

1 **3.3.5 Cultural Resources**

CULTURAL RESOURCES - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 **3.3.5.1 Environmental Setting**

3 The Project area is located within the boundaries of the Delta subregion of the Central
 4 Valley archaeological region, as defined by Moratto (1984). Little is known of human
 5 occupation of this region before 4500 years before present (BP). As a result of rapid
 6 alluvial and colluvial deposition in the valley over the past 10,000 years, ancient cultural
 7 deposits have been deeply buried in many areas.

8 The earliest evidence of widespread occupation of the lower Delta region appears at
 9 archaeological deposits assigned to the Windmill Pattern (Early Horizon), dated
 10 between 4500 and 2500 BP. The Windmill Pattern has been associated by some
 11 archaeologists with the arrival of Utian peoples from outside of California who had
 12 adapted to riparian and wetland environments. Windmill group subsistence-settlement
 13 patterns are poorly understood because few known archaeological sites are ascribed to
 14 this archaeological pattern. Available data indicate that Windmill group sites are
 15 typically located on low rises or knolls in the floodplains of creeks or rivers. Such
 16 locations would have provided protection from seasonal floods while retaining proximity
 17 to riparian, marsh, and grassland biotic communities.

18 Most known Windmill Pattern sites contain cemeteries, implying some degree of
 19 sedentism. Windmill groups typically buried the deceased in a ventrally extended
 20 position with abundant grave goods and oriented the head to the west.

21 Subsistence needs were met through hunting and fishing, as evidenced by large
 22 projectile points (spear or dart tips), baked clay net sinkers, bone fish hooks and spears,
 23 and remnants of faunal remains at Windmill Pattern sites. The presence of Windmill
 24 Pattern ground stone tools, such as mortars and milling slabs, indicate that Windmill
 25 groups collected plant foods (seeds, nuts, and perhaps roots). Other artifacts

1 characteristic of the Windmill Pattern include charmstones, quartz crystals, bone awls,
2 needles, and beads and ornaments manufactured from abalone shell and olive snails.

3 The succeeding Berkeley Pattern (Middle Horizon) dates from 2500 to 1500 BP,
4 overlapping in time at least some Windmill Pattern manifestations. Archaeologists
5 have identified more Berkeley Pattern sites than Windmill Pattern sites, and sites
6 representing the former pattern are also more widespread. Deep midden deposits,
7 suggesting larger residential group size, greater frequency of site reuse, and/or a
8 greater degree of sedentism, characterize Berkeley Pattern sites. Berkeley group
9 subsistence, in contrast to Windmill groups, placed greater emphasis on acorns and
10 other vegetal food sources.

11 The Project area is located in a portion of the Delta that was most likely used by several
12 Native American groups in recent prehistory and the historic period. Anthropologists
13 have drawn conflicting pictures of Native American use of the project area. The region
14 has been variously ascribed to the Southeastern Patwin, the Plains Miwok, and the Bay
15 Miwok.

16 Native American tribes first came into contact with Europeans in the second half of the
17 eighteenth century, when Spanish explorers entered the area. The first baptisms took
18 place in 1794 and the last in 1827. A majority of the Native American converts were
19 taken to Mission San Francisco and Mission San Jose. It appears that many tribelets
20 disappeared through the combined effects of population removal to the missions and
21 epidemics. Accounts exist of individuals who resisted missionization and fled to their
22 villages. As a consequence, the Spanish formed military expeditions to recapture the
23 fugitives. At first these individuals remained hidden in Delta lands, but eventually they
24 learned to emulate Spanish warfare tactics. Several tribelets initiated counterattacks in
25 the form of raids on missions and ranchos. With the arrival of trappers, gold miners, and
26 settlers in California, Native American tribes suffered exposure to newly introduced
27 diseases. Although this early contact with settlers had a destructive impact on these
28 Native American populations, specific tribal relationships with settlers varied. While
29 hostilities occurred between the Sierra Miwok and miners, some of the Plains Miwok
30 were put to work in agricultural operations on the large land grants coming into
31 existence at that time. After the United States acquired California in 1848, some tribes
32 were displaced to Central Valley locations, while many remained on the rancherias
33 established in the Sierra Nevada foothills.

34 During the final decades of the nineteenth and early years of the twentieth centuries,
35 tribes living on the foothill rancherias adapted to a new lifestyle. Subsistence through
36 hunting and gathering was now augmented by seasonal wage labor on ranches and
37 farms. As reliance on cash incomes increased, traditional subsistence practices
38 suffered.

1 Mexican, American, and European settlers began to arrive and set down roots within
2 the boundaries of Project area in the 1840s and 1850s. Euroamerican encroachment
3 into the area began in the Montezuma Hills in Solano County in 1844, when settler John
4 Bidwell (1819–1900) petitioned the Mexican government for a land grant in
5 southeastern Solano County. Manuel Micheltorena, the thirteenth governor of Mexican
6 Alta California, made the grant to Bidwell that same year for the 17,726-acre Rancho
7 Los Ulpinos. The grant was located on the west bank of the Sacramento River and
8 extended to the west. In 1845, Bidwell built an adobe house in the vicinity of present-
9 day Rio Vista and attempted to cultivate the land. His efforts at agriculture, as well as
10 those of subsequent settlers on the rancho, were unsuccessful due to harsh winters and
11 inadequate food supply.

12 The town of Rio Vista was created on land purchased in 1855 by Colonel N. H. Davis
13 from Bidwell. Davis laid out the town of Brazos del Rio (now Rio Vista) in 1857, below
14 the mouth of Cache Slough. The new settlement was the only town in the Rio Vista
15 Township and its name was later changed to Rio Vista. Residents included Henry
16 Beguhl, who settled the area shortly after his arrival in 1850. In 1858, a small portion of
17 land in the Los Ulpinos grant was purchased by Joseph Bruning. In 1862, when heavy
18 rains washed out Rio Vista, settlers sought a new town site at a higher elevation in the
19 vicinity of the Montezuma Hills, on Bruning's land. Bruning maintained his land holdings
20 for more than 44 years after which he donated his land to the improvement of Rio Vista.
21 In addition to allowing the new establishment of Rio Vista on his property he donated
22 land for Rio Vista's first school and first Catholic Church. Over the next few decades the
23 town continued to expand with residential and commercial development.

24 In 1892, fire devastated Rio Vista's downtown, destroying many residences and
25 commercial buildings. Almost immediately, the town's population began renewal
26 projects and many business owners constructed their buildings with brick. The town was
27 incorporated in 1893. New residents to the Rio Vista area included George E. Mayhood,
28 who acquired property in the region by 1915.

29 During the late nineteenth and early twentieth centuries, Rio Vista functioned largely as
30 an agricultural community. Aside from its downtown, much of its land remained
31 undeveloped. An increasing population due to renewal and development during the
32 early 1900s resulted in a rise in residential and infrastructure development including
33 educational, religious, and community facilities. During the 1920s, Rio Vista and the
34 surrounding region had approximately 1,900 residents. By the late 1940s and following
35 World War II, Rio Vista had an established downtown area and the regional population
36 reached more than 3,500 residents. Today, the Rio Vista region is approximately 25
37 percent developed and has more than 8,000 residents.

38 Throughout much of the nineteenth century, wheat cultivation and ranching dominated
39 the pursuits of agricultural producers in the project area. Agricultural development,

1 however, was limited. By 1878, an estimated 23 ranches operated in the general project
2 area. Agriculture-related industry served as the main driving forces of the economy
3 throughout the late nineteenth and early twentieth centuries. By the twentieth century,
4 agriculture within the project area flourished and included a variety of fruit, asparagus,
5 beans, and sugar beets, which were transported to outside markets via steamers along
6 the Sacramento River and highway travel on improved roadways.

7 The Project area continues to be characterized by agricultural land and farmsteads,
8 including clusters of single-family residences and outbuildings. The region settled as a
9 farming community in the mid-1800s.

10 **3.3.5.2 Regulatory Setting**

11 The following discussion summarizes the most important federal and State laws and
12 regulations that apply to cultural resource protection for the Project area.

13 **Federal**

14 National Historic Preservation Act of 1966 (NHPA). The NHPA and its implementing
15 regulations (36 CFR 800) require federal agencies to evaluate the potential effects of
16 their actions on historic properties. This process, often referred to as the “Section 106”
17 process, applies to properties that are listed on or eligible for listing on the National
18 Register of Historic Places (National Register).

19 **State**

20 California Environmental Quality Act (CEQA). As the CEQA lead agency, the CSLC is
21 responsible for complying with all provisions of CEQA (Pub. Resources Code, § 21000
22 et seq.) and the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.) that
23 relate to “historical resources.” An historical resource includes: 1) a resource that is
24 listed in, or determined to be eligible for listing in the California Register of Historic
25 Resources (CRHR); 2) a resource included in a local register of historical or identified
26 as significant in an historical resource surveys; and, 3) any resource that a lead agency
27 determines to be historically significant for the purposes of CEQA, when supported by
28 substantial evidence in light of the whole record.

29 The CRHR was created to identify resources deemed worthy of preservation on a State
30 level and was modeled closely after the National Register. The criteria are nearly
31 identical to those of the National Register, but focus on resources of statewide
32 significance. The criteria, which are set forth in State CEQA Guidelines section 15064.5,
33 subdivision (a)(3), are defined as any resource that meets any of the following criteria:

- 34 • Is associated with events that have made a significant contribution to the broad
35 patterns of California’s history and cultural heritage;

- 1 • Is associated with lives of persons important in our past;
- 2 • Embodies the distinctive characteristics of a type, period, region, or method of
- 3 construction, or represents the work of an important creative individual, or
- 4 possesses high artistic values; or
- 5 • Has yielded, or may be likely to yield, information important in prehistory or
- 6 history.

7 Properties listed, or formally designated as eligible for listing, on the National Register
8 are automatically listed on the CRHR, as are certain State Landmarks and Points of
9 Interest. In addition, State CEQA Guidelines section 15064.5, subdivision (a)(4) states:

10 *The fact that a resource is not listed in, or determined to be eligible for listing in the*
11 *California Register of Historical Resources, not included in a local register of*
12 *historical resources (pursuant to Section 5020.1(k) of the Public Resources Code),*
13 *or identified in an historical resources survey (meeting the criteria in Section*
14 *5024.1(g) of the Public Resources Code) does not preclude a lead agency from*
15 *determining that the resource may be an historical resource as defined in Public*
16 *Resources Code Section 5020.1(j) or 5024.1.*

17 **Local**

18 County of San Joaquin General Plan. San Joaquin County's General Plan, Volume I,
19 Section VI Resources, H. Heritage Resources establishes the following objectives and
20 policies related to cultural resources that are applicable to the Project:

- 21 • Objective 1: To protect San Joaquin County's valuable architectural, historical,
22 archaeological and cultural resources.
 - 23 ○ Policy 1: The County shall continue to encourage efforts, both public and
 - 24 private, to preserve its historical and cultural heritage.
 - 25 ○ Policy 2: Significant archeological and historical resources shall be
 - 26 identified and protected from destruction. If evidence of such resources
 - 27 appears after development begins, an assessment shall be made of the
 - 28 appropriate actions to preserve or remove the resources.
 - 29 ○ Policy 3: No significant architectural, historical, archaeological or cultural
 - 30 resources shall be knowingly destroyed through County action.

31 County of San Joaquin Ordinance Code. Historic resource preservation is discussed
32 under Chapter 9-1053 of the Ordinance Code. The intent of the chapter is to establish
33 regulations for the preservation of historic resources, such as cultural, archeological,
34 architectural, aesthetic, and environmental resources, within San Joaquin County.
35 Established regulations contained therein are generally applicable to known historic
36 resources.

1 Sacramento County General Plan. The Conservation Element, Section VI sets the goal
2 and implementation measures to promote the inventory, protection, and interpretation of
3 the cultural heritage of Sacramento County, including historical and archaeological
4 settings, sites, buildings, features, artifacts, and/or areas of ethnic historical, religious, or
5 socioeconomic importance. Policies CO-155 through CO-162 have been adopted to
6 protect archaeological resources. Policies CO-163 through CO-166 have been adopted
7 to protect historic structures.

8 Sacramento County Code 2.23.080. This code designates the Sacramento Commission
9 of History and Science as responsible for designation of sites and landmarks of historic
10 and scientific importance throughout the incorporated and the unincorporated areas of
11 Sacramento County.

12 **3.3.5.3 Impact Analysis**

13 ***a) Cause a substantial adverse change in the significance of a historical resource***
14 ***as defined in § 15064.5?***

15 ***b) Cause a substantial adverse change in the significance of an archaeological***
16 ***resource pursuant to § 15064.5?***

17 As discussed below, in March 2012, Brunzell Cultural Resource Consulting (BCR
18 Consulting) conducted a cultural resources record and information search of the Project
19 and buffer area and requested a search of the “Sacred Lands Inventory” maintained by
20 the Native American Heritage Commission (NAHC) for the Project and buffer area. A
21 pedestrian survey of the Project and buffer area was conducted on March 6, 2012.

22 The cultural resources record and information search was conducted with the Central
23 California and Information Center of the California Historical Resources Information
24 System located in Turlock, California, and the North Central Information Center located
25 in Sacramento, California, and included a review of:

- 26 • National Register of Historic Places (Directory of Determinations of Eligibility,
27 California, Office of Historic Preservation, Volumes I and II, 2001);
- 28 • California Historical Landmarks (State of California 1996);
- 29 • California Points of Historical Interest listing (State of California 1992);
- 30 • Historic Property Data File (State of California 2005);
- 31 • Other pertinent historic data on file with BCR Consulting.

32 The records search revealed that portions of the Project and adjacent areas within 1.0
33 mile of the project have been subject to seven previous cultural resource studies,
34 resulting in the recording of no cultural resources within the boundaries of the Project or
35 buffer area. A total of 15 cultural resources studies took place within 1 mile of the

1 Project, and nine cultural resource sites have been recorded within that radius (see
 2 Table 3.3.5-1).

3 **Table 3.3.5-1**
 4 **Records Search Results**

USGS	Archaeological Sites	Reports
<i>Isleton</i> (1993) 7.5-Minute USGS Quadrangle	None	SJ-750*, 816*, 1640*, 1731*, 2674*, 3644, 5356, 6068, 6069, P-34-72, 101, 189
<i>Bouldin Island</i> (1997) 7.5-Minute USGS Quadrangle	None	SA-1783, 1806, 7157, 7962, 9182, 9326, SJ-750*, 816*, 1640*, 1731*, 2674*, 3804*, 4275*, 5356, 5498, 5501, 5503, 5985, 6068, 6069

* Study included a portion of the Project.

5 On March 16, 2012, BCR Consulting requested a search of the Sacred Lands File
 6 maintained by the NAHC. The request included a brief Project description and location
 7 map and was sent to David Singleton of the NAHC by email. On April 5, 2012, Debbie
 8 Pilas-Treadway performed the Sacred Lands File search, and provided names of
 9 potentially interested tribes and individuals to BCR Consulting; the following individuals
 10 and groups were listed: Katherine Erolinda Perez, Chairperson of the Northern Valley
 11 Yokuts and Bay Miwoks; Andrew Galvan, Chairperson of the Ohlone Indian Tribe; and
 12 Ramona Garlby, Representative of the Trina Marine Ruano Family. On April 17, 2012,
 13 BCR Consulting communicated via certified letters and emails to the potentially
 14 interested parties. BCR Consulting followed up this correspondence with phone calls to
 15 the potentially interested parties. No responses have been received to date.

16 Neither previous archaeological surveys, nor the Sacred Lands search, nor the Project-
 17 specific archaeological survey of the Project and buffer area have indicated that any
 18 archeological resources are present within the Project. Construction and operation of
 19 the Project is, therefore, not expected to affect any known archeological resources.
 20 Although surface disturbance activities would all occur within frequently disturbed active
 21 agricultural land, there is still some potential that excavation activities could encounter
 22 and adversely affect unrecorded subsurface archaeological sites. Impacts to unknown
 23 archeological resources would be considered a significant impact. Therefore, MM **CUL-**
 24 **1** has been incorporated to protect unknown archeological resources during Project
 25 construction. With incorporation of MM **CUL-1**, the Project’s impacts on historical and
 26 archaeological resources would be less than significant.

27 **CUL-1: Unanticipated Archaeological Resources.** Should any previously unknown
 28 archaeological resources be discovered during construction, work will stop
 29 within 100 feet of the find until a qualified archaeologist can assess the
 30 significance of the find, and, if necessary, develop appropriate treatment
 31 measures in consultation with CSLC staff. If human remains are discovered,
 32 there shall be no further excavation or disturbance of the site or any nearby

1 area reasonably suspected to overlie adjacent human remains. Three Rivers
2 shall notify the county coroner immediately in compliance with State Health and
3 Safety Code section 7050.5 and work in the vicinity may not resume until the
4 coroner has made the necessary findings as to origin and circumstances of the
5 death. CSLC staff shall also be notified immediately. If the remains are
6 determined by the coroner to be of Native American origin, the coroner shall
7 notify the NAHC within 24 hours. The NAHC would then contact the most likely
8 descendant of the deceased Native American, who would make a
9 recommendation on how to treat or dispose of the remains with appropriate
10 dignity as set forth in Public Resources Code section 5097.98.

11 After construction is complete, the Project archaeologist shall prepare a
12 construction monitoring report and submit it to CSLC staff and the Central
13 California and the North Central Information Centers.

14 ***c) Directly or indirectly destroy a unique paleontological resource or site or***
15 ***unique geologic feature?***

16 According to review of the San Joaquin County General Plan, Sacramento County
17 General Plan and pedestrian surveys, no unique geological features or known
18 paleontological resources are located in the Project, buffer area, or general project area.
19 Therefore, the Project would not directly or indirectly destroy a unique paleontological
20 resource site or site of unique geologic feature and no project impacts would result.

21 ***d) Disturb any human remains, including those interred outside of formal***
22 ***cemeteries?***

23 There is some potential that excavation activities during Project implementation could
24 encounter and adversely affect unrecorded archaeological sites that may lie buried
25 beneath the ground surface. Impacts to unknown archeological resources would be
26 considered a significant impact. Therefore, MM **CUL-1** has been incorporated to protect
27 unknown archeological resources during Project construction. With implementation of
28 the mitigation measure, the impact would be less than significant.

1 **3.3.6 Geology and Soils**

GEOLOGY AND SOILS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.6.1 Environmental Setting**

3 This section derives information and data from a geologic hazards evaluation and bore
 4 crossing soil investigation that were completed for the Project by Raney Geotechnical,
 5 Inc. (Raney Geotechnical 2012) (see Appendix F). The purpose of the geotechnical
 6 study was to evaluate the significance of various potential geotechnical issues that may
 7 affect the permitting, planning, design, construction, and operation of the Project.

8 The Project is located within the Sacramento-San Joaquin Delta in the westerly portion
 9 of the Great Valley Geomorphic Province of California. The Great Valley is bordered to
 10 the north by the Cascade and Klamath Ranges, to the west by the Coast Ranges, to the
 11 east by the Sierra Nevada, and to the south by the Traverse Ranges. The valley formed

1 by tilting of the Sierran Block with the western side dropping to form the valley and
2 eastern side being uplifted to form the Sierra Nevada. The valley is characterized by a
3 thick sequence of sediments derived from erosion of the adjacent Sierra Nevada to the
4 east and the Coast Ranges to the west. These sedimentary rocks are mainly
5 Cretaceous in age. The depth of the sediments varies from a thin veneer at the edges of
6 the valley to in excess of 50,000 feet near the western edge of the valley.

7 The Delta is a low-elevation, triangular area generally situated between Sacramento to
8 the north, Stockton to the south, and Suisun Bay to the west. Prior to reclamation and
9 development of agricultural lands, the Delta was generally comprised of a vast
10 swampland of tules, interlacing river channels, and low islands underlain by thick
11 deposits of peat. Studies have shown a series of buried and filled river channels lie
12 beneath the present delta surface, indicating that the present pattern of islands and
13 channels is only the most recent configuration. Earlier channels and islands related to
14 Pleistocene high sea levels during interglacial times have a very different geometry.

15 Reclamation of the Delta and the development of agricultural lands began in the late
16 1800s and continued through the early 1900s. Reclamation included the construction of
17 a system of levees and drainage ditches. Since reclamation, farmed areas between
18 channels within the delta (islands) have experienced significant subsidence due
19 primarily to microbial oxidation of organic-rich deposits and compaction due to farming
20 activities. In a number of places, the islands now lie more than 20 feet below sea level.

21 **Lithology**

22 As indicated above, the Project area is underlain by a heterogeneous complex of peat,
23 river channel, and flood deposits. State geologic mapping indicates that surface
24 deposits in the Project north of the River are recognized as Rindge muck, partially
25 drained. Geologic mapping indicates that surface deposits in the Project south of the
26 River are recognized as Rindge mucky silt loam, partially drained. These soils are
27 comprised of soft mud and peat deposits.

28 Structures, Faults, and Seismicity

29 The general Project area is underlain by a monoclinial series of Cenozoic deposits
30 dipping gently to the southwest toward the westerly margin of the Central Valley. The
31 contact between the Cenozoic and basement rock dips nearly eight degrees southwest,
32 or at a slightly greater inclination than does the on-lapping homoclinal Cenozoic
33 sequence. No active faults are mapped within the immediate Project area.

34 Adjacent to the Central Valley, the Sierra Nevada and Coast ranges are geologically
35 young mountain ranges containing active and potentially active fault zones. Numerous
36 active faults are present within the Coast Ranges to the west of the Project including the
37 San Andreas, Calaveras, Hayward, and Green Valley Faults. In addition, an active

1 seismotectonic source, the Coast Ranges-Central Valley (CRCV) boundary zone, is
2 situated approximately 9 miles west of the Project. The CRCV boundary zone is the
3 geomorphic boundary of the Coast Ranges and the Central Valley, and is underlain by a
4 300-mile-long seismically active fold and thrust belt that has been the source of recent
5 earthquakes, such as the 1983 Magnitude 6.5 Coalinga and the 1985 Magnitude 6.1
6 Kettleman Hills earthquake. Nearly the entire thrust system is “blind” (concealed). The
7 basal detachment of this thrust system dips at a shallow angle to the west. East-
8 directed thrusting over ramps in the detachment and west-directed thrusting on
9 backthrusts are responsible for the uplift along the eastern range front of the Coast
10 Ranges. Based on earthquake focal mechanisms, movement on the thrust zone is
11 generally perpendicular to the strike of the geomorphic boundary and trend of the San
12 Andreas Fault System. Shortening along the geomorphic boundary is driven by a
13 component of the Pacific-North American Plate motion that is normal to the plate
14 boundary. In recent years, an additional active blind thrust (Mt. Diablo Thrust) has been
15 identified about 20 miles westerly of the subject property. The CRCV boundary zone
16 and the Mt. Diablo Thrust are considered the dominant seismic features with potential
17 for affecting the Project.

18 **3.3.6.2 Regulatory Setting**

19 The following discussion summarizes the most important federal, State, and local laws
20 and regulations that apply to geology and soils for the Project area.

21 **Federal/Local**

22 There are no federal or local regulations related to geology and soils relevant to the
23 Project.

24 **State**

25 California is a highly geologically active area, and has substantial relevant regulatory
26 requirements. The regulations listed below are at least partially applicable to the Project.

27 Alquist-Priolo Earthquake Fault Zoning Act (Pub. Resources Code, §§ 2621-2630). This
28 Act requires that "sufficiently active" and "well-defined" earthquake fault zones be
29 delineated by the State Geologist and prohibits locating structures for human occupancy
30 across the trace of an active fault.

31 California Building Code (CBC). The CBC contains requirements related to excavation,
32 grading, and construction. According to the CBC, a grading permit is required if more
33 than 50 cubic yards of soil are moved. Chapter 33 of the CBC contains requirements
34 relevant to the construction of pipelines alongside existing structures. California Code of
35 Regulations, Title 23, sections 3301.2 and 3301.3 contain provisions requiring

1 protection of the adjacent property during excavations and require a 10-day written
2 notice and access agreements with the adjacent property owners.

3 California Seismic Hazards Mapping Act (Pub. Resources Code, § 2690 and following
4 as Division 2, Chapter 7.8) and the Seismic Hazards Mapping Regulations (Cal. Code
5 Regs., tit. 14, div. 2, ch. 8, art. 10). Designed to protect the public from the effects of
6 strong ground shaking, liquefaction, landslides, other ground failures, or other hazards
7 caused by earthquakes, this Act requires that site-specific geotechnical investigations
8 be conducted identifying the hazard and formulating mitigation measures prior to
9 permitting most developments designed for human occupancy. Special Publication 117,
10 Guidelines for Evaluating and Mitigating Seismic Hazards in California (California
11 Geological Survey [CGS] 2008), constitutes the guidelines for evaluating seismic
12 hazards other than surface fault rupture and for recommending mitigation measures as
13 required by Public Resources Code section 2695, subdivision (a).

14 **3.3.6.3 Impact Analysis**

15 ***a) Expose people or structures to potentially substantial adverse effects,***
16 ***including the risk of loss, injury, or death involving:***

17 *i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-*
18 *Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or*
19 *based on other substantial evidence of a known fault? Refer to Division of Mines*
20 *and Geology Special Publication 42.*

21 The proposed pipeline alignment does not lie within an Alquist-Priolo fault rupture
22 hazard zone; however, it is within the general vicinity of a number of faults that are
23 considered active or potentially active. Project construction would not result in rupture of
24 a known earthquake fault.

25 The proposed pipeline would be installed 45 feet below the bed of the River. In the
26 event of a pipeline leak, pressure valves will detect a leak in the pipeline, and valves on
27 either side of the pipeline will automatically shut off. The pipeline would then be repaired
28 or abandoned. Three Rivers would consult with the appropriate regulatory agencies
29 during such an event prior to any repairs. During a potential leak, the gas will bubble in
30 the water and dissipate to the atmosphere. No long-term significant impacts would be
31 anticipated to result, and the overall impact would be less than significant.

32 *ii) Strong seismic ground shaking?*

33 The Project is located within the general vicinity of a number of faults that are
34 considered active or potentially active and that have the potential to generate strong
35 ground motion. Review of the CGS website indicates that peak horizontal ground
36 motion in the general Project area with a 475-year return period event (10 percent

1 probability of exceedance in 50 years) is expected to be in the range of 0.25 g to 0.33 g.
2 Due to the proximity of major active faults within and adjacent to the Coast Ranges
3 westerly of the Project, the area of the proposed pipeline is considered subject to
4 moderate groundshaking.

5 Project construction activities are not likely to generate any strong seismic activity.
6 Although there is potential for the pipeline to suffer damage in an earthquake, the
7 pipeline would be constructed and operated in accordance with the specific
8 requirements of California Public Utility Commission General Order 112-E and the U.S.
9 Department of Energy, Title 49, Part 142; moreover, in an emergency such as an
10 earthquake, Three Rivers would implement emergency response consistent with its
11 Operation, Maintenance and Emergency Response Plan (Appendix B). Therefore,
12 impacts from seismic ground shaking would be less than significant.

13 *iii) Seismic-related ground failure, including liquefaction?*

14 As detailed in Appendix F, review of Fault-Rupture Zone Mapping indicates that the
15 subject site is not within a Fault-Rupture Hazard Zone as currently delineated by the
16 State of California. The nearest State-delineated Fault-Rupture Zone to the site is
17 situated more than 9 miles westerly of the Project. Furthermore, review of published and
18 unpublished geologic literature, and Raney Geotechnical, Inc.'s reconnaissance survey,
19 have not revealed any evidence of fault rupture hazard on the Project.

20 Soils susceptible to liquefaction are present throughout the Project area. Generally, the
21 upper 50 feet of the soil profile normally consist of several feet of low density organic
22 soils and soft clays, overlying interlayered loose to medium dense sands, sandy silts,
23 and gravels.

24 Seismic events likely to produce the greatest intensity of shaking within the Project
25 include events on the CRCV boundary zone about 9 miles to the west. This fault is
26 considered capable of generating a maximum earthquake magnitude of 6.7. Raney
27 Geotechnical, Inc.'s analysis indicates that, under a maximum intensity earthquake,
28 loose sand layers within the soil profile could be susceptible to liquefaction. Except in
29 the vicinity of levees, the ground is relatively flat and liquefaction would not be expected
30 to cause significant ground spreading.

31 *iv) Landslides?*

32 The portions of the proposed pipeline where the ground would be disturbed during the
33 installation process would occur in agricultural fields that are nearly level and are
34 regularly disturbed during the growing of agricultural crops. In areas where the ground
35 surface will be disturbed, soils will be disturbed temporarily and would be restored to
36 their original condition after the pipeline is installed. As the Project would not disturb the

1 ground surface in areas that have substantial slope, it is not expected to result in any
2 landslides. No impacts are expected.

3 ***b) Result in substantial soil erosion or the loss of topsoil?***

4 The portions of the proposed pipeline where the ground would be disturbed during the
5 installation process would occur in agricultural fields that are nearly level and are
6 regularly disturbed during the growing of agricultural crops. In areas where the ground
7 surface will be disturbed, soils will be disturbed temporarily and topsoil segregated to
8 ensure the land would be restored to its original condition after the pipeline is installed.
9 Soils in the project area are susceptible to erosion due to water runoff. Heavy rains
10 during construction could result in erosion and sedimentation impacts to surface waters.
11 The Applicant has incorporated best management practices into the design of the
12 Project to reduce erosion and sedimentation impacts (Appendix G). As such, Project
13 implementation would not result in substantial soil erosion or the loss of topsoil, and the
14 impact would be less than significant.

15 ***c) Be located on a geologic unit or soil that is unstable, or that would become***
16 ***unstable as a result of the proposed project, and potentially result in on- or off-***
17 ***site landslide, lateral spreading, subsidence, liquefaction or collapse?***

18 Implementation of the Project would not cause Project soils to become unstable, and
19 would not result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or
20 collapse. The portions of the proposed pipeline where the ground would be disturbed
21 during the installation process would occur in agricultural fields that are nearly level and
22 are regularly disturbed during the growing of agricultural crops. In areas where the
23 ground surface would be disturbed, soils would be restored to their original condition
24 after the pipeline is installed after approximately 1.5 months. Soils in the Project area
25 are susceptible to erosion due to water runoff. Heavy rains during construction could
26 result in erosion and sedimentation impacts to surface waters. Three Rivers has
27 incorporated best management practices into the design of the Project to reduce
28 erosion and sedimentation impacts (see Appendix G, Best Management Practices).
29 Therefore, impacts related to project construction would be less than significant.

30 ***d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform***
31 ***Building Code (1994), creating substantial risks to life or property?***

32 The Project occurs within soils that are classified as expansive soils; however, the
33 Project would involve the construction of a pipeline in an area used for growing
34 agricultural crops that does not contain residences or other structures. Although there is
35 potential for the pipeline to suffer damage from expansive soils, the pipeline would be
36 constructed and operated in accordance with the specific requirements of California
37 Public Utility Commission General Order 112-E and the U.S. Department of Energy,
38 Title 49, Part 142; moreover, in the case of a leak, Three Rivers would implement

1 emergency response consistent with its Operation, Maintenance and Emergency
2 Response Plan (Appendix B). Therefore, the Project's impacts would be less than
3 significant.

4 ***e) Have soils incapable of adequately supporting the use of septic tanks or***
5 ***alternative wastewater disposal systems where sewers are not available for the***
6 ***disposal of waste water?***

7 The Project would not result in any development that would increase the generation of
8 wastewater or require the use of an individual wastewater treatment or disposal system.
9 No Project impacts associated with construction would result.

1 **3.3.7 Hazards and Hazardous Materials**

HAZARDS AND HAZARDOUS MATERIALS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.3.7.1 Environmental Setting**

3 The proposed pipeline will carry processed natural gas. Natural gas would be
 4 processed at the natural gas well sites prior to entry into the pipeline system. Operation
 5 of the proposed pipeline will have the potential to release hazardous materials, including
 6 natural gas from rupture or failure of the pipeline system. Three Rivers has prepared an
 7 Emergency Response Plan for the Project (Appendix B).
 8

1 Construction of the proposed pipeline would also involve the use of hazardous materials
2 associated with internal combustion engines and hydraulic equipment, including fuels,
3 coolant liquids, oils, and lubricants. Drilling muds would consist of bentonite, a natural
4 clay compound. Additives (diesel fuel, lingo-sulfates, etc.) are sometimes mixed with
5 bentonite to keep the mud emulsified in the event that drilling is temporary halted. Some
6 of these materials are toxic and could result in adverse effects to aquatic organisms if
7 released to the River during a frac-out; however, as noted in the impact analysis below,
8 bentonite used in the Project will not have diesel or other toxic additives. No fuels or
9 lubricants will be stored on-site during construction of the project.

10 No schools are located within the immediate vicinity of the Project area; the closest
11 school to the Project is Isleton Elementary School, located approximately 2.7 miles to
12 the northeast. The closest airport to the Project is Walnut Grove Airport, located
13 approximately 6.42 miles north of the Project area.

14 **3.3.7.2 Regulatory Setting**

15 The following discussion summarizes the most important federal, State, and local laws
16 and regulations that apply to hazards and hazardous materials for the Project area.

17 **Federal**

18 Clean Water Act. The CWA is a comprehensive piece of legislation that generally
19 includes reference to the federal Water Pollution Control Act of 1972, its substantial
20 supplementation by the CWA of 1977, and subsequent amendments in 1981, 1987, and
21 1993. Overall, the CWA seeks to protect the nation's water from pollution by setting
22 water quality standards for surface water and by limiting the discharge of effluents into
23 waters of the U.S. These water quality standards are enforced by the EPA. The CWA
24 also provides for development of municipal and industrial wastewater treatment
25 standards and a permitting system to control wastewater discharges to surface waters.

26 Oil Pollution Act (OPA). The OPA (33 USC 2712) requires owners and operators of
27 facilities that could cause substantial harm to the environment to prepare and submit
28 plans for responding to worst-case discharges of oil and hazardous substances. The
29 passage of OPA motivated the State of California to pass a more stringent spill
30 response and recovery regulation and the creation of the Office of Spill Prevention and
31 Response (OSPR) to review and regulate oil spill plans and contracts.

32 **State**

33 Porter-Cologne Water Quality Control Act (Porter-Cologne) (Cal. Water Code, § 13000
34 et seq.). Porter-Cologne mandates that waters of the State shall be protected, such that
35 activities which may affect waters of the State shall be regulated to attain the highest
36 quality (see Section 3.3.8, Hydrology and Water Quality).

1 **Local**

2 The Sacramento and San Joaquin County General Plans Hazardous Materials and
3 Public Safety Elements address hazards and hazardous materials use and safety within
4 the Project area. These elements provide goals, policies, and actions intended to
5 control the use of hazardous materials, and promote the safe use of these materials by
6 the public.

7 **3.3.7.3 Impact Analysis**

8 ***a) Create a significant hazard to the public or the environment through the routine***
9 ***transport, use, or disposal of hazardous materials?***

10 ***b) Create a significant hazard to the public or the environment through***
11 ***reasonably foreseeable upset and accident conditions involving the release of***
12 ***hazardous materials into the environment?***

13 There is potential for accidental releases of hazardous materials during Project
14 construction activities. Potential impacts associated with the accidental release of these
15 materials depend on the quantity and type of material, the location where it is used, the
16 toxicity or other hazardous characteristics of the material, and whether it is transported,
17 stored, and used in a solid, liquid, or gaseous form. The following procedures will be
18 implemented to avoid and/or minimize potential impacts resulting from hazards or
19 hazardous materials.

- 20 • All hazardous materials such as diesel fuel shall be stored according to the
21 California Code of Regulations, Titles 22, 23, 26 and 27, California Fire Code,
22 Title 24, and Sacramento/San Joaquin County hazardous materials ordinances
23 and Material Safety Data Sheets shall be on the Project site. Waste materials
24 shall be managed properly in accordance with requirements that comply with or
25 given authority by the Code of Federal Regulations (40 CFR) and refined in
26 California through California Code of Regulations, Titles 14, 22, 23, 26 & 27.
27 Training shall be provided to all personnel involved in handling of hazardous
28 materials/waste.
- 29 • A Project-specific emergency response plan shall be prepared for the Project and
30 a copy of the plan shall be kept on site. The plan shall discuss methods to avoid
31 and/or minimize impacts in the event of a release. The purpose of the plan shall
32 be to ensure that adequate containment would be provided to control accidental
33 spills, that adequate spill response equipment and absorbents would be readily
34 available, and that personnel would be properly trained in how to control and
35 clean up any spills.
- 36 • Fluid disposal shall follow CVRWQCB regulations (Cal. Code Regs., tit. 23).

- 1 • Equipment staging areas shall be identified that are located at least 100 feet from
2 any water body, wetlands, or sensitive habitats. All staging, fueling, and
3 maintenance of vehicles and construction equipment shall be conducted in these
4 designated staging areas. Equipment shall be provided with drip pans nightly to
5 prevent soil contamination during periods of inactivity. The contractor shall
6 maintain spill containment and cleanup materials on-site during the duration of
7 construction activities. Any soil contamination by fuels or petroleum-based
8 products shall be immediately cleaned-up and removed from the site in DOT-
9 approved drums or bags and properly disposed of in accordance with local,
10 State, and federal regulations.
- 11 • In the event of a spill of hazardous materials or drilling fluids, the applicant will
12 immediately implement provisions of the Frac-Out Contingency Plan.
- 13 • All spills of hazardous materials, if impacting or threatening waters of the State
14 and/or the U.S., shall be reported to the appropriate local, State and federal
15 agencies.
- 16 • The use of diesel fuel or hazardous substances as additives to drilling muds will
17 be prohibited.
- 18 • Amendments to the Frac-Out Contingency Plan and Hazardous Materials
19 Contingency Plan shall be filed with the appropriate local, State, and federal
20 agencies.

21 With the implementation of the measures described above, the Project will have less
22 than significant impact. The Project would not create a significant hazard to the public or
23 the environment through the routine transport, use, or disposal of hazardous materials.
24 Additionally, the Project would not create a significant hazard to the public or the
25 environment through reasonably foreseeable upset and accident conditions involving
26 the release of hazardous materials into the environment.

27 ***c) Emit hazardous emissions or handle hazardous or acutely hazardous***
28 ***materials, substances, or waste within one-quarter mile of an existing or***
29 ***proposed school?***

30 The closest school to the Project is Isleton Elementary School, located approximately
31 2.7 miles to the northeast of the Project. The proposed natural gas pipeline would not
32 emit hazardous emissions nor would the pipeline require the handling of hazardous or
33 acutely hazardous materials, substances, or waste within one-quarter mile of an existing
34 or proposed school and, therefore, no Project impacts due to construction or operation
35 would result.

36 ***d) Be located on a site which is included on a list of hazardous materials sites***
37 ***compiled pursuant to Government Code section 65962.5 and, as a result, would it***
38 ***create a significant hazard to the public or the environment?***

1 As of April 4, 2013, the Department of Toxic Substances Control (DTSC) EnviroStor
2 database does not identify the Project area as being located on a federal superfund,
3 State response, school clean up, or corrective action cleanup site. Therefore, no
4 impacts due to Project construction or operation would occur.

5 ***e) For a project located within an airport land use plan or, where such a plan has***
6 ***not been adopted, within two miles of a public airport or public use airport, would***
7 ***the project result in a safety hazard for people residing or working in the project***
8 ***area?***

9 The closest airport to the Project is Walnut Grove Airport, located approximately 6.42
10 miles north of the Project. The Project would be located underground. Therefore, the
11 Project would not result in a safety hazard for people residing or working in the Project
12 area and no project impacts due to construction or operation would result.

13 ***f) For a project within the vicinity of a private airstrip, would the project result in a***
14 ***safety hazard for people residing or working in the project area?***

15 The Project is not located within the vicinity of a private airstrip, and the pipeline would
16 be located underground. Therefore, the proposed pipeline would not result in a safety
17 hazard for people residing or working in the Project area and no impacts due to
18 construction or operation would result.

19 ***g) Impair implementation of or physically interfere with an adopted emergency***
20 ***response plan or emergency evacuation plan?***

21 No adopted emergency response plans or emergency evacuation plans are in effect
22 within the Project area. Therefore, the Project would not impair or physically interfere
23 with an adopted emergency response plan or emergency evacuation plan. No impacts
24 are expected from project implementation.

25 ***h) Expose people or structures to a significant risk of loss, injury or death***
26 ***involving wildland fires, including where wildlands are adjacent to urbanized***
27 ***areas or where residences are intermixed with wildlands?***

28 The Project is not located within a wildland fire hazard area. The proposed pipeline
29 would be located underground and therefore would not expose people or structures to a
30 significant risk of loss, injury or death involving wildland fires. Therefore, impacts due to
31 project construction and operation would be less than significant.

1 3.3.8 Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

1 **3.3.8.1 Environmental Setting**

2 The Project alignment would cross under the River and various agricultural irrigation
3 ditches. The Project area is primarily used for agricultural purposes, and these irrigation
4 ditches provide water for irrigating crops. Irrigation water is obtained from the River for
5 such purposes. Because of surface water infiltration and low elevation, groundwater
6 within the Project area is shallow.

7 The Project is located within an area subject to inundation and a 100-year flood plain as
8 designated by the Federal Emergency Management Agency and the San Joaquin and
9 Sacramento County General Plans. However, such a flooding event would not likely
10 occur except in the instance of a levee break. The proposed pipeline would be
11 completely unmanned (excepting occasional visits by pipeline technicians) and does not
12 present any potential danger or impact as a result of being in the 100-year flood zone.
13 Pipeline equipment will not impede or redirect water flow during a 100-year event.

14 The Project would not alter current drainage patterns in the area and construction would
15 be short term in nature. All water required during implementation of the Project would be
16 imported to the site from adjacent water sources with existing entitlements.

17 **3.3.8.2 Regulatory Setting**

18 The following discussion summarizes the most important federal, State, and local laws
19 and regulations that apply to hazards and hazardous materials for the Project area.

20 **Federal**

21 Clean Water Act. The CWA is a comprehensive piece of legislation that generally
22 includes reference to the federal Water Pollution Control Act of 1972, its substantial
23 supplementation by the CWA of 1977, and subsequent amendments. Overall, the CWA
24 seeks to protect the nation’s water from pollution by setting water quality standards for
25 surface water and by limiting the discharge of effluents into waters of the U.S. These
26 water quality standards are enforced by the EPA. The CWA also provides for
27 development of municipal and industrial wastewater treatment standards and a
28 permitting system to control wastewater discharges to surface waters. State operation
29 of the program is encouraged. The CWA is the primary federal statute governing the
30 discharge of dredged and/or fill material into waters of the U.S. Relevant sections
31 include the following.

32 • Section 208 requires that states develop programs to identify and control
33 nonpoint sources of pollution, including runoff.

34 • Section 230.8 gives authority to the USACE and EPA to specify, in advance,
35 sites that are either suitable or unsuitable for the discharge of dredged or fill
36 material within U.S. waters.

- 1 • Section 303 requires states to establish and enforce water quality standards to
2 protect and enhance beneficial uses of water for such purposes as recreation
3 and fisheries.
- 4 • Section 304(a)(1) requires the administrator of the EPA to publish criteria for
5 water quality that reflect the latest scientific knowledge regarding the effects of
6 pollutants in any body of water.
- 7 • Section 313(a) requires that federal agencies observe state and local water
8 quality regulations.
- 9 • Section 401 applies to dredging and other in-water activities and requires
10 certification that a permitted project complies with state water quality standards
11 for actions within state waters. Under section 401, states must establish water
12 quality standards for waters in the territorial sea. Dredging and other in-water
13 activities may not cause the concentrations of chemicals in the water column to
14 exceed state standards. To receive state certification, the applicant must
15 demonstrate that these standards would not be exceeded.
- 16 • Section 401(a)(1) requires any applicant for a federal permit (i.e., section 404) to
17 provide certification from the state in which the discharge originates that such
18 discharge would comply with applicable water quality provisions (i.e., section
19 303).
- 20 • Section 402 requires the EPA Administrator to develop the National Pollutant
21 Discharge Elimination System (NPDES) to issue permits for pollutant discharges
22 to waters of the U.S. An NPDES permit is required for: (1) any proposed point
23 source wastewater or stormwater discharge to surface waters from municipal
24 areas with a population of 100,000 or more; and (2) construction activities
25 disturbing 1.0 acre (0.4 hectare) or more of land. A stormwater pollution
26 prevention plan (SWPPP) is required for projects disturbing more than 1 acre,
27 pursuant to the general permit for construction-related discharges.
- 28 • Section 404 establishes programs regulating the discharge of dredged and fill
29 material into navigable waters of the United States.
- 30 • Section 404(b)(1) guidelines are the substantive criteria used in evaluating
31 discharges of dredged or fill material under section 404.

32 Oil Pollution Act (33 USC 2712). The OPA requires owners and operators of facilities
33 that could cause substantial harm to the environment to prepare and submit plans for
34 responding to worst-case discharges of oil and hazardous substances.

35 Rivers and Harbors Act (33 USC 401). Section 10 of the Rivers and Harbors Act limits
36 the construction of structures and the discharge of fill into navigable waters of the U.S.

1 **State**

2 Porter-Cologne Water Quality Control Act of 1969 (Cal. Water Code § 13000 et seq.)
3 (Porter-Cologne). Porter-Cologne is the principal law governing water quality in
4 California. The act, which establishes a comprehensive program to protect water quality
5 and the beneficial uses of State waters, also established the SWRCB and the nine
6 RWQCBs that are charged with implementing the SWRCB provisions and have primary
7 responsibility for protecting water quality in California. Porter-Cologne also implements
8 many provisions of the federal CWA, such as the NPDES permitting program.

9 Pursuant to federal law (33 USC 1341; CWA § 401), applicants for a federal license or
10 permit for activities that may result in any discharge to waters of the United States must
11 seek a Water Quality Certification (Certification) from the State in which the discharge
12 originates. Such Certification is based on a finding that the discharge will meet water
13 quality standards and other appropriate requirements of State law. In California,
14 RWQCBs issue or deny certification for discharges within their jurisdiction. The SWRCB
15 has this responsibility where projects or activities affect waters in more than one
16 RWQCB's jurisdiction. If the SWRCB or a RWQCB imposes a condition on its
17 certification, those conditions must be included in the federal permit or license.

18 As required by both the CWA and Porter-Cologne, the CVRWQCB has established
19 water quality objectives and toxic material limitations in the Water Quality Control Plan
20 (Basin Plan) for the Sacramento River and San Joaquin River Basins, which are
21 designed to protect beneficial uses of surface waters in the Project area, which are as
22 follows:

- 23 • Municipal and Domestic Supply
- 24 • Agricultural Supply
- 25 • Industrial Service Supply
- 26 • Industrial Process Supply
- 27 • Ground Water Recharge
- 28 • Freshwater Replenishment
- 29 • Navigation
- 30 • Hydropower Generation
- 31 • Water Contact Recreation
- 32 • Non-contact Water Recreation
- 33 • Commercial and Sport Fishing
- 34 • Aquaculture
- 35 • Warm Freshwater Habitat
- 36 • Cold Freshwater Habitat
- 37 • Estuarine Habitat
- 38 • Wildlife Habitat
- 39 • Preservation of Biological Habitats of Special Significance

- 1 • Rare, Threatened, or Endangered Species
- 2 • Migration of Aquatic Organisms
- 3 • Spawning, Reproduction, and/or Early Development
- 4 • Shellfish Harvesting

5 California Water Code section 8710. This section requires that a reclamation board
6 permit be obtained prior to the start of any work, including excavation and construction
7 activities, if projects are located within floodways or levee sections. Structures for
8 human habitation are not permitted within designated floodways.

9 California Code of Regulations, Title 23. The Central Valley Flood Protection Board
10 (CVFPB) regulates specific river, creek, and slough crossings for flood protection.
11 These crossings must meet the provisions of Title 23 of the California Code of
12 Regulations. Title 23 requires that new crossings maintain hydraulic capacity through
13 such measures as in-line piers, adequate stream bank height (freeboard), and
14 measures to protect against stream bank and channel erosion. Title 23 requires that
15 improvements, including crossings, be constructed in a manner that does not reduce
16 the channel's capacity or functionality, or that of any federal flood control project. The
17 CVFPB issues and reviews encroachment permit applications for approval of a new
18 channel crossing or other channel modification. For a crossing proposed for a federal
19 flood control project, the CVFPB coordinates review of the application with the USACE
20 and other agencies, as necessary.

21 **Local**

22 The Sacramento and San Joaquin County General Plans Land Use, Conservation, and
23 Open Space Elements address hydrology and water quality within the Project area.
24 These elements provide goals, policies, and actions intended to preserve, restore, and
25 enhance the use of water resources, and promote the quality and responsible use of
26 water by the public.

27 **3.3.8.3 Impact Analysis**

28 ***a) Violate any water quality standards or waste discharge requirements?***

29 The Project would include the installation of a pipeline under the ground surface using
30 traditional trenching and, under the Mokelumne River, agricultural drainage ditches, and
31 State Highway 12, HDD boring methods. Soils would only be temporarily impacted, and
32 areas of ground disturbance would be restored to original conditions after installation
33 activities are completed. With the implementation of Project mitigation measures, the
34 potential for discharge of any materials from these areas (e.g., sediment) would be low
35 and would not result in water quality degradation or an increase in contaminants.

1 HDD activities would bore underneath surface water features includes agricultural
2 drainage ditches and the River. With implementation of the Frac-Out Contingency Plan,
3 the HDD Boring Abandonment Contingency Plan (see Section 2.3.2), and other
4 construction best management practices (see Section 3.3.7.3), however, impacts to
5 water quality in these areas are not anticipated. Therefore, impacts due to Project
6 implementation would be less than significant.

7 ***b) Substantially deplete groundwater supplies or interfere substantially with***
8 ***groundwater recharge such that there would be a net deficit in aquifer volume or***
9 ***a lowering of the local groundwater table level (e.g., the production rate of pre-***
10 ***existing nearby wells would drop to a level which would not support existing land***
11 ***uses or planned uses for which permits have been granted)?***

12 The Project would not require water service as part of construction or long-term
13 operation nor would it interfere with groundwater supply or recharge. No Project impact
14 would result.

15 ***c) Substantially alter the existing drainage pattern of the site or area, including***
16 ***through the alteration of the course of a stream or river, in a manner which would***
17 ***result in substantial erosion or siltation on- or off-site?***

18 The pipeline would be located underground, and surfaces disturbed during construction
19 would be restored to pre-Project conditions. Therefore, the Project would not
20 substantially alter the drainage pattern of the Project or area that could result in
21 substantial erosion or siltation on or off-site, and no impacts due to construction would
22 occur. No impacts are anticipated.

23 ***d) Substantially alter the existing drainage pattern of the site or area, including***
24 ***through the alteration of the course of a stream or river, or substantially increase***
25 ***the rate or amount of surface runoff in a manner which would result in flooding***
26 ***on- or off-site?***

27 The Project involves placement of infrastructure underground and would not alter the
28 existing drainage patterns or substantially increase the rate or amount of surface run off.
29 No impacts are anticipated during construction of the Project.

30 ***e) Create or contribute runoff water which would exceed the capacity of existing***
31 ***or planned stormwater drainage systems or provide substantial additional***
32 ***sources of polluted runoff?***

33 The Project is a natural gas pipeline that would be located underground. The Project
34 would not alter existing drainage patterns, result in an increase in erosion or flooding,
35 require modifications to any existing drainage facilities, or adversely affect the quality of
36 runoff water; therefore, no impacts due to construction would occur.

1 **f) Otherwise substantially degrade water quality?**

2 The Project would be located underground and would not introduce a new use into the
3 area. As noted in *Response 3.3.8.3 a)* above, the Project would not violate water quality
4 standards or waste discharge requirements. Therefore, impacts due to construction and
5 operation are considered less than significant.

6 **g) Place housing within a 100-year flood hazard area as mapped on a federal**
7 **Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard**
8 **delineation map?**

9 The Project does not include the construction of housing within a 100-year flood hazard
10 area. No impacts are anticipated.

11 **h) Place within a 100-year flood hazard area structures which would impede or**
12 **redirect flood flows?**

13 The Project would not involve the construction of any structures within a 100-year flood
14 plain, and therefore, would not impede or redirect any water flow within a 100-year flood
15 plain. No impacts are anticipated.

16 **i) Expose people or structures to a significant risk of loss, injury or death**
17 **involving flooding, including flooding as a result of the failure of a levee or dam?**

18 The proposed pipeline would be located underground, and the Project would not result
19 in the development of any housing or any other above-ground structures that would
20 redirect flood flows. Therefore, Project construction would have no flooding-related
21 impacts.

22 **j) Inundation by seiche, tsunami, or mudflow?**

23 There is no potential for seiche or tsunami due to the lack of a significant water body
24 near the Project. The Project area is generally flat with the exception of levees on either
25 side of the River. The possibility of mudflow on these levees is low. No evidence of past
26 mudflows was observed within or adjacent to the Project area. Therefore, Project
27 impacts would be less than significant.

1 **3.3.9 Land Use and Planning**

LAND USE AND PLANNING – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.9.1 Environmental Setting**

3 The Project is situated within unincorporated areas of Sacramento and San Joaquin
 4 Counties, California. Existing land uses within and adjacent to the Project include the
 5 growing of agricultural crops (corn – *Zea mays* L.), recreation (fishing and boating), and
 6 natural gas exploration and production activities. The Project occurs within both upland
 7 areas and agricultural wetlands, as well as under the River and agricultural drainage
 8 ditches. Wetlands were observed along the edges of the River and within agricultural
 9 drainage ditches under which the pipeline would be installed via boring, as well as
 10 within the River and agricultural drainage ditches in the Project buffer area. No vernal
 11 pool habitat was observed in areas of the Project where ground-disturbing activities
 12 would occur.

13 The area surrounding the Project consists of privately and publically owned lands. The
 14 city of Isleton is located approximately 2.53 miles northwest of the Project, while the city
 15 of Rio Vista is located approximately 6.31 miles west of the Project.

16 **3.3.9.2 Regulatory Setting**

17 The following discussion summarizes the most important federal, State, and local laws
 18 and regulations that apply to land use for the Project area.

19 **Federal**

20 There are no federal regulations related to land use relevant to the Project.

1 **State**

2 California State Lands Commission (CSLC). The CSLC has jurisdiction and
3 management authority over all ungranted tidelands, submerged lands, and the beds of
4 navigable lakes and waterways. The CSLC also has certain residual and review
5 authority for tidelands and submerged lands legislatively granted in trust to local
6 jurisdictions (Pub. Resources Code, §§ 6301 & 6306). All tidelands and submerged
7 lands, granted or ungranted, as well as navigable lakes and waterways, are subject to
8 the protections of the Common Law Public Trust. As general background, the State of
9 California acquired sovereign ownership of all tidelands and submerged lands and beds
10 of navigable lakes and waterways upon its admission to the United States in 1850. The
11 State holds these lands for the benefit of all people of the State for statewide Public
12 Trust purposes, which include but are not limited to waterborne commerce, navigation,
13 fisheries, water-related recreation, habitat preservation and open space. On tidal
14 waterways, the State's sovereign fee ownership extends landward to the mean high tide
15 line, except for areas of fill or artificial accretion.

16 **Local**

17 Sacramento and San Joaquin County General Plans. The Land Use Element of the
18 Sacramento and San Joaquin General Plans defines planned long-range development
19 pattern and physical character, as well as the extent and distribution of future growth in
20 the project area. The Land Use Element is one of seven elements mandated by State
21 planning law that consists of a Statement of policies and a land use map showing the
22 spatial distribution, location, and extent of lands designated for housing, business,
23 industry, open space, agriculture, and other categories (Sacramento County 2011, San
24 Joaquin County 2012).

25 **3.3.9.3 Impact Analysis**

26 ***a) Physically divide an established community?***

27 The Project does not occur within an existing community (the Project is located in un-
28 incorporated agricultural areas), and as such, would not physically divide an established
29 community. No Project impacts are expected.

30 ***b) Conflict with any applicable land use plan, policy, or regulation of an agency***
31 ***with jurisdiction over the Project (including, but not limited to the general plan,***
32 ***specific plan, local coastal program, or zoning ordinance) adopted for the***
33 ***purpose of avoiding or mitigating an environmental effect?***

34 The Project is consistent with the land use and zoning designation for the area, and is
35 therefore considered consistent with associated agricultural resource planning purposes
36 and General Plan requirements. The Land Use Elements of the Sacramento and San

1 Joaquin County General Plans state that natural gas pipelines installed underground
2 are a “compatible” use with agricultural designations (Sacramento County 2011, San
3 Joaquin County 2012). The Project would temporarily disturb agricultural soils.
4 However, after installation is complete, soils would be placed back in the trench in the
5 same manner they are removed, and no long-term impacts to agricultural soils would
6 occur. Impacts are considered less than significant.

7 ***c) Conflict with any applicable habitat conservation plan or natural community***
8 ***conservation plan?***

9 The SJMSCP covers the entire County of San Joaquin, including Bouldin Island on
10 which portions of the Project would occur; however, agricultural lands are not covered
11 by the provisions of the SJMSCP and, as the Project will only have ground-disturbing
12 impacts within agricultural lands, the SJMSCP is not applicable to the Project. No other
13 habitat conservation plans or other approved local, regional, or state habitat
14 conservation plans are applicable to or cover the Project area. Therefore, the Project
15 would have no impact on existing conservation plans.

1 **3.3.10 Mineral Resources**

MINERAL RESOURCES - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.10.1 Environmental Setting**

3 San Joaquin and Sacramento Counties, including the general Project area, serve as an
 4 important regional source of natural gas. The Project is located within the administrative
 5 boundaries of the River Island Gas Field. There are 15 natural gas wells that have been
 6 drilled within 1-mile of the proposed pipeline alignment according to Department of
 7 Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) records. The
 8 pipeline would connect an existing active gas well on Bouldin Island to an existing
 9 pipeline and production facility at the northern terminus of the proposed pipeline on
 10 Tyler Island.

11 No other types of mineral resources have been identified within the Project area. There
 12 are no existing or planned surface mining operations within the Project area.

13 **3.3.10.2 Regulatory Setting**

14 **Federal**

15 There are no federal regulations related to mineral resources relevant to the Project.

16 **State**

17 Surface Mining and Reclamation Act (SMARA). The CGS classifies the regional
 18 significance of mineral resources in accordance with SMARA and assists in the
 19 designation of lands containing significant aggregate resources. Mineral Resource
 20 Zones (MRZs) have been designated to indicate the significance of mineral deposits.
 21 The MRZ categories are:

- 22 • **MRZ-1:** Areas where adequate information indicates that no significant mineral
 23 deposits are present or where it is judged that little likelihood exists for their
 24 presence.
- 25 • **MRZ-2:** Areas where adequate information indicates significant mineral deposits
 26 are present, or where it is judged that a high likelihood exists for their presence.

- 1 • **MRZ-3:** Areas containing mineral deposits the significance of which cannot be
2 evaluated from available data.
- 3 • **MRZ-4:** Areas where available information is inadequate for assignment to any
4 other MRZ.

5 **Local**

6 The Conservation Elements of the Sacramento and San Joaquin County General Plans
7 address mineral resources, their extraction, the continued access to these resources,
8 and their wise use. These elements provide goals, policies, and actions intended to
9 achieve the Counties' vision for continued access to, extraction of, and continued
10 benefit to Sacramento and San Joaquin Counties from these mineral resources.

11 **3.3.10.3 Impact Analysis**

12 ***a) Result in the loss of availability of a known mineral resource that would be of*** 13 ***value to the region and the residents of the State?***

14 The purpose of the Project is to bring to market (i.e., make available) natural gas that is
15 currently available at the existing DW 8-1 Well. No other known mineral resource areas
16 are identified within the Project area. As such, the Project would not result in the loss of
17 availability of any known mineral resources that would be of value to the region and the
18 residents of the State, and no impacts due to Project construction would result.

19 ***b) Result in the loss of availability of a locally-important mineral resource*** 20 ***recovery site delineated on a local general plan, specific plan or other land use*** 21 ***plan?***

22 The Sacramento and San Joaquin County General Plans do not identify any mineral
23 resource protection zones or locally important mineral resources recovery sites in the
24 Project area nor are any existing or planned surface mining operations located in the
25 Project area. San Joaquin and Sacramento Counties, including the general Project
26 area, serve as an important regional source of natural gas. The Project is located within
27 the administrative boundaries of the River Island Gas Field. The proposed pipeline will
28 connect an existing active gas well to an existing pipeline and production facility at the
29 northern terminus of the proposed pipeline on Tyler Island. Therefore, the Project would
30 not result in the loss of availability of a locally important mineral resource recovery site
31 and no impacts due to Project construction would result.

1 **3.3.11 Noise**

NOISE – Would the Project result in:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.11.1 Environmental Setting**

3 “Noise” is often defined as unwanted sound, whereas “sound” is used to describe the
 4 mechanical form of radiant energy transmitted by pressure waves in the air. Sound is
 5 characterized by two parameters: amplitude (loudness) and frequency (tone).

- 6 • Amplitude is the difference between ambient air pressure and the peak pressure
 7 of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale
 8 and is interpreted by the ear as corresponding to different degrees of loudness.
 9 Laboratory measurements correlate a 10 dB increase in amplitude with a
 10 perceived doubling of loudness and establish a 3 dB change in amplitude as the
 11 minimum audible difference perceptible to the average person (Federal Highway
 12 Administration 1982).
- 13 • Frequency is the number of fluctuations of the pressure wave per second and is
 14 measured in hertz (Hz), which indicates the number of cycles per second. The
 15 human ear is not equally sensitive to sounds of different frequencies. Sound
 16 waves below 16 Hz or above 20,000 Hz cannot be heard by humans, and the
 17 human ear is more sensitive to sound in the higher portion of this range than in

1 the lower. To approximate this sensitivity, environmental sound is usually
2 measured in A-weighted decibels (dBA). On this scale, the normal range of
3 human hearing extends from about 10 dBA to about 140 dBA.

4 The intensity of environmental noise fluctuates over time and several descriptors of
5 time-averaged noise levels are used. The three most commonly used descriptors are
6 Energy Equivalent Noise Level (L_{eq}), Day-Night Average Noise Level (L_{dn}), and
7 Community Noise Equivalent Level (CNEL).

- 8 • L_{eq} – a measure of the average energy content (intensity) of noise over any given
9 period of time. Many communities use 24-hour descriptors of noise levels to
10 regulate noise.
- 11 • L_{dn} – the 24-hour average of the noise intensity, with a 10 dBA “penalty” added
12 for nighttime noise (10:00 PM to 7:00 AM) to account for the greater sensitivity to
13 noise during this period.
- 14 • CNEL – similar to L_{dn} but adds an additional 5 dB penalty to evening noise (7:00
15 to 10:00 PM).

16 Noise generated by stationary sources, such as construction sites, machinery, and
17 industrial operations, typically attenuate at a rate between 6.0 to about 7.5 dBA per
18 doubling of distance. Noise generated by mobile sources, such as automobiles, trucks
19 and airplanes, generally attenuate at a rate between 3.0 to 4.5 dBA per doubling of
20 distance. Table 3.3.11-1 provides examples of maximum sound levels associated with
21 common noise sources, and human response to these examples.

22 In addition to the criteria discussed above, another consideration in defining impact
23 criteria is the existing noise environment in the project area. Appendix G of the State
24 CEQA Guidelines states that a project would normally have a significant effect on the
25 environment if it increases substantially the ambient noise levels for adjoining areas. In
26 community noise assessments, noise impacts are “generally not significant” if noise-
27 sensitive sites are not located in the project area, or if increases in community noise
28 levels with the implementation of the project are expected to be 3 dBA or less at noise-
29 sensitive locations, and the project would not result in violations of local ordinances or
30 standards. Noise-sensitive sites include residences, motels, hotels, public meeting
31 rooms, auditoriums, schools, churches, libraries, hospitals, amphitheaters, parks, and
32 other areas where quiet is essential. If the increase in noise exposure level is greater
33 than 3 dBA, the significance of impact will depend on the ambient noise level and the
34 presence of noise-sensitive sites. Noise impacts are “possibly significant” if increases in
35 noise exposure levels are expected to be greater than 5 dBA with implementation of the
36 project. Noise impacts are “generally significant” if the project would cause noise
37 standards or ordinances to be exceeded, or increases in the community noise levels by
38 6 to 10 dBA in built-up areas, or increases by 10 dBA or more in rural areas. CNEL is
39 used in this initial study for arterial/highway traffic-generated noise assessment.

1
2

**Table 3.3.11-1
Weighted Sound Levels and Human Responses**

Example of Sound Source	dBA*	Response Criterion
	0	Threshold of hearing
	10	Just audible
Broadcasting studio background	20	
Soft whisper at 2 feet	30	Very quiet
Background level within a residence or library	40	
Open office background level	50	Quiet
Light auto traffic at 50 feet; normal conversational speech at 5 to 10 feet	60	
Freeway traffic at 50 feet; commercial jet aircraft interior during flight	70	Intrusive, with telephone use difficult
Diesel locomotive at 300 feet; helicopter at 500 feet	80	Annoying
Heavy truck or bulldozer at 50 feet; pneumatic drill at 50 feet	90	Hearing damage at 8 Hours
Shotgun at 200 feet; shout at 0.5 feet; inside New York City subway station	100	Very annoying
Riveting machine at operators position; jet takeoff at 2,000 feet	110	
Jet aircraft takeoff at 100 feet; auto horn at 3 feet	120	Threshold of feeling and pain, with maximum vocal effort
	130	Painfully loud
Carrier deck jet operation	140	Limit of amplified speech
*Typical A-weighted sound levels taken with a sound-level meter and expressed as dBA, which approximates the frequency response of the human ear. Source: Council of Environmental Quality, 1970 Environmental Quality: The First Annual Report of the Council on Environmental Quality. U.S. Government Printing Office, Washington D.C.		

3 The Project is located in an unincorporated area of southwestern Sacramento County
4 and western San Joaquin County. The closest community to the Project is Isleton,
5 which is located approximately 2.53 miles to the northwest of the Project. The Project
6 area is used primarily for agricultural, recreational, and natural gas production, and the
7 closest residence is located approximately 0.14 mile (740 feet) to the southwest of the
8 5-2 Line tie-in point at the northern terminus of the proposed pipeline alignment. The
9 current primary contributors to noise in the vicinity of the Project area are vehicular
10 traffic on blacktop and dirt roads, recreational boat traffic on the River, and noise
11 generated by farming activities (i.e., mechanical cultivation, seeding, and harvesting).

1 **3.3.11.2 Regulatory Setting**

2 The following discussion summarizes the most important federal, State, and local laws
3 and regulations that apply to noise for the Project area.

4 **Federal**

5 A number of laws and guidelines at the federal level direct the consideration of a broad
6 range of noise and vibration issues. Several of the more significant noise related federal
7 regulations and guidelines are provided below.

8 Noise Control Act of 1972 (42 USC 4910). This Act establishes a national policy to
9 promote an environment for all Americans free from noise that jeopardizes their health
10 and welfare. To accomplish this, the Act establishes a means for the coordination of
11 federal research and activities in noise control, authorizes the establishment of federal
12 noise emissions standards for products distributed in commerce, and provides
13 information to the public respecting the noise emission and noise reduction
14 characteristics of such products.

15 EPA recommendations in “Information on Levels of Environmental Noise Requisite to
16 Protect Health and Welfare with an Adequate Margin of Safety” (NTIS 550\9-74-004,
17 EPA, Washington, D.C., March 1974). In response to a federal mandate, the EPA
18 provided guidance in this document, commonly referenced as the, “Levels Document,”
19 that establishes an L_{dn} of 55 dBA as the requisite level, with an adequate margin of
20 safety, for areas of outdoor uses including residences and recreation areas. This
21 document does not constitute EPA regulations or standards, but identifies safe levels of
22 environmental noise exposure without consideration for achieving these levels or other
23 potentially relevant considerations. It is intended to “provide State and Local
24 governments as well as the federal government and the private sector with an
25 informational point of departure for the purpose of decision making.” The agency is
26 careful to stress that the recommendations contain a factor of safety and do not
27 consider technical or economic feasibility issues, and therefore should not be construed
28 as standards or regulations.

29 Federal Energy Regulatory Commission (FERC) Guidelines On Noise Emissions From
30 Compressor Stations, Substations, And Transmission Lines (18 CFR 157.206(d)5).
31 These guidelines require that “the noise attributable to any new compressor stations,
32 compression added to an existing station, or any modification, upgrade or update of an
33 existing station, must not exceed a L_{dn} of 55 dBA at any pre-existing noise sensitive
34 area (such as schools, hospitals, or residences).” This policy was adopted based on the
35 EPA-identified level of significance of 55 L_{dn} dBA.

36 Federal Highway Administration (FHA) Noise Abatement 1 Procedures (23 CFR Part
37 772). The purpose of 23 CFR Part 772 is to provide procedures for noise studies and

1 noise abatement measures to help protect the public health and welfare, to supply noise
2 abatement criteria, and to establish requirements for information to be given to local
3 officials for use in the planning and design of highways. It establishes five categories of
4 noise sensitive receptors and prescribes the use of the Hourly L_{eq} as the criterion metric
5 for evaluating traffic noise impacts.

6 Department of Housing and Urban Development (HUD) Environmental Standards (24
7 CFR Part 51). HUD Regulations set forth the following exterior noise standards for new
8 home construction:

- 9 • 65 L_{dn} or less – Acceptable
- 10 • > 65 L_{dn} and < 75 L_{dn} – Normally unacceptable, appropriate sound attenuation
11 measures must be provided
- 12 • > 75 L_{dn} – Unacceptable

13 HUD's regulations do not contain standards for interior noise levels. Rather, a goal of 45
14 dB is set forth and attenuation requirements are geared to achieve that goal.

15 **State**

16 State regulations for limiting population exposure to physically and/or psychologically
17 significant noise levels include established guidelines and ordinances for roadway and
18 aviation noise under Caltrans as well as the now defunct California Office of Noise
19 Control. The California Office of Noise Control land use compatibility guidelines
20 provided the following:

- 21 • An exterior noise level of 60 to 65 dBA CNEL is considered "normally
22 acceptable" for residential uses.
- 23 • A noise level of 70 dBA CNEL is considered to be "conditionally acceptable."
24 This level is considered to be the upper limit of "normally acceptable" noise levels
25 for sensitive uses such as schools, libraries, hospitals, nursing homes, churches,
26 parks, offices, and commercial and professional businesses.
- 27 • A noise level of greater than 75 dBA CNEL is considered "clearly unacceptable"
28 for residences.

29 **Local**

30 The Project falls under the local jurisdictions of Sacramento and San Joaquin Counties.
31 Local regulations applicable to the Project are described below.

32 County of Sacramento. The County of Sacramento General Plan Noise Element
33 establishes land use compatibility standards for new developments. Table 3.3.11-2
34 below lists acceptable and unacceptable noise levels for new development which is
35 compatible with noise-sensitive uses unless noise mitigation features are included in

1 Project designs. Noise sensitive land uses are: (1) Residential, including single and
 2 multifamily dwellings, mobile home parks, dormitories, and similar uses; (2) Transient
 3 lodging, including hotels, motels, and similar uses; (3) Hospitals, nursing homes,
 4 convalescent hospitals, and other facilities for long-term medical care; and (4) Public or
 5 private educational facilities, libraries, churches, and places of public assembly.

6 **Table 3.3.11-2**
 7 **County of Sacramento General Plan Land Use and Noise Compatibility**

New Land Use	Sensitive ¹ Outdoor Area - Ldn	Sensitive Interior ² Area - Ldn	Notes
All Residential	65	45	5
Transient Lodging	65	45	3,5
Hospitals & Nursing Homes	65	45	3, 4, 5
Theaters & Auditoriums	---	35	3
Churches, Meeting Halls	65	40	3
Schools, Libraries, etc.	65	40	3
Office Buildings	65	45	3
Commercial Buildings	---	50	3
Playgrounds, Parks, etc.	70	---	
Industry	65	50	3

Notes:

1. Sensitive areas are defined in acoustic terminology section.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.
4. Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.
5. If this use is affected by railroad noise, a maximum (Lmax) noise level standard of 70 dB shall be applied to all sleeping rooms to reduce the potential for sleep disturbance during nighttime train passages.

8 Construction activities are exempt from the County of Sacramento Noise Ordinance
 9 (Sacramento County Code Chapter 6.68, §§ 6.68.070 and 6.68.090) if these activities
 10 do not take place between 8:00 PM and 6:00 AM on weekdays and between 8:00 PM
 11 and 7:00 AM on weekends. Project activities would comply with these requirements.

1 County of San Joaquin. The County of San Joaquin General Plan Noise Element
 2 establishes land use compatibility standards for new developments. Table 3.3.11-3
 3 below lists acceptable and unacceptable noise levels for new development which is
 4 compatible with noise-sensitive uses unless noise mitigation features are included in
 5 Project designs. Noise sensitive land uses are: (1) Residential, including single and
 6 multifamily dwellings, mobile home parks, dormitories, and similar uses; (2) Transient
 7 lodging, including hotels, motels, and similar uses; (3) Hospitals, nursing homes,
 8 convalescent hospitals, and other facilities for long-term medical care; and (4) Public or
 9 private educational facilities, libraries, churches, and places of public assembly.

10
 11

**Table 3.3.11-3
 County of San Joaquin General Plan Land Use and Noise Compatibility**

Land Use Category	Community Noise Exposure L _{dn} or CNEL, dB					
	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Homes	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Residential - Multi-Family	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Transient Lodging - Motels, Hotels	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Auditoriums, Concert Halls, Amphitheaters	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Sports Arena, Outdoor Spectator Sports	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Playgrounds, Neighborhood Parks	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Office Buildings, Business Commercial and Professional	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	
Industrial, Manufacturing, Utilities, Agriculture	Normally Acceptable		Conditionally Acceptable		Clearly Unacceptable	

INTERPRETATION:

Normally Acceptable
 Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable
 New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable
 New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable
 New construction or development should generally not be undertaken.

1 Construction activities are exempt from the San Joaquin County Noise Ordinance
 2 (Section 9-1025.9 of the San Joaquin County Development Title) if these activities are
 3 conducted between 6:00 AM and 9:00 PM on any day of the week. Project activities will
 4 comply with these requirements.

5 **3.3.11.3 Impact Analysis**

6 **a) Exposure of persons to or generation of noise levels in excess of standards**
 7 **established in the local general plan or noise ordinance, or applicable standards**
 8 **of other agencies?**

9 Project construction activities will result in short-term noise impacts and would use the
 10 following types of equipment: excavators, backhoes, side boom trucks, crawler dozers,
 11 trenchers, welding trucks, vacuum trucks, pipe rollers, pickup trucks, all-terrain vehicle
 12 (ATV), directional drill, mud unit, and a boat. The number and type of equipment used
 13 during drilling, testing and completion activities will vary from day to day.

14 The EPA has found that the noisiest equipment types operating at construction sites
 15 typically range from 76 dBA to 101 dBA at a distance of 50 feet. Table 3.3.11-4 below
 16 lists noise levels typically generated by construction equipment; however, not all
 17 equipment listed will be used during the Project.

18 **Table 3.3.11-4**
 19 **NOISE LEVELS GENERATED BY CONSTRUCTION EQUIPMENT**

Type of Equipment	Typical Sound Level (dBA at 50 feet)
Pump	76
Generator	76
Air Compressor	81
Concrete Mixer (truck)	85
Pneumatic Tools	85
Backhoe	85
Excavator	86
Dozer	87
Front-End Loader	88
Dump Truck	88
Jack Hammer	88
Scraper	88
Pavers	89
Pile Driver	101

Sources: U.S. Environmental Protection Agency, 1974; Noise Control for Building and Manufacturing Plants, BBN Layman Miller Lecture Notes, 1987.

1 Bulldozers are expected to produce the loudest noise levels during Project activities,
 2 resulting in noise levels of 87 dBA at 50 feet from the Project.

3 Noise level during Project construction at the closest residence to the Project was
 4 calculated to be 64 dBA using the equation below (www.animations.physics.unsw.edu).

5 $L_1 = L_2 + 20\log_{10} (R_2/R_1)$
 6 $L_2 = L_1 - 20\log_{10} (R_2/R_1)$
 7 $L_2 = 87 - 20\log_{10} (740'/50')$
 8 $L_2 = 87 - 23$
 9 $L_2 = \mathbf{64 \text{ dBA}}$

10 $\Delta L = L_1 - L_2$
 11 $L_1 =$ Sound level at Object 1, the dosimeter due south of the noise source (91
 12 dBA).
 13 $L_2 =$ Estimated sound Level at Object 2, the nearest residence
 14 $R_1 =$ Distance from the source of noise to the south dosimeter (50 feet)
 15 $R_2 =$ Distance from source of noise to the nearest residence (740 feet)

16 Based upon the results presented above, the outdoor noise level at the nearest
 17 residence is expected to be 64 dBA during Project construction activities. The Project
 18 would be in compliance with the Noise Control Ordinance in the Sacramento and San
 19 Joaquin County Noise Ordinances and with Sacramento and San Joaquin County
 20 General Plan Noise Elements. Accordingly, noise impacts at the nearest residence
 21 during Project implementation are within regulatory limits for residential uses.

22 State and federal standards set by the U.S. Department of Labor Occupational Safety
 23 and Health Administration (OSHA) regulate worker exposure time to sound levels above
 24 90 dBA. However, construction equipment noise levels will be 87 dBA during project
 25 activities. Accordingly, farm personnel working in the vicinity of the Project would not be
 26 exposed to sound levels exceeding State or federal standards. Therefore people will not
 27 be exposed to noise levels in excess of applicable standards, and the impact would be
 28 less than significant.

29 ***b) Exposure of persons to or generation of excessive ground-borne vibration or***
 30 ***ground-borne noise levels?***

31 Vibration is oscillating motion of structures or the ground. The rumbling sound caused
 32 by the vibration in the ground is called ground-borne vibration. The Project is expected
 33 to create ground-borne vibration as a result of project activities (e.g., during construction
 34 activities). Two elements need to be addressed when considering regarding ground-
 35 borne vibration impacts: damage to buildings and annoyance to humans.

36 One of the accepted measurements for evaluating building damage associated with
 37 ground-borne vibration is peak particle velocity (PPV). According to the DOT Surface
 38 Transportation Board (DOT-STB 2009), "PPV is the maximum instantaneous positive or

1 negative peak of the vibration signal, measured as distance per time (inches per
 2 second). PPV has been used historically to evaluate shock wave type vibrations from
 3 actions like blasting, pile driving and mining activities and their relationship to building
 4 damage.” Table 3.3.11-5 shows effects of construction vibrations on buildings.

5 **Table 3.3.11-5**
 6 **Effects of Construction Vibration***

Peak Particle Velocity (in/sec)	Effects on Buildings
< 0.05	No effect on buildings
0.1 to 0.5	Minimal potential for damage to weak and sensitive structures
0.5 to 1.0	Threshold at which there is a risk of architectural damage to buildings with plastered ceilings and walls. Some risk to ancient monuments and ruins.
1.0 to 2.0	U.S. Bureau of Mines data indicate that blasting vibrations in this range will not harm most buildings. Most construction vibration limits are in this range.
>3.0	Potential for architectural damage and possible minor structural damage.

*Modified from Vibration at www.drnoise.com/PDF_files/Vibration%20Primer.pdf.

7 In order to estimate ground-borne vibration impacts associated with the Project
 8 activities, RAB Consulting reviewed a study conducted by Gasch Geophysical Services,
 9 Inc. that involved a ground vibration monitoring study of a triple oil and gas well drilling
 10 rig operating near Lost Hills, California. The study used InstanTel vibration monitoring
 11 instruments calibrated according to manufacturer’s specifications. A 3-component tri-
 12 axial geophone was used to record vibration levels in the longitudinal (toward the
 13 source), transverse (horizontally orthogonal to the longitudinal direction), and vertical
 14 (up and down) directions. Measurements were recorded on two sides (north side and
 15 south side) of the drill rig. The power system including mud pumps, water and fuel
 16 storage and compressors were located on the north side of the drill rig. The catwalk and
 17 other minor transient vibration generating equipment were located on the south side of
 18 the drill rig. The results of the study are presented in Table 3.3.11-6.

19 Gasch Geophysical Services, Inc. recorded a PPV of 0.105 inches/second at 87 feet
 20 during drilling activities associated with a triple rig. The following calculation was used to
 21 determine the PPV (inches per second [in/sec]) at the nearest residence to the Project
 22 (DOT-Federal Transit Administration 2006).

23
$$PPV_{\text{equipment}} = PPV_{\text{ref}} (25/D)^n$$

24 Where: $PPV_{\text{equipment}}$ = peak particle velocity in in/sec of the equipment
 25 adjusted for the distance
 26 PPV_{ref} = reference vibration level in in/sec at 87 feet (drill rig)
 27 D = distance from equipment to the nearest residence in feet
 28 n = 1.5 (value related to the attenuation rate through the ground)
 29 $PPV = 0.105(87/740)^{1.5} = 0.0042$ in/sec

1
2

**Table 3.3.11-6
Vibration Monitoring Study Results***

Distance from Drill Hole (feet)	Transverse Direction (in/sec)	Vertical Direction	Longitudinal Direction
87 feet north	0.0550	0.105	0.0600
152 feet north	0.0400	0.0300	0.0200
225 feet north	0.0150	0.01000	0.01000
321 feet north	0.01000	0.01000	0.01000
105 feet south	0.0150	0.01000	0.01000
188 feet south	0.0150	0.0150	0.01000
335 feet south	0.01000	0.01000	0.01000

*Gasch Geophysical Services, Inc. Vibration Monitoring of a Large Drill Rig, December 2012.

3 The estimated PPV, 0.0042 in/sec, at the nearest residence is lower than the PPV of
4 0.05 in/sec that may cause effects on buildings as shown in Table 3.3.11-5. Therefore,
5 the estimated ground-borne vibration generated by the Project is not expected to cause
6 significant damage to buildings located within the general Project area, including the
7 closest residence located 740 feet from the Project alignment. As such, the Project
8 would have less than significant impacts to structures.

9 Another widely accepted source of measurements for evaluating human annoyance
10 associated with ground-borne vibration is root-mean-square (rms) amplitude. According
11 to the DOT’s Federal Transit Administration (2006),

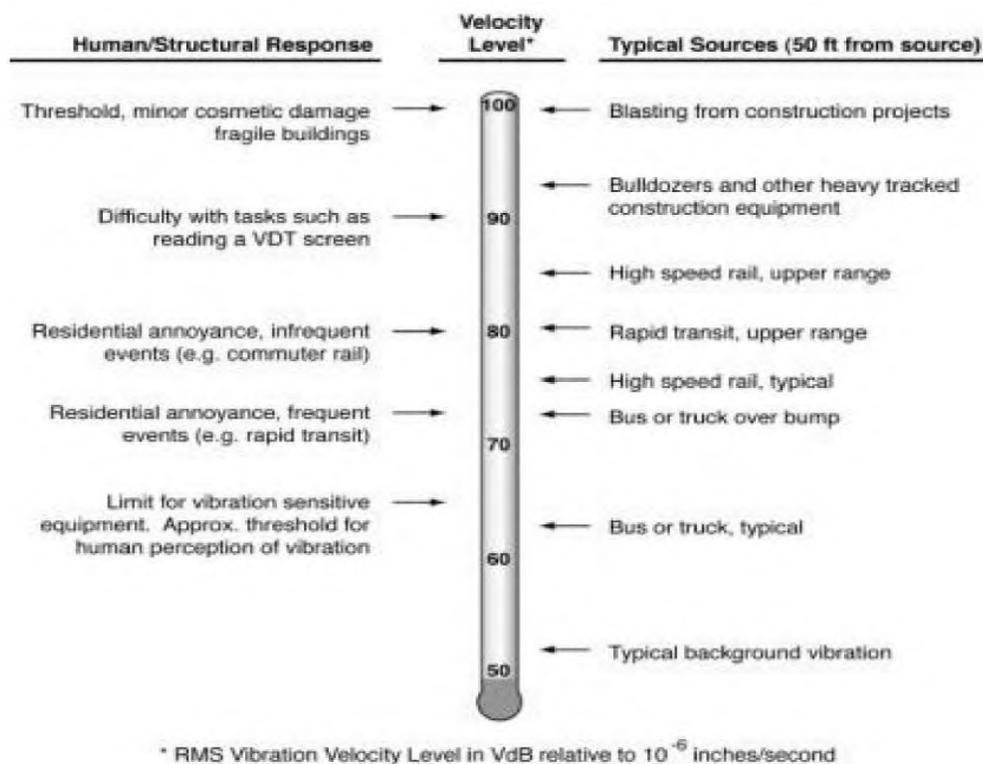
12 *It takes some time for human body to respond to vibration signals. In a sense, the*
13 *human body responds to an average vibration amplitude. Because the net average*
14 *of a vibration is zero, the rms amplitude is used to describe the “smoothed” vibration*
15 *amplitude. The rms of a signal is the square root of the average of the squared*
16 *amplitude of the signal. The average is typically calculated over a one-second*
17 *period.*

18 The rms, connoted as vibration decibels (VdB) on a log scale, is used to evaluate
19 human annoyance against ground-borne vibration. Figure 3.3.11-7 shows the
20 human/structural response to different levels of ground-borne vibration velocity levels.

21 According to the DOT’s Federal Transit Administration (2006), the background vibration
22 velocity level in residential areas is usually 50 VdB or lower, well below the 65 VdB
23 threshold of perception for humans. The range of interest is from approximately 50 VdB
24 to 100 VdB; however, the State CEQA Guidelines do not specifically define the levels at
25 which ground-borne vibration is considered "excessive." Table 3.3.11-8 provides
26 examples of the human response to different levels of ground-borne noise and vibration.

1
2
3

**Figure 3.3.11-7
Human/Structural Response to Different Levels of Ground-Borne Vibration
Velocity Levels**



4
5

**Table 3.3.11-8
Human Response to Different Levels of Ground-Borne Noise and Vibration**

Vib. Velocity Level	Noise Level		Human Response
	Low Freq1	Mid Freq2	
65 VdB	25 dBA	40 dBA	Approximate threshold of perception for many humans. Low-frequency sound usually inaudible, mid-frequency sound excessive for quiet sleeping areas.
75 VdB	35 dBA	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level annoying. Low-frequency noise acceptable for sleeping areas, mid-frequency noise annoying in most quiet occupied areas.
85 VdB	45 dBA	60 dBA	Vibration acceptable only if there are an infrequent number of events per day. Low-frequency noise annoying for sleeping areas, mid-frequency noise annoying even for infrequent events with institutional land uses such as schools and churches.
Notes:			
1. Approximate noise level when vibration spectrum peak is near 30 Hz.			
2. Approximate noise level when vibration spectrum peak is near 60 Hz.			

1 In order to estimate ground-borne vibration impacts to humans by the Project activities,
 2 the velocity level in decibels, Lv (VdB) at the nearest residence to the Project is
 3 calculated using the following equation.

$$4 \quad L_v = 20 \times \log_{10}(v/v_{ref})$$

5 Where: Lv = velocity level in decibels (VdB)
 6 v = RMS velocity amplitude = PPV/Crest Factor
 7 v_{ref} = reference velocity amplitude (1 x 10⁻⁶)

8 Crest factor is defined as the ratio of the PPV amplitude to the rms velocity amplitude.
 9 To calculate the rms velocity amplitude, a crest factor of 4 for random ground vibration
 10 was used.

$$11 \quad \text{rms velocity amplitude} = \text{PPV/Crest Factor} = 0.0042/4 = 0.0011$$

12 The vibration velocity level for the Project is calculated below:

$$13 \quad L_v = 20 \times \log_{10}(0.0011/1 \times 10^{-6}) = 60.8 \text{ VdB}$$

14 The calculated vibration velocity at the nearest residence, 60.8 VdB, is lower than the
 15 threshold of perception for humans of 65 VdB as shown in Table 3.3.11-8. Therefore,
 16 the estimated ground-borne vibration generated by the Project will have a less than
 17 significant impact.

18 ***c) A substantial permanent increase in ambient noise levels in the Project vicinity***
 19 ***above levels existing without the Project?***

20 Construction activities are anticipated to be conducted for 1.5 months. Due to the
 21 temporary nature of the construction activities, there would be no permanent increases
 22 in the ambient noise levels in the Project area. Based on the relatively short duration of
 23 construction activities and the absence of Project-related noise emissions after
 24 construction, the Project would not cause a substantial permanent increase in ambient
 25 noise levels in the Project vicinity above levels existing without the Project area and no
 26 impact would result.

27 ***d) A substantial temporary or periodic increase in ambient noise levels in the***
 28 ***project vicinity above levels existing without the project?***

29 See Response 3.3.11.3 a) discussion above. The Project would have a less than
 30 significant impact on ambient noise levels.

31 ***e) For a project located within an airport land use plan or, where such a plan has***
 32 ***not been adopted, within two miles of a public airport or public use airport, would***
 33 ***the project expose people residing or working in the project area to excessive***
 34 ***noise levels?***

1 The Project is not located within the vicinity of a public or private airport or airstrip. The
2 closest airport to the Project is Walnut Grove Airport, located approximately 6.42 miles
3 north of the Project. In addition, the Project is not located within the jurisdiction of an
4 airport land use plan. Therefore, the Project would not expose people residing or
5 working in the Project area to excessive noise levels, and there would be no impact.

6 ***f) For a project within the vicinity of a private airstrip, would the project expose***
7 ***people residing or working in the project area to excessive noise levels?***

8 The Project is not located within the vicinity of a public or private airport or airstrip. The
9 closest airport to the Project is Walnut Grove Airport located approximately 6.42 miles
10 north of the Project. Therefore, the Project will not expose people to excessive noise
11 levels, and there would be no impact.

1 **3.3.12 Population and Housing**

POPULATION AND HOUSING – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.12.1 Environmental Setting**

3 The Project is located in an unincorporated area of southwestern Sacramento County
 4 and western San Joaquin County. The closest community to the Project is the city of
 5 Isleton, which is located approximately 2.53 miles to the northwest of the Project. The
 6 Project area is used primarily for agricultural, recreational, and natural gas production.
 7 The closest residence to the Project is located approximately 0.14 mile (740 feet) to the
 8 southwest of the 5-2 Line tie-in point at the northern terminus of the proposed pipeline
 9 alignment.

10 **3.3.12.2 Regulatory Setting**

11 **Federal/State/Local**

12 No federal, State, or local regulations related to population and housing are relevant to
 13 the Project.

14 **3.3.12.3 Impact Analysis**

15 ***a) Induce substantial population growth in an area, either directly (for example, by***
 16 ***proposing new homes and businesses) or indirectly (for example, through***
 17 ***extension of roads or other infrastructure)?***

18 The Project as proposed would not induce population growth in the area, either directly
 19 or indirectly, and no impacts due to Project construction would result.

20 ***b) Displace substantial numbers of existing housing, necessitating the***
 21 ***construction of replacement housing elsewhere?***

1 The Project would not displace any housing. Therefore, the Project would not displace
2 substantial numbers of existing housing, necessitating the construction of replacement
3 housing elsewhere, and no impacts due to Project construction would result.

4 ***c) Displace substantial numbers of existing housing, necessitating the***
5 ***construction of replacement housing elsewhere?***

6 The Project would not displace substantial numbers of people, necessitating the
7 construction of replacement housing elsewhere, since no housing would be removed as
8 part of the Project. Therefore, no impacts due to Project construction would result.

1 **3.3.13 Public Services**

PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.13.1 Environmental Setting**

3 **Fire Protection and Emergency Response**

4 Fire protection and emergency response services in the Project area are provided by
5 the River Delta Fire District, located at 16969 Jackson Slough Road, Isleton, CA 95641.

6 **Police Services**

7 Police Services in the Project area are provided by the following police departments:

- 8 • Sacramento County Sheriff’s Department, Florin Service Center, located at 7000
9 65th Street, Sacramento, CA 95823.
- 10 • San Joaquin County Sheriff’s Department, located at 7000 Michael Canlis
11 Boulevard, French Camp, CA 95231.

12 **Public Education**

13 The following school districts provide public education services within the Project area:
14 (1) Lodi Unified School District; (2) New Hope Unified School District; and (3) River
15 Delta Unified School District

16 **Parks and Open Space**

17 No parks or open space areas are located within the Project or buffer area. Franks Tract
18 State Recreation Area is located approximately 4.1 miles south of the Project.

1 **Emergency Medical Services**

2 Emergency medical services are provided in the Project area by the following hospitals:

- 3 • Sutter Delta Medical Center, 3901 Lone Tree Way, Antioch, CA. This hospital is
4 an acute care facility with 145 beds. It is equipped with a 24-hour Level II
5 Emergency Department.
- 6 • Lodi Memorial Hospital, 975 South Fairmont Avenue, Lodi, CA. This hospital is
7 an acute care facility with 261 beds. It is equipped with a 24-hour Level II
8 Emergency Department.

9 **3.3.13.2 Regulatory Setting**

10 **Federal**

11 Federal regulations directly applicable to fire protection and emergency response issues
12 include:

13 29 CFR 1910.38, Emergency Action Plans. Under this regulation, an employer must
14 have an emergency action plan whenever an OSHA standard requires one. An
15 emergency action plan must be in writing, kept in the workplace, and available to
16 employees for review; an employer with 10 or fewer employees may communicate the
17 plan orally to employees. Minimum elements of an emergency action plan are:

- 18 • Procedures for reporting a fire or other emergency;
- 19 • Procedures for emergency evacuation, including type of evacuation and exit
20 route assignments;
- 21 • Procedures to be followed by employees who remain to operate critical plant
22 operations before they evacuate;
- 23 • Procedures to account for all employees after evacuation;
- 24 • Procedures to be followed by employees performing rescue or medical duties;
25 and
- 26 • The name or job title of every employee who may be contacted by employees
27 who need more information about the plan or an explanation of their duties under
28 the plan.

29 29 CFR 1910.39, Fire Prevention Plans. Under this regulation, an employer must have
30 a fire prevention plan. A fire prevention plan must be in writing, be kept in the workplace,
31 and be made available to employees for review; an employer with 10 or fewer
32 employees may communicate the plan orally to employees. The minimum elements of a
33 fire prevention plan are as follows:

- 34 • A list of all major fire hazards, proper handling and storage procedures for
35 hazardous materials, potential ignition sources and their control, and the type of
36 fire protection equipment necessary to control each major hazard;

- 1 • Procedures to control accumulations of flammable and combustible waste
- 2 materials;
- 3 • Procedures for regular maintenance of safeguards installed on heat-producing
- 4 equipment to prevent the accidental ignition of combustible materials;
- 5 • The name or job title of employees responsible for maintaining equipment to
- 6 prevent or control sources of ignition or fires; and
- 7 • The name or job title of employees responsible for the control of fuel source
- 8 hazards.

9 An employer must inform employees upon initial assignment to a job of the fire hazards
10 to which they are exposed. An employer must also review with each employee those
11 parts of the fire prevention plan necessary for self-protection.

12 29 CFR 1910.155, Subpart L, Fire Protection. Under this regulation, employers are
13 required to place and keep in proper working order fire safety equipment within facilities.

14 **State**

15 Office of the State Fire Marshal. The State Fire Marshal develops regulations relating to
16 fire and life safety under California Code of Regulations, Title 19, Public Safety. These
17 regulations have been prepared and adopted to establish minimum standards for the
18 prevention of fire and for protection of life and property against fire, explosion, and panic.
19 The Fire Marshal also adopts and administers the regulations and standards considered
20 necessary under the California Health and Safety Code to protect life and property.

21 **Local**

22 The Sacramento County Public Facilities and Public Health and Safety Elements
23 address the siting of and safe operation of natural gas pipelines within Sacramento and
24 San Joaquin Counties. These elements contain policies requiring regular auditing of
25 these pipelines, as well a regular maintenance activity to ensure their safe operation.

26 **3.3.13.3 Impact Analysis**

27 ***a) Would the Project result in substantial adverse physical impacts associated with***
28 ***the provision of new or physically altered governmental facilities, need for new or***
29 ***physically altered governmental facilities, the construction of which could cause***
30 ***significant environmental impacts, in order to maintain acceptable service ratios,***
31 ***response times or other performance objectives for any of the public services?***

32 The Project would not generate population growth through the generation of additional
33 jobs or housing units that would result in increased demand for public services and/or
34 facilities. No new or physically altered governmental facilities are proposed as part of
35 the Project. Therefore, the Project would have no impact on public services in the area.

1 **3.3.14 Recreation**

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.14.1 Environmental Setting**

3 No recreational facilities (parks, marinas, etc.) are located within the Project or buffer
 4 area; however, boating and fishing activities are conducted within the River in the
 5 Project vicinity. Two boat marinas, B&W Resort and Marina and Perry’s Boat Harbor,
 6 are located in the general vicinity of the proposed bore under the Mokelumne River. The
 7 closest park to the Project is Franks Tract State Recreation Area, located approximately
 8 4.1 miles south of the Project. The Project does not provide any public access to
 9 recreational areas or facilities. Project activities will not take place in any recreation
 10 facilities or areas.

11 **3.3.14.2 Regulatory Setting**

12 The following discussion summarizes the most important federal and State laws and
 13 regulations that apply to recreational resource protection for the Project area.

14 **Federal/State**

15 No federal or state regulations pertain to recreational resources relevant to this Project.

16 **Local**

17 The Sacramento and San Joaquin County General Plans Open Space Elements
 18 address open space and recreation access. These elements provide goals, policies,
 19 and actions intended to achieve the Counties’ vision for open space, parks, and
 20 recreational facilities that are accessible to all members of the community.

1 **3.3.14.3 Impact Analysis**

2 ***a) Would the Project increase the use of existing neighborhood and regional***
3 ***parks or other recreational facilities such that substantial physical deterioration***
4 ***of the facility would occur or be accelerated?***

5 The Project would not increase the use of existing neighborhood and regional parks or
6 other recreational facilities such that substantial physical deterioration of the facilities
7 would occur or be accelerated and no impacts due to Project construction would result.

8 ***b) Does the Project include recreational facilities or require the construction or***
9 ***expansion of recreational facilities which might have an adverse physical effect***
10 ***on the environment?***

11 The Project does not include recreational facilities or require the construction or
12 expansion of recreational facilities which might have an adverse effect on the
13 environment. Therefore, no impacts due to Project construction would result.

1 **3.3.15 Transportation/Traffic**

TRANSPORTATION / TRAFFIC – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.3.15.1 Environmental Setting**

3 Vehicles that travel through the Project area use State Highway 12 and Tyler Island
 4 Road (a Sacramento County roadway). No other public roadways are present within the
 5 Project and buffer area. State Highway 12 is considered a rural two-lane collector
 6 roadway and serves as the main east-west transportation corridor between the Fairfield
 7 and Stockton urban areas. The stated capacity of State Highway 12 is defined as
 8 10,000 vehicles per day in the Project vicinity. Caltrans conducts traffic counts annually
 9 at the intersection of State Highway 12 and Terminous Road approximately 1.21 miles
 10 to the northwest of the Project. The last available data (2011) show that approximately
 11 17,500 and 19,000 vehicles travel in a westerly and easterly direction respectively along
 12 this section of Highway 12 during an average day; peak hourly traffic ranges between
 13 1,750 and 1,850 vehicles per hour (Caltrans 2012). Sacramento County defines Tyler

1 Island Road as a local road but the County has not designated the road’s capacity, and
2 no traffic counts are available (Sacramento County 2011).

3 The Sacramento and San Joaquin County General Plans classify roadway Level of
4 Service (LOS) for rural and unincorporated areas of the counties with a rating of A to F
5 (defined below), with A representing the best LOS and F representing the worst; LOS D
6 is the minimum acceptable standard for roads in rural unincorporated roadways.

- 7 • LOS A - Conditions of free flow. Speed is controlled by drivers’ desires, speed
8 limits, or physical roadway conditions, not other vehicles.
- 9 • LOS B - Conditions of stable flow. Operating speeds beginning to be restricted,
10 but little or no restrictions on maneuverability.
- 11 • LOS C - Conditions of stable flow. Speeds and maneuverability somewhat
12 restricted. Occasional back-ups behind left-turning vehicles at intersections.
- 13 • LOS D - Conditions approach unstable flow. Tolerable speeds can be
14 maintained, but temporary restrictions may cause extensive delays. Speeds may
15 decline to as low as 40 percent of free flow speeds. Little freedom to maneuver;
16 comfort and convenience low.
- 17 • LOS E - Unstable flow with stoppages of momentary duration. Average travel
18 speeds decline to one-third the free flow speeds or lower, and traffic volumes
19 approach capacity. Maneuverability severely limited.
- 20 • LOS F - Forced Flow. Represents jammed conditions. Intersection operates
21 below capacity with several delays; may block upstream intersections.

22 According to Caltrans (2012), State Highway 12 currently has a rating of LOS D.

23 **3.3.15.2 Regulatory Setting**

24 **Federal**

25 No federal regulations related to transportation are relevant to the Project.

26 **State**

27 Caltrans is responsible for the design, construction, maintenance, and operation of the
28 California State Highway System and the portion of the Interstate Highway System
29 within the State’s boundaries. Chapter 2, Article 3 of the Vehicle Code defines the
30 powers and duties of the California Highway Patrol, which has enforcement
31 responsibilities for the operation of vehicles and highway use within the State.

32 **Local**

33 Sacramento County. The County General Plan (Sacramento County 2011) establishes
34 several policies for transportation demand and management within the Project area.

- 1 • CI-8. Maintain and rehabilitate the roadway system to maximize safety, mobility,
2 and cost efficiency.
- 3 • CI-9. Plan and design the roadway system in a manner that meets LOS D on
4 rural roadways and LOS E on urban roadways, unless it is infeasible to
5 implement project alternatives or mitigation measures that would achieve LOS D
6 on rural roadways or LOS E on urban roadways. The urban areas are those
7 areas within the Urban Service Boundary as shown in the Land Use Element of
8 the Sacramento County General Plan. The areas outside the Urban Service
9 Boundary are considered rural.
- 10 • CI-10. Land development projects shall be responsible to mitigate the project's
11 adverse impacts to local and regional roadways.

12 San Joaquin County. The County General Plan (San Joaquin County 2012) does not
13 establish specific policies for transportation demand and management within the Project
14 area; it addresses County policies through lists of projects needed to achieve the
15 County's transportation system goals. The San Joaquin Council of Governments
16 (SJCOG) and SACOG are designated by State and federal governments as the
17 Metropolitan Planning Organization, Local Transportation Authority, and Regional
18 Transportation Planning Agency. Under these designations, the SJCOG and SACOG
19 are responsible for all regional transportation planning and programming activities.

20 3.3.15.3 Impact Analysis

21 ***a) Conflict with an applicable plan, ordinance or policy establishing measures of***
22 ***effectiveness for the performance of the circulation system, taking into account***
23 ***all modes of transportation including mass transit and non-motorized travel and***
24 ***relevant components of the circulation system, including but not limited to***
25 ***intersections, streets, highways and freeways, pedestrian and bicycle paths, and***
26 ***mass transit?***

27 Project activities include work on private lands outside of existing public roadways, HDD
28 bores under State Highway 12 and the Mokelumne River, and use of public roads by
29 vehicles used to transport equipment, materials, and workers. No alteration to existing
30 public roadways or waterways would be required as a result of Project implementation.
31 Public access to the Project is restricted, as it lies on private lands, and would remain
32 restricted during Project construction. The Project would not interfere with public access
33 or use of existing County or State roadways as part of construction or long-term Project
34 operation, nor would it generate additional vehicle trips as part of long-term operation.

35 Short-term temporary construction activities would generate additional vehicle trips
36 during construction. Construction activities are anticipated to last for approximately 2
37 months; however, Project impacts on existing traffic levels would be minimal compared
38 to the current hourly and daily levels experienced on State Highway 12 and Tyler Island

1 Road. Therefore, traffic impacts due to Project construction and operation would be less
2 than significant, and no mitigation would be required.

3 ***b) Conflict with an applicable congestion management program, including but not***
4 ***limited to level of service standards and travel demand measures, or other***
5 ***standards established by the county congestion management agency for***
6 ***designated roads or highways?***

7 Since no congestion management plans are applicable to the Project area, no
8 associated impacts are anticipated.

9 ***c) Result in a change in air traffic patterns, including either an increase in traffic***
10 ***levels or a change in location that results in substantial safety risks?***

11 The Project would result in the installation of a pipeline under the ground surface and
12 above ground valves and risers. Risers would be approximately 4 to 5 feet in height. As
13 such, construction and operation of the Project would have no impact on air traffic
14 patterns or changes in location that result in substantial safety risks.

15 ***d) Substantially increase hazards due to a design feature (e.g., sharp curves or***
16 ***dangerous intersections) or incompatible uses (e.g., farm equipment)?***

17 The Project would result in the installation of a pipeline under the ground surface and
18 above ground valves and risers. Risers would be approximately 4 to 5 feet in height.
19 The pipeline would be installed under public roadways using HDD techniques, and as a
20 result, would not result in any changes to existing roadways. As such, construction and
21 operation of the Project would not substantially increase hazards due to a design
22 feature or incompatible uses and no Project impacts would occur.

23 ***e) Result in inadequate emergency access?***

24 The Project would take place within private lands, and would not result in impacts on
25 emergency access routes. Adequate access would be maintained to the Project to
26 provide emergency access in the event of an emergency.

27 ***f) Conflict with adopted policies, plans or programs regarding public transit,***
28 ***bicycle, or pedestrian facilities, or otherwise decrease the performance or safety***
29 ***of such facilities?***

30 The Project would involve installation of a pipeline under the ground surface and above-
31 ground valves and risers. Risers would be approximately 4 to 5 feet in height. The
32 pipeline would be installed under public roadways (Highway 12) using HDD boring
33 techniques, and as a result, would not result in any changes to existing roadways. No
34 alternate modes of transportation are available within the Project area. Therefore, no
35 Project impacts to alternative transportation would result.

1 **3.3.16 Utilities and Service Systems**

UTILITIES AND SERVICE SYSTEMS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, State, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.3.16.1 Environmental Setting**

3 **Water Utility**

4 No water utility facilities are located in the Project area. The Project and surrounding
 5 buffer areas are used to grow agricultural crops. Water from the Mokelumne River used
 6 for irrigation in the Project area is transferred to the local farm fields via pumping into
 7 local irrigation ditches. No irrigation pipelines are located in the Project area. Although
 8 the proposed pipeline would cross several irrigation ditches and the River, the pipeline
 9 would be installed in these areas using HDD, and no surface disturbance to irrigation
 10 ditches or the River would result.

1 **Sewer Utility**

2 No sewer utility facilities are located in the Project area. The Project and surrounding
3 buffer areas are used to grow agricultural crops.

4 **Solid Waste**

5 Waste generated in the local project area is handled at the following solid waste
6 facilities:

- 7 • North County Recycling Center & Sanitary Landfill located at 17720 East Harney
8 Lane, Lodi, CA 95240. This facility processes approximately 441 tons of waste
9 daily, and is permitted to process up to 1,200 tons of solid waste per day.
- 10 • Potrero Hills Landfill, 3675 Potrero Hills Lane, Suisun City, CA 94585. This
11 facility processes approximately 3,100 tons of waste daily, and is permitted to
12 process up to 3,400 tons of solid waste per day.

13 **3.3.16.2 Regulatory Setting**

14 **Federal, State or Local**

15 No federal, state, or local regulations are applicable to the Project's use of utility
16 services.

17 **3.3.16.3 Impact Analysis**

18 ***a) Exceed wastewater treatment requirements of the applicable Regional Water***
19 ***Quality Control Board?***

20 The Project would not require new water or wastewater treatment service. Therefore,
21 the Project would not exceed the wastewater treatment requirements of the RWQCB,
22 and no impact would result due to construction of the Project.

23 ***b) Require or result in the construction of new water or wastewater treatment***
24 ***facilities or expansion of existing facilities, the construction of which could cause***
25 ***significant environmental effects?***

26 The Project would not require additional water or wastewater treatment services or
27 affect existing services. Therefore the Project would not require or result in the
28 construction of new water or wastewater treatment facilities or expansion of existing
29 facilities, and no impacts would occur due to the construction of the Project.

30 ***c) Require or result in the construction of new storm water drainage facilities or***
31 ***expansion of existing facilities, the construction of which could cause significant***
32 ***environmental effects?***

1 The Project would not require or result in the construction of new storm water drainage
2 facilities or expansion of existing facilities or affect existing facilities, and so no impacts
3 would result due to construction of the Project.

4 ***d) Have sufficient water supplies available to serve the project from existing***
5 ***entitlements and resources, or are new or expanded entitlements needed?***

6 The Project would not require wastewater treatment services. All water used throughout
7 the Project would come from existing entitlements. Therefore, no impacts would result
8 due to construction of the Project.

9 ***e) Result in a determination by the wastewater treatment provider which serves or***
10 ***may serve the project that it has adequate capacity to serve the project's***
11 ***projected demand in addition to the provider's existing commitments?***

12 The Project would not require water or wastewater treatment services. Therefore, no
13 impacts would result due to construction of the Project.

14 ***f) Be served by a landfill with sufficient permitted capacity to accommodate the***
15 ***project's solid waste disposal needs?***

16 Waste generated in the Project area is handled at the North County Recycling Center &
17 Sanitary Landfill located in Lodi and at the Potrero Hills Landfill in Suisun City. At these
18 facilities recyclable and organic materials are sorted out for recycling elsewhere and the
19 remaining solid waste is disposed of at the facilities. The Project would generate waste
20 during short-term, temporary construction activities, but would not generate waste
21 necessitating disposal as part of long-term operations. Construction waste would be
22 disposed of in compliance with existing regulations and recycled to the extent feasible.
23 Therefore, impacts due to Project construction would be less than significant.

24 ***g) Comply with federal, State, and local statutes and regulations related to solid***
25 ***waste?***

26 As noted above in *Response 3.3.16 f)* above, solid waste generated by the Project
27 would be during short-term, temporary construction activities. Once constructed, the
28 new natural gas pipeline would not generate waste necessitating disposal. Construction
29 waste would be disposed of in compliance with existing regulations and recycled to the
30 extent feasible. Therefore, impacts due to Project construction would be less than
31 significant.

1 **3.3.17 Mandatory Findings of Significance**

MANDATORY FINDINGS OF SIGNIFICANCE – The lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur. Where prior to commencement of the environmental analysis a project proponent agrees to mitigation measures or project modifications that would avoid any significant effect on the environment or would mitigate the significant environmental effect, a lead agency need not prepare an EIR solely because without mitigation the environmental effects would have been significant (per Section 15065 of the State CEQA Guidelines):	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.3.17.1 Environmental Setting**

3 ***a) Does the project have the potential to degrade the quality of the environment,***
 4 ***substantially reduce the habitat of a fish or wildlife species, cause a fish or***
 5 ***wildlife population to drop below self-sustaining levels, threaten to eliminate a***
 6 ***plant or animal community, reduce the number or restrict the range of a rare or***
 7 ***endangered plant or animal or eliminate important examples of the major periods***
 8 ***of California history or prehistory?***

9 With the incorporation of mitigation measures as outlined in this IS/MND, the Project
 10 does not have the potential to degrade the quality of the environment, substantially

1 reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop
2 below self-sustaining levels, threaten to eliminate a plant or animal community, reduce
3 the number or restrict the range of rare or endangered plant or animal or eliminate
4 important examples of the major periods of California history or prehistory.

5 ***b) Does the project have impacts that are individually limited, but cumulatively***
6 ***considerable? (“Cumulatively considerable” means that the incremental effects***
7 ***of a project are considerable when viewed in connection with the effects of past***
8 ***projects, the effects of other current projects, and the effects of probable future***
9 ***projects)?***

10 The State CEQA Guidelines state that a Lead Agency shall consider whether the
11 cumulative impact of a project is significant and whether the effects of the Project are
12 cumulatively considerable (§ 15065). The assessment of the significance of the
13 cumulative effects of the project must, therefore, be conducted in connection with the
14 effects of past projects, other current projects, and probable future projects.

15 **Past, Present and Reasonably Foreseeable Future Projects**

16 The H12 bore would be located at the DW 8-1 Well site. Once the pipeline is installed
17 and connected to the DW 8-1 Well, the well will be converted from an idle well to a
18 producing well. The tie-in point is located at the Towne Tyler Island Farms 5-2 Well,
19 which is currently in production. According to the DOGGR Online Mapping System, 11
20 plugged wells and 1 active well are located within 1 mile of the Project. Although the
21 pipeline has been designed to accommodate potential future natural gas development
22 on Bouldin Island, according to DOGGR records, no other oil and gas wells are
23 currently being permitted within 2 miles of the Project.

24 A review of Sacramento Planning and Community Development Department Planning
25 Project Viewer and San Joaquin Community Development Department Planning
26 Documents failed to identify any proposed projects within 1 mile of the Project.

27 **Potential Cumulative Impacts**

28 Based upon the results of the initial study, it was determined that there would be no
29 potentially significant impacts associated with the following resource areas:

- Aesthetics
- Agricultural and Forest Resources
- Geology and Soils
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utility and Service Systems

1 Accordingly, the Project would not result in cumulative impacts to these resource areas.

2 The following is a discussion of cumulative impacts that could result from the Project in
3 conjunction with past, present, and reasonably foreseeable future projects as described
4 above. The term “cumulatively considerable”, for the purposes of this analysis, means
5 the effects of a project are considerable when viewed in connection with effects of past
6 projects, effects of other current projects, and effects of reasonably foreseeable or
7 probable future projects.

8 Air Quality

9 By its very nature, air pollution is largely a cumulative impact. The nonattainment status
10 of regional pollutants is a result of past and present development. Future attainment of
11 State and federal ambient air quality standards is a function of successful
12 implementation of the SMAQMD and SJVAPCD attainment plans. Consequently, the
13 SMAQMD and SJVAPCD application of thresholds of significance for criteria pollutants
14 is relevant to the determination of whether a project’s individual emissions would have a
15 cumulatively significant impact on air quality. As the Project’s emissions are less than
16 the thresholds of significance for criteria pollutants, the Project would not be expected to
17 result in a cumulatively considerable net increase of any criteria pollutant for which the
18 SMAQMD and SJVAPCD is in nonattainment under the applicable federal or State
19 AAQSS.

20 Biological Resources

21 The biological surveys performed in 2010 and 2012 found no sensitive plant or animal
22 species present within the Project area or within the 250-foot buffer area around the
23 Project. Wetland and riverine habitat were observed within the footprint of the Project,
24 but freshwater wetland and riverine habitat would be avoided by installing the pipeline
25 by HDD boring methods. Installation of the pipeline in agricultural wetlands will be
26 achieved by trenching. All agricultural wetlands disturbed by trenching methods will be
27 restored to pre-construction condition and no long-term permanent impacts to
28 agricultural wetlands would occur. No riparian, or vernal pool habitat or other natural or
29 sensitive community types were observed within the footprint of the Project or adjacent
30 areas during the biological assessment. The Project would not interfere with movement
31 of any wildlife species or with established native resident or migratory wildlife corridors.
32 Native resident and/or migratory fish and known native wildlife nursery sites are not
33 present within areas proposed for ground disturbance. The Project as proposed would
34 not conflict with any local policies or ordinances protecting biological resources or local
35 tree preservation policies/ordinances.

36 As previously stated, approximately 1.9 acres of agricultural farmland have been
37 impacted as a result of previous and existing gas wells within 1 mile of the Project area.
38 Accordingly, when combined with 0.6 acre of agricultural land temporarily disturbed by

1 the Project, 2.5 acres of agricultural farmland habitat would be cumulatively impacted
2 within a 1-mile radius of the Project. This represents a cumulative impact of 0.3 percent
3 to agricultural land within a 1-mile radius of the Project. Areas proposed for ground
4 disturbance would be returned to agricultural production after construction of the
5 pipeline.

6 Accordingly, the Project will not have a cumulatively considerable effect on biological
7 resources.

8 Cultural Resources

9 The cultural resources records search and Native American Consultation did not identify
10 any cultural or historic resources within the proposed Project area. Nine resources (see
11 Table 3.3.5-1) were recorded within 1 mile of the proposed Project; however, these
12 resources would not be impacted. Additionally, the Project has been previously
13 disturbed by many years of agricultural activities as well as the construction and
14 maintenance of roadways and levees. Accordingly, there will be no cumulative impact to
15 cultural resources.

16 ***c) Does the project have environmental effects which will cause substantial*** 17 ***adverse effects on human beings, either directly or indirectly?***

18 The Project would not cause substantial adverse effects on human beings. The project
19 would add a new use to the proposed area. However, the use is consistent with current
20 land uses in the Project area. As noted in the analysis above in Section 3, the Project
21 would comply with all applicable local, State, and federal environmental regulations and
22 would not result in any significant impacts to the public.

23