 91 kilometers away, respectively.

Sierrita performed a PSD Class I increment analysis using the modeled air impact data for the Sierrita Compressor Station, and found the maximum impact at Saguaro National Park to be no more than 0.5 percent of the PSD Class I increment for all

pollutants. Therefore, the Sierrita Compressor Station would have negligible air quality impacts on Saguaro National Park.

Using guidance provided by the FLAG Report, Sierrita also performed a Q/D screening analysis for the Superstition and Galiuro Wilderness Areas, and found Q/D (the emission rate of each pollutant in tons per year divided by the distance of each Class I area from the proposed Sierrita Compressor Station site) to be less than 1.0 in both cases, indicating a negligible impact on these areas.<sup>10</sup>

### 9. Noise

Noise is generally defined as sound with intensity greater than the ambient or background sound pressure level. Construction and operation of the Project would affect overall noise levels in the Project area. The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetation cover. Two measures that relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level ( $L_{eq}$ ) and day-night sound level ( $L_{dn}$ ). The  $L_{eq}$  is an A-weighted sound level containing the same energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The  $L_{dn}$  takes into account the duration and time the noise is encountered. Specifically, the  $L_{dn}$  is the  $L_{eq}$  plus a 10 decibel on the A-weighted scale (dBA) penalty added to account for people's greater sensitivity to sound levels during late evening and early morning hours (between the hours of 10:00 p.m. and 7:00 a.m.). The A-weighted scale is used to assess noise impacts because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise (Bies and Hansen 1988).

#### 9.1 Federal Noise Regulations

In 1974, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA 1974). This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated that an  $L_{dn}$  of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project at noise sensitive areas (NSA). NSAs are defined as homes, schools, churches, or any location where people reside or gather. FERC requires that the noise attributable to any new or modified compressor station during full load operation not exceed an  $L_{dn}$  of 55 dBA at any NSAs. Due to the 10 dBA nighttime penalty added prior to the logarithmic

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<sup>10</sup> A Q/D value of 10 or greater would indicate the need to perform a PSD increment analysis such as that performed for Saguaro National Park.

calculation of the  $L_{dn}$ , for a facility to meet the 55 dBA  $L_{dn}$  limit, it must be designed such that actual constant noise levels on a 24-hour basis do not exceed 48.6 dBA  $L_{eq}$  at any NSA.

The Pima County Code of Ordinances includes restrictions on the time of day during which certain types of construction may occur; however, no such limits apply to the areas where Project construction would occur (Pima County 2017e). We identified no other state or local noise regulations applicable to the Project.

## **9.2 Ambient Noise Conditions**

The proposed Sierrita Compressor Station would be in a predominantly rural and undeveloped area in Pima County. The area immediately surrounding the proposed compressor station consists of agricultural land, undeveloped land administered by AZBOR, and areas of gas-oil development. On August 14 and 15, 2017, Sierrita completed an ambient sound survey to measure the existing sound levels during the daytime and nighttime at the nearest NSAs to the Project site. On March 1, 2018, Sierrita also performed an ambient sound survey for the existing San Joaquin Meter Station. The results of the ambient sound surveys are provided in table 12.

## **9.3 Construction Noise Impacts and Mitigation**

Noise would be generated during construction of the Project. Construction activities in any one area could last from several weeks to several months on an intermittent basis. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local. Noise mitigation measures that Sierrita would employ during construction include restricting construction activities to daylight hours, equipping vehicles and equipment with mufflers, and maintaining vehicles and equipment in accordance with manufacturers' recommendations. Due to the distance of construction sites from the nearest NSAs, we conclude that noise impacts from Project construction would be minimal.

## **9.4 Operation Noise Impacts and Mitigation**

The proposed compressor station would generate noise on a continuous basis (i.e., up to 24 hours per day) when operating. The noise impact associated with the compressor station would attenuate with distance. Noise generated at the compressor station would be from the following operational noise sources:

- turbine exhaust silencer system and associated exhaust stack;
- turbine air intake filter system with an in-duct intake silencer;
- outdoor lube oil cooler serving the compressor;
- gas aftercooler (multi-fan air-cooled heat exchanger);
- aboveground piping and piping components; and

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- station blowdown events.

The results of the ambient sound survey were combined with the predicted noise impacts from the proposed compressor station equipment to determine the noise impacts from operation of the compressor station at each NSA. The noise survey also incorporates noise control measures for operational noise. Noise control measures at the Sierrita Compressor Station would include acoustic specifications and other design requirements for the compressor station building walls and roof, wall air supply fans, turbine exhaust silencer, aboveground piping, lube oil cooler, turbine air intake silencer, gas aftercooler, and compressor blowdown silencer. Sierrita commits to employing all of these recommended noise mitigation measures, specified in detail within section 8.0 of Hoover & Keith Inc. Report No. 3615, with the exception of the recommendation to bury all station piping to the extent feasible. Sierrita states that the Sierrita Compressor Station’s design requires that some segments of piping remain above ground. However, as much as feasible, remaining station piping would be buried. The recommended noise control measures would also serve to minimize vibration. The results of the operational noise analysis are provided below in table 13.

The operational noise analysis in table 13 indicates that the proposed compressor station’s noise contribution at nearby NSAs would likely not be perceptible at the closest NSAs.

Blowdown events generate noise at compressor stations and occur when pressure in the compressor casing, piping, or the entire station must be released in a controlled manner. Blowdown events cause a temporary increase in sound levels that would typically last for about 1 to 5 minutes. Sierrita would install blowdown silencers specified to meet an A-weighted sound level of 70 dBA at 300 feet. This mitigated blowdown sound level is predicted to result in a noise level of approximately 37 dBA at the nearest NSA, equal or below the measured ambient background noise levels summarized in table 13.

<b>NSA</b>	<b>Type</b>	<b>Distance and Direction from Station Site Center</b>	<b>Ambient Background L<sub>dn</sub> Noise Levels (dBA)</b>	<b>Predicted L<sub>dn</sub> Noise Level Contribution from Station (dBA)</b>	<b>Predicted Total L<sub>dn</sub> Noise Level (dBA)</b>	<b>Predicted Change in L<sub>dn</sub> from Existing Ambient (dBA)</b>
NSA 1	residences	5,700 feet north	38.8	37.7	41.3	2.5
NSA 2	residences	7,500 feet southwest	37.0	33.5	38.6	1.6

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While the analysis summarized in table 13 above shows that noise impacts at the NSAs from the compressor station would be well below our 55 dBA requirement, to verify compliance with the FERC's noise standards, **we recommend that:**

- **Sierrita should file with the Secretary a noise survey for the Sierrita Compressor Station no later than 60 days after placing the station into service. If a full power load condition noise survey is not possible, Sierrita should file an interim survey at the maximum possible power load within 60 days of placing the station into service and file the full power load survey within 6 months. If the noise attributable to operation of all equipment at the station under interim or full power load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSA, Sierrita should:**
  - a. **file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;**
  - b. **install additional noise controls to meet that level within 1 year of the in-service date; and**
  - c. **confirm compliance with this requirement by filing a second full power load noise survey with the Secretary for review and written approval by the Director of OEP no later than 60 days after it installs the additional noise controls.**

Sierrita also performed an operational noise analysis for its proposed modified San Joaquin Meter Station. Results of that analysis included a noise survey of the existing station, which found the station's full load  $L_{dn}$  noise contribution at the nearest NSA, approximately 450 feet away, to be approximately 49 dBA. The noise analysis also concluded that the installation of the proposed modifications should not affect the current sound level attributable to the meter station since no additional noise-generating equipment, such as gas flow-pressure regulators or engines, would be installed at the station. For this reason, we, as well as Sierrita's acoustic consultant, conclude that no equipment sound requirements would be required for the Project modifications at the station. Therefore, we conclude that the Project modifications to the San Joaquin Meter Station would not add to existing noise impacts on NSAs.

While existing noise levels would be impacted by operation of the Sierrita Compressor Station and modified San Joaquin Meter Station, based on our analyses, Sierrita's proposed noise mitigation measures, and our recommendation stated above, we conclude that the Project would not result in significant noise impacts on any nearby NSAs.

## **10. Reliability and Safety**

The pressurization of natural gas at a compressor station involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a leak, or rupture at the facility. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The compressor station must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent facility accidents and failures.

Subparts within 49 CFR 192 address compressor stations, service lines, customer meters, and valves. The facilities must be designed, constructed, and operated to meet or exceed these specifications. Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in an emergency.

Sections 192.163 – 192.173 of 49 CFR specifically addresses design criteria for compressor stations, including specific design requirements for: location, building design, emergency shut-down, pressure control, ventilation, and alarms. In addition, first aid, and safety equipment would be maintained in accordance with Occupational Safety and Health Administration regulations in 29 CFR 1910. The emergency shut-down system at the compressor station would comply with DOT regulations found in 49 CFR 192.167 and with additional safety systems addressed in sections 192.169 and 192.171.

Additionally, the operator must establish a continuing education program to enable the public, government officials, and others to recognize an emergency at the facility and report it to appropriate public officials. Sierrita would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

We received comments from the EPA and the Altar Valley Conservation Alliance regarding the Project's objective to increase the volume capacity of natural gas flowing through the existing Sierrita Line No. 2177, the changes in peak operating conditions that would result, and how this may increase the pressure within the pipeline, and potentially impact the safety and integrity of the pipeline. After the Project's completion, the existing Line No. 2177 would be required to meet the same DOT safety standards for the Sierrita pipeline as described in the Environmental Impact Statement issued for Sierrita Line. No. 2177 in Docket Nos. CP13-73-000 and CP13-74-000. Sierrita states that once the Project facilities are installed, the capacity of Line No. 2177 would increase from the current capacity of 200,846 Dth/day up to 523,640 Dth/day on a daily basis and up to 631,389 Dth/day under more favorable conditions. However, Line No. 2177 would continue to operate within its design specifications and below the maximum allowable

operating pressure (1,440 psig) of the pipeline, and the increased volumes through the line made available by the Project would not affect the ability of the pipeline to be operated in compliance with all applicable requirements within 49 CFR 192.

Sierrita's construction and operation of the Sierrita Compressor Station; associated suction and discharge piping, relocated MLV 2 and pig traps, and other appurtenances; and modified San Joaquin Meter Station would represent a minimum increase in risk to the nearby public and we are confident that with implementation of the required design criteria for the design of the Sierrita Compressor Station and associated facilities, that all Project components would be constructed and operated safely.

## **11. Cumulative Impacts**

In accordance with NEPA and with FERC policy, we identified other actions in the vicinity of the Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by the CEQ, a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time. The CEQ guidance states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions (CEQ 1997). In this analysis, we consider the impacts of past projects within defined areas of influence as part of the affected environment (environmental baseline) which were described and evaluated in the preceding environmental analysis. However, present effects of past actions (e.g., the permanent right-of-way for the existing Sierrita Line No. 2177) that are relevant and useful are also considered. Table 14 summarizes the resource-specific geographic scopes that were considered in this analysis.

The EPA recommended that we follow the cumulative impacts analysis methodology *Guidance for Preparers of Cumulative Impact Analysis* developed jointly by the EPA, the Federal Highway Administration, and the California Department of Transportation<sup>11</sup> to assess cumulative impacts for the proposed Project. We have evaluated the cumulative impacts of the proposed Project consistent with other recent assessments issued by the Commission, and in accordance with recommended CEQ and EPA methodologies (CEQ 1997, EPA 1999). The methodology that EPA recommends is informed by the same CEQ and EPA cumulative impacts guidance on which the Commission bases its analyses. Therefore, although EPA's recommended approach for evaluation of cumulative impacts is based on a California Environmental Quality Act definition of cumulative impacts (California Department of Transportation 2005), we do not find that elements of EPA's recommended cumulative effects methodology differ

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<sup>11</sup> See [http://www.dot.ca.gov/ser/cumulative\\_guidance/approach.htm](http://www.dot.ca.gov/ser/cumulative_guidance/approach.htm).

## B. ENVIRONMENTAL ANALYSIS

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from our approach to such an extent as to change our overall conclusion of cumulative impact on each affected resource.

Our cumulative effects analysis focuses on potential impacts from the proposed Project on resource areas or issues where the incremental contribution could result in cumulative impacts when added to the potential impacts of other actions. To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affects a resource also potentially affected by the Project;
- causes this impact within all, or part of, the Project area defined by the resource-specific geographic scope; and
- causes this impact within all, or part of, the time span of the proposed Project's estimated impacts.

As described in our analysis above within section B of this EA, constructing and operating the Project would temporarily and permanently affect the environment. The Project would affect geology, soils, water resources, floodplains, vegetation, wildlife, socioeconomics, some land uses, visual resources, air quality, and noise. However, throughout this EA, with the exception of operational air and noise impacts, we determined that the Project would have only minimal or temporary impacts on these resources. We also concluded that nearly all of the Project-related impacts would be contained within or adjacent to the temporary construction workspaces. For example, erosion control measures included in Sierrita's ECMP and the FERC Plan would keep disturbed soils within the work areas.

No NRHP-eligible cultural resources were identified in the areas affected by the Project; therefore, the Project would have no impact on cultural resources, and would not result in cumulative impacts on these resources. In addition, the Project activities would not impact groundwater resources due to the relatively shallow depth of excavation and the depth to potable groundwater. Therefore, the Project would not contribute to cumulative impacts on groundwater resources. Also, we determined that the Project would not impact wetlands.

Table 14 below summarizes the resource-specific geographic boundaries that were considered in this analysis, and the justification for each. Actions outside of these boundaries are generally not evaluated because their potential to contribute to cumulative impacts diminishes with increasing distance from the Project.

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<b>Table 14 Cumulative Impact Resource-Specific Geographic Scopes</b>	
<b>Resource</b>	<b>Cumulative Impact Geographic Scope</b>
Geological Resources and Soils	For geological resources and soils, potential impacts include the area of disturbance of the Project (i.e., the construction workspaces) overlapping or immediately abutting the workspaces of other actions.
Water Resources and Floodplains	Impacts on water resources are traditionally assessed on a watershed level, defined by the watershed boundary (HUC 12). For floodplains, cumulative impact is assessed within the entire floodplain footprint.
Vegetation, Wildlife, and Special Status Species	The watershed level provides a natural boundary and a geographic proxy to accommodate general wildlife habitat and ecology characteristics in the Project area; therefore, impacts of other actions on vegetation, wildlife, and special status species are evaluated in combination with the Project within the HUC-12 watershed boundary.
Land Use, Recreation, and Visual Resources	Impacts of other actions in combination with the Project are evaluated within a 1-mile radius from Project work areas.
Socioeconomics	Impacts on socioeconomic conditions typically include entire counties, as demographic statistics are generally assessed on a county basis. Therefore, socioeconomic impacts of the Project in combination with other projects are evaluated within the boundary of Pima County.
Air Quality	Construction impacts include other actions within 0.25 mile from Project workspaces. We based operational impacts on Sierrita's Significant Impact Level impact analysis, which shows that impacts from the Sierrita Station drop below the Class II Significant Impact Level at a distance of less than one kilometer; therefore, we accept Sierrita's proposal to adopt an impact radius of 15 kilometers for purposes of evaluating the Project's cumulative air impacts with other actions. <b>a/</b>
Noise	Construction impacts include other actions within 0.25 mile from the proposed Project's earth-disturbing equipment work. Operation impacts include other actions that would contribute a noise impact on any NSA within a 1-mile radius of the proposed Sierrita Compressor Station.
<p><b>a/</b> The Significant Impact Level is used to determine if a source contributes significantly to air quality degradation and requires additional analysis using a refined air quality model.</p>	

**11.1 Other Actions identified within the Geographic Scope**

Table 15 below summarizes recent past, current, and reasonably foreseeable actions and affected resources potentially falling within one or more geographic scopes identified in table 14.

Sierrita obtained the information about present and future planned actions summarized in table 15 by consulting federal, state, and local agency and municipality websites.

In addition, we reviewed the City of Tucson Planning and Services Department and Arizona Department of Transportation websites for projects in the vicinity of the proposed Sierrita Compressor Station that could contribute to cumulative impacts; however, we did not identify any additional projects falling within the resource-specific geographic scopes summarized in table 14.

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Based on the geographic scope outlined in table 14, we identified actions in table 15 for consideration in our cumulative impact assessment. These include the following types of actions:

- transportation improvement projects;
- one electric utility project;
- border security activities;
- grazing and ranching activities;
- various land management activities; and
- monitoring and operations activities associated with the existing Sierrita pipeline facilities.

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**Table 15**

**Present and Reasonably Foreseeable Actions Considered for Cumulative Impacts within the Geographic Scope of the Project**

<b>Project/Sponsor (Status)</b>	<b>Approx. Distance/Direction from Project</b>	<b>Project Description</b>	<b>Potential Contribution to Cumulative Impacts</b>
Valencia Road-Wade Road to Ajo Way / Pima County Department of Transportation (pending; proposed to occur between Spring 2018 and Fall 2019)	2 miles SW	widen the existing Valencia Road from Wade Road to Ajo Way, add travel lanes, raise median, and add bike lanes and a multiuse pathway	air quality, noise, water resources, socioeconomics, wildlife, vegetation, land use
Circuit Upgrade / Trico Electric Cooperative, Inc. (construction between 2017 and 2020) (further described in section A.8)	within proposed Sierrita Compressor Station easement	rebuild 5.3 miles of power line along Hermans Road, from north of the Three Points substation easterly to Avra Road, northerly along Avra Road to the Los Reales Road alignment, easterly along the Los Reales Road alignment to Sandario Road	air quality, water resources, wildlife, vegetation, socioeconomics, land use
multiple trails / Pima County Natural Resources, Parks, and Recreation Department (unknown status)	proposed Ironwood Trail would cross within 0.25 mile of the San Joaquin Meter Station	trail construction	vegetation, wildlife, land use
State Route 86 from Valencia Road to Kinney Road Widening / Arizona Department of Transportation (February through Summer 2018)	2 miles NE	widen and improve State Route 86 between Valencia and Kinney Roads, as well as realigning intersections, enhancing drainage features, installing traffic signals, and adding landscaping features	air quality, noise, water resources, wildlife, vegetation, socioeconomics, land use
grazing and ranching (ongoing)	throughout Altar Valley outside of Buenos Aires National Wildlife Refuge; nearest activity is approximately 1 mile SW	cattle grazing and guest ranches	water resources, wildlife, vegetation, land use
miscellaneous off-road activities related to border security / U.S. Border Patrol (ongoing)	throughout south Avra and Altar Valleys	includes vehicle and foot traffic associated with undocumented immigrants, drug trafficking, and hunters; illegal immigration and drug and human trafficking detection facilities	vegetation, wildlife, air quality, noise
restoration and habitat improvement projects (ongoing)	throughout Altar Valley	installation of wash restoration and erosion controls; vegetation restoration activities	vegetation and wildlife
prescribed burns (ongoing)	throughout Altar Valley	prescribed burns are being conducted in an effort to establish pre-establishment vegetation and habitat	air quality, water resources, vegetation and wildlife
long-term monitoring of the existing Sierrita Pipeline No. 2177 right-of-way	within and near Sierrita Compressor Station easement	long-term monitoring of the existing Sierrita Pipeline No. 2177 right-of-way	land use, vegetation, wildlife

## **11.2 Potential Cumulative Impacts of the Proposed Project**

The actions considered in our cumulative impact analysis identified in section B.11.1 may vary from the proposed Project in nature, magnitude, and duration. These actions are included based on the likelihood of their impacts coinciding with the Project's impacts, which means that these other actions have current or ongoing impacts or are "reasonably foreseeable." The actions we considered are those that could affect similar resources within the same geographic scope defined in table 14, and during the same timeframe as the Project. The anticipated cumulative impacts of the Project and these other actions are discussed below, as well as mitigation actions that Sierrita would follow to reduce those impacts. We find that the potential for the proposed Project to result in cumulative impacts is limited to the resource areas of geology and soils, socioeconomics, vegetation, wildlife, land use, water resources and floodplains, visual resources, air quality and noise, and climate change, as discussed below.

### Geology and Soils

As Project impacts on geology and soils would be highly localized and limited primarily to the Project footprint during the period of active construction, cumulative impacts on geology and soils would only occur if other geographically overlapping projects were constructed at the same time (and place) as the Project (and the exposure of soils to erosion and sedimentation) occurs. None of the other projects/actions occurring within the temporal scope of the Project would occur within the geographic scope for the Project. We conclude that the limited footprint and the measures Sierrita would adopt to minimize impacts on soils would prevent any significant cumulative impacts on geology and soils from the Project in consideration with other actions.

### Water Resources

Construction of the Sierrita Compressor Station Project would temporarily impact an ephemeral drainage that is approximately 0.12 acre. During construction, clearing vegetation cover and grading could increase erosion. Compaction of soils by heavy equipment near the ephemeral drainage may accelerate erosion and the transportation of sediment carried by stormwater runoff into the drainage. To minimize erosion, Sierrita would implement its ECMP, which includes standard measures to protect water resources. Sierrita would obtain a Floodplain Use Permit and comply with the Flood District's regulations for design, construction, and operations of the compressor stations, where applicable, including stormwater conveyance and detention/retention, flood damage prevention measures and adherence to the Pima County Floodplain Ordinance.

The actions identified in table 15 that could result in impacts on surface water (prescribed burns, grazing and ranching, and ground disturbances related to the Circuit Upgrade project and Arizona and Pima County Departments of Transportation road projects) would cumulatively add to the Project's impacts on water resources. However,

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these projects would be required to obtain all necessary federal and state water quality permits for stream crossing, including Section 404 of the Clean Water Act and NPDES permits, resulting in impacts that would be minor. Therefore, we conclude that the minor, short-term impacts from the Project would not have a noticeable contribution to overall cumulative impacts on surface water resources.

### 100-year Floodplains

Neither we nor Sierrita identified other currently proposed or reasonably foreseeable projects that would be constructed within the 100-year floodplain shared by the proposed Sierrita Compressor Station. As further discussed in section C.3 below, the Project's potential to displace floodplain capacity is negligible compared to the total floodplain area. Therefore, the Sierrita Compressor Station would result in negligible impacts on the 100-year floodplain within which it is proposed.

### Vegetation and Wildlife

Construction of the Sierrita Compressor Station Project would impact mostly Sonoran Desertscrub. Construction activities would involve clearing, grading, removal of vegetation that provide for wildlife habitat, and have the potential to spread invasive plant species. Removal of vegetation not only alters wildlife habitat, it can also cause temporary and permanent displacement of wildlife. Adverse impacts on vegetation would be minor and both short- and long-term. Use of BMPs and adherence to the FERC Plan and Procedures would further ensure that adverse impacts on vegetation and wildlife habitat would not be significant. Further, the Project is consistent with the Pima County SDCP; therefore impacts on Sonoran Desertscrub would not be significant. The Project would also result in long-term beneficial impacts on vegetation as approximately 1.1 acres of the existing MLV 2 site would be reseeded once the existing facilities are removed.

All actions identified in table 15 could result in impacts on vegetation or wildlife, and therefore would also contribute to cumulative impacts on these resources. These projects would be required to implement similar measures and restriction as the Project to minimize impacts on vegetation, wildlife, and wildlife habitat. In addition, we expect that any projects constructed in the geographic scope would be required to restore some vegetation cover to disturbed areas unless they are covered by buildings or impervious surfaces. Once construction is completed and the area is restored, most wildlife displaced during construction of any of the projects would return to the newly disturbed areas and adjacent, undisturbed habitats.

The minor short- and long-term adverse impacts, as well as some beneficial impacts, from the Project would not have a noticeable contribution to overall cumulative impacts on vegetation or wildlife. Consistent with our determination (and the FWS'

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concurrence) of *no effect* as discussed in section B.4.3, the Project would not contribute to cumulative impacts on federally listed species.

### Land Use and Visual Resources

Construction and operation of the new aboveground facilities associated with the Project would result in the conversion of existing land uses to industrial/developed land. A majority of the area impacted by the proposed Project is classified as either scrub/shrub or grassland/herbaceous. The Project's and associated non-jurisdictional Circuit Upgrade project's conversion of these areas to industrial land use would result in some cumulative impact on land use; however, this impact would be minor when combined with other land use-altering actions identified in table 15 (the Arizona and Pima County Departments of Transportation road projects, trail building projects, and recent construction and long-term restoration of the Sierrita Line No. 2177 right-of-way).<sup>12</sup>

As concluded in section B.5.3, visual impacts from the Project's construction and operation are expected to be minimal. In addition, no actions identified within table 15 have the potential to cumulatively add to the Project's visual impacts within the geographic scope defined in table 14. Therefore, we conclude that the Project would result in a minimal cumulative impact on visual resources within the geographic scope.

### Socioeconomics

Table 15 identifies actions that could contribute to cumulative impacts on socioeconomic conditions in the Project area (the Circuit Upgrade project and Arizona and Pima County Departments of Transportation road projects). These projects are minor construction projects that would be carried out by workers who already reside in the Project area, and whose effect on socioeconomic conditions is already accounted for in the baseline housing, economic, public services, and infrastructure conditions. As concluded in section B.6, socioeconomic impacts from Project construction and operation are expected to be minimal. Therefore, we conclude that the Project would result in a minimal cumulative impact on socioeconomics within the geographic scope.

### Air Quality

As discussed in section B.8.5, the operation of the proposed Project, chiefly from the Sierrita Compressor Station, would be a source of air emissions and minor amounts of fugitive emission releases from various valves and fittings, and periodic maintenance activities at the station; and these emissions would impact air quality. The Circuit Upgrade project and prescribed burn activities identified in table 15 could occur during timeframes that overlap with Project construction activities in the geographic scope, and therefore could cumulatively add to Project-related construction emissions. However, the

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<sup>12</sup> We consider the ongoing (and historically long-standing) actions identified in table 15 to be part of the environmental baseline for purposes of evaluating cumulative land use impacts.

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Project's contribution to cumulative impacts combined with these identified activities would be temporary and minor.

The nearest existing major point sources of emissions to the Project site are the Learjet Tucson Facility, approximately 14 miles east, and the Irvington Generating Station, approximately 17 miles northeast (outside the defined geographic scope). The pollutant concentrations of the emissions from these facilities drop sharply with distance, and blend into existing background concentrations. Further, Sierrita's significant impact level impact analysis for the proposed Sierrita Compressor Station finds that the Project's impacts on air quality would drop below the significant impact level for all criteria pollutants at a distance of less than one kilometer from the station. Therefore, we conclude that the cumulative air impacts from the existing LearJet Tucson Facility and Irvington Generating Station, as well as all other ongoing air pollutant-emitting activities within the Project area, including those actions identified in table 15, are entirely taken into account by the ambient background concentrations summarized in table 12. As concluded in section B.8.5, the Sierrita Compressor Station's emissions, when combined with existing ambient concentrations, would remain below the NAAQS, and therefore its cumulative impact on regional air quality would not be significant.

### Noise

Although the Project's construction would result in impacts on existing noise levels in the vicinity of the construction sites, the compressor station construction (where the longest duration of construction activities would occur), would not impact any NSAs within the 0.25-mile radius geographic scope. Sierrita Compressor Station construction could, however, result in some cumulative impact on noise levels with ongoing actions identified in table 15 that involve motorized vehicle use (e.g., U.S. Border Patrol activities); however, those impacts would only have negligible impact, if any, at NSAs.

Noise during construction at the San Joaquin Meter Station and MLV 2/pig traps removal site would likely be noticeable at nearby NSAs within the geographic scope, but would likely be shorter in duration than the anticipated 9-month-long construction period for the Sierrita Compressor Station. All actions identified in table 15 would potentially involve some motorized vehicle use, which (if not ongoing activities already contributing to existing ambient noise levels) could potentially cumulatively add to construction noise from the San Joaquin Meter Station site at nearby NSAs; however, any such cumulative noise impacts would be temporary and minor (if not negligible).

As demonstrated in section B.9.4, although operation of the Sierrita Compressor Station would result in elevated noise levels in the immediate vicinity of the station, its noise contribution would not perceptibly increase the existing noise levels at the nearest NSAs. We also determined in section B.9.4 that operation of the modified San Joaquin Meter Station would not change existing ambient noise levels. Therefore, the operation of the Sierrita Compressor Station would contribute minimally to ambient noise levels at

these NSAs. In addition, we identified no proposed or reasonably foreseeable projects within the geographic scope defined in table 14 that would contribute sustained, long-term operational noise having the potential to contribute cumulatively with noise from the Sierrita Compressor Station's operation. Noise from ongoing activities identified in table 15 is included in the ambient noise level baseline, and therefore accounted for in our analysis presented in section B.9. In addition, we identified no other activities within the geographic scope that, when combined with noise from Project operation, would result in cumulative noise impacts. Therefore, operation of the Project facilities would result in minimal cumulative impacts on noise levels at nearby NSAs.

### Climate Change

Climate change is the change in climate over time, and cannot be represented by single annual events or individual weather anomalies. While a single large flood event; a particularly cold summer; or warm winter are not necessarily strong indications of climate change; a series of floods or warm years that statistically change the average precipitation or temperature over years or decades may indicate climate change. However, recent research has begun to attribute certain extreme weather events to climate change (U.S. Global Change Research Program 2017).

Climate change has already resulted in a wide range of impacts across every region of the United States and those impacts extend beyond atmospheric climate change alone and include changes to water resources, agriculture, ecosystems, and human health. As climate change is currently happening, the United States and the world are warming; global sea level is rising and acidifying; and certain extreme weather events are becoming more frequent and more severe. These changes are driven by accumulation of GHG in the atmosphere primarily through combustion of fossil fuels (coal, petroleum, and natural gas), combined with agricultural emissions and clearing of forests. These impacts have accelerated throughout the end of the 20<sup>th</sup>, and into the 21<sup>st</sup> century. Climate change is a global concern; however, for this analysis, we will focus on the potential cumulative climate change impacts on the Project areas.

The following observations of environmental impacts with a high or very high level of confidence are attributed to climate change in the Southwest region (U.S. Global Change Research Program 2017a and 2017b, Melillo 2014, National Oceanic and Atmospheric Administration 2017):

- snowpack and streamflow amounts are projected to decline in parts of the Southwest, decreasing surface water supply reliability for cities, agriculture, and ecosystems;
- the Southwest produces more than half of the nation's high-value specialty crops, which are irrigation-dependent and particularly vulnerable to extremes of moisture, cold, and heat. Reduced yields from increasing temperatures and

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increasing competition for scarce water supplies will displace jobs in some rural communities;

- increased warming, drought, and insect outbreaks, all caused by or linked to climate change, have increased wildfires and impacts to people and ecosystems in the Southwest. Fire models project more wildfire and increased risks to communities across extensive areas;
- flooding and erosion in coastal areas are already occurring even at existing sea levels and damaging some California coastal areas during storms and extreme high tides. Sea level rise is projected to increase as Earth continues to warm, resulting in major damage as wind-driven waves ride upon higher seas and reach farther inland; and
- projected regional temperature increases, combined with the way cities amplify heat, will pose increased threats and costs to public health in southwestern cities, which are home to more than 90 percent of the region's population. Disruptions to urban electricity and water supplies will exacerbate these health problems.

The FERC staff has presented the direct and indirect GHG emissions associated with construction and operation of the Project in section B.8.5.

There is no generally accepted significance criteria for GHG emissions. In addition, we cannot determine the Project's incremental physical impacts on the environment caused by GHG emissions. Therefore, we cannot determine whether the Project's contribution to climate change would be significant.

The construction and operation would increase the atmospheric concentration of GHGs, in combination with past and future emissions from all other sources, and contribute incrementally to future climate change impacts. There is no standard methodology to estimate what extent, a project's incremental contribution to greenhouse gas emissions would result in physical effects on the environment for the purposes of evaluating the Project's impacts on climate change, either locally or nationally. Further, we cannot find a suitable method to attribute discrete environmental effects to greenhouse gas emissions. We have looked at atmospheric modeling used by the Intergovernmental Panel on Climate Change, EPA, National Aeronautics and Space Administration, and others and we found that these models are not reasonable for project-level analysis for a number of reasons. For example, these global models are not suited to determine the incremental impact of individual projects, due to both scale and overwhelming complexity.

Additionally, burning natural gas emits less CO<sub>2</sub> per unit of energy produced compared to other fuel sources (e.g., fuel oil or coal). Sierrita has identified the potential for the Project to replace older coal and oil-fired technologies with natural gas-fired sources within several power generation facilities in Mexico that would receive the natural gas volumes made available by the Project; therefore, the additional natural gas

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supply to these end-use sources may potentially offset some GHG currently being emitted by these facilities.

## C. ALTERNATIVES

In accordance with NEPA and Commission policy, we evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no-action alternative, system alternatives, and site alternatives. The evaluation criteria used for developing and reviewing alternatives were:

- ability to meet the Project's stated objective;
- technical and economic feasibility and practicality; and
- significant environmental advantage over the proposed action.

Through environmental comparison and application of our professional judgment, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. To ensure a consistent environmental comparison and to normalize the comparison factors, we generally use desktop sources of information (e.g., publicly available data, geographic information system data, aerial imagery) and assume the same general workspace requirements.

We reviewed alternatives against the evaluation criteria in the sequence presented above. The first consideration for including an alternative in our analysis is whether or not it could satisfy the stated purpose of the Project. An alternative that cannot achieve the purpose for the Project cannot be considered as an acceptable replacement for the Project. The second evaluation criteria is feasibility and practicality. Many alternatives are technically and economically feasible. Technically practical alternatives, with exceptions, would generally require the use of common construction methods. An alternative that would require the use of a new, unique, or experimental construction method may not be technically practical because the required technology is not available or is unproven. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the project economically impractical.

Alternatives that would not meet the Project's objective or were not feasible were not brought forward to the next level of review (i.e., the third evaluation criterion). Determining if an alternative provides a significant environmental advantage requires a comparison of the impacts on each resource as well as an analysis of impacts on resources that are not common to the alternatives being considered. The determination must then balance the overall impacts and all other relevant considerations. In comparing the impact between resources, we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts to another location, potentially affecting a new set of landowners.

## 1. No-Action Alternative

Under the no-action alternative, Sierrita would not construct or operate the Sierrita Compressor Expansion Project and none of the impacts associated with the Project would occur. However, the Project objectives would not be met. Sierrita would not be able to meet the Project's stated need in section A.2, including providing an incremental increase of 230,254 dekatherms per day of natural gas to Sierrita's shipper CFEi.

Although a Commission decision to deny the proposed action would avoid the environmental impacts addressed in this EA, other natural gas projects could be constructed to supply the electric generation facilities that would be served by the Project (see section B.8.5), and provide a substitute for the natural gas supplies offered by Sierrita. Such alternative projects would require the construction of additional and/or new facilities in the same or other locations to meet the Project objectives. These alternatives would result in their own set of specific environmental impacts that could be greater or equal to those associated with the current proposal. Therefore, we have dismissed this alternative as a reasonable alternative to meet the Project objectives.

## 2. System Alternatives

System alternatives are alternatives to the proposed action that would make use of Sierrita's (or other companies') existing, modified, or proposed pipeline systems to meet the stated objective of the proposed Project. System alternatives could make it unnecessary to construct all or part of the Project, such as constructing a loop line along the existing Line No. 2177. However, according to Sierrita, a loop line would not avoid the need to construct additional compression facilities to transport the increased volumes of natural gas proposed by the Project, since no existing compressor stations on its system are capable of meeting this demand. In addition, a loop line would very likely result in greater additional ground disturbance than constructing a new compressor station. For instance, assuming: a minimum 6.5 miles of additional 24-inch-diameter loop line were needed based on the distance between the proposed Sierrita Compressor Station and Sierrita Line No. 2177's point of interconnect with El Paso Natural Gas Company LLC's existing Line Nos. 1100 and 1103 (approximately 370 feet upstream of the San Joaquin Meter Station); sufficient pressure were available at the San Joaquin Meter Station receipt point to effectively eliminate the need for the construction of additional compression capacity; and a typical 75-foot-wide right-of-way (less 25 feet of collocation with the existing Line No. 2177 right-of-way), then temporary disturbance impacts for this loop line would amount to approximately 59.1 acres, not including additional pipe storage and contractor yards and access roads. Following construction, this loop line's permanent easement would require an additional 25-foot width (approximately 19.7 acres) of right-of-way co-located with the existing Line No. 2177 right-of-way. In comparison, the Project would temporarily impact a total of 18.7 acres, of which 15.7 acres would be permanently occupied by the Sierrita Compressor Station and relocated pig traps. Therefore, putting aside technical feasibility constraints, the

## C. ALTERNATIVES

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Project would likely result in less ground disturbance on undeveloped lands than a looping alternative such as the example described above.

Lastly, we have not identified any existing natural gas transmission systems in the vicinity of the delivery point near Sasabe, Arizona that could provide the additional incremental capacity that the Project proposes.

Therefore, we identified no system alternatives that are technically feasible and would meet the Project objectives.

### 3. Site Alternatives

We evaluated one alternative site for the Sierrita Compressor Station, illustrated in figure 2 below. This location was identified by Sierrita based on the location's availability for purchase from a willing landowner and its ability to meet the Project's objectives, including its ability to achieve the optimum horsepower and compression needed to provide the proposed increased capacity of natural gas delivery. For many impact criteria, the two sites are comparable, and would be equally suitable for the siting of the proposed compressor station. Table 16 compares key impact criteria between the proposed and alternative compressor station sites where noticeable differences in impacts on environmental resources would result.

<b>Siting impact criterion</b>	<b>Proposed Site</b>	<b>Alternative Site</b>
100-year floodplain impact (acres)	16.7	0.0
Length of interconnect piping required to connect the station to existing Line No. 2177 (feet)	1,375	250
Distance of nearest noise-sensitive area to site (feet)	5,600	1,800
Distance of nearest public roadway to site (feet)	1,200	750

As shown in table 16, the proposed site would result in impacts on the 100-year floodplain in which the site is located; however, as discussed below, the proposed site's potential impacts on this floodplain would be minimal. The proposed site would require longer station piping to connect to Line No. 2177 than the identified alternative, therefore resulting in greater ground disturbance. However, as described in section A.7, most construction on the proposed site (11.5 acres) would occur within land owned by Sierrita, and as we conclude in section B.4.1, impacts on vegetation would not be significant, given Sierrita's commitment to follow its ECMP and restoration methods outlined in its Reclamation Plan. For the alternative site, construction would occur entirely on land owned by the ASLD, requiring a long-term easement agreement. However, that alternative site would result in greater noise and visual impacts on nearby NSAs and roadways than the proposed site. Therefore, we find no reason to conclude that the alternative Sierrita Compressor Station site presents a significant environmental advantage over the proposed site, and we do not recommend it.



Consistency with Executive Order 11988

The construction of the Sierrita Compressor Station at the proposed site would permanently fill as much as 12.7 acres of land within the 100-year floodplain, as discussed in section B.5, above. The proposed Project's footprint would eliminate a corresponding amount of floodwater storage from this floodplain.

EO 11988 directs federal agencies to demonstrate a comprehensive approach to floodplain management, and requires agencies to:

- avoid, to the extent possible, the long and short term adverse impacts associated with the occupancy and modification of floodplains; and
- avoid the direct or indirect support of floodplain development whenever there is a practicable alternative.

EO 11988 establishes avoidance of actions on the 100-year floodplain, as one method for meeting these requirements.

Our review concludes that impacts of the Project's footprint (12.7 acres) would be minimal when compared to the overall area of the floodplain (approximately 94,000 acres). In addition, Sierrita is required to comply with all requirements included within its Floodplain Use Permit issued by the Pima County Regional Flood Control District, including stormwater conveyance, stormwater detention/retention, and adherence to the Pima County Floodplain Ordinance. Sierrita would contract an engineering design firm to ensure that the Sierrita Compressor Station's design adheres to the Flood Control District's requirements.

Based on these factors, we conclude that Sierrita's use of the site for the proposed Sierrita Compressor Station does not conflict with the intent of EO 11988.

**4. Conclusion**

We reviewed alternatives to Sierrita's proposal based on our independent analysis. Although a site location alternative appears to be technically feasible, no system, or aboveground facility alternatives provide a significant environmental advantage over the Project design. Therefore, we conclude that the proposed Project is the preferred alternative to meet the Project objectives.

## D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Sierrita constructs and operates the proposed facilities in accordance with its application and supplements, and the staff's recommended mitigation measures below, approval of the Project would not constitute a major action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact and include the measures listed below as conditions in any authorization the Commission may issue to Sierrita.

1. Sierrita shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Sierrita must:
  - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
  - b. justify each modification relative to site-specific conditions;
  - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
  - d. receive approval in writing from the Director of OEP **before using that modification.**
2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project. This authority shall allow:
  - a. the modification of conditions of the Order;
  - b. stop-work authority; and
  - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.
3. **Prior to any construction**, Sierrita shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of**

#### D. CONCLUSIONS AND RECOMMENDATIONS

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**construction**, Sierrita shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Sierrita's exercise of eminent domain authority granted under NGA Section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Sierrita's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Sierrita shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
  - b. implementation of endangered, threatened, or special concern species mitigation measures;
  - c. recommendations by state regulatory authorities; and
  - d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of the authorization and before construction begins**, Sierrita shall file an Implementation Plan with the Secretary for review and

#### **D. CONCLUSIONS AND RECOMMENDATIONS**

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written approval by the Director of OEP. Sierrita must file revisions to the plan as schedules change. The plan shall identify:

- a. how Sierrita will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
- b. how Sierrita will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
- c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
- d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
- e. the location and dates of the environmental compliance training and instructions Sierrita will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change);
- f. the company personnel (if known) and specific portion of Sierrita's organization having responsibility for compliance;
- g. the procedures (including use of contract penalties) Sierrita will follow if noncompliance occurs; and
- h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
  - (1) the completion of all required surveys and reports;
  - (2) the environmental compliance training of onsite personnel;
  - (3) the start of construction; and
  - (4) the start and completion of restoration.

7. Sierrita shall employ at least one EI. The EI shall be:

- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
- b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
- c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;

#### D. CONCLUSIONS AND RECOMMENDATIONS

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- d. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
  - e. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Sierrita shall file updated status reports with the Secretary on a **biweekly** basis until all construction and restoration activities are complete. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Sierrita's efforts to obtain the necessary federal authorizations;
  - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
  - c. a listing of all problems encountered and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
  - d. a description of the corrective actions implemented in response to all instances of noncompliance;
  - e. the effectiveness of all corrective actions implemented;
  - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
  - g. copies of any correspondence received by Sierrita from other federal, state, or local permitting agencies concerning instances of noncompliance, and Sierrita's response.
9. Sierrita must receive written authorization from the Director of OEP **before commencing construction of any Project facilities**. To obtain such authorization, Sierrita must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
10. Sierrita must receive written authorization from the Director of OEP **before placing the Project into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.
11. **Within 30 days of placing the authorized facilities in service**, Sierrita shall file an affirmative statement with the Secretary, certified by a senior company official:

#### D. CONCLUSIONS AND RECOMMENDATIONS

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- a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
  - b. identifying which of the conditions in the Order Sierrita has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
12. **Prior to construction**, Sierrita shall file with the Secretary, for the review and approval by the Director of OEP, the descriptions and locations of signage and any additional measures it will actively employ and maintain to deter unauthorized OHV use during construction and operation of Project facilities.
13. **Prior to construction**, Sierrita shall file with the Secretary, for review and approval by the Director of OEP, documentation confirming that it will offer pre- and post-construction testing to Tucson Water for the well identified within 100 feet of the construction work area. If testing reveals that impacts on the well occurred as a result of Project construction, Sierrita shall provide a temporary source of water and repair or replace the well to its former capacity in coordination with Tucson Water.
14. Sierrita shall file with the Secretary a noise survey for the Sierrita Compressor Station **no later than 60 days** after placing the station into service. If a full power load condition noise survey is not possible, Sierrita shall file an interim survey at the maximum possible power load **within 60 days** of placing the station into service and file the full power load survey **within 6 months**. If the noise attributable to operation of all equipment at the station under interim or full power load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSA, Sierrita shall:
  - a. file a report with the Secretary, for review and written approval by the Director of OEP, on what changes are needed;
  - b. install additional noise controls to meet that level **within 1 year** of the in-service date; and
  - c. confirm compliance with this requirement by filing a second full power load noise survey with the Secretary for review and written approval by the Director of OEP no later than **60 days** after it installs the additional noise controls.

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# **Appendix A**

## **Consultations, Permits, and Approvals**

**Table A-1  
Consultations, Permits, and Approvals for the Project**

<b>Permit/Approval</b>	<b>Administering Agency</b>	<b>Status</b>
<b>Federal</b>		
Certificate of Public Convenience and Necessity	Federal Energy Regulatory Commission	Application filed December 21, 2017. Certificate pending.
Clean Water Act, Section 404 —Nationwide Permit 12	U.S. Army Corps of Engineers – Arizona Regulatory Branch	Permit application filed November 2017. Response requesting info received February 9, 2018.
Endangered Species Act, Section 7 Consultation	U.S. Fish and Wildlife Service – Arizona Ecological Services Field Office	Consultation letters sent July 1, 2017. Concurrence received September 26, 2017.
Migratory Bird Consultation under Migratory Bird Treaty Act 16 U.S.C. 703-711; Section 3 of Executive Order 13186, Bald & Golden Eagle Protection Act; Fish and Wildlife Coordination Act		Concurrence received September 26, 2017.
<b>Tribal</b>		
Tribal Consultation, National Historic Preservation Act Section 106	Ak-Chin Indian Community	Contact letter sent August 11, 2017. Responses received August 24, 2017; October 11, 2017.
	Fort McDowell Yavapai Nation	Contact letter sent August 11, 2017. No response to date.
	Gila River Indian Community	Contact letter sent August 11, 2017. Responses received August 24, 2017; September 29, 2017.
	Hopi Tribe	Contact letter sent August 11, 2017. Responses received August 30, 2017; September 29, 2017.
	Pascua Yaqui Tribe of Arizona	Contact letter sent August 11, 2017. No response to date.
	Pueblo of Zuni	Contact letter sent August 11, 2017. No response to date.
	Salt River Pima-Maricopa Indian Community	Contact letter sent August 11, 2017. Response received October 4, 2017.
	Tohono O'odham Nation	Contact letter sent August 11, 2017. Response received October 13, 2017.
	Yavapai-Apache Nation	Contact letter sent August 11, 2017. Response received September 29, 2017.
<b>State</b>		
State Threatened and Endangered Species Consultation	Arizona Game and Fish Department	Letter sent February 9, 2018. Concurrence pending.
Facility Air Quality Permitting	Pima County Department of Environmental Quality	Permit application filed July 24, 2017. Permit issued November 14, 2017.
Fugitive Dust Activity Permit	Pima County Department of Environmental Quality	Pending.
Clean Water Act, Section 402 Water Quality Certification – Arizona Pollution Discharge Elimination System Permit	Arizona Department of Environmental Quality – Water Quality Division	Pending.
Hydrostatic Test Water – General Permit for De Minimis Discharges to Waters of the U.S.	Arizona Department of Environmental Quality – Water Quality Division	Pending.
Section 106 Cultural Resources Consultation	Arizona State Parks – State Historic Preservation Office	Survey report sent August 11, 2017. Concurrence received September 5, 2017.
<b>Local</b>		
Floodplain Use Permit	Pima County Flood Control District	Application filing anticipated second quarter 2018. Permit anticipated third quarter 2018.