

Appendix A

Impact Assessment Summary

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Introduction

The impact summary was originally provided to the CPUC on March 17, 2007 to support the CPUC's determination of how to proceed with environmental compliance for Phase II of the Kirby Hills Natural Gas Storage Facility (referred to in this appendix as "Phase I" of the project). The California Environmental Quality Act (CEQA) Initial Study Checklist was used to focus the impact analysis for the Phase II components (described in Chapter 2 of the supplemental PEA). The CEQA checklist provides a summary of the anticipated potential impacts associated with Phase II of the project and provides a comparison with the impacts associated with Kirby Hills Phase I (as determined in the Final IS/MND [CPUC 2006]). As part of the proposed Phase II project components, LGS will implement the applicable mitigation measures and the Applicant-Proposed Measures (APMs) identified in Chapter 2 of the supplemental PEA.

Impact Assessment Summary

The impact assessment summary provided below indicates that the Phase II project components would result in either less of an impact or the same level of impact on most environmental resources identified in the CEQA checklist. There will be one new potential impact on waters of the United States associated with the re-completion of two existing wells (W2 and W5) in the Suisun Marsh Primary Management Area. The work around these existing wells would result in the placement of fill material into approximately 1.17 acres of potential waters of the United States. As described below in the *Biological Resources* section, a new applicant-proposed mitigation (APM-7) is identified to reduce the impact to a less-than-significant level.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
I. AESTHETICS.				
Would the project:				
a. Have a substantial adverse effect on a scenic vista?				
Phase I				■
Phase II				■
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?				
Phase I				■
Phase II				■
c. Substantially degrade the existing visual character or quality of the site and its surroundings?				
Phase I			■	
Phase II			■	
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?				
Phase I			■	
Phase II			■	
a. The Phase II project components would not have a substantial adverse effect on a scenic vista. See the responses to questions “b through d” below.				
b. Because of the intervening rolling grassland and hills, the Phase II project components would not be visible to travelers on State Route (SR) 12, a County-designated scenic roadway. There is no state-designated scenic highway in the vicinity. There is still no impact associated with Phase II project components, and therefore no mitigation is required.				
c. Most of the Phase II project components would not be visible or would be similar in type and view to existing elements. LGS will implement the APMs as part of Phase II to minimize disturbance of the visual character of the site (these are the same APMs that were implemented as part of the Phase I components). Consequently, potential impacts related to degradation of the existing visual character of the site are still considered less than significant, and no mitigation is required.				

- d. The impacts associated with the Phase II components would be less than those associated with Phase I (the compressor station [constructed as part of the Phase I] introduced a greater source of light into the area). All aboveground facilities will have low-pressure sodium or similar low-glare lights. The lights will be shielded and directed downward, and will be illuminated only when nighttime activities are necessary. Because these facilities would be located in a rural area, they would not substantially alter nighttime views. Therefore, this impact is considered less than significant, and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
II. AGRICULTURAL RESOURCES.				
In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				
Phase I				■
Phase II				■
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?				
Phase I			■	
Phase II			■	
c. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?				
Phase I			■	
Phase II			■	
a. The Phase II project components will have no impact on important farmland, as was described for Phase I project components. Most of the land within the Phase II area is not suitable for irrigated agriculture, and has been designated suitable for dry-land farming and grazing activities. The Phase II area does not include important farmland, as defined by California’s Farmland Mapping and Monitoring Program. Therefore, the Phase II project components would have no impact.				
b. The Phase II project components would result in the loss of less grazing land than the Phase I project components. The Phase II project components would result in the permanent loss of approximately 8 acres of grazing land in the Kirby Hills (the Phase I project resulted in the loss/disturbance of 11 acres of agricultural lands). This impact therefore is considered less than significant, and no mitigation is required.				

- c. See response to questions “b” above.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
III. AIR QUALITY.				
When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a.				
			■	
			■	
b.				
		■		
		■		
c.				
			■	
			■	
d.				
			■	
			■	
e.				
			■	
			■	

- a. The Phase II project components would result in a similar level of impacts as the Phase I project components. LGS will implement all applicable BAAQMD control measures and APMs. This impact is still considered less than significant, and no mitigation is required.
- b. The level of impact for the Phase II components would be similar as described for the Phase I project components. LGS will implement APM AIR-1 and the following two mitigation measures that were identified in the Final IS/MND, to reduce impacts to a less-than-significant level:

Mitigation Measure AQ-1: During high wind events (defined as periods with sustained gusts over 25 mph, construction areas (unpaved roads, excavation areas, disturbed areas) that have visible dust emissions shall be watered no less frequently than every hour at the source of origin of those visible emissions; and Activities causing visible dust emissions that remain visible for more than 100 feet from their point of origin will be discontinued or those activities reduced to limit the visible dust plume to less than 100 feet from their point of origin. Additionally, during high winds construction activities within one-half mile of any downwind residence that cause visible fugitive dust will be discontinued when the visible dust plumes that remain visible for more than 50 feet past their point of origin.

Mitigation Measure AQ-2: All diesel fueled construction equipment will be fueled with diesel fuel meeting ARB ultra low sulfur (15 ppm max) certification specifications.

- c. See response to “a” and “b” above. The Phase II project components are not expected to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area for an applicable federal or state ambient air quality standard because LGS has committed to implementing best available control measures as part of the project. Therefore, this impact is still considered less than significant, and no mitigation is required.
- d. The Phase II project components would result in similar exposure of sensitive receptors to substantial pollutant concentrations. For the reasons described in the Final IS/MND, this impact is still considered less than significant, and no mitigation is required.
- e. As described for the Phase I project components (Final IS/MND), processing of natural gas the injection/ withdrawal wells has the potential to result in release of small quantities of odorized natural gas. Odorized gas could be emitted from piping components such as valves and flanges (fugitive emissions). Such leaks are unlikely, would be small, and would quickly be dissipated by even light winds. Nevertheless, LGS will implement measures to prevent and repair such leaks. Aboveground piping components will be maintained to minimize leakage of odorized gas. Because these measures have been incorporated into the Phase II project description, this potential impact is still considered less than significant and no mitigation is required.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES.				
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (DFG) or U.S. Fish and Wildlife Service (USFWS)?				
Phase I			■	
Phase II			■	
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the DFG or USFWS?				
Phase I				■
Phase II				■
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?				
Phase I		■		
Phase II		■		
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				
Phase I			■	
Phase II			■	
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				
Phase I				■
Phase II				■

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?				
Phase I				■
Phase II				■

As described in Chapter 3 of the supplemental PEA, the Phase II project area contains the following sensitive biological resources:

Waters of the United States (including wetlands). Approximately 10.232 acres of waters of the United States were delineated in the Phase II project area, including 9.191 acres of jurisdictional wetlands and 1.041 acres of other waters of the United States (see Figure 3.3-1 in the supplemental PEA). These waters of the United States were delineated by a Jones & Stokes’ wetlands ecologist and soils scientist on March 8, 2007. The waters of the United States have been documented in a formal wetland delineation report and will be submitted to the U.S. Army Corps of Engineers (USACE) for verification. A copy of the wetland delineation report and map has been submitted to the CPUC as part of the CPCN package.

Special-status plant populations. Two special-status plants have been documented in the Phase II project area (bearded popcorn-flower [*Plagiobothrys hystriculus*] and Parry’s tarweed [*Centromadia parryi ssp. parryi*]). These species occur along the south sides of the Kirby Hills access road (see Figure 3.3-1 in the supplemental PEA for the location of these special-status plant populations).

Special-status wildlife habitat. The Phase II area supports suitable habitat for several special-status species (see Table 3.3-1 in the supplemental PEA). Several non-special-status migratory birds (including waterfowl) and raptors could nest in and adjacent to the Phase II area, based on the presence of suitable nesting habitat. The Phase II project components will be designed to avoid and minimize impacts on these species.

- a. As described above, the Phase II project area contains potential habitat and occupied habitat for special-status plant and wildlife species. The Phase II project components are being designed to avoid a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the DFG or USFWS. LGS will implement the APMs

described in the Final IS/MND to avoid and minimize potential impacts on special-status species. These measures include:

- The installation of barrier fencing.
- Minimizing ground-disturbing activities in specific areas.
- Conducting preconstruction surveys.
- Implementing timing restrictions.
- Monitoring construction activities in specified sensitive areas.

Implementation of the APMs (described in the Final IS/MND) would result in a less-than-significant impact on special-status species.

- b. The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the DFG or USFWS because no riparian habitat or other sensitive natural communities (other than wetlands, described below) occur in the Phase II project area. There would be no impact or change from the original Kirby Hills I of the project.
- c. The Phase II of the project would result in the temporary disturbance and permanent loss of approximately 1.17 acres of waters of the United States (including 0.81 acre of brackish marsh and 0.36 acre of mudflat). Potential impacts on the waters of the United States would be associated with access to and work around existing gas wells W-2 and W-5, located in the Suisun Marsh Primary Management Area. Although LGS will implement a variety of APMs (described in the Final IS/MND) as part of the proposed project to avoid and minimize potential impacts on waters of the United States, including the installation of protection measures and timing restrictions, this impact is still considered significant. To reduce this impact to a less-than-significant level, LGS will implement a new APM (APM B-7) to compensate for permanent impacts on wetlands associated with the primary marsh area:

New APM B-7: Compensate for Permanent Impacts on Jurisdictional Wetlands

LGS will be obtaining permits to place fill material into the waters of the United States associated with the Suisun Marsh Primary Management Area. These permits will include a Section 404 permit from the USACE and a Section 401 water quality certification from the Regional Water Quality Control Board (RWQCB). As part of these permit authorizations, LGS will implement measures to minimize the placement of fill material into the wetlands and will compensate for the permanent loss of wetlands at a minimum 1:1 ratio (one acre for every one acre filled). The final compensatory mitigation ratio and implementation plan (e.g., the purchase of mitigation bank credits) will be determined through coordination with the USACE, RWQCB, and the BCDC (if necessary).

- d. Construction of the Phase II project components is not expected to displace resident or wintering waterfowl, or permanently disrupt established migration corridors. Construction noise associated with grading and excavation activities in the Kirby Hills could temporarily disrupt normal movement patterns of resident waterfowl flying through the study area, because birds might avoid flying through an active construction area. However, flight patterns are expected to revert back to normal after construction has been completed. This impact is therefore considered less than significant. No mitigation is required.
- e. The Phase II project components would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. There would be no impact.
- f. The Phase II project area does not occur within an area covered by an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, there would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
V. CULTURAL RESOURCES.				
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?				
Phase I			■	
Phase II				■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?				
Phase I			■	
Phase II			■	
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				
Phase I			■	
Phase II			■	
d. Disturb any human remains, including those interred outside of formal cemeteries?				
Phase I			■	
Phase II			■	

To support the Phase II analysis, a cultural resources investigation and included a cultural resources records search, contacts with Native Americans, and a pedestrian field survey on December 15, 2006. The cultural resources records search was conducted on May 24, 2005 to support the *Proponent's Environmental Assessment for the Kirby Hills Natural Gas Storage Project* (Jones & Stokes 2005). The records search was conducted at the Northwest Information Center of the California Historical Resources Information System, housed at Sonoma State University, Rohnert Park, California. The records search was conducted for the project area and a 0.5 mile radius of the project area. No cultural resources were reported within the project area or within 0.5 mile of the project area.

The Native American Heritage Commission (NAHC) was contacted to obtain information about cultural resources in the project area or referrals to representatives who may have such information. Four contacts were identified by the NAHC, all of whom were contacted. To date, none of the contacts have responded to requests for information. The following impact analysis is based on the information contained in the Final IS/MND and the recent December 2006 field visit.

- a. There are no historic resources located directly within the Phase II project area. The Phase II project components would not cause a substantial adverse change in the significance of a historic resource. Therefore, there would be no impact and no mitigation is required.
- b. Although no known archaeological resources were identified during the research or fieldwork completed to date, there is some potential that buried cultural resources could be inadvertently unearthed during ground-disturbing activities associated with project construction. However, implementation of APM C-1 (Stop Work If Buried Resources Are Discovered Inadvertently) would result in a less-than-significant impact.
- c. One of the three geologic formations in the project area (the Markley formation) is known to yield fossils. However, these fossils are common and widespread invertebrate fossils; and the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Thus, the occurrence of this formation at the project site is not considered a unique paleontological site; thus the impact of disturbing this formation is considered less than significant. No mitigation is required.
- d. No human remains are known to be located in the Phase II project area. However, there is always the possibility that unmarked burials may be unearthed during construction. Implementation of APM C-2 (Comply with State Laws Relating to Native American Remains) would result in a less-than-significant impact.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VI.	GEOLOGY AND SOILS.				
	Would the project:				
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	1. 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.				
	Phase I		■		
	Phase II			■	
	2. Strong seismic groundshaking?				
	Phase I		■		
	Phase II		■		
	3. Seismic-related ground failure, including liquefaction?				
	Phase I		■		
	Phase II		■		
	4. Landslides?				
	Phase I			■	
	Phase II			■	
b.	Result in substantial soil erosion or the loss of topsoil?				
	Phase I			■	
	Phase II			■	
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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?				
	Phase I			■	
	Phase II			■	

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				
Phase I			■	
Phase II			■	
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?				
Phase I				■
Phase II				■
a. As described for the Phase I project components, the Phase II components will be designed in compliance with all safety standards and requirements. The Phase II components will be built to the same codes standards as the Phase I components. Therefore, this impact is considered less than significant.				
b. The proposed project is not 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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. Using the geotechnical investigation information and other facility design guidelines, all project elements will be designed to avoid landslide, lateral spreading, subsidence, liquefaction, or collapse. This potential impact is therefore considered less than significant, and no mitigation is required.				
c. Construction activities would expose disturbed and loosened soils to erosion from rainfall, surface runoff, and wind. As described in the Final IS/MND, APM-related erosion control measures will be implemented to minimize accelerated erosion and sedimentation. Except for the above-ground facilities, the site topography will be reclaimed to preconstruction conditions. A stormwater pollution prevention plan (SWPPP) has been prepared for Phase I of the project and will be used for Phase II. Because these BMPs have been incorporated into the project design, the potential impact related to soil erosion is considered less than significant. No mitigation is required.				
d. The Phase II project components are not located on unstable soil or a geologic unit that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. Using the geotechnical investigation information and other facility design guidelines, all Phase II project elements will be designed to avoid landslide, lateral spreading, subsidence, liquefaction, or collapse. This				

potential impact is therefore considered less than significant, and no mitigation is required.

- e. As described in the Final IS/MND, soils in the project area are highly expansive and could therefore damage structures that are constructed without adequate foundations. Based on geotechnical investigation and engineered design, all project elements will be designed to withstand shrink-swell forces, the magnitudes of which can readily be anticipated. This potential impact is therefore considered less than significant, and no mitigation is required.
- f. No septic tanks are planned as part of the Phase II project components. There would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS.				
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				
Phase I			■	
Phase II			■	
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?				
Phase I		■		
Phase II			■	
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				
Phase I				■
Phase II				■
d. Be located on a site that 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?				
Phase I		■		
Phase II		■		
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?				
Phase I				■
Phase II				■
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?				
Phase I				■

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Phase II				■
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				
Phase I				■
Phase II				■
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?				
Phase I			■	
Phase II			■	
a. As described in the Final IS/MND, LGS has committed to implementing APM HZ-1, which specifies procedures and restrictions on equipment maintenance and refueling during construction and operation of the project. Implementation of these measures would reduce the potential exposure of the public to hazardous materials used on-site for routine operations to less-than-significant levels. In the Final IS/MND, LGS estimated that project operations will generate about 1,000 gallons of liquid hazardous waste per year, primarily used motor oil. This quantity is for both phases of the project. Small quantities of oily rags, oil filters, and tri-ethylene glycol filters would also be generated. Under current federal, state, and local regulations, these hazardous wastes would be stored on-site for a maximum of 90 days before they would be picked up by a licensed hazardous waste hauler for transport to a licensed hazardous waste storage facility. Liquid wastes shall be temporarily held within structures capable of containing 110 percent of the storage tank capacities in storage tanks at the compressor site. Solid wastes shall be temporarily stored at the compressor site in enclosed, secured areas.				
<p>A small potential exists for the accidental release of hazardous wastes temporarily stored on-site, but the chance of it reaching the public is insignificant. This is because the volumes of materials used or stored at the compressor site are small and enclosed within storage areas, and only a few scattered residences are in the vicinity (the nearest resident is less than 0.5 mile from the project area). LGS has also committed to APM HZ-2, which contains (1) the construction contract specifications for handling of hazardous materials generated from construction-related activities including a requirement that the project contractor prepare a Health and Safety Plan; and (2) a commitment to preparing a Hazardous Materials Contingency Plan to be implemented if an</p>				

accidental spill occurs. Therefore, the project will not create a significant hazard to the public or the environment as the result of transport, use or disposal of hazardous materials. This impact remains less than significant for the Phase II project components.

- b. As described above under the *Geology and Soils* section, LGS will ensure that the Phase II project components do not 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. This impact would be less than significant for the Phase II components
- c. The Phase II project components would not emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. There would be no impact associated with the Phase II components.
- d. To ensure that the Phase II project components are not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, ensure that the project components would not create a significant hazard to the public or the environment, LGS has implemented Mitigation Measure HZ-2 as part of Phase I of the project. The Phase II sampling program did not find environmental impacts on the LGS-leased land and no REC sites will be disturbed during construction of the Phase II project components.

Mitigation Measure HZ-2

Prior to construction within the portion of the land west of Shiloh Road leased by LGS that will be disturbed by construction activity (“LGS leased land”), a Phase II site investigation shall be conducted to further evaluate whether a spill or release of hazardous materials has occurred on those sites on the portion the LGS leased land within Kirby Hills identified by the Phase I Environmental Site Assessment submitted by LGS (ERM 2005). Samples should be taken at those locations on the LGS leased land identified in Appendix G of LGS’ Phase I Environmental Site Assessment and analyzed for VOCs and petroleum hydrocarbons following standard EPA protocol. If the Phase II sampling program finds environmental impacts on the LGS leased land, additional research shall be conducted to verify if other unrecorded sumps were used within the particular impacted LGS leased land. If other sumps are discovered within the particular LGS leased land, additional Phase II soil sampling activities shall be conducted to delineate the extent of contamination and recommend appropriate action.

- e. The Phase II project area is located more than two miles south of Travis Air Force Base. The project is not located within an airport land use plan area and would not result in a safety hazard for people residing or working in the project area. There would be no impact associated with the Phase II project components.
- f. The Phase II project components are not located within the vicinity of a private airstrip and therefore would not result in a safety hazard for people residing or

working in the project area. There would be no impact associated with the Phase II project components.

- g. The Phase II project components would be located in a rural agricultural area with only a few scattered residences. No emergency response plan or emergency evacuation plan has been adopted for the project area. There would be no impact associated with the Phase II project components.

As described in the Final IS/MND, the Health and Safety Element of the Solano County General Plan (Solano County 1977a) classifies the Montezuma Hills, which includes the project area, as a high grassfire risk area due to the dry grassland environment and frequent strong winds. During the construction phase, heavy equipment and passenger vehicles driving on vegetated areas before clearing and grading with heated mufflers could increase the danger of fire.

Fire and rescue services in the project area are provided by the Montezuma Hills Fire District, which operates four fire stations that are equipped for grass fires. These are located at Birds Landing Road; Collinsville Road near Collinsville; Shiloh Road; and one in Rio Vista. The Rio Vista Fire Department also provides fire and rescue services to the city of Rio Vista and surrounding areas.

The increased risk of wildland fire in the project area during the project construction phase is potentially significant, but LGS has committed to APM HZ-3, which specifies development of a Grass Fire Control Plan. This mitigation measure will reduce the potential for impacts to public safety from wildland fires in the project area to a less-than-significant level.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY.				
Would the project:				
a.	Violate any water quality standards or waste discharge requirements?			
	Phase I		■	
	Phase II		■	
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in 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 that would not support existing land uses or planned uses for which permits have been granted)?			
	Phase I		■	
	Phase II		■	
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 that would result in substantial erosion or siltation onsite or offsite?			
	Phase I		■	
	Phase II		■	
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 that would result in flooding onsite or offsite?			
	Phase I		■	
	Phase II		■	
e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			
	Phase I		■	
	Phase II		■	
f.	Otherwise substantially degrade water quality?			
	Phase I		■	

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Phase II			■	
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?				
Phase I				■
Phase II				■
h. Place within a 100-year flood hazard area structures that would impede or redirect floodflows?				
Phase I				■
Phase II				■
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?				
Phase I				■
Phase II				■
j. Contribute to inundation by seiche, tsunami, or mudflow?				
Phase I				■
Phase II				■
a. As described in the Final IS/MND, potential impacts regarding stormwater during construction would be reduced or controlled through implementation of the SWPPP. Compliance with the NPDES permit requires that structural and operational APMs be used where necessary to minimize water quality impacts associated with construction and industrial operations. Also, APMs G-3 through G-7 are designed to control erosion that would occur during the construction phase of the project. Grading would be designed to direct runoff from disturbed areas away from surface waters. Temporary settling basins or other filtering mechanisms would be used to control sediment discharges. In addition, visual monitoring of runoff water quality and quantitative analytical testing of runoff samples would be used to identify potential impacts, and corrective measures could then be implemented, if necessary. In addition, a Hazardous Materials Contingency Plan will be implemented if an accidental spill occurs or if any subsurface hazardous materials are encountered during construction, per the requirements of APM HZ-2. Because LGS would implement the measures				

described above (and is required to comply with the permits described above), this impact is considered less than significant. No mitigation is required.

- b. Up to 15 new injection/withdrawal wells will be constructed on three new well pad sites, located south of the Kirby Hills access road. As described in the Final IS/MND, the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) is responsible for wells drilled into an underground gas storage facility. Before receiving a permit to drill the wells and operate the project, LGS will complete engineering and geology studies as well as an injection plan and submit them to the division for approval. LGS will be required to post a bond with DOGGR to ensure proper completion or abandonment of any well drilled. Because of the oversight and requirements by DOGGR, this impact is considered less than significant for the Phase II project components. No mitigation is required.
- c. As described in the Final IS/MND for the Phase I project components, the Phase II project components would not 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 that would result in substantial erosion or siltation onsite or offsite. Because LGS would implement APMs to avoid and minimize potential erosion and siltation and the degradation of surface water quality during operation of the project, this impact is considered less than significant. No mitigation is required.
- d. See response to question “c” above.
- e. See response to questions “a”, “b”, and “c” above.
- f. LGS will implement APMs described in the Final IS/MND to avoid substantial degradation of water quality during both the construction and operation phases of the project. This impact is considered less than significant and no mitigation is required for the Phase II project components.
- g. The Phase II project components do not involve placement of 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. There would be no impact.
- h. None of the Phase II facilities would impede or redirect floodflows. There will be no impact.
- i. The Phase II project components would not expose people or structures to a significant risk of loss, injury, or death involving flooding. There would be no impact.
- j. The Phase II project area does not occur within a region that could be affected by inundation by seiche, tsunami, or mudflow. There would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
IX. LAND USE AND PLANNING.				
Would the project:				
a. Physically divide an established community?				
Phase I				■
Phase II				■
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				
Phase I			■	
Phase II			■	
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				
Phase I				■
Phase II				■
a. As described in the Final IS/MND, the Phase II project area is within a rural agricultural area with only a few scattered residences. Development of the project would not divide an established community and would only cause minor short-term disturbance to residences in the area during the construction phase. There would be no impact.				
b. Phase II of the LGS project is consistent with the policies of the Solano County General Plan and the Suisun Marsh Protection Plan for the project area. Natural gas production and storage facilities are conditionally permitted within both the Agricultural (A-160) and Limited Agricultural (AL-160) districts, provided that they do not affect the agricultural character of the area (see Section B.3.2—Agricultural Resources).				
c. There is no habitat conservation plan or natural community conservation plan for the project area. Therefore, there would be no impact.				

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
X. MINERAL RESOURCES.				
Would the project:				
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?				
Phase I				■
Phase II				■
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?				
Phase I				■
Phase II				■
a. As described in the Final IS/MND, no significant aggregate deposits are mapped in the project area. Construction and operation of the project would not interfere with or preclude the operation of mineral resource management in the region. No impact would occur for the Phase II project components.				
b. See response to question “a” above.				

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XI. NOISE.				
Would the project:				
a. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?				
Phase I			■	
Phase II			■	
b. Expose persons to or generate excessive groundborne vibration or groundborne noise levels?				
Phase I			■	
Phase II			■	
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				
Phase I			■	
Phase II			■	
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				
Phase I			■	
Phase II			■	
e. Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?				
Phase I				■
Phase II				■
f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?				
Phase I				■
Phase II				■

- a. Construction of the Phase II components would result in fewer noise-related impacts than the Phase I component. The analysis conducted for the Final IS/MND applies to the Phase II well sites. Construction of the gas pipeline near the meter station, as well as construction of the wells would result in temporary increases in noise levels in the area of construction activity. The well sites along Kirby Hills access road and the gas pipeline near the metering station are located over 2,000 feet from the nearest noise-sensitive use. The wells would be directionally drilled from the well pads into the storage formation. Primary noise-generating activities would include excavation, grading, scraping, horizontal boring, and compaction activities. Vehicles traveling to and from construction sites also may increase noise in the area, but to a lesser degree. The magnitude of construction noise impacts would depend on the type of construction activity, the noise level generated by various pieces of construction equipment, the duration of the activity, the distance between the activity and noise-sensitive receptors, and shielding effects from local barriers and topography.

As described in the Final IS/MND, well drilling sites are not visible from surrounding areas and are located over 2,000 feet from the nearest noise-sensitive use (NSA R1, the former duck club). The wells will be directionally drilled from the well pads into the storage formation.

Well drilling would be conducted on a 24-hour basis for 12 or more weeks. The results of the noise analysis (Hoover & Keith 2007) indicate that the maximum noise level of drilling operations at the new storage wells will be equal to or less than 45.6 Ldn at the nearest NSA (R1). Noise from the work over well is predicted to be 43.8 Ldn. Accordingly, noise from well drilling at the noise-sensitive uses is not predicted to result in a perceptible increase in noise and would be below the County's noise standard of 50 Community Noise Equivalent Level (CNEL). This impact is therefore considered less than significant, and no mitigation is required.

- b. Vibration levels from construction equipment and activities are not likely to be perceptible to residences, because there are no residences in the Phase II project area and no high impact equipment such as a pile driver is expected to be used. Because the project components are more than 2,000 feet from the nearest sensitive receptor, no residence would be exposed to excessive vibration, and the impact would be less than significant.
- c. See the response to question "a" above.
- d. See the response to question "a" above.
- e. The Phase II project components are not located within an airport land use plan area and would not expose people residing or working in the project area to excessive airport noise levels. There would be no impact.
- f. There are no known private airstrips in the project area. There would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XII. POPULATION AND HOUSING.				
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?				
Phase I			■	
Phase II				■
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?				
Phase I				■
Phase II				■
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?				
Phase I				■
Phase II				■
a. Construction of the Phase II project components would not result population growth or the need for additional housing because there would be only a small number of workers at the construction site. Although the impact associated with construction and operation of the Phase I components was determined to be less than significant, it is anticipated that there would be no impact associated with the Phase II components.				
b. There is no element associated with the Phase II project components that would displace existing housing or residents. There would be no impact.				
c. See response to question “b”.				

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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XIII. PUBLIC SERVICES.

Would the project:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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 following public services:

Fire protection?

Phase I

■

Phase II

■

Police protection?

Phase I

■

Phase II

■

Schools?

Phase I

■

Phase II

■

Parks?

Phase I

■

Phase II

■

Other public facilities?

Phase I

■

Phase II

■

- a. **Fire Protection.** As described in the Final IS/MND, LGS will implement APM T-1 (Construction Traffic Safety Measures) as part of the Phase II project. With the implementation of this measure, emergency service providers in the area would be able to respond adequately to emergencies associated with construction-related activities. This is because emergency services are located within an appropriate distance of the construction work area, and an emergency access plan would be in place during construction to ensure emergency vehicle access in and adjacent to the construction work area.

Any increase in demand for emergency response attributable to the risk of fire would be offset by LGS's provision as part of the project of information, training, and equipment, as well as the implementation of APM HZ-3 (Fire Management Measures). Therefore, this impact is considered less than significant, and no additional mitigation is required.

Police Protection. Because there is no population growth anticipated as a result of the proposed project that would require increased police protection to accommodate increases in population or new facilities, the operation of the project would not impact police services. However, during construction, there would be a higher risk of vandalism and theft of construction equipment or tampering with a construction site that would rely upon the current police force. However, the construction period is relatively short and there is a sufficient police force currently in place. The use of the police force would be a temporary construction-related impact, but that impact would be less than significant.

Schools and Parks. The demand for parks will not change as a result of the project.

Other Public Facilities. The demand for other public services, such as hospitals and maintenance of public facilities, will not change as a result of the project.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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XIV. RECREATION.

Would the project:

- a. 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?
 - Phase I ■
 - Phase II ■

- b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?
 - Phase I ■
 - Phase II ■
 - a. The Phase II project components would not result in the increase in the use of existing neighborhood or regional parks, or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. There would be no impact.
 - b. The Phase II project components would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. There would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XV. TRANSPORTATION/TRAFFIC.				
Would the project:				
a. Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?				
Phase I		■		
Phase II			■	
b. Cause, either individually or cumulatively, exceedance of a level-of-service standard established by the county congestion management agency for designated roads or highways?				
Phase I		■		
Phase II			■	
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?				
Phase I				■
Phase II				■
d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				
Phase I				■
Phase II				■
e. Result in inadequate emergency access?				
Phase I			■	
Phase II			■	
f. Result in inadequate parking capacity?				
Phase I				■
Phase II				■
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Phase I				■
Phase II				■

- a. As described in the Final IS/MND, local roadways in the project area (such as Shiloh and Birds Landing Roads) have relatively low traffic volumes. Project related traffic would not increase traffic on the local roads to a level that is substantial in relation to the existing traffic load and capacity of the street system. Therefore, congestion caused by construction vehicles accessing the work areas from local roads would be minimal and limited to the short-term duration of construction.

As described in the Final IS/MND for this checklist question, project related trips that would occur during the peak commute hours along SR 12 could result in additional traffic congestion on SR 12. Mitigation Measure TRA-1 described in the Final IS/MND would be implemented, and would involve scheduling construction traffic during off-peak hours. This impact would be less than significant for the Phase II project components.

Mitigation Measure TRA-1: LGS and/or the construction contractor shall schedule construction traffic, including construction worker and material delivery trips, to avoid peak traffic commute hours along SR 12. Carpooling of the construction workforce will also be encouraged.

- b. See response to question “a”.
- c. The Phase II project components would not result in a change in air traffic patterns. No impacts would occur.
- d. The Phase II project components would not substantially increase hazards because of a design feature or incompatible uses. No impacts would occur.
- e. As described in the Final IS/MND, LGS has committed to implementing APM T-1 as part of the project, which includes a provision requiring LGS to consult with emergency service providers and to develop an emergency access plan for emergency vehicle access in and adjacent to the construction zones. Implementation of APM T-1 as well as the stipulations of the Caltrans and County permits would ensure that potential impacts associated with disruptions to emergency response routes would be less than significant.
- f. The proposed project would not result in inadequate parking capacity. There would be no impact.

- g. The proposed project will not conflict with adopted policies, plans, or programs supporting alternative transportation. There would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS.				
Would the project:				
a. Exceed wastewater treatment requirements of the applicable RWQCB?				
Phase I				■
Phase II				■
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?				
Phase I				■
Phase II				■
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				
Phase I			■	
Phase II				■
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?				
Phase I			■	
Phase II				■
e. Result in a determination by the wastewater treatment provider that 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?				
Phase I				■
Phase II				■
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				
Phase I			■	
Phase II			■	

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
g. Comply with federal, state, and local statutes and regulations related to solid waste?				
Phase I				■
Phase II				■
a. The Phase II project components would not be subject to wastewater treatment requirements, because no wastewater would be generated. There would be no impact.				
b. The Phase II project components would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. There would be no impact.				
c. Phase II will not require any new, on-site stormwater detention basin facilities. There would be no impact.				
d. As described in the Final IS/MND, construction crews would bring in potable water for drinking purposes and non-potable water would be used for dust control. Because of the relatively small scale and temporary short-term nature of construction, as well as the minimal anticipated water consumption during gas storage operation, there are sufficient water supplies available to serve the project from existing entitlements and resources. There would be no impact associated with the Phase II project components.				
e. The Phase II project components will not require services of a wastewater treatment facility.				
f. Most of the soil excavated for the project would be used at the project site for filling and grading activities. There may be a minimal amount of excess material, which would be delivered to a local landfill, such as Potrero Hills or Hay Road landfill. Both of these landfills have sufficient permitted capacity to accommodate the project’s solid waste disposal needs. Therefore, this impact is considered less than significant, and no mitigation is required.				
g. The Phase II project components will comply with federal, state, and local statutes and regulations related to solid waste. There would be no impact.				

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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XVII. MANDATORY FINDINGS OF SIGNIFICANCE.

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, substantially 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?

Phase I	■
Phase II	■

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.)

Phase I	■
Phase II	■

c. Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Phase I	■
Phase II	■

The “Mandatory Findings of Significance” analysis conducted for the Kirby Hills I project in the Final IS/MND applies to the Phase II project components.