Transmittal #1

Subsequent Negative Declaration and Initial Study For
Terminal Island Renewable Energy Project

City of Los Angeles

CITY OF LOS ANGELES
SANITATION
DEPARTMENT OF
PUBLIC WORKS

Bureau of Sanitation
Regulatory Affairs Division
November 2011

City of Los Angeles
Office of City Clerk
Room 395, City Hall
Los Angeles, CA 90012

CALIFORNIA ENVIRONMENTAL QUALITY ACT
SUBSEQUENT NEGATIVE DECLARATION
(Article I, City CEQA Guidelines)

LEAD CITY AGENCY AND ADDRESS:	Council District 15
Department of Public Works, Bureau of Sanitation 1149 South Broadway, Suite 900, Los Angeles, CA 90015	
PROJECT TITLE: **Terminal Island Renewable Energy Project (TIRE.) Changes**	S.C.H.
PROJECT LOCATION: Terminal Island Water Reclamation Plant (TIWRP) 445 Ferry Street, San Pedro, CA 90731	

DESCRIPTION: The proposed project will be located within the existing 2006 Terminal Island Renewable Energy (TIRE.) Project site, which currently occupies one half acre of the existing TIWRP. The existing 2006 TIRE project (which was analyzed in a 2006 Mitigated Negative Declaration or MND) has been in operation since 2008 and over 130 million gallons of bio-slurry material (brine, treated effluent, digested sludge and biosolids) have been placed into deep subsurface over 5000 feet below TIWRP. The facility currently utilizes one injection well and two monitoring wells. 50 tons of TIWRP digested sludge and approximately 150 tons (6 truckloads of Hyperion biosolids) are diverted from the City's farm in Kern County; thus eliminating truck traffic and associated air emissions. The facility will eventually prevent over 84, 000 metric tons of greenhouse gas carbon dioxide equivalent emissions from being emitted. The goal of the facility operations is to ultimately generate methane gas through biodegradation of the bio-slurry, which can be converted to a renewable energy source. The proposed project will allow the project to continue demonstration operations for an additional five years under a new Underground Injection Control Permit being considered by the U.S. Environmental Protection Agency. The proposed 2011 project includes: (1) drilling an additional well to place bio-slurry, (2) deepening the existing three wells including the newly drilled well from 5300 feet to 7500 feet to place more bio-slurry, (3) operating two injection wells alternately or simultaneously to place bio-slurry and (4) drilling up to four replacement wells as necessary to address operational problems. These proposed project changes will facilitate placement of 400 tons of bio-slurry material, which was the original project goal. Continuing to place bio-slurry material within these wells will facilitate more rapid production of methane gas that will ultimately be converted to renewable energy that can be used to power at least 3,000 homes. The proposed 2011 project environmental impacts were analyzed in this Subsequent Negative Declaration.

NAME AND ADDRESS OF APPLICANT IF OTHER THAN CITY AGENCY:

FINDING: The City of Los Angels has determined that this project would not have a significant effect on the environment for the following reasons: **See the attached Initial Study**

Any written comments received during this public review period are attached, together with any responses of the lead City Agency

THE INITIAL STUDY PREPARED FOR THIS PROJECT IS ATTACHED

PERSON PREPARING THIS FORM	**ADDRESS**	**TELEPHONE NUMBER**
Diane Gilbert Jones Environmental Engineer Associate IV	12000 Vista del Mar Playa del Rey, CA 90293	310-648-5248
SIGNATURE (Official) H. Omar Moghaddam, Division Manager Regulatory Affairs Division		**Date** 11-17-2011

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CITY OF LOS ANGELES
CALIFORNIA ENVIRONMENTAL QUALITY ACT

INITIAL STUDY

Council District: 15 Date: November 2011

Lead City Agency: Department of Public Works, Bureau of Sanitation

Project Title: Terminal Island Renewable Energy Project Changes

1. INTRODUCTION:

1.1 Purpose

The City of Los Angeles (City), as lead agency under the California Environmental Quality Act (CEQA), has prepared a Subsequent Negative Declaration (ND) and Initial Study (IS) to its Mitigated Negative Declaration (MND) and Initial Study for the Terminal Island Renewable Energy Project (TIRE), herein referred to as the 2006 Project or 2006 MND. The purpose of this Subsequent ND is to address construction of a fourth well at the existing 2006 Project location, construction of project replacement wells, deepening of existing wells as necessary and operating the two injection wells alternately or simultaneously during the demonstration phase. The 2006 MND evaluated the potential environmental impacts associated with the development of a renewable energy facility on a half acre parcel for the placement of treated non-hazardous municipal waste biosolids, digested sludge, and associated fluids, into a deep geologic formation below the Terminal Island Water Reclamation Plant (TIWRP). The 2006 Project is a public benefit project that has improved the environment by eliminating air emissions associated with trucking the biosolids and reducing greenhouse gas (GHG) emissions through geologic sequestration. The process takes advantage of renewable geothermal energy (heat) in the subsurface to create another source of renewable energy (relatively pure methane from subsurface biodegradation of biosolids).

The 2006 MND analyzed the impact of the following site activities: (1) construction of three wells; (2) injection operations including equipment for processing 400 tons of biosolids per day; (3) transport of biosolids from the Hyperion Treatment Plant (HTP), and (4) production of methane gas. The City of Los Angeles, Bureau of Engineering adopted the 2006 Project MND. The existing 2006 Project at the TIWRP was approved

by the U. S. Environmental Protection Agency (EPA) in the Underground Injection Control Class V Experimental Permit No. CA5060001 and the Board of Harbor Commissioners in the Coastal Development Permit 06-02.

The environmental impacts of the 2006 Project were previously addressed in the 2006 MND that was approved by the City of Los Angeles. Because the impacts of the 2006 Project were analyzed in the approved 2006 MND, and are not part of the currently proposed project changes, they are beyond the scope of this analysis. Based on the analysis of air quality impacts in the 2006 MND, the lead agency concluded that, after incorporation of the mitigation measures identified for the 2006 Project, any potentially significant adverse air quality impacts resulting from operation of the 2006 Project would be reduced to a level of insignificance. Following the approval of the 2006 MND, operators of the facility began implementing the 2006 Project, including mitigations to address air emission, GHGs, noise, hazards and hazardous materials, hydrology and water quality, and aesthetics, in accordance with the 2006 MND.

This Subsequent ND assesses the potential for environmental impacts of the current Project that will include an additional well, construction of project replacement wells (up to four wells), potentially deepening of the existing wells, and operating two injection wells alternately/simultaneously.

1.2 Document Format

This ND is organized into seven sections as follows:

Section I, Introduction: provides an overview of the project and the CEQA environmental documentation process.

Section 2, Project Description: provides a description of the project location, project background, project components, environmental benefits and proposed construction and operation.

Section 3, Environmental Effects/Initial Study Checklist: presents the City's Checklist for all impact areas and mandatory findings of significance. Includes discussion and identifies applicable mitigation measures.

Section 4, Preparation and Consultation: provides a list of key personnel involved in the preparation of this report and key personnel consulted.

Section 5, Determination – Recommended Environmental Documentation: provides the recommended environmental documentation for the proposed project.

Section 6, References: provides a list of reference materials used during the preparation of this report and,

Section 7, Appendix: provides Criteria Pollutant and Green House Gas Emission Calculations

1.3 CEQA Process

The IS/ND contained herein have been prepared in accordance with CEQA (Public Resources Code §21000 et seq.), the State CEQA Guidelines (Title 14, California Code of Regulations, §15000 et seq.), and the City of Los Angeles CEQA Guidelines (1981, amended July 31, 2002) This document identifies the potential impacts on the environment, related to the drilling of additional wells, operation of two wells simultaneously and deepening of existing wells, and ways in which the potential significant effects of the Project are proposed to be avoided.

In accordance with CEQA and the State CEQA Guidelines, this ND will be distributed to public agencies and other interested parties and organizations. In reviewing the Subsequent ND, public agencies and interested parties should focus on the sufficiency of the document in identifying and analyzing potential impacts on the environment and ways in which the potential significant effects of the changes to the project are proposed to be avoided. Comments on the ND should be submitted in writing prior to the end of the public review period.

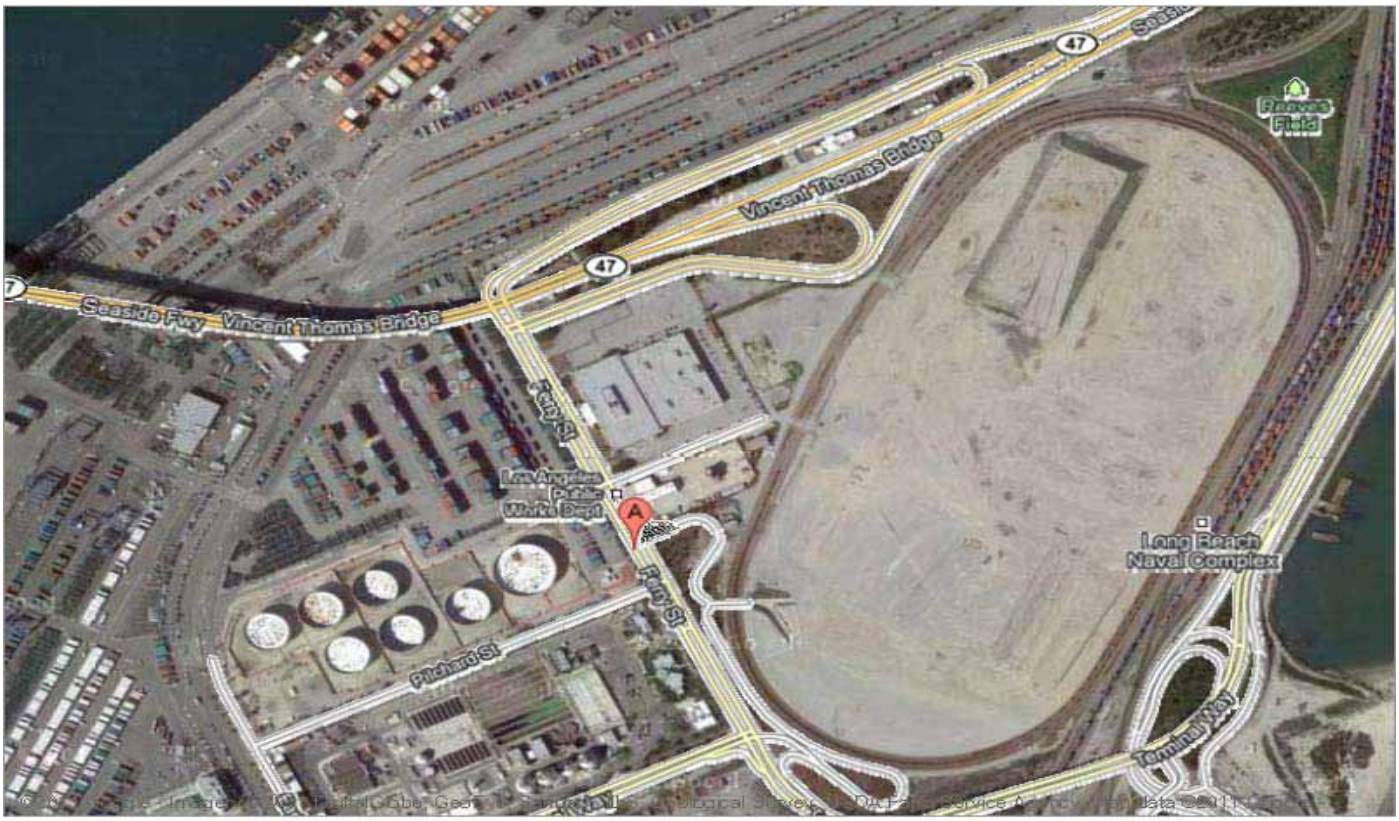
After close of the public review period, the Board of Public Works considers the ND together with any comments received during the public review process, and makes a recommendation to the City Council on whether or not to approve the project. The City Council is the decision-making body and also considers the negative declaration or together with any comments received during the public review process, in the final decision to approve or disapprove the project. During the project approval process, persons and/or agencies may address either the Board of Public Works or the City Council regarding the project. The City Council will adopt the ND only if it finds on the basis of the whole record before it that there is no substantial evidence that the project will have a significant effect on the environment

2.0 PROJECT DESCRIPTION

This section provides a description of the project location, project background, project components, environmental benefits, construction and operation and the objectives of the proposed Project. This information is the basis for the analysis of the environmental impacts and findings included in Section 3.

2.1 Location

The area of review is within the existing 2006 Project site located at the TIWRP which is a city-owned wastewater treatment plant located on Terminal Island. (See maps, Figure 1) The acreage of the TIRE site will remain the same with the additional well located within the 2006 Project site. No additional operations equipment would be needed other than the additional well. Any replacement wells would also be drilled within the existing TIRE site if replacement wells are deemed necessary.



Project Location

Figure 1: Project Location and 2006 Project Site (Terminal Island Water Reclamation Plant)

2.2 Purpose

The City of Los Angeles proposes to add one additional interchangeable injection and/or monitoring well (SFI#4) to the 2006 Project site with the option to construct up to 4 replacement wells to provide flexibility in responding to operational well problems and unforeseen conditions, such as natural disasters. The two injection wells may be operated alternately or simultaneously. The City is also requesting to increase the depth of the existing wells from roughly 5,500 feet to 7,500 feet The full scale 2006 Project requires that up to 400 tons of biosolids are injected daily; current operations is injecting up to 200 tons per day into one well. The addition of another injection well operating alternately or simultaneously with the existing three wells will facilitate this and help meet the TIRE project demonstration objectives of injecting 400 tons per day and making use of the methane gas that will be ultimately generated. The environmental effects of injecting up to 400 tons per day of sewage sludge/biosolids, as well as the transport of some of the biosolids from HTP to TIWRP, were previously analyzed in the MND for the 2006 Project.

2.3 Background/Environmental Benefits

The original TIRE project (2006 Project) is the nation's first full scale project demonstrating an innovative technology to convert biosolids into clean energy by deep well placement and geothermal biodegradation. The 2006 Project was issued an Underground Injection Control (UIC) demonstration permit (CA5060001) by the EPA in November 2006. The 2006 Project began injection operations in July 2008 and since that time over 120 million gallons of bio-slurry material (digested sludge, biosolids and brine) have been successfully placed underground. The existing UIC demonstration permit is set to expire November 2011. The City of Los Angeles has submitted a new permit application to the EPA to extend the demonstration period of the project for another five years. The new permit application is currently under review.

TIRE provides onsite treatment and reuse of biosolids and related fluids produced by TIWRP and the Hyperion Treatment Plant (HTP) by injecting the material into deep geologic formations within the TIWRP premises. This process takes advantage of renewable geothermal energy (heat) in the subsurface to create another source of renewable energy (relatively pure methane from subsurface biodegradation of biosolids). The TIRE demonstration project is opening doors to a local innovative option for biosolids management as a renewable resource with improved environmental benefits. Not only does the 2006 Project and this proposed Project have the ability to create a green renewable energy, but it is also reducing GHG emissions and sequestrating carbon dioxide (CO_2). Figure 2 is a graphic depicting the facility, and the deep well injection and degradation process.

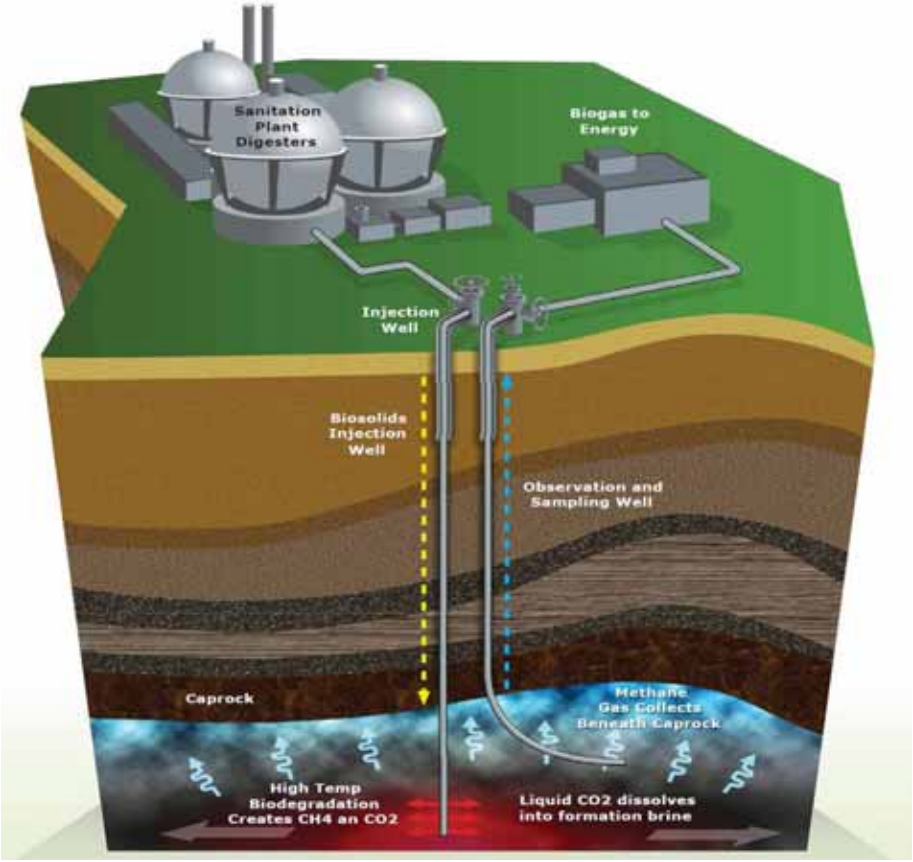


Figure 2: Deep Well Injection/Biodegradation

Project objectives in combination with those of the approved 2006 Project include:

- Enhancing thermal land pasteurization of biosolids in a natural environment of underground heat and pressure;
- Conversion of biosolids to clean renewable energy on a cost-effective basis by bio-degradation and geothermal treatment;
- Possible usage of methane generated in fuel cells to produce green power;
- Reduction of GHG emissions by permanent sequestration of CO_2 in the formation brine;
- Provision of a better alternative to protect ground water resource and land usage; and,
- Reduction of traffic, vehicle emissions, and odor by eliminating long distance trucking of biosolids.

2.4 Summary

The City is requesting to construct and operate an additional well and up to four replacements wells, with the option to increase the depth of existing wells and any new wells as necessary from 5,300 ft. to 7,500 ft. to continue demonstrating the project and maximize injection volume. The additional well and possible replacement wells will be interchangeable from injection to monitoring based on the discretion of the operation. Replacement wells would only be constructed if an existing well at the 2006 Project site or the new well is no longer functioning safely or meeting the requirements of the EPA permit for this project. At no time will there be more than 4 active wells at the TIRE site.

We are requesting the option to inject into two wells alternately or simultaneously. Operating two wells will not create a geological impact. At a depth of 7,500 ft these two wells are at least 600 feet apart. The pressure in each well will be acting independently of each other and monitoring equipment will be in place to ensure that regulatory and operational requirements are met.

2.5 Geology

We are proposing to inject into the lower Miocene sands (Puente Formation) to increase the storage volume for the TIRE project. We are currently injecting into the Repetto Formation and have significant data and information on this geological formation. The lower Miocene sands in the Puente formation are geologically similar to the Repetto formations that we have been injecting into. By drilling and injecting into the Puente Formation we are expecting similar formation responses to the biosolids material placed at this depth based on geological data obtained before, during, and after drilling on the three existing wells that are currently in operation at the TIRE site.

The same protections provided for when drilling and injecting into in the Repetto formation will be provided for when drilling and injecting into the Puente formation. Figure 3 shows numerous intercalated fine to coarse grained, poorly sorted sandstones and siltstones with interbedded dark brown-gray shales and clays. This series of alternating shale (sealing zones) and low pressure sand sequences (absorption zones) present natural protection mechanisms for usable groundwater sources thousands of feet above. The different oil/water contacts found within the Wilmington oil field demonstrate that sands are non-continuous and the shales form sealing caps to the underlying reservoirs.

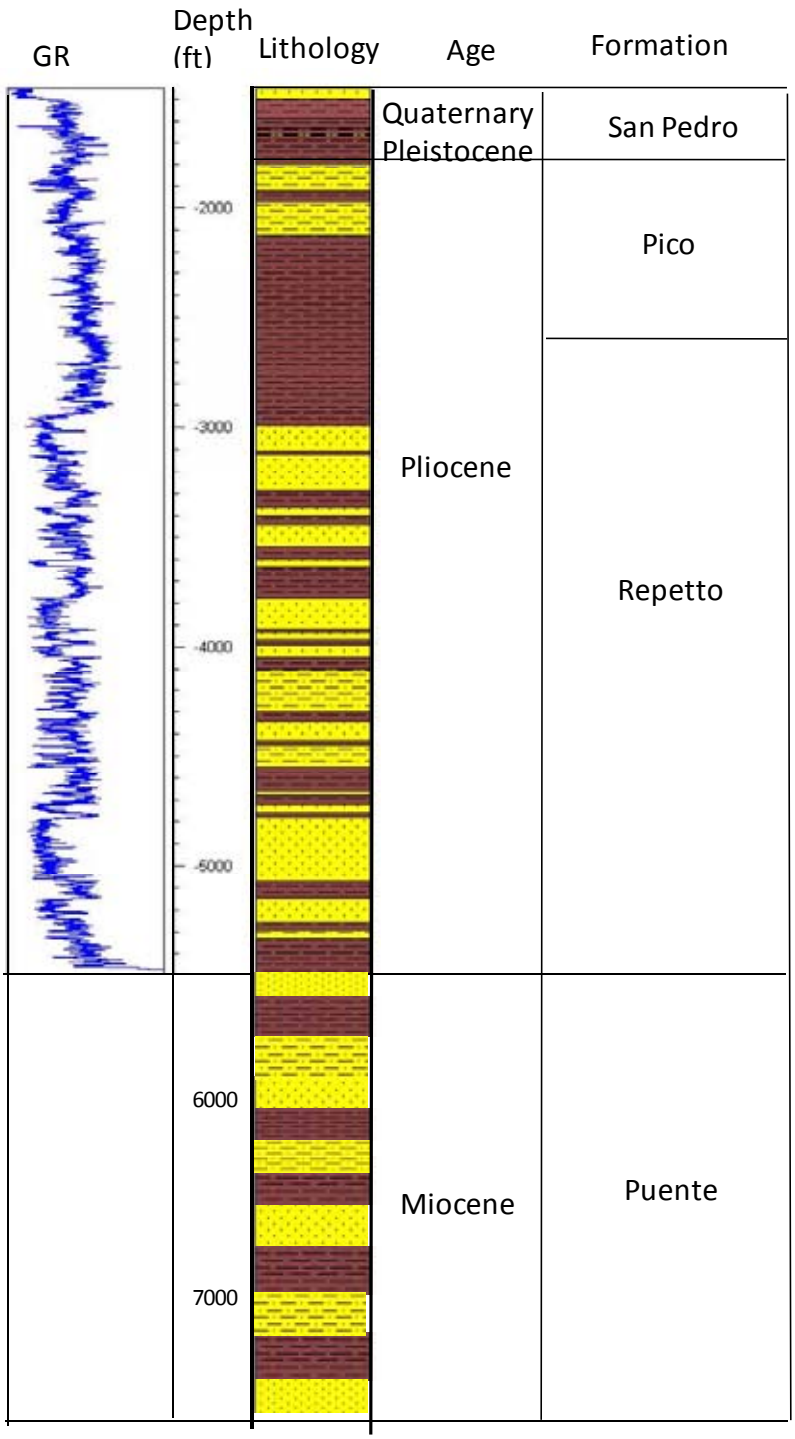


Figure 3: Strategic Column for the TIRE area

2.6 Construction

The construction/drilling of one well to 7,500 ft. or extending an existing well from 5,300 ft. to 7,500 ft. is expected to take approximately one month per drilling event. An SCAQMD approved and permitted drilling rig (Figure 4) will be onsite for about 2 to 3 weeks to drill well SFI#4 and any replacement wells that are required, in addition to drilling the existing wells down to 7,500 ft. Drill cuttings will be placed into steel tanks on site, and later transported offsite for management at an approved landfill. Dust will be controlled by sprinkling water manually.

Figure 4: Previous Drill Rig at TIRE

The additional well will have mainly an 8-5/8" injection casing and 3-1/2" steel injection tubing, both of which run through the entire depth of the well (Figure 5).

At the lower end, the casing and tubing will form an injection chamber with perforations from where slurry is injected into the target formations. To enhance ground water protection, the well will have two more outer casings. The annular space between all the casings is filled with cement. Slurry material will pass through steel tubing, positioned inside an outer steel casing surrounded by a cement sheath to an exit point at a depth of about 3,800 to 7,000 feet.

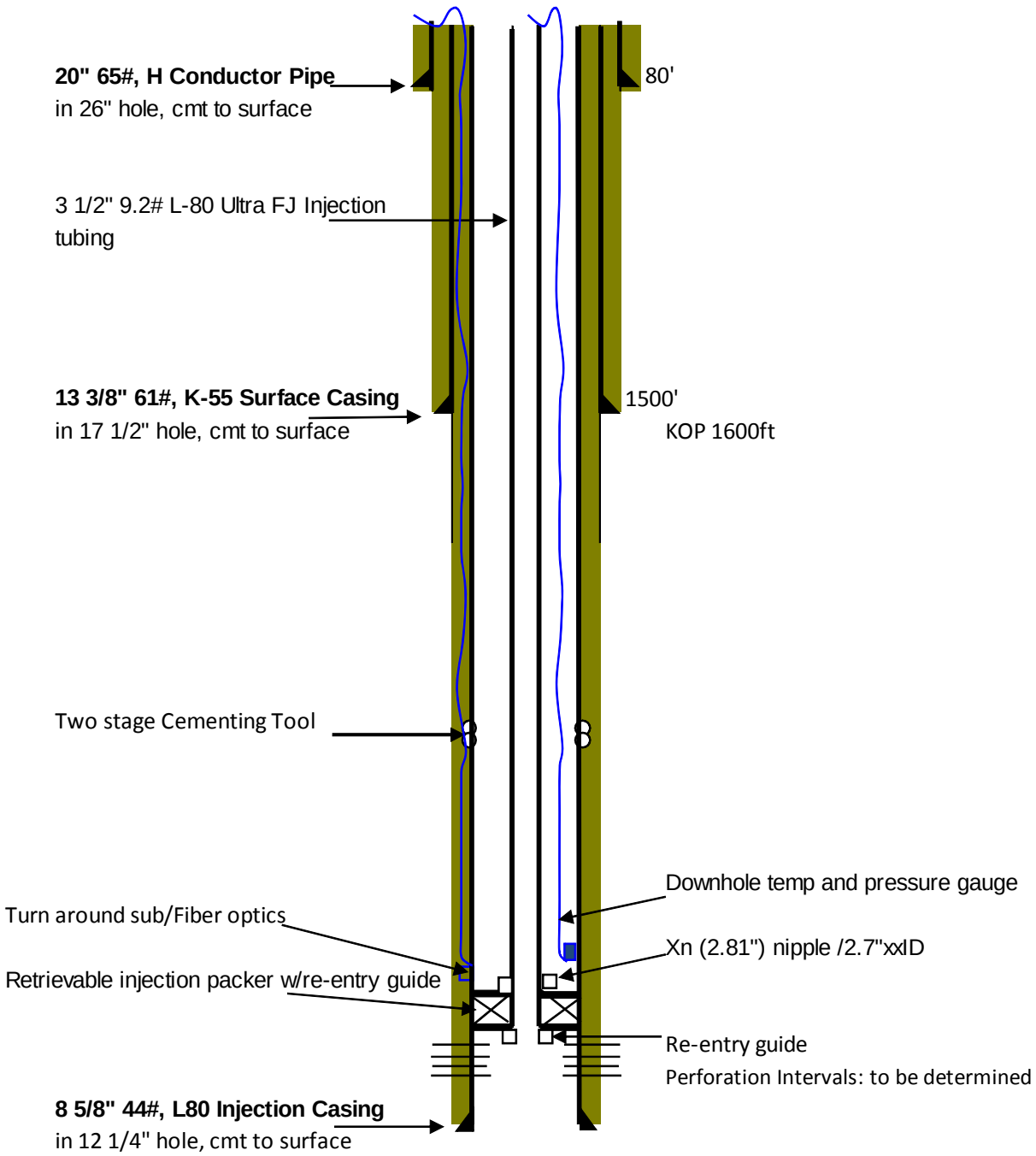


Figure 5: Interchangeable injection and monitoring well schematic 8 5/8" casing

If it is necessary to construct replacement wells, the same construction procedure for SFI#4 will be used for the replacement wells.

As shown in Figure 5, the one additional injection well will have several layers of protection. Bio-slurry material will be pumped down a steel tube within the cased well

bore past a packer, located at a depth just above the permitted disposal zone. Outside the tubing is an annular region filled with fluid. This fluid annulus pressure will be constantly monitored to immediately detect any potential tubing/packer leak. If material were to leak out of the tubing, it would still be contained within the outer steel casing, which is in turn surrounded by a cement sheath. Outside the primary well casing and cement sheath, another casing and cement string will be placed from the surface beyond the depth of usable groundwater to provide additional protection for shallow groundwater.

Pumping operations are planned between 1 a.m. and 7 p.m. daily, five days a week. Pumping is shut-in nightly and for extended periods over weekends to allow formation pressures to decline to natural conditions. Pressure is increased during pumping to the parting pressure of the sand formation, allowing solids entry. When pumping is stopped, the high porosity formation closes in on the solids and allows the fluid pressure to bleed off and return to natural conditions. Fluid is prevented from migrating upwards by multiple impermeable shale layers overlying the permeable injection formation.

The analysis in this document assumes that, unless otherwise stated, the proposed project changes will be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards (e.g., *Los Angeles Municipal Code* and Bureau of Engineering *Standard Plans*). Also, the analysis in this document assumes that construction will follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., *Standard Specifications for Public Works Construction* and the *Work Area Traffic Control Handbook*) as specifically adapted by the City of Los Angeles (e.g., The City of Los Angeles Department of Public Works *Additions and Amendments to the Standard Specifications for Public Works Construction* (AKA "The Brown Book," formerly Standard Plans S-610)).

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services, and activities.

2.7 Intended Use of this Document

This ND is required for the discretionary actions anticipated at this time for the project by the following agencies:

- Environmental Protection Agency
- City of Los Angeles
- California Air Resources Board
- California Coastal Commission
- South Coast Air Quality Management District

3.0 Initial Study Checklist/Environment Assessment

This section documents the screening process used to identify and focus upon environmental impacts that could result from the proposed Project at the existing 2006 Project site to: construct a new well; construct replacement wells; deepen existing wells; and inject into multiple wells simultaneously and/or alternately. The following Initial Study Checklist follows the recommendations of the Governor's Office of Planning and Research and was used in conjunction with the City's CEQA Thresholds Guide and other sources to assess the potential environmental impacts resulting from the proposed Project.

The proposed Project changes listed below were analyzed in each of the checklist environmental areas below:

1) Construction of a new well to the depth of 7,500 ft.
2) Extend existing wells from 5,300 ft. to a depth of 7,500 ft.
3) Inject material into multiple wells simultaneously and/or alternately
4) If necessary, construct replacement wells for operational problems and/or in case of natural disasters.

Impacts Analyzed in Previous 2006 Project MND

The 2006 MND analyzed the impact of the following site activities: (1) installation of three wells; (2) processing of up to 400 tons per day of biosolids; (3) drilling to a depth of 5,300 feet; (4) transport of biosolids from HTP; and (5) methane production. The City of Los Angeles Planning Department adopted the 2006 MND for the 2006 Project and the existing operations were approved at the TIWRP in the U. S. Environmental Protection Agency (EPA) Underground Injection Control Class V Experimental Permit No. CA5060001 and the Board of Harbor Commissioners Coastal Development Permit 06-02.

The environmental impacts of the 2006 project, in particular the five items discussed above, were previously addressed in the 2006 MND that was approved by the City of Los Angeles. Because the impacts of installation of the three wells, processing of 400 tons per day of biosolids, drilling to a depth of 5,300 feet, transport of biosolids from HTP and methane production were analyzed in the 2006 Project approved by the City of Los Angeles, they are not part of the currently proposed project and, thus, are beyond the scope of this analysis. Following the approval of the 2006 MND by the City of Los Angeles, operators of the facility began implementing the 2006 Project, including the five activities discussed above, in accordance with the 2006 MND. Based on the analysis of air quality impacts in the 2006 MND, the lead agency concluded that, after incorporation of the mitigation measures identified for the 2006 Project, any potentially significant adverse air quality impacts resulting from operation of the 2006 Project would be reduced to a level of insignificance after imposing mitigation measures. The 2006 MND also imposed operational condition to mitigate dust. The 2006 MND calculated GHG emission impacts. However, consistent with current CEQA guidance, this Subsequent ND includes an analysis of project related GHG emission impacts compared to the existing setting, which includes GHG emissions resulting from the 2006 Project.

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
3.I AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

Comment: The Project will be located within a highly industrialized area within the Port of Los Angeles at TIWRP. The City of Los Angeles Community Plan for San Pedro identifies 11 scenic view sites in the San Pedro area. For approximately one month during each drilling event temporary drilling equipment will be onsite to drill the new and/or replacement wells and deepen existing wells. Operation of the new well would not add any additional significant equipment to the site than is already in operation under the 2006 MND.

From any identified scenic viewpoint that provides visibility to the TIWRP premises, the principal observable structures are the three existing spherical digester tanks associated with TIWRP that rise about seventy feet from street level. These tanks will dwarf the highest structure associated with the proposed Project during construction and operation. There is also a 300 foot long cylindrical coal conveyor enclosure and a mobile oil storage complex associated with the TIWRP that will further obscure the existence of construction associated with the proposed Project, and operation of the additional well. The proposed Project would cause no significant impacts to the scenic vistas.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

Comment: The project area is located on Terminal Island, in a highly industrialized area within the Port. The Project site is not located near an eligible or designated state scenic highway. In addition to CalTrans officially designated and eligible state scenic highways, the City of Los Angeles has city-designated scenic highways. These include several streets in San Pedro that are in the vicinity of the Project (City of Los Angeles, 1999b). The project site is not observable

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
from most of these highways. The one scenic highway where the site may be observed is Harbor Boulevard, near 6th Street. However, the proposed Project will not be a prominent feature and will not change the nature of any view shed surrounding the project area. Therefore, no damage to scenic resources is expected from the proposed Project. See also section 3.1.a. above.				
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
Comment: The Project area is heavily industrialized and contains ship repair facilities, marine oil terminals, fishing related industries, a marine research facility, fire station, wastewater treatment plant, and other heavy industry. Adjacent to the site are parking lots and oil storage tanks. The proposed project will be contained within the previously analyzed 2006 MND project site. The proposed Project would not degrade the visual character or quality of the existing site. See also section 3.1.a and 3.1.b above.				
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
Comment: For approximately one month during each drilling event temporary drilling equipment will be onsite to drill the new and/or replacement wells and deepen existing wells. Construction activities for the new/replacement wells and deepening of existing wells for the proposed Project are not anticipated to require additional lighting. The drilling rig contains lights for safety purposes. The night lighting is part of the existing operations currently allowed at the site as part of the 2006 Project and analyzed in the 2006 MND. After the one month duration for construction there will be no increase in lighting associated with the Project, and therefore, no significant impacts to light and glare are anticipated. The proposed Project would not introduce significant sources of artificial light that could adversely affect day or nighttime views.				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
3.2. AGRICULTURE RESOURCES: 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?	☐	☐	☐	☒
Comment: The proposed Project site, which will be within the previously analyzed and approved 2006 MND project site, is not located in an area designated as Prime or Unique Farmland, or Farmland of Statewide Importance. The area is not considered nor zoned as farmland. No farmland or row crops currently exist on the Project site. Therefore, the proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use, consistent with the adopted 2006 MND.				
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
Comment: The Project site, which will be within the previously analyzed and approved 2006 MND project site, is in Planning Area 7 of the Port of Los Angeles and is zoned for heavy industrial use. The Project site is not located within a Prime Farmland designation, nor does it consist of more than 40 acres of farmland. No Williamson Act contracts apply to the proposed project. The proposed Project will not conflict with existing zoning for agricultural use, or a Williamson Act contract, consistent with the adopted 2006 MND. Refer to comment 3.2 (a) above.				
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Comment: The Project site, which will be within the previously analyzed and approved 2006 MND project site, is in Planning Area 7 of the Port of Los Angeles and is zoned for heavy industrial use. The Project site is not located within an area zoned, or will be rezoned, for forest land or timberland. The proposed Project will not conflict with existing zoning for forest land, timberland, or timberland zoned as Timberland Production, consistent with the adopted 2006 MND.				
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
Comment: The Project site, which will be within the previously analyzed and approved 2006 MND project site, is in Planning Area 7 of the Port of Los Angeles and is zoned for heavy industrial use. The Project site is not located within an area zoned as forest land. The proposed Project will not result in a loss of forest land or conversion of forest land to non-forest use, consistent with the adopted 2006 MND. Refer to comment 3.2 (c) above.				
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to nonagricultural or conversion of forest land to non-forest use?	☐	☐	☐	☒
Comment: The proposed Project changes will not involve changes in the existing environment which, due to their location or nature, could result in conversion of farmland to nonagricultural or conversion of forest land to non-forest use, consistent with the adopted 2006 MND. Refer to comment 3.2 (a) above.				
3.3 AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

Comment: The proposed Project would be constructed and operated in the South Coast Air Basin (Basin), currently a non-attainment area for ozone, carbon monoxide, nitrogen dioxide, and fine particulate matter (PM_{10}). The South Coast Air Quality Management District (SCAQMD) has adopted an Air Quality Management Plan (AQMP) which sets forth strategies for attaining all national air quality standards by certain deadline dates and for meeting state standards at the earliest feasible date. The AQMP also serves as the State Implementation Plan for bringing the air basin into attainment. A significant impact would occur if the project resulted in substantial emissions during construction and operation which would exceed the established thresholds. Construction activities would comply with applicable SCAQMD regulations, such as Rule 403, which is designed to minimize fugitive dust. As a standard practice, construction equipment would also be permitted, maintained, and operated to minimize emissions. Operation of two wells simultaneously is not expected to result in a significant increase in emissions compared to the 2006 Project. As a result, it is concluded that the proposed Project is consistent with the AQMP and therefore, is expected to result in less than significant impacts related to the applicable air quality plan.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐

Comment: 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_3), fine particulates ($PM_{2.5}$), and respirable particulates (PM_{10}), for which the SCAQMD has requested redesignation as attainment based on air monitoring data. To assess the impacts of Project-

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
related construction and operational emissions, the City has adopted SCAQMD established regional significance thresholds that are shown Appendix A. Construction and operational emissions from the proposed project that are below these thresholds will be considered less than significant. The 2006 MND included an analysis of the air emissions impacts associated with the 2006 Project. Although the baseline for this project would account only for the amount of biosolids presently being injected, the difference in injection from the existing setting up to 400 tons per day has previously been analyzed in the certified 2006 MND. Therefore, this analysis only assesses the potential emissions increase associated with this project (the construction of one new well, drilling to a depth of 7,500 feet for the existing wells, and replacement of up to four wells, as well as the additional commuter trips associated with additional employees required to operate two injection wells simultaneously). As shown in Appendix B, the criteria pollutant emissions during construction and operation are below the relevant significance thresholds values. The proposed Project will not violate any air quality standard or contribute substantially to an existing or projected air quality violation. See comment 3.3(a) above.				
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 which exceed quantitative thresholds for ozone precursors)? Comment: Because the Basin is currently non-attainment for O_3, PM_{10}, and $PM_{2.5}$, related projects could exceed the applicable air quality standard or contribute to an existing or projected air quality exceedance. With regard to determining whether or not air quality impacts from a proposed Project are significant, any given project's potential contribution to cumulative impacts are assessed utilizing the same	☐	☐	☒	☐

significance criteria as for project-specific impacts. 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 in Comment 3.3(b) above, peak daily emissions associated with construction and operation of the proposed Project would not generate operational or construction air quality emission impacts that exceed the SCAQMD's recommended regional significance thresholds. In addition, the proposed Project is located within the site of the previously analyzed 2006 MND project site, in a highly industrialized area.

To assess the cumulative impacts of the proposed project, the City conducted a search between October 17 and 25, 2011 of applicable websites to assess the impact status of past, current, and foreseeable future projects within a half mile radius of the project site. Sites reviewed included the Port of Los Angeles CEQA/EIR Projects and Public notices website (http://www.portoflosangeles.org/environment/public_notices.asp) the City of Los Angeles Planning website (http://cityplanning.lacity.org/), Los Angeles County Planning Department website (http://planning.co.la.ca.us/), the San Pedro Community Plan and the Port of Los Angeles Master Plan. The City did not identify any related on-going or planned projects.

As shown in the tables in Appendix B, the proposed project construction air emissions are essentially negligible (between 0 and 2.6% of the significance thresholds). The on-going operational emissions are less than 0.2% of the corresponding significance thresholds.

The proposed project is expected to have less than significant cumulative impacts on the environment due

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
to the lack of on-going or future projects in the area, less than significant impacts of the project itself and the minor contribution of the air emissions (construction and operational) relative to the corresponding significance thresholds.				
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Comment: The Project location, which is within the 2006 MND project site, is in a heavily industrialized area of the Port of Los Angeles. No sensitive receptors are in proximity to the Project site. The nearest residences are located approximately 0.5 miles to the west, across the Main Channel of the Los Angeles Harbor. The nearest school is Fifteenth Street Elementary School, which is located approximately one mile to the west of the Project site.

Drilling a new well and/or replacement wells and deepening existing wells will require temporary drilling equipment along with associated vehicles to be located at the existing site for a one month duration for each drilling event In addition, there will be additional commuter trips associated with the project during the operational phase in order to account for the additional workers needed to run two injection wells simultaneously.

The construction and operation of the proposed Project has the potential to generate an increase in criteria pollutants (e.g., CO, NO_x, SO_x and PM). Localized significance thresholds (LSTs) for NO_x and CO are based on causing or exceeding health-based air quality ambient concentration standards. The PM_{10} LST for construction is based on requirements of Rule 403, which is indirectly a health-based standard; for operation the PM_{10} LST is based on Rule 1303, which applies limits less than Rule 403 concentration limits and therefore, provides greater health-based protection.

The SCAQMD has developed LST look-up tables for

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
NO_x, CO, PM_{10} and $PM_{2.5}$. These LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent federal or state ambient air quality standards. These LSTs are based on the ambient concentration of that pollutant for each source receptor area and the distance to the nearest sensitive receptor; PM10 LSTs were based on the requirements of Rule 403. As discussed above the nearest receptor is over 0.5 miles (roughly 800 m) whereas the LST look-up tables have a maximum receptor distance of 500 m. As a conservative approach, the City compared the Project emissions summarized in Comment 3.3(b) to the SCAQMD's LSTs at 500m for a 1 acre facility. Using this conservative approach, comparison to the LSTs shows that the Project will not have a substantial impact on exposure to sensitive receptors, consistent with the adopted 2006 MND. See comment 3.3(a) above.				
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
Comment: The temporary construction activities to drill new and/or replacement wells and deepen existing wells or operate multiple injection wells are not expected to create any objectionable odors affecting a substantial number of people given the lack of residents near the Project site, consistent with the adopted 2006 MND. See comment 3.3(d) above				
3.4 BIOLOGICAL RESOURCES: 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?	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Comment: The Project site, which is within the previously analyzed 2006 MND Project site, is currently developed and supports no wildlife or native plant species. The state and federally listed endangered California Least Tern nests within the Port of Los Angeles, approximately 2 miles south of the Project location. There is a Memorandum of Agreement (MOA) between the Los Angeles Harbor Department, State of California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers to protect the California Least Tern. The MOA requires that the 15-acre nesting site be protected during the annual nesting season from May to October. In addition, the Least Tern forages in the shallow water areas of the Port of Los Angeles and has been reported to forage within Fish Harbor on occasion about a quarter of a mile from the Project site. The proposed Project will have no substantial adverse effect the protection of the Least Tern, or affect water quality as runoff from the Project site will be directed to the plant sewer. The proposed Project will not 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, consistent with the adopted 2006 MND.				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
Comment: There is no riparian habitat or other sensitive natural community on or within a one mile radius of the Project site, which is within the previously analyzed 2006 MND project site. The proposed Project will not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Game or US Fish and Wildlife Service, consistent with the adopted 2006 MND.				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 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?	☐	☐	☐	☒
Comment: The Project site, which is within the previously analyzed and approved 2006 MND project site, is currently developed and does not contain any federally protected wetlands as defined by Section 404 of the Clean Water Act. Additionally, the surrounding area does not contain any federally protected wetlands. The proposed Project will not have a substantial adverse effect on federally protected wetlands as defined by Section 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, consistent with the adopted 2006 MND.				
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
Comment: The proposed Project site, which is within the previously analyzed 2006 MND project site, is located within an existing wastewater treatment plant in an industrialized area within the Port of Los Angeles. The Project would not interfere with the movement of fish or wildlife, or with established wildlife corridors or nursery sites. The proposed Project will not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, consistent with the adopted 2006 MND.				
e) Conflict with any local policies or ordinances	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
protecting biological resources, such as a tree preservation policy or ordinance?				
Comment: The County of Los Angeles has established 61 Significant Ecological Areas (SEAs) (County of Los Angeles, 2001). There is one SEA within the Port of Los Angeles boundaries: The Pier 400 California Least Tern Nesting Site. The 15 acre site is protected during the annual nesting season from April to September through MOA between the Los Angeles Harbor Department, CDFG, USFWS and the U.S. Army Corps of Engineers to protect the California Least Tern. This MOA will remain in effect during the construction and operations of the proposed Project. The proposed Project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, consistent with the adopted 2006 MND.				
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?	☐	☐	☐	☒
Comment: The Project site, which is located within the previously analyzed 2006 MND project site, is located in an industrialized area within the Port of Los Angeles. Neither the Project site nor any adjacent area is included as part of an adopted Natural Communities Conservation Plan (NCCP) or Habitat Conservation Plan (HCP). The requirements set forth in the 2006 MND Project are being implemented and will remain in effect for the proposed Project. The proposed Project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, consistent with the adopted 2006 MND.				
3.5 CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
significance of a historical resource as defined in § 15064.5?				
Comments: The proposed Project will not significantly affect historical resources, consistent with the adopted 2006 MND.				
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	☒
Comments: The Project site, which is within the previously analyzed 2006 MND project site, is on a man-made fill related to the original construction in the early 20th century and subsequent developments at the TIWRP. The proposed Project would not cause substantial significant adverse change of archaeological resources in the area, consistent with the adopted 2006 MND.				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
Comments: The surface geologic formation within the Project area consists of man-made fill material constructed in the early 20th century and possesses no known paleontological resources. The proposed Project, which is within the previously analyzed 2006 MND project site, will not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, consistent with the adopted 2006 MND.				
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
Comments: Excavations and drilling done within the plant during the original and succeeding construction activities including the 2006 Project did not uncover any human remains. The proposed Project, which is within the previously analyzed 2006 MND project site, are not expected to disturb any human remains,				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
including those interred outside of formal cemeteries, consistent with the adopted 2006 MND.				
3.6 GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
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.	☐	☐	☐	☒
Comments: Several earthquake faults are within the Project vicinity and extend through the Port of Los Angeles, both on land and in the water channels. None of these faults are designated as a special study zone under the Alquist-Priolo Earthquake Zoning Act. Geologically, the proposed Project well site lies in proximity to the Wilmington Oil Field. However, it is separated from the field by the THUMS Huntington Beach fault which runs northeasterly to the site. Another fault, the Palos Verdes fault runs southwesterly to the site. This fault zone is the closest active fault to the Project site (roughly 0.25 miles to the east of the Project site).				
Large earthquakes in the Los Angeles area typically occur at depths between 7 km and 20 km, and occur primarily in hard basement rocks. The proposed Project wells will penetrate only to a depth of about 7,500 ft. (less than 2.5 km) into the soft sand and shale sequence. These wells will not penetrate deeper basement rocks, where major earthquakes are generated. When drilling the existing wells for the 2006 Project, no impact was created when drilling to a depth of 5,300 ft. The geological sequences consisting of sand and shale sequences that will be encountered at a depth of 7,500 ft. are physically similar to those				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
already encountered in drilling the existing wells to a depth of 5,300 ft. for the previously analyzed 2006 Project. The safety requirements for the 2006 Project have been implemented and will remain in effect for the proposed Project. Based on geology and data collected from the 2006 Project, there will be no significant impact in drilling additional wells to a greater depth of 7,500 ft.				
The TIWRP is responsible for safeguarding its employees, facilities, the public, and the environment in the event of a disaster (natural or manmade) and other emergencies. Natural hazards include earthquakes, floods, and severe weather conditions such as high winds. Emergency situations could also develop from a major explosion or fire, uncontrolled hazardous material spills or releases, verified bomb threats, or civil disorder. The adopted TIWRP Response Plan was prepared to meet the safety and public health requirements of the following regulations: 1) Emergency Action Plan [CCR, Title 8, Section 3220]; 2) Fire Prevention Plan [CCR, Title 8, Section 3221]; 3) Hazardous Waste operations and Emergency Response [CCR, Title 8, Section 5192]; 4) Preparedness and Prevention Plan [CCR, Title 22, Section 66265.31, Section 66265.32(c), and Section66265.52(c)].The proposed Project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving Rupture of a known earthquake fault, consistent with the adopted 2006 MND.				
ii. Strong seismic ground shaking?	☐	☐	☐	☒
Comments: Several principal active faults lie within 25 miles of the proposed Project. These include the Palos Verdes, Newport-Inglewood, Elysian Park, Whittier-Elsinore, and Santa Monica-Raymond faults. These faults are capable of producing ground movements of a maximum moment magnitude of 6.6 to 1. Faults such as these are typical of southern California and it is reasonable to expect a strong ground motion seismic event during the lifetime of any proposed project in the				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
region. Risk of seismic hazards, such as seismic groundshaking, cannot be avoided in the southern California region. However, no significant impact from drilling an additional well, drilling four replacement wells, or drilling to a greater depth (7,500 feet) is expected based on the geological data collected during the 2006 Project. The geological sequences consisting of sand and shale sequences that will be encountered are physically similar to those all ready encountered in drilling the existing wells to a depth of 5,300 ft. The proposed Project will not create strong seismic ground shaking, consistent with the adopted 2006 MND. Refer to 3.6(a) (i) above.				
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
Comments: The Project site, which is within the previously analyzed 2006 Project site, is located within an area susceptible to liquefaction. However, as part of the City of Los Angeles Uniform Building Code (UBC) and BOE Standard Project Specifications, construction measures are prescribed that enable safe and efficient project implementation within the liquefaction zone area; the City has managed construction within liquefaction zones for many years. The same construction measures will be taken for proposed Project as were implemented for the 2006 MND project. Therefore, the proposed project changes are not expected to result in impacts related to ground failure from liquefaction. The proposed Project is not expected to make the soil any more susceptible to liquefaction, landslide, lateral spreading or subsidence and would not expose people to any additional adverse effects, consistent with the adopted 2006 MND.				
iv. Landslides?	☐	☐	☐	☒
Comments: The Project site, which is within the previously analyzed 2006 Project site, is not located on a hill side. The proposed Project will not result significant impacts related to landslides, consistent with the adopted 2006 MND.				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Comments: Drilling a new well and/or replacement wells and deepening existing wells will require temporary drilling equipment along with associated vehicles to be located at the Project site for a month at a time during each drilling event. The proposed Project would involve grading and compaction of soil. During construction, Best Management Practices will be used to minimize soil erosion and runoff. Consequently, the potential for substantial soil erosion or the loss of topsoil is considered minimal.

Drilling activities will include removal of soils and mud from the Project site. During this process, the site would be managed in accordance with a Storm Water Pollution Prevention Plan prepared in accordance with the General Construction Activity Storm Water Permit adopted by the State Water Resources Control Board and to SCAQMD rules and regulations (i.e. Rule 403 – Fugitive Dust). The proposed Project will not result in substantial soil erosion or loss of topsoil, consistent with the adopted 2006 MND.

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 landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐

Comments: As with the 2006 Project, prior to commencing construction activities for the proposed Project, a new geotechnical evaluation will be completed that will prescribe methods, techniques, and specifications for: site preparation, treatment undocumented fill and/or alluvial soils, fill placement on sloping ground, fill characteristics, fill placement and compactions, temporary excavations and shoring, permanent slopes, treatment of expansive soils, and treatment of corrosive soils. Design and construction of the proposed Project would conform to

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
recommendations in the geotechnical evaluation. In addition, the proposed Project includes the option to inject into two wells alternately or simultaneously. Operating two wells will not create a geological impact. At a depth of 7,500 ft., these two wells will be at least 600 feet apart. The pressure in each well will be acting independently of each other and monitoring equipment will be in place to ensure that regulatory and operational requirements are met. Therefore, the proposed Project would not be located on a geologic unit or soil that is unstable or that could become unstable resulting in on-off site landslide, lateral spreading, subsidence, liquefaction or collapse. Impacts from potentially expansive soil would not be significant, consistent with the adopted 2006 MND.				
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?	☐	☐	☐	☒
Comments: Refer to comment 6(c) above.				
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?	☐	☐	☐	☒
Comments: The City of Los Angeles, Department of Public Works, Bureau of Sanitation provides sewer service to all areas within its jurisdiction, including the Project. The proposed Project will not 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, consistent with the adopted 2006 MND.				
3.7 GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact

Comment: The analysis of GHG impacts is different from the analysis of criteria pollutants. For criteria pollutants, significance thresholds are based on daily emissions to be consistent with the use of daily exceedances of applicable ambient quality standards being used to assess the attainment or non-attainment status of a region. 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). However, the half-life of CO_2 is approximately 100 years and thus, the effects of GHGs are longer-term and affect global climate over a relatively long time frame.

In response to growing scientific and political concern regarding global climate change, California has recently adopted a series of laws to reduce both the level of GHGs in the atmosphere and to reduce emissions of GHGs from commercial and private activities within the state.

- In September 2002, Governor Gray Davis signed Assembly Bill (AB) 1493, which requires the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the State.
- In June 2005, Governor Schwarzenegger signed Executive Order S-3-05, which established GHG emissions reduction targets for the State, as well as a process to ensure that the targets are met. As a result of this executive order, the California Climate Action Team (CAT), led by the Secretary of the California State Environmental Protection Agency (CalEPA), was formed. The CAT published its first report in March 2006, in which it laid out several recommendations and strategies

[1] California Air Resources Board (CARB). Low Carbon Fuel Standard (LCFS) Program Background. Available at: http://www.arb.ca.gov/fuels/lcfs/lcfs-background.htm. Accessed 28 January 2011.

for reducing GHG emissions and reaching the targets established in the executive order.

- In September 2006, Governor Schwarzenegger signed California's Global Warming Solutions Act of 2006 (AB 32). AB 32 requires CARB to establish a statewide GHG emissions cap for 2020; adopt mandatory reporting rules and an emission reduction plan for significant sources of GHG emissions; and adopt regulations to achieve the maximum technologically feasible and cost effective reductions of GHGs. Since signing AB 32, CARB has promulgated regulations, such as the Low Carbon Fuel Standard (LCFS) and GHG Cap and Trade aimed at lowering GHG emissions. The LCFS, established by Executive Order S-1-07, requires California to reduce the carbon intensity of California transportation fuels by 10 percent by 2020.[1] At the Hearing Board meeting on December 16, 2010, CARB adopted a resolution to establish a Cap-and-Trade Program. A requirement of the Scoping Plan, the Cap-and-Trade Program establishes a declining limit on GHGs from capped sectors, allowing California to meet the reduction goals established by AB 32; this program was finalized in October 2011. In addition Executive Orders S-14-08 and S-21-09 were also signed, which set the renewable energy target to 33%. Stemming from these Executive Orders, CARB adopted the Renewable Electricity Standard in September 2010, which requires energy utilities to meet the 33% renewable energy target by 2020. These renewable energy requirements will drive the use of bioenergy in the State.
- California Senate Bill 97 (SB 97), passed in August 2007, is designed to work in conjunction with CEQA and AB 32. SB 97 requires the California Office of Planning and Research (OPR) to prepare and develop guidelines for the mitigation of GHG emissions or the effects thereof, including, but not limited to, effects associated with transportation and energy consumption. These

amendments were approved by the Office of Administrative Law (OAL) on February 16, 2010, and became effective on March 18, 2010. The OPR and the Resources Agency shall periodically update these guidelines to incorporate new information or criteria established by CARB pursuant to AB 32. SB 97 will apply to any environmental impact report, Negative Declaration, Mitigated Negative Declaration, or other document required by CEQA, except for a limited number of prescribed types of projects. SB 97 was automatically repealed on January 1, 2010.

- The SCAQMD has established a Climate Change Policy, adopted by the SCAQMD Governing Board, at its September 5, 2008 meeting, to actively seek opportunities to reduce emissions of criteria, toxic, and climate change pollutants. The policy includes the intent to assist businesses and local governments implementing climate change measures, decrease the agency's carbon footprint, and provide climate change information to the public.
- In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), argued on November 29, 2006 and decided on April 2, 2007, the U.S. Supreme Court held that not only did the USEPA have authority to regulate GHGs, but also that the US EPA's reasons for not regulating GHGs did not fit the statutory requirements. The U.S. Supreme Court ruled that CO_2 and other GHGs are pollutants under the Clean Air Act (CAA), and that the US EPA must regulate GHG emissions if it determines such emissions pose an endangerment to public health or welfare. On December 15, 2009, EPA found that GHGs endanger public health and welfare (known as the "endangerment finding") and that the combined emissions of these GHGs from new motor vehicles cause and contribute to the air pollution that endangers public health and welfare ("the cause and contribute finding"). These findings were a

prerequisite to finalizing GHG standards for vehicles under the CAA, and EPA issued the Light-Duty Vehicle Rule (LDVR) establishing national GHG emissions standards for vehicles under the CAA on May 7, 2010. Under EPA's interpretation (published April 2, 2010), a pollutant becomes "subject to regulation" on the date that a requirement in the CAA or a rule adopted by EPA under the CAA to control emissions of that pollutant "takes effect" or becomes applicable to the regulated activity. Since LDVR took effect January 2, 2011, stationary sources also had to be regulated under the CAA as of that date.

- On June 3, 2010, EPA published the Tailoring Rule, which brings GHGs into the stationary source CAA permitting programs, namely Title V and Prevention of Significant Deterioration (PSD). This rule "tailored" the CAA applicability thresholds for GHG emissions to cut down on the administrative burden to permitting authorities and permittees. Step 1 of Tailoring Rule implementation, which involves sources already subject to Title V and PSD, began on January 2, 2011 per the requirement outlined above in which GHGs become subject to regulation on the effective date of the LDVR. Step 2, which brings new sources into the program based on GHG emissions, begins on July 1, 2011. On January 12, 2011, EPA announced that by July 2011, it plans to complete a rulemaking that will defer permitting requirements for CO_2 emissions from biomass and other biogenic sources for three years.

The City of Los Angeles released its GreenLA climate action plan, in May 2007. The Plan sets forth a goal of reducing the City's greenhouse gas emissions to 35% below 1990 levels by the year 2030, one of the most aggressive goals of any big city in the U.S. This voluntary plan identifies over 50 action items, grouped into focus areas, to reduce emissions. While the emphasis is first on municipal facilities and operations, several measures address programs to reduce

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
emissions in the community. The 2006 MND included an analysis of the GHG emissions associated with the 2006 Project. Although the baseline for this project would account only for the amount of biosolids presently being injected, the difference in injection from the existing setting up to 400 tons per day has previously been analyzed in the certified 2006 MND. Therefore, this analysis only assesses the potential GHG emissions increase associated with this project (construction of one new well, drilling to a depth of 7,500 feet for the existing wells, and replacement of up to four wells, as well as the additional commuter trips associated with additional employees required to operate two injection wells simultaneously). GHG emissions for the proposed Project were calculated and shown in Appendix B. In addition to the small amount of GHG emissions generated, this Project is needed to fully realize the GHG benefits of the 2006 Project and thus, there is no significant impact.				
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of greenhouse gases? Comment: In 2008, the City of Los Angeles implemented the ClimateLA which will carry out the Green LA Climate Action plan that includes more than fifty specific actions designed to reduce the City's contributions to climate change, and to prepare a response to the changes that have already begun to occur. All City actions to reduce greenhouse gas (GHG) emissions are guided by a set of policy principles and community values. The City aims to achieve real, measurable reductions in carbon dioxide (CO2) emissions through City government (municipal) operations and facilities, the business sector, and residential households. The 2006 Project is in line with the City's Climate Action plan for reducing greenhouse gases. The Project is not expected to result in a conflict with applicable plans, policies, or regulations adopted for the purpose of reducing emissions of GHGs.	☐	☐	☒	☐

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
3.8 HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
Comment: Biosolids are not classified as a hazardous waste. Biosolids injection and methane production were part of the 2006 Project. The 2006 MND found impacts from hazards and hazardous materials to be less than significant. This analysis only assess impacts of the current project (drilling one new well, drilling up to four replacement wells, drilling the existing wells down to 7,500 feet and injecting into two wells simultaneously). The proposed Project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, consistent with the adopted 2006 MND.				
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?	☐	☐	☒	☐
Comment: Biosolids injection and methane production were part of the 2006 Project. The 2006 MND found impacts from hazards and hazardous materials to be less than significant. This analysis only assess impacts of the current project (drilling one new well, drilling up to four replacement wells, drilling the existing wells down to 7,500 feet and injecting into two wells simultaneously).				
The TIWRP is responsible for safeguarding its employees, facilities, the public, and the environment in the event of disaster (natural or manmade) and other emergencies. Natural hazards include earthquakes, floods, and severe weather conditions such as high winds. Emergency situations could also develop from a major explosion or fire, uncontrolled hazardous material spill or releases, verified bomb threats, or civil				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
disorder. The adopted TIWRP Response Plan was prepared to meet the safety and public health requirements of the following regulations: 1) Emergency Action Plan [CCR, Title 8, Section 3220]; 2) Fire Prevention Plan [CCR, Title 8, Section 3221]; 3) Hazardous Waste operations and Emergency Response [CCR, Title 8, Section 5192]; 4) Preparedness and Prevention Plan [CCR, Title 22, Section 66265.31, Section 66265.32(c), and Section66265.52(c)]. The proposed Project will not create an additional significant hazard impact, consistent with the adopted 2006 MND.				
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
Comment: Biosolids injection and methane production were part of the 2006 Project. The 2006 MND found impacts from hazards and hazardous materials to be less than significant. This analysis only assess impacts of the current project (drilling one new well, drilling up to four replacement wells, drilling the existing wells down to 7,500 feet and injecting into two wells simultaneously).				
The Port of Los Angeles, including the Project site, is adjacent to the Los Angeles Unified School District – Local District K. District K encompasses the cities of Carson, Gardena, Lomita, San Pedro, Wilmington, and parts of Long Beach, Harbor City and Torrance. The nearest school is Fifteenth Street Elementary School, located over one mile to the west across the main channel of the Port of Los Angeles in San Pedro. The Project site is not within one-quarter mile of an existing or proposed school. The proposed Project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, consistent with the adopted the 2006 MND.				
d) Be located on a site which is included on a list of	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? Comment: Biosolids injection and methane production were part of the 2006 Project. The 2006 MND found impacts from hazards and hazardous materials to be less than significant. This analysis only assess impacts of the current project (drilling one new well, drilling up to four replacement wells, drilling the existing wells down to 7,500 feet and injecting into two wells simultaneously) An electronic database search of listings maintained by federal, state, and local agencies of sites with known or suspected hazardous material contamination, use of hazardous or toxic materials and regulated wastes, discharge or spillage incidents, discharge permits, landfills, and storage tanks was performed. The Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment consistent with the adopted 2006 MND.				
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 airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? Comment: Biosolids injection and methane production were part of the 2006 Project. The 2006 MND found impacts from hazards and hazardous materials to be less than significant. This analysis only assess impacts of the current project (drilling one new well, drilling up to four replacement wells, drilling the existing wells down to 7,500 feet and injecting into two wells simultaneously) The Project, which is within the previously analyzed 2006 MND project site, is not within the vicinity of a	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
public airstrip and is not within two miles of a public airport. The closest public airport, Long Beach Airport, is located approximately nine miles to the northeast of the Project site. The proposed Project would not result in a safety hazard for people residing or working within such an area, consistent with the adopted 2006 MND.				
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?	☐	☐	☒	☐
Comment: Biosolids injection and methane production were part of the 2006 Project. The 2006 MND found impacts from hazards and hazardous materials to be less than significant. This analysis only assess impacts of the current project (drilling one new well, drilling up to four replacement wells, drilling the existing wells down to 7,500 feet and injecting into two wells simultaneously)				
Helicopter landing pads are currently located at Berth 93E, approximately one mile to the northwest of the site and at Berth 79 approximately 0.75 miles west of the site. Only small helicopters operate from these locations and transit primarily via the Main Channel of the Port of Los Angeles. Given the distance of the heliport from the Project site, persons will not be exposed to significant risk from the proposed Project, consistent with the adopted 2006 MND.				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
Comment: Biosolids injection and methane production were part of the 2006 Project. The 2006 MND found impacts from hazards and hazardous materials to be less than significant. This analysis only assess impacts of the current project (drilling one new well, drilling up to four replacement wells, drilling the existing wells down to 7,500 feet and injecting into two wells simultaneously).The emergency response plan prepared for the 2006 MND will be applicable for the				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
proposed Project. The facility also has an emergency evacuation plan. The proposed Project will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, consistent with the 2006 MND.				
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?	☐	☐	☐	☒
The Project site, which is within the previously analyzed 2006 MND Project site, is currently developed and does not consist of any wildlands. The proposed Project will not expose people or structures to risk of loss, injury or death involving wildland fires.				
3.9 HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
Comments: As required by the California Regional Water Quality Control Board, Los Angeles Region, the proposed Project will be in compliance with the National Pollutant Discharge Elimination System (NPDES) program to control direct stormwater discharges. The proposed Project site will be within the previously analyzed 2006 MND project site of half an acre area. The area is paved, bermed and slopes toward a debris basin which discharges to the in-plant sewer. Any spills from drilling are washed and diverted to the sanitary sewer. All in-plant run offs are collected and treated along with the plant's influent. During emergencies or unusual conditions, runoff from the site is directed to the plant's drainage system. There are three targeted underground zones with a total thickness of about 1,500 feet (500 meters) for biosolids disposal. They are the Tar Zone and the Ranger Zone within the Repetto Formation, and the Upper Terminal zone within the Puente Formation.				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Based on nearby lithology (Wilmington Oil Field), the formation materials should be intercalated fine to coarse grained, poorly sorted sandstones and siltstones with interbedded dark brown-gray shales and clays. This series of alternating shale (sealing zones) and low pressure sand sequences (absorption zones) present natural protection mechanisms for usable groundwater sources thousands of feet above. The different oil/water contacts found within the Wilmington oil field demonstrate that sands are non-continuous and the shales formed sealing caps to the underlying reservoirs. The proposed Project will not violate any water quality standards or waste discharge requirements, consistent with the adopted 2006 MND.				
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.	☐	☐	☒	☐
Comments: There are no drinking water wells in the Project area or within one mile of the Project area. The Project site, which is within the previously analyzed 2006 MND site, is currently developed and most of the site consists of impermeable surfaces. The site does not support surface recharge of groundwater. Groundwater in the area has a significant saltwater intrusion, and is therefore unsuitable for use as drinking water.				
The new and/or replacement wells will be constructed with steel and several layers of concrete casings while penetrating through geological formations including the ones containing the water table. Isolation of the deep wells along with the monitoring instrumentations assure adequate safeguard for protection in depths of several thousand feet. The new and/or replacements wells are below the local water table. The proposed Project will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge,				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
consistent with the adopted 2006 MND.				
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? Comment: No streams or rivers cross the Project site. A stormwater pollution prevention plan for the control of soil erosion and sediment runoff has been implemented for the 2006 Project and will remain in effect for the construction and operations of the proposed Project. The proposed Project would not substantially alter the existing drainage pattern of the site or area, consistent with the adopted 2006 MND.	☐	☐	☒	☐
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? Comment: The proposed Project will not 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, consistent with the adopted 2006 MND. Refer to comments 3.9(a) and 3.9(c)	☐	☐	☒	☐
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? Comment: Refer to Comments 3.9(a), 3.9(c), and 3.9(d) above. The proposed Project will not 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, consistent with the adopted 2006 MND.	☐	☐	☒	☐

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
Comment: The proposed Project will create a less than significant impact on water quality to what was previously analyzed in the 2006 MND. Refer to comment 3.9(a).				
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?	☐	☐	☐	☒
Comment: The Project will not involve the construction of houses. Also, the Project site is not located in the 500-year designated flood zone or the 100-year designated flood zone.				
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
Comment: The Project will not place structures within a 100-year flood hazard area that would impede or redirect flood flows, consistent with the adopted 2006 MND. Refer to comment 3.9(g).				
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 dam?	☐	☐	☐	☒
Comment: The proposed Project will not 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 dam, consistent with the adopted 2006 MND. Refer to comment 3.9(g).				
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
Comment: The open harbor system would allow seismic forces to travel out to sea rather than contain them in a closed basin subject to increasing oscillations as is characteristic of seiche activity. The Project site is located outside the areas “potentially impacted by a				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
tsunami." The topography of the area, which is essentially flat, lacks sufficient relief to support a mudflow. The emergency response and evacuation plans have been implemented for the 2006 MND Project and will remain in effect during the construction and operations of the proposed Project. The proposed Project will not contribute to inundation by seiche, tsunami, or mudflow.				
3.10 LAND USE AND PLANNING Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
Comment: The Project site, which is within the previously analyzed 2006 MND project site, is confined to a single parcel within an industrial area The proposed Project will not physically divide an established community, consistent with the adopted 2006 MND.				
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 mitigating an environmental effect?	☐	☐	☐	☒
Comment: The Project will be consistent with the designated land use and the Port Plan certified by the California Coastal Commission, The Harbor Board of Commissioners issued a Coastal Development permit for the 2006 MND Project which will apply to the proposed Project. The proposed Project will not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project, consistent with the adopted 2006 MND.				
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
Comment: Refer to Comment 3.4(f) above. The proposed Project will not conflict with any applicable				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
habitat conservation plan or natural community conservation plan, consistent with the adopted 2006 MND.				
3.11 MINERAL RESOURCES 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? Comment: The Project site, which is within the previously analyzed 2006 MND project site, is located in a Mineral Resource Zone (MRZ) area classified as "MRZ-1," which is defined as areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. The proposed Project will not 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, consistent with the adopted 2006 MND.	☐	☐	☐	☒
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? Comment: Refer to 3.11(a) above. The proposed Project will not 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, consistent with the adopted 2006 MND.	☐	☐	☐	☒
3.12 NOISE 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?	☐	☐	☒	☐

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Comment: For approximately one month during each drilling event, construction activities will occur. During this time, the drilling rig may produce noise in the range of 75 to 88 dBA. This noise level is lower than the noise produced by trucks, trains, and cargo handling equipment in the vicinity. Noise levels will not be higher than the levels established for the plant. The dominant noise source in the area is due to cargo container truck traffic from a container handling lot operating adjacent to the plant. Within the plant itself, there are centrifuges, boilers, and pumps in current operation. Cargo trucks, which continuously operate at Terminal Way, have a noise level of 82 to 95 dBA, which is above the proposed Project's anticipated noise levels. The main injection equipment will be a short stroke positive displacement pump that produces 68 to 72 dBA. Operation of two injection wells simultaneously is expected to result in similar noise levels as those currently produced by the 2006 Project. This is lower than the conditionally acceptable industrial noise level of 70 to 80 dBA. Equipment may be equipped with vibration or noise dampers. There are also no known sensitive noise receptors for at least a quarter a mile from the site. The nearest residences are located approximately 0.5 miles to the west of the Project site, across the Main Channel of the Los Angeles Harbor. The proposed Project will not expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, consistent with the adopted 2006 MND.				
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
Comment: A significant impact would occur if the Project resulted in or exposed people to excessive groundborne vibration or groundborne noise levels during construction or operation. This would include excessive groundborne vibrations or noise which causes structural damage or displaces objects in				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
nearby buildings. Drilling of the additional well, deeper in the wells or replacement wells may generate groundborne vibration and noise; however, there are no nearby sensitive receptors. These effects would be temporary and short-term in nature. As with the 2006 MND project, vibration and noise levels during temporary construction and each drilling event will be monitored. The proposed Project will not expose persons to or generate excessive groundborne vibration or groundborne noise levels, consistent with the adopted 2006 MND.				
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? Comment: The proposed Project will not create a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project, consistent with the adopted 2006 MND. Refer to Comments 3.12(a) and 3.12(b) above.	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? Comments: Refer to Comments 3.12(a) and 3.12(b) above. The proposed Project will not create a substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project, consistent with the adopted 2006 MND.	☐	☐	☒	☐
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 airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? Comment: No public airport is located within the vicinity of the Project area which is within the previously analyzed 2006 MND project site. The proposed Project	☐	☐	☐	☒

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
will not expose people residing or working in the project area to excessive noise levels that are located within airport land use plan, consistent with the adopted 2006 MND.				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
Comment: Helicopter landing pads are currently located at Berth 93E, approximately one mile to the northwest of the site and at Berth 79 approximately 0.75 mile west of the site. The proposed Project would not expose people residing or working in the project area to excessive noise levels within the vicinity of private airstrip, consistent with the adopted 2006 MND.				
3.13 POPULATION AND HOUSING Would the project:				
a) Induce substantial population 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)?	☐	☐	☐	☒
Comment: The proposed Project requires only a few temporary workers for construction activities for about one month per event, and may require three new contract operators for injecting into two well simultaneously. The proposed Project will not create substantial population growth or extension of roads or other infrastructure, consistent with the adopted 2006 MND.				
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
Comment: The proposed Project is located within the TIWRP. There is no housing on or adjacent to the Project site, which is within the previously analyzed 2006 MND project site. The nearest housing is located 0.5 miles to the west, across the Main Channel of the				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Los Angeles Harbor. Therefore, the proposed project changes will not displace housing, consistent with the adopted 2006 MND.				
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
Comment: The proposed Project will not displace a substantial numbers of people, necessitating the construction of replacement housing elsewhere, consistent with the 2006 MND. Refer to Comment 3.13(b) above.				
3.14 PUBLIC SERVICES 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 public services:				
a) Fire protection?	☐	☐	☐	☒
Comment: The City of Los Angeles Fire Department (Fire Department) currently provides fire protection for the Project area. The Fire Department has a response time of five minutes within its jurisdiction. The Fire Department facilities in the vicinity of the Project site include land-based fire stations and fireboat companies. Two fire stations are located on Terminal Island near the Project site. Station 111 at 954 South Seaside Avenue has a staff of three fire fighters per shift (total of nine) and includes one fireboat and is located approximately 0.5 miles from the proposed Project site. Station 40 at 330 Ferry Street has a staff of four firefighters per shift (total of 12) and includes one engine company and is located approximately 0.25 miles from the proposed site. The Fire Department will be available to provide services to the proposed Project and the surrounding area. Also the Fire Department				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
will review and approve plot plans for the proposed Project.				
The 2006 MND project incorporated emergency response plans and procedures that include fire protection in place and will remain in effect during the construction and operations for the proposed Project. The proposed Project will not impact Fire protection, consistent with the adopted 2006 MND.				
b) Police protection?	☐	☐	☐	☒
Comment: Both the Los Angeles Harbor Department Port Police (Port Police) and the Lost Angeles Police Department provide police services to the Port of Los Angeles. The Port Police is the primary response agency to the Port by jurisdictional responsibility over operations within the Port's boundaries. Port Police headquarters is located in the Los Angeles Harbor Department (LAHD) administration building at 425 South Palos Verdes Street in San Pedro and is located approximately three miles from the proposed site. The Port Police has a staff of approximately 90 sworn officers who enforce municipal, state, and federal laws, as well as port tariff regulations. Port Police officers maintain a 24-hour land and water patrol fleet of approximately 40 vehicles and five police boats. Response time for patrol vehicles is less than five minutes for all patrol areas.				
Although the Port Police are the first responders to an emergency, the Port is within the City of Los Angeles, and the ultimate responsibility for police services falls to the Los Angeles Police Department. The department's Harbor Division is at 2175 John S. Gibson Boulevard in San Pedro and is located approximately three miles from the proposed site, and has a staff of approximately 260 officers and 30 civilians. Patrols are divided into two watches (day/PM and PM/morning), and both radio-dispatched cars and traffic-control motorcycles are used to patrol the area. Average response time for the entire Harbor Division is approximately 10.6 minutes. The proposed Project				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
drilling activities would not result in subsequent developments that would lead to an increase in the need for police services. Impacts on police service to the community would not occur as a result of the proposed Project, consistent with the adopted 2006 MND.				
c) Schools?	☐	☐	☐	☒
Comment: The proposed Project would not promote population growth, either directly or indirectly, because it would not include new residential or educational development, consistent with the adopted 2006 MND.				
d) Parks?	☐	☐	☐	☒
Comment: The proposed Project does not involve parks, or any residential development that would increase the need for new parks, consistent with the adopted 2006 MND.				
e) Other public facilities?	☐	☐	☐	☒
Comment: The proposed Project would not promote population growth, either directly or indirectly. It would not include new residential or educational development, and thus, it would not have a significant effect on public facilities, consistent with the adopted 2006 MND.				
3.15 RECREATION Would the project:				
a) 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?	☐	☐	☐	☒
Comment: The proposed Project does not involve residential development, and would not adversely affect existing recreational opportunities or increase the				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
demand for neighborhood or regional parks or other recreational facilities, consistent with the adopted 2006 MND.				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? Comment: Refer to Comment 3.15(a) above.	☐	☐	☐	☒
3.16 TRANSPORTATION/TRAFFIC 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?	☐	☐	☒	☐

Comments: For well construction activities there will be temporary truck traffic. The construction of the proposed Project will require up to a maximum of 16 temporary construction workers on one day (most construction days would have 8 workers and 8 vehicles) and a maximum of 9 hauling trips. This results in a potential maximum of 16 vehicle trips in a single day; however, this scenario is conservative as these activities will not occur on the same day. During operation, there will be at most three additional employees resulting in three additional vehicle trips to and from the facility. An additional maximum of 6 trips would result in a negligible increase in traffic. Thus, there will be a less than significant impact on the level of service (LOS). The proposed Project will not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system based on the small increase in traffic associated with drilling and operation of two wells simultaneously.

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 system for designated roads or highways?	☐	☐	☒	☐
Comments: The proposed Project will not create a significant increase in additional traffic or road congestion as discussed in Comment 3.16(a). The proposed Project will not conflict with an applicable congestion management program or other standards established by the county congestion management system for designated roads or highways, consistent with the adopted 2006 MND. Refer to Comment 3.16(a) above.				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
Comments: The proposed Project does not involve the delivery of materials via air and will not result in tall structures. Therefore, the proposed Project will not result in a change in air traffic patterns, consistent with the adopted 2006 MND.				
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
Comments: The proposed Project does not involve construction of roads or use of incompatible equipment on roads (e.g. farm equipment). Therefore, the proposed Project would not result in an increase in safety hazard to pedestrians, personnel, visitors, or nearby neighbors.				
e) Result in inadequate emergency access?	☐	☐	☐	☒
Comments: The 2006 Project has approved emergency response plans that are in place and will				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
remain in effect during the construction and operations for the proposed Project. Traffic control plans were developed to maintain adequate emergency access to all surrounding facilities during construction and will be used for temporary construction activities related to the proposed Project. The proposed Project will not result in inadequate emergency access, consistent with the adopted the 2006 MND.				
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
Comments: No barriers to pedestrian or bicycle circulation would occur. The proposed Project would comply with all policies regarding alternative transportation. The proposed Project would not conflict with adopted policies or existing facilities related to alternative transportation, consistent with the adopted.2006 MND.				
3.17 UTILITIES AND SERVICE SYSTEMS Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
Comment: The proposed Project does not exceed wastewater treatment requirements to the existing wastewater treatment systems and would not affect existing wastewater treatment equipment, consistent with the adopted 2006 MND.				
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
Comment: The City of Los Angeles, Department of Public Works, Bureau of Sanitation provides sewer service to the Project site. The Bureau of Sanitation maintains sewer lines in the Project area, as well as a				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
wastewater treatment plant on Terminal Island. The adequacy of wastewater disposal service is evaluated based on conveyance capacity (typically via a gravity-driven underground pipeline network) and treatment capacity prior to discharge. Potable water is provided to the project area by the City of Los Angeles, Department of Water and Power (DWP). DWP is responsible for supplying, conserving, treating, and distributing water for domestic, industrial, agricultural, and firefighting purposes within the City of Los Angeles. For approximately one month during each drilling event plant effluent and portable water will be used for drilling purposes. The use of this water source will not cause a result in construction of new water or waste facilities. The proposed Project will not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects, consistent with the adopted 2006 MND.				
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? Comment: The proposed Project, which will be within the previously analyzed 2006 MND project site, will not 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, consistent with the adopted 2006 MND. Stormwater from the Project site would flow into the existing storm drains within the plant property. The site is currently developed with impermeable surfaces. Project-related increases in stormwater flow are not expected.	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Comment: Potable water is provided by the City of Los Angeles Department of Water and Power (DWP). During the temporary construction operations for approximately one month per drilling event plant effluent will be used for dust control and wash down. Fresh water will be used only for personnel needs. The amount anticipated to be required is minimal and can be supplied by the existing resources. The proposed Project will not have a significant effect on the available water supplies, consistent with the adopted 2006 MD.				
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?	☐	☐	☒	☐
Comment: Refer to comments 3.17(b). The proposed Project will not impact the capacity of existing wastewater treatment which will serve the demand for the proposed Project, consistent with the adopted 2006 MND.				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
Comment: During the temporary drilling operations, the drill shaving and solid waste from construction activities would be managed in facilities either within the County of Los Angeles or other non-Los Angeles County Sanitation District facilities. The 2006 MND found that no substantial increase in landfill waste generation would occur during the construction of the 2006 project, including the drilling of the initial three wells. Approximately 1730 cubic yards of material will be generated during construction of new or replacement wells or deepening wells for the proposed Project. This amount is not anticipated to increase landfill waste generation compared to the 1.6 million tons of material managed from June 2010 to November 2011 at nearest County of Los Angeles facility. The				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
proposed Project will not result in substantial increases in landfill waste generation and thus, will not increase landfill generation beyond the permitted capacity, consistent with the adopted 2006 MND.				
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
Comment: The proposed Project would comply with all federal, state, and local regulations pertaining to the disposal of solid waste, including Chapter VI, Article 6, Garbage, Refuse Collection, of the City of Los Angeles Municipal Code; Part 13, Title 42, Public Health and Welfare, of the California Health and Safety Code; and Chapter 39, Solid Waste Disposal. Any potentially hazardous materials would be disposed of in landfills permitted to accept such waste. Because the proposed Project would implement and be consistent with the procedures and policies detailed in these codes, the proposed Project will have no impact on the ability to comply with these statutes and regulations related to solid waste.				
3.18 MANDATORY FINDINGS OF SIGNIFICANCE: 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?	☐	☐	☒	☐
Comment: The Project site is located in an industrialized area within the Port of Los Angeles. Neither the Project site nor any adjacent areas are included as part of an adopted Natural Communities Conservation Plan (NCCP) or Habitat Conservation Plan (HCP).				
There is currently only one NCCP that is being considered near the Port of Los Angeles. The NCCP				

for the Palos Verdes Peninsula Sub-Regional Plan is currently under consideration (CDFG, 2011). This plan intends to protect coastal sage scrub and does not include the Port of Los Angeles lands. There are no HCPs currently in place for the Port of Los Angeles. The County of Los Angeles has also established 61 SEAs. There is one SEA within the Port of Los Angeles boundaries: The Pier 400 California Least Tern Nesting Site. A MOA between the City of Los Angeles Harbor Department, CDFG, U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers protects the California Least Tern at the 15 acre site during the annual nesting season from April to September. This SEA is located approximately 2 miles south of the Project site. Least Terns do not use the Project area for nesting or foraging. The proposed Project would not reduce or threaten any fish or wildlife species (endangered or otherwise).

The Project site is on a man-made fill related to the original construction in the early 20th century and subsequent developments at the TIWRP. The site would not be expected to yields significant archaeological or paleontological resources. Therefore, the proposed Project would not cause substantial adverse changes in significance of archaeological resources in the area. The proposed Project would not eliminate important examples of the major periods of California history or prehistory.
As required by the California Regional Water Quality Control Board, Los Angeles Region, the proposed Project will be in compliance with the National Pollutant Discharge Elimination System (NPDES) program to control direct stormwater discharges. The Project site, which is within the previously analyzed 2006 MND project site, is paved, bermed, and slopes toward a debris basin which discharges to the in-plant sewer. Any spills from drilling are washed and diverted to the sanitary sewer. All in-plant runoff is collected and treated along with the plant's influent. During emergencies or unusual conditions, runoff from the site will be directed to the plant's drainage system.
The proposed Project has the potential to slightly

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
degrade the immediate environment during temporary construction due to equipment emissions and noise from construction activity. In order to ensure that wildlife and habitat are not disturbed during the construction and operation of the proposed project changes will comply with regulations to curb runoff impacts that could have adverse effects on these resources. Thus, the potential of the proposed Project 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 are expected to be less than significant.				
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, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
Comment: As discussed in Sections 3.1 through 3.17, the impacts of the proposed project are less than significant. The proposed project is entirely within the footprint of the existing 2006 TIRE project site and the impacts of current operations were analyzed in the 2006 MND. As noted in Section 3.3(c), specific analysis of cumulative air quality impacts demonstrate that air quality impacts would not be cumulatively considerable. To assess the cumulative impacts of the proposed project, the City conducted a search between October 17 and 25, 2011 of applicable websites to assess the impact status of past, current, and foreseeable future projects within a half mile radius of the project site. Sites reviewed included the Port of Los Angeles CEQA/EIR Projects and Public notices website, the City Planning website, Los Angeles				

Issues	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
County Planning Department website, the San Pedro Community Plan and the Port of Los Angeles Master Plan. The City did not identify any related on-going or planned projects.				
The current project would facilitate achievement of the benefits of the 2006 Project, including reductions in criteria and air toxic pollutants by eliminating long-distance trucking of biosolids/sewage sludge and reductions in GHGs by injection the biosolids/sewage sludge rather than land application (with its related methane emissions).				
The proposed project is expected to have less than significant cumulative impacts on the environment due to the lack of on-going or future projects in the area, substantially less than significant impacts of the project itself on each environmental impact area and , in particular, the minor contribution of the air emissions relative to the corresponding significance thresholds.				
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐
Comment: The proposed Project would not have significant air quality, geology and soils, hydrology, land use, noise, public service, or traffic impacts that would cause substantial adverse effects on human beings, either directly or indirectly. The Project, as part of a modification to the 2006 Project, is a public benefit project that will continue to improve the environment by converting biosolids into clean energy by deep well injection and bio-degradation, while at the same time reducing GHG emissions through geologic sequestration. To date over 200,000 miles of truck traffic and associated emissions, pollutions, odors and dust have been eliminated for the 2006 Project; and carbon dioxide (greenhouse gas) sequestered. The Project, as part of a modification to the 2006 Project, will take advantage of renewable geothermal energy (heat) in the subsurface to create another source of renewable energy.				

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5.0 Determination - Recommended Environmental Documentation

5.1 Summary

The existing 2006 Project occupies one half acre of the 25 acre TIWRP, and includes the injection of up to 400 tons per day of biosolids/sewage sludge in the existing underground formations using three injection/monitoring wells. The area is a heavy industrial ([O]M3-1) and non-residential zone. The plant is surrounded by oil storage tanks, cargo container lots, coal handling structures, rail tracks, and cargo roads. The proposed Project is to construct one additional well and up to 4 replacement wells at a depth of 7,500 feet, deepen existing wells to 7,500 feet and operate two injection wells alternately and/or simultaneously at the TIWRP located at 445 Ferry Street in San

Pedro. At no time will there be more than four active wells at the Project site. The wells will be used for the placement on non producing oil formations of biosolids slurry mixture. As analyzed for the 2006 Project, approximately 40 tons of biosolids from TIWRP and up to 360 tons from the HTP will be placed deep underground into the geological formations. The Project, in combination with the 2006 Project, will also allow the ultimate recovery of methane gas generated by the biodegradation of the biosolids. The gas will be reused as a renewable fuel for power co-generation using nonpolluting fuel cells; further enhancing air quality. In addition, with biodegradation occurring deep underground, CO_2, a by-product and a GHG, is sequestered safely in brine formations underground. The 2006 Project has been in operations for over three years and has successfully placed more than 130 million gallons of bio-slurry material deep underground. To date the 2006 Project has saved over $1.6 million for biosolids trucking, eliminated over 200, 000 miles of truck traffic and reduced air emissions related to trucking. The project is set to sequester over 83, 000 tons of CO_2. These benefits will continue under the 2006 Project and with the incorporation of the proposed Project.

5.2 Recommended Environmental Documentation

On the basis of this evaluation, I find that the proposed Project changes to the TIRE project could not have a significant effect on the environment, and the **Subsequent *Negative Declaration*** *for the TIRE Project* be adopted.

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7. Appendices

7.1 Appendix A: AQMD Air Quality Significant Thresholds (March 2011)
7.2 Appendix B: Project Criteria and GHG Emission Calculations

7.1 Appendix A

South Coast Air Quality Management District Air Quality Significant Thresholds

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction [b]**	**Operation [c]**
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants [d]		
NO2 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM10 24-hour average annual average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation) 1.0 μg/m^3	
PM2.5 24-hour average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation)	
SO2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 μg/m^3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average Quarterly average	1.5 μg/m^3 (state) 0.15 μg/m^3 (federal) 1.5 μg/m^3 (federal)	

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million μg/m^3 = microgram per cubic meter ≥ = greater than or equal to
MT/yr CO2eq = metric tons per year of CO2 equivalents > = greater than

7.2 Appendix B: Project Criteria and Greenhouse Gas Emissions Calculations

- **Construction of New Wells**
- **Deepening of existing wells from 5300 feet to 7500 feet**
- **Greenhouse Gas Emissions**
- **Operations Emissions**

Construction Drilling Air Emissions Analysis
TIRE Project Modification

Phase 1. Emission estimates for one well to 7,500 ft (one new well, four replacement wells)

Drilling Phase	HP [1]	Load factor	Fuel Consumption (gal/day)[1]	Criteria Pollulants (lb/day)						GHG Emissions (tonnes/day)		
				CO	NO_x	PM_{10}	PM_{25}	ROG	SO_2	CO_2	CH_4	CO_2e
Drawwork	1,000	0.09	150	4.66	0.28	0.47	0.47	0.008	0.02	1.17	0.00005	1.17
Generator	500	0.09	75	2.89	0.28	0.28	0.28	0.004	0.01	0.59	0.00003	0.59
Mud Pump	1,000	0.07	125	6.36	0.25	0.64	0.64	0.002	0.02	0.98	0.00007	0.98

[1] Data from client

Total emission for drilling a well to 7,500 ft

Drilling Phase	Time (days)	Criteria Pollulants (lbs/event)						GHG Emissions (tonnes/event)		
		CO	NO_x	PM_{10}	PM_{25}	ROG	SO_2	CO_2	CH_4	CO_2e
Drawwork	24	111.84	6.72	11.33	11.33	0.19	0.54	28.13	0.0011	28.15
Generator		69.42	6.72	6.81	6.81	0.10	0.27	14.07	0.0007	14.08
Mud Pump		152.64	6.00	15.25	15.25	0.05	0.45	23.44	0.0017	23.48
Total		**333.91**	**19.44**	**33.38**	**33.38**	**0.34**	**1.27**	**65.64**	**0.0035**	**65.71**

Phase 2. Emission estimates for extending one well from 5,500 ft to 7,500 ft

Drilling Phase	Diesel Usage (gal/day)	Load factor	Criteria Pollulants (lb/day)						GHG Emissions (tonnes/day)		
			CO	NO_x	PM_{10}	PM_{25}	ROG	SO_2	CO_2	CH_4	CO_2e
Drawwork	150	0.09	4.66	0.28	0.47	0.47	0.008	0.02	1.17	0.00005	1.17
Generator	75	0.09	2.89	0.28	0.28	0.28	0.004	0.01	0.59	0.00003	0.59
Mud Pump	125	0.07	6.36	0.25	0.64	0.64	0.002	0.02	0.98	0.00007	0.98

Total emissions from deepening each existing well (3) from 5,500 ft to 7,500 ft

Drilling Phase	Time (days)	Criteria Pollulants (lb/event)						GHG Emissions (tonnes/event)		
		CO	NO_x	PM_{10}	PM_{25}	ROG	SO_2	CO_2	CH_4	CO_2e
Drawwork	4	18.64	1.12	1.89	1.89	0.03	0.09	4.69	0.00	4.69
Generator		11.57	1.12	1.13	1.13	0.02	0.05	2.34	0.00	2.35
Mud Pump		25.44	1.00	2.54	2.54	0.01	0.08	3.91	0.00	3.91
Total		**55.65**	**3.24**	**5.56**	**5.56**	**0.06**	**0.21**	**10.94**	**0.0006**	**10.95**

5. Maximum Emissions from Phase 1 or 2

Drilling Phase	Criteria Pollulants (lb/day)						GHG Emissions (tonnes/day)		
	CO	NO_x	PM_{10}	PM_{25}	ROG	SO_2	CO_2	CH_4	CO_2e
Drawwork	4.66	0.28	0.47	0.47	0.01	0.02	1.17	0.00	1.17
Generator	2.89	0.28	0.28	0.28	0.00	0.01	0.59	0.00	0.59
Mud Pump	6.36	0.25	0.64	0.64	0.00	0.02	0.98	0.00	0.98
Total	**13.91**	**0.81**	**1.39**	**1.39**	**0.01**	**0.05**	**2.73**	**0.00**	**2.74**

Emission Factors[1]							
CO	NO_x [2]	PM_{10}	PM_{25}	ROG[2]	SO_2	CO_2	CH_4
g/hp-hr	lb/day	g/hp-hr	g/hp-hr	lb/day	g/hp-hr	g/hp-hr	g/hp-hr
1.027	0.28	0.104	0.104	0.008	0.005	568.299	0.022
1.275	0.28	0.125	0.125	0.004	0.005	568.299	0.029
1.682	0.25	0.168	0.168	0.002	0.005	568.299	0.042

[1] Emission factors used from CalEEMod, unless otherwise noted.

[2] Data provided by Kenai Drilling for daily drilling

Construction Commuter Air Emissions Analysis
TIRE Project Modification

1. For a new well to 7,500 feet		
Drill mud accumulated per event	310	cubic yd
Capacity of one truck	50	cubic yd
Total trucks required to haul out drill cuttings offsite	6.2	trucks
One way trip	120	miles
VMT per event	1488	miles

2. For an existing well drilling from 5,500 feet to 7,500 feet		
Drill mud accumulated per event	60	cubic yd
Capacity of one truck	50	cubic yd
Total trucks required to haul out drill cuttings offsite	1.2	trucks
One way trip	120	miles
VMT per event	288	miles

5 new wells
3 wells drilled 2,000 feet

3. Emission Estimates

Operating Scenario	Emission Factors (g/mile)[1]						Days of operation	Emissions					
	Criteria Pollulants							Criteria Pollulants (lb/day)					
	CO	NO_x	PM_{10}	PM_{25}	ROG	SO_2		CO	NO_x	PM_{10}	PM_{25}	ROG	SO_2
Each new well to 7,500	1.33	8.09	0.42	0.31	0.36	0.01	24	0.18	1.10	0.06	0.04	0.05	0.00
Adding 2,000 ft to 3 older wells	1.33	8.09	0.42	0.31	0.36	0.01	4	0.21	1.28	0.07	0.05	0.06	0.00

[1] Emission Factors from EMFAC 2011, assuming T6 instate heavy duty diesel truck

[2] From EPA Office of transport / Air Quality, Update of Methane and Nitrous oxide Emission Factors.

Operating Scenario	GHG Emission Factors (g/mile)[1]		Days of operation	GHG Emissions (tonnes/day)		
	CO_2	CH_4[2]		CO_2	CH_4	CO_2e
Each new well to 7,500	1,141.5	0.01	24	0.07	6.20E-07	0.07
Adding 2,000 ft to 3 older wells	1,141.5	0.01	4	0.08	4.32E-07	0.08

[1] Emission Factors from EMFAC 2011, assuming T6 instate heavy duty diesel truck

[2] From EPA Office of transport / Air Quality, Update of Methane and Nitrous oxide Emission Factors.

Construction Air Emissions Analysis
TIRE Project Modification

Source	Criteria Pollulants (lb/day) - Peak Day					
	CO	NO_x	PM_{10}	PM_{25}	ROG	SO_2
Construction	13.91	0.81	1.39	1.39	0.01	0.05
Vehicular traffic	0.21	1.28	0.07	0.05	0.06	0.00
Total	**14.12**	**2.09**	**1.46**	**1.44**	**0.07**	**0.05**
Threshold	550	100	150	55	75	150
Above Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
% of Threshold	**2.6%**	**2.1%**	**1.0%**	**2.6%**	**0.1%**	**0.0%**

Source	GHG Emissions					
	Total Tonnes			Total Tonnes Per Year (Amortized over 30 years)		
	CO_2	CH_4	CO_2e	CO_2	CH_4	CO_2e
Construction	361.01	0.02	361.42	12.03	0.001	12.05
Vehicular traffic	9.48	0.00	9.48	0.32	0.00	0.32
Total	**370.49**	**0.02**	**370.90**	**12.35**	**0.001**	**12.36**

Operational Commuter Air Emissions Analysis
TIRE Project Modification

Activity	Shifts/day	Workers per shift	# Trips	Miles per trip	Total VMT	Criteria Emissions (lb/day)[3]					
						ROG	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$
Commuter	2	3	6	30	180	0.12	1.31	0.12	0.00	0.02	0.01
Threshold						**55**	**550**	**55**	**150**	**150**	**55**
Above Threshold?						**No**	**No**	**No**	**No**	**No**	**No**
% of Threshold						**0.2%**	**0.2%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**

Activity	Shifts/day	Workers per shift	# Trips	Miles per trip	Total VMT	GHG Emissions (tonnes/day)			GHG Emissions (tonnes/yr)		
						CO_2	CH_4	CO_2e	CO_2	CH_4	CO_2e
Commuter	2	3	6	30	180	0.07	0.0001	0.07	26.09	0.023	26.58

Emission Factors (g/mile)[1]

ROG	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4[2]
0.298	3.306	0.307	0.004	0.050	0.022	397.04	0.36

[1] Based on EMFAC 2011, 50% mix of LDA and LDT 1

[2] Based on EPA, office of transport and air quality

[3] Based on worker data provided by client