

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



May 17, 2011

Mr. Jim Kiefer  
Director Project Development  
Central Valley Gas Storage, LLC  
3333 Warrenville Road, Suite 130  
Lisle, Illinois 60532

**Subject:** *Central Valley Natural Gas Storage Project – Request for Notice to Proceed to Drill up to 10 Injection/Withdrawal Wells at the Remote Well Pad Site (Application No. 09.08.008).*

Dear Mr. Kiefer:

Central Valley Natural Gas Storage has requested authorization from the California Public Utilities Commission (CPUC) to drill up to 10 injection/withdrawal wells at the remote well pad site.

The Central Valley Natural Gas Storage project was evaluated in accordance with the California Environmental Quality Act and a Certification of Public Convenience and Necessity (CPCN) was granted by the CPUC on October 14, 2010 (Decision 10-10-001). **NTP #5A is granted by CPUC for the proposed construction activities based on the following factors:**

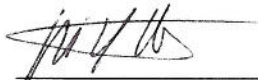
- The Mitigated Negative Declaration prepared for the Central Valley Gas Storage project defined required mitigation measures to be implemented prior to project construction. The relevant mitigation measures for drilling up to 10 injection/withdrawal wells at the remote well pad site are summarized in *Attachment A*. Central Valley's compliance with the pre-construction component for each measure is noted in the status table.
- All construction personnel working on the Central Valley Gas Storage project have received environmental training and will be briefed on specific measures to be implemented during construction.
- All construction activities will be conducted within areas identified and included in the Final Initial Study/Mitigated Negative Declaration for the CVGS project site.

Robert M. Brown  
May 17, 2011

The conditions noted below shall be met by Central Valley Gas Storage and its contractors:

- Prior to gas injection at the remote well pad site, approval of NTP 5B will be required. CVGS shall submit a groundwater monitoring plan consistent with MM HYDRO-1 to satisfy the pre-construction requirements for NTP 5B.
- Copies of all relevant permits, compliance plans (i.e., MMCRP, SWPPP, etc.), and this Notice to Proceed shall be available on-site for the duration of construction activities. Copies of permits shall be provided to the CPUC upon request.
- All crew personnel shall be appropriately trained on environmental issues, including requirements of the MMCRP, prior to starting work. A log shall be maintained on-site with the names of all crew personnel trained and submitted to the CPUC.
- Central Valley shall comply with all applicable mitigation measures while conducting construction activities within the approved work limits associated with this Notice to Proceed.

Sincerely,



Eric Chiang

CPUC Environmental Project Manager

cc: D. Hochart, Dudek  
S. Eckardt, Dudek  
S. Bushnell-Bergfalk, ICF  
J. Kiefer, Central Valley Gas Storage, LLC  
N. McIntire, Flour Inc.  
H. Salvage, Flour Inc.

Att: Attachment A – Mitigation Measures

**MITIGATION MONITORING, COMPLIANCE  
AND REPORTING PROGRAM**

**Central Valley Gas Storage Project**

**Attachment A – Mitigation Measures**

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing	Project Component	Status
Short-term and long-term visual impacts.	—	AES-1	<p>The following measures would be implemented as part of the proposed project to minimize visual impacts of the project and to be consistent with Colusa County General Plan policies:</p> <ul style="list-style-type: none"> <li>• Construction disturbances will be minimized to help reduce contact between exposed soil and naturally vegetated areas, and clearing of vegetation and trees at facility sites will be minimized.</li> <li>• Disturbed agricultural land will be replanted following pipeline construction, if requested by the landowner.</li> <li>• All above ground structures will be painted with non-glare, earth-tone colors to blend with the surrounding vegetation/landscape.</li> <li>• Shielded, non-glare lighting will be used at facilities.</li> </ul>	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	<p>CPUC to verify proposed building materials and replanting of agricultural lands along the disturbed areas through review of preconstruction plans and samples.</p> <p>CPUC to verify consultation with ColusaCounty through meeting notes, and review of project implementation in the field.</p> <p>Effectiveness Criteria – materials are non-reflective and are considered consistent with General Plan policies by ColusaCounty.</p>	Prior to and during construction.	All	<p>Pre-Construction Component Complete</p> <p>Central Valley has specified use of non-reflective, earth tone paints in the purchase of buildings, and for exposed process equipment. Paint specifications were provided to the CPUC on March 2, 2011.</p> <p>Central Valley provided the Major Use Permit that was approved by the Colusa County Board of Supervisors. The Major Use Permit conditions include measures to ensure materials are non-reflective and consistent with the General Plan policies.</p>
Nighttime lighting during 24/7 drilling activities and well pad and pull-back activities at HDD sites.	AES-1	—	Night lighting for construction at the well pad and horizontal directional drilling (HDD) drilling sites, if required, shall be fully shielded and directed away from residential areas. Lights shall be turned off in areas where they are no longer needed.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	<p>CPUC to ensure that commitments have been incorporated into construction contract specifications.</p> <p>CPUC to inspect periodically to ensure correct placement of lighting to prevent night lighting impacts to residential areas.</p>	Prior to and during construction.	<p>Remote Well Pad Site Observation Wells</p> <p>Natural Gas Connecting Pipeline – Segment A and B</p>	<p>Pre-Construction Component Complete</p> <p>CPUC verified on March 2, 2011 that commitments have been incorporated into the construction contract specifications.</p>
Nighttime lighting during 24/7 drilling activities	AES-2	—	The applicants' drilling plan shall specify that lights shall be fully shielded and directed inward on the work area.	Central Valley to prepare and implement drilling plan and shall include light specification. Drilling plan to be submitted to the CPUC and ColusaCounty at least 2 weeks prior to construction of the applicable phase(s).	<p>CPUC to ensure that commitments have been incorporated into construction contract specifications.</p> <p>CPUC to inspect periodically to ensure correct placement of lighting to prevent night lighting spillover effects.</p>	Prior to and during construction.	Remote Well Pad Site Observation Wells	<p>Pre-Construction Component Complete</p> <p>CPUC verified on March 2, 2011 that commitments have been incorporated into the construction contract specifications.</p>

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Potential for short-term and long-term loss of use of land, crops, and agricultural structures.	—	AGRI-1	As a public utility, Central Valley is required to offer appropriate compensation for land held in private ownership as part of the acquisitions of utility easements. Central Valley would compensate landowners for any permanent crop losses at aboveground facility sites and temporary crop losses in the year of construction and, if applicable, will compensate for the permanent removal of any structures and agricultural-related improvements that are necessary to construct the project.	Central Valley would compensate landowners as part of the acquisition of utility easements.	Central Valley to document compensation and provide verification of compliance with measure to CPUC at least 2 weeks prior to construction of the applicable construction phase(s) (see Mitigation Measure AG-1).	Prior to, during, and post construction.	All	Pre-Construction Component Complete  CPUC verified on March 18, 2011 that Central Valley has provided compensation.
Potential for short-term and long-term loss of use of land, crops, and agricultural structures.	AG-1	—	In areas where right-of-way (ROW) is to be acquired by fee or easement, Central Valley shall compensate the property owner at “fair market value” in compliance with federal and state regulations. The determination of “fair market value” shall be determined by a professional land appraiser retained by Central Valley. Central Valley shall provide qualifications of the professional land appraiser and a copy of appraisals to the California Public Utilities Commission (CPUC). In areas where temporary impacts would occur due to construction, Central Valley shall replace or compensate property owners for compensable private facilities and crops that were removed for construction. Replacement of facilities and crops shall occur to the extent they are not detrimental to future pipeline or natural gas operations. Compensation shall be determined by the professional land appraiser.	Central Valley will compensate landowners through use of a professional land appraiser. Central Valley will replace crops and facilities, as compensable.	Central Valley to document compensation and provide verification of compliance with measure to CPUC.  CPUC to coordinate with Central Valley to confirm land appraiser meets requirements, and landowners are appropriately compensated.	Prior to and post construction.	All	Pre-Construction Component Complete  CPUC verified on March 18, 2011 that Central Valley has provided compensation.
Potential for dust (PM10) to be generated by construction activities.	—	AIR-1	The following measures would be implemented as part of the proposed project to minimize dust emissions and reduce short-term construction impacts to a less-than-significant level: <ul style="list-style-type: none"> <li>• Water all active construction areas (subject to vehicle travel) at least twice (as necessary) daily.</li> <li>• Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 feet of freeboard.</li> <li>• Water (as necessary) unpaved access roads, parking areas, and staging areas at construction sites that receive regular vehicle travel.</li> <li>• Sweep daily with water sweepers all paved public roads where the pipeline right-of-way (ROW) intersects the road.</li> <li>• Sweep paved streets daily with water sweepers if visible soil material is carried onto adjacent public streets.</li> <li>• Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt and sand).</li> <li>• Limit traffic speeds on unpaved roads to 15 miles per hour.</li> </ul>	Central Valley to implement measures as defined and incorporate commitments into construction contracts.  Central Valley will notify the CPUC that the CCAPCD has issued an “Authority to Construct” air permit before beginning construction of the compressor facility.	CPUC to inspect periodically for dust control within and outside the work area in order to ensure that fugitive dust has been controlled.  Central Valley to provide CPUC written verification from CCAPCD to document permit compliance prior to construction of the compressor facility.	Prior to and during construction.	All	Pre-Construction Component Complete.  CPUC verified on March 2, 2011 that the Colusa County Air Pollution Control District (CCAPCD) has issued an “Authority to Construct” air permit.

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			<ul style="list-style-type: none"> <li>• Install sandbags or other erosion control measures to prevent silt runoff to public roadways.</li> <li>• Replant vegetation in disturbed areas as quickly as possible, where determined appropriate and in consultation with the landowner.</li> <li>• Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.</li> <li>• Limit the area subject to excavation, grading, and other construction activity at one time.</li> </ul> <p>Central Valley will notify the California Public Utilities Commission (CPUC) that the Colusa County Air Pollution Control District (CCAPCD) has issued an "Authority to Construct" air permit before beginning construction of the compression facility.</p>					
Potential for NOx and greenhouse gas (GHG) emissions from all diesel powered construction equipment, including support equipment.	—	AIR-2	<p>Central Valley would implement the following measures to reduce NOx and GHG emissions from all diesel powered construction equipment and vehicles:</p> <ul style="list-style-type: none"> <li>• To the extent feasible, all construction diesel engines rated at 100 hp or more shall meet, at minimum, the Tier 2 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in Title 13 California Code of Regulations Section 2423 (b)(1), unless such engine is not available for a particular type of equipment. In the event a Tier 2 engine is unavailable, that engine shall meet the Tier 1 standards. In the event that a Tier 1 engine is unavailable for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by the engine manufacturer that the use of such devices are not practical for specific engine types. For purposes of this measure, the use of such devices is considered not practical if any of the following conditions apply:</li> </ul> <ol style="list-style-type: none"> <li>1. There is no available soot filter that has been verified by either the California Air Resources Board of the U.S. Environmental Protection Agency (EPA) for the engine in question.</li> <li>2. The construction equipment is intended to be on site for 10 days or less.</li> <li>3. The use of a soot filter may be terminated immediately if one of the following conditions apply: <ul style="list-style-type: none"> <li>a. The use of a soot filter is excessively reducing normal availability of the construction equipment due to increased</li> </ul> </li> </ol>	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	<p>Central Valley shall document compliance with this measure. The construction plans shall define how and where records of project-vehicle fleet, equipment tuning, and maintenance will be kept for CPUC review during construction.</p> <p>Central Valley shall ensure that all construction workers are aware of the vehicle idling restriction by including explanation of this requirement in the Worker Training Program.</p> <p>CPUC to ensure that commitments have been made in contracts specifying equipment.</p> <p>CPUC to inspect periodically for equipment idling.</p> <p>Central Valley to provide verification of carpool program to the CPUC at least 30 days prior to construction of the applicable phase(s).</p>	At least 30 days prior to construction; during construction; after receipt of the CCAPCD Authority to Construct.	All	<p>Pre-Construction Component Complete.</p> <p>CPUC verified commitments have been included in contract documents specifying all construction diesel engines rated at 100 hp or more shall meet, at minimum, the Tier 2 California Emissions Standards for Off-Road Compression-Ignition Engines as specified in Title 13 California Code of Regulations Section 2423 (b)(1), unless such engine is not available for a particular type of equipment. CPUC verified commitments have been included as part of the contract documents on March 2, 2011.</p> <p>Carpooling requirement is not applicable for this phase of the project.</p> <p>Central Valley provided documentation that environmental awareness training will include an overview of idling restrictions. CPUC verified pre-construction component has been completed by</p>

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			<p>downtime for maintenance and/or reduced power output due to an excessive increase in backpressure.</p> <p>b. The soot filter is causing or is reasonably expected to cause significant engine damage.</p> <p>c. The soot filter is causing or is reasonably expected to cause a significant risk to the workers or the public.</p> <p>d. Any other seriously detrimental cause that has the approval of the CPUC prior to the termination being implemented.</p> <ul style="list-style-type: none"> <li>All heavy earthmoving equipment and heavy-duty construction-related trucks with engines shall be properly maintained and the engines tuned to the engine manufacturer's specifications.</li> <li>To the extent feasible, unnecessary construction equipment and vehicle and idling time will be minimized. The ability to limit construction vehicle idling time is dependent upon the sequences of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel powered vehicles, have extended warm-up times following start-up. Where such diesel powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The proposed project will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of preconstruction conferences. Those briefings will include discussion of a common sense approach to vehicle use.</li> <li>Central Valley will institute a carpooling program to transport workers from staging areas to the work site.</li> </ul>					<p>Central Valley on March 2, 2011.</p> <p>Central Valley provided documentation that all maintenance records for construction equipment will be available in the Construction Management offices onsite.</p>
Potential for NOx emissions.	—	AIR-3	Central Valley will lease NOx emission credits from the CCAPCD in an amount that offsets all construction-related NOx emissions exceeding CCAPCD's significance threshold of 137 pounds per day after implementation of AIR-2. Based on the NOx pounds per day emission estimates for each construction phase, and the length of those phases, NOx emissions would exceed the CCAPCD threshold by a total of 28,438 pounds, or 14.2 tons (see Appendix B). Consequently, Central Valley will purchase emission credits to offset this amount of NOx emissions.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to the CPUC that the mitigation credits have been leased at least 30 days prior to any construction.	The NOx mitigation credits shall be leased prior to any construction.	All	<p>Pre-Construction Component Complete.</p> <p>CPUC verified on January 26, 2011 that the mitigation credits have been leased.</p>
Potential for GHG emissions.	AIR-3	—	In addition to purchasing and retiring offsets for operational emissions under APM AIR-5, Central Valley will also purchase and retire offsets to cover the GHG emissions resulting from	Project carbon offsets for the construction emissions shall be provided to CPUC with a verification opinion statement(s),	CPUC ensure that project carbon credits have been purchased and retired and will review the independent	During operation; annual GHG emission inventory due to CPUC by March 31 of the	All	Compliance with this measure will not be provided until the project is operational.

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			<p>construction of the project as follows: (1) the project carbon offsets for the first year of operation shall include a minimum of 2,514 MTCO<sub>2</sub>E, based on one-half of the total estimated construction emissions; and (2) the project carbon offsets for the second year of operation shall include the balance of 5,028 MTCO<sub>2</sub>E of construction emissions. Because Central Valley has agreed to fully offset the construction emissions of the project within the first 2 years of project operation, there is no need to amortize the construction emissions over the life of the project for the purpose of accounting for these emissions. Project carbon offsets for the construction emissions shall be provided no later than those for the operational emissions as described in APM AIR-5. Central Valley shall conduct an annual GHG emission inventory of stationary sources (compressor engines, standby generator, natural draft burner, glycol reboilers, still vent, and blowdown of natural gas) each year and report its findings to the CPUC by March 31 of the following year. Central Valley shall include in its annual GHG inventory an additional 50 MTCO<sub>2</sub>E, which accounts for an estimated 50 MTCO<sub>2</sub>E/year from non-stationary sources. When the project carbon offsets from operational emissions (APM AIR-5) and construction emissions are retired, Central Valley shall provide to the CPUC a copy of the verification opinion statement(s) by the verification body accredited by the American Carbon Registry, Climate Action Reserve, or the Voluntary Carbon Standard, as appropriate, for the project carbon offsets provided.</p>	<p>from the entity that certified the project carbon offsets or a verification body registered with the California Climate Action Reserve, American National Standards Institute (ANSI), or the California Air Resources Board (CARB).</p>	<p>verification opinion statement(s).</p>	<p>following year.</p>		
<p>Develop and implement a worker environmental awareness program.</p>	—	BIO-1	<p>Before any work occurs in the project area, including grading, Central Valley would conduct mandatory contractor/worker environmental awareness training for construction, monitoring, supervisory, and engineering/inspection personnel. The awareness training would be provided to all construction personnel to discuss sensitive environmental resources known or having the potential to occur in the project region, best management plans, and permit conditions. If new construction personnel are added to the project, Central Valley would ensure that the personnel receive the mandatory training before starting work.</p>	<p>Central Valley to implement measure as defined and incorporate commitments into construction contracts.</p>	<p>Central Valley to provide a copy of the worker training program for review and approval at least 30 days prior to start of construction. Central Valley to provide verification to CPUC of implementation of worker training program and compliance with measure as defined through providing sign-in sheets on a weekly basis. All construction personnel that have been trained shall receive a sticker for their hard hat indicating they have completed environmental awareness training.</p>	<p>Prior to and during construction.</p>	All	<p>Pre-Construction Component Complete.</p> <p>Central Valley provided an outline of the content of the environmental awareness training program that will be provided to all construction personnel. CPUC verified the pre-construction component has been completed by Central Valley on March 2, 2011.</p>
<p>Obtain and comply with state, federal, and local permits.</p>	—	BIO-2	<p>Before any construction activities are initiated and engineering plans and specifications have been finalized, Central Valley would obtain the permits listed below:</p>	<p>Central Valley to implement measure as defined and incorporate commitments into construction contracts. Copies of</p>	<p>CPUC to ensure that commitments have been incorporated into construction contracts. CPUC to verify</p>	<p>Prior to construction.</p>	Compressor Station Remote Well Pad Site	<p>Central Valley provided CPUC with the following permits.</p>

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			<ul style="list-style-type: none"> <li>• Clean Water Act (CWA) Section 404 nationwide permit from the U.S. Army Corps of Engineers (ACOE)</li> <li>• CWA Section 401 water quality certification from the Central Valley Water Board (all Section 404 permits require a Section 401 water quality certification from the Regional Water Quality Control Board (RWQCB))</li> <li>• CWA Section 402/National Pollutant Discharge Elimination System (NPDES) permit from the State Water Board (requiring preparation of a Stormwater Pollution Prevention Plan (SWPPP))</li> <li>• Section 1602 Streambed Alteration Agreement and 2081 Agreement from the Department of Fish and Game (CDFG)</li> <li>• Biological Opinion from the U.S. Fish and Wildlife Service (USFWS).</li> </ul> <p>Central Valley is responsible for obtaining all required permits and authorizations from local, state, and federal agencies. If a conflict arises between the provisions of any of the permits, Central Valley would comply with the provision that offers the greatest protection to water quality, species of special concern, and/or critical habitat. Copies of the permits will be provided to the contractor with the construction specifications.</p>	<p>the permits will be provided to the CPUC and contractor at least 2 weeks prior to the applicable phase(s).</p>	<p>CDFG, ACOE, USFWS, and RWQCB review and approval and that copies of all requisite permits be provided prior to construction.</p>		<p>Observation Well Conversions</p> <p>Saltwater Disposal Well</p> <p>Natural Gas Connecting Pipelines</p>	<ul style="list-style-type: none"> <li>• CWA Section 401 water quality certification from the Central Valley Water Board.</li> <li>• Clean Water Act (CWA) Section 404 nationwide permit from the U.S. Army Corps of Engineers (ACOE).</li> <li>• CWA Section 402/National Pollutant Discharge Elimination System (NPDES) permit from the State Water Board.</li> <li>• Biological Opinion from the U.S. Fish and Wildlife Service (USFWS).</li> <li>• 2081 Agreement from the Department of Fish and Game (CDFG)</li> <li>• Section 1602 Streambed Alteration Agreement is not for activities associated with NTP #5 (no streams subject to CDFG Code 1602 occur in the NTP #5 work area).</li> </ul>



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Install temporary construction barrier fencing to protect sensitive biological resources adjacent to the construction zone.	—	BIO-3	The construction specifications would require that a qualified biologist identify sensitive biological habitat on site and identify areas to avoid during construction. Sensitive communities in the area that would generally be required for construction, including staging and access, will be fenced off to avoid disturbance in these areas. The contractor would install construction barrier fencing to identify environmentally sensitive areas. Sensitive resources that occur in and adjacent to the construction area include woody riparian vegetation, wetlands (including suitable habitat for federally listed invertebrates), giant garter snake aquatic and upland habitat, western pond turtle aquatic habitat, elderberry shrubs that provide potential habitat for the valley elderberry longhorn beetle (VELB), and trees that support nests of sensitive bird species. Before construction, the contractor will work with the project engineer and a resource specialist to identify the locations that require barrier fencing and will place stakes around the sensitive resource sites to indicate these locations. In some areas, staking and flagging may be appropriate and would be determined by the environmental compliance monitor. The protected area would be designated an environmentally sensitive area and clearly identified on the construction specifications. The fencing would be installed before construction activities are initiated and would be maintained throughout the construction period.	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide survey documentation report to CPUC at least 30 days prior to construction regarding sensitive biological habitat. CPUC to inspect periodically during construction in order to ensure measures are being implemented as defined.	Prior to and during construction.	All	Pre-Construction Component Complete.  Central Valley provided a memorandum identifying sensitive habitat and areas to be fenced during construction. CPUC verified the pre-construction component has been completed by Central Valley on March 21, 2011.
Potential for disturbance of tree-, shrub-, or ground-nesting white-tailed kite, northern harrier, loggerhead shrike, and non-special-status migratory birds and raptors.	—	BIO-8	Central Valley will implement one of the following measures, depending on the specific construction timeframe, to avoid disturbance of tree-, shrub- or ground-nesting birds, such as white-tailed kites, northern harriers, loggerhead shrikes, and white-faced ibis, and non-special-status migratory birds and raptors. <ul style="list-style-type: none"> <li>For project components that are scheduled for construction during the breeding season for these species (generally between February 15 and August 15), a qualified wildlife biologist will be retained to conduct the following focused nesting surveys within the appropriate habitat.</li> <li>Tree- and shrub-nesting surveys will be conducted in riparian and oak woodland habitats within or adjacent to the construction area to look for white-tailed kite, loggerhead shrike, and other non-special-status migratory birds and raptors.</li> <li>Ground-nesting surveys will be conducted in annual grasslands and agricultural lands within and adjacent to the construction area to look for northern harrier and other non-special-status migratory birds.</li> </ul>	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to provide survey report documentation to CPUC of the applicable phase(s) to be prepared by a qualified biologist.	Prior to and during construction for all areas identified as suitable habitat for tree-, shrub-, or ground-nesting birds.	Compressor Station Remote Well Pad Site  Observation Well Conversions  Saltwater Disposal Well	Pre-Construction Component Complete.  Central Valley provided survey report documentation from a qualified biologist on March 2, 2011.

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			<p>The surveys should be conducted within 2 weeks before initiation of construction activities and at any time between February 15 and August 15. If no active nests are detected, then no additional measures are required.</p> <p>If surveys indicate that migratory bird or raptor nests are found in any areas that would be directly affected by construction activities (e.g., the noise associated with construction would substantially exceed ambient noise levels associated with highway/road or agricultural noise), then a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (usually late June to mid-July). The extent of these buffers will be determined by a wildlife biologist, and will depend on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of agricultural and highway/road noise and other disturbances, and other topographical or artificial barriers. These factors should be analyzed to make an appropriate decision on buffer distances.</p> <p>Construction activities that are scheduled to begin before the breeding season, (i.e., begin between August 16 and February 15) (pre-existing construction) can proceed. Optimally, all necessary vegetation removal should be conducted before the breeding season (generally between February 15 and August 15) so that nesting birds or raptors would not occur in the construction area during construction activities. If any birds or raptors nest in the project vicinity under conditions existing before construction, then it is assumed that they are habituated (or will habituate) to the construction activities. Under this scenario, the preconstruction survey described previously should still be conducted on or after February 16 to identify any active nests in the vicinity, and active sites should be monitored by a wildlife biologist periodically until after the breeding season or after the young have fledged (usually late June to mid-July). If active nests are identified on or immediately adjacent to the project site, then all nonessential construction activities (e.g., equipment storage and meetings) should be avoided in the immediate vicinity of the nest site, but the remainder of construction activities may proceed.</p> <p>All preconstruction surveys will be documented in a memo to the CPUC to support authorization of the notice to proceed for specific project components.</p>					

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Potential to impact nesting birds during construction.	—	BIO-10	To ensure that possible impacts on nesting Swainson's hawks or their foraging habitat are less than significant, and that unauthorized take of Swainson's hawk does not occur, Central Valley will implement the following measures: a) Preconstruction surveys for nesting Swainson's hawks will be conducted in the project area. These surveys will occur during the breeding season before project activities begin. b) If a Swainson's hawk nest occurs in or adjacent to the project area and could be adversely affected by the increase in ambient noise levels associated with construction, Central Valley will follow CDFG's recommendations for mitigating impacts to Swainson's hawks (CDFG 1994).	Central Valley to implement measure as defined and incorporate commitments into construction contracts.  Central Valley to retain CDFG-approved qualified biologist to perform surveys.	Central Valley to provide survey report documentation to CPUC and provide verification to CPUC of compliance with measure as defined.	Prior to and during construction for all areas identified as suitable Swainson's hawk nest habitat.	Compressor Station Remote Well Pad Site  Observation Well Conversions  Saltwater Disposal Well	Pre-Construction Component Complete.  Central Valley provided survey report documentation from a qualified biologist on March 2, 2011.
Potential to impact giant garter snake habitat.	—	BIO-12	Because of the nature and scale of anticipated adverse effects on giant garter snakes and their habitat, mitigation and compensation measures presented in this measure were derived primarily from the USFWS's Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat. Mitigation measures also are based on the guidance provided in the Programmatic Formal Consultation for ACOE 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo counties, California (USFWS 1997). Mitigation measures to avoid and minimize effects on the giant garter snake are as follows: <ul style="list-style-type: none"><li>At such time when construction plans are finalized, a biologist will conduct a preconstruction survey for giant garter snake and its habitat at each site where construction activities will occur. This survey will identify and document the specific locations of suitable habitat within or adjacent to proposed construction areas. The biologist will be responsible for submitting survey maps and immediately reporting the presence of the species, if found, to the USFWS in order to determine appropriate actions.</li></ul> If giant garter snake habitat is identified during the preconstruction survey identified above, Central Valley will: <ul style="list-style-type: none"><li>Avoid construction activities within 200 feet from the banks of giant garter snake aquatic habitat and confine movement of heavy equipment to existing roadways to minimize habitat disturbance to the maximum extent feasible.</li></ul>	Central Valley to implement measure as defined and incorporate commitments into construction contracts.  Central Valley to retain USFWS-approved qualified biologist to perform surveys.	Central Valley to provide verification to CPUC of compliance with measure as defined.  Central Valley to provide CPUC and USFWS copies of survey maps and documentation prior to construction of the applicable phase(s).	Prior to and during construction for all areas identified as suitable giant garter snake habitat.	Compressor Station Remote Well Pad Site  Observation Well Conversions Saltwater Disposal Well and Tank  Natural Gas Connecting Pipelines	To be completed throughout construction.  On-going, daily preconstruction surveys will be conducted by a USFWS-approved biological monitor during construction.

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			<ul style="list-style-type: none"> <li>• Time construction activities within habitat so that they occur between May 1 and October 1. This is the active period for giant garter snakes and direct mortality is lessened because snakes are expected to actively move and avoid danger.</li> <li>• Inform construction personnel to recognize giant garter snakes and their habitat. Construction personnel should receive worker environmental awareness training prior to undertaking work at construction sites.</li> <li>• Survey the project area for giant garter snakes 24 hours prior to initiating construction activities. After construction has been initiated, a biologist will be available thereafter. If a snake is encountered during construction, the biologist will have the authority to stop all construction activity until appropriate corrective measures can be completed or it has been determined that the snake will not be harmed. A survey of the project area should be repeated if a lapse in construction activity of 2 weeks or greater has occurred. Sightings and acknowledgement of incidental take will be reported to the USFWS immediately.</li> <li>• Confine clearing to the minimum area necessary to facilitate construction activities. Flag and designate avoided giant garter snake habitat within or adjacent to the project area as an environmentally sensitive area. This area should be avoided by all construction personnel.</li> <li>• Ensure any dewatered habitat remains dry for at least 15 consecutive days after April 15 and prior to excavating or filling the dewatered habitat.</li> <li>• Remove temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions after construction activities. Restoration work may include such activities such as replanting species removed from banks or replanting emergent vegetation in the active channel.</li> </ul>					
Potential to impact giant garter snake habitat.		BIO-13	Central Valley will compensate for temporary disturbance of giant garter snake habitat. This mitigation will be determined through consultation with USFWS and ACOE and provided in the Biological Opinion. Based on a review of the Biological Opinions that were issued for the Wild Goose Gas Storage Expansion and Pacific Gas and Electric (PG&E) Colusa Generating Station Projects, the USFWS will likely require a 1:1 ratio for	Central Valley to implement measure as defined and incorporate commitments into construction contracts. Central Valley to provide a copy of the final Biological Opinion to the CPUC prior to construction of the applicable phase(s).	Central Valley to provide verification to CPUC of compliance with measure as defined.	Prior to construction for all areas identified as suitable giant garter snake habitat.	Compressor Station Remote Well Pad Site  Observation Well Conversions  Saltwater Disposal Well and Tank	Pre-Construction Component Complete.  Central Valley has purchased GGS credits from Wildlands' Ridge Cut Mitigation Bank. CPUC verified a copy of the sales agreement was provided by

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			temporary impacts to giant garter snake habitat. This mitigation ratio is consistent with the USFWS Programmatic Formal Consultation for ACOE 404 Permitted Projects with Relatively Small Effects on Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties, California (USFWS 1997).  The Biological Opinion will be provided to the CPUC to support their issuance of a notice to proceed for project components that support suitable giant garter snake upland and aquatic habitat.				Natural Gas Connecting Pipelines – Segments A & B	Central Valley on March 2, 2011.
Potential to impact giant garter snake habitat.	BIO-1	—	Central Valley will implement all conditions and measures stipulated within the Biological Opinion to be issued by the U.S. Fish and Wildlife Service (USFWS) at the conclusion of the Section 7 consultation with the U.S. Army Corps of Engineers (ACOE) to minimize and/or avoid take and direct and indirect impacts on giant garter snake. A copy of the final Biological Opinion shall be submitted to the CPUC prior to any construction that would impact giant garter snakes or habitat potentially supporting this species, as evidence of the commitment by Central Valley to implement all conditions and measures contained therein.	Central Valley to implement this measure as defined and incorporate commitments into construction contracts. Central Valley to provide a copy of the final Biological Opinion to the CPUC prior to construction of the applicable phase(s).	Central Valley to provide verification of compliance with measure as defined. CPUC to review final Biological Opinion.	Prior to construction.	Compressor Station Remote Well Pad Site  Observation Well Conversions  Saltwater Disposal Well and Tank  Natural Gas Connecting Pipelines	Pre-Construction Component Complete.  Central Valley provided USFWS Biological Opinion and commitments have been incorporated into the construction documents. CPUC verified pre-construction component was completed on March 2, 2011.
Potential for impacts to wetlands.	BIO-3	—	Central Valley shall submit documentation of Section 404 wetland fill authorization to the CPUC prior to the start of construction. All conditions, stipulations, and measures to avoid, minimize, and/or mitigate for impacts to wetlands and other waters of the U.S. described and contained within the authorized permit shall be implemented by Central Valley, as approved by the CPUC. Documentation verifying the approved ACOE fill permit and associated conditions shall be presented to the CPUC prior to any project construction that would impact wetlands and other waters of the U.S. as evidence of the commitment by Central Valley to implement all conditions and measures contained therein.	Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts. Copies of the Section 404 authorization will be provided to the CPUC prior to construction of the applicable phase(s).	Central Valley to provide verification of compliance with measure as defined. CPUC to review the Section 404 authorization.	Prior to construction.	Natural Gas Connecting Pipelines – Segments A and B  Remote Well Pad Site	Pre-Construction Component Complete.  Central Valley provided Section 404 Permit and commitments have been incorporated into the construction documents. CPUC verified pre-construction component was completed on March 2, 2011.
Construction of the proposed project could affect undiscovered Native American human remains.	—	CR-3	If human remains of Native American origin are discovered during project construction, it will be necessary to comply with state laws relating to the disposition of Native American burials, which fall under the jurisdiction of the Native American Heritage Commission (NAHC) (Public Resources Code, Section 5097). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent	Central Valley to contact county coroner if human remains are found.  Central Valley and coroner to contact NAHC.	CPUC and NAHC to review extraction plan if needed. CPUC and Central Valley monitor to ensure work is suspended upon discovery of resources to ensure avoidance of all significant cultural resources.  If avoidance is not possible upon conclusion of evaluations, data recovery research program exhausts	During ground-breaking activities in all construction areas.	All	Pre-Construction Component Complete.  Central Valley provided qualifications of the qualified archeologist on April 18, 2011 and measures have been included in the contract documents.

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			human remains, until the following occurs: <ul style="list-style-type: none"> <li>• The Colusa County Coroner has been informed and has determined that no investigation of the cause of death is required</li> <li>• If the remains are of Native American origin:                             <ul style="list-style-type: none"> <li>○ The descendants of the deceased Native Americans have made a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code, Section 5097.98</li> <li>○ NAHC is unable to identify a descendant or the descendant fails to make a recommendation within 24 hours after being notified by the NAHC.</li> </ul> </li> </ul>		potential of site to yield further important information. The qualifications of the qualified archaeologist shall be provided to the CPUC.			
Potential impact paleontological resources during construction.	—	CR-4	Central Valley will implement the following measures to avoid potential impacts on buried or previously unidentified paleontological resources. Conduct paleontological resource training. As part of the preconstruction environmental training program, construction workers will be provided an overview of the paleontological resources that could occur in the project area. The training will be conducted to help construction workers to (1) identify potential paleontological resources encountered during excavation, and (2) review procedures in the event that a potential fossil is found. Specifically, the training may include a discussion of the following: <ul style="list-style-type: none"> <li>• Fossil identification (the paleontologist may present example fossils to the workers)</li> <li>• The prohibition of collecting or intentionally disturbing fossils</li> <li>• Stopping all excavation and ground-disturbing work within 100 feet of the find</li> <li>• Procedures for notifying supervisors and site monitoring staff</li> <li>• A discussion of the paleontologist's authority to redirect or stop certain work operations</li> <li>• An overview of the actions that the paleontologist may take to identify the sensitivity of a fossil and to recover and curate a fossil.</li> </ul> Stop work if paleontological resources are discovered during construction. If a vertebrate fossil is discovered during construction, the contractor will stop work immediately in the area of the find until a qualified professional	Central Valley to provide training as part of the Worker Training Program.	CPUC to inspect periodically to prevent destruction of non-renewable Paleontologic resources. CPUC to review and approve monitoring results report that provides the fossils found and their significance.	Prior to and during construction.	All	Pre-Construction Component Complete.  Environmental Awareness Training outline provided to CPUC. CPUC verified pre-construction component was completed on March 2, 2011.

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			<p>vertebrate paleontologist can assess the nature and importance of the find and recommend a course of action in consultation with CPUC and other appropriate agencies. If the fossil is determined to be of scientific importance, the course of action will involve preparation, recovery, and museum curation of the fossil. The course of action may also include preparation of a report for publication describing the find. Central Valley will be responsible for ensuring that the recommendations of the paleontologist regarding treatment and reporting are implemented.</p>					
<p>Construction of the proposed project could affect undiscovered cultural resources.</p>	<p>CUL-1</p>	<p>—</p>	<p>In the event that any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, such as chipped or ground stone, historic debris, building foundation, or human bones, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find. If any find is determined to be significant, representatives of Central Valley, CPUC, and the qualified archaeologist shall meet to determine the appropriate avoidance measures or other appropriate mitigation, with the ultimate determination to be made by the CPUC. All significant cultural materials recovered shall be subject to scientific analysis; professional museum curation, as necessary; and a report prepared by a specialist according to current professional standards.</p> <p>In considering any suggested mitigation proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the CPUC and Central Valley shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is carried out.</p> <p>If the CPUC, in consultation with the qualified archaeologist, determines that a significant archaeological resource is present and that the resource could be adversely affected by the proposed project, Central Valley will:</p> <ul style="list-style-type: none"> <li>• Re-design the project to avoid any adverse effect on the significant archaeological resource; or</li> <li>• Implement an archaeological data recovery program (ADRP), unless the qualified</li> </ul>	<p>If necessary during monitoring, Central Valley's archaeologist to prepare ADRP and meet with and submit to CPUC for review within 2 weeks of discovery. Central Valley to implement data recovery as specified in ADRP.</p>	<p>CPUC and Central Valley monitor to ensure work is suspended upon discovery of resources to ensure avoidance of all significant cultural resources. CPUC to review completed ADRP. If avoidance is not possible upon conclusion of evaluations, data recovery research program exhausts potential of site to yield further important information.</p>	<p>During ground-breaking activities in all construction areas.</p>	<p>All</p>	<p>Pre-Construction Component Complete.</p> <p>Central Valley provided qualifications of the qualified archeologist on April 18, 2011 and measures have been included in the contract documents.</p>

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			archaeologist determines that the archaeological resource is of greater interpretive use than research significance, and that interpretive use of the resource is feasible. If the circumstances warrant an ADRP, such a program shall be conducted. The project archaeologist and the CPUC shall meet and consult to determine the scope of the ADRP. The archaeologist shall prepare a draft ADRP that shall be submitted to the CPUC for review and approval. The ADRP shall identify how the proposed ADRP would preserve the significant information the archaeological resource is expected to contain. That is, the ADRP shall identify the scientific/historical research questions that are applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practical.					
Project structures and facilities could be damaged as a result of seismically induced ground shaking.	—	GEO-3	Central Valley will ensure that the project is constructed in accordance with all applicable state and county building and construction codes and ordinances related to earthquake safety and structural stability during ground shaking for aboveground structures. In addition, Central Valley will install safety vibration sensors in all relevant equipment to shut down operations should an earthquake occur that is of a magnitude that could jeopardize the integrity of the facilities. To support the project design, geotechnical soil borings will be performed to the extent necessary to determine the seismic structural design and construction requirements prescribed in the 2007 California Building Code (CBC).	Central Valley to implement measure as defined. Central Valley to submit final design and geotechnical borings results to CPUC and DOGGR for their review and approval prior to construction of the applicable phase(s).	CPUC to verify that design has incorporated specific conditions to remediate impacts related to earthquake safety and structural stability.	Prior to construction.	Metering Station Compressor Station Saltwater Disposal Well and Tank Remote Well Pad Site	Pre-Construction Component Complete.  CPUC verified compliance with pre-construction component on March 15, 2011.
Potential hazardous substance spills during construction.	—	HAZ-1	The construction equipment used for the proposed project will require periodic maintenance and refueling. To reduce the potential for contamination by spills, no refueling, storage, servicing, or maintenance of equipment will be allowed within 100 feet of sensitive environmental resources. No refueling or servicing will be allowed without the placement of absorbent material or drip pans underneath the vehicle to contain spilled fuel. Any fluids drained from the machinery during servicing will be collected in leak-proof containers and taken to an appropriate disposal or recycling facility. If such activities result in	Central Valley to incorporate measure as defined and incorporate into construction contracts.	CPUC to ensure that commitments have been incorporated into construction contract specifications.  CPUC to inspect periodically to ensure measure is being implemented.	Prior to and during construction.	All	Pre-Construction Component Complete.  CPUC verified on March 18, 2011 that commitments have been incorporated into construction contract specifications.



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			<p>spilling or accumulation of a product on the soil, the contaminated soil will be assessed and disposed of properly. Under no circumstances will contaminated soils be added to a spoils pile.</p> <p>Mobile refueling trucks likely will be used for on-site refueling of construction equipment. The refueling trucks will be independently licensed and regulated to haul and dispense fuels to ensure that the appropriate spill prevention techniques are implemented.</p> <p>All maintenance materials (oils, grease, lubricants, antifreeze, and similar materials) will be stored at off-site staging areas. If these materials are required during field operations, they will be placed in a designated area away from site activities and sensitive resources.</p> <p>During construction, vehicles and equipment not in use will be parked or stored at least 100 feet from water bodies, wetlands, known archaeological sites, and other sensitive resource areas. These areas will be identified on the construction drawings, as appropriate. All washdown activities will be conducted at least 100 feet from sensitive environmental resources.</p>					
<p>Potential hazardous substance spills during construction.</p>	<p>—</p>	<p>HAZ-2</p>	<p>Central Valley will prepare a comprehensive Construction and Operation Safety and Emergency Response Plan that includes hazardous substance control, worker health and safety, incident response, and fire prevention and management. Each of these plan elements is briefly described below. The plan will be prepared prior to construction and will be submitted to the CPUC for review and approval.</p> <p>Release of Hazardous Substances and Emergency Response Element. This element of the plan will include measures that will be implemented if an accidental release occurs or if any subsurface hazardous materials are encountered during construction and during future operation of the facility. The provisions outlined in this plan will include telephone numbers of county and state agencies and primary, secondary, and final clean-up procedures.</p> <p>The plan will include the following measures to address hazardous materials generated from construction-related activities:</p> <ul style="list-style-type: none"> <li>• Diesel fuel and petroleum-based lubricants will be stored only at designated staging areas.</li> <li>• All hazardous material spills or threatened releases—including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of the quantity spilled—must be</li> </ul>	<p>Central Valley to prepare a Construction and Operation Safety and Emergency Response Plan as defined.</p>	<p>Central Valley to provide CPUC copies of all plans developed in compliance with hazardous materials regulations at least 30 days prior to construction of the applicable phase(s).</p> <p>CPUC to review Construction and Operation Safety and Emergency Response Plan to ensure compliance with measure.</p>	<p>30 days prior to construction</p>	<p>All</p>	<p>Pre-Construction Component Complete.</p> <p>Central Valley provided a HSES Site Manual that includes a construction safety and emergency plan. CPUC verified HSES site manual and emergency plan was provided by Central Valley on March 2, 2011.</p>

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			<p>reported immediately if the spill has entered or threatens to enter a water of the state, has caused injury to a person, or threatens injury to public health.</p> <p>Sudden Uncontrolled Release of Natural Gas and Emergency Response Element. This element of the plan will include measures that will be implemented if there was a failure or rupture of a pipeline or compressor station component during future operation of the facilities. The provisions outlined in this plan will include a callout procedure with telephone numbers of local fire and police responders, as well as county and state agencies. The plan will address public safety measures, emergency evacuation routes, and traffic control. Coordination and training with other parties like PG&amp;E and the local fire and police departments will also be part of this plan.</p> <p>Worker Health and Safety Element. This element of the plan will include provisions that establish worker training. This portion of the plan will also establish security measures to prevent unauthorized entry to cleanup sites and to reduce hazards outside the investigation/cleanup area. It will also address gas leaks, methods of evacuation, and general protection measures.</p> <p>Fire Prevention and Management Element. To minimize the potential fire risks during summer construction activities, this element of the plan will identify fire management measures that will be implemented during construction and operation. The plan will include the notification procedures and emergency fire precautions listed below:</p> <ul style="list-style-type: none"> <li>• All internal combustion engines, stationary and mobile, will meet applicable regulatory standards.</li> <li>• Light trucks and cars with factory-installed (type) mufflers, in good condition, may be used on roads where the roadway is cleared of all vegetation.</li> <li>• "No Smoking" signs and fire rules will be posted at the contractor field offices and areas visible to employees during the fire season.</li> <li>• Equipment parking areas and small stationary engine sites will be cleared of all extraneous flammable materials.</li> <li>• Fire extinguishers will be installed at the compressor station and metering station.</li> <li>• Employee training in use of extinguishers and communication with the local fire departments will be provided to all personnel.</li> </ul>					

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Potential for impact to the public or environment due to use of hazardous materials.	HAZ-1	—	Central Valley and/or the project contractor will contain drilling mud and cuttings from well drilling and HDD in portable tanks and will remove and dispose of these at approved facilities for this type of waste.	Central Valley to incorporate measure as defined and incorporate into construction contracts.	Central Valley to document compliance with this measure. CPUC to ensure that commitments have been incorporated into construction contract specifications. CPUC to inspect periodically to ensure measure is being implemented.	Prior to and during construction.	Natural Gas Connecting Pipeline – Segment A Remote Well Pad Site Observation Wells	Pre-Construction Component Complete.  CPUC verified on May 16, 2011 that commitments have been incorporated into construction contract specifications.
Potential for impact to the public or environment due to use of hazardous materials.	HAZ-2	—	All personnel working at the compressor station and remote well pad site will be trained in general and specific hazardous chemical safety issues and response procedures.	Central Valley to implement this measure as defined and incorporate commitments into construction contracts.	Central Valley to provide verification to CPUC of worker training program and compliance with measure as defined.	Prior to construction.	Compressor Station  Remote Well Pad Site	Pre-Construction Component Complete.  Central Valley provided a HSES Site Manual that includes a construction safety and emergency plan. CPUC verified HSES site manual and emergency plan was provided by Central Valley on March 2, 2011.
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-4	—	If asbestos-cement pipe (ACP) is encountered during construction, the pipe will be removed by hazardous materials trained employees from the construction work area and stockpiled to the side. Containment and removal may be carried out simultaneously with the continuation of construction to the extent possible.	Central Valley to implement measure as defined.	Central Valley to document compliance with this measure and provide verification to the CPUC.	During construction.	All	Compliance with this measure will not be provided unless ACP is encountered during construction.
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-6	—	Central Valley will prepare and implement a Gas Monitoring Plan prior to first gas injection. The Gas Monitoring Plan will address the type and frequency of gas monitoring well tests, both surface and in shallow soils; the frequency of wellhead inspections by a qualified operator; monitoring requirements for abandoned wellheads; and reporting requirements. The Gas Monitoring Plan will be submitted to the California Department of Toxic Substances Control (DTSC). DTSC will review results of the Gas Monitoring Plan and request implementation of any additional monitoring that is required as a result of the information obtained. A copy will be submitted to the CPUC. Dudek will be responsible for monitoring natural gas at shallow depths near the ground surface. The four primary elements of this gas monitoring plan are: 1. Establish a baseline or background level for natural gas at the surface prior to storage operations. This will allow comparison and sound evaluation of future project-related gas monitoring results. 2. Periodically measure for levels of detectable gas at predetermined surface locations. This will allow the storage operator to ascertain	Central Valley to prepare a Gas Monitoring Plan as defined, and submit to DTSC for review and approval. A copy will also be submitted to the CPUC.	DTCS review of the Gas Monitoring Plan. Central Valley to provide copy of the plan and verification of submittal to DTSC and CPUC.	Prior to first gas injection.	Remote Well Pad Site Observation Wells	Compliance with this measure will not be provided until the project is operational.

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			<p>whether the levels of gas detected at the surface, if any, have increased noticeably above the previously established background levels. It is expected that small variations may occur, which may not individually rise to any significant level, but trends over several sample periods could provide an indication of a change that requires further investigation.</p> <p>3. Quantify and, if necessary, qualify any changes in an attempt to identify the source. First, based on sampling and testing of gas samples, determine whether the gas quality signature is similar to the native gas production in the area or to pipeline gas. Gas in the storage reservoirs will be almost exclusively pipeline gas with components that should be relatively easy to identify compared to native gas.</p> <p>4. Based on any specific changes observed, Central Valley shall respond to the data and corresponding analysis with additional testing, surveillance, or mitigation, as appropriate. If the data indicates that any detected surface gas is from the storage operation, then a plan will be developed to identify the leaking pipeline, well, or reservoir, including procedures to further test and correct the situation. The overall gas monitoring plan will be evaluated after 5 years to determine its future usefulness. The monitoring plan will consist of the following features:</p> <ul style="list-style-type: none"> <li>• Permanent monitoring/testing sites at the project remote well pad site and compressor station site</li> <li>• Leakage surveys at predetermined locations at least once each year</li> <li>• Utilization of standard, industry-approved gas measurement equipment</li> <li>• Field personnel trained on gas sampling methods and instrumentation, identifying stressed vegetation, and other indicators of potential leakage.</li> </ul>					
<p>Potential for impact to the public or environment due to release of hazardous materials into the environment.</p>	<p>HAZ-7</p>	<p>—</p>	<p>Central Valley will conduct annual temperature logging inside injection/withdrawal well and observation well casings. A temperature tool will be run into each injection and observation well to measure temperature anomalies. In the event that anomalous temperature gradients are identified, or if elevated gas concentrations are detected in the shallow soils during monitoring conducted as part of Mitigation Measure HAZ-6, Central Valley will further investigate to determine the cause and source of the anomaly. In the event there is a casing integrity issue, practicable steps will be taken in a concerted effort to minimize the impact of the leak until repairs can be made. Leaks will be repaired as soon as possible in the case of a</p>	<p>Central Valley to implement measure as defined, and submit documentation to DOGGR for review and approval.</p>	<p>DOGGR review of documentation to ensure compliance with measure. Central Valley to provide copy of documentation and verification of submittal to DOGGR to CPUC.</p>	<p>During operation; documentation to be sent to DOGGR and CPUC no later than 4 months after leak detection.</p>	<p>Remote Well Pad Site Observation Wells</p>	<p>Compliance with this measure will not be provided until the project is operational.</p>

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			leak that is potentially hazardous to human health, as soon as reasonable without causing additional hazards, and documentation will be sent to DOGGR no later than 4 months after leak detection. A copy of the documentation will be submitted to the CPUC.					
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-8	—	If routine surface or subsurface gas monitoring indicates that a well may be leaking (e.g., methane concentrations above baseline levels gas bubbles, distressed vegetation), Central Valley will report it immediately to the DOGGR and implement the appropriate remedial actions in consultation with the DOGGR. Central Valley will submit all well remediation and repair records to the DOGGR.	Central Valley to implement measure as defined, and submit documentation to DOGGR for review and approval.	DOGGR review of documentation to ensure compliance with measure. Central Valley to provide copy of documentation and verification of submittal to DOGGR to CPUC.	During operation.	Remote Well Pad Site Observation Wells	Compliance with this measure will not be provided until the project is operational.
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-9	—	<ul style="list-style-type: none"> <li>Inspect produced-water storage tank(s) for integrity/leakage on an annual basis.</li> <li>Meter produced and injected formation water; periodically reconcile produced versus injected formation water quantities.</li> <li>Construct secondary containment berm around tank(s).</li> <li>Leak/pressure testing of the casing from below the base of freshwater to ground surface to verify that under injection pressures the well cannot leak saline fluid into the freshwater aquifer zones.</li> </ul>	Central Valley to implement measure as defined, and submit documentation to DOGGR for review and approval.	DOGGR review of documentation to ensure compliance with measure. Central Valley to provide copy of documentation and verification of submittal to DOGGR to CPUC.	Containment berm constructed prior to operation. Inspections and testing during operation.	Remote Well Pad Site  Salt Water Disposal Well	Pre-Construction Component Complete.  Central Valley provided DOGGR permit. CPUC verified compliance with pre-construction component on March 2, 2011.
Potential for impact to the public or environment due to release of hazardous materials into the environment.	HAZ-10	—	<ul style="list-style-type: none"> <li>Proper gas well design. The primary aquifer protection mechanism is structurally sound, leak-free casing, and there is a competent cement bond across the base of freshwater with either the surface casing or the injection/production casing. The well design is regulated by DOGGR. Verification of adherence to well design is accomplished by inspection and by running cement bond logs after construction is completed.</li> <li>Periodic monitoring for indications of leakage. This includes annual temperature logging of the wells, which will detect vertical formation fluid/gas movement within the borehole area above the zone of intent.</li> <li>Well work to repair casing and/or annular cement seal leakage if detected.</li> </ul>	Central Valley to implement measure as defined, and submit documentation to DOGGR for review and approval.	DOGGR review of documentation to ensure compliance with measure. Central Valley to provide copy of documentation and verification of submittal to DOGGR to CPUC.	Prior to construction and monitoring and repairs during operation.	Remote Well Pad Site	Pre-Construction Component Complete.  Central Valley provided DOGGR permit. CPUC verified compliance with pre-construction component on March 2, 2011.
Potential to violate water quality standards or waste discharge requirements.	—	HYDRO-1	The reclamation effort will involve restoration of temporarily disturbed areas (where necessary) and installation of erosion control measures to comply with County grading permits and the NPDES permit from the State Water Board. Central Valley will prepare a SWPPP that describes when, where, and how such site reclamation will occur. Site-specific erosion control measures (nonvegetative or mechanical techniques) will be determined on a site-	Central Valley to implement measure as defined and incorporate commitments into construction contracts.	Central Valley to receive approval of plans from Colusa County Public Works Department. Central Valley to provide verification to CPUC of measure, including submittal of construction contract at least 2 weeks prior to construction of the applicable phase(s).	Prior to issuance of grading permit	All	Pre-Construction Component Complete.  Central Valley provided grading plan issued by Colusa County and SWPPP submitted to RWQCB. CPUC verified pre-construction component has been met on March 2, 2011.

Impact	MM	APM No.	Mitigation Measure/ Applicant Proposed Measure	Implementation Actions	Monitoring Requirements and Effectiveness Criteria	Timing	Project Component	Status
			<p>specific basis as part of this SWPPP.</p> <p>As part of the SWPPP, erosion and sediment control measures will be implemented to reduce the amount of soil that is displaced or transported from a land area and to control the discharge of soil particles that are displaced or transported. The standard control measures and practices listed below will be implemented during and after construction to reduce accelerated soil erosion and sedimentation impacts to a less-than-significant level:</p> <ul style="list-style-type: none"> <li>• Remove only the vegetation that it is absolutely necessary to remove</li> <li>• Avoid off-road vehicle use outside the work zone</li> <li>• Avoid excessive trips along the ROW or access roads</li> <li>• Instruct all personnel on stormwater pollution prevention concepts to ensure that all are conscious of how their actions affect the potential for erosion and sedimentation</li> <li>• Perform initial cleanup</li> <li>• Compact subsurface backfill material</li> <li>• Apply an appropriate seed mix, where determined necessary, in nonagricultural areas and through coordination with the landowner.</li> </ul> <p>Construction inspectors will be on site during all construction activities and will reinforce the importance of confining all vehicular traffic to the existing ROW and access roads.</p>					
Potential to degrade water quality.	HYDRO-1	—	<p>Central Valley shall develop and implement a groundwater monitoring plan that will include both pre-injection and post-injection monitoring of groundwater quality to identify any seepage of stored natural gas into the groundwater aquifers. In the event that stored natural gas is detected above the reservoir, Central Valley shall immediately consult with DOGGR and the Central Valley Regional Water Quality Control Board (RWQCB) to determine the appropriate remedial action required, including depressurization of the reservoir or other appropriate measures approved by DOGGR and the RWQCB. The monitoring and any potential remediation shall be under the supervision of DOGGR and RWQCB.</p>	<p>Central Valley to prepare a groundwater monitoring plan as defined, and as necessary, coordinate with DOGGR and RWQCB. Commitments of plan shall be incorporated into construction contract.</p>	<p>Central Valley to monitor groundwater and provide reports to DOGGR and RWQCB. CPUC to review groundwater monitoring plan to ensure compliance with measure.</p>	<p>Prior to construction associated with the first gas injection of any project component.</p>	All	<p>A separate NTP will be issued by the CPUC prior to injecting gas within the Princeton Gas Field. The groundwater monitoring plan will be provided prior to any gas injection.</p>
Construction activities would temporarily increase local noise levels.	—	NOI-1	<p>Central Valley will incorporate the following measures into the construction contract specifications to reduce and control noise generated from construction-related activities such that construction noise does not exceed 60 dBA-Lmax between 7:00 p.m. and 7:00 a.m. weekdays and all day on Sundays and legal holidays at adjacent residences.</p>	<p>Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts.</p>	<p>CPUC to ensure that restrictions have been incorporated into construction contracts. CPUC to inspect periodically for evidence of successful compliance with measure as defined.</p>	<p>Prior to and during construction.</p>	All	<p>Pre-Construction Component Complete.</p> <p>CPUC verified on March 18, 2011 that the commitments have been incorporated into construction contract</p>

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			<ul style="list-style-type: none"> <li>Prohibit noise-generating construction activity within 900 feet of occupied dwelling units between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and all day on Sundays and legal holidays, unless written approval is obtained from the resident.</li> <li>Ensure that all construction equipment has sound-control devices no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.</li> <li>Implement appropriate additional noise-reducing measures as may be necessary, including but not limited to:                             <ul style="list-style-type: none"> <li>Changing the location of stationary construction equipment</li> <li>Shutting off idling equipment</li> <li>Providing local enclosures or barriers around noise-generating equipment</li> <li>Rescheduling construction activity</li> <li>Notifying nearby residents in advance of construction work.</li> </ul> </li> </ul>					specifications
Construction activities would temporarily increase local noise levels.	NOI-1	—	Central Valley will incorporate specifications to reduce and control noise generated from construction-related activities such that general construction noise Monday through Saturday, 7:00 a.m. to 7:00 p.m., does not exceed 75 dBA Leq(h) at noise sensitive receptors (e.g., occupied residences, churches, schools) into the project construction contract.	Central Valley to implement mitigation measure as defined and incorporate commitments into construction contracts.	CPUC to ensure that restrictions have been incorporated into construction contracts. CPUC to inspect periodically for evidence of successful compliance with measure as defined.	Prior to and during construction.	All	Pre-Construction Component Complete.  CPUC verified on March 18, 2011 that the commitments have been incorporated into construction contract specifications.
Detours, road and lane closures.	—	TRA-1	<p>Central Valley will prepare a construction traffic plan to minimize short-term construction-related impacts on local traffic. These measures will include installation of temporary warning signs at appropriate locations along major road intersections. The signs will be placed at strategic locations near points of access and will be removed after all construction-related activities are completed. The plan will include (but may not be limited to) the measures listed below:</p> <ul style="list-style-type: none"> <li>Coordinate with Colusa County on any lane or road closures, if needed to construct improvements</li> <li>Install traffic control devices</li> <li>Provide alternate routes (detours), as necessary, to route local traffic around roadway construction</li> <li>Provide notification of any road closures to residents in the vicinity of construction</li> <li>Provide access to driveways, private roads, and agricultural roads outside the immediate construction zone</li> </ul>	Central Valley to prepare construction traffic plan as defined.	Central Valley will obtain approval of construction traffic plan from Colusa County Public Works Department to ensure traffic flows would be generally maintained without severe congestion. Approval from Colusa County and the construction traffic plan(s) shall be provided to CPUC prior to construction of the applicable phase(s).	Prior to issuance of grading permit(s).	All	Pre-Construction Component Complete.  Central Valley provided verification that Colusa County has received the traffic control plan on March 18, 2011.

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			<ul style="list-style-type: none"> <li>Consult with emergency service providers and develop an emergency access plan for emergency vehicle access in and adjacent to the construction zone.</li> </ul>					