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***Sacramento Natural Gas Storage Project  
Final Environmental Impact Report Addendum  
Proceeding No. A.07-04-013  
SCH No. 2007112089***

***July 2011***

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## SECTION 1.0 INTRODUCTION

This document is an Addendum Environmental Impact Report (EIR) to the Final EIR for the Sacramento Natural Gas Storage (SNGS) Project. This Addendum EIR is prepared in accordance with Section 15164 of the California Environmental Quality Act (CEQA) Guidelines. The Addendum provides minor clarifications and information regarding the existing conditions, impacts, and mitigations for the proposed project. These clarifications and information do not result in the identification of new significant impacts.

The Addendum is divided into three sections: Section 1.0 provides a brief introduction; Section 2.0 provides minor modifications to the Final EIR and responses to comments, presented in ~~strikeout~~underline; and Section 3.0 provides additional clarification to selected mitigation measures in the Final EIR.

## SECTION 2.0 CHANGES TO FINAL EIR

### 2.1 Addition to EIR Section A.2, Project Purpose and Need, under Section A.2.1

The following paragraph is added to the end of Section A.2.1 (page A-4 of the Final EIR):

The Florin Gas Field is considered a “Dry Gas Field” in that it has a low percentage of natural gas liquids. Jenden and Kaplan (1989) define a dry gas field as the percentage by weight of propane, butane, and pentane divided by the total weight of hydrocarbons, including methane and ethane, being less than 1.6%. Division of Oil, Gas, and Geothermal Resources (DOGGR) records for the gas wells at the Florin Gas Field in 1987 indicate that the propane, butane, and pentane percentage was 0.03% (Jenden and Kaplan 1989). This would indicate that the field contains few natural gas liquids.

**Reference:** Jenden, P.D. and L.B. Kaplan. 1989. “Origin of Natural Gas in Sacramento Basin, California.” *American Association of Petroleum Geologists*(73)4:431–453.

### 2.2 Revisions to EIR Section B, Project Description

The following footnote is added to the first paragraph, third sentence under the heading “Florin Gas Field” (pages B-1 and B-2 of the Final EIR) clarifying the location of the eight plugged and abandoned wells in the Florin Gas Field based on 2011 DOGGR data and as depicted in revised Figure B-2, Florin Gas Field (Appendix A, Addendum to the Final EIR Figure Revision):

Figure B-2 also shows the location of the eight plugged and abandoned wells in the Florin Gas Field.<sup>1</sup>

<sup>1</sup> Silva, J. 2011. Shift in Florin Gas Field wellsite locations. Telephone conversation between J. Silva (Division of Oil, Gas, and Geothermal Resources) and J. Saunders (Dudek). July 12, 2011.

The original GIS data (2007) depicted in the Draft EIR Figure B-2, Florin Gas Field, was projected by DOGGR in the State Plan Coordinate System, Zone II, North American Datum (NAD 1927) and while the 2011 GIS data downloaded from the DOGGR website is projected in the same State Plan Coordinate System, it now uses NAD 1983. Consideration of NAD 1927 and NAD 1983 projects wells in different locations above the Florin Gas Field (see Appendix A, Final EIR Figure Revisions, Figure B-2, Florin Gas Field, for comparison of well locations). As shown in the figure, NAD 1983 resulted in a consistent locational shift from NAD 1927 points for Florin Gas Field wells and wells in the vicinity, and the 2011 data shows two well locations on Danny Nunn Park lands.

The addition of this footnote prompted revisions to current footnote 1 on Final EIR page B-2 regarding DOGGR and storage capacity of gas fields. The footnote numbering has been updated to reflect that this is now footnote 2 on page B-2 of the Final EIR:

<sup>42</sup>It should be noted that DOGGR does not estimate storage capacity. DOGGR has historic production records of the previous Florin Gas Field, which Ryder Scott Company used to determine a portion of the gas field capacity. Ryder Scott Company did further modeling to determine the gas field capacity. Also, based on testimony before the CPUC, there is disagreement among experts as to the size of the field. Dr. John Robertson questioned the size and storage capacity of the reservoir asserting that the field was larger than depicted by SNGS, LLC. Mr. Bruce Palmer of the Scott Ryder Company provided testimony replying to Dr. Robertson's testimony. Mr. Palmer responded to each of Dr. Robertson's issues defending the model and the modeled size of the reservoir.

### 2.3 Revisions to EIR Section D.6, Hazardous Materials, Public Health and Safety

The following text is added to the first paragraph under the heading "Impact HAZ-1c: Use, Transportation, and Storage of Methyl Mercaptan" (page D.6-17 of the Final EIR) regarding methyl mercaptan:

Methyl mercaptan is not flammable from ignition sources such as sparks or flames but could ignite or explode if mixed with some other chemicals.

The following text is added to the last paragraph under the heading "Impact HAZ-1c: Use, Transportation, and Storage of Methyl Mercaptan" (page D.6-19 of the Final EIR) regarding the storage of methyl mercaptan at the wellhead site:

Despite the low probability of an incident, impacts associated with hazardous materials delivery are considered significant due to the close proximity along travel routes to area schools and parks. Implementation of Mitigation Measures HAZ-1ci, HAZ-1cii, and HAZ-1ciii would ensure that public health and safety impacts due to delivery and storage of hazardous materials would be less than significant (Class II) by ensuring that the transporters comply with the regulations and by creating a route that will minimize potential exposure to a large number of people in the event of an accidental release.

The following revision has been made to Mitigation Measure HAZ-1ciii to clarify the storage and use of methyl mercaptan at the wellhead site (page D.6-20 of the Final EIR):

**HAZ-1ciii:** The methyl mercaptan shall be stored and used at the wellhead site in a specialized structure. The amount stored at the facility shall be limited to two cylinders. ~~and~~ The delivery routes to the wellhead site shall be similar to that for the compressor station, except that only a portion of Power Inn Road shall be used.

The following text is inserted after the first full paragraph on page D.6-25 of the Final EIR:

Ryder Scott's analysis did not reveal the existence of shale barriers below the field's cap rock that would impede vertical gas flow. In addition, the Ryder Scott gas injection

computer model indicates there is vertical permeability through 250 feet of the storage reservoir. Dr. John Robertson, who is an expert consultant for Avondale Glen Elder Neighborhood Association (AGENA), disagrees, asserting that the storage reservoir is composed of two gas sands separated by a thin shale layer approximately 10 feet thick, and as a result, there is no vertical permeability through the sand/shale sequences. According to Robertson, vertical permeability of the storage reservoir is less than 25 feet.

The following revision is made to the first item listed after the paragraph under the heading “Conclusion” (page D.6-27 of the Final EIR) regarding why Impact HAZ-2a remains a significant and unavoidable (Class I) impact:

1. A release of natural gas, even with a low probability, has a potential for substantial consequences from fire and explosions due to the project area having high population densities. Although mitigation measure ~~HAZ-2a<sup>iii</sup>~~ HAZ-2a<sup>i</sup> would reduce the already low probability by conducting further testing of the cap rock to ensure release of gas would not occur, the possibility of a release of gas would still remain.

The following text is added to Mitigation Measure HAZ-2b<sup>i</sup> following “The additional measures shall also be provided:” (page D.6-43 of the Final EIR):

- The Emergency Response Plan and Emergency Action Plan will be the same plan.

The following revisions have been made to Mitigation Measure HAZ-2b<sup>i</sup> under the second bullet following “The additional measures shall also be provided:” (page D.6-43 of the Final EIR)

The applicant shall be required to retain the services of a company recognized as proficient in emergency response well control for the purpose of controlling and suppressing incidents beyond the technical proficiency of the City of Sacramento Fire Department. The firm selected shall be approved by the City of Sacramento Fire Department. Costs shall be paid by the applicant.

## **2.4 Revisions to EIR Section D.7, Hydrology and Water Quality**

Text has been added to Impact H-5 at the end of the discussion under the heading “Wellhead Site” (page D.7-20 of the Final EIR):

The drilling process shall involve the use of casings that will be sealed above and below each aquifer so that the well would not contaminate aquifers or allow cross contaminations between aquifers. Therefore, there would be no significant groundwater impacts from drilling of the new gas wells.

Text is added to Impact H-8 regarding impacts to surface and groundwater from operations.

The following paragraph is inserted after the first full paragraph under the heading “Natural Gas Field, Wellhead Site, and Compressor Station (page D.7-22 of the Final EIR):

The wellhead site will include two water storage tanks that will store produced water taken from the stored natural gas. There is a potential that this water could contain natural gas liquids (NGLs). Since the gas field is considered a dry field containing little NGL (Dickey 2011), it is expected that the levels will be low and either the water in the tanks will be reinjected into the reservoir or will be disposed of by an approved waste disposal firm that will reuse the material. Therefore, no significant impact would occur.

**Reference:** Dickey, S. 2011. "Characteristics of Florin Gas Field, Regarding Wet or Dry Produced Gas." Letter from S. Dickey (Dudek) to J. Westermeier (Dudek). April 14, 2011;

Text is added to Impact H-8 regarding impacts to existing groundwater remediation. The following paragraph is inserted at the end of discussion of Impact H-8, “Operation and Maintenance Impacts to Surface Water and Groundwater Quality” (page D.7-24 of the Final EIR):

Implementation of the proposed project is not expected to impact current remediation programs associated with the current VOC contamination at the former Sacramento Army Depot. Pipelines and other facilities shall be designed to avoid existing wells and piping. Use of casings and sealing of the casings will prevent interaction with contaminated groundwater during drilling of gas wells.

## **2.5 Revisions to EIR Section D.8, Land Use, Agriculture, and Recreational Resources**

The following text is inserted after the third full paragraph under the heading City of Sacramento General Plan and Community Plan in the Final EIR Section D.8.2.3, Local Regulations (page D.8-21 of the Final EIR):

In November 2010, the Sacramento City Council adopted Resolution 2010-692 that amended portions of the 2030 General Plan Policy, LU 1.1.13, The Development Intensity at Less than the Minimum Floor-Area-Ratio (FAR). This policy in part states, “Where a discretionary permit is required, a development with a FAR at less than the required minimum may be deemed consistent with the General Plan if the City finds that (1) the use involves no building or by its nature normally conducts a substantial amount of its operations outdoors...” This General Plan Resolution would allow development of the wellhead site as proposed.

The following text is added to the “Consistency Determination” column under General Plan Goal ER1.1 (Water Quality Protection) in Table D.8-5, Consistency Analysis with Applicable

Proposed 2030 General Plan, Policy, or Goal for the Proposed SNGS City of Sacramento Project Components (page D.8-43 of the Final EIR):

With implementation of Mitigation Measures H-8a (preparation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan) and H-8b (groundwater monitoring wells) , the operation of the proposed project is consistent with the General Plan goal.

## 2.6 Revision to EIR Section F.4, Cumulative Impacts

The following mitigation measure revisions have been made to Section F.4.1, Air Quality (pages F-10 and F-11 of the Final EIR) to be consistent with numbering provided in Table G-1, Mitigation Monitoring Program (pages G-61 and G-62 of the Final EIR). The text of Mitigation Measure C-AQ-1 has also been revised as follows.

### **Mitigation Measure for Impact C-AQ-1: Potential for Greenhouse Gas Emissions (Methane Leakage)**

**C-AQ-1** SNGS, LLC shall participate in the U.S. EPA’s Natural Gas STAR Program in order to reduce methane gas emissions. A memorandum of understanding (MOU) between SNGS, LLC and ~~with~~ the U.S. EPA Natural Gas STAR Program shall be signed prior to initial startup of the compressor station. Within 6 months after signing the MOU, SNGS, LLC shall prepare an implementation plan that includes BMPs identified by the Natural Gas STAR program for transmission and distribution facilities. The implementation plan shall incorporate Partner Reported Opportunities that cost-effectively reduce methane emissions. After one calendar year of participation in the program, SNGS, LLC shall submit an annual report documenting the previous year’s emission-reduction activities and corresponding methane emission reductions. Copies of all documents shall be submitted to the CPUC.

### **Mitigation Measure for Impact C-AQ-2: Potential for Greenhouse Gas Emissions (Electrical Usage)**

**C-AQ-2** SNGS, LLC shall enter into an agreement with SMUD to provide a minimum of 50% of the electricity used by the compressor station from renewable energy sources by participation in SMUD’s Greenergy Program. This is an existing program developed by SMUD that allows for SMUD customers to pay an additional fee for their electricity to allow for 50% of the electricity to be obtained from renewable resources. A copy of the agreement shall be provided to CPUC prior to the start of operation of the compressor station.

## 2.7 Revisions to Responses B5-17 and B5-243 (Response to Comments from Remy, Thomas, Moose, and Manley, LLP on behalf of Avondale Glen Elder Neighborhood Association (AGENA))

Text has been added to clarify Response B5-17 (pages B5-3 and B5-4) as follows:

It is expected that the Proposed Project will remain in operation for at least 30 years. As described in Section B.6 of the EIR, the abandonment process will include:

- Cleaning and abandonment of pipelines in place
- Depressurization of the reservoir
- Removal of surface structures
- Plugging and abandonment of the wells per DOGGR regulations.

The abandonment of the project would involve a limited amount of off-road equipment and workers used to abandon the wells on the wellhead site as well as restore the wellhead site and compression station to their original condition. While electric equipment may be available at the time of abandonment, in the event that diesel-powered equipment would be used, it would produce much lower emissions than those assumed for the construction of the project. Specifically, the equipment 30 years in the future would likely meet the Tier 4 EPA/CARB emission standards for off-road equipment, which are applicable to new equipment starting in 2013 to 2015 (depending on the equipment horsepower), or possibly better (depending on whether more stringent standards are adopted in the future). The Tier 4 NO<sub>x</sub> standard, for example, is about 10% of the standards for Tier 2/Tier 3 equipment that would be common in the years during which the project would be constructed. Similarly, motor vehicles driven by workers would produce substantially lower emissions than the current fleet. Accordingly, it is expected that abandonment activities would not exceed the Sacramento Metropolitan Air Quality Management District's NO<sub>x</sub> threshold of 85 pounds per day for construction activities. Abandonment of the project will not result in any new significant impacts than those described for construction and operation of the Proposed Project; therefore, the development of an abandonment plan including mitigation measures is not necessary.

The last sentence in Response B5-243 (page B5-63) is modified as follows:

In Section D.10, Population and Housing, subsection D.10.3.3, Impacts, of the EIR, Impact P-4, Environmental Justice, accounts for public health and safety impacts. As stated under Impact P-4, for issues regarding the safety of residents, please also refer to Section D.6, Hazardous Materials, Public Health, and Safety, regarding pipe rupture and potential leakage from the underground reservoir. Concern has been raised during the public scoping process relating to the Proposed Project's impacts to public health and



safety. As discussed in Section D.6 of the EIR, extensive analysis has been conducted on the reservoir and it has been concluded that the potential for release of natural gas resulting in fire, explosion, and release of toxic substance is low. Mitigation Measures HAZ-2ai, HAZ-2aii, and HAZ-2bi through HAZ-2bix, outlined in Section D.6, further reduce the potential for occurrence, but not to less-than-significant levels. In addition, Section D.7, Hydrology and Water Quality, of the EIR discusses the potential release of gas into the groundwater aquifer due to natural gas entering the aquifer through migration of the gas through faults in the cap rock or through abandoned operating wells. The likelihood of this occurrence is low; however, the consequences of contamination are considered significant. Mitigation Measure H-8b reduces the potential, but not to less-than-significant levels.

Also of concern is the potential of rupture of proposed pipelines and subsequent fire and explosion if the gas cloud ignited. There is the potential that this could impact nearby disadvantaged residential areas. As described in Section D.6, under Impact HAZ-2b, it is anticipated that the risks associated with a gas pipeline risk would be below potential thresholds; therefore, it would be considered less than significant. Mitigation measures outlined in Section D.6 of the EIR further reduce the potential for occurrence, ~~but not~~ to less-than-significant levels.

## **2.8 Revision to Response D2-45 (Response to Comment from Sacramento Natural Gas Storage, LLC)**

Text has been added to clarify Response D2-45 (page D2-14) as follows:

The commenter states that the closest residence to wellhead drilling operations is 450 feet. It is assumed that this distance is measured to the closest residential building, not measured to the closest residential property line. Thus, this results in a drilling noise level of approximately 64 dBA at the residence building. Therefore, using 450 feet as the distance from the closest residence (building) to the closest potential drill rig site, the noise level results in a significant noise impact during nighttime operation, and Mitigation Measures N-1a through N-1e provided in the Draft EIR still apply. In addition, ~~Based on our analysis, the lot line of the closest sensitive receptor is approximately 125 feet. Although the drilling rigs may be approximately 300 feet from these receptors,~~ it is assumed that drilling support activities will occur throughout the site, not only at the drill rig. This will include equipment use, pipe, and other storage and construction activities.

## **SECTION 3.0 PROVISION OF FURTHER INFORMATION ON MITIGATION MEASURES**

The following provides additional information for and are included as a part of the Applicant's Proposed Measures (APMs) and mitigation measures (MMs). A consolidated list of the APMs and MMs is provided in Section G.9, Mitigation Monitoring Program Table, of the Final EIR.

### **APM 3: Sacramento Metropolitan Air Quality Management District (SMAQMD) Emission Control Plan**

**Purpose of Plan:** To reduce air pollutant emissions during construction to less-than-significant levels.

**Content of Plan:** The plan shall inventory air emissions from construction according to SMAQMD requirements and develop measures to further control emissions, such as alternative-powered equipment and dust-reduction activities. More detail regarding this plan is found on page D.2-20 of the Final EIR.

**Reviewing and Approving Agencies:** SMAQMD and California Public Utilities Commission (CPUC).

**Mitigation Monitoring:** The plan shall be prepared and approved before construction begins and monitoring shall ensure that the requirements of the plan are followed.

### **APM 5: Injection Plan, Drilling Plan, and Abandonment Plan**

**Purpose of Plan:** This plan shall meet the requirements of DOGGR to outline the detailed plan for drilling of the gas wells, injection of the natural gas, and the eventual abandonment of the wells. This plan shall include maximum permissible pressures of injection and storage, drilling and casing requirements, and abandonment procedures, in accordance with DOGGR requirements. The purpose of this plan is to minimize the environmental impacts to the greatest extent possible while recognizing that Impact HAZ-2a remains significant and unavoidable, per the discussion on pages D.6-23 through D.6-27 of the Final EIR.

**Contents of Plan:** The plan shall provide details on the depth, casing, pressures, drilling procedures, and other activities associated with the drilling of the wells. This shall include plans for using and cementing in casings and other protections of aquifers. These requirements and procedures shall be developed in consultation with DOGGR for the injection, drilling, and abandonment of gas wells with the specific goal of minimizing environmental risks to the maximum extent feasible. Specific requirements for this project shall be developed in consultation with DOGGR as each gas field has unique characteristics, including but not limited to, depth to the reservoir, operating pressure of the existing gas field, and size of the gas field. The plan shall also outline the rate and pressure of injection and maximum storage pressures. The plan shall describe the methods that will be used during the abandonment of the well when it

will no longer be used. The abandonment plan shall include the extent of placement of cement plugs and other procedures, such as the ongoing monitoring of abandoned wells.

**Reviewing and Approving Agencies:** DOGGR and CPUC.

**Mitigation Monitoring:** The plan shall be reviewed and approved by DOGGR prior to the drilling of wells and DOGGR shall monitor its implementation.

### **APM 6: Paleontological Resource Discovery and Management Plan**

**Purpose of Plan:** To develop procedures for monitoring, evaluation, and salvage of paleontological resources that are currently unknown but may be discovered during construction. This plan, in conjunction with Mitigation Measure G-9, will ensure that impacts to unique or paleontological resources will be less than significant.

**Contents of Plan:** The plan shall include monitoring procedures, procedures for halting construction of the project in the event a paleontological resource is discovered during construction, evaluation of resources, and procedures for salvaging resources. The plan shall identify that in the event that fossils are encountered, the paleontologist will have the authority to divert or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely fashion. Fossil remains will be cleaned, sorted, repaired, catalogued, and then stored in a local scientific institution that houses paleontological collections. The qualified paleontologist will be responsible for preparation of fossils to a point of identification, and submittal of a letter of acceptance from a local qualified curation facility. Within 90 days of completion of the excavation phase of the project, the paleontologist shall provide to the CPUC a report summarizing the monitoring results for review and approval. The monitoring results report shall include appropriate graphics summarizing the results (even if negative), analyses, and conclusions of the monitoring program. More detail regarding this plan is found on page D.5-17 of the Final EIR. This activity will include the evaluation of any discovered resources by a qualified paleontologist.

**Reviewing and Approving Agency:** CPUC.

**Mitigation Monitoring:** The plan shall be submitted and approved by the CPUC before construction begins. Monitoring during construction shall take place and the procedures outlined in the plan shall be followed.

### **APM No. 8: Hazardous Materials Contingency Plan/Health and Safety Plan**

#### *Hazardous Materials Contingency Plan*

**Purpose of Plan:** To identify the types and handling of hazardous materials during the construction and operation of the proposed project. The plan shall identify procedures in the event of a release of spill of materials. This would include solvents, lubricants, fuels, and other materials such as methyl mercaptan. Note: This plan does not include the release of natural gas.

**Contents of Plan:** At a minimum, the plan shall describe the types of hazardous materials associated with the construction and operation of the project. The project will use solvents, fuels, lubricants, and welding supplies such as acetylene. The plan shall describe these materials that will be used and shall address the transport, use, and storage of these materials, locations where the materials will be used and stored, and the quantities of these materials that will be used and stored. The plan will incorporate best management practices (BMPs) for the transport, use, and storage of these materials. The plan shall also describe measures to be used in the notification, clean-up, and remediation of any hazardous materials released to affect complete clean-up. For each chemical or class of chemical, the plan shall describe the response required, clean-up methods, and other methods to ensure public safety and a rapid and complete clean-up. The plan will incorporate BMPs in the formulation of the notification, clean-up, and remediation plans. The plan shall also describe notifications and other measures that shall be implemented in the event of a spill and maximum response time allowed. The plan shall also address the availability and storage of clean-up supplies, and will detail practices to ensure timely responses and easily available clean-up supplies and equipment. Worst-case scenarios shall be discussed and planned for. All preventative and responsive measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC, Sacramento County Fire Department, Sacramento City Fire Department, California Department of Toxic Substances Control.

**Mitigation Monitoring:** The plan shall be submitted to the reviewing and approving agencies and modified as necessary to meet their approval. The plan must be approved before commencement of the project. The mitigation monitors shall ensure that all facets of the plan are implemented.

### ***Health and Safety Plan***

**Purpose of Plan:** This plan outlines health and safety procedures for workers and contractors to minimize environmental impacts in the event that hazardous soils or other materials are encountered during construction of the project. This plan, in conjunction with Mitigation Measure HAZ-1a (transport of hazardous wastes encountered during construction to an approved facility), would reduce safety impacts to less than significant.

**Contents of Plan:** The plan shall outline methods and procedures for maintenance of worker health and safety during construction and operation of the project. The plan shall identify that in the event that grading, construction, or operation of proposed facilities encounters hazardous waste, SNGS, LLC shall ensure compliance with the California Code of Regulations (CCR) Title 23 Health and Safety Regulations and the California Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5).

The plan must describe required worker training, engineering controls, and monitoring procedures. The plan must include security measures to prevent unauthorized entry to clean-up

sites, and to reduce hazards outside the investigation/clean-up area. All methods and procedures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC and California Occupational Safety and Health Administration (Cal OSHA).

**Mitigation Monitoring:** The plan must be approved and implemented before construction begins.

### **APM 14: Post-Construction Erosion and Sediment Control Plan**

**Purpose of Plan:** To provide detailed engineering plans for the control of erosion and sediment within the right-of-ways (ROWs) of project pipelines and facility sites after construction is complete. This plan outlines long-term measures to reduce erosion from the construction sites throughout operation and abandonment of facilities.

**Contents of Plan:** The plan shall provide detailed plans of erosion control structures, grading plans, and other procedures to control erosion after construction. The control plan will describe when, where, and how the site reclamation BMPs would be implemented. The plan shall identify that disturbed soils shall be seeded and stabilized to prevent erosion and temporary sediment barriers left in place until restoration is deemed complete and/or the ROW is returned to pre-construction conditions. This shall include soil stabilization through the use of a soil bonding fiber or mat, revegetation, and other activities/devices, such as sediment barriers. The plan shall also specify monitoring requirements and duration of monitoring to ensure the potential for erosion is minimized and corrective measures are implemented in the event erosion is identified during the site inspections. All BMPs in this plan and monitoring requirements shall meet requirements of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC and City of Sacramento.

**Mitigation Monitoring:** The plan shall be approved before construction begins. The features of the plan shall be monitored up to 3 years after construction.

### **APM 16: Bore Plan and Frac-Out Contingency Plan**

**Purpose of Plan:** The purpose of this plan is to provide design and boring procedures for horizontal directional drilling for pipeline construction under drainages and roadways. The plan shall also provide procedures for prevention of frac-outs (rupturing of soil and release of drilling muds to the surface); provide for the timely detection of frac-outs; protect areas that are considered environmentally sensitive; ensure an organized, timely, and “minimum-impact” response in the event a frac-out and release of drilling mud occurs in an environmentally sensitive area; ensure that all appropriate notifications are made to the appropriate regulatory

agencies within 24 hours; and that documentation is completed. This APM, along with other APMs and mitigation measures, will ensure that impacts to surface waters are less than significant (see pages D.7-17 and D.7-18 of the Final EIR).

**Contents of Plan:** The plan shall identify that a pedestrian survey will be conducted for the drilling entry and exit areas, surrounding work areas, and the drilling route (to the extent it is accessible) to ensure that there are no sensitive biological resources present on the surface. In the event a sensitive biological resource is present, biological resources will be flagged for avoidance or the construction limit will be clearly marked. The plan shall identify that barriers (straw bales or sedimentation fences, as specified in the project's Stormwater Pollution Prevention Plan (SWPPP)) will be erected between the bore site and nearby sensitive resources prior to drilling, as appropriate, to prevent released material from reaching the drainage ditches. The plan will also include that as part of the environmental awareness training required for all construction workers, information will be provided to identify and locate sensitive resources at the site and that all field personnel understand their responsibility for timely reporting of frac-outs. The plan will identify the location and methods to ensure that necessary response equipment is being maintained on site or at a readily accessible location and in good working order.

The plan shall further outline the location of drilling sites, bore locations, depth, and size of casings. The plan shall also describe boring procedures and methods, including BMPs, to prevent frac-outs and other issues associated with boring. The plan shall also provide methods and BMPs for cessation and clean-up of any frac-out. The plan shall identify methods to isolate the area with hay bales, sand bags, or silt fencing to surround and contain the drilling mud. The on-site environmental monitor shall be consulted regarding next appropriate action among the following: A mobile vacuum truck will be used to pump the drilling mud from the contained area and recycled and/or the drilling mud will be left in place to avoid potential damage from vehicles entering the area. Following removal of the excess drilling mud, the area will be returned to pre-existing conditions in coordination with the landowner and environmental monitor.

The contractor will be responsible for hauling and the disposal of all waste drilling fluid at an approved location. All preventative and responsive measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC; California Department of Fish and Game; Department of Transportation (DOT), Division of Pipeline Safety; County and City of Sacramento.

**Mitigation Monitoring:** The plan must be approved before construction begins. The CPUC and California Department of Fish and Game shall monitor the requirements in the plan to ensure that the boring is conducted in accordance with the plan.

### **MM C-2a: Cultural Resources Treatment Plan**

**Purpose of Plan:** To develop procedures for protection of cultural resources that are currently unknown but may be encountered during construction and to reduce those potential impacts to less than significant.

**Content of Plan:** The plan shall develop the procedures for monitoring of excavations, procedures to stop construction in the event resources are encountered, methods of evaluation, notification process, and how the resources will be evaluated and mitigated. More detail regarding this plan is found on pages D.4-13 and D.4-14 of the Final EIR.

**Reviewing and Approving Agencies:** CPUC and Native American Heritage Commission.

**Mitigation Monitoring:** The plan shall be submitted and approved before construction begins. Monitoring during construction shall take place and the procedures outlined in the plan shall be followed.

### **MM HAZ-2ai: Gas Detection Plan**

**Purpose of Plan:** This plan shall outline location and methods of monitoring natural gas that could reach the surface. The purpose of this plan is to minimize the environmental impacts to the greatest extent possible while recognizing that Impact HAZ-2a remains significant and unavoidable, per the discussion on pages D.6-23 through D.6-27 of the Final EIR.

**Contents of Plan:** There are four primary elements of this plan: establishing a baseline, periodic measurements; quantifying and qualifying any changes, and responding appropriately. More detail regarding this plan is found on pages D.6-40 through D.6-42 of the Final EIR.

**Reviewing and Approving Agencies:** CPUC and City of Sacramento.

**Mitigation Monitoring:** The plan must be approved before construction begins. Once the plan is approved, the CPUC and City shall ensure that the plan is implemented prior to injecting gas into the reservoir. This will be an ongoing requirement throughout the duration of the gas storage project.

### **MM HAZ-2bi: Service Gap Analysis**

**Purpose of Analysis:** To determine additional public services that may be required to support the project either during operations or in the case of fire or explosion. This is in addition to the current emergency services provided by the City or County of Sacramento. The plan shall identify these additional services and methods for funding those services. The purpose of this plan is to minimize the environmental impacts to the greatest extent possible while recognizing that Impact HAZ-2a remains significant and unavoidable, per the discussion on pages D.6-23 through D.6-27 of the Final EIR.

**Content of Analysis:** The analysis shall list personnel, services, and equipment necessary to respond to a public emergency. Services that are lacking or not sufficient shall be identified and a plan developed to provide the services, such that public safety is ensured through timely and

robust emergency responses. The plan shall include those resources needed and the costs for providing the resources. The plan shall also identify the cost of these resources and how the applicant will finance those plans. Worst-case scenarios shall be discussed and planned for. The plan shall include the following elements:

- Identification of emergency agencies, equipment, and resources within a 100-mile radius of the project area. This analysis shall include an inventory of existing fire equipment, police, and fire/rescue assets.
- Analysis of equipment and personnel requirements under potential scenarios of release of gas and resulting fire and explosions.
- Identification of potential shortfalls of equipment and personnel and the cost to make up the shortfalls.
- Identification of fair-share funding for the applicant to provide these additional resources.

All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC, City of Sacramento, County of Sacramento.

**Mitigation Monitoring:** The study shall be completed, approved, and implemented prior to storage of gas. This includes mechanisms for the applicant to fund these services prior to storage of gas in the reservoir.

### **MM HAZ-6: Fire Protection Plan**

**Purpose of Plan:** The purpose of the plan is to identify the equipment, resources, and procedures that will be required to protect the project facilities, including well site and compressor station, as well as the surrounding community, from fire during construction and operation of the project, and to lessen the impacts created by exposure to wildland fires to less than significant. Only a portion of the project site within grassland areas are prone to wildland fires, primarily the pipeline alignment and the compressor station.

**Contents of Plan:** The plan shall outline the firefighting and fire safety equipment that will be provided for each facility. The plan shall ensure that the necessary equipment is available and located on site in a manner easily and intuitively accessible. It shall also outline the training of personnel in firefighting techniques. BMPs should be incorporated as appropriate to ensure the public safety through a timely and robust response to any fires or threats thereof. The plan shall also outline notification of local fire departments and protocols for coordination with the fire department. Worst-case scenarios shall be discussed and planned for. At a minimum, the plan will include the following:

- Procedures for minimizing potential ignition, including:
  - Vegetation clearing



- Fuel modification establishment
- Parking requirements
- Smoking restrictions
- Hot work restrictions
- Red flag warning restrictions
- Fire coordinator role and responsibility
- Fire suppression equipment on site at all times work is occurring
- Emergency response and reporting procedures
- Emergency contact information
- Worker education materials; kick-off and tailgate meeting schedules
- All internal combustion engines, stationary and mobile, will meet applicable regulatory standards
- Provisions for fire safety and prevention during operations
- Fire suppression/detection systems
- Emergency shut-down provisions
- Emergency drill preparation
- Emergency evacuation plan
- Other information as provided by responsible fire agencies for the Proposed Project.

All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC, DOGGR, City of Sacramento Fire Department, County of Sacramento Fire Department.

**Mitigation Monitoring:** The plan shall be approved before construction begins. Once the plan has been approved, the City of Sacramento Fire Department and CPUC shall ensure that the required equipment and notification procedures are in place prior to construction.

### **MM H-4a: Drainage and Grading Plans**

**Purpose of Plan:** To provide detailed plans for grading and drainage of the facilities during and after construction, and to ensure that impacts from increased runoff from new impervious areas and alterations of existing drainage patterns are less than significant.

**Contents of Plan:** The plan shall include detailed engineering drawings indicating grading that will be conducted at the facility sites and showing the drainage improvements that will be completed to accommodate flows generated from the project site. This plan, at a minimum, shall quantify and include the existing flows draining to existing storm drains and will identify

whether any new facilities will be required in order to ensure that both on-site and off-site drainage facilities are sized to accommodate existing and project-generated flows. Additional details of this plan can be found on pages D.7-19 and D.7-20 of the Final EIR. All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC and City of Sacramento.

**Mitigation Monitoring:** The plan must be submitted and approved before the start of construction.

### **MM H-4b: Erosion and Sediment Control Plan**

**Purpose of Plan:** To provide detailed engineering plans for the control of erosion and sediment in the ROWs of the pipelines and facility sites during construction, and to ensure that impacts from increased runoff from new impervious areas and alterations of existing drainage patterns are less than significant.

**Contents of Plan:** The plan shall provide detailed plans of erosions control structures, grading plans, and other procedures to control erosion and sedimentation during construction (see page D.7-20 of the Final EIR). Erosion control efforts, such as hay bales, covers, sediment fences, sensitive area access restrictions (e.g., flagging), and vehicle mats in wet areas, would be installed before extensive soil clearing and grading begins. Appropriate stabilization measures, such as mulching or seeding, would be used to protect exposed areas during construction activities. All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC and City of Sacramento.

**Mitigation Monitoring:** The plan shall be approved before construction begins. The features of the plan shall be monitored during construction.

### **MM H-4b: Stormwater Pollution Prevention Plan (SWPPP)**

**Purpose of Plan:** To provide design and process guidance to prevent contaminated stormwater from leaving facility sites during operation.

**Contents of Plan:** The plan shall provide engineering details and BMPs to capture and treat stormwater from the facilities prior to discharge to storm drains. As described on page D.7-20 of the Final EIR, the following items shall be included in the SWPPP: (1) vicinity map, (2) site map, (3) list of potential pollutant sources, (4) type and location of erosion and sediment BMPs, (5) name and phone number of person responsible for SWPPP, and (6) certification by property owner or authorized representative. All measures addressed in the SWPPP shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC, City of Sacramento, and Regional Water Quality Control Board.

**Mitigation Monitoring:** The plan shall be approved before construction begins. On-site inspections shall be conducted to ensure that design and BMPs are constructed as specified.

### **MM H-8a: Spill Prevention, Control, and Countermeasure Plan (SPCC)**

**Purpose of Plan:** To control erosion and spills during construction of facilities. The purpose of this plan is to minimize the environmental impacts to the greatest extent possible while recognizing that groundwater contamination remains significant and unavoidable, per the discussion on pages D.7-22 through D.7-24 of the Final EIR.

**Contents of Plan:** The plan shall follow the 2010 National Pollution Discharge Elimination System (NPDES) General Permit issued by the California State Water Resources Control Board. The SPCC plan shall identify operating procedures that the facility will implement to prevent oil spills; control measures installed to prevent oil from leaving the project site; and countermeasures to contain, clean up, and mitigate the effects of an oil spill. The plan shall also include BMPs and methods for erosion control, control and use of hazardous materials, location of fueling, and the implementation of other protection methods to the maximum extent feasible. Worst-case scenarios shall be discussed and planned for. A copy of the plan shall be kept on site at the facility and made available for review by the U.S. Environmental Protection Agency (EPA) Regional Administrator during normal business hours. The plan shall be amended as required by 40 CFR 112. The plan shall be reviewed, evaluated, and updated (if necessary) every 5 years. All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC and Central Valley Regional Water Quality Control Board.

**Mitigation Monitoring:** The CPUC shall ensure that the plan is prepared according to standards prior to the start of construction and implemented throughout the construction process. The plan must be approved before construction begins.

### **MM H-8b: Groundwater Monitoring Plan**

**Purpose of Plan:** This plan must be prepared in conjunction with the water quality sampling plan and gas detection plan. The purpose of the plan will be to monitor the groundwater levels and pressures in the aquifer to detect if the gas in the reservoir is moving vertically through the cap rock. The purpose of this plan is to minimize the environmental impacts to the greatest extent possible while recognizing that groundwater contamination remains significant and unavoidable, per the discussion on pages D.7-22 through D.7-24 of the Final EIR.

**Contents of the Plan:** The plan shall include location of monitoring wells, a description of pressure measuring devices, and methods for recording pressures. The plan shall also include how baseline pressures will be determined, describe the steps to be taken in response to pressure changes, and the procedures for depressurization of the reservoir. Worst-case scenarios shall be discussed and planned for. More detail regarding this plan is found on page D.7-24 of the Final EIR. All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC, DOGGR, City of Sacramento, and Central Valley Regional Water Quality Control Board

**Mitigation Monitoring:** The CPUC and DOGGR shall ensure that the plan is prepared, approved, and implemented before the facility begins operation, and that the plan is followed during operation of the facility. The monitoring plan and any potential remediation shall be under the supervision of DOGGR and the Central Valley Regional Water Quality Control Board.

### **APM 9/MM U-2: Emergency Response Plan/Emergency Action Plan**

**Purpose of Plan:** The plan shall outline potential accidents to the public associated with fire, explosion, and release of natural gas, and the steps to be taken in response to such incidents, with the goal of ensuring that impacts created by public service system disruption will be less than significant.

**Contents of Plan:** The plan shall outline the types and scenarios of anticipated accidents, including rupture of pipelines, fire/explosion at compressor station and wellhead site, as well as migration of natural gas into groundwater and the surface. Worst-case scenarios shall be discussed and planned for. For each scenario, the requirements for emergency response shall be described, both for incident response and evacuation/sheltering of the public. This plan shall include the emergency response resources needed prior to and during an emergency, the availability and location of those resources, and possible duration of the types of scenarios and the length of period that the resources would be required. BMPs shall be incorporated to ensure the public safety through a robust and timely emergency response. All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC, City of Sacramento, and County of Sacramento.

**Mitigation Monitoring:** The plan must be approved before construction begins. Once the plan is reviewed and approved, the City of Sacramento and CPUC shall ensure that the elements of the plan are implemented.

### **MM U-1c: Final Design Plans**

**Purpose of Plan:** To provide detailed project design of project facilities, and to ensure that impacts related to utility system disruptions are less than significant.

**Contents of Plan:** Full plan specifications and final design for pipeline, compressor station, wellhead site, and other facilities. More detail regarding this plan is found on page D.11-9 of the Final EIR. All design measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC; City of Sacramento; DOGGR; DOT, Division of Pipeline Safety.

**Mitigation Monitoring:** Final design is to be completed and approved before project construction begins.

### **MM T-1a: Traffic Control Plan**

**Purpose of Plan:** To provide vehicle safety and reduce traffic congestion during construction, and to ensure that impacts related to construction generated traffic are less than significant.

**Contents of Plan:** The plan shall outline measures to control traffic during construction. This plan shall include lane closures, barricade placement, traffic congestion, and timing of construction for each facility and construction phase including such items as staggered employee shift hours and truck scheduling to avoid peak traffic hours. More detail regarding this plan is found on page D.12-8 of the Final EIR. All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC and City of Sacramento.

**Mitigation Monitoring:** The plan shall be prepared and approved before construction begins. Measures in the plan shall be monitored during construction of all facilities.

### **MM C-AQ-1: Natural Gas STAR Program Implementation Plan.**

**Purpose of Plan:** Natural Gas STAR is a voluntary program of the gas and oil industry to reduce methane emissions during the production and transportation of natural gas. The plan shall provide measures to reduce methane emissions for the project, and ensure that impacts to global climate change are not considered cumulatively considerable.

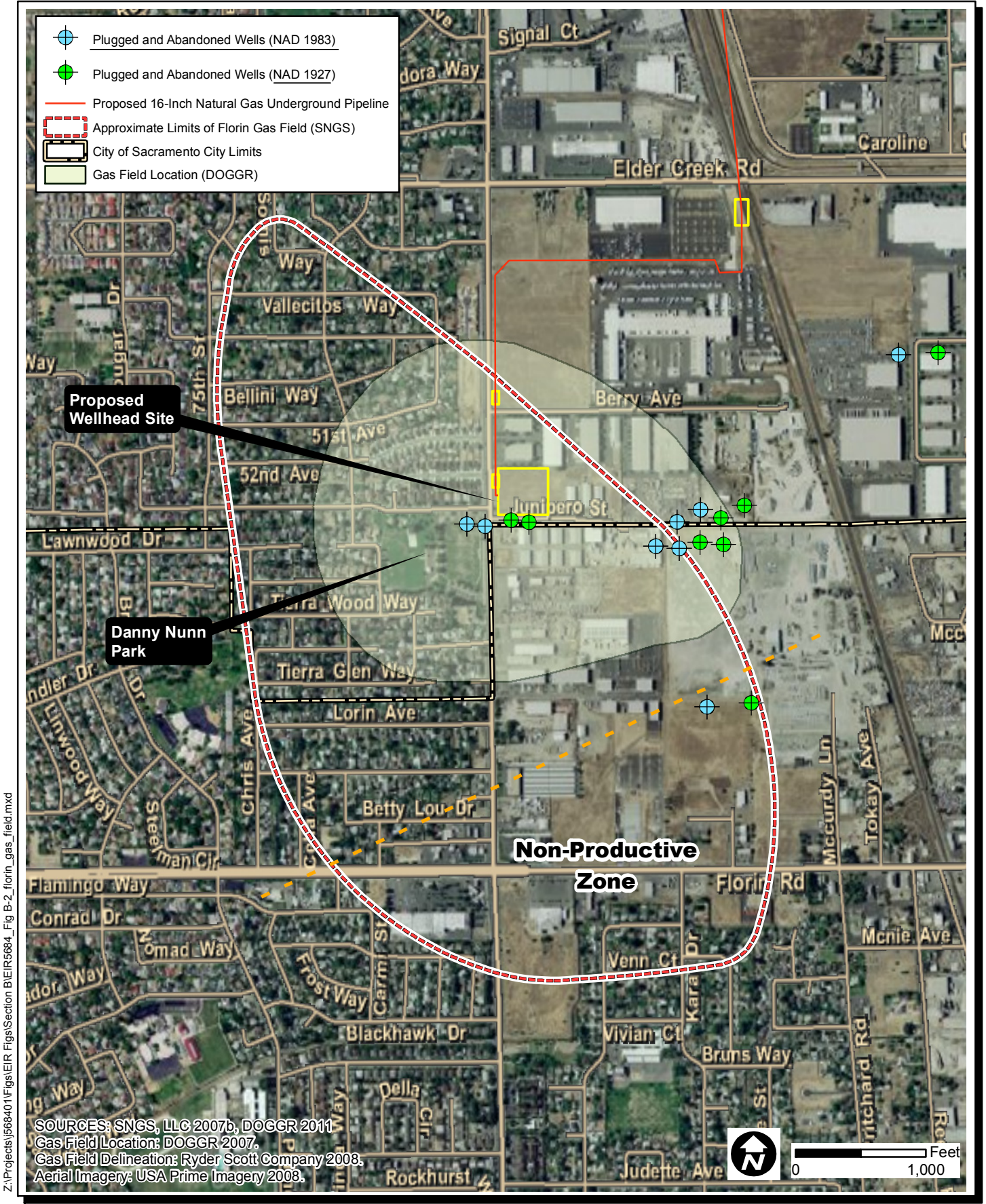
**Contents of Plan:** The plan shall provide engineering detail of specific project components to demonstrate the reduction in emissions of methane from the project. More detail regarding this plan is found on page F.10 of the Final EIR. All measures addressed in this plan shall meet the requirements and needs of the reviewing and approving agencies as detailed at the time those agencies are reviewing the plan.

**Reviewing and Approving Agencies:** CPUC and Environmental Protection Agency.

**Mitigation Monitoring:** The plan must be submitted and approved before commencement of the project.

APPENDIX A  
*Addendum to the Final EIR, Figure Revision*





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Sacramento Natural Gas Storage Project - Addendum to the Final EIR  
**Florin Gas Field**

**FIGURE B-2**