PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

MITIGATED NEGATIVE DECLARATION

Central Valley Gas Storage, LLC
Certificate of Public Convenience and Necessity Application
A 09-08-008
Central Valley Gas Storage Project

INTRODUCTION

Pursuant to Public Utilities Code Chapter 5, Article I, Central Valley Gas Storage, LLC (Central Valley), a wholly owned subsidiary of Nicor, Inc., of Illinois, submitted an application to the CPUC for a Certificate of Public Convenience and Necessity (CPCN) on August 19, 2009, for the purpose of developing the Central Valley Gas Storage Project (project) in Colusa County, California.

The CPCN application and accompanying Proponent's Environmental Assessment (PEA) identifies the proposed project, including the conversion of the depleted Princeton Gas Field into a natural gas storage reservoir and construction of related facilities including a compressor station, remote well pad site, observation wells, metering station, and connecting pipelines.

Pursuant to the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.), the CPUC must prepare an Initial Study (IS) for the proposed project to determine if any significant impact on the environment would result from project implementation. The IS uses the significance criteria outlined in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.).

Article 6, Section 15070, Decision to Prepare a Negative Declaration or Mitigated Negative Declaration, of the CEQA Guidelines states the following:

A public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or

b) The initial study identifies potentially significant effects, but:

   1) Revisions in the project plans or proposals made by or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

   2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

Based on the analysis in the IS, it has been determined that all project-related environmental impacts could be reduced to a less-than-significant level with the incorporation of feasible mitigation measures. Therefore, adoption of a Mitigated Negative Declaration (MND) will satisfy the requirements of CEQA.

The information contained in the project's PEA and additional information requested by the CPUC during the PEA review was fully considered during the preparation of this Draft IS/MND.

Copies of the project application, PEA, and supporting technical studies are available on the project website at http://www.cpuc.ca.gov/environment/info/dudek/cvgs/CVGS_Home.htm.

PROJECT DESCRIPTION

The proposed project would be located in northeastern Colusa County, approximately 60 miles northwest of Sacramento. The compressor station and remote well pad site would be located south/southwest of Princeton, and the Pacific Gas & Electric Company (PG&E) line 400/401 connecting pipeline would travel west from the compressor station to the metering station, interconnecting with PG&E line 400/401 several hundred feet south of PG&E's Delevan Compressor Station.

Central Valley proposes to convert, construct, and operate the depleted Princeton Gas Field as a natural gas storage facility. The conversion of the depleted gas field will require the construction of surface and subsurface facilities, including a compressor station, remote well pad site, observation wells, saltwater disposal well and pipeline, metering station, and natural gas connecting pipelines. The project includes construction, operation, and maintenance of the following components:

- Princeton Gas Storage Field (natural gas storage reservoir)
- Surface facilities, including
    - Compressor station and associated facilities on a 10-acre site (including the installation of an approximate 3,500-foot-long electrical distribution line that would connect the compressor station to an existing 12-kilovolt PG&E line)
    - Remote well pad site on a 3.1-acre site that includes up to 10 injection/withdrawal wells and a 130,000-gallon saltwater storage tank
    - Saltwater disposal well (the existing Central Valley test well will be converted to a saltwater disposal well and connected to the remote well pad by a 800-foot-long, 6-inch water drain pipeline)
    - Observation wells (involves conversion of up to three existing wells, drilling one new well, and re-entry into one plugged well)
    - Metering station on a 1-acre site near PG&E Line 400/401
- Natural gas connecting pipelines, including
    - A 1,950-foot-long, dual 16-inch gathering line system to connect the injection/withdrawal wells to the compressor station
    - A 170-foot-long, 8-inch gas pipeline, and use of a meter skid and rental compressor unit for a temporary connection to PG&E Line 172
    - A 14.7-mile-long, 24-inch diameter gas pipeline, which would connect the compressor station to the metering station, plus a 580-foot interconnection with PG&E Line 400/401.

The project would provide natural gas storage by injecting natural gas into the Princeton Gas Field; a depleted natural gas reservoir located approximately 2,200 feet underground. The natural gas would then be withdrawn according to customer demand. Central Valley proposes to inject into the Princeton Gas Field 9 billion cubic feet (Bcf) of natural gas in the first year of service (an ultimate working gas capacity of 11 Bcf will be phased in over 2 years).

PROJECT OBJECTIVE

The purpose of the proposed project is to add high-deliverability natural gas storage in northern California that is connected to PG&E Line 400/401. The project has the following basic objectives:

- Increase the total amount of natural gas storage capacity and the reliability of supply in northern California where storage is in high demand.
- Mitigate potentially costly conditions related to California's reliance on imported gas by allowing purchasers to buy gas when the supply is adequate and the price is low, inject it into the proposed project for storage, and withdraw and use the stored gas when supply is short and prices are higher.
- Develop a storage facility that is in close proximity to PG&E's existing gas transmission facilities (Line 400/401).

APPLICANT PROPOSED MEASURES

Central Valley has included the following Applicant Proposed Measures (APMs) that reduce certain associated impacts to levels below significance. These APMs are part of the project description and are fully enforceable by the CPUC.

AESTHETICS

Applicant Proposed Measure AES-1: Implement measures to minimize visual impacts. 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:

- 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.
- Disturbed agricultural land will be replanted following pipeline construction, if requested by the landowner.
- All above ground structures will be painted with non-glare, earth-tone colors to blend with the surrounding vegetation/landscape.
- Shielded, non-glare lighting will be used at facilities.

AGRICULTURAL RESOURCES

Applicant Proposed Measure AGRI-1: Compensate landowners for land acquired for easements and structures, crops, and improvements removed for project construction. 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.

Applicant Proposed Measure AGRI-2: Restore agricultural fields to preconstruction condition. Following construction, agricultural fields will be surveyed and regraded to their original elevation where needed, and all rice field dikes and check boxes will be repaired or replaced. Although the trench backfill in agricultural areas will be compacted to minimize settling, follow-up elevation surveys would be provided, if necessary, to ensure that field grading and irrigation flaws are not adversely affected. Fences and irrigation facilities will be replaced or repaired to their original condition following construction.

AIR QUALITY/CLIMATE CHANGE

Applicant Proposed Measure AIR-1: Implement measures to reduce PM_{10} dust generated by construction activities. 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:

- Water all active construction areas (subject to vehicle travel) at least twice (as necessary) daily.
- Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 feet of freeboard.
- Water (as necessary) unpaved access roads, parking areas, and staging areas at construction sites that receive regular vehicle travel.
- Sweep daily with water sweepers all paved public roads where the pipeline ROW intersects the road.
- Sweep paved streets daily with water sweepers if visible soil material is carried onto adjacent public streets.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt and sand).
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible, where determined appropriate and in consultation with the landowner.
- Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
- Limit the area subject to excavation, grading, and other construction activity at one time.

Central Valley will notify the CPUC that the Colusa County Air Pollution Control District has issued an “Authority to Construct” air permit before beginning construction of the compression facility.

Applicant Proposed Measure AIR-2: Require measures to reduce NO_x and greenhouse gas (GHG) emissions from all diesel powered construction equipment, including support equipment. Central Valley would implement the following measures to reduce NO_x and GHG emissions from all diesel powered construction equipment and vehicles:

- 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:
  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.
  2) The construction equipment is intended to be on site for 10 days or less.
  3) The use of a soot filter may be terminated immediately if one of the following conditions apply:
     a. The use of a soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance and/or reduced power output due to an excessive increase in backpressure.
     b. The soot filter is causing or is reasonably expected to cause significant engine damage.
     c. The soot filter is causing or is reasonably expected to cause a significant risk to the workers or the public.
     d. Any other seriously detrimental cause that has the approval of the CPUC prior to the termination being implemented.
- 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.
- 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.
- Central Valley will institute a carpooling program to transport workers from staging areas to the work site.

Applicant Proposed Measure AIR-3: Central Valley will purchase NO_x credits from the Colusa County Air Pollution Control District. Central Valley will lease NO_x emission credits from the CCAPCD in an amount that offsets all construction-related NO_x emissions exceeding CCAPCD's significance threshold of 137 pounds per day after implementation of AIR-2. Based

on the NO_x pounds per day emission estimates for each construction phase, and the length of those phases, NO_x 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 NO_x emissions.

Applicant Proposed Measure AIR-4: Implement GHG measures as a participant in the U.S. EPA's Natural Gas STAR program. Central Valley will participate in the U.S. EPA's Natural Gas STAR Program. Central Valley will sign a memorandum of understanding (MOU) with the U.S. EPA prior to initial startup of the compressor station. Within 6 months after signing the MOU, Central Valley will prepare an implementation plan that includes best management practices identified by the Natural Gas STAR program for transmission and distribution facilities. The implementation plan shall incorporate Partner Reported Opportunities (PRO) that cost-effectively reduces methane emissions. Within 45 days after completion of one calendar year of participation in the program, Central Valley will submit an annual report documenting the previous year's emission-reduction activities and corresponding methane emission reductions. Copies of all documents will be submitted to the CPUC.

Prior to startup of the compressor station, Central Valley will implement the following best management practices consistent with the Natural Gas STAR program. These measures may be incorporated in the implementation plan.

- The compressor engines will use compressed air starters instead of natural gas starters. This measure is consistent with PRO Fact Sheet #103.
- Central Valley will utilize programmable logic controllers, which will automate the startup sequence of the compressor units. This measure is consistent with PRO Fact Sheet #106.
- The temporary compressor will be a rich-burn, natural-gas-fueled engine equipped with an automated air-fuel ratio controller. This measure is consistent with PRO Fact Sheet #111.
- Dehydration facilities will be designed to separate and recover flash gas from the dehydrator reboilers, which can be used for fuel gas for the reboiler and vapor removal unit. Also, electric motor-driven tri-ethylene glycol pumps will be used in place of pumps powered by compressed natural gas. These measures are consistent with PRO Facts Sheets #201, 203, and 206.
- Ultrasonic meters will be installed at the compressor station and at each of the wellheads in place of orifice meters. This measure is consistent with PRO Fact Sheet #304.
- Pneumatic controls will be operated using pressurized instrument air rather than natural gas. This measure is consistent with Natural Gas STAR Lessons Learned document "Convert Gas Pneumatic Controls to Instrument Air."

Applicant Proposed Measure AIR-5: Implement measures to reduce CO_2E emissions during project operation. Based upon lower horsepower and hours of operation projections, the estimated CO_2E emissions from the project's stationary sources will be 15,952 metric tons per year (mtpy) CO_2E, for total project-wide GHG emissions of 16,596 mtpy. In any year, when CO_2E emissions exceed 10,000 mtpy, Central Valley will purchase offsets that will effectively cap its emissions at 10,000 mtpy by securing and retiring GHG offset credits by March 31 of a given year in a quantity equal to the previous calendar year's actual GHG emissions from the facility, minus 10,000 mtpy. Central Valley will purchase GHG offset credits from any or all of the following offset certification standards: American Carbon Registry, Climate Action Reserve, or the Voluntary Carbon Standard. Central Valley would report each year to the CPUC its GHG

emissions and the number of GHG offsets purchased and retired to offset project emissions above 10,000 mtpy.

BIOLOGICAL RESOURCES

Applicant Proposed Measure BIO-1: Develop and implement a worker environmental awareness program. 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.

Applicant Proposed Measure BIO-2: Obtain and comply with state, federal, and local permits. Before any construction activities are initiated and engineering plans and specifications have been finalized, Central Valley would obtain the permits listed below:

- Clean Water Act (CWA) Section 404 nationwide permit from the U.S. Army Corps of Engineers (ACOE)
- 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))
- CWA Section 402/National Pollutant Discharge Elimination System (NPDES) permit from the State Water Board (requiring preparation of a Stormwater Pollution Prevention Plan (SWPPP))
- Section 1602 Streambed Alteration Agreement and 2081 Agreement from the Department of Fish and Game (CDFG)
- Biological Opinion from the U.S. Fish and Wildlife Service (USFWS).

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.

Applicant Proposed Measure BIO-3: Install temporary construction barrier fencing to protect sensitive biological resources adjacent to the construction zone. 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.

Applicant Proposed Measure BIO-4: Minimize potential for the long-term loss of woody riparian vegetation. To the extent possible, Central Valley would direct the contractor to minimize the potential for the long-term loss of woody riparian vegetation by trimming vegetation rather than removing entire shrubs or trees. Using hand tools (e.g., clippers, chain saw), shrubs and trees may be trimmed to the extent necessary to gain access to the work zone. Cutting would be limited to the minimum area necessary and will only be done in areas that do not provide habitat for sensitive species. All cleared material/vegetation would be removed out of the riparian zone.

Applicant Proposed Measure BIO-5: Compensate for the loss of woody riparian vegetation at a ratio of 2:1. Central Valley would compensate for the removal or loss of woody riparian vegetation (trees and shrubs) a minimum ratio of 2:1 (2 acres for every 1 acre removed). Central Valley would purchase mitigation bank credits at a locally approved bank or contribute funds to the National Fish and Wildlife Foundation in lieu fee program. Central Valley would provide written evidence to CPUC and other appropriate resource agencies (e.g., CDFG) that compensation has been established through the purchase of mitigation credits. The amount to be paid would be the fee that is in effect at the time the fee is paid.

Applicant Proposed Measure BIO-6: Avoid and minimize disturbance of waters of the United States, including wetlands. To the extent possible, Central Valley would avoid and minimize impacts on waters of the United States, including wetlands, by implementing the following measures. These measures would be incorporated into contract specifications and implemented by the construction contractor:

- The project will be designed, to the extent possible, to avoid direct and indirect impacts on waters of the United States, including wetlands.
- Construction activities will be avoided in saturated or ponded natural wetlands and drainages during the wet season (spring and winter) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as use of padding or vehicles with balloon tires, will be employed.
- Exposed drainage banks and levees above drainages will be stabilized immediately upon completion of construction activities. Other waters of the United States will be restored in a manner that encourages vegetation to re-establish to its pre-project condition and reduces the effects of erosion on the drainage system.
- Any trees, shrubs, debris, or soils that are inadvertently deposited below the ordinary high water mark (OHWM) of streams will be removed in a manner that minimizes disturbance of the drainage bed and bank.
- To the extent possible, in-stream construction within the OHWM of natural drainages crossed by a pipeline alignment will be restricted to the low-flow period (generally April through October).
- All activities will be completed promptly to minimize their duration and resultant impacts.

Applicant Proposed Measure BIO-7: Conduct preconstruction surveys for active burrowing owl burrows and implement the California Department of Fish and Game guidelines for burrowing owl mitigation, if necessary. If wildlife surveys indicate that the annual grasslands west of the Glenn-Colusa Canal support potential burrows, Central Valley will retain a qualified biologist to conduct preconstruction surveys for active burrows according to CDFG guidelines. CDFG recommends that preconstruction surveys be conducted at all construction sites (except paved areas) and within a 250-foot-wide buffer zone around the construction site to locate active burrowing owl burrows.

If no burrowing owls are detected, then no further actions will be taken. If active burrowing owls are detected, the following measures will be implemented by Central Valley:

- When destruction of occupied burrows is unavoidable outside the nesting season (September 1–January 31), unsuitable burrows will be enhanced (enlarged or cleared of debris) or new burrows created (installing artificial burrows) at a ratio of 2:1 on protected lands approved by CDFG. Newly created burrows will follow guidelines established by CDFG.
- If owls must be moved away from the project construction area, passive relocation techniques (e.g., installing one-way doors at burrow entrances) will be used instead of trapping. At least 1 week will be necessary to accomplish passive relocation and allow owls to acclimate to alternate burrows.
- If active burrowing owl burrows are found and the owls must be relocated, Central Valley will offset the loss of foraging and burrow habitat in the project construction area by acquiring and permanently protecting foraging habitat (the acreage would be determined through consultation with CDFG).
- If avoidance is the preferred method of dealing with potential impacts, no ground disturbing construction activities will occur within 160 feet of occupied burrows during the non-breeding season (September 1–January 31) or within 250 feet during the breeding season (extends from March through August, peaking in April and May).

Applicant Proposed Measure BIO-8: Avoid disturbance of tree-, shrub-, or ground-nesting white-tailed kite, northern harrier, loggerhead shrike, and non-special-status migratory birds and raptors. 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.

- 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.
- 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.
- 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.

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.

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.

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.

All preconstruction surveys will be documented in a memo to the CPUC to support authorization of the notice to proceed for specific project components.

Applicant Proposed Measure BIO-9: Establish a minimum 20-foot-wide buffer around all elderberry shrubs prior to construction in the area around the shrub. Before any ground-disturbing activity, Central Valley will ensure that a minimum 4-foot-tall temporary, plastic mesh–type construction fence is installed at least 20 feet from the driplines of elderberry shrubs that are within 100 feet of the construction area. The fencing will be installed in a way that prevents equipment from enlarging the work area beyond the delineated work area. The fencing will be checked and maintained weekly until all construction is completed.

No construction activity, including grading, will be allowed until this condition is satisfied. No grading, clearing, storage of equipment or machinery, or other disturbance or activity may occur until the CPUC environmental compliance monitor has inspected and approved all temporary construction fencing. The fencing and a note reflecting this condition will be shown on the construction plans.

Applicant Proposed Measure BIO-10: Conduct preconstruction surveys for Swainson's hawk nests and implement appropriate restrictions.[1] 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).

Applicant Proposed Measure BIO-11: Conduct a preconstruction survey for western pond turtles and implement measures to avoid impacts.[2] To avoid construction-related impacts on western pond turtles, Central Valley will retain a wildlife biologist to conduct a preconstruction survey for western pond turtles no more than 48 hours before the start of construction activities associated with the 14.7-mile gas pipeline component. The wildlife biologist will look for adult pond turtles. If a western pond turtle is located in the construction area, the biologist will move the turtle to a suitable aquatic site outside the construction area.

Applicant Proposed Measure BIO-12: Implement avoidance and minimization measures during construction activities in giant garter snake habitat.[3] 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:

- 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.

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[1] Swainson's hawk: USFWS Birds of Conservation Concern, Forest Service Region 5 Sensitive Species, and state-listed as threatened (Table 5.5-3).

[2] Western Pond Turtle: California Species of Special Concern (Table 5.5-3).

[3] Giant Garter Snake: Federally listed as threatened and state-listed as threatened (Table 5.5-3).

If giant garter snake habitat is identified during the preconstruction survey identified above, Central Valley will:

- 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.
- 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.
- 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.
- 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.
- 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.
- Ensure any dewatered habitat remains dry for at least 15 consecutive days after April 15 and prior to excavating or filling the dewatered habitat.
- 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.

Applicant Proposed Measure BIO-13: Compensate for the temporary disturbance of giant garter snake habitat. 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 PG&E Colusa Generating Station Projects, the USFWS will likely require a 1:1 ratio for 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.

Applicant Proposed Measure BIO-14: Implement avoidance and minimization measures during construction activities near vernal pool fairy shrimp and vernal pool tadpole shrimp habitat.[4] Central Valley will avoid potential direct and indirect disturbance of vernal pool fairy shrimp and vernal pool tadpole shrimp habitat by implementing the following measures:

- The on-site biological monitor will be present during ground disturbance activities occurring west of the Glenn-Colusa Canal to ensure that habitat is avoided and will have the authority to stop all construction activities that may result in the destruction of habitat.
- Central Valley will prohibit all activities within 250 feet of suitable seasonal wetland habitat (unless there is a physical barrier such as a road or berm that eliminates a hydrologic connection and potential for indirect impacts to habitat during the winter months). This would include alteration of topography, dumping, burning, burying of garbage or fill materials, construction of access roads, placement of stormwater drains, and the use of pesticides or other toxic chemicals.

Cultural Resources

Applicant Proposed Measure CR-1: Conduct additional field investigations and implement measures if sensitive cultural resources are found. Prior to construction, Central Valley will retain the services of a professional archaeologist to conduct on-site pedestrian inspections of those portions of the project area that are not flooded and that are considered by the archaeologist to have the potential to have archaeological deposits, and which have not already been subjected to archaeological inspection. Any identified cultural resources will be recorded on standard Department of Parks and Recreation site record forms. The archaeologist will consult with Central Valley to determine methods of avoiding impacts (such as boring under the resource or routing around the resource) on any potentially significant cultural resources that are identified as a result of these additional investigations. If any potentially significant cultural resources cannot be avoided, then additional documentation and data recovery efforts will be implemented by a qualified archaeologist in consultation with CPUC, ACOE, and the State Historic Preservation Officer. Additional documentation will include preparation of formal National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) evaluations of recorded resources.

Applicant Proposed Measure CR-2: Conduct archaeological monitoring and stop work if buried resources are discovered inadvertently. Central Valley and its construction contractor will take the steps specified below during project construction. A qualified archaeological monitor will inspect all ground-disturbing activities associated with pipeline construction preparation. Construction preparation will include removal of topsoil in agricultural areas, formation of berms to restrict flooding, and grading of staging areas. If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or human bone, are discovered inadvertently during ground-disturbing activities, work will stop in the area of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with CPUC, the State Historic Preservation

[4] Vernal Pool Fairy Shrimp: Federally listed as threatened. Vernal pool tadpole shrimp: Federally listed endangered (Table 5.5-3).

Officer, and other appropriate agencies. In the event that human remains are encountered, Applicant Proposed Measure CR-3 will be implemented.

Applicant Proposed Measure CR-3: Implement measures to comply with state laws relating to Native American remains. 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 human remains, until the following occurs:

- The Colusa County Coroner has been informed and has determined that no investigation of the cause of death is required
- If the remains are of Native American origin:
    - The descendents 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
    - NAHC is unable to identify a descendant or the descendant fails to make a recommendation within 24 hours after being notified by the NAHC.

Applicant Proposed Measure CR-4: Implement measures to avoid effects on paleontological resources during construction. 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:

- Fossil identification (the paleontologist may present example fossils to the workers)
- The prohibition of collecting or intentionally disturbing fossils
- Stopping all excavation and ground-disturbing work within 100 feet of the find
- Procedures for notifying supervisors and site monitoring staff
- A discussion of the paleontologist's authority to redirect or stop certain work operations
- An overview of the actions that the paleontologist may take to identify the sensitivity of a fossil and to recover and curate a fossil.

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 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.

GEOLOGY, SOILS, AND SEISMICITY

Applicant Proposed Measure GEO-1: Develop site-specific seismic stress guidelines into facility design. Central Valley will retain a qualified professional geologist or geotechnical engineer to perform a site-specific seismic analysis for the project. The analysis will develop estimated peak ground accelerations and response spectra for the pipeline crossing site. The analysis will use geologic and seismic parameters, including distances to faults, major historical earthquakes, regional seismicity, and subsurface conditions.

Applicant Proposed Measure GEO-2: Assess pipeline response to seismic ground accelerations and ground deformation resulting from seismic events. Central Valley will retain an expert in steel pipeline response to earthquakes who will use the results from the ground acceleration and liquefaction study (APM GEO-1) to assess the gas pipeline response to seismic, ground shaking, liquefaction, dynamic compaction, lateral spreading, and strains due to seismic wave propagation. The results and any recommendations contained in this analysis will be used in the design of the pipeline.

Applicant Proposed Measure GEO-3: Construct project in accordance with state and county building and construction codes related to earthquake safety and structural stability. 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).

Applicant Proposed Measure GEO-4: Conduct geotechnical studies and implement specific measures in potential liquefaction-prone and expansive soil areas. Central Valley will conduct site-specific geotechnical studies and implement special construction in liquefaction-prone and expansive soil areas. Where appropriate, the measures listed below will be incorporated into the final facilities design:

- Excavation and removal or recompaction of liquefiable soils
- In situ ground densification
- Ground modification and improvement
- Deep foundations
- Reinforced shallow foundations
- Reinforced structures to resist deformation during liquefaction.

Applicant Proposed Measure GEO-5: Assess pipeline response to surface deformation due to landslides or slumping at channel and canal pipeline crossings. 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 creek, drainage, and canal crossings. A

qualified geologist and geotechnical engineer will be retained to evaluate the stability of the slopes or the pipeline design depth relative to existing slopes, or both, within these water drainages and canals.

Hazards and Hazardous Materials

Applicant Proposed Measure HAZ-1: Implement equipment maintenance and refueling restrictions. 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 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.

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.

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.

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.

Applicant Proposed Measure HAZ-2: Prepare and implement a construction and operation safety and emergency response plan. 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.

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.

The plan will include the following measures to address hazardous materials generated from construction-related activities:

- Diesel fuel and petroleum-based lubricants will be stored only at designated staging areas.
- All hazardous material spills or threatened releases—including petroleum products such as gasoline, diesel, and hydraulic fluid, regardless of the quantity spilled—must be 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.

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&E and the local fire and police departments will also be part of this plan.

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.

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:

- All internal combustion engines, stationary and mobile, will meet applicable regulatory standards.
- 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.
- "No Smoking" signs and fire rules will be posted at the contractor field offices and areas visible to employees during the fire season.
- Equipment parking areas and small stationary engine sites will be cleared of all extraneous flammable materials.
- Fire extinguishers will be installed at the compressor station and metering station.
- Employee training in use of extinguishers and communication with the local fire departments will be provided to all personnel.

Hydrology and Water Quality

Applicant Proposed Measure HYDRO-1: Prepare and implement a stormwater pollution prevention plan. 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-specific basis as part of this SWPPP.

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:

- Remove only the vegetation that it is absolutely necessary to remove
- Avoid off-road vehicle use outside the work zone
- Avoid excessive trips along the ROW or access roads
- 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
- Perform initial cleanup
- Compact subsurface backfill material
- Apply an appropriate seed mix, where determined necessary, in nonagricultural areas and through coordination with the landowner.

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.

Applicant Proposed Measure HYDRO-2: Prepare and implement a dewatering and discharge plan. Prior to construction of the gas pipeline, Central Valley will prepare a dewatering and discharge plan that describes the methods of dewatering and filtering the trench and hydrostatic test water, general locations where groundwater and hydrostatic test water will be discharged, and monitoring methods to ensure that surface waterways are not affected by the discharged water. A copy of this plan will be submitted to the CPUC for review and approval prior to its implementation.

NOISE

Applicant Proposed Measure NOI-1: Implement noise control measures. 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.

- 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.
- 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.
- Implement appropriate additional noise-reducing measures as may be necessary, including but not limited to:
    - Changing the location of stationary construction equipment
    - Shutting off idling equipment
    - Providing local enclosures or barriers around noise-generating equipment
    - Rescheduling construction activity
    - Notifying nearby residents in advance of construction work.

RECREATION

Applicant Proposed Measure REC-1: Coordinate with adjacent national wildlife refuges and landowners and implement measures to avoid conflicts with seasonal recreation activities. Prior to finalizing the pipeline construction schedule and engineering plans, Central Valley will contact the Sacramento and Delevan National Wildlife Refuges (NWRs) and landowners to discuss the pipeline construction schedule and appropriate measures that could be implemented to reduce the impact on seasonal recreation activities (hunting and bird watching). Measures that may be implemented to ensure that construction does not conflict with fall/winter hunting season and birding on the adjacent wildlife refuges and private properties are listed below:

- Restrict construction activities to certain locations and times of day (avoiding early mornings and evening in hunting areas)
- Post signs that notify recreationists of construction activities
- Mail and post fliers that notify the public of construction activities.

TRANSPORTATION AND TRAFFIC

In addition to implementing the following applicant-proposed measure, Central Valley will also enter into a road maintenance agreement with the County to cover any potential construction-related damage to public roads. The construction traffic plan described below will be prepared prior to construction and will be submitted to the County and CPUC for review.

Applicant Proposed Measure TRA-1: Prepare and implement a construction traffic plan. 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:

- Coordinate with Colusa County on any lane or road closures, if needed to construct improvements
- Install traffic control devices
- Provide alternate routes (detours), as necessary, to route local traffic around roadway construction
- Provide notification of any road closures to residents in the vicinity of construction
- Provide access to driveways, private roads, and agricultural roads outside the immediate construction zone
- Consult with emergency service providers and develop an emergency access plan for emergency vehicle access in and adjacent to the construction zone.

NEGATIVE DECLARATION MITIGATION MEASURES

The following mitigation measures are recommended to reduce project-related impacts to a less-than-significant level.

AESTHETICS

Mitigation Measure 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.

Mitigation Measure AES-2: The applicants' drilling plan shall specify that lights shall be fully shielded and directed inward on the work area.

Mitigation Measure AES-3: All permanent outdoor site and building lighting at the compressor station, remote well pad site, and metering station site shall be directed at the ground and immediate area around the mounting pole or building wall. All permanent outdoor lighting shall be fully shielded such that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the luminaire, is projected below the horizontal. Poles used for site lighting shall not exceed a height of 35 feet.

Mitigation Measure AES-4: Observation and saltwater disposal well pad lighting and metering station lighting shall be used only as needed when the sites are accessed for monitoring or servicing.

AGRICULTURAL RESOURCES

Mitigation Measure 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.

Mitigation Measure AG-2: Central Valley shall coordinate, prior to construction, with owners of land adjacent to the pipeline route regarding temporary blockage of access to the owner's parcel due to pipeline construction. Alternative access routes shall be provided, or farmers shall be provided breaks in spoil piles, trenches, or pipe strings to accommodate their need for field access during construction.

Mitigation Measure AG-3: Should the final designed pipeline occur within 15 feet of tree canopy drip lines (the outermost extent of the tree canopy), Central Valley, in coordination with affected landowners, shall implement methods to protect the pipeline from tree roots, such as the following:

1) An herbicide-embedded fabric (such as Biobarrier) could be placed in the trench above the pipeline and on the side adjacent the trees
2) Wrap the pipeline with a non-chemical root barrier fabric "sock" before placing into trench
3) Compact soil around pipeline to minimize/prevent root growth upon backfilling the trench.

Mitigation Measure AG-4: If final design of the 14.7-mile connecting pipeline would result in a loss of trees in the orchard along the alignment, Central Valley will compensate the landowner for permanent crop loss.

AIR QUALITY/CLIMATE CHANGE

Mitigation Measure AIR-1: The applicant shall incorporate passive solar design in all buildings that would require temperature control, but not including the compressor building. Buildings shall be sited, oriented, and designed to optimize conditions for natural heating, cooling, and daylighting to the maximum extent practicable. Specific examples of passive solar design may include, but are not limited to, the following:

Building Orientation

- Site buildings to take advantage of shade, prevailing winds, landscaping, and sun screens to reduce energy use.
- Shade south-facing windows that receive full sun with a combination of landscaping, overhangs, shutters, and solar window screens. To optimize southern solar heat gain, locate major window openings on the southeast, south, and southwest sides of the buildings. To minimize cold winter exposure, keep windows on the north-, east-, and west-facing walls small in size.

Heating and Cooling Optimization

- Optimize building glazing by evaluating the thermal resistance (or R-value), visible light transmittance, and solar heat gain coefficient of the building's glass.
- Utilize exterior sun controls and shading techniques such as trees, awnings, or trellises, as opposed to interior controls such as blinds and shutters, to block light and heat before penetrating the building to reduce energy demand from mechanical cooling and heating.
- Place shade trees, trellises, or awnings strategically to minimize the use of glazing.
- Use skylights, natural lighting, and indirect (i.e., solar tube) lighting to eliminate overheating and glare.
- Arrange building openings to catch cooling summertime breezes.
- Size and locate outlet openings to accelerate the flow of breezes through the building.
- Use reflective foil and air space underneath the roof sheeting to reduce heat penetration.

Natural Lighting Optimization

- Install roof monitors and skylights for overhead natural lighting; however, consideration should be given to potential overheating from skylights.
- Use reflective ceilings and light-colored interior surfaces to increase interior lighting.
- Incorporate shading devices to minimize direct-beam sunlight penetration into workspaces.
- Use lighting and control systems, such as automated natural light-actuated controls that adjust depending on the amount of natural light entering the interior space, for maximum flexibility and adjustability depending on the layout of the building and the natural exposure of the structure to natural daylight.

The above measures are provided as guidance to maximize natural lighting and achieve optimal heating and cooling condition. Central Valley shall provide CPUC documentation of passive

solar design measure(s) and quantification of energy savings either as a number or percentage. In addition to site plans, architectural plans, landscape plans, and construction plans identifying the design elements incorporated into the building design, supporting documentation are required to verify the energy savings achieved through the combination of chosen design elements. Computer modeling tools and simulation programs may be utilized to identify the best combination of design strategies and to verify performance.

Mitigation Measure AIR-2: Central Valley shall enter into an agreement with Pacific Gas and Electric (PG&E) to participate in the ClimateSmart™ Program for purchases of Central Valley's electric energy. All contributions to the ClimateSmart™ program, funded through a surcharge to a customer's electricity charges, are invested in high-quality greenhouse gas emission reduction and capture projects that are independently verified and registered with the Climate Action Reserve. A copy of the agreement shall be provided to CPUC prior to the start of operation of the compressor station. If a future program renders this agreement redundant (e.g., if Central Valley can demonstrate that the same benefits are achieved via PG&E's participation in a future cap-and-trade program), then the agreement shall be terminated, subject to review and approval by the CPUC.

Mitigation Measure 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 construction of the project as follows: (1) the project carbon offsets for the first year of operation shall include a minimum of 2,514 $MTCO_2E$, 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 $MTCO_2E$ 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 $MTCO_2E$, which accounts for an estimated 50 $MTCO_2E$/yr 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.

BIOLOGICAL RESOURCES

Mitigation Measure 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.

Mitigation Measure BIO-2: Central Valley will implement all conditions and measures stipulated within the Biological Opinion to be issued by the USFWS at the conclusion of the Section 7 consultation with the ACOE to minimize and/or avoid take and direct and indirect impacts on valley elderberry longhorn beetle (VELB). A copy of the final Biological Opinion shall be submitted to the CPUC prior to any construction that would impact VELB or habitat potentially supporting this species as evidence of the commitment by Central Valley to implement all conditions and measures contained therein.

Mitigation Measure 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.

Mitigation Measure BIO-4: In order to prevent potential impacts to wildlife that may fall into open construction trenches associated with the connecting pipelines, the trenches shall be either covered with plywood, tarps, metal plates, or some other similar material, with the edges covered by soil, on a daily basis or will be backfilled on a daily basis. If the trenches are to be left open, escape ramps will be constructed at no more than 1,000-foot intervals along the sidewalls of the trench with at least one ramp placed at either end of the trench. The escape ramps must be at a 2:1 slope or less and may be constructed of any material (e.g., soil, wooden boards) so long as the ramps are placed immediately adjacent to a sidewall. Escape ramps shall also be placed within any bore pits that will remain open during construction activities. The spacing and design of the ramps shall consider the location and dimension of the bore pits and shall be at the discretion of the monitoring biologist.

In addition to installing escape ramps, the full-time biological monitor that will be on site during all construction activities will conduct regular surveys of all open pits and trenches, beginning in the morning prior to construction activities and throughout the day, in search of any wildlife that may have fallen into the bore pits or open trenches. Any animals observed in the bore bits or trenches will be guided up available escape ramps or will be captured and moved out of the construction area. This survey effort will be documented by the biologist in the daily log and reported to the CPUC at the end of the week. If a state-listed or federally listed species (such as giant garter snake) requires removal from the bore pit or trench, this handling effort will be subject to the conditions of the Biological Opinion.

CULTURAL RESOURCES

Mitigation Measure CUL-1: 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.

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.

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:

- Re-design the project to avoid any adverse effect on the significant archeological resource; or
- Implement an archeological data recovery program (ADRP), unless the qualified archaeologist determines that the archeological 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 archeological 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 archeological resources if nondestructive methods are practical.

HAZARDS AND HAZARDOUS MATERIALS

Mitigation Measure 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.

Mitigation Measure 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.

Mitigation Measure HAZ-3: In the event that soils suspected of being contaminated, based on visual or olfactory evidence or from portable chemical monitoring devices, are removed during excavation activities along the pipeline corridor, the excavated soil will be tested and, if contaminated above soil action levels, shall be disposed of at a licensed waste facility. Any excavated areas which have an odor due to contaminated soil will be covered while one or more

samples are being tested to determine the level of contamination. The presence of known or suspected contaminated soil or groundwater will require the supervision of testing and investigation by a licensed professional geologist or engineer, as appropriate, to meet state and federal regulations.

Mitigation Measure 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.

Mitigation Measure HAZ-5: If existing underground structures cannot be avoided, structures will be crossed by boring or ditching under them unless the owner of the structures allows them to be removed or the natural gas pipeline to be installed over them. The trench will be hand-dug in areas in close proximity to existing pipelines and other structures. A minimum clearance of 1 foot shall be maintained, where feasible, between such lines or structures and the line being laid, unless otherwise specified. Special procedures, such as placement of protective materials between the pipeline and existing structure, will be followed to protect existing structures where this clearance is not feasible.

Mitigation Measure HAZ-6: Central Valley will prepare and implement a Gas Monitoring Plan prior to construction. 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 ~~California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR)~~the California Department of Toxic Substances Control (DTSC) ~~for approval.~~; A~~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 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.
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.
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:

- Permanent monitoring/testing sites at the project remote well pad site and compressor station site
- Leakage surveys at predetermined locations at least once each year
- Utilization of standard, industry-approved gas measurement equipment
- Field personnel trained on gas sampling methods and instrumentation, identifying stressed vegetation, and other indicators of potential leakage.

Mitigation Measure HAZ-7: 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 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.

Mitigation Measure 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.

Mitigation Measure HAZ-9:

- Inspect produced-water storage tank(s) for integrity/leakage on an annual basis.
- Meter produced and injected formation water; periodically reconcile produced versus injected formation water quantities.
- Construct secondary containment berm around tank(s).
- 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.

Mitigation Measure HAZ-10:

- 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.

- 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.
- Well work to repair casing and/or annular cement seal leakage if detected.

Mitigation Measure HAZ-11~~9~~: During construction, Central Valley will coordinate with the adjacent airstrip landowner and implement measures to avoid conflicts with air traffic or crop spraying activities.

HYDROLOGY AND WATER QUALITY

Mitigation Measure HYDRO-1: 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.

NOISE

Mitigation Measure 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.

Mitigation Measure NOI-2: Prior to drill rig set up activities and prior to commencement of nighttime activities, Central Valley will meet with nearby noise sensitive areas (NSAs) to explain the project schedule and planned well site activities. In the event that noise attributable to drill rig activities becomes objectionable and if it exceeds applicable criteria, Central Valley will offer temporary relocation or compensation.

Mitigation Measure NOI-3: Central Valley shall install a minimum 12-foot-tall temporary noise barrier around three sides of the drill rig during drilling activities at proposed observation well Zumwalt-2. The actual height of the noise barrier may vary depending on the selected drill rig; however, the noise barrier material shall have a minimum sound transmission class (STC) rating of 20. The open side of the noise barrier shall face away from the adjacent closest residence, and the noise barrier shall reduce noise levels to 55 dB Ldn or less at the adjacent closest residence.

TRANSPORTATION AND TRAFFIC

Mitigation Measure TRA-1: The emergency access plan prepared as part of APM TRA-1 shall include providing access to residences along the pipeline alignment. Requirements of the plan shall include advanced notice, between 2 and 4 weeks prior to construction, by mail to adjacent property owners and emergency service providers as to where property access would be blocked, excavation plating, emergency vehicles being granted access via one open lane, short detours, and alternate routes.

UTILITIES AND SERVICE SYSTEMS

Mitigation Measure U-1: All discharges shall be in compliance with local, state, and federal regulations pertaining to wastewater disposal. Approval shall be obtained from the Central Valley RWQCB prior to discharging water produced by dewatering and hydrotesting of pipelines.

ENVIRONMENTAL DETERMINATION

The IS was prepared to identify potential effects on the environment from the project and to evaluate the significance of these effects. The IS was based on site visits, analysis of the environmental setting, and the PEA.

Based on the IS, the project as proposed by Central Valley, including mitigation measures proposed herein, would have no significant impacts in the areas of aesthetics, agricultural resources, air quality/climate change, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems.

REVIEW PERIOD

All comments regarding the correctness, completeness, or adequacy of this MND must be received by the CPUC by no later than 5:00 p.m. on May 22, 2010.

CONTACT PERSON

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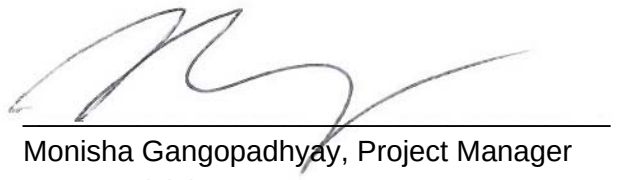

4/14/10

Monisha Gangopadhyay, Project Manager
Energy Division
California Public Utilities Commission

Date