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

# NEGATIVE DECLARATION

WILD GOOSE STORAGE, INC.
WILD GOOSE GAS STORAGE PROJECT
NATURAL GAS STORAGE FACILITIES
(A.96-08-058)

## PROJECT DESCRIPTION

The California Public Utilities Commission is considering a Certificate of Public Convenience and Necessity for the construction of natural gas storage facilities by Wild Goose Storage, Inc. (WGSI) in Butte County. See Figure 1 for a project vicinity map. WGSI provided the Commission with a Proponent's Environmental Assessment (PEA) that was available for public review along with this document from March 31 to April 29, 1997. WGSI also prepared a series of environmental surveys and mitigation implementation plans that accompanied the PEA and were also available for public review. Attachment A to this document is a collection of the comments on the draft of this document and responses to those comments.

The Administrative Law Judge's Proposed Decision, which included this document as Appendix C, was mailed to parties in this proceeding for further comments. The comments of the parties (on the CEQA document) and the resulting changes to the Negative Declaration are discussed in Attachment B to this document.

### Project Overview

Located in the southwest corner of Butte County, California, the Wild Goose Gas Storage Project involves development of a previously abandoned 137-billion-cubic-foot (Bcf) underground natural gas field for use in natural gas storage. The project Proponent is Wild Goose Storage, Inc. (WGSI), a wholly-owned subsidiary of Alberta Energy Company Ltd. Equipment and surface facilities required for natural gas storage are not extensive, requiring only a small amount of land to accommodate compressors, gas dehydration equipment and liquid handling systems. See Figure 2 for a project components map. As proposed, project development will require construction of:

- an interconnect to the 12-inch-diameter Line 167 of Pacific Gas and Electric Company's (PG&E's) Sacramento Valley Gas Transmission System.
- a 3-acre Remote Facility Site at West Liberty Road for metering, processing and compressing the gas.
- approximately 4 miles of 18-inch-diameter gas pipeline and 2-inch-diameter bi-directional produced water pipeline between the Well Pad Site and the Remote Facility Site.
- a 1.5-acre Well Pad Site at the location of the now-abandoned compression facility and well pad.

The Wild Goose Gas Storage Project is designed to move gas between PG&E's existing gas pipeline system and the storage field. During periods of low natural gas demand, gas will be injected into the storage field and during periods of high demand, the gas will be withdrawn from the storage field and returned to PG&E's pipeline system.

**INSERT FIGURE 1**

**INSERT FIGURE 2**

- The Wild Goose Gas Field consists of 12 distinct underground porous rock "reservoirs" located at depths ranging from 2,550 to 3,450 feet below the ground surface. The individual reservoirs are separated from each other by the presence of impervious rock (shale) formations. These reservoirs have three primary characteristics that make the field technically attractive for conversion to gas storage:

  - An impervious dome-shaped "cap rock," which varies in thickness from 10 to 75 feet, serves as the top of the reservoir and traps the natural gas within the top portion of the dome.

  - The reservoir body is composed of highly porous and permeable sandstone rock within which the gas is actually contained.

  - The flanks of the reservoir are saturated with water and are in contact with large, deep aquifers that provide pressure support during gas withdrawal.

In California there are presently 10 active underground natural gas storage facilities in operation near primary market centers: 5 in the Los Angeles area (owned by Southern California Gas), 4 near San Francisco (3 owned by PG&E and 1 by Dow Corporation) and 1 in Santa Barbara (owned by Southern California Gas). Stringent standards set by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) govern underground construction and operation of natural gas wells and underground storage reservoirs to ensure safety and security of stored gas.

The Applicant for the Wild Goose Storage Project is:

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Canada T2P 4K9

**Field Operation**

During injection operations, gas will flow from PG&E's Line 167 through the Remote Facility Site compressor and the project's 18-inch-diameter, bi-directional pipeline to the Well Pad Site for injection into the field. Typically, gas will be taken from the PG&E line at pressures ranging from 550 to 800 pounds per square inch gauge (psig) and injected into the reservoir at a maximum design surface pressure of 2,000 psig using an 8,900-horsepower, low-$NO_x$, turbine-driven compressor. This amount of compression will provide 80 million standard cubic feet per day (MMcfd) of firm injection service.

During withdrawal operations, gas will flow from the Well Pad Site back to the Remote Facility Site and into PG&E's Line 167. Wellhead surface pressures under withdrawal conditions will typically range from 1,500 psig to approximately 500 psig. Wells and facilities have been designed to provide 200 MMcfd of firm withdrawal service. The volume of daily, weekly and monthly injections and withdrawals will vary with customer demand, subject to the volume, deliverability and injection capabilities of the field. All injections and withdrawals will be operationally dispatched and controlled by project personnel working at the Remote Facility Site.

When gas is withdrawn from the reservoir, small amounts of water from aquifers connected to the storage reservoir may also be withdrawn with the gas. This water is termed "produced water" and is removed from the gas by a three-stage process. Stage one is at the Well Pad Site where separators remove most of the water. Produced water will be piped through a 2-inch-diameter pipeline to the Remote Facility Site for disposal. Stages two and three of produced water removal are conducted at the Remote Facility Site. One of the key advantages of the Wild Goose Gas Field is its classification as a "dry" gas field. As such, there are no hydrocarbon liquids (oil or gas condensate) accompanying the gas as it is withdrawn from the field, as may be the case in some oil and gas fields that have been converted to storage. Only the produced water, which is high in mineral concentration, must be separated and disposed.

If produced water quantities are small, the water will be periodically trucked to disposal site approved by the DOGGR. Off-site disposal would be by a hauler licensed by the California Department of Transportation and the California Highway Patrol, who would dispose of the water at a DOGGR-approved disposal/injection well, as is common practice in gas and oil field operations. Disposal vacuum truck service is provided for PG&E locally by Gomes Excavating, Inc. of Rio Vista, and produced water is disposed of in permitted injection wells in Solano County. Otherwise, produced water will be pumped into a deep disposal well, which may be located at the Remote Facility Site. Reinjection of produced water back to a suitable deep aquifer is a common practice subject to permitting by the DOGGR. The disposal well will be drilled and cased to a depth considerably below the base of fresh water in the area, into an aquifer containing greater than 10,000 mg/l total dissolved solids, as required by DOGGR in their disposal well permitting process.

Prior to full project operation, a 2- to 3-month start-up phase is required to inject "cushion gas" into the storage reservoir. Cushion gas is injected to re-establish the gas saturation, slowly depress the gas-water contact zone in the porous sandstone formations, and establish the base field pressure. Cushion gas becomes a permanent component of the reservoir and is not withdrawn. It will be owned by WGSI, unlike the working gas inventory, which will be owned by storage customers.

### *History of the Field*

The Wild Goose Gas Field was discovered in 1951 and produced in excess of 100 Bcf of gas from 12 wells that tapped each of the 12 reservoirs. Gas from the field was routed to a compressor previously located at the proposed Well Pad Site. From here it was transported through a 8-inch-diameter collector pipeline to PG&E's Wild Goose Mixer Station on West Liberty Road. Production ceased at the end of primary depletion in 1988 and all wells were abandoned in accordance with DOGGR standards. Over time, excellent production and pressure records were kept, resulting in a very complete and high-quality database available for analyses. All 12 reservoirs are segregated by impervious shale layers, which allows individual zones to be converted to storage in response to market demand. For the storage demand identified in the near term, the L4 reservoir (second deepest zone) is considered to be the best candidate due to its appropriate size, high-quality rock and strong aquifer support.

### Well Pad Site

Primary pressure regulation, water separation, metering and flow-rate control will occur at the Well Pad Site. The Well Pad Site is located in the extreme southwest corner of Butte County in an area that has historically been used for natural gas production facilities and waterfowl hunting clubs. This site is on private property owned by the Wild Goose Club, which also owns the majority of the surface rights above the gas field. The Well Pad Site supports moderately dense freshwater marsh habitat, limited open water habitat, and a small amount of ruderal annual grassland (on the former compressor pad and the levee

berm.) Although the freshwater marsh area is privately managed by the club, it is Army Corps Of Engineers (ACOE) jurisdictional wetland.

Results of extensive engineering and geologic studies indicate that current storage needs can be met with one vertical and five to nine horizontal wells in the L4 reservoir. This will utilize approximately 50 percent of the field's total storage capacity. The first well drilled will be vertical and will provide a rock core for cap rock and reservoir studies. The use of horizontal well technology for the remaining wells minimizes the total number of wells required. All wells will be used for both withdrawal and injection of stored gas.

The Well Pad Site will consist of 1.5 acres within an 8.5-acre lease tract. The remaining 7 acres will be available should project expansion ever occur. The 8.5-acre lease tract and a majority of the underground storage and mineral rights needed for the project have been secured from the Wild Goose Club. The balance of the needed storage rights have been secured from neighboring property owners. Actual acreage required for the stored gas is less than half of the total underground storage rights acquired, providing a large buffer zone around the project.

The Well Pad Site is accessed from the south via a private gravel road through the Wild Goose Club site. The club's existing approaches and bridge crossing the Cherokee Canal are not adequate for the length and weight of the pipeline construction and well drilling equipment. A new access road and bridge will be installed across the Cherokee Canal just south of the Wild Goose Club compound.

During the original gas production, the compressor and well pad occupied a one-quarter-acre area parallel and adjacent to the Cherokee Canal. Construction of the proposed Well Pad Site involves the re-establishment and expansion of a portion of this original well pad and compressor site to minimize surface disturbance. To lessen the effects of periodic flooding, the Well Pad Site will be elevated approximately 5 feet to the level of the existing access road and surrounded by an earthen perimeter berm. The site will then be covered with compacted aggregate and the berm will be landscaped with native vegetation to blend with the surroundings and to visually screen the facility from the nearby wildlife habitat and hunting areas. The design and appearance of the Well Pad Site must conform to the Wild Goose Club's specifications.

Depending on the final compaction ratio, approximately 22,000 cubic yards of fill material will be required to elevate the site and construct the berm. This fill material will be taken from four adjacent locations on Wild Goose Club property—three existing upland sites and one at Goose Island (See Figure 2). The upland areas are intended to be converted to wetlands to offset wetlands loss at the Well Pad Site.

Surface facilities will include the well heads with valves, a pipeline pig receiver (used to clean and inspect the pipeline connecting the Well Pad Site and Remote Facility Site), water separators, pressure control valves, emergency shutdown valves, and methanol and corrosion inhibitor storage tanks. All tanks containing hazardous materials will be constructed with dual containment systems. Approximately 500 gallons of methanol and 25 gallons of corrosion inhibitor will be temporarily stored and used on site. Methanol is used only during very cold weather and may be present at the Well Pad Site for less than two months during the winter. The tanks will be installed in 110 percent external containment cells, with the top vent above the historic flood level. The wellheads and associated piping, valves and tanks will be less than 3 feet high. Site lighting installed for security will operate on photo cells. A short whip-style radio antennae will be installed for the remote operational monitoring and control communications link to the Remote Facility Site.

**Remote Site Facility**

While the facility site for this type of project would typically be located adjacent to the withdrawal and injection wells, a remote site is proposed to minimize potential environmental effects. The proposed site is presently a rice field located adjacent to PG&E's Line 167, which provides the project connection to the existing gas transmission system. In addition, West Liberty Road provides the all-weather road access required for the Remote Facility Site. A 5-acre tract for the Remote Facility Site will be purchased in fee or obtained under a long-term lease agreement. Initial site development will occupy approximately 3 acres, with the remaining two acres serving initially for temporary construction staging and material storage, and ultimately as a buffer area while it is held in reserve should project expansion ever occur.

All aboveground structures at the Remote Facility Site will be painted a flat, neutral color to minimize any visual impact. Site lighting, installed for security and nighttime operational activities, will operate on photo cells. The design, construction, operation and maintenance of the Remote Facility Site will be in compliance with the applicable specifications, standards and regulations established by the federal government and the industry.

Major components of the Remote Facility Site are (see Figure 3):

- ***Gas Compressor:*** A centrifugal natural gas compressor driven by a turbine engine producing 8,600 to 8,900 horsepower. Turbine exhaust emissions will be minimized by using best available control technology (BACT). The compressor will be housed in a noise attenuated, pre-engineered building. Exterior materials will be chosen to blend with surrounding land uses and building styles. The building will be approximately 75 feet long, 75 feet wide, and 35 feet high, and large enough to provide sufficient space for warehousing equipment and repair parts.

- ***Produced Water Storage and Disposal:*** Wellhead separators will remove the majority of produced water at the Well Pad Site. Produced water will be piped to the Remote Facility Site in a 2-inch-diameter pipeline buried along side the 18-inch-diameter gas pipeline. Any water remaining in the gas stream will be removed at the Remote Facility Site by the second stage inlet separator. Produced water will be stored temporarily at the Remote Facility Site in four aboveground 21,000-gallon tanks with 110 percent external containment. The tanks storage enclosure will be approximately 50 feet long, 50 feet wide, and 25 feet high. If produced water quantities are small, the water will be periodically trucked to an approved disposal site.

- ***Dehydration Units and Reboilers:*** Two dehydration units consisting of triethylene glycol/natural gas contactor towers and two natural-gas-fired glycol reboilers. The gas contactors will be approximately 30 feet high. Vapors from the glycol still will be flared to reduce emissions. The flame will not be visible since it will be contained within an incinerator stack approximately 30 feet high.

***Gas Odorant System:*** Gas in PG&E's transmission system is odorized with methyl mercaptan for safety. The Remote Facility Site will be equipped with a trim odorant system to supplement odorant lost during storage and withdrawal.

**INSERT FIGURE 3**

- ***Gas Coolers:*** Gas must be cooled before it enters the discharge header to Line 167 or the Well Pad Site to reduce the thermal stress on the pipeline and valves. The coolers are approximately 15 feet high and are driven by electric motors.

- ***Gas Scrubbers:*** One gas scrubber vessel will remove fine particulate matter (salt-coated sand and bits of formation rock) from the gas to protect the internal surfaces of the equipment.

- ***Pressure Control Facilities:*** Pressure control valves at the Remote Facility Site will regulate the total gas flow entering the Remote Facility Site during withdrawal from the storage field. Each individual well at the Well Pad Site will be equipped with a pressure control valve to control gas flow.

- ***Relief Vents:*** Two emergency shutdown relief vents will be used to vent pressurized gas to the atmosphere from pressure relief valves following an emergency blowdown, or a blowdown required for pipeline maintenance activities. The relief vents have not yet been designed, but may consist of horizontal cylinders, approximately 36 inches in diameter and 12 feet long, with a vertical exit pipe. Baffles will reduce blowdown noise to acceptable levels.

- ***Waste Oil Storage Tank:*** Oil wastes include approximately 1,000 gallons annually from maintenance of the compressor and emergency generator. These wastes will be stored temporarily in an aboveground tank pending off-site shipment to permitted treatment, storage or disposal facilities by a licensed hauler. The 1,000-gallon tank, approximately 15 feet in height, will be located within concrete containment walls providing 110 percent of the volume of the tank. The tank and containment walls will be located near the dehydration units and compressor building.

- ***Glycol Supply Tank:*** A 1,000-gallon aboveground tank, approximately 15 feet in height, with 110 percent containment will supply make-up glycol for any minor amounts lost as vapor in the glycol reboilers. The glycol-supply tank will be located near the compressor building.

- ***Generator:*** To ensure Remote Facility Site has continuous power, a natural-gas-fueled, 500-horsepower back-up generator will be activated if the local PG&E power supply is interrupted.

- ***Office Building:*** A single-story office/control building for the operators and maintenance workers will be architecturally similar to the compressor building. The building will be approximately 30 wide, 60 feet long, and 16 feet high.

- ***Radio Antennae:*** A radio antennae will be used for remote safety and operations monitoring at the Well Pad Site and to provide operational data to PG&E's gas control center. The antennae will be mounted on a slender pyramid-shape tower, reaching a total height of approximately 30 feet.

- ***Utilities:*** Natural gas will be used as the fuel for the compressors, standby generator and glycol reboiler. Electricity from the existing 12 kV distribution line along West Liberty Road will be used for gas coolers, pumps, site lighting, office lighting, heating/ventilation/air conditioning system, air compressors and other miscellaneous equipment. Pacific Bell will provide phone service from their existing cable along Pennington Road. Potable water for the Remote Facility Site will be supplied from an on-site water well. Sanitary wastewater will flow to an approved on-site septic system and leach field. The entire site will be enclosed by a 6-foot-high chainlink fence with a one-foot barbed wire extension. The perimeter will be landscaped to screen the facility and minimize its visibility.

- ***Metering:*** Custody transfer gas metering will occur at a PG&E-operated metering building located within the perimeter of the Remote Facility Site. The building will be approximately 30 feet wide, 60 feet long, and 20 feet high. Equipment will consist of bi-directional flow meters and electronic communication equipment. PG&E will own and operate the equipment.

- ***Staffing:*** All 10 project operations and maintenance staff will be stationed at the Remote Facility Site. Up to 5 full-time staff will be on-site during the day shift, seven days a week. Operations and maintenance staff will include:

  - Plant Superintendent/Manager
  - Secretary/Clerk
  - Control Room Operator(s)
  - Electrical/Instrumentation Maintenance Technician
  - Mechanical/Equipment Maintenance Technician
  - Reservoir/Production Technician

  Because these positions are specialized and usually require formal training, recruiting will be conducted locally for people with engineering, mechanical or technical backgrounds and experience.

**Connecting Pipelines**

The Remote Facility Site will be connected to the Well Pad Site by a 18-inch-diameter, bi-directional-flow gas pipeline of approximately 4 miles, with a maximum operating pressure of 2,000 psig. A 2-inch-diameter water disposal pipeline will also be installed for transporting produced water to the Remote Facility Site for disposal. Both pipelines will be buried in a common trench with a minimum cover of 3 feet. The depth of the pipelines will be increased to provide up to 5 feet of cover in rice fields, as may be required in easement agreements with local landowners. The pipeline will require approximately 12 acres of permanent easement (30 feet wide) and approximately 18 acres of temporary construction working strip (45 feet wide) on private lands. Approximately one mile of the pipeline route will be in the County road right-of-way in West Liberty Road. The route of the pipelines is shown on Figure 2.

**Construction Requirements**

- ***Staging:*** The 5-acre pad for the Remote Facility Site will be constructed following harvest in mid September, 1997, with construction of the 3-acre station area beginning the following spring in February, 1998. The perimeter 2 acres will be used for staging and material storage during station and pipeline construction. Construction staging and minimal material storage during the construction of the well pad and the pipeline in the wetlands will use an existing upland area adjacent to the proposed Well Pad Site.

- ***Access:*** Existing paved, graveled and dirt roads in the agricultural and waterfowl management areas will be used to gain access to the pipeline right-of-way. Once the right-of-way is cleared, pipeline construction equipment and vehicles will use the right-of-way to travel along the pipeline. Since the existing bridge crossing the Cherokee Canal at the Wild Goose Club is inadequate to support anticipated construction traffic, a new access road and bridge will be constructed at the south end of the club compound. Heavy equipment for the construction of the Remote Facility Site will be brought in on West Liberty Road via the Colusa Highway and Pennington Road. The

existing bridge on West Liberty Road is presently weight-restricted and will be reconstructed to handle standard maximum weight loads.

- ***Construction Schedule:*** Subject to project approval, construction of the project is anticipated to begin in July of 1997. About four weeks will be required to construct the pad and berm at the Well Pad Site, and about two weeks to construct the pad for the Remote Facility Site. Construction of the pipeline between the Well Pad Site and the Remote Facility Site is expected to take approximately 4 weeks, with 2 weeks of preconstruction activities occurring in early 1998. Drilling the wells at the Well Pad Site is expected to take four months and up to six months will be required to construct the Remote Facility Site. Construction will occur 10 hours per day, five or six days per week depending on the construction schedule for the particular component.

  The schedule includes the following specific construction constraints developed by the Applicant and imposed by environmental and land use issues in the project area:

  - As mitigation to avoid impact to the Giant garter snake, trenched crossings of ditches conveying water cannot occur during the months of October through April while the snake is hibernating.

  - As mitigation to avoid increased impacts to wetland vegetation and soils in the Butte Sink area, construction should occur during the driest months of mid-June through mid-August.

  - As mitigation to avoid impacts to the waterfowl management and hunting activities in the hunt clubs, construction cannot occur during the months of mid-October through January.

  In order to construct the pipeline in the rice fields during the active farming period, the construction working strip will be isolated from the adjacent fields and not flooded. Installation of the temporary rice check will be performed by the rice farmers during their normal field preparation activities in February and March 1998.

- ***Construction Work Force:*** During peak construction periods, approximately 120 workers will be in the project area. The estimated work force necessary for construction of each facility is composed of the following labor crafts:

  - Pipefitters
  - Welders
  - Electricians
  - Instrument men
  - Equipment operators
  - Carpenters
  - Iron workers
  - Laborers

**Construction Methods**

- ***Well Pad Construction***

  The fill sources for the Well Pad Site berm and elevated pad will be from three adjacent wetland creation sites and a habitat enhancement area on the Wild Goose Club. Scrapers, loaders, dozers, graders and dump trucks will be used to first remove and stockpile the topsoil, then to excavate

subsoil material at selected locations to predetermined depths to create and enhance wetland habitat. The topsoil will be respread following construction. All excavation will be overseen by the club manager, and completed during the dry period in the Butte Sink. The excavated soil will be transported by the scrapers and dump trucks to the pad site via existing access roads.

Once the existing pad site has been cleared of vegetation down to mineral soil, 5 feet of fill will be placed to elevate the pad. Loaders and graders will place the fill in 6- to 12-inch lifts, watering and compacting each successive lift with a sheep's foot or wobbly wheeled roller prior to placing the next lift. Once the design compaction, grade and elevation for the pad is reached, an earthen perimeter berm will be installed and compacted around the site. The berm will be placed with at a 3 to 1 side slope, and will be 3 feet high on the west, south and east sides, and 4 feet high on the north side to accommodate habitat for the threatened giant garter snake. Finally, an impermeable geotextile liner will be installed over the pad and covered with 12 inches of crushed, compacted aggregate to create a stable surface for the operation and maintenance vehicles. Access roads will also be covered in crushed, compacted aggregate. Drainage structures and pumps will be installed and the final grade of the fill and the gravel surface will be sloped to drain according to a grading and drainage plan. All facilities to be installed at the Well Pad Site will be designed to withstand periodic inundation. If needed, gas handling equipment foundations may also include pilings to ensure stability.

- ***Access Road and Bridge***

  The new access road and bridge will be installed immediately adjacent to the south end of the club compound (see Figure 2). The access road will be approximately 290 feet long between the existing Wild Goose Club entrance road and the canal, and approximately 160 feet long between the west side of the canal and the existing wetland management road. The access road will be constructed by clearing the existing vegetation and topsoil, placing a layer of clean fill material or road base to elevate the road slightly above the adjacent wetlands, and then covering the road with gravel. The organic topsoil stripped as part of initial clearing will be placed on the sloped edges of the road to facilitate rapid revegetation of the road shoulders.

  A 90-foot-long railroad flat car bridge will span the canal (see Figure 4). The bridge foundations include the placement of clean fill on the edges of the Cherokee Canal, with the base of the fill extending slightly into the channel. The fill will consist of clean angular rock, 4 to 6 inches in size. Once the fill is placed and compacted to the proper dimensions and height, 6-to 18-inch clean rip-rap rock will be placed over the fill to protect it from the current. Two or three support columns will be drilled into the fill. Sixteen-inch diameter steel pipes will be inserted into the drill holes to a depth of 20 feet and filled with concrete. A 2-foot-thick reinforced concrete pad will be poured on top of the columns to support the flatcar at its load-bearing points. The flatcar would be set on the foundations by a crane. No concrete will come into contact with the water in the canal.

**INSERT FIGURE 4**

- ***Well Drilling and Pad Development***
  The well drilling rigs will operate 24 hours per day, 7 days per week while each well is drilled, with downtime for moving the drilling rig to the next well position. The drilling rig will be at the site up to 4 months while drilling the injection and withdrawal wells. All fluids used in the drilling operation will be contained in rig tanks. Fluid circulation systems are closed, resulting in no discharges. Off-site disposal of drilling mud solids would be by a licensed hauler and would be disposed of at an approved landfill disposal site well as is common practice in gas and oil field operations. Disposal service is available locally from Mervin G. Clark Construction of Sutter, with disposal at the Fulton Reclamation Facility in Orland. The impermeable geotextile liner described above will contain any produced water or other contaminants spilled during well-drilling operations. Controlled drainage of the site will be via a 6-inch-diameter drain pipe. Operation of the drain pipe will be as described in Section 9: Hydrology of the Applicant's PEA.

  Once the wells are in place, the ancillary piping, water separators, methanol and corrosion inhibitor tanks, and valve and monitoring equipment will be installed and tested.

- ***Remote Facility Site Construction***
  The 5-acre tract will be filled, leveled and compacted with approximately 18 inches of earth to bring the subgrade up to the elevation of the adjacent rice field dikes. Fill material will likely be obtained from rice field leveling in the immediate area. The site will be established as part of the initial construction activities in September, 1997. In the second quarter of 1998, the construction of the aboveground and underground facilities will proceed with the remaining site preparation of the 3-acre portion of the site. Approximately 10 inches of crushed aggregate will be spread and compacted to create a stable surface. Drainage structures will be installed, the final grade of the gravel surface will be sloped to drain, and perimeter fencing will be installed. Site development will continue with the civil and structural work, mechanical and piping work, building erection and fabrication, electrical and instrumentation, and finally, landscaping, testing and cleanup.

- ***West Liberty Road Bridge Reconstruction***
  In response to discussions with the Butte County Public Works Department regarding the Belding Lateral bridge weight restrictions on West Liberty Road, the county has recommended upgrading the weight capacity of the bridge by reconstructing the bridge support structure. This reconstruction will consist of removing the existing decking and I-beams, and installing larger I-beams at closer spacing on the existing abutments. This work will not affect the canal banks or bottom, and no work will be done in the water. New wood decking will be installed and the gravel surface will be replaced to blend with the existing roadway. The county estimates it will take its crews approximately one week to 10 days to complete this work, during which time the road will be closed to traffic. Affected property owners on West Liberty Road will be provided access around the construction site during bridge construction. Details of construction and traffic mitigation measures will be provided in the *Transportation Management Plan.*

- ***Pipeline Construction Techniques***
  The pipeline will be constructed using a combination of trenching and auger boring. The construction right-of-way, within which all construction activity must occur, will be 75 feet wide except at bored crossings where additional space (50 feet by 150 feet) is needed on one side for the bore pit.

As noted above, pipeline preconstruction work is required for the portion of the route in rice fields. In order to construct in the rice fields during the active farming period, the construction working strip will be isolated from the adjacent fields to keep it from flooding. Since the route through rice fields follows the field edge, this will be accomplished by installing a new temporary rice check 75 feet away from and parallel to the field edge. Installation of the temporary rice check will be performed by the rice farmers during their normal field preparation activities in February and March 1998. This will allow the adjacent fields to be flooded and planted, but the isolated construction working strip will remain dry and un-farmed when construction begins in the summer. The temporary rice checks will be removed after the fields have been drained in August or September 1998, and the field will be surveyed and regraded to its preconstruction level and contour. As an alternative to boring some of the smaller ditches, rigid culverts may be installed in ditches across the full width of the construction right-of-way during this preconstruction work. Sand bags will be used to seal around the ends of the culvert, thereby isolating the flowing water from the work area while the crossing is trenched during summer construction. Culverts will be installed in such a way to ensure that no disturbance to channel or ditch banks occurs during the giant garter snakes' dormant period.

The trenching procedure is a sequence of the following eight operations (see Figure 5):

*Clearing and Grading*
Clearing and grading prepares the right-of-way by removing any obstacles or debris, then removing the topsoil and segregating it on the edge of the right-of-way for redistribution following construction. Clearing will be minimized and vegetation will be cut or trimmed whenever possible.

*Trenching*
Trenching is conducted by bucket wheel ditchers or tracked backhoes. The excavated subsoil is maintained in a separate windrow to be used as trench backfill following installation of the pipe. The pipeline trench is a minimum of 27 inches wide (1.5 times the pipe diameter) and a 54 inches deep to allow 3 feet of cover over the pipeline, or 78 inches deep where 5 feet of cover is needed. At culverted ditch crossings, back hoes will excavate under the culverts, and the culvert will span the trench until the trench is backfilled and the ditch is restored.

*Stringing*
Stringing of pipe is completed by trucking pipe lengths to and along the right-of-way and unloading with a crane or cat with a side boom.

*Pipe Installation*
Pipe installation includes any bending for horizontal or vertical angles in the alignment, welding the pipe segments together, coating the joint areas with an epoxy-based coating to prevent corrosion, then lowering the pipe into the trench with side booms.

*Backfilling*
Backfilling the trench typically uses the subsoil previously excavated from the trench, then the topsoil is re-spread to return the surface to its original grade. In agricultural areas, the backfill is tested to ensure it is replaced at the same compaction density as the adjacent undisturbed soil.

**INSERT FIGURE 5**

*Hydrostatic Testing*
Hydrostatic testing is completed by filling the pipeline with water, increasing the pressure to 125 percent of the maximum operating pressure, and holding the pressure for a period of time. The water will be drawn from local sources and returned to these sources as described in Section 9: Hydrology.

*Cleanup*
Cleanup and restoration of the surface along the right-of-way and any temporary work spaces involves removing any construction debris, final grading to the finished contour and revegetation if needed. A slight crown is retained over the top of the trench in non-agricultural areas to allow for settling. At trenched crossings, any construction culverts will be removed and the irrigation canal or ditch channel will be restored to preproject condition.

*Commissioning*
Commissioning is the drying of the inside of the pipeline, purging air and filling the pipeline with natural gas.

*Auger Boring*
Pipeline crossings of the larger canals will likely be constructed using auger boring techniques. This technique involves excavating a bore pit on one side of the crossing and a receiving pit on the other side, and utilizes an auger and power unit mounted on rails. The power unit drives the auger inside a heavy wall pipe casing segment until the power unit reaches the leading edge of the bore pit. The power unit is disconnected from the auger, backed up, and a segment of the gas pipe is welded to the casing segment already driven. Additional auger and gas pipe segments are added successively until the bore reaches the other side of the crossing in the receiving pit. Soil excavated by the auger is removed from the pit by a backhoe. Once through, the power unit backs out the auger one segment at a time, leaving the gas pipeline in place under the crossing. In the receiving pit, the casing segment is removed for use at the next crossing.

**Operation and Maintenance Procedures**

The PEA for the project discusses the following operation and maintenance procedures. These procedures have been evaluated by the Commission for their potential environmental impacts, and any impacts have been mitigated to a less-than-significant level.

- General System Monitoring and Control
- Well Pad Site Monitoring and Control
- Remote Facility Site Monitoring and Control Systems
- Control Room Technology
- Equipment Operation
- Facility Inspection and Survey
- Pipeline Inspections
- Well Pad Site Inspections
- Remote Facility Site Inspections
- Maintenance and Repair Procedures
- Scheduled Site Maintenance
- Parts and Materials

**Possible Future Plans**

Because the Wild Goose Gas Storage Project is the first independent gas storage provider in California, future demand projections for such a service are very qualitative. The proposed project scope is based on the reasonably foreseeable projected gas storage needs up to the year 2000.

The proposed current level of development constitutes an initial phase of project development, representing approximately 50 percent of total field storage capacity. Although the gas field has this additional storage capacity, WGSI has indicated the project will be economically viable as currently configured, and has no reasonably foreseeable plans to expand the project. However, as market conditions warrant, expansion of the project may be proposed in multiple additional phases.

In order to fully develop the storage capacity of the field, additional wells would be needed at the Well Pad Site, and the project would need to either (1) connect to PG&E's backbone gas transmission lines 400 and 401 west of Interstate 5 near Delevan in Colusa County, or (2) establish a second connection to PG&E's gas transmission pipeline system elsewhere in the general area. Additional compressors and piping at the Remote Facility Site would also be required to handle any significant increase in capacity. There would be sufficient space at the Well Pad and Remote Facility lease areas to accommodate such an expansion, and WGSI indicates that full expansion of the gas storage capacity would involve no more than an approximate doubling of the physical facilities required for the current project. The environmental issues in the possible future expansion will be similar in character and scale as with the project currently described; i.e., it would likely result in similar types of impacts and mitigations that would occur on the proposed Wild Goose project and that have occurred on similar recent projects. Expansion of the use of storage capacity should not involve any new or unavoidable groundwater, water quality or geologic issues.

**Project Termination**

WGSI currently has no plans to abandon any part of the proposed facilities. For certain project assumptions discussed in this document, a facility life of 30 years has been used, but with proper maintenance the facility will last considerably longer. Should the pipeline ultimately be abandoned, the pipe would either be abandoned in place or removed and salvaged. Pipe abandoned in place would be capped in compliance with regulatory requirements. Pipe installed under water crossings and road ways would generally be abandoned in place. Should segments of the pipeline be removed, the surface would be restored and rehabilitated. The Remote Facility Site would be dismantled and salvaged and the site rehabilitated per Butte County ordinance requirements in effect at the time. Concrete and pavement would be broken up and disposed of at an approved disposal area, or left in place. The Well Pad Site would be closed out by abandoning the wells per DOGGR requirements and the site would be rehabilitated.

## PERMIT REQUIREMENTS

Implementation of this project will require approval of the Certificate and other individual public agency permits. If the responsible agencies find that additional or modified mitigation measures are necessary to mitigate impacts to insignificance, all such mitigation measures shall be implemented and complied with by Wild Goose. Table 1 is a list of the permits now known to be required for the Wild Goose Gas Storage Project.

**Table 1**
**Permit Requirements for the Wild Goose Gas Storage Project**

| Permits | Agency | Jurisdiction/Purpose |
|---|---|---|
| **FEDERAL AGENCIES** | | |
| Section 404 Individual Permit | Army Corps of Engineers | Waters of the U.S. and EPA lead agency |
| Section 7 Consultation | U.S. Fish and Wildlife Service | Threatened and Endangered Species Biological Opinion (through Corps review process) |
| Section 106 Review | Advisory Council on Historic Preservation | Historic Properties Management Plan (through Corps review process) |
| **State Agencies** | | |
| Certificate of Public Convenience and Necessity (CPCN) | California Public Utilities Commission | Overall project approval and CEQA lead agency |
| Gas and Disposal Well Installation | Division of Oil, Gas & Geothermal Resources | Natural gas storage and produced water disposal well |
| NPDES General Permits and Section 401 Certification/Waiver | Regional Water Quality Control Board | Industrial and construction storm water, hydrotest water discharge, and water quality certification/waiver |
| Stream Crossing Agreements | Department of Fish & Game | Waterways and wildlife habitat areas |
| Endangered Species Consultation | Department of Fish & Game | Biological Opinion (through CEQA review process) |
| Consultation | State Historic Preservation Office | Cultural resources management (through CEQA review process) |
| **Local Agencies** | | |
| Road Encroachment Permit | Butte County Public Works | Pipeline installation in West Liberty Road and driveway access to the Remote Facility Site |
| Domestic Well and Septic System Permit | Butte County Environmental Health | Domestic water supply well and septic tank and leach field at the Remote Facility Site |
| Hazardous Material Release Response Plan | Butte County Environmental Health | Storage, handling and disposal of hazardous materials and wastes |
| Building Permits | Butte County Development Services | Building permits for structures and buildings |
| Authority to Construct/ Operate | Butte County Air Quality Management District | Air emission reduction and monitoring |
| Encroachment Approval | Reclamation District #833 | Crossing District canals and ditches |

## ENVIRONMENTAL DETERMINATION

An Initial Study (attached) was prepared to assess the project's potential effects on the environment, and the respective significance of those effects. Based on the Initial Study the Wild Goose Gas Storage Project has the potential to cause significant adverse effects on the environment in the areas of:

- Land Use and Planning
- Geological Problems
- Water
- Air Quality
- Transportation/Circulation
- Biological Resources
- Hazards
- Noise
- Public Services
- Utilities and Service Systems
- Aesthetics
- Cultural Resources
- Recreation

The project will have less than a significant effect in the areas of:

- Population and Housing
- Energy and Mineral Resources

In response to the Initial Study, the Commission should incorporate the mitigation measures in Table 2 into the WGGSP so that the project will not have any significant adverse effects on the environment. Table 2, Mitigation Monitoring Plan, is organized by the resource topics of the CEQA checklist. The table contains a summary of impacts in each resource area and the mitigation measures that should be adopted to reduce the impacts to a less-than-significant level. These mitigation measures are drawn from the analysis of the Environmental Checklist.

The Wild Goose Gas Storage Project Mitigation Monitoring Plan (MMP) has been developed through an independent environmental review by Commission staff and consultant's of Wild Goose Storage, Inc.'s Proponent Environmental Assessment and related documents. The MMP contains mitigation measures of four types as noted in the table:

1. Developed by WGSI for the project and accepted by the Commission without modification.

   Example: **Mitigation Measure BR 5Ta**
   *To minimize impacts to water quality and wildlife, construction activities in wetlands will coincide with the driest period - approximately mid-June through mid-August. (Applicant's Measure B-1)*

2. Initially developed by WGSI, but modified by the Commission.

   Example: **Mitigation Measure BR 5Tb**
   To *avoid additional indirect wetland impacts, the edges of construction right-of-way in each area shall be clearly staked and surveyed in at a minimum of 100 foot intervals before start of construction in that area. (Applicant's Measure B-2, Revised)*

3. Developed by the Commission to address a specifically identified impact.

   Example: **Mitigation Measure BR 1b**
   *Before start of project construction, clay flat areas supporting populations of Little mouse-tail shall be clearly marked by a qualified botanist as exclusion zones on construction plans and shall be marked in the field with orange fencing. Project activities will avoid these zones. (No Applicant numbered measure.)*

4. General and specific implementation plans developed by WGSI as part of their overall mitigation program.

   Example: *B-8 Initiate cleanup activities immediately following trench backfilling*.

In addition, based on the results of the Initial Study, there is a reasonably foreseeable potential for significant impacts associated with the full development of WGSI's storage capacity. Therefore, if WGSI seeks to expand or modify its physical facilities to the extent that discretionary approval by a public agency is required, it shall consult with the Commission, so that the Commission may ensure that the appropriate environmental analysis of the impacts of WGSI's specific proposal may be performed.

Copies of all other permits required by the federal, state, bi-state, and local agencies will be submitted to the Commission's Mitigation Monitor as they are completed. Construction may not begin in any individual jurisdiction until the subject permit is obtained, and/or there are other enforceable agreements in place with the respective jurisdiction. With implementation of the mitigation measures listed in Table 2, and the directive that all other permits will be submitted upon approval, the Commission should conclude that the proposed project will not have one or more potentially significant environmental effects. To assure these measures are implemented, the Commission should direct that a Mitigation Monitor be appointed and the Mitigation Monitoring Plan be adopted prior to the approval of the Certificate.

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Douglas M. Long, Manager
Decision-Making Support Branch
Energy Division
California Public Utilities Commission

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Date