



# South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178  
(909) 396-2000 • www.aqmd.gov

**SUBJECT: NOTICE OF INTENT TO ADOPT A DRAFT SUBSEQUENT  
MITIGATED NEGATIVE DECLARATION**

**PROJECT TITLE: SIGNAL HILL PETROLEUM, INC.; SIGNAL HILL WEST  
UNIT (SHWU) GAS PLANT MODIFICATION PROJECT**

In accordance with the California Environmental Quality Act (CEQA), the South Coast Air Quality Management District (SCAQMD) is the Lead Agency and has prepared a Draft Subsequent Mitigated Negative Declaration (SMND) for the project identified above. Based on the environmental analysis of the proposed project in the Draft SMND, there would be no significant adverse impacts to any environmental area after mitigation measures are applied. The purpose of this Notice of Intent (NOI) is to solicit comments on the environmental analysis contained in the Draft SMND.

If the proposed project has no bearing on you or your organization, no action on your part is necessary. The Draft SMND and other relevant documents may be obtained by calling the SCAQMD Public Information Center at (909) 396-2039 or accessing the SCAQMD's CEQA website at <http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2014>. Comments focusing on issues relative to the environmental analysis for the proposed project will be accepted during a 35-day public review and comment period beginning November 26, 2014, and ending 5:00 p.m. on December 30, 2014. Please send any comments to Ms. Cynthia Carter (c/o Office of Planning, Rule Development, and Area Sources) at the address shown above. Comments can also be sent via facsimile to (909) 396-3324 or email at [ccarter@aqmd.gov](mailto:ccarter@aqmd.gov). Ms. Carter can be reached by calling (909) 396-2431. Please include the name and phone number of the contact person.

Project Applicant: Signal Hill Petroleum, Inc.

Date: November 25, 2014

Signature: 

Michael Krause  
Program Supervisor, CEQA  
Planning, Rules, and Area Sources

Telephone: (909) 396-2706

Reference: California Code of Regulations, Title 14, §15072, 15073, 15105, and 15162 and 15369.5



**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**  
**21865 Copley Drive, Diamond Bar, CA 91765-4182**

**NOTICE OF INTENT TO ADOPT**  
**A DRAFT SUBSEQUENT MITIGATED NEGATIVE DECLARATION**

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**Project Title:**

Signal Hill Petroleum, Inc.; Signal Hill West Unit (SHWU) Gas Plant Modification Project

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**Project Applicant:** Signal Hill Petroleum, Inc.                      **SCH No:** TBD

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**Project Location:** Signal Hill West Unit Facility - 1215 E. 29<sup>th</sup> Street in Signal Hill, CA, 90755

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**Description of Nature, Purpose, and Beneficiaries of Project:** The proposed project is a modification to a previously-approved project evaluated in a 1998 Mitigated Negative Declaration (MND), adopted by the City of Signal Hill on June 16, 1998. A Draft Subsequent Mitigated Negative Declaration (SMND) has been prepared to evaluate environmental impacts of the proposed project to upgrade the existing natural gas processing plant at its West Unit Production Facility. The purpose of the proposed modifications to the existing gas processing plant is to: 1) expand the existing vapor recovery system; 2) modify the existing natural gas dehydration system; 3) make beneficial use of the natural gas by sale; and, 4) provide operational flexibility by allowing for reduced operations and the ability to sell excess gas to Long Beach. The proposed improvements to the existing gas plant will occur in the same location as the current gas processing facility to allow SHP to continue processing natural gas for independent producers in the area. No new combustion equipment will be installed. The following environmental topic areas were identified as having the potential to be affected by the proposed project: aesthetics, air quality and greenhouse gas emissions; energy; geology and soils; hazards and hazardous materials; noise; and, solid and hazardous waste. Based on the analysis of the proposed project in the Draft SMND, there would be no significant adverse impacts to any environmental area after mitigation measures are applied. The proposed project site is not enumerated on the California Department of Toxic Control Hazardous Waste Facilities' List per Government Code §65962.5 (<http://www.envirostor.dtsc.ca.gov>; accessed November 19, 2014).

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|   |   |
|---|---|
| <b>Lead Agency:</b>                         | <b>Division:</b>                            |
| South Coast Air Quality Management District | Planning, Rule Development and Area Sources |

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|  |                      |   |
|--|----------------------|---|
| <b>Draft SMND and all supporting documentation are available at:</b> | <b>Or by calling</b> | <b>The Draft Subsequent MND is available by accessing the SCAQMD's website at:</b>  |
| SCAQMD Headquarters<br>21865 Copley Drive<br>Diamond Bar, CA 91765   | (909)396-2039        | <a href="http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2014">http://www.aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2014</a> |

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**The Public Notice of Intent is provided through the following:**

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> Long Beach Press Telegram<br>(November 26, 2014) | <input checked="" type="checkbox"/> Signal Hill Tribune<br>(November 28, 2014) | <input checked="" type="checkbox"/> SCAQMD Website      |
| <input checked="" type="checkbox"/> SCAQMD Public Information Center                 | <input checked="" type="checkbox"/> Surrounding Community                      | <input checked="" type="checkbox"/> SCAQMD Mailing List |

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**Draft Subsequent Mitigated Negative Declaration 35-day Review Period:**

November 26, 2014 through December 30, 2014

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The proposed project would not have a statewide, regional, or area-wide significance, therefore, a CEQA scoping meeting is not required (pursuant to Public Resources Code §21083.9(a)(2)) and, thus, will not be held for the proposed project.

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|                               |               |                  |               |
|-------------------------------|---------------|------------------|---------------|
| <b>Send CEQA Comments to:</b> | <b>Phone:</b> | <b>Email:</b>    | <b>Fax:</b>   |
| Cynthia Carter                | (909)396-2431 | ccarter@aqmd.gov | (909)396-3324 |

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**DRAFT SUBSEQUENT MITIGATED NEGATIVE DECLARATION FOR:  
SIGNAL HILL PETROLEUM, INC.; SIGNAL HILL WEST UNIT (SHWU)  
GAS PLANT MODIFICATION PROJECT  
(SCAQMD ID 101977)**

**SCH No. TBD**

**November 2014**

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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## **CHAPTER 1**

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### **PROJECT DESCRIPTION**

Introduction  
Agency Authority  
Background  
Project Description  
Project Location  
Construction Schedule  
Operating Scenarios

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## CHAPTER 1 - PROJECT DESCRIPTION

### 1.1 INTRODUCTION

On June 16, 1998, the City of Signal Hill adopted a Mitigated Negative Declaration (MND) and issued permits to Signal Hill Petroleum, Inc. (SHP) for modifications at the Signal Hill West Unit (SHWU) NO<sub>x</sub> RECLAIM Facility (ID 101977); refer to [Appendix A, Draft Initial Study/Mitigated Negative Declaration \(adopted June 16, 1998, City of Signal Hill Resolution 98-06-4831\)](#). On June 16, 1998, in conjunction with the MND, the City of Signal Hill also approved a Conditional Use Permit (CUP) for the continued operation of seven oil production facilities (Sites No. 1-7) by Signal Hill Petroleum, Inc. with no physical change to the site boundaries or the type of operations, with exception of a new natural gas processing facility at CUP Site No. 2. A new 7,000 square foot (s.f.) modernized gas processing plant replaced an existing adjacent 200,000 s.f. facility constructed in the 1920's. This smaller, modernized gas processing plant (subject gas plant) was constructed in year 2000 and is the subject of this document.

Signal Hill Petroleum, Inc. operates approximately 200 active oil production wells in the Long Beach/Signal Hill area. SHP also operates several processing facilities that process the crude oil, associated gas, and water produced from these wells. The two largest of these processing facilities are: Signal Hill West Unit (SHWU, ID 101977) and Signal Hill Central Unit (SHCU, ID 045086). The SHWU facility includes the subject gas plant that processes (i.e., removes liquids from) the produced gas from most of SHP's wells in the area, as well as produced gas from wells operated by third parties; refer to [Figure 1A, Regional Map](#), [Figure 1B, Local Vicinity Map](#), and [Figure 2, Third Party Operators](#). No changes are occurring at the SHCU Facility.

The subject gas processing plant was originally installed in the year 2000 as a replacement for an aging plant on an adjacent parcel. The subject plant was subsequently modified in 2008 by adding additional compression capacity at the inlet to the plant. Presently, gas exiting the gas processing facility cannot be sold to an end user, primarily because of naturally occurring carbon dioxide (CO<sub>2</sub>) in the gas (which is not removed by the existing gas processing facility). Instead, a combustion turbine (Device D115) at the facility uses 100% of the processed gas as fuel to generate electricity for use within SHP's operations.

The existing gas processing plant and the combustion turbine are currently operating near capacity. To remedy increased gas gathered in the future, it will be sold to a local supplier; however, modifications to the existing gas processing plant are required in order to process (e.g. remove CO<sub>2</sub> from) the produced gas to meet specifications and allow for the sale of the excess gas that cannot be used as fuel in the combustion turbine. There is no proposed change to the current turbine with the proposed project. The proposed modifications will also enable the field gathering system to operate at a lower pressure, which will improve the gas plant's ability to reliably perform its function as the vapor recovery/control system for SHP and third party oil wells and processing facilities in the area. The gas plant is considered vapor control since the gas from these wells is handled as a renewable resource (for example, generating power or heat) and not flared.

In addition, the proposed modifications will enable the gas plant to continue operating (at less than full capacity) even when the combustion turbine is out of service (e.g., for maintenance), because it will be possible to sell processed gas. This, again, improves the reliability of the gas plant as a vapor recovery/control system for SHP and third party oil wells and facilities. Finally, the proposed modifications will enable SHP to deliver pipeline quality gas to the local gas distribution system through the existing meter and sales line. Following construction of the proposed improvements, the onsite turbines will continue to operate at or near capacity with excess gas being sold through the sales line.

The proposed modifications to SHP's existing gas processing plant are to:

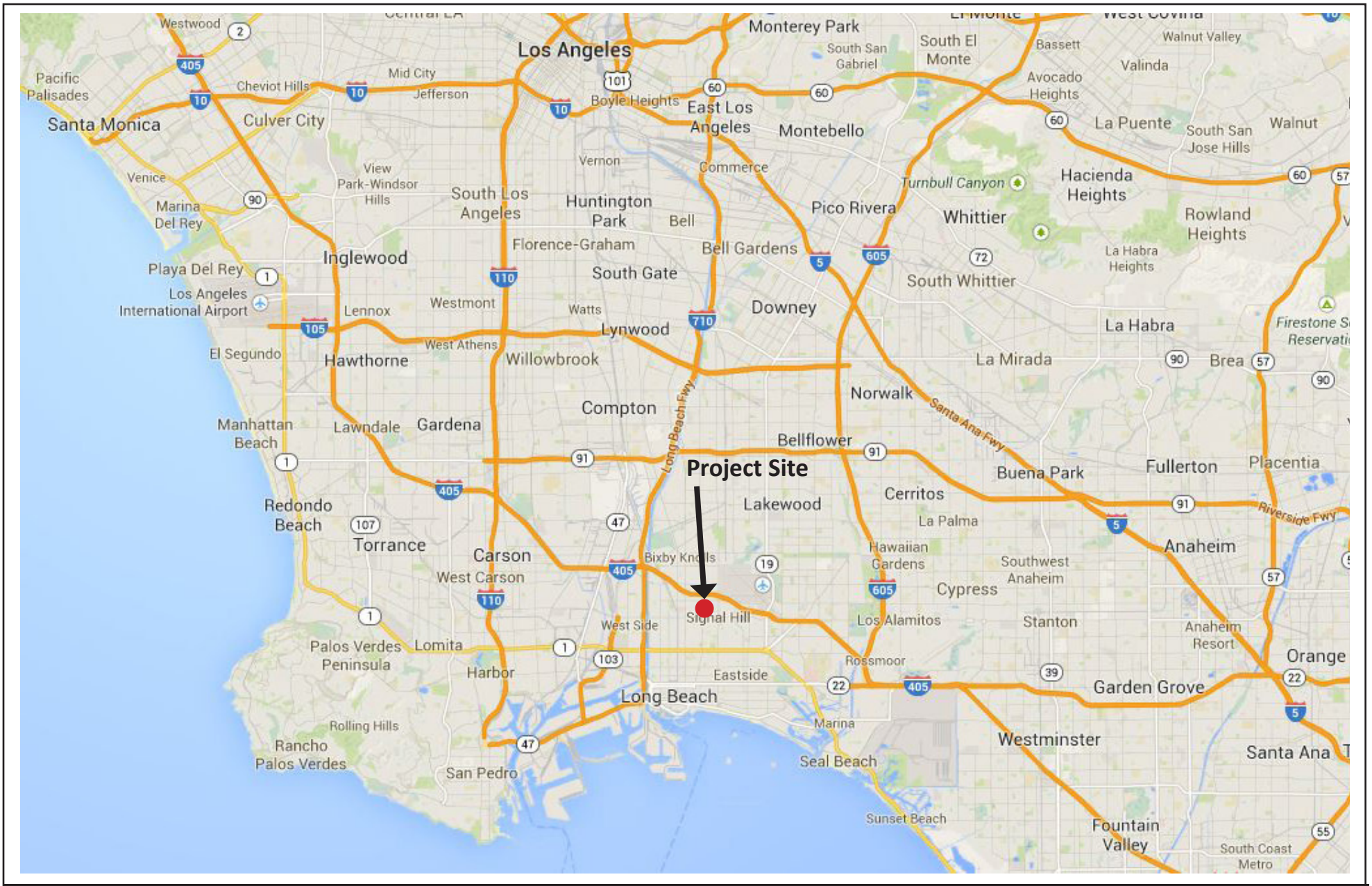
1. Modify the existing vapor recovery system by adding additional compression capacity;
2. Modify the existing natural gas dehydration (LTS) system by upgrading the propane refrigeration and glycol dehydration equipment; and,
3. Add a new CO<sub>2</sub> filtration system.

Project construction involves three phases: asphalt and soils removal, pouring the footings and slabs, and finally, installing the prefabricated equipment. The project will commence with the removal of a small amount soil beneath the asphalt. This first phase will take two days. Two adjacent locations will be subject to construction activities, as described below:

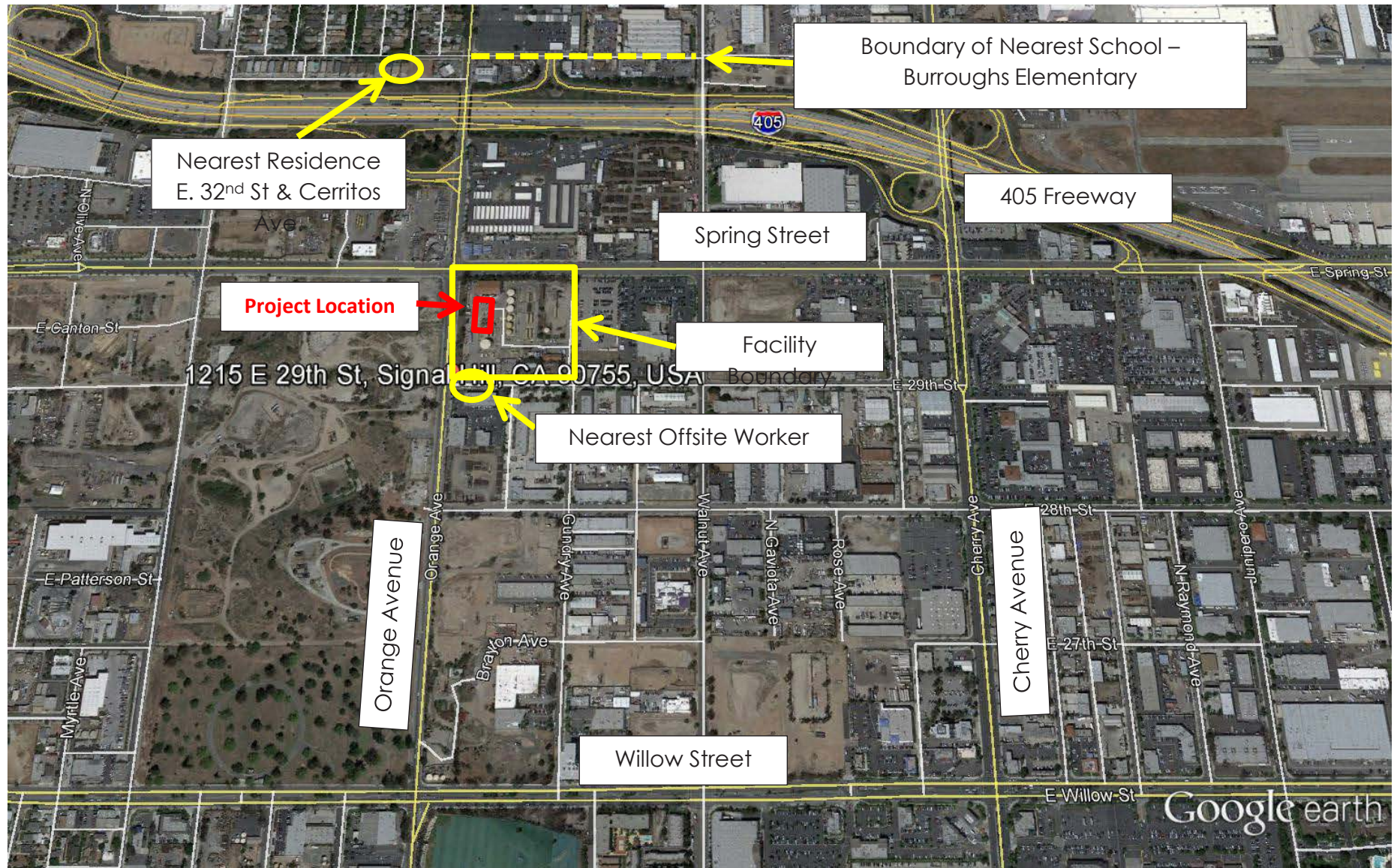
1. On the larger site, the impacted surface area will be approximately 1,400 s.f., or 20 feet by 70 feet. This area sits within the current Drill Site #2, which is completely paved. Asphalt will be removed from the entire 1,400 s.f. area. A concrete containment wall will be built on the perimeter, three feet of the rectangle. Within the center of the rectangle, a 924 s.f. area, 14 feet by 66 feet, will be excavated to a depth of five feet, and filled in with concrete. This area will act as a skid pad for the new compression train that is the subject of the SCAQMD permit; and,
2. The smaller site will be located just southwest of the larger pad and will be 10 foot by 35 feet. The existing asphalt will be removed and the site excavated to a depth of five feet. The excavation will be filled with concrete and will serve as a skid pad for the CO<sub>2</sub> membrane filter.

The first slab and containment area will be formed, poured, and cured over a 19-day period. The second slab will be formed, poured, and cured over a 29-day period. The final equipment installation will require another 11 days. All equipment will be rubber tired and diesel powered and will operate on paved surfaces.

The SCAQMD has primary approval authority over the project as currently proposed. Therefore, under §15367 of the California Environmental Quality Act (CEQA) Guidelines, the SCAQMD will serve as the “lead agency” of the proposed project. The SCAQMD shall be responsible for preparation of the appropriate environmental document, per the requirements of CEQA. To analyze potential environmental impacts resulting with implementation of the proposed modifications to the existing gas plant (current project), the SCAQMD has prepared this Draft Subsequent Mitigated Negative Declaration (SMND) which supplements the previously-adopted 1998 Mitigated Negative Declaration for the subject site.

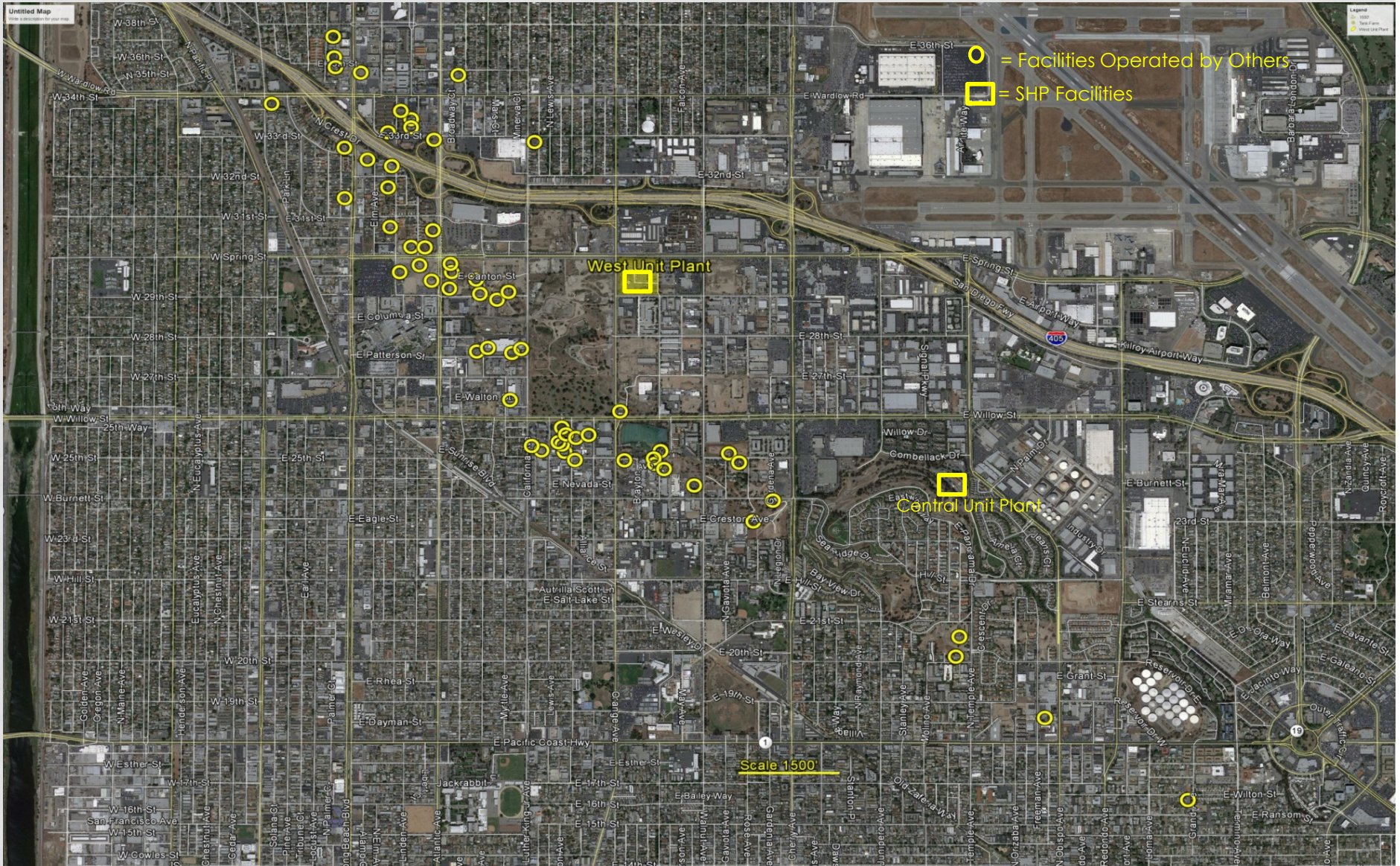


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## 1.2 AGENCY AUTHORITY

California Public Resources Code §21000 *et seq.* requires evaluation of all environmental impacts resulting with proposed “projects” as well as the identification and implementation of feasible methods aimed at reducing, avoiding, and/or eliminating any significant adverse impacts that may result with project implementation. As defined by CEQA, the proposed modifications to the existing gas plant represent the “project.” Accordingly, this Draft Subsequent MND has been prepared to evaluate the proposed modifications and to determine the potential impacts that such improvements may have on the existing environment.

As stated above, the SCAQMD will serve as the “lead agency” for the proposed project. The lead agency is the public agency having the principal responsibility for carrying out or approving a project that may have a significant adverse effect upon the environment (Public Resources Code §21067). Because the proposed project requires discretionary approval from the SCAQMD for modifications to existing stationary source equipment and for installation of new stationary source equipment, the SCAQMD has the greatest responsibility for supervising or approving the project as a whole. Therefore, the SCAQMD is the most appropriate public agency to act as the lead agency (CEQA Guidelines §15051(b)).

Since changes have been made to the project that was previously analyzed under the 1998 MND, a Subsequent MND is the appropriate CEQA document for the proposed (current) project (CEQA Guidelines §15162 and 15369.5). Further, a Subsequent MND is appropriate because any potentially significant adverse impacts have been identified as less than significant as a result of the incorporation of the proposed modifications to the 1998 project (CEQA Guidelines §15162) and after imposing mitigation measures. Due to the nature of the modifications, the only responsible agency with oversight is SCAQMD.

## 1.3 BACKGROUND

### 1.3.1 PREVIOUS MND

As stated above, on June 16, 1998, the City of Signal Hill (City) adopted an MND for the project as originally proposed, and approved SHP’s request for approval of CUP 97-03. The project, as evaluated in the 1998 MND, allowed for the continuing operations at the seven existing consolidated oil and gas drilling, production, storage, processing, and shipping facilities and to construct the new 7,000 s.f. natural gas processing facility at 1215 E. 29<sup>th</sup> Street. The project was intended to allow for the continuation of existing operations at seven individual SHP sites (CUP Sites No. 1-7). Additionally, it provided a new, modernized processing plant and replaced the adjacent natural gas processing plant, which operated inefficiently on outdated equipment and produced large quantities of emissions in processing operations, provided unaesthetic attributes to the visual setting, and subjected adjacent properties to high levels of noise and groundborne vibration.

Key environmental issues evaluated in the 1998 MND included aesthetics, air quality, geology and soils, hazards, and noise. Mitigation measures were provided to reduce impacts to a level of less than significant.

### 1.3.2 SCAQMD PERMITTING

Following adoption of the MND and issuance of CUP 97-03 on June 16, 1998 that allowed for the continued operation of the seven CUP Sites, the SCAQMD issued permits to SHP for the construction and operation of the (new) natural gas processing plant. The permit issued for the project at that time identified certain conditions for operation of the proposed equipment and emissions limitations. A subsequent permit modification in 2008 added additional compression capacity at the inlet to the plant.

In 2009 and 2010, SHP requested corrections to the permit issued in 2008 in order to address discrepancies identified by SHP. Subsequently, in February 2014, a permit application package was submitted to the SCAQMD for proposed modifications to the existing natural gas processing plant, which is the subject of this document. Refer to Appendix 2 of [Appendix B, SCAQMD Permit Application \(February 2014\)](#), of this Draft Subsequent MND for additional details.

### 1.3.3 CUP PROCESSING

In the mid-1970's, the City originally approved CUPs for seven drill sites (some of which also included treatment/processing functions) and three central processing facilities to allow major oil companies in the Signal Hill area to proceed with a unitization plan. These CUPs specifically included a condition that the CUPs expire in 20 years, and that the City could revoke the CUPs for noncompliance with conditions.

Historically, in November 1971, Shell Oil Company formed the Central Unit and initiated secondary recovery operations by implementing a water flooding program.<sup>1</sup> Texaco and the Atlantic Richfield Corporation (ARCO) initiated similar secondary recovery operations in the West and East Units in 1974 and 1975, respectively. SHP acquired Shell Oil Company oil wells, including three drill sites in the Central Unit, one of which included a Central Processing Facility. SHP also acquired ARCO facilities, which included a Central Processing Facility and two drill sites in the East Unit.

In early 1992, the City advised SHP and Texaco that their CUPs had expired. SHP submitted preliminary applications to renew their CUPs on October 15, 1991 for the East and Central Units. SHP subsequently acquired Texaco's West Unit sites, which include a Central Processing Facility and two consolidated drill sites, for which CUP applications had not been submitted.

On July 31, 1997, SHP submitted a consolidated application package for the seven CUP sites considered in the 1998 MND. On June 16, 1998, the City approved a request submitted by SHP to approve CUP 97-03 and MND (dated September 18, 1997) for a five-year term to continue the operation of the seven existing consolidated oil and gas drilling, production, storage, processing and shipping facilities and to construct a new 7,000 s.f. natural gas processing facility at 1215 E. 29<sup>th</sup> Street.

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<sup>1</sup> Water flood involves the use of wells to re-inject fluid, primarily produced water (no fresh water is used) with minor concentrations of additives, into the subsurface oil/gas reservoir to re-pressurize the sandstone and flush oil into recovery (extraction) wells. This technique is not the same as hydraulic fracturing that applies high pressure water injection to break up the reservoir.

On October 1, 2002, the City approved amendments to CUP 97-03 for a ten-year term to continue the operation of the seven existing consolidated oil and gas drilling, production, storage, processing, and shipping facilities and to construct a simple cycle gas turbine power plant at 1215 E. 29<sup>th</sup> Street to work in conjunction with the gas processing facility to generate electric power for oil operations.

On September 4, 2012, the City Council approved a one-year extension of CUP 97-03. The one-year extension was expected to allow sufficient time to complete additional and updated analysis of the seven drill sites; however, the time required to collect, digitize, manage and analyze the data was much greater than expected. As a result, on August 20, 2013, the City Council approved an additional six-month extension of CUP 97-03, set to expire February 2014. An additional extension for CUP 97-03 was subsequently requested, and Resolution No. 2014-02-6058 was approved by the City of Signal Hill on February 4, 2014, extending CUP 97-03 through December 31, 2014. The extension covered the seven existing consolidated drilling sites with oil and gas storage, processing, and shipping operations, and the gas turbine facility. As applicable, modifications occurring with the proposed project will be subject to such conditions for CUP Site No. 2; refer also to Section 2.5, Environmental Checklist and Discussion, for further details on the conditions that will apply to the current project. It should be noted that the modifications proposed to the existing gas plant with the current project (evaluated in this CEQA document) do not change the conditions relative to the previously-adopted CUP for the subject site; refer also to Section 1.4, Project Description, for a detailed description of the proposed improvements.<sup>2</sup>

#### **1.3.4 GAS PROCESSING PLANT - PERFORMANCE ISSUES**

Gas production in the affected oil field is rising and will continue to rise in the future. The increase in gas is due to a number of reasons. SHP has replaced gas gathering lines within the system, both to third parties and its own wells. This system works on a vacuum, and the new lines no longer allow atmospheric air into the system, creating more vacuum at the well head and an increase in gas production at the same level of oil production. Additionally, SHP has completed new 3-D Seismic Surveys on the oilfield and continues to interpret data and target new or replacement wells into fault blocks that have not previously been produced, with the result that these wells produce less water and more gas and oil than the older wells. Each new well or well work-over contributes to the knowledge of the reservoir. New technology in the form of electrical logs, and the interpretation of those logs along with better well completion methods, are increasing gas production in new wells and re-drilled or recompleted wells. By applying the new technologies and normal reservoir management practices, an improved gas-to-oil rate from existing facilities and operations can be achieved.

The existing gas processing plant and the combustion turbine are currently operating near capacity. To remedy increased gas gathered in the future, it will be sold to a local supplier. Therefore, modifications to the existing gas processing plant are necessary to process (e.g. remove CO<sub>2</sub> from) the produced gas to meet specifications to sell excess gas that cannot be used

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<sup>2</sup> The City of Signal Hill Planning Commission approved an extension of the CUP on November 12, 2014. Final approval of the CUP by the City of Signal Hill City Council is anticipated to occur at the City Council hearing scheduled for December 2, 2014.

as fuel in the combustion turbine. The modifications to the gas plant will further increase vacuum pressure at the well heads with the result being an increase in gas, even if no new wells were drilled or existing wells re-drilled. The proposed modifications will: enhance the gas plant's ability to reliably perform its function as the vapor recovery/control system for SHP and third party oil wells and processing facilities in the area by generating renewable power (via turbine and gas sales and not flaring); enable the gas plant to continue operating even when the combustion turbine is out of service because it will be possible to sell processed gas; and, enable SHP to deliver pipeline quality gas to the local gas distribution system.

### **1.3.5 CURRENT OPERATIONS**

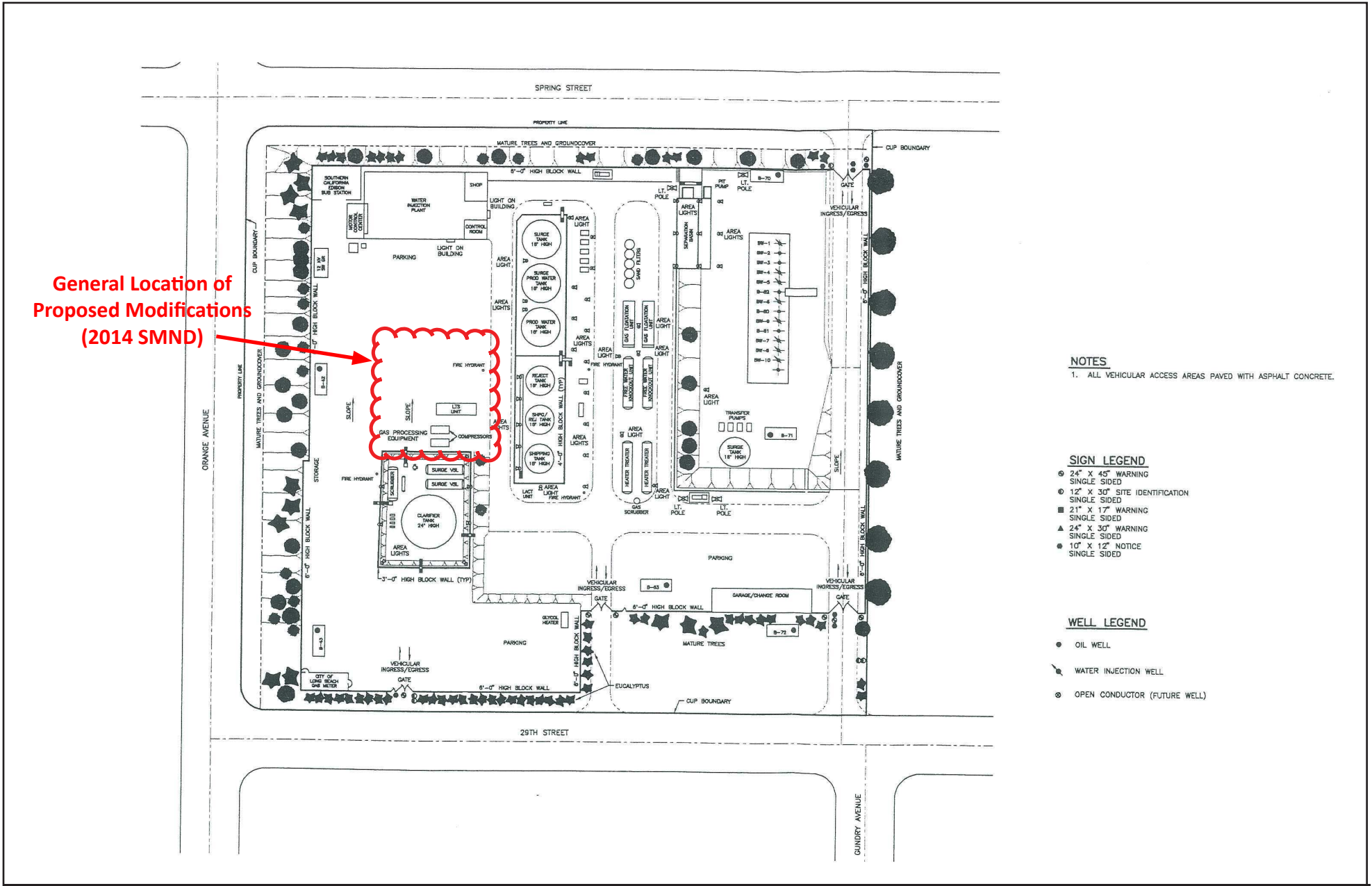
Signal Hill Petroleum, Inc. operates approximately 200 active production wells in the Long Beach/Signal Hill area. SHP also operates several processing facilities that process the crude oil, associated gas, and water produced from these wells. The two largest of these processing facilities are: Signal Hill West Unit (SHWU, ID 101977) and Signal Hill Central Unit (SHCU, ID 045086). The proposed project site lies within the SHWU.

The overall property on which the proposed project is located is identified as the “B” Drill Site of the Signal Hill West Unit (also referenced as “Site 2” in the current CUP). The property is used for the recovery of petroleum hydrocarbons through the continued operation of production and drilling facilities in connection with the SHWU of the Long Beach Oil Field. The site supports a field office and water injection plant and serves as the primary operating plant for the West Unit. The main components of the site include a fluid dehydration plant, a water injection plant, gas processing/dehydration equipment, oil and gas shipping equipment, and an Edison electrical substation. The site also serves as a gathering site for oil, gas, and water production, as well as a distribution site for water injection, and a control center for electrical systems associated with the turbine. In addition, the site has active oil, gas, and water injection wells, is designed for well drilling activities, and provides material storage for daily operations. This site now also supports the natural gas processing facility that replaced the outdated existing facility formerly located across Orange Avenue (see description below) and is the location of the proposed modifications.

## **1.4 PROJECT DESCRIPTION**

### **1.4.1 SUMMARY OF THE 1998 PROJECT VS. THE PROPOSED PROJECT**

The project as evaluated in the 1998 MND is summarized below. Additionally, [\*Table 1, Summary of Changes between the Affected Equipment Analyzed in the 1998 MND and the Proposed Project Equipment\*](#), provides a comparison of the improvements proposed with the 1998 project and the project as currently proposed and that is being analyzed in this Draft Subsequent MND. Refer also to [\*Figure 3A, Existing Configuration – CUP Site No. 2\*](#), and [\*Figure 3B, Proposed Gas Plant Modification\*](#), which show the conditions analyzed under the 1998 MND and those evaluated in this Draft SMND.



General Location of Proposed Modifications (2014 SMND)

**NOTES**  
 1. ALL VEHICULAR ACCESS AREAS PAVED WITH ASPHALT CONCRETE.

- SIGN LEGEND**
- ⊙ 24" X 45" WARNING SINGLE SIDED
  - ⊙ 12" X 30" SITE IDENTIFICATION SINGLE SIDED
  - 21" X 17" WARNING SINGLE SIDED
  - ▲ 24" X 30" WARNING SINGLE SIDED
  - 10" X 12" NOTICE SINGLE SIDED

- WELL LEGEND**
- OIL WELL
  - ⊙ WATER INJECTION WELL
  - ⊙ OPEN CONDUCTOR (FUTURE WELL)



Not to Scale

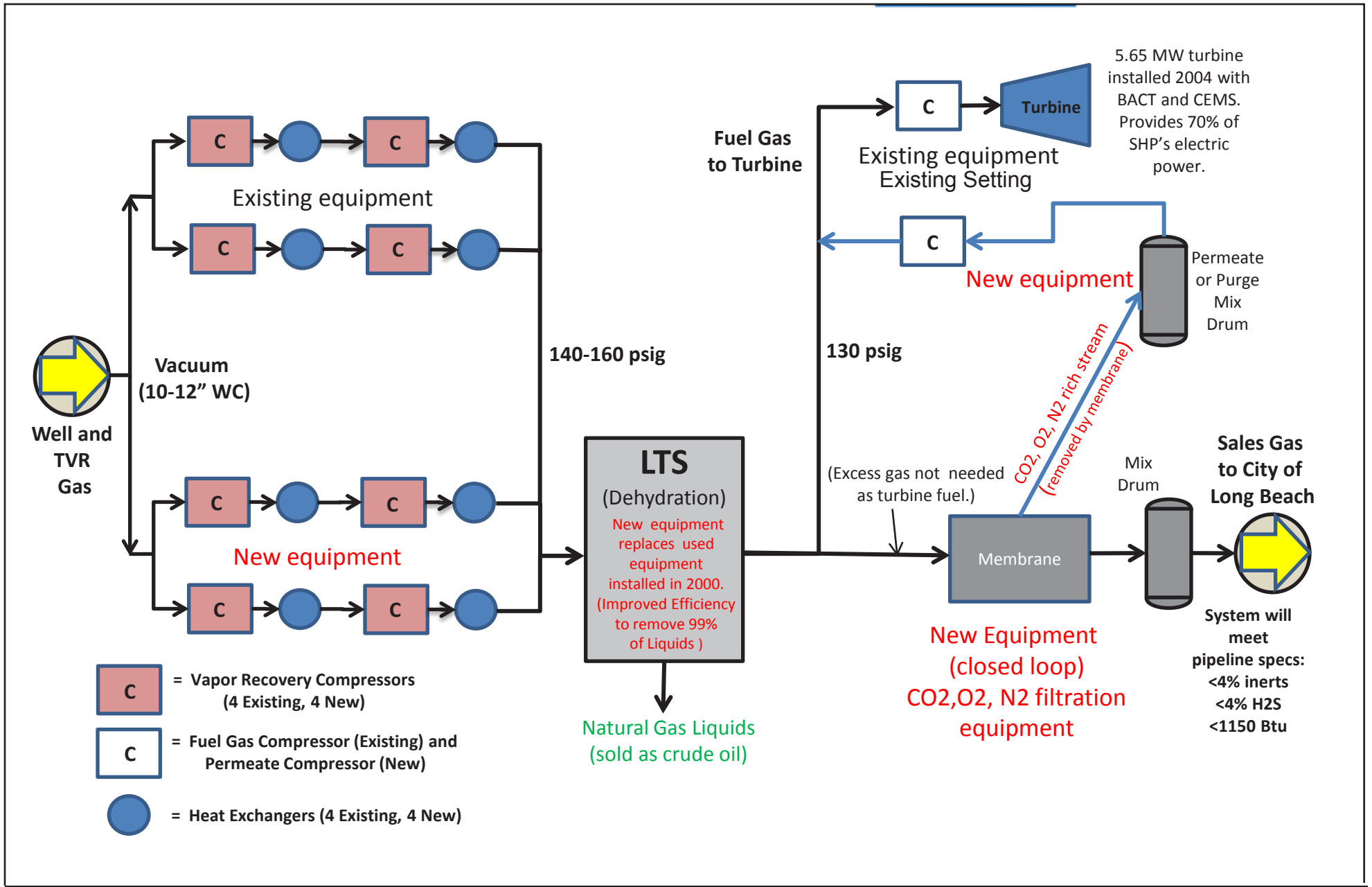
Source: Signal Hill Petroleum, Inc. (1997 MND)  
 Signal Hill Figures.incd

Signal Hill Petroleum  
 Subsequent Mitigated Negative Declaration  
**SITE PLAN - CUP SITE NO. 2 (AS ANALYZED IN 1998 MND)**

Figure 3A

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From the 1998 MND:

*The existing 200,000 s.f. natural gas processing facility was located at 2901 Orange Avenue in the City of Long Beach. It was constructed and placed into operation in the early 1920's to meet the expanding needs of the newly discovered Long Beach Oil Field. The facility is outdated, over-sized, and very inefficient. It uses processed dry gas for the internal combustion engines which drive the compressors. As a result, a large quantity of the emissions is continuously exhausted into the atmosphere. The facility's aesthetics are undesirable, as it contains five large cooling towers of 50 +/- feet; two stacks of 70 +/- feet, and miscellaneous other equipment and several old buildings. The perimeter of the site is bounded by chain link fence with no landscaping and is easily visible from the surrounding street network. In addition, the existing facility operates at noise levels in excess of 80 dB at its property line, and generates ground-borne vibration in the area as a result of fuel gas combustion engines. This facility is ultimately planned for demolition and redevelopment, although no specific development plans have been approved at this time.*

*The new proposed 7,000 s.f. natural gas processing facility would allow the replacement of the existing facility and would be located across from the existing site, within CUP Site No, 2. The new gas facility equipment would be much smaller and would integrate well with the existing West Unit processing facility. In contrast to the existing facility, the new facility would include one 12-inch diameter stabilizer, 34 feet in height, located behind an existing 24-foot high water tank. General equipment height would be 10 feet, mostly located three feet below ground in the new facility's containment area. The facility would be visually screened from the surrounding area by a 6-foot block wall and mature landscaping, in accordance with the City's Oil Code. In addition, the new facility is anticipated to operate at noise levels of less than 70 dB at the property line, according to the compressor manufacturer and the applicant. The new compressors would be driven by two (2) 150-horsepower electric motors. The new facility would also allow for the eventual abandonment of the existing site which would benefit the proposed development of the area by the Signal Hill/Long Beach Joint Powers Authority.*

Since the time of adoption of the 1998 MND, the above-described improvements have been constructed. At present, the existing facility includes a gas processing plant that processes (i.e., removes liquids from) the produced gas from most of SHP's wells in the area as well as produced gas from wells operated by third parties. The gas plant was originally constructed in year 2004 (as a replacement for the aging plant on the parcel immediately adjacent to the west of Orange Avenue) and was subsequently modified in 2008 to increase compression capacity at the inlet to the plant. At present, the gas exiting the gas processing facility cannot be sold to an end user, primarily because of naturally occurring CO<sub>2</sub> in the gas (which is not removed by the existing gas processing facility). Instead, a combustion turbine (Device DII5) at the facility uses 100% of the processed gas as fuel to generate electricity for use within SHP's operations.

Due to various technological improvements being made to oil wells (e.g., reworking existing mature wells, better field management practices, and better downhole completion techniques) and to the gas gathering system serving the SHWU gas processing plant and to the third party facilities which it serves, the volume of gas processed at the SHWU gas processing plant is increasing. The existing gas processing plant and the combustion turbine are currently operating near capacity. To remedy increased gas gathered in the future, it will be sold to a local supplier. As the SHWU gas processing plant will no longer be able to utilize all of the fuel in the combustion turbine, modifications are needed. The proposed modifications will also enable the field gathering system to operate at a lower pressure, which will improve the gas plant's ability to reliably perform its function as the vapor recovery/control system for SHP and third party oil wells and processing facilities in the area.

The proposed upgrade will add two additional 2-stage compression trains, replace the current propane refrigeration unit with “state of the art” equipment that represent Best Available Control Technology (BACT), and add a CO<sub>2</sub> filtration system. No new combustion equipment will be installed. The changes will increase the vacuum on the gathering lines, reducing back-pressure and reducing the potential for leaks in the upstream gathering system. The addition of the new compression trains will allow the processing of 4,000 mscf/day up from 2,000 mscf/day. The increase in volume will accommodate the growth of gas production from the mature water flood as oil production naturally declines over time.

In addition, the proposed modifications will enable the gas plant to continue operating (at less than full capacity) even when the combustion turbine is out of service (e.g., for maintenance), because it will be possible to sell processed gas. This will further improve the reliability of the gas plant as a vapor recovery/control system for SHP and third party oil wells and facilities. Additionally, the proposed modifications will enable SHP to deliver pipeline quality gas to the local gas distribution system.

The objectives of the proposed modifications to SHP's existing gas processing plant are to:

1. Expanding the existing vapor recovery system;
2. Modify the existing natural gas dehydration (LTS) system;
3. Make beneficial use of the natural gas by sale; and,
4. Provide operational flexibility by allowing for reduced operations and the ability to sell excess gas to Long Beach.

A comparison of the 1998 project (previously analyzed) as compared to the currently proposed project is provided in [Table 1](#). Refer also to [Figure 3A, Existing Configuration – CUP No. 2 Site No. 2](#), and [Figure 3B, Proposed Gas Plant Modification](#). Additionally, [Figures 4A to 4D](#) show the anticipated site disturbance and new/modified equipment proposed with the project.

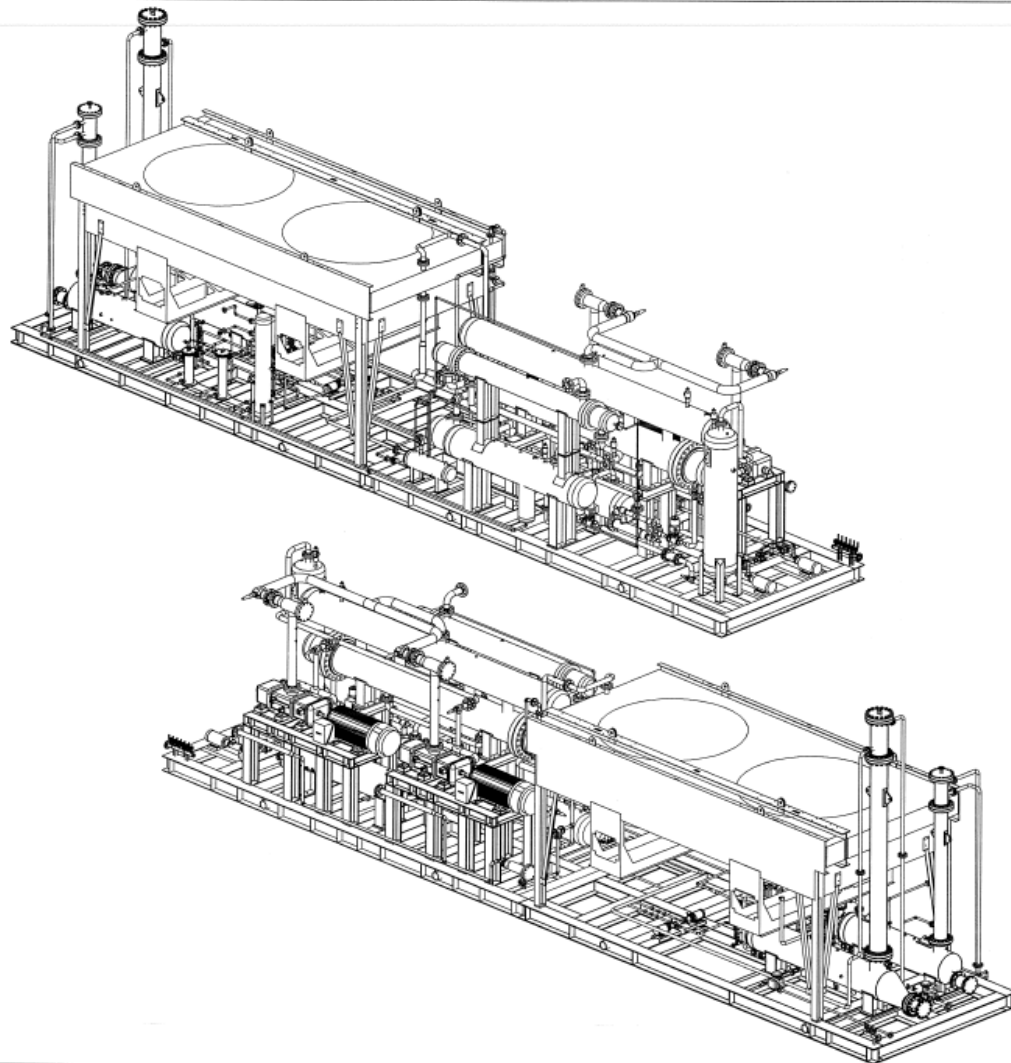


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| CUSTOMER CONNECTIONS |                    |                       |
|----------------------|--------------------|-----------------------|
| DESIGNATION          | DESCRIPTION        | SIZE & RATING         |
| (A)                  | PROCESS INLET      | 4" - 600# RFSD FLANGE |
| (B)                  | GAS PRODUCT        | 4" - 600# RFSD FLANGE |
| (C)                  | INSTRUMENT AIR     | 2" - 150# RFSD FLANGE |
| (D)                  | TO VRU (BY OTHERS) | 2" - 300# RFSD FLANGE |
| (E)                  | LPG TO STORAGE     | 2" - 300# RFSD FLANGE |
| (F)                  | INSTRUMENT AIR     | 2" - 150# RFSD FLANGE |
| (G)                  | BLANKET GAS        | 1" - 150# RFSD FLANGE |
| (H)                  | TO BTEX            | 1" - 150# RFSD FLANGE |
| (J)                  | TO ATMOSPHERE      | 1" - 150# RFSD FLANGE |

QTY. REQ.D.: 1

**INDUSTRIAL EQUIPMENT SOLUTIONS, INC.**  
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MACHINERY ARRANGEMENT  
 400HP MRU UNIT  
 (SKID ISOMETRIC)

|     |          |    |      |     |            |              |        |     |
|-----|----------|----|------|-----|------------|--------------|--------|-----|
| REV | DATE     | BY | CHKD | APP | DATE       | PROJECT      | QTY    | REV |
| AA  | 11/15/13 | AA | CL   | MG  | 12/26/13   | IES-223A-011 | 4 OF 4 | B   |
| BB  | 12/26/13 | AA | CL   | MG  | 05/23/2011 |              |        |     |

NOTES:

| REV | DATE     | REVISIONS                   | BY | CHKD | APP |
|-----|----------|-----------------------------|----|------|-----|
| A   | 11/15/13 | ISSUED FOR APPROVAL         | AA | CL   | MG  |
| B   | 12/26/13 | REVISED PER CLIENT COMMENTS | AA | CL   | MG  |
|     |          |                             |    |      |     |
|     |          |                             |    |      |     |
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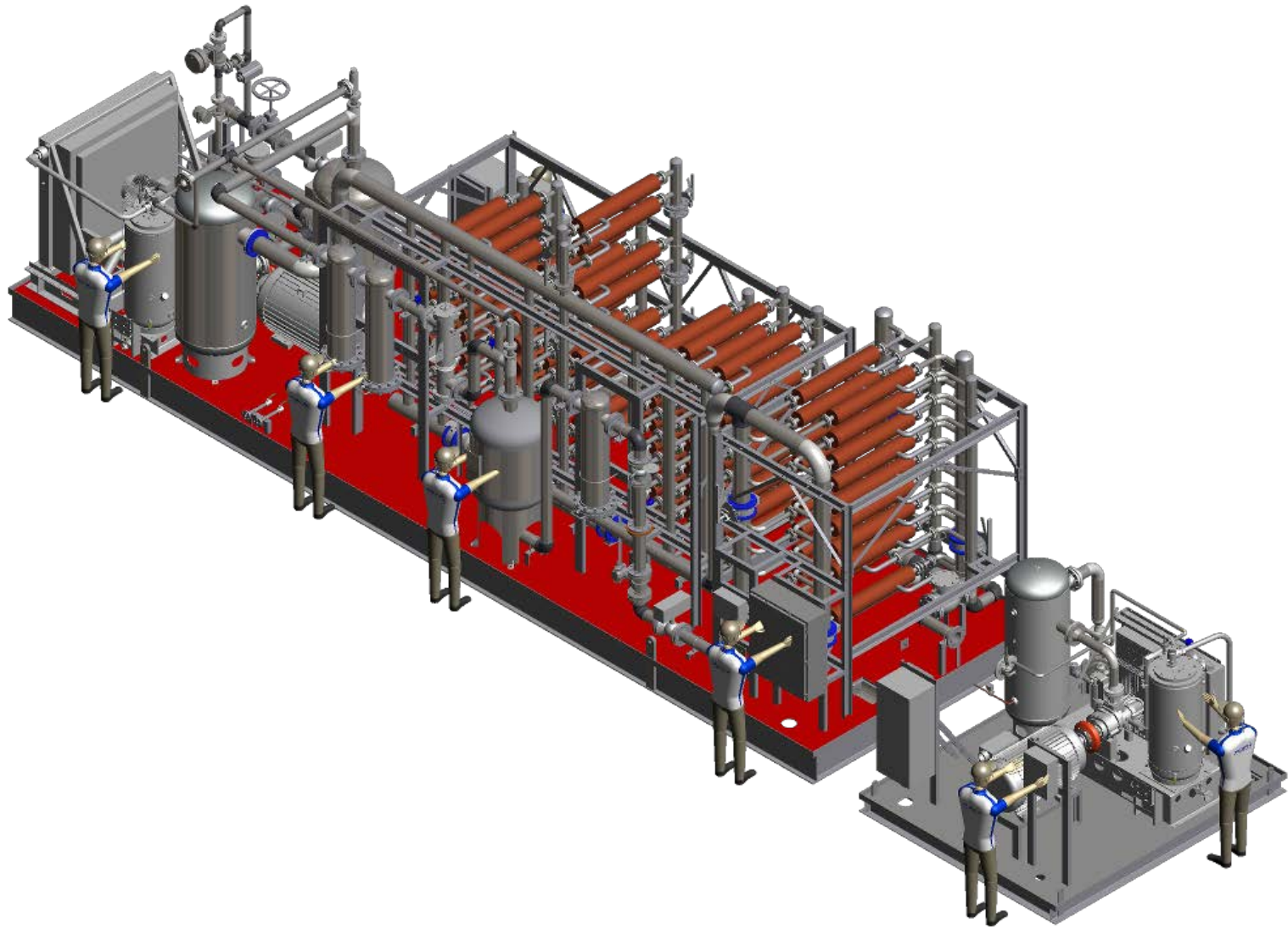
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|  |                |        |     |
|--|----------------|--------|-----|
| PROJECT TITLE  |                |        |     |
| MACHINERY ARRANGEMENT<br>400 HP MRU UNIT<br>(SKID ISOMETRIC)<br>BOZCO ENGINEERING<br>SIGNAL HILL, CA 90755 |                |        |     |
| SCALE  | DRAWING NUMBER | SHT    | REV |
| N.T.S.   | IES-223A-011   | 4 OF 4 | B   |

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**Table 1. Summary of Changes between the Affected Equipment Analyzed in the 1998 MND and the Proposed Project Equipment**

| Equipment Category                   | 1998 MND (Current)   | Proposed Project (2014)  |
|--------------------------------------|--|--|
| Vapor Recovery System                | <ul style="list-style-type: none"> <li>▪ Two identical 2-stage compression trains</li> <li>▪ 4-6 inch water vacuum to 140-160 pounds per square inch gauge (psig)</li> </ul>                         | <ul style="list-style-type: none"> <li>▪ Two identical 2-stage compression trains</li> <li>▪ <b>Two additional identical 2-stage compression trains</b></li> <li>▪ <b>10-12 inch</b> water vacuum to 140-160 psig</li> </ul>   |
| Natural Gas Dehydration (LTS) System | <ul style="list-style-type: none"> <li>▪ Propane refrigeration / low temperature (-2°F) separation</li> </ul>  | <ul style="list-style-type: none"> <li>▪ Propane refrigeration / low temperature <b>(-30°F)</b> separation <b>(replace with high efficiency equipment)</b></li> </ul>  |
| CO <sub>2</sub> Filtration           | <ul style="list-style-type: none"> <li>▪ None</li> </ul>   | <p>All new equipment:</p> <ul style="list-style-type: none"> <li>▪ <b>CO<sub>2</sub> filtration system to meet City of Long Beach pipeline quality specifications</b></li> </ul>   |
| Product Streams                      | <ul style="list-style-type: none"> <li>▪ Natural Gas Liquids, or NGLs, (unfractionated) combined and sold with crude oil</li> <li>▪ Processed gas used as fuel in self-generation turbine</li> </ul> | <ul style="list-style-type: none"> <li>▪ NGL's (unfractionated) combined and sold with crude oil</li> <li>▪ Processed gas:                             <ul style="list-style-type: none"> <li>– Used as fuel in self-generation turbine</li> <li>– <b>To City of Long Beach distribution system</b></li> </ul> </li> </ul> |

The proposed project to be evaluated under this Draft Subsequent MND will result in the following benefits:

- Increased Efficiency and Reliability
  - Improved vapor recovery for SHP's 200 wells and 7 tank facilities (ID's 101977, 045086, and 170540 through 170544); and, for 64 wells and 47 facilities operated by 20 different third party operators (this will avoid the need for combustion through flaring)
  - Modern Technology and Equipment
    - Fewer equipment leaks and mechanical upsets in the gas plant itself
  - More efficient LTS system
  - More effective and efficient gathering and processing of produced gas will result in less back-pressure and reduced potential for leaks in the upstream gathering system
- Ability to Sell Gas
  - Less Reliance on Turbine as Ultimate Control Device

- Will be able to maintain (reduced) operations by selling gas when the gas turbine is out of service, e.g., for maintenance
- o Increase the supply of local natural gas into the City of Long Beach distribution system, replacing gas transported from long distances, and therefore, reducing potential fugitive emissions currently associated with natural gas transmission lines; refer also to [\*Appendix C, Commitment Letter from City of Long Beach Gas & Oil Department \(September 2014\)\*](#).

Additionally, within the area associated with the proposed actions, oil production is regulated by the State of California Department of Oil, Gas, & Geothermal Resources (DOGGR) and the Cities of Long Beach and Signal Hill. In respect to drilling, the DOGGR defers to local agencies with land use responsibilities for CEQA oversight.

The City of Signal Hill only allows drilling to occur on approved Conditional Use Permit Drill Sites. These sites are located in non-residential zones in order to provide a buffer between sensitive land uses and more industrial-type operations. Within the City, far fewer wells have been drilled in the last ten years than have been abandoned. Rather, emphasis has been placed on increasing efficiencies of existing wells in order to maintain current production. This is due in part to the high cost of drilling a new well.

The City of Signal Hill recently revised the Oil Code section of its Municipal Code (Title 16, Oil Code). Such revisions resulted in the requirement for well permits for all new wells and any re-drilling or recompletion of existing wells (Section 16.12.030). Prior to the issuance of a drilling permit, applicants are required to submit an application and accompanying materials to enable adequate understanding and review by the City and the California Division of Oil and Gas (DOG) during the permit process.

Similarly, the City of Long Beach permits oil drilling only within established Drilling Districts. Such Drilling Districts are identified in the City's Strategic Plan. Similar to the City of Signal Hill, the City of Long Beach Municipal Code also includes an Oil Code section pertaining to the regulation of oil production activities (Title 12, Oil Production Regulations). The City requires a permit for any new wells, or re-drilling or recompletion of existing wells.

Third party operators within the City of Signal Hill do not benefit by the "water flood" operation, and operate on sites that are largely considered to be "non-conforming existing uses" per the Municipal Code. These sites offer limited or no opportunity for future expansion of existing operations. Therefore, without implementation of the modifications to the gas plant as proposed with the project, any increase to restrictions on these third party operators could potentially result in alternative gas handling measures, such as flaring, thereby leading to a potential increase in the generation of harmful emissions.

Downstream effects of the proposed project will include decreased emissions and reduced reliance on other non-local gas sources. Gas marketing will occur through the Public Utility, which is owned by the City of Long Beach. The existing natural gas processing facility is currently fitted with a meter, and therefore, installation of a new meter onsite will not be necessary to allow for the sale of gas enabled by the proposed project.

Implementation of the proposed modifications to the existing gas plant will result in an increased locally produced supply of available sales gas in the City of Long Beach distribution system. The natural gas industry was deregulated in the 1980's, and as a result, the City of Long Beach Gas & Oil (LBGO) Department currently purchases the gas supply for its customers on the open competitive market from sources within California, Texas, Wyoming, New Mexico, Canada, with the potential for expansion outside of the United States into Mexico. Additionally, Long Beach presently operates both on-shore and off-shore natural gas fields. Under negotiated long-term contracts, LBGO purchases approximately 10 billion cubic feet of natural gas on an annual basis.<sup>3</sup> If and when the gas plant is operating at full capacity, the 2,000 mcf a day that is in excess of the turbine capacity would mean that SHP could sell approximately 730 million cf per year, or 7.3% of the total volume currently utilized by the City of Long Beach.

By replacing gas supplies that are currently transported to the area over long distances from non-local sources (refer to [Appendix C](#)), the Project would allow for potential fugitive emissions associated with natural gas transmission lines to be reduced, thereby further reducing potential adverse effects on air quality and from greenhouse gas emissions. Additionally, the proposed modifications and resultant availability of the sales gas will reduce reliance on gas supplies from non-local sources.

The proposed improvements will result in enhancement of local gas supplies available for public sale and consumption through the proposed improvements at the natural gas plant. The proposed project will allow for the transfer of pipeline quality gas to the local gas distribution system for sale to third party(s) for beneficial use; however, the availability of such supplies as a result of the project will not be growth-inducing. The gas made available for sale by the proposed project will meet area demand for such resources and will therefore reduce the need for imported gas supplies; however, it is not anticipated that the availability of such resources will enable new development that would not have otherwise occurred under existing conditions (i.e. make available a new resource required to enable growth that was not previously available). Rather, future demand for the gas produced will be influenced by economic conditions at the time that the gas is purchased. Therefore, the project is not considered to represent a significant growth-inducing impact.

#### **1.4.2 NEW OPERATIONS**

The natural gas processing plant will continue to perform the same basic functions as the current facility: vapor recovery, natural gas dehydration, and production of natural gas liquids (unfractionated) and processed gas. As stated above, the proposed modifications will result in improved efficiency and reliability in plant operations, and will enable SHP to process and transfer the excess gas produced for sale. Refer also to [Figures 4A to 4D](#) which show the anticipated disturbance and proposed modifications at the project site.

Basic changes in operations that will occur after construction of the proposed equipment modifications are completed and gas sales begin are as follows:

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<sup>3</sup> City of Long Beach Gas & Oil Department. "Who We Are." Available at: [http://www.longbeach.gov/lbgo/who\\_we\\_are/default.asp#business](http://www.longbeach.gov/lbgo/who_we_are/default.asp#business). Accessed September 17, 2014.

1. Enhanced vapor recovery for SHP and third-party oil wells and area processing facilities;
2. Enhanced, more efficient natural gas dehydration processes;
3. Excess gas produced will be processed (e.g. removal of CO<sub>2</sub> from) to meet required City of Long Beach pipeline quality specifications; and,
4. Transfer of pipeline quality gas to the local gas distribution system for sale to end users for beneficial use.

It should be noted that SHP has received confirmation from the City of Long Beach Gas & Oil Department that it intends to enter into a Natural Gas Delivery Agreement for Locally Produced Gas (Agreement) with SHP for the delivery and purchase of locally-produced natural gas produced by SHP to supply a portion of the City's gas requirements. Under the agreement, the City will purchase all locally-produced gas delivered to the City by SHP, and such gas will displace an equivalent volume of natural gas imported by the City from more remote sources; refer to [Appendix C, Commitment Letter from City of Long Beach Gas & Oil Department](#) (September 18, 2014).

### **1.4.3 PERMIT CONDITION MODIFICATIONS**

On February 26, 2014, SHP submitted an application to the SCAQMD for the permit required for the proposed modifications to the existing natural gas processing plant. The application addressed modifications to the vapor recovery system/natural gas dehydration system, installation of CO<sub>2</sub> filtration system, and improvements to enable SHP to deliver pipeline quality gas to the local gas distribution system for sale; refer also to Appendix 2 of [Appendix B, SCAQMD Permit Application \(February 2014\)](#), of this Draft Subsequent MND. Construction and operation of the other components currently present onsite (identified for the 1998 project in [Table 1](#), above) were analyzed in the previous 1998 MND (with exception of the modifications made to add compression capacity at the inlet to the plant in 2008).

Permit conditions consistent with the required mitigation measures (see also [Table 2](#), below) will be included in the final permit for the proposed project.<sup>4</sup>

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<sup>4</sup> The City of Signal Hill Planning Commission approved an extension of the CUP on November 12, 2014. Final approval of the CUP by the City of Signal Hill City Council is anticipated to occur at the City Council hearing scheduled for December 2, 2014.



#### 1.4.4 MITIGATION MEASURES CHANGES

As discussed above, the 1998 MND imposed mitigation measures for the project as proposed at the time. The 1998 mitigation measures are identified in [Table 2, Summary of Mitigation Measures from the 1998 MND](#). The 1998 mitigation measures will continue to be implemented. The changes to the project analyzed in the 2014 Draft Subsequent MND will necessitate modifications to and/or replacement of these measures. Therefore, mitigation measures proposed for implementation with the current (2014) project are identified in [Table 3, Summary of Mitigation Measures for the Proposed Project \(2014\)](#), below, and are discussed in greater detail in Section 2.5, Environmental Checklist and Discussion, of this Draft Subsequent MND.

**Table 2. Summary of Mitigation Measures from the 1998 MND**

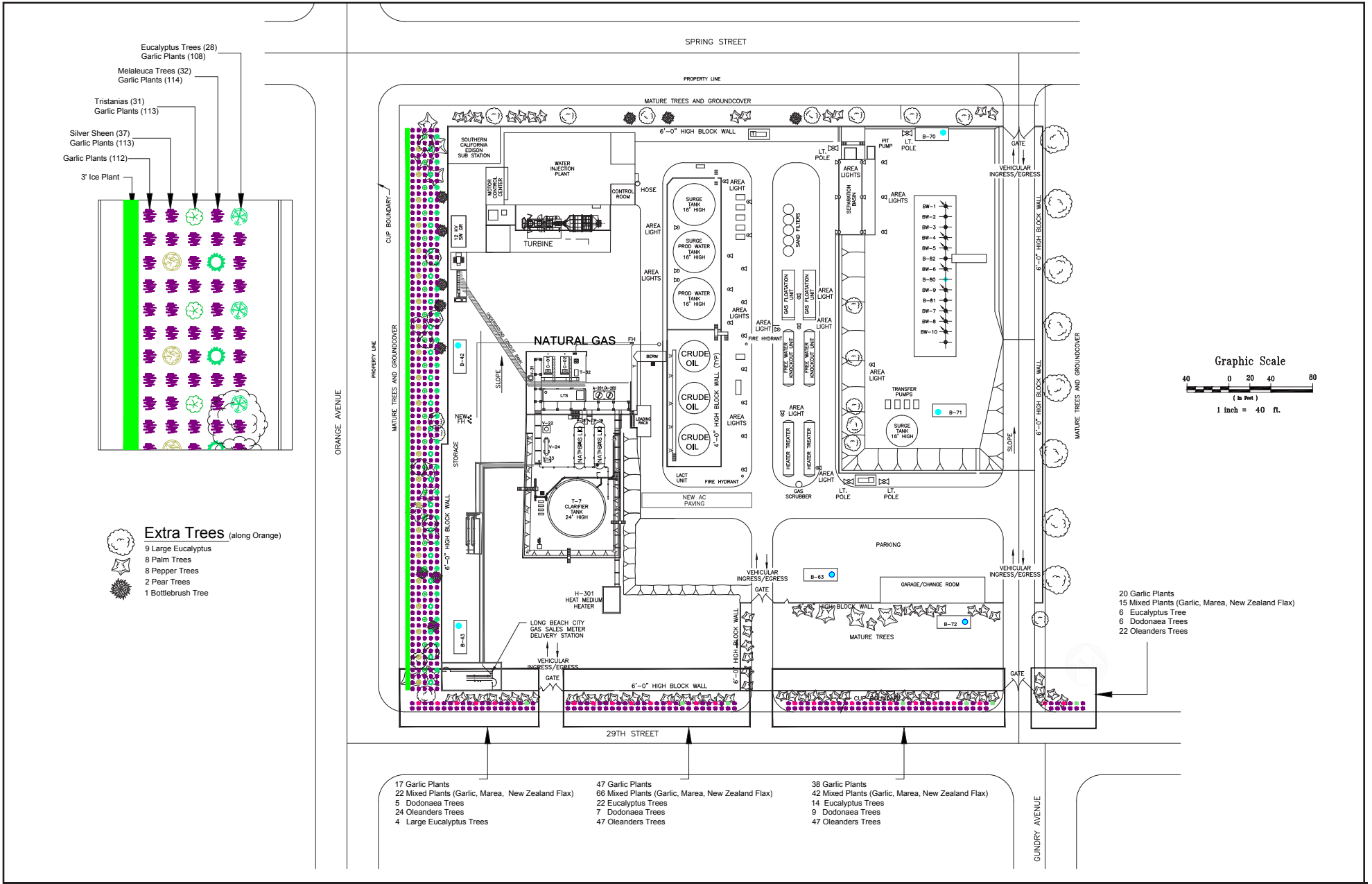
| 1998 MND Mitigation Measure            | 1998 MND   |
|--|--|
| <b>GEOPHYSICAL (GEOLOGY AND SOILS)</b> |  |
| #1a                                    | A structural engineer, civil engineer or architect, experienced with earthquake-resistant design, shall sign off on all building plans to determine the adequacy of seismic criteria for project structures, and to ensure incorporation of necessary design changes, prior to issuance of building permits.   |
| #1b                                    | Prior to issuance of building permit(s), the Building Official shall review and approve all building plans to ensure compliance with the Uniform Building Code as adopted by the City of Signal Hill.  |
| #1c                                    | All site preparation and operation shall be in compliance with the City's grading and paving standards (no further mitigation is required).  |
| <b>AIR QUALITY</b>                     |  |
| #2                                     | <p>In order to reduce fugitive dust emissions, the following measures shall be implemented during construction of the proposed natural gas processing facility to the satisfaction of the City Engineer.</p> <ol style="list-style-type: none"> <li>a. The project shall comply with State, City, and UBC dust control regulations, so as to prevent the soil from being eroded by wind, creating dust, or blowing onto a public road or roads or other public or private property.</li> <li>b. Adequate watering techniques shall be employed to partially mitigate the impact of construction-generated dust particulates. Unpaved construction roads shall be watered at least two times per day.</li> <li>c. SCAQMD Rule 403, as amended, shall be adhered to, ensuring the cleanup of the construction-related dirt on approach routes to the site, and the application of water and/or chemical dust retardants that solidify loose soils shall be implemented for construction vehicle access, as directed by the City Engineer. This shall include covering, watering, or otherwise stabilizing all inactive soils piles (left more than 10 days) and inactive graded areas (left more than 10 days).</li> </ol> |

|                                    |   |
|------------------------------------|---|
| <b>1998 MND Mitigation Measure</b> |   |
|                                    | <b>1998 MND</b>   |
| #3                                 | Prior to approval of the proposed project, the applicant shall demonstrate SCAQMD compliance or provide Agency staff with a copy of the preliminary application for an SCAQMD operating permit. Upon issuance of the CUP, the applicant shall provide evidence of a SCAQMD operating permit.  |
| <b>HAZARDS</b>                     |   |
| #4a                                | Prior to CUP approval SHP shall demonstrate compliance with applicable hazardous materials rules and regulations, to include, at minimum, an Emergency Response Plan as required by the Fire Department addressing spill, fire, and explosion hazards, and relative risk of upset to adjacent land uses.  |
| <b>NOISE</b>                       |   |
| #5a                                | a. Construction activities shall comply with City of Signal Hill Noise Ordinance Section 9.16.050 relating to construction noise. Construction is permitted only between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday.   |
| #5b                                | b. All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the City Inspector.   |
| #5c                                | c. Stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers to the satisfaction of the City Inspector.   |
| #5d                                | d. On an annual basis, the operator shall measure the noise at the property line and submit said readings to the Planning Director for review. The Planning Director shall require the construction of sound barriers around the facility or any other mitigation both feasible and appropriate, should the gas processing equipment not meet noise standards found in Signal Hill Municipal Code Chapter 9.16, entitled "Noise," for industrial areas. |
| #5e                                | f. All servicing, reworking, and redrilling at the CUP sites shall comply with Section 9.16.070 of the Signal Hill Municipal Code.  |
| <b>AESTHETICS</b>                  |   |
| #6                                 | CUP site landscaping shall comply with the landscaping concept as shown on the site plans and conditions of approval for additional landscape enhancement and maintenance requirements.   |

**Table 3. Summary of Mitigation Measures for the Proposed Project (2014)**

| 2014 Mitigation Measure | Proposed Project (2014)  |
|-------------------------|--|
|                         | <b>HAZARDS</b>   |
| MM-HAZ-1                | Prior to approval of the proposed project, SHP shall demonstrate compliance with applicable hazardous material rules and regulations, to include, at minimum, an Emergency Action Plan as required by the Fire Department addressing spill, fire, and explosion hazards and relative risk of upset to adjacent land uses.  |
|                         | <b>NOISE</b>   |
| MM NOI-1                | <p><i>Short-Term Construction</i></p> <p>In order to reduce construction noise, the following measures shall be implemented during construction of the proposed natural gas processing facility to the satisfaction of the SCAQMD or designee:</p> <ol style="list-style-type: none"> <li>a. Construction activities shall comply with City of Signal Hill Noise Ordinance Section 9.16.050 relating to construction noise. Construction is permitted only between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday.</li> <li>b. All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the SCAQMD or designee.</li> <li>c. Stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers to the satisfaction of the SCAQMD or designee.</li> </ol>   |
| MM NOI-2                | <p><i>Long-Term Operation</i></p> <p>In order to reduce long-term operational noise, the following measures shall be implemented for the proposed natural gas processing facility to the satisfaction of the SCAQMD or designee:</p> <ol style="list-style-type: none"> <li>d. Within thirty (30) days of installation of the proposed equipment modifications at the existing gas processing facility at Site No. 2, the operator shall measure the noise at the property line and submit said readings to the SCAQMD for review. The SCAQMD shall require the construction of sound barriers around the facility, or any other mitigation both feasible and appropriate, should the gas processing equipment not meet noise standards found in the Signal Hill Municipal Code Chapter 9.16, entitled "Noise," for industrial areas.</li> <li>e. On an annual basis, the operator shall measure the noise at the property line and submit said readings to the SCAQMD for review. The SCAQMD shall require the construction of sound barriers around the facility, or any other mitigation both feasible and appropriate, should the gas processing equipment not meet noise standards found in the Signal Hill Municipal Code Chapter 9.16, entitled "Noise," for industrial areas.</li> </ol> |
|                         | <b>AESTHETICS</b>  |
| MM AES-1                | Within 30 days of completion of the construction phase, the project applicant shall install perimeter landscaping consistent with that shown on the Conceptual Landscape Plan prepared for the project (included as <a href="#">Figure 5, Conceptual Landscape Plan</a> ).   |

| <b>2014 Mitigation Measure</b> | <b>Proposed Project (2014)</b>   |
|--------------------------------|--|
|                                | Improvements to the existing irrigation system shall be made, as required, to adequately accommodate the landscape plantings and to ensure long-term success of establishment. The project applicant shall be responsible for maintaining the landscaping installed to the satisfaction of the SCAQMD or designee, with landscape maintenance being part of the annual review for CUP 97-03. |



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## 1.5 PROJECT LOCATION

The proposed project site is located in the City of Signal Hill, within Los Angeles County in southern California. The City of Long Beach completely surrounds the City of Signal Hill. Interstate 405 (I-405) is located approximately 0.22 miles to the north of the site and provides regional access to this area of southern California, including the Cities of Santa Monica and Los Angeles, located further to the north of Signal Hill.

The CUP Sites No. 1-7, previously considered in the 1998 MND, include the proposed project site and are located throughout the City of Signal Hill, within the Long Beach Oil Field. The Long Beach Oil field encompasses the entirety of the City of Signal Hill, as well as portions of Long Beach to the northwest and southeast of the City. Additionally, the SHWU Facility is located on the western region of the South Coast Air Basin (Basin), which is a sub-area of the SCAQMD's area of jurisdiction.

The proposed modifications to the natural gas processing plant will occur at the same location as that was considered in the 1998 MND. The 1998 MND considered construction of the new natural gas processing facility at CUP Site No.2, which is the site where the current modifications are proposed; however, the 1998 MND also considered CUP Sites No. 1 and 3-7. These CUP sites are not included as part of the current project being evaluated. All improvements associated with the proposed project will occur within the boundaries of CUP Site No. 2, and no offsite properties will be affected; refer to [Figure 1A, Regional Vicinity Map](#), and [Figure 1B, Local Vicinity Map](#).

The existing SHWU natural gas processing facility (ID Signal Hill West Unit (SHWU) NO<sub>x</sub> RECLAIM Facility (ID 101977) where the proposed improvements will occur is within the larger boundary of CUP Site No. 2; refer to [Figure 1B, Local Vicinity Map](#). The SHWU site is bounded by Orange Avenue to the west, E. Spring Street to the north, a retail car sales dealership to the east, and E. 29<sup>th</sup> Street to the south. The City of Long Beach borders the northern edge of Spring Street.

Surrounding land uses include a self-storage operation to the north, across E. Spring Street, with an auto-oriented commercial retail business to the northwest, and equipment/collision repair businesses to the northeast. A retail car sales business borders the site to the east. To the south, the site is bordered by E. 29<sup>th</sup> Street. Across E. 29<sup>th</sup> Street are various commercial retail businesses (e.g. real estate office) and a chapel, and a commercial office park is located just to the south/southeast. To the west is Orange Avenue, with a generally vacant and highly disturbed parcel that supported the former gas processing facility (demolished subsequent to the construction of the existing natural gas processing facility located on the proposed project site) bordering the street.

According to the City of Signal Hill Zoning Map, the site is zoned GI (General Industrial). Adjacent lands to the south/southeast have similar zoning classifications, as well as SP-4 (Auto Center Specific Plan) and are intended for industrial-type and auto-related uses. Lands immediately to the west of Orange Avenue and north of Spring Street are located within the City of Long Beach.

## 1.6 CONSTRUCTION SCHEDULE

The proposed project would involve limited removal and/or replacement of some existing onsite equipment and subsequent installation of new equipment (as described above in Section 1.4, Project Description) in order to improve operations at the existing gas processing plant. Construction will be limited to minor demolition and hauling activities to remove the outdated equipment and to install the proposed equipment at the existing gas processing facility site.

Demolition and construction activities are anticipated to occur over an approximate 61-day period, following certification of the Subsequent MND and issuance of the required permits; refer to Chapter 2, Section III, Air Quality, of this Draft Subsequent MND for a detailed description of demolition and construction requirements. Construction, including initial demolition to connection of the new equipment installed, is anticipated to commence in the 4<sup>th</sup> quarter of 2014; however, this date may ultimately vary, depending on the length of the approval process. Although the actual dates of the construction phase may change, it should be noted that the construction analysis and emissions described herein in this Draft Subsequent MND will remain the same (i.e., the construction analysis is conservative and all projected emissions will be the same or greater than actual emissions if construction is delayed).

## 1.7 OPERATING SCENARIO

SHP's Gas Plant is captured under the California Accidental Release Program (Cal-ARP), the U.S. EPA's Risk Management Programs and the California Occupational Safety Administration (OSHA) Process Safety Management (Cal-ARP/RMP/PSM) regulations. These regulations require SHP to operate the gas plant in a very prescriptive manner to prevent releases from the gas plant to the environment. SHP must conduct hazard analyses, process safety and hazards assessments, mechanical integrity assessments, management of change, pre-construction review, operational training and post maintenance auditing. The goal of these programs is to prevent accidental releases to the environment that may have catastrophic consequences.

Installation of the proposed equipment will occur in a logical sequence in order to ensure that all new equipment is operating effectively prior to shut down of any existing equipment. The installation sequence will be analyzed and fine-tuned as part of the pre-construction review. The operational procedures will be reviewed prior to construction, even those aspects that haven't changed. Training will be implemented subsequent to the review of the operational procedures. The new equipment to be installed is illustrated in [Figure 3B, Gas Plant Modification - Proposed Improvements](#). Overall facility operations and maintenance will not change substantially, but will still require review under the Cal-ARP/RMP/PSM program. [Appendix B, SCAQMD Permit Application \(February 2014\)](#), includes detailed construction and operational emissions for the new equipment.



## CHAPTER 2

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### ENVIRONMENTAL CHECKLIST FORM

Introduction  
General Information  
Potentially Significant Impact Areas  
Determination  
Environmental Checklist and Discussion  
    Aesthetics  
    Agriculture and Forestry Resources  
    Air Quality  
    Biological Resources  
    Cultural Resources  
    Energy  
    Geology and Soils  
    Greenhouse Gas Emissions  
    Hazards and Hazardous Materials  
    Hydrology and Water Quality  
    Land Use and Planning  
    Mineral Resources  
    Noise  
    Population and Housing  
    Public Services  
    Recreation  
    Transportation/Traffic  
    Utilities and Services  
    Mandatory Findings of Significance  
References  
Acronyms  
Glossary

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## CHAPTER 2 - ENVIRONMENTAL CHECKLIST

### 2.1 INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

### 2.2 GENERAL INFORMATION

|                            |   |
|----------------------------|---|
| Project Title:             | Signal Hill Petroleum, Inc., Signal Hill West Unit (SHWU) Facility (SCAQMD ID #101977), Gas Plant Modification Project  |
| Lead Agency Name:          | South Coast Air Quality Management District   |
| Lead Agency Address:       | 21865 Copley Drive<br>Diamond Bar, CA 91765   |
| Contact Person:            | Michael Krause  |
| Contact Phone Number:      | (909) 396-2706  |
| Project Sponsor's Name:    | Signal Hill Petroleum, Inc.   |
| Project Sponsor's Address: | 2633 Cherry Avenue<br>Signal Hill, California 90755   |
| General Plan Designation:  | Light Industrial  |
| Zoning:                    | GI (General Industrial)   |
| Description of Project:    | <p>The proposed project is a modification to a previously-approved project that was evaluated in a 1998 Mitigated Negative Declaration (MND), prepared and adopted by the City of Signal Hill. The 1998 project allowed for the issuance of a single Conditional Use Permit (CUP) for the continued operation of seven oil production facilities (CUP Sites No. 1-7) operated by Signal Hill Petroleum, Inc. (SHP) with no physical change to the site boundaries or the type of operations, with exception of a new natural gas processing facility on CUP Site No. 2. The 7,000 square foot (s.f.) modernized processing facility was intended to replace an existing adjacent 200,000 s.f. facility constructed in the 1920's.</p> <p>Presently, gas exiting the gas processing facility cannot be sold to an end user, primarily because of naturally occurring CO<sub>2</sub> in the gas (which is not removed by the existing gas processing facility).</p> |

Modifications to the existing gas processing plant are therefore necessary in order to process (e.g. remove CO<sub>2</sub> from) the produced gas to meet specifications to sell excess gas that otherwise cannot be used as fuel in the combustion turbine. The proposed modifications will also enable the field gathering system to operate at a lower pressure, which will improve the gas plant's ability to reliably perform its function as the vapor recovery/control system for SHP and third party oil wells and processing facilities in the area.

In addition, the proposed modifications will enable the gas plant to continue operating (at less than full capacity) even when the combustion turbine is out of service (e.g., for maintenance), because it will be possible to sell processed gas. This, again, improves the reliability of the gas plant as a vapor recovery/control system for SHP and third party oil wells and facilities. The proposed modifications will also enable SHP to deliver pipeline quality gas to the local gas distribution system that meets the required specifications of the City of Long Beach. The City has provided SHP with a commitment letter to accept delivery and purchase of locally-produced natural gas processed by SHP to supply a portion of the City's gas requirements; refer to [Appendix C](#).

Surrounding Land Uses and Setting:

The proposed project site is located in the City of Signal Hill, within Los Angeles County in southern California. The City of Long Beach completely surrounds the City of Signal Hill.

The existing natural gas processing facility [contained within Signal Hill West Unit (SHWU) NO<sub>x</sub> RECLAIM Facility (ID 101977)] where the proposed improvements will occur is within the larger boundary of CUP Site No. 2. The SHWU processing facility site (which contains the natural gas processing facility) is bounded by Orange Avenue to the west, E. Spring Street to the north, a retail car sales dealership to the east, and E. 29<sup>th</sup> Street to the south. The City of Long Beach borders the northern edge of Spring Street.

Surrounding land uses include a self-storage operation to the north, across E. Spring Street, with an auto-oriented commercial retail business to the northwest, and equipment/collision repair businesses to the northeast. A retail car sales business borders the site to the east. To the south, the site is bordered by E. 29<sup>th</sup> Street. Across E. 29<sup>th</sup> Street are various commercial retail businesses (e.g. real estate office) and a chapel, and a commercial office park is

located just to the south/southeast. To the west is Orange Avenue, with a generally vacant and highly disturbed parcel that supported the former gas processing facility (demolished subsequent to the construction of the existing natural gas processing facility located on the proposed project site) bordering the street.

Other Public Agencies            None.  
Whose Approval is  
Required:

### 2.3 POTENTIALLY SIGNIFICANT IMPACT AREAS

The following environmental impact areas have been assessed to determine their potential to be affected by the project. As indicated by the checklist on the following pages, environmental topics marked with a "✓" may be adversely affected by the project. An explanation relative to the determination of impacts can be found following the checklist for each area.


- |   |   |   |
|---|---|---|
| <input checked="" type="checkbox"/> Aesthetics              | <input type="checkbox"/> Greenhouse Gas Emissions                   | <input type="checkbox"/> Population and Housing             |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Public Services                    |
| <input type="checkbox"/> Air Quality                        | <input type="checkbox"/> Hydrology and Water Quality                | <input type="checkbox"/> Recreation                         |
| <input type="checkbox"/> Biological Resources               | <input type="checkbox"/> Land Use and Planning                      | <input type="checkbox"/> Transportation/Traffic             |
| <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Mineral Resources                          | <input type="checkbox"/> Utilities and Service Systems      |
| <input type="checkbox"/> Geology and Soils                  | <input checked="" type="checkbox"/> Noise                           | <input type="checkbox"/> Mandatory Findings of Significance |
| <input type="checkbox"/> Energy                             |   |   |

## 2.4 DETERMINATION

On the basis of this initial evaluation:

- .. I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- Ⓟ I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- .. I find that the project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- .. I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- .. I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Date: 11/25/2014

Signature:   
Michael Krause  
Program Supervisor

## 2.5 ENVIRONMENTAL CHECKLIST AND DISCUSSION

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### I. AESTHETICS

#### Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.
- Environmental Setting and Impacts

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed changes to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility to be located at CUP Site No.2 (current proposed project site). The new natural gas processing facility included a vapor recovery system, natural gas dehydration system, and production of natural gas liquid (NGL) and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project.

The 1998 MND identified potentially significant adverse impacts for the aesthetic resources checklist items, and therefore mitigation (Mitigation Measure #6 in the 1998 MND) was proposed to reduce potential impacts to a less than significant level. The mitigation measure required CUP site landscaping to comply with the landscaping concept shown on the site plans and conditions of approval for additional landscape enhancement and maintenance requirements. In accordance with the 1998 MND, this mitigation measure has been implemented to date; refer to [Figure 3A, Existing Configuration – CUP Site No. 2](#), and [Figure 5, Conceptual Landscape Plan](#). The benefits from the 1998 mitigation measure will continue as the new equipment will be located in the same vicinity as the existing equipment. The 1998 mitigation measures will continue to be implemented.

***Other Applicable Regulations for Previously Approved 1998 Project***

Additionally, the Conditions of Approval for extension of CUP 97-03 to December 31, 2014 included Condition 6, which required that no structures, including tanks, shall exceed 40 feet, except that the height of the emissions stack for the gas turbine power plant shall not exceed 45 feet in height, and no pumping unit shall exceed 50 feet in height above existing grades. Additionally, Condition 11.c) requires that (during drilling operations), the operator shall maintain a minimum of five off-street parking spaces at each Consolidated Drilling and Oil Production Site, as requested by Signal Hill Municipal Code Section 16.16.050, entitled “Off-Street Parking.” Condition 11.h) requires that the operator arrange light fixtures so that light is not directed at neighboring property owners or tenants. All lighting shall be consistent with Signal Hill Municipal Code Section 16.20.070 of the Municipal Code. Furthermore, CUP Condition 11.i) requires that the operator maintain paint on all equipment. Equipment tanks shall be painted a neutral color, and any change in color is subject to approval by the Director of Community Development. Tanks and equipment shall be repainted periodically as reasonably necessary and as determined by the Oil Services Coordinator.

Additionally, Condition 14.b) cites the following specific improvements for CUP Site No. 2 (encompasses the proposed project site) which were required to be implemented within four months of the approval of the CUP, subject to review and approval by the Director of Community Development. Condition 14.b) required that, for CUP Site No. 2 (proposed project site), the operator shall remove the dead trees from the Orange Avenue (west) and east sides of the facility. Additionally, the operator was required to remove weeds from the ground-covered areas long Orange Avenue and new ground cover planted as needed; plant new trees along the east side of the site; and, design and install a new landscaped area on E. 29th Street, including an automatic irrigation system. Such enhancements have been implemented to date to reduce potential adverse visual effects of the new equipment project.

Further, Condition 24 required that the operator install and maintain landscaping at all seven drill sites to the satisfaction of the Planning Commission, improving on the specification of Condition 14 from the previous Conditions of Approval for CUP 97-03. Condition 25 required that the operator install such landscaping no later than January 24, 2014, and maintain it to the satisfaction of the Planning Commission, with landscape maintenance being part of the annual review for CUP 97-03. Such improvements have been made to date, thereby improving the visual aesthetics of CUP Site No. 2.

The above conditions were applied to the 1998 project. As existing commitments and requirements, such measures will also apply to the currently proposed project, as appropriate (and if not already in place), in order to further avoid and/or reduce potential effects of the proposed project on aesthetic resources.



|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                              |                                     |
| a) Have a substantial adverse effect on a scenic vista?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings?  | <input type="checkbox"/>       | <input checked="" type="checkbox"/>   | <input type="checkbox"/>     | <input type="checkbox"/>            |

**I.a), .b), and .c).** The existing visual character of the surrounding locale is highly industrial and commercial. The proposed project is not located within or along a designated scenic corridor, and the existing SHWU Facility does not contain any scenic resources such as trees, rock outcroppings, etc. Those existing components of the gas plant not affected with the proposed project would retain their current physical height and appearance. As constructed, the existing facilities include one 12-inch diameter stabilizer, 14 feet in height, located behind an existing 24-foot water tank. General equipment height is approximately 10 feet, generally located between three feet below ground in the containment area. The facility is visually screened by a 6-foot high block wall and mature landscaping in accordance with the City’s Oil Code. The existing facilities are therefore generally not visible from street level beyond the existing perimeter wall.

The equipment installed with the proposed project for the vapor recovery or natural gas dehydration system will have similar characteristics as the existing equipment. No component of the new CO<sub>2</sub> filtration system or improvements made to enable distribution of sales gas will exceed the height of the existing facilities onsite; refer also to Appendix 2 of [Appendix B, SCAQMD Permit Application \(February 2014\)](#), for proposed equipment descriptions. The proposed improvements will be consistent with similar industrial-type elements associated with existing surrounding land uses (e.g. oil and gas extraction, industrial uses, etc.). Additionally, as stated above, the Conditions of Approval with extension of CUP 97-03 to December 31, 2014 have been implemented and further reduce the visibility of the site while enhancing the existing visual setting.

Based on the above discussion, the proposed modifications at the existing SHWU Facility are not expected to substantially degrade the existing character or quality of the visual landscape; however, to ensure that the proposed improvements do not result in a significant impact over the long-term, mitigation is proposed (MM AES-1) to require installation of landscape plantings along the western and southern perimeters of the larger SHP parcel (adjacent to Orange Avenue and E. 29<sup>th</sup> Street); refer to [Figure 5, Conceptual Landscape Plan](#). The landscaping will enhance the visual setting and screen views into the site from offsite locations. Additional plantings at a lower density will also be planted along the northern and eastern perimeters of the property to enhance the appearance of the property. Maintenance of the landscaping will be the

responsibility of SHP (or via contract with a private landscaping company) and will be subject to the satisfaction of the Planning Commission, with landscape maintenance being part of the annual review for CUP 97 03. Implementation of MM AES-1 will reduce potential impacts with regard to a substantial change in the existing character of the visual landscape to a level of less than significant.

|   | <b>Potentially<br/>Significant<br/>Impact</b> | <b>Less Than<br/>Significant<br/>With<br/>Mitigation</b> | <b>Less Than<br/>Significant<br/>Impact</b> | <b>No Impact</b>                    |
|---|---|--|---|-------------------------------------|
| Would the project:  |   |  |   |                                     |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/>                      | <input type="checkbox"/>                                 | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> |

**I.d).** The proposed equipment modifications will not require a new onsite light source to operate safely during nighttime operations. Construction-related activities will occur during daylight hours. Therefore, no increase in lighting associated with the project at the SHWU Facility is expected. No impacts relative to light and glare will occur with the proposed project.

### **Mitigation Measures**

With regard to aesthetics, the following mitigation measure is proposed to reduce visual impacts resulting from potential degradation of the existing visual character or quality of the site and its surroundings to a level of less than significant. The 1998 mitigation measures will continue to be implemented.

#### **MM AES-1**

Within 30 days of completion of the construction phase, the project applicant shall install perimeter landscaping consistent with that shown on the Conceptual Landscape Plan prepared for the project (included herein as [Figure 5, Conceptual Landscape Plan](#)). Improvements to the existing irrigation system shall be made, as required, to adequately accommodate the landscape plantings and to ensure long-term success of establishment. The project applicant shall be responsible for maintaining the landscaping installed to the satisfaction of the SCAQMD or designee, with landscape maintenance being part of the annual review for CUP 97-03.

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## **II. AGRICULTURE AND FORESTRY RESOURCES**

### **Significance Criteria**

Project-related impacts on agricultural resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g)).
- The proposed project would involve changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to non-agricultural uses.

## **Environmental Setting and Impacts**

### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7), with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing facility included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project, as appropriate.

The 1998 MND did not identify potentially significant adverse impacts for issues relative to any agricultural resources checklist items (analyzed under Land Use and Planning in the 1998 MND). The analysis of project impacts on forestry resources was not included as a checklist item in 1998; however, such analysis is included herein.

|   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:  |                                |                                       |                              |                                     |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?                        | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g))? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**II.a), .b), and .c).** There are no agricultural resources (i.e., food crops grown for commercial purposes) located on in the near vicinity of the SHWU Facility; refer to [Figure 1B, Local Vicinity Map](#), for industrial location. The proposed project will not involve construction of any structures outside of the existing boundaries of the SHWU Facility, where agricultural resources may be located. The zoning of the SHWU Facility will remain as GI (General Industrial); the existing use of the site for the natural gas processing facility is an allowed use under the GI zone. Therefore, the proposed project will not result in a significant adverse impact on agricultural resources, convert prime farmland, unique farmland, or farmland of statewide importance to non-farming use, or, conflict with zoning for agriculture.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                              |                                     |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**II.d).** There are no forestry resources (i.e., park forests, timber crops grown for commercial purposes, etc.) located in or near the vicinity of the SHWU Facility. The proposed project will not involve construction of any improvements or structures outside of the existing boundaries of the SHWU Facility, where forestry resources may occur. The proposed project does not require a

rezone, and the existing zoning (GI – General Industrial) will remain in effect. Therefore, the proposed project will have no significant adverse impact on forestry resources, result in the loss of forest land or conversion of forest land to non-forest use, or conflict with zoning for forestry.

|  | <b>Potentially<br/>Significant<br/>Impact</b> | <b>Less Than<br/>Significant<br/>With<br/>Mitigation</b> | <b>Less Than<br/>Significant<br/>Impact</b> | <b>No Impact</b>                    |
|--|---|--|---|-------------------------------------|
| Would the project:   |   |  |   |                                     |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | <input type="checkbox"/>                      | <input type="checkbox"/>                                 | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> |

**II.e).** Refer to the analysis provided under II.a) through II.d), above. Due to existing conditions onsite and in the surrounding area, the proposed project would not involve other changes in the existing environment which, due to their location or nature, could result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No significant adverse impact would occur.

**Mitigation Measures**

Based on the above information relative to impacts relative to agriculture and forestry resources, no significant adverse impacts were identified, and therefore, no mitigation measures are required for the construction or operation of the proposed project.

**III. AIR QUALITY**

**Significance Criteria**

To determine whether or not air quality impacts from the proposed project may be significant, impacts will be evaluated and compared to the criteria in [Table III-1, SCAQMD Air Quality Significance Thresholds](#). If impacts equal or exceed any of the criteria in [Table III-1](#), they will be considered significant. As necessary, all feasible mitigation measures will be identified and implemented to reduce any significant adverse air quality impacts from the proposed project to the maximum extent feasible.

**Table III-1. SCAQMD Air Quality Significance Thresholds**

| <b>Mass Daily Thresholds</b>   |  |                  |
|--|--|------------------|
| <b>Pollutant</b>   | <b>Construction</b>  | <b>Operation</b> |
| NO <sub>x</sub>  | 100 lbs/day  | 55 lbs/day       |
| VOC  | 75 lbs/day   | 55 lbs/day       |
| PM <sub>10</sub>   | 150 lbs/day  | 150 lbs/day      |
| PM <sub>2.5</sub>  | 55 lbs/day   | 55 lbs/day       |
| SO <sub>x</sub>  | 150 lbs/day  | 150 lbs/day      |
| CO   | 550 lbs/day  | 550 lbs/day      |
| Lead   | 3 lbs/day  | 3 lbs/day        |
| <b>Toxic Air Contaminants (TACs), Odor and GHG Thresholds</b>  |  |                  |
| TACs<br>(including carcinogens and non-carcinogens)  | Maximum Incremental Cancer Risk $\geq$ 10 in 1 million<br>Cancer Burden > 0.5 excess cancer cases (in areas $\geq$ 1 in 1 million)<br>Chronic & Acute Hazard Index $\geq$ 1.0 (project increment)      |                  |
| Odor   | Project creates a minimal odor nuisance pursuant to SCAQMD Rule 402  |                  |
| GHG  | 10,000 MT/yr CO <sub>2</sub> eq for industrial facilities  |                  |
| <b>Ambient Air Quality Standards for Criteria Pollutants</b>   |  |                  |
| <b>NO<sub>2</sub></b><br>1-hour average<br>annual arithmetic mean  | SCAQMD is in attainment; a project is significant if it causes or contributes to an exceedance of the following attainment standards:<br>0.18 ppm (State)<br>0.03 ppm (state) and 0.0534 ppm (federal) |                  |
| <b>PM<sub>10</sub></b><br>24-hour average<br>annual average  | 10.4 $\mu\text{g}/\text{m}^3$ (construction) & 2.5 $\mu\text{g}/\text{m}^3$ (operation)<br>1.0 $\mu\text{g}/\text{m}^3$  |                  |
| <b>PM<sub>2.5</sub></b><br>24-hour average   | 10.4 $\mu\text{g}/\text{m}^3$ (construction) & 2.5 $\mu\text{g}/\text{m}^3$ (operation)  |                  |
| <b>SO<sub>2</sub></b><br>1-hour average<br>24-hour average   | 0.25 ppm (state) & 0.075 ppm (federal – 99 <sup>th</sup> percentile)<br>0.04 ppm (State)   |                  |
| <b>Sulfate</b><br>(24-hour average)  | 25 $\mu\text{g}/\text{m}^3$ (State)  |                  |
| <b>CO</b><br>1-hour average<br>8-hour average  | SCAQMD is in attainment; a project is significant if it causes or contributes to an exceedance of the following ambient standards:<br>20 ppm (state) and 35 ppm (federal)<br>9.0 ppm (State/federal)   |                  |
| <b>Lead</b><br>30-day average<br>rolling 3-month average<br>quarterly average  | 1.5 $\mu\text{g}/\text{m}^3$ (State)<br>0.15 $\mu\text{g}/\text{m}^3$ (federal)<br>1.5 $\mu\text{g}/\text{m}^3$ (federal)  |                  |
| PM <sub>10</sub> = particulate matter less than 10 microns in size, $\mu\text{g}/\text{m}^3$ = microgram per cubic meter; ppm = parts per million; TAC = toxic air contaminant; AHM = Acutely Hazardous Material; NO <sub>2</sub> = Nitrogen Oxide, CO = Carbon Monoxide, VOC = Volatile Organic Compounds, SO <sub>x</sub> = Sulfur Oxide; SO <sub>2</sub> = Sulfur Dioxide. Lbs = pounds.<br>Source: SCAQMD; data obtained April 2014. |  |                  |

**Environmental Setting and Impacts**

***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project on air quality.

The 1998 MND did not identify a potentially significant adverse impact relative to air quality for the checklist items; however, mitigation was identified (Mitigation Measures #2 and #3 in the 1998 MND). In accordance with the 1998 MND, this mitigation has been implemented to date. The 1998 mitigation measures will continue to be implemented.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**III.a).** The SHWU is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the SCAQMD. The SCAQMD is the air pollution control agency primarily responsible for preparing the Air Quality Management Plan (AQMP), which is a comprehensive air pollution control program for making progress towards and attaining the State and federal ambient air quality standards. The most recent AQMP was adopted by the Governing Board of the SCAQMD on December 7, 2012 (2012 AQMP). An inventory of existing emissions from industrial facilities is included in the baseline inventory in the 2012 AQMP, as well as projections of the future emissions which are based on source category growth factors provided by the Southern California Association of Government (SCAG). The 2012 AQMP also identifies

emission reductions from existing sources and air pollution control measures that are necessary in order to comply with applicable State and federal ambient air quality standards. A significant impact would occur if the proposed project were not consistent with the AQMP.

The 2012 AQMP demonstrates that applicable ambient air quality standards can be achieved within the timeframes required under federal law. The proposed project must comply with applicable SCAQMD rules and regulations for new or modified sources or the necessary air quality permits to implement the project will not be issued. For example, new emission sources associated with the proposed project are required to comply with the SCAQMD's Regulation XIII - New Source Review, including Best Available Control Technology (BACT), offsets, and modeling requirements, as applicable. The proposed project must also comply with prohibitory rules, as applicable, such as Rule 403, for the control of fugitive dust. By meeting these requirements, the proposed project will be consistent with the goals and objectives of the 2012 AQMP to improve air quality in the Basin. Compliance with State and federal sulfur limits on diesel fuel, including the use of ultra-low sulfur diesel fuel as a control measure under the 2012 AQMP, is also required. As described in the following discussion, the proposed project is not expected to generate significant adverse air quality impacts. For these reasons, the proposed project is concluded to be consistent with applicable AQMPs and is not expected to diminish an existing air quality rule or a future compliance requirement.

The Growth Management Chapter (GMC) of the Regional Comprehensive Plan and Guide (RCPG) forms the basis of the land use and transportation control measure portions of the AQMP. Projects that are consistent with the projections of the employment and population forecasts identified in the GMC are considered consistent with the 2012 AQMP growth projections.

A limited number of construction workers will be required during project construction; however, these workers will be temporary workers who will be supplied by the existing local labor pool. The number of vendors that travel to and from work at the facility is not expected to change upon completion of the proposed project. No new employees will be required at the facility for operation as the result of the proposed modifications. Therefore, the proposed project will also be consistent with the 2012 AQMP population and employment forecasts.

The proposed project would serve existing and intended land uses and would be consistent with the goals and policies of the 2012 AQMP. The project would not substantially affect regional employment or job growth. Existing uses on and surrounding the project site would not be changed by the proposed project. The proposed project will not conflict with the AQMP or the other applicable plans described above. As a result, it is concluded that the proposed project is consistent with the AQMP, and therefore, is expected to result in a less than significant impact with regard to the applicable air quality plan.



|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact        | No Impact                |
|--|--------------------------------|---------------------------------------|-------------------------------------|--------------------------|
| Would the project:   |                                |                                       |                                     |                          |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**III.b).** The proposed project area is located in and is part of the Basin, which currently exceeds and is in violation of the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS), specifically with respect to ozone (O<sub>3</sub>) (8-hour standard) and fine particulates (PM<sub>2.5</sub>) (24-hour standard).

There are several monitoring stations located in Long Beach which include: Hudson Monitoring Station located at 2425 Webster Avenue in Long Beach at the Hudson School Building Services Facility, which is approximately 2.65 miles west/southwest of the gas plant; and, Edison Monitoring Station located at 625 Maine Avenue, at the Edison Elementary School, approximately 2.84 miles southwest of the gas plant.<sup>1, 2</sup> Both stations are also within the vicinity of I-710.

To assess the impacts of project-related construction and operational emissions, the SCAQMD has established regional significance thresholds that are shown above in [Table III-1](#). Construction and operational emissions from the proposed project that are below these thresholds will be considered less than significant.

To assess local air quality impacts, the SCAQMD has also established emission thresholds for one-hour average (NO<sub>2</sub>, CO, SO<sub>2</sub>), eight-hour average (CO), 24-hour average (PM<sub>2.5</sub>, PM<sub>10</sub>, and SO<sub>2</sub>), and annual average (NO<sub>2</sub>, PM<sub>10</sub>, SO<sub>2</sub>) emissions. Project emissions are compared to concentration standards (i.e., background plus incremental) for pollutants for which the Basin is in attainment (i.e., NO<sub>2</sub>, CO) and to incremental standards (i.e., incremental increase) for pollutants for which the Basin is in non-attainment (i.e., PM<sub>10</sub> and PM<sub>2.5</sub>).

The only emissions of criteria pollutants associated with operation of the proposed project are fugitive emissions from component leaks. Incremental criteria emissions from fugitive components (i.e., the net increase in fugitive components) were determined in accordance with methodology prescribed by the SCAQMD for oil and gas production facilities. This methodology utilizes Rule 1173 screening data from the prior eight calendar quarters to calculate site-specific emission factors by component category (i.e., the highest weighted average leaking / non-leaking factor in any one quarter). These factors are then multiplied by a factor of 1.2 and by the incremental component counts associated with the proposed project to determine incremental fugitive emissions by permit unit. Representative gas analytical data for the facility was used to convert the incremental fugitive emissions from TOG to VOC. Rule 1173 screening data and gas analytical data associated with the gas processing plant portion of the SHWU Facility were used.

<sup>1</sup> SCAQMD. Long Beach Monitoring Stations. Available at: <http://www.aqmd.gov/home/library/air-quality-data-studies/air-quality-monitoring-studies/rule-1158>. Accessed September 23, 2014.

<sup>2</sup> SCAQMD, Monitoring Network Plan. Available at: <http://www.aqmd.gov/home/library/clean-air-plans/monitoring-network-plan>. Accessed November 21, 2014.

Additional details are included in Appendix 3 and Appendix 8 of [Appendix B, SCAQMD Permit Application \(February 2014\)](#), of this Draft Subsequent MND.

### ***Construction Emissions and Analyses***

Construction typically occurs in general phases including demolition, site preparation, construction of structures, and final site work. Specific construction activities required to implement the proposed project include: excavation, concrete work, erection, and replacement/installation of the individual pieces of equipment, as shown in [Table III-2, Daily Project Activity and Emissions – Demolition and Construction](#), below. Each task will require the operation of onsite equipment (e.g., rubber-tired backhoes), and vehicles to transport workers or for deliveries. All proposed project improvements will be completed on a paved surface within the existing boundaries of the gas plant facility; refer to [Figure 3A, Site Plan – CUP Site No. 2 \(as Analyzed in 1998 MND\)](#). Initial excavation activities for the project will be undertaken using rubber-tired backhoes.

**Table III-2. Daily Project Activity and Emissions – Demolition and Construction**

| Schedule | Task                       | Backhoe | Diesel (gal) | Dump Truck           | Diesel (Gal) | Concrete Truck      | Diesel (Gal) | Truck | Gas (Gal) | Crane      | Diesel (Gal) | CO, lbs      | VOC, lbs      | NO <sub>x</sub> , lbs | SO <sub>x</sub> , lbs | PM <sub>10</sub> , lbs |
|----------|----------------------------|---------|--------------|----------------------|--------------|---------------------|--------------|-------|-----------|------------|--------------|--------------|---------------|-----------------------|-----------------------|------------------------|
| Day 1    | Demo LTS Area              | 8 hours | 10           | 4 Trucks<br>2 miles  | 6            |                     |              | 20 mi | 2         |            |              | <b>5.955</b> | 1.657         | <b>10.550</b>         | <b>1.502</b>          | 0.792                  |
| Day 2    | Demo LTS Area              | 8 Hours | 10           | 4 Trucks<br>2 miles  | 6            |                     |              | 20 mi | 2         |            |              | <b>5.955</b> | 1.657         | <b>10.550</b>         | <b>1.502</b>          | 0.792                  |
| Day 3    | Form Foundations           |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 4    | Form Foundations           |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 5    | Pour Foundations           |         |              |                      |              | 3 Hours,<br>2 Miles | 6            | 20 mi | 2         |            |              | 1.474        | 0.138         | 3.577                 | 0.001                 | 0.246                  |
| Day 6    | Deliver Rebar              |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 7    | Deliver Piping             |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 8    | Hand trench and Set piping |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 13   | Hand trench and Set piping |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 14   | Set rebar                  |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 15   | Pour Slab                  |         |              |                      |              | 8 Hours,<br>8 miles | 16           | 20 mi | 2         |            |              | 3.505        | 0.206         | 7.881                 | 0.002                 | 0.648                  |
| Day 16   | Cure Slab                  |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 21   | Cure Slab                  |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 22   | Set Skid                   |         |              |                      |              |                     |              | 20 mi | 2         | 4<br>Hours | 12.8         | 2.539        | 6.817         | 7.115                 | 0.012                 | 2.753                  |
| Day 23   | Convert Equipment          |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 36   | Convert Equipment          |         |              |                      |              |                     |              | 20 mi | 2         |            |              | 0.255        | 0.097         | 0.995                 | 0.001                 | 0.033                  |
| Day 37   | Remove Old LTS Skid        |         |              |                      |              |                     |              | 20 mi | 2         | 6<br>Hours | 19.2         | 3.681        | <b>10.105</b> | 10.175                | 0.017                 | <b>4.113</b>           |
| Day 38   | Demo Skid Area             | 8 hrs   | 10           | 4 trucks,<br>2 miles | 6            |                     |              | 20 mi | 2         |            |              | <b>5.955</b> | 1.657         | <b>10.550</b>         | <b>1.502</b>          | 0.792                  |
| Day 39   | Form Foundations           | 2 hrs   | 2.25         | 1 Truck 1<br>mile    | 2            |                     |              | 20 mi | 2         |            |              | 0.763        | 0.518         | 3.405                 | 0.003                 | 1.490                  |
| Day 40   | Pour Foundations           |         |              |                      |              | 2 Hours,<br>2 miles | 4            | 20 mi | 2         |            |              | 1.067        | 0.124         | 2.716                 | 0.001                 | 0.067                  |

Table III-2, continued

| Schedule                    | Task                      | Backhoe       | Diesel (gal) | Dump Truck                                    | Diesel (Gal) | Concrete Truck   | Diesel (Gal) | Truck | Gas (Gal) | Crane   | Diesel (Gal) | CO, lbs    | VOC, lbs    | NO <sub>x</sub> , lbs | SO <sub>x</sub> , lbs | PM <sub>10</sub> , lbs |
|-----------------------------|---------------------------|---------------|--------------|---|--------------|------------------|--------------|-------|-----------|---------|--------------|------------|-------------|-----------------------|-----------------------|------------------------|
| Day 41                      | Hand trench, Set Plumbing |               |              |   |              |                  |              | 20 mi | 2         |         |              | 0.255      | 0.097       | 0.995                 | 0.001                 | 0.033                  |
| Day 43                      | Hand Trench, Set Plumbing |               |              |   |              |                  |              | 20 mi | 2         |         |              | 0.255      | 0.097       | 0.995                 | 0.001                 | 0.033                  |
| Day 44                      | Pour Slab                 |               |              |   |              | 4 hours, 4 miles | 8            | 20 mi | 2         |         |              | 1.880      | 0.151       | 4.438                 | 0.001                 | 0.341                  |
| Day 45                      | Cure Slab                 |               |              |   |              |                  |              | 20 mi | 2         |         |              | 0.255      | 0.097       | 0.995                 | 0.001                 | 0.033                  |
| Day 50                      | Cure Slab                 |               |              |   |              |                  |              | 20 mi | 2         |         |              | 0.255      | 0.097       | 0.995                 | 0.001                 | 0.033                  |
| Day 51                      | Set Skid                  |               |              |   |              |                  |              | 20 mi | 2         | 4 hours | 12.8         | 2.539      | 6.817       | 7.115                 | 0.012                 | 2.753                  |
| Day 52                      | Connect Equipment         |               |              |   |              |                  |              | 20 mi | 2         |         |              | 0.255      | 0.097       | 0.995                 | 0.001                 | 0.033                  |
| Day 61                      | Connect Equipment         |               |              |   |              |                  |              | 20 mi | 2         |         |              | 0.255      | 0.097       | 0.995                 | 0.001                 | 0.033                  |
| Total                       |                           |               | 32.25        |   | 20           |                  | 34           |       | 118       |         | 44.8         |            |             |                       |                       |                        |
| <b>Total Gasoline, gals</b> |                           | <b>118.00</b> |              | <b>Project Max Day, lbs</b>                   |              |                  |              |       |           |         |              | <b>6.0</b> | <b>10.1</b> | <b>10.6</b>           | <b>1.5</b>            | <b>4.1</b>             |
| <b>Total Diesel, gals</b>   |                           | <b>131.05</b> |              | <b>SCAQMD Significance Threshold, lbs/day</b> |              |                  |              |       |           |         |              | <b>550</b> | <b>75</b>   | <b>100</b>            | <b>150</b>            | <b>150</b>             |
|                             |                           |               |              | <b>Significant?</b>                           |              |                  |              |       |           |         |              | <b>No</b>  | <b>No</b>   | <b>No</b>             | <b>No</b>             | <b>No</b>              |

NOTES:  
 1) Fuel consumption rates and emission factors [EMFAC, 2011, e.g.: EMFAC-PL uses the combined outputs from the two models (EMFAC-LDV and EMFAC-HD) at the most detailed level (e.g. EMFAC "Burden" output level) disaggregated by Speed (5-MPH increments) as the base inventory. Running Exhaust Emission Rate<sub>vc, Speed</sub> (g/mile) = [Default Running Exhaust Emissions<sub>vc, Speed</sub>] / [Default Total VMT<sub>vc, Speed</sub>] are from the California Emissions Estimator Model (CalEEMod) version 2013.2.2 or, when not available in CalEEMod, from the manufacturer's specifications.  
 2) Cement batch plant to be used is one mile from the project site; disposal site for the asphalt and soil is 1/2 mile from the project site.  
 3) Small truck traffic of 20 miles per day is for incidentals. Except for the concrete contractor and a crane operator, demolition and construction workers are part of the normal on-site labor force.  
 Source: SHP, 2014.

Project construction-related activities will occur in one phase, commencing with the removal of onsite asphalt and excavation of small amount of soil beneath the asphalt. Two adjacent locations will be subject to construction activities, as described below:

1. On the larger site, the impacted surface area will be approximately 1,400 s.f., or 20 feet by 70 feet. This area sits within the current Drill Site #2, which is completely paved. Asphalt will be removed from the entire 1,400 s.f. area. A three-foot wide concrete containment wall will be built on the perimeter of the 1,400 s.f. rectangular area. Within the center of the rectangle, a 924 s.f. area, 14 feet by 66 feet, will be excavated to a depth of five feet, and filled in with concrete. This area will act as a skid pad for the new compression train that is the subject of the SCAQMD permit; and,
2. The smaller site will be located just southwest of the larger pad and will be 10 foot by 35 feet. The existing asphalt will be removed and the site excavated to a depth of five feet. The excavation will be filled with concrete and will serve as a skid pad for the CO<sub>2</sub> membrane filter.

During construction of the original gas plant and turbine, these soils were previously excavated to a depth of seven feet, and re-compacted with clean fill. During the proposed excavation on the two sites described above, the soils will be monitored under the conditions required by the *Various Locations Rule 1166 Contaminated Soil Mitigation Plan*. This Mitigation Plan was approved by the AQMD and is actively renewed on an annual basis.

If soil is contaminated with VOC (including TACs that are VOC), the Mitigation Plan will require that VOC emissions from the contaminated soil be controlled. Because demolition is expected to last only a few days, and a SCAQMD Rule 1166 VOC Contaminated Soil Mitigation Plan will be required to be followed if VOC contaminated soil is found, significant adverse impacts from VOC TAC emissions associated with any contaminated soils are not expected.

If contaminated soils are encountered, those soils will be isolated, stockpiled, and taken to a Waste Management Thermal Remediation site for disposal. Clean soils will be taken to the Signal Hill Petroleum soil stockpile site at Willow Street and Walnut Avenue in Signal Hill, less than one mile from the site. Further, all asphalt removed from the site will be taken to the Blue Diamond Recycling Facility located at California Avenue and Spring Street in the City of Signal Hill, less than one mile from the site. All project excavation and removal will be accomplished with a rubber-tired backhoe and loaded into trucks for removal from the site. A crane will be brought in to set the skids, download and install the prefabricated equipment onto the skids, and remove one redundant skid. All work will be performed on a paved facility, connected to paved public streets.

Construction emissions will be generated from the combustion of fuel (primarily diesel) by equipment and/or vehicle use required for project construction activities, as well as from fugitive dust due to soil-disturbing activities. As described above, minimal excavation is anticipated for construction of the required foundations; refer to [Figure 4A, Project Disturbance](#). The construction activities will be conducted during distinct time periods and will disturb approximately five percent of one acre of land within the SHWU Facility. Actual construction will generally take place in the area of the existing gas processing plant. During construction of

the proposed project, a limited number of commute trips and hauling truck trips to the facility will occur; refer to [Table III-2, Project-related Peak Daily Construction and Operational Emissions](#).

Including time for curing of the concrete, the entire construction period is estimated to be 61 days. Construction is expected to occur intermittently over the 61-day period. When construction is occurring, work is expected to typically occur ten hours per day (anticipated time of use for each specific activity and the resultant exhaust emissions generated by project demolition and construction are provided in Table III-2). The proposed construction schedule in [Table III-2](#) forms the basis for calculating emissions from construction of the proposed project. The dates of the schedule may change, but the timeline of the scheduled activities for each phase, i.e., number of days, would remain consistent. Also, the current analysis is conservative because emission factors typically decrease over time as equipment efficiency improves. Thus, if construction of the project is delayed for any reason, none of the environmental impacts conclusions in the analysis would change or worsen. For example, a conclusion of less than significant impacts from the construction phase of the project would remain less than significant even if the actual dates of the construction schedule are delayed.

Peak daily construction emissions are shown in [Table III-3, Project-related Peak Daily Construction and Operational Emissions](#). As shown, construction emissions for the project will be less than the SCAQMD’s construction air quality significance thresholds. Thus, construction of the proposed project is expected to result in less than significant air quality impacts, and no mitigation is required.

**Table III-3. Project-related Peak Daily Construction and Operational Emissions**

| Parameter  | SCAQMD CEQA Threshold | Localized Significance Threshold <sup>1,2</sup> | Actual Project Impact | Comments   |
|--|-----------------------|---|-----------------------|--|
| <b>Demolition / Construction Emissions</b>                         |                       |   |                       |  |
| NO <sub>x</sub> , lbs/day  | 100                   | 55  | 10.6                  | <ul style="list-style-type: none"> <li>▪ 61 day project duration, see separate detail</li> <li>▪ Lbs/day is maximum day for each pollutant</li> <li>▪ PM<sub>2.5</sub> assumed equal to PM<sub>10</sub></li> </ul> |
| VOC, lbs/day   | 75                    | N/A   | 10.1                  |  |
| PM <sub>10</sub> , lbs/day   | 150                   | 29  | 4.1                   |  |
| PM <sub>2.5</sub> , lbs/day  | 55                    | 10  | 4.1                   |  |
| SO <sub>x</sub> , lbs/day  | 150                   | N/A   | 1.5                   |  |
| CO, lbs/day  | 550                   | 1,180   | 6.0                   |  |
| Lead, lbs/day  | 3                     | N/A   | 0                     |  |
| <b>Operational Emissions</b>                                       |                       |   |                       |  |
| NO <sub>x</sub> , lbs/day  | 55                    | 55  | 0                     | <ul style="list-style-type: none"> <li>▪ Fugitive emissions only, see application package for details (Appendix B)</li> </ul>  |
| VOC, lbs/day   | 55                    | N/A   | 18                    |  |
| PM <sub>10</sub> , lbs/day   | 150                   | 7   | 0                     |  |
| PM <sub>2.5</sub> , lbs/day  | 55                    | 3   | 0                     |  |
| SO <sub>x</sub> , lbs/day  | 150                   | N/A   | 0                     |  |
| CO, lbs/day  | 550                   | 1,180   | 0                     |  |
| Lead, lbs/day  | 3                     |   | 0                     |  |
| <b>Demolition, Construction and Operational Emissions Combined</b> |                       |   |                       |  |
| GHG, MT/yr<br>CO <sub>2</sub> eq                                   | 10,000                | N/A   | 2,875                 | Demo/Constr (2/30) + Fugitives (70) + CO <sub>2</sub> Removal (2,805)  |

Table III-3, continued

| Parameter   | SCAQMD CEQA Threshold | Localized Significance Threshold <sup>1,2</sup> | Actual Project Impact   | Comments   |
|---|-----------------------|---|-------------------------|--|
| <b>Toxic Air Contaminants from Operational Emissions<br/>(NOTE: Does not include construction emissions).</b> |                       |   |                         |  |
| MICR  | $1 \times 10^{-6}$    | N/A   | $0.0255 \times 10^{-6}$ | Nearest Off Site Worker (Office Building @100m)        |
| Cancer Burden   | 0.5                   | N/A   | N/A                     | MICR is $< 1 \times 10^{-6}$                           |
| Chronic Hazard Index  | 1.0                   | N/A   | $9.85 \times 10^{-5}$   | Nearest Off Site Worker (Office Building @100m)        |
| Acute Hazard Index  | 1.0                   | N/A   | $2.07 \times 10^{-4}$   | Nearest Acute Exposure (Public Street @25m)            |
| <b>Odor</b>   |                       |   |                         |  |
| Odors During Construction   | Rule 402 Nuisance     | N/A   | None Expected           | Minor construction, Rule 1166 Plan for excavated soils |
| Odors During Operations   | Rule 402 Nuisance     | N/A   | None Expected           | Fugitive emissions subject to Rule 1173 I&M program    |

Source: SHP, 2014.

1. Localized Significance Thresholds are identified for Source Area Receptor 4 (South Coastal Los Angeles County). The thresholds assume a one-acre or smaller site with sensitive receptors located within 100 meters.

2. Localized Significance Thresholds apply to onsite emissions and not mobile sources.

### ***Operational Emissions and Analyses***

The modifications proposed with the project do not include the addition of any combustion equipment. As shown in [Table III-3](#), the proposed project would not result in any operational emissions with exception of VOCs. As shown in the table, VOCs generated by daily operation of the project will be less than the SCAQMD's threshold. Therefore, the project will not generate emissions during the operational phase that will result in a significant impact with regard to air quality; refer also to [Appendix B, SCAQMD Permit Application \(February 2014\)](#), for additional data.

The proposed project will be subject to the requirements of Rule 1303(a) and (b) which define three requirements - BACT, modeling, and offsets for permitting actions that result in an increase of emissions of non-attainment air contaminants (i.e., VOC, NO<sub>x</sub> and PM<sub>10</sub>), ozone depleting compounds, or ammonia. As shown in Appendix 3 of [Appendix B, SCAQMD Permit Application \(February 2014\)](#), there will be an increase in emissions of VOC from the existing vapor recovery and natural gas dehydration systems and from the proposed CO<sub>2</sub> filtration system. Thus, the proposed project is subject to the requirements of Rule 1303(a) and (b).

BACT is required if the increase in emissions of any non-attainment air contaminant, ozone depleting compound, or ammonia is greater than one pound per day. As shown in [Table III-3](#), the increase of VOC emissions relative to the proposed project (all of which will be fugitive emissions from potential equipment leaks) would exceed the one pound per day threshold. The fugitive components of the proposed project will satisfy SCAQMD BACT by complying with the requirements of Rule 1173, 40 CPR 60 Subpart 0000, and SCAQMD's Part D (non-major source) BACT guideline for "Fugitive Emission Sources at Natural Gas Plants and Oil and Gas Production Fields" which provides specific measures for equipment operation; refer to [Appendix B, SCAQMD Permit Application \(February 2014\)](#), for additional details.

Modeling (or screening per Appendix A of Rule 1303) is required to demonstrate an emission increase will not cause a violation of any State or national ambient air quality standards at any receptor location in the SCAQMD; however, per Rule 1303, Appendix A, modeling is not required for VOC. Therefore, no modeling is required for the proposed project.

Further, per Rule 1303(b)(2), unless exempt, offsets are required at a ratio of 1.2:1 for any unit for which there is an increase of 0.50 pounds per day or more in emissions of any non-attainment air contaminant. The increased VOC emissions from the project are not exempt from offset requirements. Thus, SHP will be required to offset such emissions at a ratio of 1.2:1 (or 18 lbs per day x 1.2 = 22 lbs/day). SHP will provide the required offsets upon notification from the SCAQMD.

Additionally, 40 CFR 60 Subpart 0000 establishes emission standards for the control of VOC and SO<sub>2</sub> emissions from "affected facilities" that commence construction, modification, or reconstruction after August 23, 2011. "Affected facilities" include sweetening units (e.g. the CO<sub>2</sub> filtration system) and fugitive components, among others listed, both of which will be a part of the proposed project. Because the acid gas removed by the sweetening unit will not be released into the atmosphere (it will be combined with fuel gas consumed in the existing combustion turbine), the sweetening unit is exempt from the requirements of the regulation (40 CFR 60.5365(g)(4)). Therefore, the only equipment-specific requirements of this regulation applicable to the proposed project are the portions applicable to fugitive components. Specifically, the applicable portions are found at 40 CFR 60.5400. In general, 40 CFR 60.5400 requires that fugitive components comply with the requirements of 40 CFR Part 60 Subpart VV a (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry); however, 40 CFR 60.5401(c) and (d) provide exemptions from some of these requirements that are applicable to this project. 40 CFR 60.5401(c) provides an exemption for "sampling connection systems," and 40 CFR 60.5401(d) provides an exemption for (1) pumps in light liquid service, (2) valves in gas-vapor service, and (3) PRD's in gas-vapor service when such equipment is located at a non-fractionating gas plant with throughput less than 10 mmscf<sup>2</sup> per day. Taking into account these exemptions, the applicable requirements of 40 CFR 60.5400 to the proposed project are summarized in [Appendix B, SCAQMD Permit Application \(February 2014\)](#). Details of the air quality operational analysis are available in [Appendix B, SCAQMD Permit Application \(February 2014\)](#).

Therefore, operation of the proposed project will result in less than significant air quality impacts, and no additional mitigation measures are required.

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<sup>2</sup> mscf stands for one thousand standard cubic feet; mmscf is 1,000 mscf, or 1 million cubic feet.



|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact        | No Impact                |
|--|--------------------------------|---------------------------------------|-------------------------------------|--------------------------|
| Would the project:   |                                |                                       |                                     |                          |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**III.c).** Significant adverse cumulative air quality impacts could occur if the proposed project resulted in a cumulatively considerable net increase of a criteria pollutant for which the Basin exceeds federal and State ambient air quality standards and has been designated as an area of non-attainment by the USEPA and/or the California Air Resources Board (CARB). The Basin is a non-attainment area for O<sub>3</sub> and fine particulate matter (PM<sub>10</sub><sup>3</sup> and PM<sub>2.5</sub>).

“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probable future projects. The Basin is currently in non-attainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, and related projects could exceed the applicable air quality standard or contribute to an existing or projected air quality exceedance when considered in combination with the effects of the proposed project. Therefore, this analysis assumes that individual projects that generate construction or operational emissions that exceed the SCAQMD’s recommended daily thresholds for project-specific impacts would also cause a cumulatively considerable increase in emissions for those pollutants for which the Basin is in non-attainment and, therefore, are considered to have significant adverse cumulative air quality impacts.

As discussed above, peak daily emissions associated with all phases of construction and operation of the proposed project will not generate operational or construction emission air quality impacts that exceed the SCAQMD’s regional significance thresholds. In addition, the proposed project will be located in a portion of the SHWU Facility, where other industrial facilities in the immediate vicinity are also located. Because emissions during any phase of the proposed project do not exceed the project-specific significance thresholds, they are not considered to be cumulatively considerable pursuant to CEQA Guidelines §15064(h)(1).

The SCAQMD guidance on addressing cumulative impacts for air quality is as follows. “As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR.” “Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative

<sup>3</sup> The US EPA recently proposed to find the Basin in attainment for the federal PM<sub>10</sub> standard; however, the Basin still exceeds the state PM<sub>10</sub> standard.

significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.”<sup>4</sup>

This approach was upheld by the Court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District’s established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, “The Lead Agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect.” The court found that, “Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria...” “Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact.” As in *Chula Vista*, here the District has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established South Coast Air Quality Management District significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. Here again, the court upheld the SCAQMD’s approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, it may be concluded that the Project will not cause a significant unavoidable cumulative contribution to an air quality impact.

Based on the foregoing analysis, project-specific air quality impacts from implementing the proposed project would not exceed air quality significance thresholds (Table III-1); therefore, based on the above discussion, cumulative impacts are not expected to be significant for air quality. Therefore, potential adverse impacts from the proposed project would not be "cumulatively considerable" as defined by CEQA Guidelines §15064(h)(1) for air quality impacts. Per CEQA Guidelines §15064(h)(4), the mere existing of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulative considerable.

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<sup>4</sup> SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3, <http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf?sfvrsn=4>.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact        | No Impact                |
|--|--------------------------------|---------------------------------------|-------------------------------------|--------------------------|
| Would the project:   |                                |                                       |                                     |                          |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**III.d).** This subsection evaluates whether or not the proposed project has the potential to expose sensitive receptors to substantial pollutant concentrations. The following are typically considered to be sensitive receptors: long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, child care centers, and athletic facilities. As indicated in Chapter 1, the area surrounding the site is highly developed with several uses. The nearest sensitive receptor (school/daycare) to the SHWU Facility is located approximately 0.33 mile to the north of the site; refer to [Figure 1B, Local Vicinity Map](#).

**Criteria Pollutant Health Impacts**

Construction and operation activities have the potential to generate an increase in criteria pollutants (e.g., CO, NO<sub>x</sub>, SO<sub>x</sub> and PM). Localized significance thresholds (LSTs) for NO<sub>x</sub> and CO are based on causing or exceeding health-based air quality ambient concentration standards. The PM<sub>10</sub> LST for construction is based on requirements of Rule 403, which is indirectly a health-based standard, and for operation the PM<sub>10</sub> LST is based on Rule 1303, which applies limits less than Rule 403 concentration limits. Therefore, the PM<sub>10</sub> LST provides greater health-based protection.

The degree of a health effect depends on the level of exposure, duration of exposure, and the existing health of those exposed. For example, individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. Inhaled, CO has no direct toxic effect on the lungs, but instead exerts its effect on tissues by interfering with oxygen transport through competition with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO<sub>2</sub> at levels found in homes with gas stoves. These levels are higher than ambient levels found in southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO<sub>2</sub> in healthy subjects. Larger decreases in lung functions are observed more in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups. More recent studies have found associations between NO<sub>2</sub> exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms, and emergency room asthma visits.

All asthmatics are sensitive to the effects of SO<sub>2</sub>. Exposure of a few minutes to low levels of SO<sub>2</sub> can result in airway constriction in some asthmatics. Further, increased resistance to air flow, as well as reduced breathing capacity leading to severe breathing difficulties, can be observed after high acute exposure to SO<sub>2</sub>. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO<sub>2</sub>.

There is a consistent correlation between elevated ambient fine particulate matter levels and an increase in mortality rates, respiratory infections, and the number and severity of asthma attacks. Studies have reported an association between long term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and, specifically, an increased mortality from lung cancer.

### ***Discussion of CARB's PM Mortality Quantification Methodologies***

While CARB (2008) has reported that it plans to develop a method for quantifying premature deaths from specific sources affecting limited geographic areas, it has not yet developed an approved approach which could be applied to small projects such as the proposed project. As noted in [Table III-3](#), the proposed project's PM<sub>2.5</sub> emissions are below emission standards set by the SCAQMD.

The analysis of the proposed project demonstrates that: 1) the criteria pollutant emissions from the proposed project are still below the LSTs or do not cause or contribute to an exceedance of any ambient air quality standard; and, 2) potential adverse health impacts associated with construction or operational emissions are still expected to be less than significant because the emissions are below a level at which health effects could occur (per LST thresholds which are based upon NAAQS standards). Therefore, the public will not be adversely affected by adverse health effects as a result of the proposed project. Thus, health impacts associated with the construction and operational emissions from the proposed project are determined to still be less than significant.

### **Toxic Air Contaminants (TAC) Analysis**

The proposed project has the potential to generate emissions that are carcinogenic or may have non-cancer health effects, depending on concentration levels and the duration of exposure. TAC emissions are generated from fugitive emissions from all potential leak points such as valves, flanges, and similar connector items. Numerous federal, State, and local regulatory agencies have developed lists of TACs and their risk characteristics. The risk characteristics of the TACs that may be generated by the proposed project are identified in the SCAQMD's Risk Assessment Procedures for Rules 1401 and 212, Appendix L (SCAQMD, 2005).

The health risks associated with increased TAC emission from the proposed project were determined for each permit unit in accordance with the SCAQMD's "Risk Assessment for Rules 1401 and 212, Version 7.0, July 1, 2005." Tier 3 analyses were used to demonstrate compliance with Rule 1401 for each permit unit. TAC emissions from operations were calculated for the proposed project when it becomes operational. A summary of the associated TAC emissions and detailed calculations are shown in Appendix 5 of [Appendix B, SCAQMD Permit Application \(February 2014\)](#), of this Draft Subsequent MND. Rule 212, Standards for Approving Permits

and Issuing Public Notice, requires notification of the public when the following occurs: 1) an increase in emissions of air contaminants from a new or modified permit that is located within 1,000 feet of a school; 2) an increase in emissions of air contaminants from a new or modified facility that exceeds threshold amounts stated in the rule; or, 3) an increase in emissions of toxic air contaminants from a new or modified permit unit that causes the incremental maximum individual cancer risk (MICR) to be greater than or equal to one in one million or causes the permit unit to create a potential risk of nuisance. The emissions increases associated with the project do not exceed the threshold amounts stated in the rule, and the MICR for each new or modified permit unit is less than one in one million. As the proposed project will not be located within 1,000 feet of a school (nearest school is Burroughs Elementary, located approximately 1,450 feet away), and the system is expected to operate in compliance with all applicable regulatory requirements, a risk of nuisance is not anticipated.

Rule 1401, New Source Review of Toxic Air Contaminants, rule requires the health risk associated with projects that result in increases of toxic air contaminants to meet specific requirements. Specifically, the incremental MICR for a permit unit must not exceed one in one million and the non-cancer chronic and acute hazard indices must not exceed a value of one. As stated above, health risk analyses were performed for the proposed project in accordance with the SCAQMD's "Risk Assessment Procedures for Rules 1401 and 212, Version 7.0, July I, 2005." The results of Tier 3 analyses indicate the requirements of the rule are satisfied. Copies of the (Tier I, Tier 2, and Tier 3) analyses are included in Appendix 5 of [Appendix B, SCAQMD Permit Application \(February 2014\)](#), of this Draft Subsequent MND.

Additionally, Rule 1402, Control of Toxic Air Contaminants from Existing Sources, requires facility-wide health risk assessments and risk reduction plans for facilities that exceed certain threshold levels of emissions and risk. The facility does not exceed any of these thresholds.

The proposed project will result in changes to emissions of TACs in a manner consistent with changes in criteria emissions. TAC emissions from fugitive components (i.e., the net increase in fugitive components) were determined using criteria fugitive emissions calculated as described above and TAC concentrations in the SHWU facility produced gas based on a recent representative sample. Details are included in Appendix 4 of [Appendix B, SCAQMD Permit Application \(February 2014\)](#), of this Draft Subsequent MND.

Additionally, if soil is contaminated with VOC (including TACs that are VOC), the facility owners/operators will be required to prepare a SCAQMD Rule 1166 VOC Contaminated Soil Mitigation Plan. The mitigation plan would require that VOC emissions from the contaminated soil be controlled. Because demolition is expected to last only a few days, and a SCAQMD Rule 1166 VOC Contaminated Soil Mitigation Plan will be required to be followed if VOC contaminated soil is found, significant adverse impacts from VOC TAC emissions associated with contaminated soil are not expected.

A health risk assessment (HRA) was prepared to quantify the incremental cancer and non-cancer health risks from operation of the proposed project. The maximum risk impacts from operation of the proposed project are shown in [Table III-3](#) in Section III, Air Quality. Risk impacts due to operation of the proposed project are less than the SCAQMD significance thresholds for cancer

risk for residential or worker receptors or for chronic or acute non-cancer hazard indices for residential or worker receptors. Thus, all health risk impacts potentially resulting with the proposed project will be less than significant, and no mitigation measures are required.

|   | <b>Potentially<br/>Significant<br/>Impact</b> | <b>Less Than<br/>Significant<br/>With<br/>Mitigation</b> | <b>Less Than<br/>Significant<br/>Impact</b> | <b>No Impact</b>         |
|---|---|--|---|--------------------------|
| Would the project:  |   |  |   |                          |
| e) Create objectionable odors affecting a substantial number of people? | <input type="checkbox"/>                      | <input type="checkbox"/>                                 | <input checked="" type="checkbox"/>         | <input type="checkbox"/> |

**III.e).** The 1998 MND concluded that odor impacts from the 1998 project would be less than significant. All existing stationary emissions sources that were already at the site or were part of the 1998 project are subject to SCAQMD rules and regulations. These existing rules, regulations, and permit conditions will continue to apply to both the 1998 project and the proposed project, as appropriate.

Construction activities associated with the proposed gas plant modifications may generate detectable odors from heavy-duty equipment exhaust immediately next to the equipment. This impact would be short-term in nature, and would not cause SCAQMD thresholds to be exceeded. No noticeable offsite effects with regard to odors are anticipated to occur. Compliance with recommended SCAQMD construction measures will ensure that potential impacts are reduced to a less than significant level.

Additionally, the SCAQMD accepts air quality complaint calls 24 hours a day. During business hours (i.e., 7:00 a.m. to 5:30 p.m., Tuesday through Friday), an attendant answers the call and directs the information accordingly. During non-business hours, an automated answering service forwards the call to a standby supervisor who takes appropriate action. If a public nuisance is expected based on the number of complaints received (i.e., Rule 402 – Nuisance), the SCAQMD will respond to the complaint with an immediate investigation. Rule 402 has the following requirement, “A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.”

The proposed project does not include any odor-emitting equipment such as new oil/gas tanks or tanks of any kind, or increases in daily oil production. Additionally, all gas plant equipment is connected to the vapor recovery system. As a result, no increase in odors related to oil/gas processing operations at the SHWU Facility where the proposed project site is located will occur, as compared to current conditions.

In addition, SCAQMD Rule 431.1 prohibits burning gaseous fuels with a sulfur content greater than 40 ppm, which serves to limit SO<sub>x</sub> emissions from stationary equipment. Affected facilities are subject to reporting of monthly gaseous fuel consumption and SO<sub>x</sub> emissions. No sources of

combustion are associated with the proposed project, and therefore, such requirements do not apply.

During construction, diesel emissions from construction equipment may be sources of odor. All construction activities required to implement the proposed project will not occur on the same day, thereby limiting the potential impacts of construction odors. In addition, odors associated with construction would be temporary and localized. The existing perimeter wall and vegetation (e.g. along Spring Street) may reduce the impacts of any potential odors outside of the facility by providing an impediment to dispersion of ground level odors.

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. During operation, potential sources of odor include: fugitive emissions, pressure relief devices, and other connections required for the proposed project; leaks from the new equipment; and, odorant for gas sales (as required by the U.S. Department of Transportation (DOT)). Total VOC emissions will be less than the regional VOC construction significance threshold, and therefore, odors associated with VOCs would be minimized; refer to [Appendix B, SCAQMD Permit Application \(February 2014\)](#). In addition, no new sources of combustion are associated with the proposed project. All existing combustion systems will be operated such that any odors associated with the proposed project will be reduced or eliminated. Project operations would also be subject to SCAQMD Rule 402 and would be prohibited from creating an odor nuisance. As a result, when gas is combusted, there will be only a minimal potential to generate odors.

Fugitive emissions are further regulated under existing inspection and maintenance programs required pursuant to SCAQMD Rules 1166 and 1176. Rule 1166 regulates VOC emissions from decontamination of soil during excavation. SHP currently complies with the requirements of this rule, and will continue to comply as it applies to the proposed modifications. Rule 1176 regulates VOC emissions from wastewater systems. Rule 1176 applies to wastewater systems and associated control equipment located at petroleum refineries, on-shore oil production fields, off-shore oil production platforms, chemical plants, and industrial facilities.

Based on the above, potential incremental odor impacts due to the proposed project compared to the baseline are anticipated to be less than significant.

### **Mitigation Measures**

Based on the above information relative to impacts relative to air quality, no significant adverse impacts were identified, and therefore, no mitigation measures are required for the construction or operation of the proposed project. The 1998 mitigation measures will continue to be implemented.

## **IV. BIOLOGICAL RESOURCES**

### **Significance Criteria**

The impacts on biological resources will be considered significant if any of the following criteria apply:

- The proposed project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, State, or local agencies.
- The proposed project interferes substantially with the movement of any resident or migratory wildlife species.
- The proposed project adversely affects aquatic communities through construction or operation of the project.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing facility included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project on biological resources.

The 1998 MND did not identify any potentially significant adverse impacts for any of the biological resources checklist items.



|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                              |                                     |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands, as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.), through direct removal, filling, hydrological interruption, or other means?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| d) Interfere substantially with the movement of any native resident, migratory fish, or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?   | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**IV.a), .b), .c), .d), .e), and .f).** The proposed project would be located entirely within the existing boundaries of the SHWU Facility, which has already been developed for oil and gas production uses. The site is located in a highly urbanized area within the City, and typical land uses are generally industrial or commercial in nature. There are no riparian habitats or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by the

California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS) onsite or on adjacent lands. Furthermore, no federally-protected wetlands as defined by §404 of the Clean Water Act (CWA), no areas of natural open space, and no areas of significant biological resource value on or in the vicinity of the site.

With exception of landscaping around the perimeter walls of the SHWU Facility, the operating areas within the facility walls have previously been cleared of vegetation for fire safety reasons. No candidate, sensitive, or special status species identified in local plans, policies, or regulations, or by the CDFW or the USFWS are found at the facility, as the facility area supports no habitat for such species. No conflicts with local, regional, or State conservation plans are expected, as no such plans are in place on or near the facility as indicated by the existing zoning onsite and in the surrounding area (GI - General Industrial). Therefore, no significant impacts on biological resources impacts will result with project implementation.

### **Mitigation Measures**

Based on the above information relative to impacts relative to biological resources, no significant adverse impacts were identified, and therefore, no mitigation measures are required for the construction or operation of the proposed project.

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## **V. CULTURAL RESOURCES**

### **Significance Criteria**

Impacts to cultural resources will be considered significant if:

- The proposed project results in the disturbance of a significant prehistoric or historic archaeological site, a property of historic or cultural significance to a community or an ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The proposed project would disturb human remains.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing facility included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration

equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect (if not already in place) during construction and operation of the proposed project in order to further avoid and/or reduce potential effects of the proposed project on cultural resources.

The 1998 MND did not identify any potentially significant adverse impacts for any of the cultural resources checklist items.

|  | <b>Potentially Significant Impact</b> | <b>Less Than Significant with Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|--|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:   |                                       |  |                                     |                                     |
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**V.a).** The existing gas natural gas processing facility was recently constructed at the SHWU Facility. As an industrial facility, no equipment or structures onsite are associated with California cultural heritage, associated with important persons of the past, or embody high artistic values, etc. (CEQA Guidelines §15054.5). The proposed project will require minor excavation/demolition activities to accommodate the modifications to the existing onsite equipment; refer to [Figure 4A, Project Disturbance](#). No equipment on the area of the site affected by the proposed modifications is older than 50 years old, and no historically significant structures are present. As a result, no structures of historic importance will be affected by the proposed project.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant with Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**V.b).** As stated above, the natural gas processing plant has been constructed on the site, subsequent to the City’s approval for CUP Sites No. 1-7 (97-03). The existing gas plant is located on a disturbed site with no apparent archaeological resources remaining. For this reason,

and the fact that no existing structures at the SHWU Facility are considered archaeologically or historically significant, implementing the proposed project will not adversely affect any archaeological resources.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant with Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**V.c).** For the same reasons discussed in items 5.a). and 5.b) above, no unique paleontological resources are apparent at the project site. No paleontological resources were specifically identified at the site in association with improvements resulting with the 1998 project. As there are no apparent paleontological resources located on the SHWU Facility site, minor ground-disturbing activities that may occur as a result of implementing the proposed project are not expected to generate significant adverse impacts on paleontological resources.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant with Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| d) Disturb any human remains, including those interred outside formal cemeteries? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**V.d).** As previously noted, the proposed project is located within the boundaries of the SHWU Facility site, which has been previously developed/disturbed. No known human remains or burial sites have been identified at the SHWU Facility during previous site disturbances or construction activities. As such, the proposed project is not expected to disturb any human remains. If cultural resources are encountered unexpectedly during ground disturbance associated with construction of the proposed project, the facility will use proper local and/or federal protocol (e.g. contacting professional archaeologists, temporarily halting disturbance work in the vicinity, etc.) to ensure that significant impacts to such resources do not occur.

### **Mitigation Measures**

Based on the above information relative to impacts relative to cultural resources, no significant adverse impacts were identified, and therefore, no mitigation measures are required for the construction or operation of the proposed project.

## **VI. ENERGY**

### **Significance Criteria**

The impacts to energy will be considered significant if any of the following criteria are met:

- The proposed project conflicts with adopted energy conservation plans or standards.
- The proposed project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The proposed project uses non-renewable resources in a wasteful and/or inefficient manner.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing facility included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project on energy resources.

The 1998 MND analyzed Energy and Minerals as one issue area, utilizing slightly different significance criteria than those identified above; however, the 1998 MND did not identify any potentially significant adverse impacts for any of the energy or mineral resources checklist items. Due to recent updates to the checklist, the discussion of mineral resources is discussed in greater detail in Section VIII, Mineral Resources, of this Draft Subsequent MND.

|   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:                                  |                                |                                       |                              |                                     |
| a) Conflict with adopted energy conservation plans? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**VI.a).** The proposed project is not expected to conflict with any adopted energy conservation plan because there is no known energy conservation plan that would apply. Additionally, the modifications proposed with the project are not expected to substantially increase the SHWU Facility’s energy demand, as explained in the following discussion.

|   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact        | No Impact                           |
|---|--------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|
| Would the project:  |                                |                                       |                                     |                                     |
| b) Result in the need for new or substantially altered power or natural gas utility systems?                      | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| c) Create any significant effects on local or regional energy supplies and on requirements for additional energy? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Create any significant effects on peak and base period demands for electricity and other forms of energy?      | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e) Comply with existing energy standards?   | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**VI.b), .c), .d), and .e).** As stated above, the proposed project will result in: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system.

The proposed equipment modifications are intended to improve efficiency at the gas processing plant. The equipment modifications, as specifically described in Chapter 1 of this document, will result in replacement of the existing natural gas dehydration (LTS) system (currently propane refrigeration/low temperature) with high-efficiency equipment to enhance onsite operations; refer also to Sections III, Air Quality, and Section VII, Greenhouse Gas Emissions, for related discussion.

Currently, the gas exiting the gas processing facility currently cannot be sold to an end user, primarily because of naturally occurring CO<sub>2</sub> in the gas (which is not removed by the existing

gas processing facility). Instead, a combustion turbine (Device D115) at the facility uses 100% of the processed gas as fuel to generate electricity for use within SHP's operations. The existing gas processing plant and the combustion turbine are currently operating near capacity. Thus, modifications to the existing gas processing plant are necessary to process (i.e., remove CO<sub>2</sub> from) the produced gas to meet specifications to sell excess gas that cannot be used as fuel in the combustion turbine. The proposed modifications will also enable the field gathering system to operate at a lower pressure. In addition, the proposed modifications will enable the gas plant to continue operating (at less than full capacity) even when the combustion turbine is out of service (e.g., for maintenance) because it will be possible to sell processed gas. This will improve the reliability of the gas plant as a vapor recovery/control system for SHP and third party oil wells and facilities.

Additionally, modifications made will enable SHP to deliver pipeline quality gas that will increase the supply of local natural gas into the City of Long Beach distribution system. Such resources will displace the need for gas currently transported to the area from long distances, ultimately reducing the energy used in the transport of such resources. As stated previously, SHP has received confirmation from the City of Long Beach Gas & Oil Department that it intends to enter into a Natural Gas Delivery Agreement for Locally Produced Gas (Agreement) with SHP for the delivery and purchase of locally-produced natural gas produced by SHP to supply a portion of the City's gas requirements. Under the agreement, the City will purchase all locally-produced gas delivered to the City by SHP, and such gas will displace an "equivalent of volume of far-away gas delivered to the City;" refer to Appendix C, [\*Commitment Letter from City of Long Beach Gas & Oil Department\*](#) (September 18, 2014).

Demand for electricity during the construction period is not expected to increase appreciably because most of the construction equipment will be powered by diesel fuel. Construction activities require a limited number of construction equipment and, due to onsite space limitations, small-scale equipment will be used. In addition, although construction will occur intermittently over a period of approximately two months, construction activities requiring electricity are few. As discussed in the Air Quality section, both diesel and gasoline are used to operate the construction equipment totaling 131 gallons of diesel and 118 gallons of gasoline (see Table III-2). According to the California Energy Commission, the total retail sales in Los Angeles County for year 2012 was 235 million gallons of diesel and 3,658 million gallons of gasoline. Thus, the proposed project will have a negligible effect on the fuel supply. The amount of diesel needed is 0.00006 percent ( $131/235 \text{ million} \times 100$ ) of the total diesel supply in the county where the project is located and 0.000003 percent ( $118/3,658 \text{ million} \times 100$ ) of the total gasoline supply in the county where the project is located. As a result, the total diesel and gasoline fuel that will be required for construction of the proposed project is considered to be minimal and does not represent a significant volume. Therefore, less than significant electricity or energy demand impacts are expected during the construction period.

Therefore, based on the above information, less than significant adverse energy demand impacts are anticipated with implementation of the proposed project.

## **Mitigation Measures**

Based on the above information relative to impacts relative to energy, no significant adverse impacts were identified, and therefore, no mitigation measures are required for the construction or operation of the proposed project.

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## **VII. GEOLOGY AND SOILS**

### **Significance Criteria**

The impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction, or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing facility included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project



(if not already in place) in order to further avoid and/or reduce potential effects of the proposed project with regard to geology and soils.

The 1998 MND identified potentially significant adverse impacts relative to seismic safety at the proposed gas processing plant for the geology and soil resources checklist items. Mitigation was identified (Mitigation Measure #1 in the 1998 MND) to require City review of all building plans to ensure compliance with the Uniform Building Code (UBC) and compliance with the City’s grading and paving standards. In accordance with the 1998 MND, this mitigation measure has been implemented to date. The 1998 mitigation measures will continue to be implemented.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact        | No Impact                           |
|--|--------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                                     |                                     |
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| ii) Strong seismic ground shaking?   | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| iii) Seismic-related ground failure, including liquefaction?   | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| iv) Landslides?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**VII.a).** Specifically with regard to the proposed project, the SHWU Facility is located in a seismically active region of southern California. Seismic events are a common occurrence in southern California, with northwesterly trending major earthquake faults dominating in the region. The San Andreas Fault is the primary fault in the area and is thought to have a maximum credible event potential equivalent to a magnitude of 8.5 on the Richter scale. The most significant exposed seismic feature in the Signal Hill area is the northwest trending Newport-Inglewood fault zone which trends diagonally across the City. The Compton Thrust fault, a buried fault similar to the fault which produced the 1994 Northridge earthquake, underlies the City at a depth of approximately eight miles.

The adverse effects associated with strong seismic events depend upon several factors including the following: intensity of the event, frequency of vibration, distance from the epicenter, and

nature of earth materials through which the vibrations pass. Numerous active and potentially active faults with surface expressions (fault traces) have been mapped adjacent to, within, and beneath the Cities of Signal Hill and Long Beach;<sup>5</sup> however, no known active surface fault traces identified by the State, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, are known to be present at or in the vicinity of the proposed project site. Therefore, the possibility of surface fault rupture affecting the proposed project area and/or the exposure of people or property to hazardous conditions resulting from rupture of a known earthquake fault would be considered low; however, such events may still occur.

As noted above, the San Andreas Fault Zone is a major structural feature in the region and forms a boundary between the North American and Pacific tectonic plates. The San Andreas Fault is a right lateral strike-slip<sup>6</sup> fault moving at approximately 30 millimeters per year (mm/yr), with a northeast-southwest trend near the site area. A strike-slip fault is where two tectonic plates slide past each other. The recent earthquakes in Japan (March 2011) resulted from movement of tectonic plates in a subduction zone, where one tectonic plate is pushed under a second tectonic plate. A subduction configuration like that off the coast of Japan does not occur off the coast of southern California.

Because the SHWU Facility is located in a seismically active region of southern California, it is conceivable that a seismic event could occur during construction or operation of the proposed project; however, this possibility exists currently regardless of the proposed project. Similar to many areas in southern California, the proposed project area is susceptible to strong ground shaking and ground failure during seismic events produced by local faults. Because the area of the proposed project is flat, landslides are not typically of concern. The potential seismic hazards from the proposed project would not be higher than existing seismic hazards from the facility under current operating conditions or greater in any way than seismic hazards in most areas of the City of Signal Hill.

While it is likely that the proposed project area will be shaken by future earthquakes produced in southern California, construction of the proposed modifications will be conducted in accordance with all applicable requirements for seismic safety in the Uniform Building Code (UBC) for the Zone in which the proposed project is located. The existing operations, as well as operation of the proposed project, will continue to be subject to all previous regulations and requirements (e.g. Conditions of CUP Approval) as well as any future changes to the City of Signal Hill Municipal Code regarding seismic designs and controls which from time to time may be promulgated.

According to the [Figure 4, Seismic Response Areas](#), of the City of Signal Hill General Plan Safety Element, the proposed project area is not located within an area susceptible to liquefaction.<sup>7</sup> In addition, according to the Safety Element, the SHWU Facility is not located

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<sup>5</sup> Active faults are classified by the State Division of Mines and Geology as faults showing evidence of surface displacement within the last 11,000 years.

<sup>6</sup> A strike-slip fault is a fault in which the dominant sense of motion is horizontal, parallel to the strike of the fault (also known as a lateral-slip fault). Motion is commonly described as left-lateral (sinistral) or right-lateral (dextral). (USGS 2011)

<sup>7</sup> City of Signal Hill, Safety Element of the City of Signal Hill General Plan, Figure 4, Seismic Response Areas, February 1986.

within a hillside area susceptible to landslides or slope instability.<sup>8</sup> The probability of seismically-induced landslides affecting the proposed project area is considered to be negligible, due to the lack of topographic relief across the area.

As described above, impacts may occur due to risks from seismic ground shaking and/or ground failure, due to the location of the proposed project within southern California. SHP’s Gas Plant is captured under the California Accidental Release Program (Cal-ARP), the U.S. EPA’s Risk Management Programs and the California Occupational Safety Administration (OSHA) Process Safety Management (Cal-ARP/RMP/PSM) regulations. These regulations require SHP to operate the gas plant in a very prescriptive manner to prevent releases from the gas plant to the environment. SHP must conduct hazard analyses, process safety and hazards assessments, mechanical integrity assessments, management of change, pre-construction review, operational training and post maintenance auditing. The goal of these programs is to prevent accidental releases to the environment that may have catastrophic consequences. Additionally, all project site preparation and operation will occur in compliance with the City’s grading and paving standards. With conformance to applicable State and local regulations, potential impacts with regard to exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving geologically unstable conditions or events will be less than significant.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**VII.b).** The majority of the SHWU Facility is currently paved; refer to [Figure 4A, Project Disturbance](#), in Chapter 1. Construction activities will require the exposure of soil to install foundation pads for new equipment; however, the area of soil exposed is expected to be relatively small, as shown in [Figure 4A](#). Any soil that is disturbed would be subject to SCAQMD Rule 403 - Fugitive Dust, which requires stabilization of soil disturbed by human activity, often in the form of spraying water on such areas two to three times per day, if applicable. Compliance with Rule 403 is expected to substantially limit soil erosion loss to the air. As a result, no significant adverse soil erosion impacts are expected with the project.

<sup>8</sup> Ibid.

|   | <b>Potentially<br/>Significant<br/>Impact</b> | <b>Less Than<br/>Significant<br/>With<br/>Mitigation</b> | <b>Less Than<br/>Significant<br/>Impact</b> | <b>No Impact</b>         |
|---|---|--|---|--------------------------|
| Would the project:  |   |  |   |                          |
| c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse? | <input type="checkbox"/>                      | <input type="checkbox"/>                                 | <input checked="" type="checkbox"/>         | <input type="checkbox"/> |

**VII.c).** Refer to VII.a), above. Subsidence is associated with relatively strong seismic shaking, shallow groundwater, and the presence of loose, fine, sandy soils. These conditions are not expected to exist simultaneously within the project site and potential impacts from land subsidence are considered slight. Although subsidence within the Long Beach Oil Field occurred in the early years (1940’s), subsidence has been arrested and constant monitoring and control by the Long Beach Oil and Gas Department is ongoing and will continue into the future.<sup>9</sup> Stable land surfaces are critical for continued regional economic growth that cannot be jeopardized by the effects of oil and gas production. The strength of the geologic structure prevents subsidence as fluids are removed from the pore space of the rock. If the oil field was susceptible to subsidence, it would have likely occurred long ago, as the field reached a peak production of 87 million barrels per year in 1923 (compared to current production of an estimated 1.5 million barrels per year).

Soils within the project site are composed of weathered alluvium and are classified as silts and sands. These soils generally range in composition from non-expansive to slightly expansive; fill materials may also be encountered. These soils would not present potential impacts from soil expansion to the proposed project facilities.

The project will be designed consistent with the requirements of the UBC and standard engineering practices to reduce potential impacts from unstable soils. Therefore, the proposed project will not be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or offsite landslides, lateral spreading, subsidence, liquefaction, or collapse. Therefore, potential impacts with regard to geologic instability, potentially resulting in landslides, lateral spreading, subsidence, liquefaction, or collapse, will be less than significant.

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<sup>9</sup> City of Long Beach Gas & Oil. <http://www.longbeach.gov/oil/subsidence/default.asp>. Accessed November 6, 2014.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                              |                                     |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**VII.d).** Refer to VII.c), above. Soils at the SHWU Facility are not considered to be expansive. In addition, the amount of soil disturbed during construction is expected to be minimal; refer to [Figure 4A, Project Disturbance](#). Therefore, no significant impacts related to expansive soils are expected.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                              |                                     |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**VII.e).** The proposed modifications will occur at the existing gas plant and are intended to improve efficiency and reliability of the gas plant and enable future gas sales. No septic tanks or alternative disposal systems are necessary, nor are they included as part of the proposed project. Therefore, no significant impacts on soils from alternative wastewater disposal systems will occur with the proposed project.

**Mitigation Measures**

Based on the above information relative to impacts relative to geology, no significant adverse impacts were identified, and therefore, no mitigation measures are required for the construction or operation of the proposed project. The 1998 mitigation measures will continue to be implemented.

**VIII. GREENHOUSE GAS EMISSIONS**

**Significance Criteria**

The analysis of GHG impacts is different from the analysis of criteria pollutants. For criteria pollutants, significance thresholds are based on daily emissions because the attainment or non-

attainment status is based on daily exceedances of applicable ambient air quality standards. Furthermore, several ambient air quality standards are based on the relatively short-term exposure effects on human health (e.g., one-hour and eight-hour). On the contrary, because the half-life of CO<sub>2</sub> is approximately 100 years, the effects of GHGs are longer-term and affect global climate over a relatively long time frame. Thus, the SCAQMD's current position is to evaluate GHG effects over a longer time frame than a single day.

On December 5, 2008 the SCAQMD adopted the “Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Thresholds.” This draft guidance proposes a tiered approach to determining GHG significance of projects.<sup>10</sup> The first two tiers involve (1) exempting the project because of potential reductions of GHG emissions allowed under CEQA and (2) demonstrating that the project's GHG emissions are consistent with a local general plan. Because neither of these tiers is applicable for the proposed project, the analysis shifts to Tier 3. It should be noted that SHP's operations are subject to CARB GHG Mandatory Reporting and Cap-and-Trade regulations. The GHG emissions increases resulting from removal of CO<sub>2</sub> from the process gas and being added to the turbine fuel will be fully offset per the requirements of CARB's GHG Cap-and-Trade regulations. Tier 3 establishes a numerical threshold of 10,000 MT CO<sub>2</sub>eq per year as the incremental increase representing significance. Projects with incremental increases below this threshold are not considered to be cumulatively considerable. The next tier of the significance threshold methodology considered for this analysis is Tier 4. The significance threshold approaches in Tier 4 were not adopted by the Governing Board and possible options continue to be under investigation by staff. Tier 4 will not be considered further. Tier 5 may be applicable if GHG emissions exceed the numerical significance threshold of 10,000 MT CO<sub>2</sub> eq per year. In this situation, offsite mitigation could be used to reduce GHG emission impacts to less than significant, but mitigation would be required for the life of the project, defined as 30 years. As additional information is compiled regarding the level of GHG emissions that constitute a significant cumulative climate change impact, SCAQMD will continue to revisit and possibly revise the level of GHG emissions considered to be significant.

To determine whether or not incremental GHG emissions from the proposed project may be significant, impacts from the proposed project may be evaluated and compared to the 10,000 metric tons of carbon dioxide equivalents per year (MT CO<sub>2</sub>e/year) guidance threshold for industrial sources.<sup>11</sup>

## **Environmental Setting and Impacts**

### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2

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<sup>10</sup> SCAQMD. 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Adopted by SCAQMD December 5, 2008.

<sup>11</sup> SCAQMD. 2011. SCAQMD Air Quality Significance Thresholds. Revised March 2011. Available at: [www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf). Accessed July 21, 2014.

(current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project.

The 1998 MND did not provide an analysis of GHG, as the Initial Study did not include such a section at that time. Therefore, the following discussion represents new information pertaining to the proposed project relative to greenhouse gas emissions.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact        | No Impact                |
|--|--------------------------------|---------------------------------------|-------------------------------------|--------------------------|
| Would the project:   |                                |                                       |                                     |                          |
| a) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Generate greenhouse gases, either directly or indirectly, that may have a significant impact on the environment?                | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**VIII.a, b).** The natural process through which heat is retained in the troposphere is called the “greenhouse effect.”<sup>12</sup> The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and greenhouse gases (GHG) in the upper atmosphere absorb this long wave radiation and emit this long wave radiation into space and toward the Earth. This “trapping” of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The most abundant GHGs are water vapor and carbon dioxide (CO<sub>2</sub>). Many other trace gases have greater ability to absorb and re-radiate long wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a

<sup>12</sup> The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth’s surface to 10 to 12 kilometers.

Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-radiate long wave radiation.

GHGs normally associated with the proposed project include the following:<sup>13</sup>

- Water Vapor ( $H_2O$ ). Although water vapor has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Natural processes, such as evaporation from oceans and rivers, and transpiration from plants, contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively.

The primary human related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than one percent) to atmospheric concentrations of water vapor. The Intergovernmental Panel on Climate Change (IPCC) has not determined a GWP for water vapor.

- Carbon Dioxide ( $CO_2$ ). Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources and is the primary greenhouse gas emitted through human activities. In 2011,  $CO_2$  accounted for approximately 84% of all greenhouse gas emissions from human activities in the U.S. Although  $CO_2$  emissions originate from a variety of natural sources, human-related emissions are responsible for the increase occurring in the atmosphere since the time of the industrial revolution.<sup>14</sup> Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining GWPs for other GHGs.
- Methane ( $CH_4$ ). Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric fermentation. Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of methane is 21.
- Nitrous Oxide ( $N_2O$ ). Nitrous oxide is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of nitrous oxide is 310.
- Hydrofluorocarbons (HFCs). HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing, as the continued phase out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs range from 140 for HFC-152a to 11,700 for HFC-23.<sup>15</sup>

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<sup>13</sup> All Global Warming Potentials are given as 100 year GWP. Unless noted otherwise, all Global Warming Potentials were obtained from the Intergovernmental Panel on Climate Change. Climate Change (Intergovernmental Panel on Climate Change, Climate Change, The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC, 1995).

<sup>14</sup> United States Environmental Protection Agency, Climate Change – Overview of Greenhouse Gases, Updated July 31, 2013. <http://epa.gov/climatechange/ghgemissions/gases/fgases.html>. Accessed August 16, 2014.

<sup>15</sup> Ibid.



- Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years).<sup>16</sup> The GWP of PFCs range from 6,500 to 9,200.
- Sulfur hexafluoride (SF<sub>6</sub>). Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the IPCC with a GWP of 23,900; however, its global warming contribution is not as high as the GWP would indicate, due to its low mixing ratio compared to carbon dioxide.

In addition to the six major GHGs discussed above (excluding water vapor), many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone (O<sub>3</sub>) depleters. Therefore, their gradual phase out is currently in effect. The following is a listing of these compounds:

- Hydrochlorofluorocarbons (HCFCs). HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the Montreal Protocol are subject to a consumption cap and gradual phase out of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWPs of HCFCs range from 77 for HCFC-123 to 2,310 for HCFC-142b.<sup>17</sup>
- 1,1,1 trichloroethane. 1,1,1 trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. The GWP of methyl chloroform is 110 times that of carbon dioxide.<sup>18</sup>
- Chlorofluorocarbons (CFCs). CFCs are used as refrigerants, cleaning solvents, and aerosols spray propellants. CFCs were also part of the U.S. Environmental Protection Agency's (EPA) Final Rule (57 FR 3374) for the phase out of O<sub>3</sub> depleting substances. Currently, CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from approximately 4,750 for CFC 11 to 14,420 for CFC 13.<sup>19</sup>

California has enacted several pieces of legislation that relate to GHG emissions and climate change, much of which sets aggressive goals for GHG reductions within the state. Per Senate Bill 97, the California Natural Resources Agency adopted amendments to the CEQA Guidelines, which address the specific obligations of public agencies when analyzing GHG emissions under

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<sup>16</sup> Ibid.

<sup>17</sup> United States Environmental Protection Agency, *Class II Ozone Depleting Substances*, Updated November 7, 2014. <http://www.epa.gov/ozone/science/ods/classtwo.html>. Accessed November 10, 2014.

<sup>18</sup> Ibid.

<sup>19</sup> United States Environmental Protection Agency, *Class I Ozone Depleting Substances*, Updated November 7, 2014. <http://www.epa.gov/ozone/science/ods/classone.html>. Accessed November 10, 2014.

CEQA to determine a project's effects on the environment; however, neither a threshold of significance nor any specific mitigation measures are included or provided in these CEQA Guideline amendments.

- **Assembly Bill 32 (Statewide GHG Regulation):** The California Global Warming Solutions Act of 2006, widely known as AB 32, requires the California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verification of statewide GHG emissions. The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020.
- **California Senate Bills 1078, 107, and 2 - Renewables Portfolio Standard:** Established in 2002 under California Senate Bill 1078 and accelerated in 2006 under California Senate Bill 107, California's RPS requires retail suppliers of electric services to increase procurement from eligible renewable energy resources by at least 1 percent of their retail sales annually, until they reach 20 percent by 2010. On April 2, 2011, Governor Jerry Brown signed California Senate Bill 2 to increase California's RPS to 33 percent by 2020. This new standard also requires regulated sellers of electricity to procure 25 percent of their energy supply from certified renewable resources by 2016.
- **Low Carbon Fuel Standard:** California Executive Order S-01-07 (January 18, 2007) requires a 10 percent or greater reduction in the average carbon intensity for transportation fuels in California regulated by CARB. CARB identified the LCFS as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009.<sup>20</sup>

### ***Construction GHG Emissions and Analyses***

Construction typically occurs in phases including demolition, site preparation, construction of structures, and final site work. Construction activities required to implement the proposed project include: demolition, excavation, concrete work, erection, and installation of the individual pieces of equipment; refer also to [Table III-2](#) of Section III, Air Quality.

Construction emissions are generated from the combustion of fuel (primarily diesel) in off-road vehicles and other equipment required for the construction activities. Equipment to be installed with the project has already been fabricated elsewhere, purchased, and delivered to the site in anticipation of installation as proposed. Project construction activities will be conducted during distinct time periods and will disturb substantially less than one acre of land within the SHWU Facility. Actual construction will generally take place in the area of the existing gas processing plant; refer to [Figure 1B, Local Vicinity Map](#).

Construction is expected to occur intermittently over a period of approximately 61 days. When construction is occurring, work is expected to typically occur ten hours per day, five days per week. The proposed construction schedule in [Table III-2](#) in the Air Quality section forms the

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<sup>20</sup> California Air Resources Board (CARB), 2009. Resolution 09-31. Available at: <http://www.arb.ca.gov/regact/2009/lcfs09/res0931.pdf>. Accessed: July 2014.

basis for calculating emissions from construction of the proposed project. The dates of the schedule may change, but the timeline of the scheduled activities for each phase (e.g. number of days) would remain consistent. Multiple construction activities would not occur on the same day and would not result in impacts outside the scope of this analysis. Additionally, the current analysis is conservative because emission factors typically decrease over time as equipment efficiency and fuel efficiency improves. Thus, if construction of the project is delayed for any reason, none of the environmental impacts conclusions in the analysis would change or worsen. For example, a conclusion of less than significant impacts from the construction phase of the project would remain less than significant even if the actual dates of the construction schedule are delayed.

As shown in [Table III-3](#), emissions from demolition and construction activities (resulting from vehicle fuel usage) will result in 2 MT CO<sub>2</sub>e total, or 0.07 MT CO<sub>2</sub>e per year if amortized over 30 years. Construction emissions will therefore be well below the SCAQMD threshold of 10,000 MT CO<sub>2</sub>e per year. Therefore, construction of the proposed project is expected to result in less than significant GHG impacts, and no mitigation measures are required.

### ***Operational GHG Emissions and Analyses***

Implementation of the proposed modifications to the existing gas plant will result in an increased local supply of available sales gas in the City of Long Beach distribution system, thereby replacing gas supplies that are currently transported to the area over long distances from non-local sources; refer to [Appendix C, Commitment Letter from City of Long Beach Oil & Gas Department](#). Because the proposed modifications and resultant availability of the sales gas will reduce reliance on gas supplies from non-local sources, the overall potential fugitive emissions associated with natural gas transmission lines will be reduced, thereby reducing potential adverse effects on air quality and from greenhouse gas emissions.

Additionally, installation of the equipment as proposed will increase efficiency of the equipment. The changes will increase the vacuum on the gathering lines, reducing back-pressure and reducing the potential for leaks in the upstream gathering system. The addition of the new compression trains will allow the processing of 4,000 mscf/day up from 2,000 mscf/day. The increase in volume will accommodate the organic growth of gas production from the mature water flood as oil production naturally declines.

As shown in [Table III-3](#), it is anticipated that fugitive releases from potential equipment leaks would equate to approximately 70 MT of CO<sub>2</sub>e per year (PTE). The proposed modifications will result in removal of 2,805 MT of CO<sub>2</sub>e per year from sales gas (based on maximum design capacity and allowable throughput); refer to [Appendix B, SCAQMD Permit Application \(February 2014\)](#), for additional information. Most of the processed gas leaving the new gas dehydration unit would continue to go straight to the turbine to be used as fuel. The excess (i.e., the portion not needed as turbine fuel) would proceed on and pass through the new CO<sub>2</sub> membrane filtration unit where CO<sub>2</sub> (as well as some O<sub>2</sub> and N<sub>2</sub>) would be removed from the process stream. The resulting process stream would contain less than 4% inerts (i.e., CO<sub>2</sub>, O<sub>2</sub>, and N<sub>2</sub>), which will enable sale of the gas to the City of Long Beach. The gas stream rejected from the sales gas in the CO<sub>2</sub> membrane filtration unit (which will also contain methane) will be

added back to the fuel gas stream going to the turbine. The CO<sub>2</sub> in this stream would simply “pass-through” the turbine (i.e., it’s not transformed in the combustion process) and be emitted to atmosphere. Thus, the CO<sub>2</sub> removed from the sales gas stream in the CO<sub>2</sub> membrane filtration unit (which is estimated to be a maximum of 2,805 MT per year) would end up in the atmosphere as incremental CO<sub>2</sub> emissions resulting from the project.

Overall, operational GHG emissions will total an estimated 2,875 MT CO<sub>2</sub>e per year. Therefore, project impacts would be well below the SCAQMD threshold of 10,000MT CO<sub>2</sub>e. Further, the facility is subject to CARB reporting and applicable cap and trade requirements to offset any significant impacts with regard to GHG, as required. Operational impacts relative to GHG will therefore be less than significant, and no mitigation measures are required.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>         |
|---|---------------------------------------|--|-------------------------------------|--------------------------|
| Would the project:  |                                       |  |                                     |                          |
| c) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**VIII.c).** Refer to responses VIII.a) and .b), above. The proposed project will result in minor improvements at the subject site to improve the efficiency and reliability of existing onsite operations and enable the sale of gas to third parties for ultimate distribution. GHG emissions resulting with implementation of the proposed project will be below a level of significance, as discussed above. Further, due to the nature of the project and construction/operational conditions anticipated, the project is not anticipated to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. As described previously, the proposed project will reduce fugitive emissions associated with natural gas transmission and reduce or avoid potential additional GHG-related emissions from independent gas producers. Impacts will be less than significant, and no mitigation measures are required.

### **Mitigation Measures**

With regard to GHGs, impacts from the proposed project were concluded to have a less than significant impact, and no mitigation measures are required.

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## **IX. HAZARDS AND HAZARDOUS MATERIALS**

### **Significance Criteria**

The impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.

- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

## **Environmental Setting and Impacts**

### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site) The new natural gas processing plant included avapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project with regard to hazards and hazardous materials.

The 1998 MND identified a potentially significant adverse impact for the hazards and hazardous materials checklist item relative to the accidental release of hazardous substances and the exposure of people to existing sources of potential health hazards. Mitigation was identified (Mitigation Measure #4a in the 1998 MND) to reduce project impacts to a level of less than significant. In accordance with the 1998 MND, this mitigation has been implemented to date. The 1998 mitigation measures will continue to be implemented.

|   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact        | No Impact                |
|---|--------------------------------|---------------------------------------|-------------------------------------|--------------------------|
| Would the project:  |                                |                                       |                                     |                          |
| a) Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**IX.a) and b).**

Construction and operation of the proposed gas processing facility presents the remote possibility for explosions. Gas producing equipment has been installed with automatic shut-down devices as well as instrumentation to detect explosive levels in the gas stream. New facility system piping has been installed and portions of the system are under vacuum pressure, which precludes leakage into the atmosphere and the chance for explosion. The piping system has been constructed with minimal screwed and flange connections to minimize leakage. This facility has received a permit from the Los Angeles County Fire Department. Therefore, the risk is less than significant.

All of the new equipment required as part of the proposed project will use or process produced oil field gas, which consists primarily of methane and trace amounts of other gases (e.g., propane, butane, or pentane). Methane is defined as a hazardous material by the USEPA (USEPA; 40 CFR 68.130). The other gases that comprise the oil field gas (e.g., propane, butane, or pentane) also are defined as hazardous materials; however, these gases are only present in trace amounts, if at all, and do not constitute a hazard.

The proposed modifications and removal of older equipment will also not increase hazards resulting from an earthquake as:

1. The new equipment will be required to meet UBC requirements and the latest safety standards and thus will reduce impacts related to an earthquake event compared to any older permitted equipment. Additionally, the new equipment will be more reliable and less susceptible to breakdowns and upsets, thereby reducing the potential for emergencies, upsets, and breakdowns as compared to the existing equipment.
2. Hazard impacts resulting from an earthquake are not expected to increase due to implementing the proposed project. No drilling is associated with the proposed project. No physical changes are proposed for the gas sales pipeline (no change in hazards due to the project). Therefore, there is no change in hazard impacts as a result of implementing the proposed project.

The SHWU Facility gas plant is subject to the California Accidental Release Program (CalARP) regulations in Title 19 CCR, Division 2, Chapter 4.5. CalARP requires stationary sources with quantities of a regulated substance above a threshold specified in the regulation to develop and submit a risk management plan (RMP). Methane is a regulated substance, with a specified threshold of 10,000 pounds; however, per §2770.2(b)(2)(B), “naturally occurring hydrocarbon mixtures need not be considered when determining whether more than a threshold quantity is present at a stationary source. Naturally occurring hydrocarbon mixtures include any combination of the following: condensate, crude oil, field gas, and produced water, each as defined in Section 2735.3.” Per §2735.3, field gas is defined as “gas extracted from a production well before the gas enters a natural gas processing plant.” Therefore, the quantification of methane that is on the site as natural gas is not counted toward the threshold quantity. No other regulated substances are used at the SHWU Facility. Therefore, a RMP for the facility is not required.

Operation of the proposed project will not add any systems or processes that would cause the facility to become subject to either the Process Safety Management regulations or to CalARP. All of the proposed equipment will be specifically designed to handle and process natural gas. Each system will have a number of engineered safety controls and systems such as temperature alarms and automatic shutdown devices to ensure the gas will be treated to pipeline quality and injected into the gas sales pipeline.

Additionally, SHP operators are required to participate in periodic safety training and have knowledge of how to use proper personal protective equipment (PPE). Safety training is also required by OSHA as part of annual “Hazwopper” training. SHP requires daily project meetings to review current and relevant safety issues, and safety training is required by several agency programs for newly assigned workers as well as contractors onsite. SHP’s Cal-ARP/RMP/PSM program identifies requirements for pre-review, training, startup, and maintenance of subsequent gas plant operations under EPA, OSHA, and California Unified Program Agency (CUPA) requirements to eliminate or mitigate, releases and failures that may cause harm to the environment, personnel, and/or emergency responders.

Other hazardous materials that are currently used during typical operations and would continue to be used include standard oil-based and synthetic lubrication oils used in the compressor, odorant materials mandated by DOT regulations, and materials for cleaning operations. As a result, hazardous materials are not generated regularly. All of the materials used currently, or expected to be used in the future, are stored in proper containers or vessels, are properly labeled, and are handled in accordance with all applicable regulations and safety requirements.

The construction equipment used by contractors in the construction of the new equipment will use a variety of typical hazardous materials including lube oils, gasoline and/or diesel fuels, sealants, welding gases, and paints. All of the construction equipment expected to be used onsite are the same types of construction equipment regularly used at other construction sites except that, because of space limitations onsite, smaller equipment is expected to be used.

All hazardous materials that will be used onsite for the proposed project have been used on the site in the past. The total amount of materials is not expected to increase, and there are no new

hazardous materials being introduced to the site with the proposed equipment modifications. Therefore, there is no new risk of upset and the consequences of an upset; however, if such risk were to occur, it would be similar to the consequences of an upset during current operations. Further, the proposed project proponent maintains an onsite environmental coordinator that will oversee the proper management of hazardous materials by the respective construction contractor.

As a result, the proposed project is not anticipated to increase the potential for a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials, or through foreseeable upset or accident conditions involving the release of hazardous materials. Impacts will be less than significant, and no mitigation measures are required.

|  | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>         |
|--|---------------------------------------|--|-------------------------------------|--------------------------|
| Would the project:   |                                       |  |                                     |                          |
| c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**IX.c).** No existing or proposed schools are located within one-quarter mile of the existing SHWU Facility. The new and modified equipment to be installed with the proposed project have the potential to emit TACs; however, analysis undertaken for the proposed project concluded that cancer and non-cancer impacts from the proposed improvements will be less than significant; refer to Section III, Air Quality, above. Other potential impacts related to hazardous substances or wastes associated with the proposed project are expected to remain within the SHWU Facility because they will be stored inside areas protected by spill containment barriers. As a result, impacts to schools are considered to be less than significant.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5, and, as a result, would create a significant hazard to the public or the environment? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |



**IX.d).** According to the California Department of Toxic Substances Control (Envirostor, 2014), the project site is not located in an area which is included on the recent list of hazardous materials sites compiled pursuant to Government Code §65962.5 (Cortese list of active hazardous waste and substances sites).<sup>21</sup> Therefore, no prior release of hazardous materials or remediation efforts has occurred at the site. No significant hazards, on the environment or to the public, relative to hazardous materials handling at the SHWU Facility are therefore anticipated, and no impact would occur.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                              |                                     |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**IX.e and .f).** The SHWU Facility is not located within an airport land use plan or within two miles of a public or private airport. The proposed project does not include installing equipment that is taller than the tallest equipment currently used onsite that could potentially interfere with flight patterns. Therefore, no safety hazards are expected from the proposed project on any airports in the region.

<sup>21</sup> California Department of Toxic Substances Control: Envirostor. Available at: <http://www.envirostor.dtsc.ca.gov>. Accessed September 17, 2014.

| Would the project:  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                |
|---|--------------------------------|---------------------------------------|------------------------------|--------------------------|
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/>       | <input checked="" type="checkbox"/>   | <input type="checkbox"/>     | <input type="checkbox"/> |

**IX.g).** The SHWU Facility implements an existing Spill Prevention, Control, and Countermeasure (SPCC) Plan as is required by the U.S. Environmental Protection Agency (USEPA). The SPCC requires preventative measures such as secondary containment walls, routine training, response procedures, and certifications. Additionally, this facility implements the State of California Consolidated Unified Program Agency’s Consolidated Contingency Plan/Hazardous Material Inventory program. These plans are maintained onsite to minimize the potential for the release of hazardous materials or harm to onsite workers and/or other members of the general public. If the equipment of the proposed project requires onsite storage of new hazardous materials, such materials will be added to the existing plans currently being implemented by SHP; however, as noted above, no new types of hazardous materials will be used or generated onsite as result of the proposed project. Additionally, in conformance with applicable standards, SHP will be required to prepare and demonstrate compliance with an Emergency Action Plan, as required by the Fire Department, which addresses spill, fire, and explosion hazards and relative risk of upset to adjacent land uses.

Furthermore, emergency vehicles currently have access to the proposed project via existing access gates, thereby providing adequate emergency access. All emergency personnel have access in and out of the site utilizing their own keys. No changes in access to the site are proposed with the project. As such, the proposed project is not expected to interfere with SHP’s emergency action plan or any other emergency response plan; however, to ensure that proper measures are taken to minimize the potential for the release of hazardous materials onsite and/or exposure of workers or the public to hazardous substances, mitigation is proposed (MM HAZ-1) to require implementation of additional plans for the proposed facilities.

| Would the project:  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| i) Significantly increased fire hazard in areas with flammable materials?   | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**IX.h and .i).** Refer also to .a) and .b), above. The proposed project will not increase the existing risk of fire hazards in wildland areas or as the result of the use of flammable materials. The SHWU Facility is not located in or adjacent to wildland areas. Further, although the perimeter outside of the fence is landscaped as required by the City of Signal Hill CUP Conditions of Approval (CUP 97-03), no substantial or native vegetation exists within the operational portions of the SHWU Facility. All vegetation within the operational portions of the facility has already been removed as a fire safety measure. Therefore, no significant increase in fire hazards involving wildlands is expected to be associated with the proposed project.

### **Mitigation Measures**

Based on the above information relative to hazards and hazardous materials, no significant adverse impacts were identified; however, to further ensure that the proposed improvements do not result in a significant impact with regard to the potential for any increased risk of damage from or exposure to hazards or hazardous materials, mitigation is proposed (MM HAZ-1) to require preparation and implementation of additional plans (i.e. Emergency Action Plan) for the proposed facilities. Implementation of MM HAZ-1 will reduce potential project impacts with regard to hazards and hazardous materials to a level of less than significant. The 1998 mitigation measures will continue to be implemented.

#### **MM HAZ-1**

Prior to approval of the proposed project, SHP shall demonstrate compliance with applicable hazardous material rules and regulations, to include, at minimum, an Emergency Action Plan as required by the Fire Department addressing spill, fire, and explosion hazards and relative risk of upset to adjacent land uses.

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## **X. HYDROLOGY AND WATER QUALITY**

### **Significance Criteria**

Potential impacts on water resources will be considered significant if any of the following criteria apply:

- Water Demand:
  - The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
  - The project increases demand for water by more than five million gallons per day.
- Water Quality:
  - The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.

- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

## Environmental Setting and Impacts

### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project on hydrology and water quality.

The 1998 MND did not identify any potentially significant adverse impacts for any of the hydrology and water quality checklist items.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| a) Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**X.a).** The proposed project will result in improvements to the existing gas processing plant, and will not require the drilling or re-drilling of any wells on the CUP Site No. 2. The changes will increase the vacuum on the gathering lines, reducing back-pressure and reducing the potential for leaks in the upstream gathering system. The addition of the new compression trains will allow the processing of four thousand mscf/day up from two thousand mscf/day. The increase in volume will accommodate the organic growth of gas production from the mature water flood as oil production naturally declines. Water flood involves the use of wells to re-inject fluid (primarily water with minor concentrations of additives) into the oil/gas reservoir to re-pressurize the sandstone and flush oil into recovery (extraction) wells.

The existing operations at the SHWU Facility do not produce industrial effluent wastewater streams that are rerouted to public treatment facilities. Construction and operation of the equipment of the proposed project will also not produce industrial wastewater.

Ground disturbance required for the improvements to the proposed gas processing facility will increase the potential for erosion; however, implementation of erosion control measures as required by the City and adherence to all applicable requirements set forth in the National Pollutant Discharge Elimination System (NPDES) permit will reduce potential impacts to less than significant levels.

The proposed project will be required to comply with the requirements of Chapter 12.16 of the City of Signal Hill Municipal Code which addresses stormwater and urban runoff. Further, the site operator must also meet the requirements of the Standard Urban Stormwater Mitigation Plan (SUSMP) as approved by the Los Angeles Regional Water Quality Control Board (RWQCB). These requirements are identified in the applicable Storm Water Pollution and Prevention Plans (SWPPP) for the subject site and include best management practices (BMPs) such as erosion control during construction activities, storage of material bags and drums, onsite inspections, sampling and analysis of storm water that leaves the property, and employee training. Continued compliance with applicable federal, State, and local regulations, Code requirements, and permit provisions would ensure that no significant impacts related to potential discharge into surface water or changes in water quality occur as a result of the proposed project. In addition, no additional water beyond that included in the 1998 project will be discharged as part of the proposed project, so no additional wastewater would be generated that has the potential to violate water quality standards or waste discharge requirements. Therefore, no water quality impacts were identified as a result of implementing the proposed project.

Additionally, the Safe Drinking Water Act was enacted in 1974, and amended in 1986 and 1996. In 1980, H.R. 8117 added Section 1425 to the act dealing with underground injection wells related to the production of oil and gas, allowing programs that effectively protect groundwater to continue their regulatory programs in compliance with the Safe Water Drinking Act. In 1981, California applied for, and in 1982 was granted primacy in regulating the underground injection wells. A peer review was conducted in the mid 1980's by the Ground Water Protection Council and the programs were found to be effective in protecting drinking water.

The SHP oil operations in Signal Hill are in secondary recovery, the previous operators having established waterflood operations in the mid-1970's. SHP continues this operation today, under

the primary regulatory authority of the State of California Division of Oil, Gas & Geothermal Resources (DOGGR). SHP's operations are subject to a number of regulatory authorities at the local, State, and federal levels, with regulators having authority over the operations and influencing the permitting, monitoring and reporting process; refer to [Figure 6, Regulatory Matrix](#), of this Initial Study which identifies the affected agencies and regulatory processes relative to SHP operations.

The DOGGR oversees oil and natural gas facilities, pipelines, and gas wells. Such oversight includes operations under AB1960 Facilities Program requirements, active/idle oil well and lease management; active/idle work-overs; well drilling/re-drilling; idle well management and testing; and, injection well management, in addition to testing, management and inspections, and permit issuance activities. The DOGGR has substantial regulations governing how water injection wells must be constructed as they pass through freshwater aquifer zones (DOGGR Regs. 1721, 1722.2 through 1722.4, 1723.2 and 1724.6). These requirements are currently applicable to operations at the SHWU Facility.

Produced water, water associated with the production of oil, is re-injected into the formations at depths ranging from 2,500 to 6,000 feet at a maximum pressure of 1,800 pounds per square inch (psi). Every injection well is monitored daily for injection rate and pressure. The data is compiled and reimported monthly to DOGGR. DOGGR conducts annual inspections, and all injection wells and operations are subject to unscheduled, surprise inspections. Within the operations, whether it be well work-overs or maintenance, no freshwater is used in the field for any oil production related activities. Freshwater is used for the drip irrigations system associated with landscaping and for restrooms and safety equipment for the field employees. .

As already noted above, the proposed project does not increase demand for additional water; none of the equipment associated with the proposed modifications to the gas processing plant require water for operation. Re-injected water is generated as a result of the existing crude extraction process and is supplemented only with stormwater. As a result, no additional wastewater will be discharged as part of the proposed project beyond that which already exists and was previously analyzed. Produced water from the existing onsite drilling operations is collected and injected back into the oil zones, thereby reducing the amount of water runoff from the SHWU Facility.

Additionally, in order to determine potential impacts of oil field operations on groundwater quality in the Signal Hill - Long Beach area, the City of Signal Hill recently retained Flow Science, Incorporated (Flow Science) to prepare a technical study. This study, entitled *Impacts of Oil Field Operations on Groundwater Quality in Signal Hill-Long Beach Area* (February 25, 2014), is available under separate cover at the City of Signal Hill and is not attached as an appendix to this Draft Subsequent MND as it is not project-specific.

This study considered information from public sources (e.g., drinking water quality information, public reports on subsurface geology) and information provided by SHP, Inc. (e.g., well logs from oil wells in the field, information on water flood operations). Additionally, information on subsurface geology, including the locations of drinking water aquifers and hydrocarbon production zones, information on water quality in drinking water aquifers, and information

related to oil field operations and the potential of those operations to impact groundwater quality was reviewed.

The Los Angeles Basin includes over 30 mapped oil fields and 9,700 oil/gas wells. The subsurface geology is complex, and the aquifer zones and hydrocarbon zones within the LA Basin are highly folded and faulted. Therefore, the depth of drinking water aquifers and hydrocarbon zones is variable and depends on one's location within the basin.

In the Signal Hill area, drinking water aquifers typically occur within the top 1,400 feet or less below ground surface (bgs), while hydrocarbon zones within the Long Beach Field typically occur below this level and may extend to a depth of a few miles bgs. Drinking water aquifers are generally separated from hydrocarbon zones by layers of low permeability. Low permeability layers also exist between drinking water aquifers (“aquitards”) and between hydrocarbon zones at different depths. In addition, oil/gas wells are constructed with solid casings that extend through drinking water aquifers; oil/gas wells are not screened or perforated in drinking water zones. Drinking water wells typically terminate well above hydrocarbon zones.

The City of Signal Hill and the surrounding area overlie two main groundwater basins: the West Coast Basin and the Central Basin. These two basins are separated by the Newport-Inglewood Fault Zone, a geologic structural feature that partially restricts groundwater flow. Historical over-pumping of groundwater has resulted in seawater intrusion, primarily in the West Coast Basin, and seawater intrusion barriers and spreading grounds are being operated to minimize additional future impacts. Multiple Superfund sites are located throughout the LA Basin, but these sites are located far from the Signal Hill-Long Beach area and do not currently affect groundwater quality in the Signal Hill-Long Beach area. The Signal Hill-Long Beach area, however, has been impacted by numerous contamination events and subsequent cleanups.

Contamination from these local events appears to have been limited to soil and to shallow aquifers that are not used for drinking water production. Data was reviewed by Flow Science from groundwater samples collected from both monitoring and production wells to characterize groundwater quality. The City of Signal Hill Water Department confirmed that groundwater quality from City-owned production wells have consistently met State water quality standards.<sup>22</sup>

This data demonstrates that constituent concentrations in groundwater production zones have, to date, been below applicable regulatory thresholds, with the exception of total dissolved solids (TDS) and chloride primarily in the West Coast Basin, where seawater intrusion has resulted in exceedances of California's Secondary Maximum Contaminant Levels (MCLs). Water level data collected by the WRD indicate that, except in Central Basin recharge areas located six or more miles from Signal Hill, groundwater levels in the West Coast and Central Basins are below sea level.

The “base of freshwater” (BFW) is a term used to describe the level below which salinity rises to relatively high levels and to distinguish between more saline water (such as exists within hydrocarbon zones) and fresher groundwater overlying saline waters. Because changes in the base of freshwater could potentially indicate changes in groundwater quality, Flow Science

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<sup>22</sup> Flow Science. Impacts of Oil Field Operations on Groundwater Quality in Signal Hill-Long Beach Area. February 25, 2014.

reviewed well logs provided by SHP that show the location of the BFW within the Signal Hill-Long Beach area. Flow Science’s review of well logs from pairs of wells located near each other but logged decades apart shows that the BFW does not appear to have changed significantly over time. As shown by one pair of wells separated by a fault, the depth to the BFW can vary significantly across faults and other discontinuities within the area.

SHP employs an oil/gas production technique known as “waterflood” to enhance oil recovery within the Long Beach Oil Field. Waterflood involves the use of wells to inject fluid (primarily water with minor concentrations of additives) into the oil/gas reservoir to re-pressurize the sandstone and flush oil into recovery (extraction) wells. The DOGGR establishes limits and monitoring requirements for waterflood operations within California. For example, DOGGR requires that injection pressures in waterflood operations be maintained below the fracture pressure of the formation; this fracture pressure was established for the Long Beach field decades ago by DOGGR and is now required to be confirmed in the field using step-rate tests. DOGGR also requires monitoring on a regular basis to confirm the mechanical integrity of oil well casings and the tubing and packers used in waterflood operations. Flow Science reviewed limited waterflood well and test information, which was characterized by SHP as representative of its waterflood operations, which SHP states are conducted consistent with DOGGR’s requirements and industry standard practices. Flow Science concluded that waterflood operations, as currently conducted, have little potential to adversely impact water quality in overlying drinking water aquifers.

The Flow Science study therefore concluded that subsurface operations within the Signal Hill-Long Beach area to date have had no impact on water quality within drinking water aquifers. Refer to the Flow Science technical study for a more in-depth discussion and technical data supporting such findings.<sup>23</sup>

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<sup>23</sup> Ibid.



| Air  |   |  |   |   |  |
|--|---|--|---|---|--|
| Agency Name  | Area of Oversight   | Examples of Area Coverage  | Oversight Methods   | Training Requirements   | Recordkeeping Requirements   |
| South Coast Air Quality Management District                                | Stationary Air Emission Sources, Criteria and Hazardous Air Pollutants  | Natural gas turbine emission; Minor combustion device (lawn care equipment, small fenerators, water heaters) emissions; Internal combustion engines emissions, Process heater emissions; Storage tank emissions; Fugitive gas leaks from pipelines, compressors, valves, fittings, flanges | Unannounced and annual inspections; Permit program; Breakdown reports; Daily, quarterly and annual emission reports submitted to Air District   |   | Quarterly and annual emission reports and fees; Submitted self-Inspection reports; RECLAIM recordkeeping & daily reports   |
| California Air Resources Board   | Mobile Source Emissions, Criteria and Hazardous Air Pollutants  | On-road vehicle emissions; Off-road vehicle emissions; Portable equipment emissions  | Periodic submitted reports; Inspections of portable equipment; Annual Periodic Smoke Inspection Program; Vehicle labeling   |   | Portable equipment usage logs; Initial and periodic vehicle records; Inspection records  |
| California Air Resources Board   | Greenhouse Gas Emissions  | Facility and Mobile Source Greenhouse Gas Emissions  | Annual emission reports with verification by independent third party  |   | GHG monitoring plan; Test results  |
| U.S. Environmental Protection Agency                                       | Greenhouse Gas Emissions  | Facility Greenhouse Gas Emissions  | Annual emission reports   |   | GHG monitoring plan; Test results  |
| Nonair   |   |  |   |   |  |
| Agency Name  | Area of Oversight   | Examples of Area Coverage  | Oversight Methods   | Training Requirements   | Recordkeeping Requirements   |
| California EPA (California Unified Program Agencies - CUPA)                | Manages local CUPAs (See LACoFD and LBFD)   | Local CUPA have oversight Jurisdiction (see LACoFD and LBFD)   | Local CUPA have oversight Jurisdiction (see LACoFD and LBFD)  | Local CUPA have oversight Jurisdiction (see LACoFD and LBFD)                        | Local CUPA have oversight Jurisdiction (see LACoFD and LBFD)   |
| Los Angeles County Fire Department (LACoFD - CUPA for City of Signal Hill) | Hazardous Materials Handler; Hazardous Waste Generator; Aboveground Storage Tank Program; California Accidental Release Prevention (CalARP) Program; California Uniform Fire Code | Consolidated Contingency (Business Emergency) plan and Hazardous Materials Inventory program (CCP/HMI); CalARP plan and program  | Annual CCP/HMI submittals; CalARP plan & report submittals; Aboveground storage tank inventory; Annual and unannounced inspections; Permit program and fees; Spill response   | 24-hr & 8-hr hazardous waste responder; CCP/HMI specific; Spill response; CalARP    | Plans; Training documents; Certifications  |
| City of Long Beach Fire Department (LBFD - CUPA for City of Long Beach)    | Hazardous Materials Handler; California Uniform Fire Code   | Consolidated Contingency (Business Emergency) plan and Hazardous Materials Inventory program (CCP/HMI)   | Annual CCP/HMI submittals; Annual and unannounced inspections; Permit program and fees; Spill response  | 24-hr & 8-hr hazardous waste responder; CCP/HMI specific; Spill response            | Plans; Training documents; Certifications  |
| Department of Toxic Substance Control                                      | Hazardous Wastes  | Hazardous Waste Accumulation, Storage and Disposal; Regular disposal of solvents, used oil (milkruns), antifreeze, automotive batteries; Universal and Electronic Waste Disposal   | Universal hazardous waste manifest submittals; Annual questionnaire, Waste manifest summary & fee submittals  | 24-hr hazardous waste responder; 8-hr annual hazardous waste responder refresher    | Self-inspections; Training documents   |
| Department of Oil and Gas  | Oil and Natural Gas Facilities and Pipelines;   | AB1960 Facilities Program requirements;  | Spill plan; Pipeline management plan; Tank design & regular inspection program; Leak reporting; Annual inspections  | Spill response  | Tank inspection results; Spill response forms; Training documents; Records retained up to "life-of-the facility"   |
| Department of Oil and Gas  | Oil and Natural Gas Wells   | Active/Idle Oil Well & Lease Management; Active/Idle Workovers; Well Drilling/Redrilling; Idle Well Management/Testing; Injection Well Management  | Annual oil/injection well equipment/signage/containment/area inspections (picture documentation); Well work plan review & permit issuance; Idle well inspections & testing reports; Injection well 3rd party surveys/annual rate/pressure inspections with monthly record; submittals |   | Annual reports; permit applications and issuance; well history submittals; daily well visual inspections   |
| DOT, Pipeline and Hazardous Materials Safety Administration                | Oil and Natural Gas Facilities and Pipelines (OPA 90)   | Facility Response Plans and Spill Equipment; Incident Command System   | Unannounced and announced inspections; Spill response   | Spill response; Spill drills; Notification drills                                   | Training; Drills; Spill response forms   |
| U.S. EPA (& U.S. Coast Guard)  | All Environmental Activities, Oil Spills  | Facility Response Plans, Spill Prevention, Containment and Countermeasure Plans  | Spill plan; Spill reporting; Visual inspections of tanks, pipelines, facilities; Unannounced inspections; Spill response  | Spill response  | Plans; Spill response forms; Training documents; Certifications; Inspection records  |
| U.S. OSHA  | Health and Safety Requirements  | Injury and Illness Prevention Program; Confined Space; Hazmat Communication; Emergency Response; Electrical Safety; Hot Work; Lock-Out/Tag-Out; Heat Stress; Hazwaste; Fire Prevention; equipment safety and certifications  | Monthly safety meetings; Tailgate meetings; Annual reporting; Annual and periodic training; Self-inspections  | All Health and Safety require training  | Annual reports; self-inspections; training; Records are required to be kept up to 30 years beyond termination of employees   |
| Mobile (Vehicles)  |   |  |   |   |  |
| Agency Name  | Area of Oversight   | Examples of Area Coverage  | Oversight Methods   | Training Requirements   | Recordkeeping Requirements   |
| California Department of Motor Vehicles                                    | Commercial Motor Vehicles   | State Registration/License requirements; Motor Carrier Program   | Annual registration/license renewals; Annual permit report/renewal, certificates and annual fees; Drug and alcohol testing (CSAT) program; Employer Pull Notice program with security checks (driver record review)   | (see DOT reqts)   | Vehicle information; Employee information; Insurance information; Drug and alcohol testing; Hours of Service information   |
| California Highway Patrol  | Commercial Motor Vehicles   | Biennial Inspection of Terminal Program  | Biennial facility and vehicle inspections; Roadside vehicle inspections   | (see DOT reqts)   | Vehicle information; Employee information; Commercial driver information; Drug and alcohol testing; Hours of service information; Insurance information                  |
| U.S. DOT, Federal Motor Carrier Safety Administration                      | Commercial Motor Vehicles   | Commercial Vehicles  | Hazmat registrations; Special permit registrations; Security plans; Unannounced and triennial inspections of facilities, vehicles and records   | General awareness; Safety; Function specific; Security; Hazardous material specific | Vehicle information; Employee information; Commercial driver information; Drug and alcohol testing; Hours of service information; Insurance information; Shipping papers |

Notes: Except as noted, all records must be kept for at least 3 or 5 years.  
 Most reports are submitted online  
 Spill Response means agency representative is present at an actual spill response to review SHP procedures

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|  | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|--|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:   |                                       |  |                                     |                                     |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**X.b.).** The City of Signal Hill is located within the Long Beach Plain groundwater basin. Groundwater on the project site is encountered under shallow water table conditions within relatively low permeability sediments. This groundwater does not provide enough water to be utilized as a water supply resource, and deeper aquifers north of Signal Hill are used for groundwater supply.

Water is presently injected/extracted at the CUP sites into/from deeper oil bearing zones which does not directly affect the shallower aquifers associated with drinking water. No new freshwater will be used in the project operations. No change in site operations will occur with the proposed project that will influence direction or rate of flow of groundwater. Further, the project site is currently paved/developed and will remain as such once the modifications are complete. Therefore, the project will not increase the potential to interfere substantially with groundwater recharge as compared to the existing setting. No significant impacts will result with the proposed project.

|  | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|--|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:   |                                       |  |                                     |                                     |
| c) Substantially alter the existing drainage pattern of the site or area, including alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

|   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**X.c) and .d).** Refer also to X.b) above. The site is located in a dense urbanized area, and no stream or river courses are located in the immediate vicinity. The closest water body to the facility is the Pacific Ocean, approximately three miles to the south. The proposed project site and vicinity are relatively flat. The currently proposed project does not include additional paving that would increase the rate or amount of surface runoff, nor will the improvements result in a change to absorption rates, drainage patterns, or the rate or amount of runoff; refer to [Figure 4A, Project Disturbance](#). Substantial erosion or siltation on- or offsite, or a substantial increase in the amount of runoff, are therefore not anticipated.

| Would the project:  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**X.e).** Refer to X.c) and X.d), above. Minor disturbance to the existing paved surface within the project boundaries will be required to implement the proposed modifications, The currently proposed project does not include additional paving that will increase the rate or amount of surface runoff, nor will the improvements result in a change to the rate, amount, or quality of runoff; refer to [Figure 4A, Project Disturbance](#). Less than significant impacts with regard to runoff from the site will occur.

| Would the project:                                | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| f) Otherwise substantially degrade water quality? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**X.f.).** Refer also to X.a), above. As discussed in Chapter 1, the proposed modifications will result in installation of modern technology and equipment that will allow for fewer equipment leaks and mechanical upsets in the gas plant itself, as well as more effective and efficient gathering and processing of produced gas that will result in less back-pressure and reduced potential for leaks in the upstream gathering system. Additionally, active injection/extraction wells located within project CUP sites extend through water bearing zones into oil bearing zones, and are encased to prevent leaks and contamination to aquifers used as sources of drinking water. It is expected that any contamination would be immediately reported and remediated in accordance with federal, State, and local standards. Potential effects on groundwater quality are addressed by the State of California DOGGR rather than the NPDES (stormwater discharge) program. CUP Site No. 2 (which includes the project site) operates under DOGGR Waterflood Project Permits. These permits set forth guidelines whereby water injection into oil bearing zones is regulated, and the isolation of groundwater intervals is strictly enforced. As such, the proposed improvements will not substantially degrade water quality.

| Would the project:   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| h) Place within 100-year flood hazard area structures which would impede or redirect flood flows?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**X.g) and .h).** The project site is located within the Zone "C" Flood Hazard Zone, identified in the (FEMA) flood insurance study as an area of moderate or minimal hazard from the principal source of flooding in the area. Buildings in this Zone could be flooded by severe, concentrated rainfall coupled with recognized inadequate local drainage systems. The project does not propose any housing or structures that will impede or redirect flows. Due to the existing industrialized uses of the proposed project site and surrounding facilities, potential flood impacts are not expected to be significant.

| Would the project:  | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dike? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**X.i).** Refer to X.d), above. The project site is located within the Zone "C" Flood Hazard Zone; however, due to the existing industrialized uses of the proposed project site and surrounding facilities, potential flood impacts are not expected to be significant. The proposed project does not involve new construction that could expose people to new risks of loss, injury, or death involving flooding. The site is not located within an area subject to inundation in the event of a dam failure, and there are no levees near the facility that could fail. Therefore, no significant adverse impacts from flooding are anticipated as a result of the proposed project.

| Would the project:                            | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| j) Inundation of seiche, tsunami, or mudflow? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**X.j).** The facility is located approximately three miles north of the nearest body of water (Pacific Ocean). As such, there is minimal potential that the facility could be affected by seiches or tsunamis. The facility is on relatively flat land in a built-out area, so the possibility of mudflows is also remote. Therefore, no significant adverse impacts from flooding are anticipated as a result of the proposed project.

### **Mitigation Measures**

Based on the above information relative to hydrology and water quality, no significant adverse impacts were identified. Therefore, no mitigation measures are required for the construction or operation of the proposed project.

**XI. LAND USE AND PLANNING**

**Significance Criteria**

Land use and planning impacts will be considered significant if the proposed project conflicts with the land use and/or zoning designations established by the City of Signal Hill.

**Environmental Setting and Impacts**

***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project relative to hydrology and water quality.

The 1998 MND did not identify any potentially significant adverse impacts for any of the land use and planning checklist items.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| a) Physically divide an established community?  | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

|   | <b>Potentially<br/>Significant<br/>Impact</b> | <b>Less Than<br/>Significant<br/>With<br/>Mitigation</b> | <b>Less Than<br/>Significant<br/>Impact</b> | <b>No Impact</b>                    |
|---|---|--|---|-------------------------------------|
| mitigating an environmental effect?   |   |  |   |                                     |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/>                      | <input type="checkbox"/>                                 | <input type="checkbox"/>                    | <input checked="" type="checkbox"/> |

**XI.a), .b), and .c).** The modifications involved in the proposed project will be developed entirely within the existing boundaries of CUP Site No. 2. As such, the proposed project will not physically divide any established communities or affect adjacent properties. The site is currently designated Light Industrial on the City of Signal Hill General Plan Land Use Map and is zoned GI (General Industrial). The proposed project is consistent with these designations and will not require a General Plan amendment or rezone to allow for implementation. The project site is not located within the boundaries of a habitat or natural community conservation plan and is within CUP Site No. 2 which is fully developed and highly industrialized; no sensitive biological resources are present onsite. Therefore, the proposed project is consistent with the existing land use designation, is consistent with uses permitted within the zone, and will not conflict with any applicable land use plan. No impacts will occur, and no mitigation measures are required.

### **Mitigation Measures**

Based on the above information relative to land use impacts, no significant adverse impacts were identified. Therefore, no mitigation measures are required for the construction or operation of the proposed project.

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## **XII. MINERAL RESOURCES**

### **Significance Criteria**

Potential impacts on mineral resources will be considered significant if any of the following conditions are met:

- The proposed project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State.
- The proposed project would result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or



type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project relative to mineral resources.

The 1998 MND did not identify any potentially significant adverse impacts for any of the mineral resources checklist items. Mineral Resources were evaluated in the 1998 MND in combination with Energy Resources; however, with the current checklist format, Mineral Resources are evaluated separately herein in Section XII using the significance criteria identified above.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                              |                                     |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?                                 | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**XII.a).** and **b).** The proposed project does not change the natural gas processing activities currently approved and operating at the site. The proposed project would allow for improvements to enhance the efficiency and reliability of SHP’s ability to provide continued operation of natural gas recovery and processing-related facilities already present onsite and within the surrounding City of Signal Hill. Such operations have been active for over 85 years and are an important part of the region’s petroleum resource recovery operations.

Oil and gas extraction and processing will continue at the SHWU Facility and other area oil and gas drilling and recovery operations, even in the absence of the proposed project. Continued extraction of resources from the Long Beach Oil Field is not considered to represent a loss in the availability of important mineral resources in the same way that building a development project over a mineral resource such as gravel, asphalt, bauxite, or gypsum (which are commonly used for construction activities or industrial processes) would make these resources unavailable for other uses.

Natural gas processing activities within the confines of the existing SHWU Facility will continue to be regulated by the City's previous determinations. No other mineral resources are present at the SHWU Facility, and no significant impacts will occur.

### **Mitigation Measures**

Based on the above information relative to impacts on mineral resources, no significant adverse impacts were identified. Therefore, no mitigation measures are required for the construction or operation of the proposed project.

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## **XIII. NOISE**

### **Significance Criteria**

Impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinance or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration

equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project relative to noise.

The 1998 MND identified potentially significant adverse impacts relative to noise for the checklist items. The 1998 MND identified mitigation (Mitigation Measures #5a to #5e of the 1998 MND) to reduce construction and operational noise impacts to a level of less than significant. In accordance with the 1998 MND, these mitigation measures have been implemented with the existing facilities onsite. Additionally, Mitigation Measure #5d required that a noise study be performed after project installation to confirm that operation of the gas processing plant would not exceed the City noise standard of 70 dB as measured at the property line. This mitigation measure has been implemented, and the results of testing indicated a sound level of below 70 dBA for each of the two sites where measurements were taken at the property line (adjacent to Orange Avenue); refer to [Appendix D, Signal Hill Sound Level Survey](#), of this Draft Subsequent MND. The 1998 mitigation measures will continue to be implemented.

### ***Enforcement of Noise Reduction Measures***

All existing operations that were part of the 1998 project and any future activities (operation or construction) that are included in the proposed project will be subject to OSHA and NIOSH standards and enforced by OSHA. In addition, all construction activities are limited by the City of Signal Hill to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday (Municipal Code, Chapter 9.16, Noise).

Additionally, the Conditions of Approval for the City's extension of CUP 97-03 to December 31, 2014 included conditions pertaining to potential noise effects from continued operation of CUP Sites No. 1-7 and operation of the existing gas processing plant. Conditions 12.a) to 12.d) were added to reduce the level of noise from operation of the Consolidated Drilling and Production sites. Such measures addressed the following: 1) deliver to or remove equipment and materials from any of the Consolidated Drilling and Oil Production Sites between the hours of 7:00 a.m. and 7:00 p.m. except emergencies; 2) the operator shall use electric motors to power equipment. Vehicle motors, including portable service or drilling rigs, may use internal combustion engines; 3) the Director of Community Development may approve internal combustion engines for gas processing equipment if noise levels as measured at the Drill Site boundaries can be maintained within the noise levels allowed by the Signal Hill Municipal Code Chapter 9.16; and, 4) the operator shall provide noise controls as required by Signal Hill Municipal Code Sections 16.16.110, entitled, "Soundproofing," et. seq. and Section 16.20.100. Additionally, Condition 16 required that, after the operator installs the gas processing equipment, the operator shall test the level of noise at the property line generated by the equipment. If the noise level is greater than 70 dB, the operator shall prepare and submit a Noise Mitigation Plan to the Director of Community

Development for review and approval. The plan may including the construction of sound walls or any other method both feasible and reasonable that would reduce the noise level to 70 dB or below at the property line. The operator shall, within three months, design and successfully install measures to mitigate noise levels to 70 dB or below. This measure has been implemented and the results of noise level testing for operation of the existing gas processing plant are provided in [Appendix D, Signal Hill Sound Level Survey](#), of this Draft Subsequent MND and discussed in greater detail below.

These existing regulations and conditions are currently applicable to the SHWU Facility and will also continue to apply during construction and operation of the proposed project. The City of Signal Hill is responsible for enforcement of such requirements.

|   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                |
|---|--------------------------------|---------------------------------------|------------------------------|--------------------------|
| Would the project result in:  |                                |                                       |                              |                          |
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | <input type="checkbox"/>       | <input checked="" type="checkbox"/>   | <input type="checkbox"/>     | <input type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?  | <input type="checkbox"/>       | <input checked="" type="checkbox"/>   | <input type="checkbox"/>     | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?  | <input type="checkbox"/>       | <input checked="" type="checkbox"/>   | <input type="checkbox"/>     | <input type="checkbox"/> |

**XIII.a.), c.), and d.).** The existing gas processing plant is an industrial-type use located within the Long Beach Oil Field which supports extensive oil/gas extraction wells and associated processing facilities. Land uses surrounding the parcel on which the project site is located include a self-storage operation to the north, across E. Spring Street, with an auto-oriented commercial retail business to the northwest, and equipment/collision repair businesses to the northeast. A retail car sales business borders the site to the east. To the south, the parcel is bordered by E. 29<sup>th</sup> Street. Across E. 29<sup>th</sup> Street are various commercial retail businesses (e.g. real estate office) and a chapel, and a commercial office park is located just to the south/southeast. To the west is Orange Avenue, with a generally vacant and highly-disturbed parcel that supported the former gas processing facility bordering the street to the west.

The ambient noise environment in the proposed project area is comprised of contributions from equipment and operations within the surrounding industrial and commercial areas, and from traffic on roads within the vicinity of the site, including I-405 just to the north. Drilling and oil

production operations are part of the existing condition and contribute to the baseline ambient noise conditions.

Noise would be generated from both construction and operational activities associated with the proposed project. Noise impacts from construction will occur during demolition, excavation, and construction required for the proposed equipment modifications. The construction equipment associated with the proposed project may include backhoes, welding machines, trucks, cranes and/or compactors. Examples of noise levels from construction equipment are presented in [Table XIII-1, Construction Noise Sources](#). Such noise will be generated intermittently over the approximately two-month construction period. In addition, the largest construction equipment will not always be operating simultaneously or on the same days.

**Table XIII-1 Construction Noise Sources**

| Equipment        | Typical Noise Levels (decibels) <sup>[1],[2][3]</sup> |
|------------------|---|
| Truck            | 88  |
| Air Compressor   | 81  |
| Flatbed Truck    | 84  |
| Pickup           | 70  |
| Tractor Trailer  | 75  |
| Cranes           | 83  |
| Pumps            | 76  |
| Welding Machines | 72  |

1. Data are modified from the City of Los Angeles, 1998. Levels are in dBA at a 50-foot reference distance. These values are based on a range of equipment and operating conditions.
2. Values are intended to reflect noise levels from equipment in good condition, with appropriate mufflers, air intake silencers, etc. In addition, these values assume averaging the sound level over all directions from the listed piece of equipment.
3. As construction is temporary and typical of urban environments, the City of Signal Hill does not have specific noise limits for construction activities. Instead, the City limits the hours that construction can occur to 7:00 a.m. to 6:00 p.m. Monday through Friday.

Construction activities for the proposed project will occur within the boundaries of the existing SHWU Facility. The closest receptor is located adjacent to the southwest of the site; refer to [Figure 1B, Local Vicinity Map](#). Due to distance, the noise level from construction activities is not anticipated to adversely affect this or other adjacent locations. In addition, the noise generated from construction activities will be located near ground level, with all construction activities occurring behind permanent masonry walls. As a result, the noise levels are expected to attenuate over distance to a greater extent.

Project construction activities shall comply with City of Signal Hill Noise Ordinance Section 9.16.050 relating to construction noise. Construction activities at the project site are limited by the City of Signal Hill noise ordinance to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday. These limitations will remain in effect during construction of the currently proposed project. Because of the nature of the construction activities, the type, number, operation time, and loudness of construction equipment will vary throughout the construction period. The sound level associated with construction will change as construction progresses, and construction noise sources will be temporary and intermittent and will cease following construction activities; however, mitigation is proposed (MM NOI-1a to NOI-1c) to ensure project construction does not result in a significant noise impact. Such measures will include ensuring that all construction

equipment, fixed or mobile, be equipped with properly operating and maintained mufflers. Stationary construction equipment will also be placed onsite such that emitted noise is directed away from sensitive noise receivers.

Based on the noise levels anticipated for the proposed project, noise producing equipment at the SHWU Facility is not expected to exceed maximum noise levels identified in the City of Signal Hill noise ordinance. Operation of the new equipment installed as part of the proposed project is not expected to generate a significant increase in noise levels over existing conditions. Further contributing to the reduction in noise is the distance of the facilities (within the interior) from the exterior parcel boundary and the perimeter block wall, particularly along Spring Street where it is combined with a landscaped berm; no changes to the wall (or berm) will occur with the proposed project.

As required by the City, a sound level survey was conducted at the site in February 2012 to assess noise generated by operation of the existing gas plant; refer to [Appendix D, Signal Hill Sound Level Survey](#), of this Draft Subsequent MND. Measurements were taken at two locations along the western property boundary (near Orange Avenue). Both readings were below a level of 70 dBA and therefore in compliance with City noise thresholds for the land use. Therefore, it is anticipated that little additional noise will be generated during operation of the proposed project.

Based on the fact that the proposed equipment will be placed within a concrete block wall, and the fact that the new equipment will have noise ratings similar to existing equipment, significant noise impacts from operation of the proposed project are not anticipated to occur; however, the project will be subject to CUP Condition #16 and mitigation measures (MM NOI-2a to NOI-2b) which will require noise level testing following installation of the proposed improvements to ensure that operational noise levels are less than significant and that no additional measures are required to reduce substantial noise generated. Additionally, all future servicing, reworking, and/or re-drilling at any of the CUP sites shall occur in compliance with Section 9.16.070 of the Signal Hill Municipal Code.

|   | <b>Potentially<br/>Significant<br/>Impact</b> | <b>Less Than<br/>Significant<br/>With<br/>Mitigation</b> | <b>Less Than<br/>Significant<br/>Impact</b> | <b>No Impact</b>         |
|---|---|--|---|--------------------------|
| Would the project result in:  |   |  |   |                          |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/>                      | <input type="checkbox"/>                                 | <input checked="" type="checkbox"/>         | <input type="checkbox"/> |

**XIII.b).** Construction activities that will occur at the facility have the potential to generate low levels of groundborne vibration onsite. The only activity that may generate low levels of groundborne vibration is construction of the foundations for the new equipment. Such onsite groundborne vibration activity would be temporary and intermittent and is not anticipated to result in a significant noise impact.

Operation of the proposed project will not involve any new drilling or other similar activities that would have the potential to increase groundborne vibration. The proposed equipment does not have parts or processes that exert mechanical energy to any appreciable extent that would contribute to groundborne vibrations. Operation of the proposed project is therefore not anticipated to cause significant adverse groundborne vibration or noise impacts.

|   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project result in:  |                                |                                       |                              |                                     |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the area to excessive noise levels?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**XIII.e. and f.).** The proposed project is not located within an airport land use plan or within the vicinity of a private airstrip. Furthermore, the SHWU Facility is not located within the normal flight pattern of any airport. As noise impacts from the proposed project are concluded to be less than significant, and because the facility is not located within an airport land use plan or within the vicinity of a private airstrip, no significant noise impacts to people living or working in an airport land use plan, or within the vicinity of a private airstrip, are expected.

**Mitigation Measures**

Based on the above information relative to impacts with regard to noise, mitigation measures are required for the construction or operation of the proposed project.

With regard to noise, the following mitigation measures are proposed to reduce impacts resulting from potential construction and operational noise to a level of less than significant. The 1998 mitigation measures will continue to be implemented.

**Short-Term Construction**

**MM NOI-1**

In order to reduce construction noise, the following measures shall be implemented during construction of the proposed natural gas processing facility to the satisfaction of the SCAQMD or designee:

- a. Construction activities shall comply with City of Signal Hill Noise Ordinance Section 9.16.050 relating to construction noise. Construction is permitted only between the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday.
- b. All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the SCAQMD or designee.
- c. Stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers to the satisfaction of the SCAQMD or designee.

### ***Long-Term Operation***

#### **MM NOI-2**

In order to reduce long-term operational noise, the following measures shall be implemented for the proposed natural gas processing facility to the satisfaction of the SCAQMD or designee:

- a. Within thirty (30) days of installation of the proposed equipment modifications at the existing gas processing facility at Site No. 2, the operator shall measure the noise at the property line and submit said readings to the SCAQMD for review. The SCAQMD shall require the construction of sound barriers around the facility, or any other mitigation both feasible and appropriate, should the gas processing equipment not meet noise standards found in the Signal Hill Municipal Code Chapter 9.16, entitled “Noise,” for industrial areas.
- b. On an annual basis (once yearly), the operator shall measure the noise at the property line and submit said readings to the Planning Director for review. The Planning Director shall require the construction of sound barriers around the facility or any other mitigation both feasible and appropriate, should the gas processing equipment not meet noise standards found in Signal Hill Municipal Code Chapter 9.16, entitled “Noise,” for industrial areas.

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## **XIV. POPULATION AND HOUSING**

### **Significance Criteria**

The impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing, or employment inconsistent with adopted plans either in terms of overall amount or location.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or



type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project on population and housing.

The 1998 MND did not identify any potentially significant adverse impacts for any of the population and housing checklist items.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing everywhere?  | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**XIV.a), .b), and .c).** The proposed project will require modifications to the existing equipment at the SHWU Facility and will not involve an increase, decrease, or relocation of population. No existing housing or residents are present onsite, and therefore, the displacement of housing or people is not required. As construction labor needs will be limited, personnel for construction activities is expected to come from the existing labor pool in southern California. Further, operation of the proposed project is not expected to require any new permanent employees at the SHWU Facility. Additionally, the increased availability of gas supply resulting with the

proposed project is not considered to be growth inducing. The proposed improvements will result in enhancement of local gas supplies available for public sale and consumption through the proposed improvements at the natural gas plant. The proposed project will allow for the transfer of pipeline quality gas to the local gas distribution system for sale to third party(s) for beneficial use; however, the availability of such supplies as a result of the project will not be directly growth-inducing. The gas made available for sale by the proposed project will meet area demand for such resources and displace gas currently being transported from greater distances away from Long Beach; such demand will be influenced by economic conditions at the time that the gas is purchased.

Therefore, construction and operation of the proposed project are not expected to have a significant adverse impact on population or housing, induce substantial population growth, or exceed the growth projections contained in any adopted plans.

### **Mitigation Measures**

Based on the above information relative to impacts relative to population and housing, no significant adverse impacts were identified, and therefore, no mitigation measures are required for the construction or operation of the proposed project.

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## **XV. PUBLIC SERVICES**

### **Significance Criteria**

Impacts on public services will be considered significant if a proposed project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities (the construction of which could cause significant environmental impacts) in order to maintain acceptable service ratios, response times, and/or other performance objectives.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant

inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project on public services.

The 1998 MND did not identify any potentially significant adverse impacts for any of the public services checklist items.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| <p>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:</p> <p>a) Fire protection?</p> | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**XV.a).** The SHWU Facility will continue to be served by the City of Signal Hill Fire Department, primarily from Los Angeles County Fire Department (Signal Hill) Station No. 60, located at 2300 E. 27<sup>th</sup> Street, approximately 0.7 miles to the northwest of the proposed project site. The station currently serves the existing facilities. The proposed project will not increase the requirements or need for additional or altered fire protection services as the modifications proposed are not expected to generate significant adverse hazards, including risks of fires or explosions, in part because the proposed project would not use or generate new hazardous materials onsite that would require fire department services in the event of an accidental release. No new fire hazards are anticipated, and therefore, no significant adverse impacts to fire protection services will occur.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: |                                       |  |                                     |                                     |
| b) Police protection?   | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**XV.b).** The City of Signal Hill Police Department is the responding agency for law enforcement needs at the SHWU Facility. A pass-coded security gate is presently at the facility, so there is no need to have a security guard onsite, as the entrance to the site is controlled. Therefore, no impacts to the local police department services are expected from the proposed project during construction or operation. Additionally, all modifications will occur within the confines of the existing boundaries of the SHWU Facility, with no additional workers required for operation of the proposed facility improvements. No components of the proposed project are expected to increase the need for police protection services, as new or modified equipment and operational procedures are generally anticipated to be similar to those occurring under existing conditions. No significant impacts with regard to police protection services will occur.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: |                                       |  |                                     |                                     |
| c) Schools?   | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| d) Parks?   | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| e) Other public facilities?   | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**XV.c), .d), and .e).** The proposed project will involve modifications at the existing SHWU Facility, currently in operation. The local workforce in southern California is expected to fill the short-term construction positions required for the proposed project, and no increase in the number of permanent workers is expected at the SHWU Facility as the result of project implementation. The proposed project will not result in an increase in the local population that could cause adverse physical impacts or adversely affect service ratios. Therefore, the proposed project is not expected to generate significant adverse impacts to schools, parks, or other public facilities within the Signal Hill or Long Beach communities.

### **Mitigation Measures**

Based on the above information relative to impacts on public services, no significant adverse impacts were identified. Therefore, no mitigation measures are required for the construction or operation of the proposed project.

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## **XVI. RECREATION**

### **Significance Criteria**

The impacts to recreation will be considered significant if:

- The proposed project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The proposed project adversely affects existing recreational opportunities.

### **Environmental Setting and Impacts**

#### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project

(if not already in place) in order to further avoid and/or reduce potential effects of the proposed project with regard to recreation.

The 1998 MND did not identify any potentially significant adverse impacts for any of the recreation checklist items.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?                         | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**XVI.a) and .b).** As indicated in Section XIV, Population and Housing, the existing labor pool in southern California is sufficient to fulfill the labor requirements for the construction of the proposed project. Operation of the facilities affected by the proposed project will not require any additional permanent workers onsite following installation. Therefore, there will be no changes in population densities as the result of project implementation. No substantial increase in the use or degradation of existing neighborhood and regional parks or other recreational facilities is expected with the proposed modifications to the existing gas processing plant.

The proposed project does not include recreational facilities or require the construction or expansion of existing recreational facilities. No significant adverse impacts to recreational facilities will occur.

### Mitigation Measures

Based on the above information relative to impacts on public services, no significant adverse impacts were identified. Therefore, no mitigation measures are required for the construction or operation of the proposed project.

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## XVII. TRANSPORTATION / TRAFFIC

### Significance Criteria

The impacts on transportation and traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where the level of service (LOS) is reduced to D, E, or F for more than one month.
- An intersection's volume to capacity ratio increases by 0.02 (two percent) or more when the LOS is already at D, E, or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans, or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists, or pedestrians are substantially increased.
- The need for more than 350 employees.
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day.
- Increase customer traffic by more than 700 visits per day.

## **Environmental Setting and Impacts**

### ***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project with regard to transportation/traffic.

The 1998 MND did not identify any potentially significant adverse impacts for any of the transportation and traffic checklist items.

Additionally, the Conditions of Approval for the City’s extension of CUP 97-03 to December 31, 2014 included Condition 11.c), which requires that the operator maintain a minimum of five off-street parking spaces at each Consolidated Drilling and Oil Production Site as required by Signal Hill Municipal Code Section 16.20.050, entitled “Off-Street Parking.”

These existing regulations and conditions are currently applicable to the SHWU Facility and will also continue to apply during construction and operation of the proposed project, as appropriate. The City of Signal Hill is responsible for enforcement of such requirements.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                              |                                     |
| a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?   | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**XVII.a) and b).** Operation of the proposed project will not require any new permanent employees, and therefore, no additional commuter or maintenance trips will occur as compared to existing conditions. Vehicle trips for maintenance purposes will also not increase substantially with the proposed modifications. Thus, the project will not adversely affect the existing LOS at nearby intersections or roadways, or result in conflict with any congestion management plans or applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system.

Construction of the modifications proposed with the project will require a limited number of construction workers on any given day; refer to [Table III-2](#) for anticipated construction requirements. Additionally, the project would generate a limited number of trips required to haul



any existing equipment that is removed onsite to an approved offsite location for proper disposal. It is estimated that implementation of the proposed improvements will result in a limited number of vehicle trips per day during construction, including vehicle trips generated by workers travelling to and from the site on a daily basis for purposes of work; however, this scenario is conservative. Sufficient parking for these workers is readily available onsite, and availability of such onsite parking was conditioned with prior approval of CUP 97-03 for CUP Sites No. 1-7, as described above.

| Would the project:  | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**XVII.c).** The proposed project includes modifications to the existing gas plant facilities. The proposed project would not involve the delivery of materials via air, so no change or increase in air traffic is expected.

| Would the project:   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|--|---------------------------------------|--|-------------------------------------|-------------------------------------|
| d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**XVII.d).** The proposed project does not involve construction of roads or use of incompatible equipment on roads (e.g., farm equipment). Therefore, no increased hazards due to a design feature or incompatible use is expected.

| Would the project:                                  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| e) Result in inadequate emergency access or access? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**XVII.e).** The proposed modifications will occur within the boundaries of the existing SHWU Facility, at the location of the existing gas processing plant. Although a minor increase in local traffic due to equipment and workers going to and from the site will occur, such effects are not expected to result in inadequate emergency access at or adjacent to the SHWU Facility because the exits and entrances to the site will remain unchanged and the existing emergency access gates to the SHWU Facility will be maintained. Therefore, the project will not result in inadequate emergency access or access, and no impacts will occur.

Parking for the proposed project construction workers will be provided within the confines of the existing boundaries of the SHWU Facility or on adjacent streets. As a limited number of construction workers is expected to be required to modify the existing equipment, sufficient parking will be available. No new workers are required for operation of the facilities as modified by the proposed project, and therefore, no additional parking will be necessary. Therefore, the proposed project will not result in a significant impact with regard to parking.

| Would the project:   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|--|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such features? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**XVII.f).** The proposed project will be constructed within the confines of the existing SHWU Facility and is not expected to conflict with adopted policies, plans, or programs supporting alternative transportation modes (e.g., bus turnouts, bicycle racks). Therefore, no impacts will occur.

### Mitigation Measures

Based on the above information relative to impacts on traffic and transportation, no significant adverse impacts were identified. Therefore, no mitigation measures are required for the construction or operation of the proposed project.

**XVIII. UTILITIES AND SERVICES**

**Significance Criteria**

The impacts on solid and hazardous waste will be considered significant if the following occur:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

**Environmental Setting and Impacts**

***Impacts Analyzed in Previous 1998 Project MND***

The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project on utilities and services.

The 1998 MND did not identify any potentially significant adverse impacts for any of the utilities and services checklist items.

|   | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>                    |
|---|---------------------------------------|--|-------------------------------------|-------------------------------------|
| Would the project:  |                                       |  |                                     |                                     |
| a) Exceed wastewater treatment requirements of applicable Regional Water Quality Control Board? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities?       | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

|   | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact | No Impact                           |
|---|--------------------------------|---------------------------------------|------------------------------|-------------------------------------|
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?                                     | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?  | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |

**XVIII.a). to e).** The proposed project will result in modifications to the existing onsite gas processing plant to improve reliability and efficiency of operations and to enable SHP to ultimately treat and deliver pipeline quality gas to the local gas distribution system that meets the required specifications of the City of Long Beach. No improvements are proposed that would adversely affect current operating conditions with regard to demand for public wastewater or water treatment services or facilities or water supplies will occur with the proposed modifications. No impacts will occur, and no mitigation measures are required.

|  | Potentially Significant Impact | Less Than Significant With Mitigation | Less Than Significant Impact        | No Impact                           |
|--|--------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|
| Would the project:   |                                |                                       |                                     |                                     |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/>       | <input type="checkbox"/>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?                | <input type="checkbox"/>       | <input type="checkbox"/>              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**XVIII.f). and .g).** The removal of existing equipment onsite during the construction phase will generate a limited amount of waste materials such as asphalt, structural steel, copper, and/or stainless steel. Metals with economic value will be routed to authorized recyclers for recovery and reuse (i.e., sold as valuable scrap) or sold for spare part recovery, as appropriate.

The disposal of construction-related waste could contribute to the diminishing available landfill capacity; however, sufficient landfill capacity currently exists in the Signal Hill area to handle disposal of the minimal amount of construction waste that will be generated by the proposed improvements. Any solid waste produced (i.e. packaging) will be taken to a local facility operated by EDCO Disposal.

Clean soil excavated to provide new foundations will be reused onsite as backfill where possible. Any excess soils will be diverted to the existing market as clean reusable soil. All soil excavation work, especially any contaminated soil related to either the proposed project or related to other onsite maintenance work, is managed under SHP's Soil Mitigation Plan required by SCAQMD Rule 1166. The 1166 AQMD permit applies to various locations within SHP's oil field. All soils excavated as part of the proposed project will be monitored under the conditions required by the *Various Locations Rule 1166 Contaminated Soil Mitigation Plan*. This Mitigation Plan was approved by the AQMD and is actively renewed on an annual basis. The permit allows for the removal of a total of 2,000 cubic yards (c.y.) of soil. As shown in [Figure 4A, Project Surface Disturbance](#), approximately 24 c.y. of soil will be excavated and removed with the proposed project, well under the City of Signal Hill's requirement for a grading permit and well within the 2,000 c.y. standard. Any contaminated soils will be isolated, stockpiled, and taken to the Coleman Stockpile Facility located near California Avenue and Spring Street and eventually transported to a Waste Management Thermal Remediation Solutions facility for disposal. Soils determined to be non-hazardous will be transported to SHP's soil stockpile for reuse in the field. This facility is located adjacent to Drill Site #2 at Walnut Avenue and Willow Street in the City of Signal Hill. The asphaltic concrete (a.c.) paving removed from the site (approximately 30 c.y.) will be taken to the Blue Diamond Recycling Facility located at California Avenue and Spring Street in Signal Hill. As such, construction impacts of the proposed project on waste treatment and disposal facilities are expected to be less than significant. During operation, the proposed project is expected to generate only small volumes of solid waste, primarily from administrative or office activities, e.g., waste paper. The proposed project will not result in an increase in the number of permanent employees at the SHWU Facility, so no other types of substantial increase in solid waste is expected. Consequently, the proposed project is not expected to generate significant adverse non-hazardous waste impacts.

The existing site operations do not generate or require disposal of a substantial amount of hazardous wastes or soils. Operation of the new equipment installed with the proposed project will not use or generate new hazardous materials onsite. Any excavated soils determined to be contaminated during demolition or excavation activities would be documented, containerized, properly manifested, and shipped to proper treatment and disposal in compliance with applicable local, State, and/or federal laws pertaining to hazardous materials. Any amount of spent lubrication oils from maintenance activities will be collected and recycled, as appropriate, and therefore, such materials are considered to be a recycled material and not a waste. Therefore, no significant hazardous waste impacts will occur.

## Mitigation Measures

Based on the above information relative to impacts on utilities and services, no significant adverse impacts were identified. Therefore, no mitigation measures are required for the construction or operation of the proposed project.

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## XIX. MANDATORY FINDINGS OF SIGNIFICANCE

|   | Potentially<br>Significant<br>Impact | Less Than<br>Significant<br>With<br>Mitigation | Less Than<br>Significant<br>Impact  | No Impact                |
|---|--------------------------------------|--|-------------------------------------|--------------------------|
| Would the project:  |                                      |  |                                     |                          |
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/>             | <input type="checkbox"/>                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**XIX.a).** The 1998 MND analyzed the impacts of continued operation of seven oil production facilities operated by SHP (CUP Sites No. 1-7) with no proposed change to the physical site boundaries or type of operations, with the exception of a new natural gas processing facility at CUP Site No.2 (current proposed project site). The new natural gas processing plant included a vapor recovery system, natural gas dehydration system, and production of NGL and fuel gas.

The changes from the 1998 project compared to the proposed project are: 1) modification of the existing vapor recovery system (additional compression capacity); 2) modification of the existing natural gas dehydration system (upgrade of propane refrigeration and glycol dehydration equipment); 3) addition of a new CO<sub>2</sub> filtration system to produce gas that meets City of Long Beach specifications; and, 4) delivery of pipeline quality sales gas to the local gas distribution system. Further, the plant was modified in 2008 by adding compression capacity at the plant inlet; such improvements are part of the current baseline conditions and are not analyzed in this Draft Subsequent MND. As applicable, any existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project (if not already in place) in order to further avoid and/or reduce potential effects of the proposed project.

The proposed project does not have the potential to adversely affect the environment, reduce or eliminate any plant or animal species, or destroy prehistoric records of the past. The proposed project would occur in an existing industrial facility that has been previously disturbed, graded,

and developed and, therefore, does not support any habitat of fish or wildlife species. Further, the proposed project site is in an area that is generally developed with land uses comprised of commercial and industrial uses. The proposed project will not extend into environmentally sensitive areas, but will remain within the confines of an existing, operating facility. For additional information, see Section IV, Biological Resources and Section V, Cultural Resources.

|  | <b>Potentially<br/>Significant<br/>Impact</b> | <b>Less Than<br/>Significant<br/>With<br/>Mitigation</b> | <b>Less Than<br/>Significant<br/>Impact</b> | <b>No Impact</b>         |
|--|---|--|---|--------------------------|
| Would the project:   |   |  |   |                          |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probable future projects)? | <input type="checkbox"/>                      | <input type="checkbox"/>                                 | <input checked="" type="checkbox"/>         | <input type="checkbox"/> |

**XIX.b).** As the Lead Agency under CEQA, the SCAQMD uses the same significance thresholds for project-specific and cumulative impacts for all environmental topics analyzed. Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable; conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.”<sup>24</sup>

With respect to aesthetics, no cumulative impacts are expected, as all project components will be visually similar in nature to the existing industrial-type equipment located within the confines of the existing SHWU Facility, which is surrounded by a perimeter wall. Additionally, mitigation is proposed to require landscaping which will enhance the visual setting and reduce views into the site from offsite public vantage points. Therefore, no significant change in visual characteristics is expected at the project site, and no cumulative aesthetic impacts are expected.

With respect to air quality, no cumulative impacts are anticipated. The proposed project will increase the efficiency of the onsite equipment, and a substantial change in operations will not occur with the proposed modifications. Emissions resulting with implementation of the proposed project will be below the SCAQMD’s thresholds for all criteria air pollutants. Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the SCAQMD air quality significance criteria. Therefore, the proposed project will not

<sup>24</sup> SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3. <http://www.aqmd.gov/hb/2003/030929a.html>

cause a significant environmental effect, nor result in an unavoidable cumulatively considerable contribution to an air quality impact.<sup>25</sup>

With respect to geology, no cumulative geology impacts are expected because all of the structures associated with the proposed project will be built in conformance with the UBC. Therefore, no significant change in impacts to geology is expected at the project site, and no cumulative geology impacts will occur.

Emissions relative to GHG from the proposed project will be below the SCAQMD's cumulatively considerable significance threshold for GHGs. No significant adverse impacts are expected, either individually or cumulatively.

With respect to hazards, no cumulative hazard impacts are expected because no new hazardous materials will be used at the site. The amount of hazardous materials generated is not expected to increase and any materials will continue to be handled according to all regulations. Therefore, no significant increase in hazards is expected at the project site, and no cumulative hazard or hazardous materials impacts are expected.

With respect to hydrology, no cumulative impacts are expected because the proposed project does not require the use of additional water at the facility or increase the amount of runoff. The proposed project will not have any impact on either water quantity or water quality. Therefore, no significant impacts to hydrology and water quality are expected at the project site, and no cumulative hydrology and water quality impacts are expected.

With respect to noise, no cumulative impacts are expected because the proposed project will not cause a significant increase in noise during construction or operation. Construction activities will generate noise onsite, but the impacts will be reduced to below significance outside the facility's boundaries. The operation of the proposed project is not expected to generate significant levels of noise. In addition, all applicable conditions imposed by the City of Signal Hill associated with extension of the CUP (97-03) will remain in effect for the proposed project, as appropriate. Therefore, no significant impacts to noise are expected at the SHWU Facility, and no cumulative noise impacts are expected.

With respect to traffic, no cumulative impacts are expected because the proposed project will not cause a significant increase in the vehicle trips during construction or operation. Construction activities will generate a limited number of trips on the peak traffic day, whereas operation will not result in any additional trips. This small number of truck trips will not cause a significant impact to the capacity of nearby intersections. Therefore, no significant impacts to traffic are expected at the project site, and no cumulative noise impacts are expected.

Consistent with CEQA Guidelines §15064.7, a “lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect.” Further, CEQA Guidelines §15064(h)(1) requires that a “lead agency consider whether the cumulative impact is significant and whether the effects of the project are cumulatively

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<sup>25</sup> Refer also to *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4<sup>th</sup> 327, 334 and *Rialto Citizens for Responsible Growth v. City of Rialto* (2102) 208 Cal. App. 4<sup>th</sup> 899 pertaining to the determination of significant impacts and whether a project is considered to be cumulatively considerable.



considerable.” Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider the effect significant, but must briefly describe the basis for concluding that the incremental effect is not cumulatively considerable. As stated above, projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable; projects that do not exceed the project-specific significance thresholds are not considered to be cumulatively considerable. Therefore the proposed project’s contribution to air quality, aesthetics, geology/soils, hazards, and noise are not cumulatively considerable, and thus not significant. This conclusion is consistent with CEQA Guidelines §15064(h)(4), which states, “The mere existence of cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.”

|  | <b>Potentially Significant Impact</b> | <b>Less Than Significant With Mitigation</b> | <b>Less Than Significant Impact</b> | <b>No Impact</b>         |
|--|---------------------------------------|--|-------------------------------------|--------------------------|
| Would the project:   |                                       |  |                                     |                          |
| c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/>              | <input type="checkbox"/>                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**XIX.c).** All existing terms, conditions, or requirements previously imposed by the City of Signal Hill in their former determinations for the gas processing plant will remain in effect during construction and operation of the proposed project in order to further avoid and/or reduce potential effects of the proposed project. The proposed project will not significantly increase criteria pollutant emissions as compared to existing conditions, and all emissions will remain below the SCAQMD’s operational significance thresholds. Further, health impacts relative to the proposed project are less than all SCAQMD significance thresholds; refer to Section III, Air Quality. As a result, the proposed project is not expected to significantly increase the potential impacts due to air quality, health risk, hazards and hazardous materials, or other impacts related to human health. Therefore, no significant health impacts or other adverse impacts to humans are expected due to the operation of the proposed project.

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## REFERENCES

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## ACRONYMS

| ABBREVIATION                   | DESCRIPTION   |
|--------------------------------|---|
| °F                             | Degrees Fahrenheit  |
| AB                             | Assembly bill   |
| AB 32                          | Assembly bill 32: California’s Global Warming Solutions Act of 2006 |
| AHM                            | acutely hazardous material  |
| AQMP                           | Air Quality Management Plan   |
| Basin                          | South Coast Air Basin   |
| BACT                           | Best Available Control Technology                                   |
| BFW                            | Base of Freshwater  |
| Bgs                            | below ground surface  |
| BMP                            | Best Management Practice  |
| CAAQS                          | California Ambient Air Quality Standards                            |
| CalARP                         | California Accidental Release Program                               |
| CalEEMod™                      | California Emissions Model™   |
| CARB                           | California Air Resources Board                                      |
| CEQA                           | California Environmental Quality Act                                |
| CFC                            | chlorofluorocarbon  |
| CFR                            | Code of Federal Regulations   |
| CH <sub>4</sub>                | Methane   |
| CO                             | Carbon monoxide   |
| CO <sub>2</sub>                | Carbon dioxide  |
| CO <sub>2</sub> eq             | CO <sub>2</sub> equivalent  |
| CPUC                           | California Public Utilities Commission                              |
| CUP                            | Conditional Use Permit  |
| CUPA                           | California Uniform Program Agency                                   |
| dba                            | A-weighted noise level measurement in decibels                      |
| DOG                            | Division of Oil and Gas   |
| DOGGR                          | Department of Oil, Gas, and Geothermal Resources                    |
| DOT                            | Department of Transportation  |
| DPM                            | Diesel particulate matter   |
| DTSC                           | (California) Department of Toxic Substances Control                 |
| EPA                            | U.S. Environmental Protection Agency                                |
| ERPG                           | Emergency Response Planning Guideline                               |
| FEMA                           | Federal Emergency Management Agency                                 |
| Gal                            | gallons   |
| GHG                            | greenhouse gas  |
| GI                             | General Industrial  |
| GMC                            | Growth Management Chapter   |
| GWP                            | Global Warming Potential  |
| H <sub>2</sub> O               | water vapor   |
| H <sub>2</sub> SO <sub>4</sub> | hydrogen sulfate  |
| HCFC                           | hydrochlorofluorocarbon   |
| HFC                            | hydrofluorocarbon   |
| HIA                            | Acute Hazard Index  |
| HIC                            | Chronic Hazard Index  |
| HRA                            | Health Risk Assessment  |

|                   |   |
|-------------------|---|
| IRP               | Integrated Resource Plan  |
| IS                | Initial Study   |
| ISCST3            | Industrial Source Complex Model Short Term Version 3                    |
| LADWP             | Los Angeles Department of Water and Power                               |
| lbs               | pounds  |
| lbs/hr            | pounds per hour   |
| LCFS              | Low Carbon Fuel Standard  |
| LOS               | Level of Service  |
| LST               | Localized Significance Threshold  |
| LTS               | (existing natural gas dehydration system)                               |
| MCL               | Maximum Contaminant Level   |
| MEIR              | Maximum exposed individual resident                                     |
| MEIW              | Maximum exposed individual worker                                       |
| mi                | miles   |
| MICR              | Maximum individual cancer risk  |
| mm/yr             | millimeters per year  |
| MMscf             | Million Standard Cubic Feet   |
| MND               | Mitigated Negative Declaration  |
| MT                | metric ton  |
| N <sub>2</sub> O  | Nitrous Oxide   |
| NAAQS             | National Ambient Air Quality Standards                                  |
| NGL               | Natural Gas Liquid  |
| NIOSH             | National Institute of Occupational Safety and Health                    |
| NO <sub>x</sub>   | nitrogen oxide  |
| NO <sub>2</sub>   | nitrogen dioxide  |
| NPDES             | National Pollutant Discharge Elimination System                         |
| O <sub>3</sub>    | ozone   |
| OEHHA             | Office of Environmental Health Hazard Assessment                        |
| OSHA              | Occupational Safety and Health Administration                           |
| PFC               | perfluorocarbon   |
| PM                | particulate matter  |
| PM <sub>2.5</sub> | particulate matter less than 2.5 microns in diameter, fine particulates |
| PM <sub>10</sub>  | particulate matter less than 10 microns in diameter                     |
| PPE               | Personal Protective Equipment   |
| ppm               | parts per million   |
| psig              | pounds per square inch gauge  |
| PSM               | Process Safety Management   |
| PTE               | (need definition – air quality section)                                 |
| RCPG              | Regional Comprehensive Plan and Guide                                   |
| RECLAIM           | REgional CLean Air Incentives Market Program                            |
| RMP               | Risk Management Program   |
| RPS               | Renewables Portfolio Standard   |
| RWQCB             | Regional Water Quality Control Board                                    |
| s.f.              | Square Foot   |
| SB                | Senate bill   |
| SCAG              | Southern California Association of Governments                          |
| SCAQMD            | South Coast Air Quality Management District                             |
| SF <sub>6</sub>   | sulfur hexafluoride   |

|                   |   |
|-------------------|---|
| SHP               | Signal Hill Petroleum, Inc.                         |
| SHWU              | Signal Hill West Unit                               |
| SMND              | Subsequent Mitigated Negative Declaration           |
| SNMP              | Salt and Nutrient Management Plan                   |
| SO <sub>x</sub>   | sulfur oxide  |
| SO <sub>2</sub>   | sulfur dioxide                                      |
| SPCC Plan         | Spill Prevention, Control, and Countermeasure Plan  |
| SUSMP             | Standard Urban Stormwater Mitigation Plan           |
| SWPPP             | Stormwater Pollution Prevention Plan                |
| TAC               | toxic air contaminant                               |
| TDS               | Total Dissolved Solids                              |
| UBC               | Uniform Building Code                               |
| ug/m <sup>3</sup> | micrograms per cubic meter                          |
| US DOT            | United States Department of Transportation          |
| USEPA             | United States Environmental Protection Agency       |
| USFWS             | U.S. Fish and Wildlife Service                      |
| VOC               | volatile organic compounds                          |
| WRD               | Water Replenishment District of Southern California |

## GLOSSARY

| TERM          | DEFINITION  |
|---------------|---|
| Ambient Noise | The background sound of an environment in relation to which all additional sounds are heard.  |
| dBA           | The decibel (dB) is one tenth of a <i>bel</i> where one bel represents a difference in noise level between two intensities $I_1$ , $I_0$ where one is ten times greater than the other. (A) indicates the measurement is weighted to the human ear. |
| Natural Gas   | A mixture of hydrocarbon gases that occurs with petroleum deposits, principally methane together with varying quantities of ethane, propane, butane, and other gases.   |
| Seiche        | A vibration of the surface of a lake or landlocked sea that varies in period from a few minutes to several hours and which may change in intensity.   |
| Water Flood   | The use of wells to re-inject fluid (primarily water with minor concentrations of additives) into the oil/gas reservoir to re-pressurize the sandstone and flush oil into recovery (extraction) wells.  |