

4.6 Fire Protection and Emergency Response

This section addresses the fire protection and emergency response resources related to the Proposed Project. These resources include the existing services and capabilities of nearby fire departments and the systems and design of the proposed facilities and their associated pipelines. The emergencies that would require summoning these available resources include fire, oil spill, hazardous substance release, and other events that could lead to these emergency situations, such as earthquake, traffic accident, and pipeline rupture. This section also presents criteria used to determine significant impacts and mitigation measures to reduce significant impacts.

The Proposed Oil Project, the Pipeline and the Proposed City Maintenance Yard Project would each have the potential for impacts on Safety and Risk. As the Proposed Oil Project and the Pipelines would operate together during the operational phases, these have been discussed in the same sub-section. The Proposed City Maintenance Yard Project has been discussed in a separate impact sub-section.

4.6.1 Environmental Setting

The environmental setting addresses the capabilities currently in place, such as equipment and resources of agencies, such as the City of Hermosa Beach, Redondo Beach, Manhattan Beach, El Segundo and the County of Los Angeles.

4.6.1.1 Response Capabilities

Response capabilities are associated with agencies with jurisdiction over the Project Area or that have mutual aide agreements with that jurisdiction.

Agency Response Capabilities and Responsibilities

The Project sites are entirely within the City of Hermosa Beach, which is under the jurisdiction of the Hermosa Beach Fire Department. The pipeline routes pass through the City of Hermosa Beach, as well as the City of Redondo Beach and Torrance, all of which are under the jurisdiction of the respective area fire departments. These areas are not a part of the emergency response area of the Los Angeles County Fire Department (LACFD, also known as the Consolidated Fire Protection District of Los Angeles County).

The City of Hermosa Beach has "automatic" aide agreements with Manhattan Beach and Redondo Beach Fire Departments. This means that the dispatch of units to an incident is handled automatically by the dispatch center and the dispatch of additional units does not require the input of a commander on the scene. Manhattan Beach and Hermosa Beach have the same dispatch center. Redondo Beach has its own dispatch center.

The City of Hermosa Beach also has mutual aide agreements with the County of Los Angeles Fire Department as well as the City of Torrance and El Segundo. Units from these fire

4.6 Fire Protection and Emergency Response

departments would be dispatched under the request of the commander on the scene. The City of Torrance also has a hazardous materials unit, but it is not a part of the mutual aide agreement.

For a hazardous materials incident, such as a crude oil fire, a gas release or a hazardous material spill (i.e. crude oil spill), the City would provide the initial response and then rely on the resources of the hazardous materials unit from the County of Los Angeles Fire Department. Redondo Beach has very limited hazardous material response capabilities.

Table 4.6-1 Fire Stations Available to Respond to an Emergency at the Project Site

Fire Station/ Facility	Address	Distance to Site (approximate response time)	Equipment and Staff
Hermosa Beach	540 Pier Avenue Hermosa Beach	< 5 minutes	1 Fire Engine Paramedic rescue unit Ambulance
Redondo Beach #1	401 S. Broadway, Redondo Beach	2 miles, 7:46 minutes	3 Fire Engines Ladder Truck Fire Boat Limited Haz mat Unit Light Air Response Unit Ambulance
Redondo Beach #2	2400 Grant Av, Redondo Beach	2 miles, 6:58 minutes	
Manhattan Beach #1	400 15th Street	2.3 Miles, 6:14 minutes	2 Fire Engines Paramedic rescue unit Ambulance
Manhattan Beach #2	1400 Manhattan Beach Boulevard	2.5 miles, 5:45 minutes	
Torrance (6 fire stations)	1701 Crenshaw Blvd. (HQ), Torrance	5.5 Miles, 15 minutes	Engines Ladder trucks Haz mat trailer Haz mat response team Paramedics Etc
El Segundo	314 Main Street El Segundo CA	5.5 miles, 13 minutes	Engines Ambulance
LACFD #18 (closest)	4518 Lennox Blvd, Inglewood	8 miles, 17 minutes	Various
LACFD #106 (closest)	27413 Indian Peak Rd, Rancho Palos Verdes	8 miles, 17 minutes	
LACFD #105	18915 S Santa Fe Ave Carson	12.5 miles, 24 minutes	Haz Mat unit
LACFD #43	921 S Stimson Ave La Puente	37 miles, 46 minutes	Haz Mat unit
LACFD #129	42110 6th St West Lancaster	79 miles, 90 minutes	Haz Mat unit
LACFD #150	19190 Golden Valley Road, Santa Clarita	44 miles, 52 minutes	Haz Mat unit

Notes: response times from Redondo Beach and Manhattan beach based on average response times into Hermosa Beach, as per HBFD records from 2009-2013.

The Hermosa Beach Fire Department training program includes monthly training on a range of topics, including:

- Apparatus Operations;
- Driving Techniques;
- Emergency Medical;
- Hazardous Materials;
- Incident Command;
- Fire Investigations;
- Fire Preventions;
- Rescue Operations;
- Fire Suppressions; and
- Wildland

Total personnel training hours total about 350 per month in 2013.

The Hermosa Beach Fire Department issues an Annual Performance Report that details the departments' performance against various criteria and acts as a guide for areas that might need improvement. The report indicates that, in 2012, there were 2,461 total calls for service, with 1,728 of those calls for services within the City and 1,551 of the calls for Emergency Medical Treatment (EMT, paramedics). The EMT total response time and travel times met the department goals or were within 5% of the department goals. However, the EMT dispatch alarm processing times and EMT turn-out times "clearly missed the goals".

For fire service calls, the travel and response times were within 5% of the department goals. However, the fire dispatch alarm processing times and fire turn-out times also clearly missed the goals. In addition, response times with an "Effective Response Force" (meaning a minimum of four firefighters and, at emergency medical-related incidents, a minimum of four personnel with at least two of them paramedics) also clearly missed the goals to fire incidents, but met and exceeded the goals to emergency medical incidents.

In terms of firefighting effectiveness, the percent of fires confined to room of origin, the average dollar loss per structure fire and the percentage of property saved from fire all met the Department goals.

For inspections, the number of effective fire inspections (403 in the year 2012) and the number of effective pre-incident plans (1 conducted) did not meet the Department goals. For preliminary data on year 2013, the number of pre-incident plans increased to 42 and met Department goals. In terms of training, the training hours met the Department goals. For preliminary data on year 2013, the number of training hours has decreased by 17 hours per year per firefighter, and is potentially not meeting Department goals in some areas.

In 2013, an Operations Analysis report was prepared for the Hermosa Beach Fire Department by ICMA Center for Public Safety Management (ICMA 2013). ICMA was retained by the city of Hermosa Beach to complete an operational analysis of the city's fire department to include staffing and workload. The analysis was intended to provide the City with an unbiased review of fire services provided by the Hermosa Beach Fire Department. The report concluded that the

4.6 Fire Protection and Emergency Response

Hermosa Beach Fire Department was a capable department in the delivery of first response emergency medical (EMS) and fire services. However, it also concluded that the dispatch handling times are high for EMS and fire calls relative to NFPA 1710 Standards and that this "exceeding slow processing time" could contribute to difficulties in incidents with flashover and critically ill or injured patients.

The report produced a number of recommendations related to organization and administrative issues. The report examined the entire fire response capabilities of the area mutual aide, including Manhattan Beach and Redondo Beach Fire Departments, as well as the Hermosa Beach Fire Department. The report also showed that the Project Site would be encompassed within the 4 minute travel times for the Redondo and Hermosa Beach Fire Departments and within the 6 minute travel time for the Manhattan Beach Fire Department. Hermosa Beach Fire Department units responded to 1,660 calls that originated from within the city in a 12 month period (May 1, 2012, to April 30, 2013) and 755 calls for mutual or automatic aide during the period (primarily from Manhattan and Redondo Beach).

Agency Inspection Programs

The City of Hermosa Beach conducts inspections on all businesses within the City. Currently, within the City, there are only light industrial facilities, such as automobile mechanics, that maintain any inventory of hazardous materials. The City Fire Departments goal is to inspect every business annually, although historically, they have achieved an inspection rate of about 60-70% annually, with 406 inspections in 2012. The City Fire Department inspects fire compliance issues such as exit signs, hazmat locations, spacing, access and "pre-incident planning".

In 1991, the LACFD merged with the Department of Health Services' Hazardous Materials Control Program to form the Health Hazardous Materials Division (HHMD). In 1997, the HHMD became a Certified Unified Program Agency (CUPA) to administer the following programs within Los Angeles County: the Hazardous Waste Generator Program, the Hazardous Materials Release Response Plans and Inventory Program, the California Accidental Release Prevention Program (Cal-ARP), the Aboveground Storage Tank Program, and the Underground Storage Tank Program.

The HHMD has an Inspection Section, an Emergency Operations Section, a Special Operations Section, and an Administration and Planning Section. The Inspection Section permits and inspects hazardous material handling and hazardous-waste generating businesses to ensure compliance with federal, state, and local laws and regulations related to hazardous materials. It also oversees the proper handling, treatment, transportation, and disposal of hazardous wastes generated by many industries. These inspections ensure compliance with applicable laws and regulations and assist businesses with pollution prevention and waste reduction. The HHMD personnel also investigate and resolve complaints alleging mismanagement of hazardous material and hazardous waste.

The LACFD inspects hazardous materials locations annually as well for regulatory compliance. There are 28 facilities within the City of Hermosa Beach that are inspected by the LACFD. The LACFD inspects for issues such as compliance with hazardous material storage, use and disposal regulations and requirements.

4.6.2 Regulatory Setting

The regulatory section first discusses codes and standards and then federal and state legislative requirements.

4.6.2.1 Codes and Standards

Several codes and standards apply to fire protection and emergency response for facilities such as the Proposed Project. Table 4.6-2 lists many applicable rules and regulations from the American Petroleum Institute (API), Center for Chemical Process Safety (CCPS) Guidelines, Industrial Risk Insurers (IRI), LACFD Criteria and Guidelines, the International Fire Code (IFC), and the National Fire Protection Association (NFPA).

Table 4.6-2 Applicable Codes, Standards, and Guidelines

Code/Standard	Description
API 500	Classification of Hazardous Areas in Petroleum Pipeline Facilities
API 653	Design and inspection of atmospheric tanks
API 2004	Inspection for Fire Protection
API 2510	Design and Construction of LPG installations and 2510A Fire considerations
API 2610	Design, Construction, Operation, Inspection and Maintenance of Tank and Terminal Facilities
CCPS	Guidelines for Fire Protection in Chemical, Petrochemical and Hydrocarbon Processing Facilities
IRI IM.2.5.2	Plant Layout and Spacing for Oil and Chemical Plants
LACFD Fire Prevention Regulations	20 - Safety of Refineries, Bulk Plants and Chemical Plants and 24 - Above Ground Storage & Dispensing of Flammable & Combustible Liquids
NFPA Standard 11	Low Expansion Foam and Combined Agent Systems
NFPA Standard 15	Water Spray Fixed Systems
NFPA Standard 22	Water Tanks for Private Fire Protection
NFPA Standard 24	Installation of Private Fire Service Mains and Their Appurtenances
NFPA Standard 25	Inspection, Testing and Maintenance of Water-Based Fire Protection Systems
NFPA Standard 30	Flammable and Combustible Liquids Code
IFC Chapter 53	Compressed gasses
IFC Chapter 57	Flammable and Combustible Liquids
IFC Chapter 50	Hazardous Materials
IFC Chapter 61	Liquefied Petroleum gasses
IFC Appendix C&D	Fire flow requirements, fire hydrant locations, Access Guidelines

Notes: LPG = liquefied petroleum gas

American Petroleum Institute

API develops petroleum and petrochemical equipment and operating standards and represents the oil and gas industry.

4.6 Fire Protection and Emergency Response

API 2610, Design, Construction, Operation, Maintenance, and Inspection of Terminal and Tank Facilities, addresses issues related to terminals and tank facilities. It addresses site selection, tank spacing requirements, waste management, operations, fire prevention, piping systems, and other issues. API 2610 generally refers to NFPA 30 and NFPA 11 for fire protection issues, such as spacing and foam systems. Water supplies “should be based on consideration of the specific risks involved.” Water supply can be from “any source that is capable of providing the required flow-rate and for sufficient duration.” API 2610 also indicates that each facility should develop a written emergency plan for the event of a fire in the facility.

API 2610 addresses:

- Hazard identification and communication (section 4.2);
- Written operating procedures to address routine and non-routine operations, such as emergency shutdown and startup (section 4.3);
- Safe work practices, including hotwork, lockout/tagout, and confined space entry (section 4.4);
- Emergency response plans (section 4.5, 5.6);
- Management of change, training programs, pre-startup review, incident investigation, and contractor safety (sections 4.6-4.10);
- Control of flammable vapors (e.g., storage tank type, inert gas) (section 5.2);
- Overfill protection and high level alarms (section 5.2, 6.1);
- Inspection and maintenance programs (see API 653);
- Portable fire extinguishers (section 5.3);
- Tank leak detection and vapor emission control (section 6.1);
- Tank appurtenances (e.g., vents, gauges, manholes, ladders, grounding);
- Water draw-off systems to remove water in the bottom of the tank;
- Dikes sized to “contain the greatest amount of liquid that may be released from the largest tank within the diked area assuming a full tank and providing sufficient allowance for precipitation;”
- Location of firefighting valves outside diked areas;
- Anchoring of piping and elimination of dead-legs;
- Loading facilities spill containment, including sloped pavement and catch basins, lighting, fire protection, and overpressure protection (section 9);
- Loading valves either self-closing (top loading) or automatic shut-off to prevent overfill;
- Loading area water/foam spray systems, automatically or manually activated with thermal/flame detectors, and combustible vapor detection;
- Loading vapor control systems;
- Loading emergency shutdown systems;
- Communication systems; and
- Corrosion control.

API 2610 states that “unless known to be otherwise, crude oil and residual fuels in storage should be considered to be flammable liquids for firefighting purposes” (section 5.8.2).

API 653, Tank Inspection, Repair, Alteration, and Reconstruction, addresses the maintenance of atmospheric storage tanks:

- Tank suitability for service;
- Brittle fracture considerations;
- Inspections;
- Materials;
- Design considerations;
- Tank repair and alteration;
- Dismantling and reconstruction;
- Welding;
- Examination and testing;
- Marking and recordkeeping;
- External tank inspections by an authorized inspector every 5 years;
- Ultrasonic inspections of shell thickness every 5 years (when corrosion rate unknown);
- Internal bottom inspection every 10 years, if corrosion rates unknown; and
- Detailed checklists for in-service and out-of-service inspections (Appendix C).

API 2510 addresses storage and use of liquefied petroleum gasses (LPG), such as propane and butane. API 2510 requires:

- Looped water supply systems around the storage and handling of LPG;
- Water supply supplies capable of cooling the largest vessel being protected (0.25 gallons per minute per square foot [gpm/ft^2] of vessel) plus adjacent vessels plus reserve capacity of three 250-gallon-per-minute (gpm) cooling streams;
- Water supply for at least 4 hours of supply;
- Location of hydrants so that each storage vessel can be reached from at least two directions by at least three cooling streams, none of which uses more than 300 feet of hose;
- Water deluge systems manually operated from outside the spill containment area and at least 50 feet from the storage vessel;
- Automatic systems considered for unattended operations;
- Fireproofing of vessel structural supports;
- Vessel fireproofing if portable equipment is the only means of applying water;
- Emergency shutoff systems, including manual shutoff from a location accessible during an emergency or automatic shutoff through fire activation;
- Shutoff valves shall close automatically with fire or be remotely actuated; and
- Fire and hydrocarbon detection.

Center for Chemical Process Safety

The American Institution of Chemical Engineers formed the CCPS in 1985 in response to the 1984 industrial accident in Bhopal, India. Since then, CCPS has published more than 100 process safety guidebooks. “Guidelines for Fire Protection in Chemical, Petrochemical and Hydrocarbon Processing Facilities” (CCPS 2003a) and “Facility Siting and Layout” (CCPS 2003b) address several issues related to the Proposed Project processes, including fire protection

4.6 Fire Protection and Emergency Response

strategies, fire prevention, hazards analysis and risk assessment, equipment spacing, and design guidelines. Specific guidelines include:

- Firefighting access should be provided from at least two directions and should not require crossing an adjacent unit. Access ways should be provided every 200 feet, should be at least 20 feet wide, and should not pass under pipeways.
- A water supply of 4 hours should be provided with a minimum demand of 3,000 gpm.
- The use of flammable gas detection and fire detection (i.e., flame, smoke, and heat) is recommended.
- Detection and alarm systems are recommended, including alarms in the control room or another 24-hour attended location, visual and audible alarms such as strobes or beacons, and horns and detection systems utilizing heat, smoke, gas, and flame detection with appropriate spacing (NFPA 72).
- Foam systems should be checked at least annually, including foam performance evaluations and fire extinguishers should be checked monthly.
- Isolation valves should be used on inventories more than 2,000 gallons and they should be easily accessible under adverse conditions or remotely operable.

Industrial Risk Insurers

IRI provides guidance for facilities to address property loss prevention. IRI Guideline 17 indicates that water supplies should be capable of supplying at least 500 gpm for 4 hours for pumping stations (IRI 17.3.3), and 3,000 gpm for 4 hours to all areas of an oil storage terminal (IRI 17.3.4).

IRI IM 2.5.2 also provides guidelines for the overall oil and chemical plant's layout. The most important guidelines recommend:

- At least two entrances to the plant;
- Subdividing the site into general areas (blocks) with a maximum size of 300 by 600 feet;
- Access roadways between the blocks to allow access to each block from at least two directions; and
- Road widths and clearances sized to handle large moving equipment and emergency vehicles.

National Fire Protection Association

The NFPA, established in 1896, publishes numerous codes and standards that cover issues ranging from foam systems to dry cleaning facilities. Several NFPA codes and standards are applicable to the Proposed Project.

NFPA Standard 11 addresses foam application to protect outdoor atmospheric storage tanks containing flammable and combustible liquids. Fire-fighting foam is an aggregate of air-filled bubbles formed from aqueous solutions and is lower in density than flammable liquids. It is used principally to form a cohesive floating blanket on flammable and combustible liquids and prevents or extinguishes fire by excluding air and cooling the fuel. It also prevents re-ignition by suppressing formation of flammable vapors. Foam is prepared by utilizing a water supply along with a foam concentrate.

Foam for tank fires can be applied through fixed foam discharge outlets permanently fixed to the tank top, by portable hose streams using foam nozzles, or by large-capacity monitor nozzles close to the tank. Foam can be applied to a liquid spill into a dike to suffocate a fire or prevent ignition of the flammable material spill, utilizing fixed systems, portable systems, or monitors. Foam systems should be inspected annually, including foam performance tests.

For fires on the roof of the tank, NFPA 11 requires a foam supply with a minimum discharge rate of 0.16 gpm/ft² (for hand-held and foam monitors) and a minimum discharge time of 65 minutes for crude petroleum (section 5). The minimum foam application rate and discharge time for discharge outlets fixed to the tank are 0.10 gpm/ft² and 30 minutes, respectively. For diked areas, foam rates shall be 0.16 gpm/ft² for 30 minutes.

NFPA 11 also requires that fixed foam systems have automatic fire detection (thermal and hydrocarbon detection) and alarms.

NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, addresses water spray systems and issues such as installation requirements; design requirements, including hydraulic calculations; water supplies; and maintenance.

NFPA 22 addresses the installation of private water tanks to supply water to a facility.

NFPA 24 and 25 address the installation of private fire service equipment, including service mains and fire hydrants, as well as inspection, testing, and maintenance.

NFPA 30 addresses issues related to flammable and combustible liquids. NFPA 30 addresses fire prevention and risk control, electrical systems, storage in containers, processing facility issues, aboveground storage tanks requirements, and piping systems. NFPA 30 also addresses separation distances from vessels and tanks to property lines and to buildings and structures.

NFPA 291 addresses testing of fire hydrants. As per NFPA 291.4.13, fire hydrants should be flow tested every five years and should be flushed at least annually. Class AA hydrants have a rated capacity of 1,500 gpm or more, Class A 1,000 gpm, Class B 500 gpm and Class C less than 500 gpm.

International Fire Code

The IFC addresses issues ranging from egress and emergency escapes to fumigation, hot work, and cryogenic fluids.

Article 9 addresses fire protection systems, site access and water supply for buildings, including access road minimum width requirements of 20 feet and all-weather driving capabilities.

4.6.2.2 Federal and State Regulations

California Code Title 8, Division 1 (Department of Industrial Relations) Chapter 4 (Division of Industrial Safety), Subchapter 14 (Petroleum Safety Orders--Drilling and Production), addresses several issues related to confined space and testing of vapor. Article 6, section 6529 addresses issues related to fire and explosions:

4.6 Fire Protection and Emergency Response

- Firefighting equipment should be inspected, tested, and maintained in serviceable condition. A record should be kept recording when fire extinguishers were last inspected, tested, and recharged.
- A plan shall be established and implemented to ensure the safe and orderly evacuation of employees.

Section 4.8, Risk of Upset, Hazards, and Hazardous Materials, and Section 4.9, Hydrology and Water Resources, further discuss regulations related to oil spills and pipelines.

Los Angeles County Fire Prevention Regulations

The LACFD maintains fire prevention regulations that address issues from fireworks to aboveground storage of flammable materials.

Regulation 8 addresses fire hydrant design, specifying 300-foot spacing, a minimum fire hydrant flow of 1,000 gpm, and a maximum flow of 5,000 gpm for 2 to 5 hours.

Regulation 20 addresses refineries and chemical plants that store, handle, process, or distribute hazardous materials that are regulated by the County of Los Angeles Fire Code. Regulation 20 addresses inspections, labeling of piping and tanks, permits, emergency plans, and safety training programs.

The LACFD submitted a letter in response to the Notice of Preparation of this Environmental Impact Report that indicated requirements and needed submittals, which are reflected in existing codes and standards, including:

- The hazardous material types and quantities to be stored or used at the facility;
- Required permits from the Los Angeles County Certified Unified Program Agency (CUPA) and other appropriate agencies;
- Hazardous materials inventory submittal to CUPA;
- Hazardous materials management and emergency response plan;
- Identification of the oversight agency for remediation of onsite soil and groundwater contamination; and
- If storing natural gas over 10,000 pounds, a Risk Management Plan must be prepared and submitted to the CUPA.

LACFD Fire Code (Title 32 and as per the International Fire Code Section 3406.3) addresses flammable and combustible liquids issues related to oil and gas wells, including:

- Overfill prevention;
- Automatic shut-off;
- Tank venting;
- Required use of foam systems on crude tanks with onsite storage of foam;
- Diked areas equal to or greater than the largest tank; and
- Well drilling and operations separation distance from storage tanks (25 feet), sources of ignition (25 feet), streets and railways (75 feet), buildings (100 feet), places of assembly and schools (300 feet).

Los Angeles County Dispatch Response Matrices

The LACFD maintains dispatch response matrices which guide the dispatch centers designation of resources for different calls, from structure fires to marine rescues. The first alarm requirements for an explosion, pipeline or oil well fire would include up to 4 engines, 1 truck, 1 squad, 1 emergency support team, 1 hazardous material task force, 1 urban search and rescue, 1 foam unit, 2 battalion chiefs and 1 ambulance.

4.6.2.3 Equipment Spacing

Safe equipment spacing requirements for petrochemical plants are given in IRI Guidelines IM2.5.2, CCPS, NFPA Fire Protection Handbook, NFPA 30, and API 2510. Table 4.6-3 summarizes the requirements applicable to the Proposed Project.

Table 4.6-3 Applicable IRI, CCPS, NFPA, and API Equipment Spacing Requirements

A. Inter-Unit Spacing Requirements (feet) - IRI

	Flares	Loading Racks	Service Buildings	Control Rooms	Water supply Pumps	Process Units High Hazard	Pressure Storage Tanks	Atmospheric Storage Tanks
Flares	—							
Loading Racks	300	50						
Service Buildings	300	200	—					
Control Rooms	300	200	—	—				
Fire Pumps	300	200	50	50	—			
Process Units High Hazard	300	200	400	300	300	200	*	*
Pressure Storage Tanks	400	350	350	350	350	350	*	*
Atmospheric Storage Tanks	300	250	250	250	350	350	*	*

Notes: — = no spacing requirement; * = see table C (Storage Tanks Spacing Requirements)

Source: IRI IM2.5.2

B. Intra-Unit Spacing Requirements (feet) - IRI

	Compressors	Pipe racks	Fired Heaters	Heat Exchanges	High Hazard Pumps	Emergency controls	Analyzer rooms
Compressors	30						
Pipe racks	50	—					
Fired Heaters	50	50	25				
Heat Exchanges	30	10	50	5			
High Hazard Pumps	30	15	50	15	5		
Emergency controls	50	50	50	50	50	—	
Analyzer rooms	50	50	50	50	50	—	—

Notes: — = no spacing requirement

Source: IRI IM2.5.2

4.6 Fire Protection and Emergency Response

C. Plant Equipment Spacing Requirements (feet) – CCPS

	Property	Storage tanks	Heat Exchangers	Fired Heaters	Gas Compressors	Pumps	Loading Racks	LPG Loading racks
Property	—							
Storage Tanks	200	15						
Heat Exchangers	200	15	15					
Fired Heaters	200	50	50	—				
Gas Compressors	200	15	15	50	—			
Pumps	200	15	15	50	15	—		
Loading Racks	100	200	200	200	200	200	—	
LPG Loading racks	350	250	250	250	250	250	150	—
Office, lab, maintenance areas	-	*	200	200	200	200	-	-
Control room	-	*	200	200	200	200	-	-

Notes: see following table

Source: CCPS Fire Protection in Chemical, Petrochemical and Hydrocarbon Processing Facilities, Appendix A

D. Tank Spacing to Other Areas (feet) – CCPS

Location	Tank Type				
	Atmospheric Tank less than 10,000 gallons	Atmospheric Tank more than 10,000 gallons	Atmospheric Tank with boil over potential	Pressurized Storage	Refrigerated Flammable Storage
Property Boundary	25	100	200	200	200
Public Access	50	100	200	250	250
Offsite Populations	50	250	500	350	250
Fire pumps	50	200	200	250	200
ESD and mitigation systems	50	50	50	50	50
Office, lab, Maintenance areas	50	250	-	35	-
Control room	100	250	-	35	-

Source: CCPS Fire Protection in Chemical, Petrochemical and Hydrocarbon Processing Facilities, Appendix A

E. Storage Tanks Spacing Requirements (feet) – IRI, CCPS

	Floating Roof Tanks 3,000<C<10,000 bbl	Floating Roof Tanks 10,000<C<300,000 bbl	Pressure Storage vessels – Drums and Bullets
Floating Roof Tanks 3,000<C<10,000 bbl	0.5 D		
Floating Roof Tanks 10,000<C<300,000 bbl	D	D	
Pressure Storage vessels – Drums and Bullets IRI	1.5 D 100' min.	1.5 D 100' min.	D
Pressure Storage vessels – Drums and Bullets CCPS	2.0 D 100' min	2.0 D 100' min.	D

C = tank capacity; D = tank diameter

Source: IRI IM2.5.2, CCPS

F. Atmospheric Storage Tanks Spacing Requirements - NFPA

	Required Distance
Between Adjacent Tanks (Shell-to-Shell)	1/6 sum of adjacent tank diameters but not less than 3 feet
From Property Line that Is or Can be Built Upon, Including the Opposite Side of a Public Way – With Protection for Exposures	½ times diameter of tank or 175 feet for tanks over 3,000,000 gal (72,000 bbl) capacity
From Property Line that Is or Can be Built Upon, Including the Opposite Side of a Public Way – No Protection for Exposures	Diameter of tank, but need not exceed 175 feet but no less than 5 feet
From Nearest Side of any Public Way or from Nearest Important Building on the Same Property	1/6 times diameter of tank but no less than 5 feet or 60 feet for tanks more than 3,000,000 gallons capacity
Liquid processing equipment, such as pumps heaters, etc distance to a property that can be built upon	25 feet

Source: NFPA 30

4.6 Fire Protection and Emergency Response

G. Pressurized Liquefied Petroleum Gas Tanks Spacing Requirements - API

	Required Distance
Between Adjacent Tanks (Shell-to-Shell)	5 feet or $\frac{3}{4}$ of larger tank diameter
Adjoining Property Line	75 feet (for 30,000-70,000 gallon tanks)
Control buildings	50 feet
Other buildings	100 feet
Process vessels	50 feet
Flares and other equipment with open flames	100 feet
Fired equipment including process furnaces	50 feet
Rotating equipment, except pumps taking suction from LPG tanks	50 feet 10 feet
Loading facilities	50 feet

Source: API Standard 2510 Design and Construction of LPG Installations, 2001 Edition

4.6.3 Significance Criteria

The CEQA Guidelines do not identify specific significance criteria for fire protection and emergency response. Therefore, significance criteria have been developed against which the significance of the future operation's impacts to fire or other emergency protection can be judged. These thresholds address fire protection impacts in two areas: the general adequacy and design of onsite fire protection systems, and the general adequacy of emergency response capabilities. The basis for the thresholds are existing codes and standards.

By examining these two areas, the following significance criteria were developed. The Proposed Project would be considered to have a significant impact in the fire protection and emergency response area if:

- The Project Site does not contain adequate water supply or fire foam supplies to meet the recommended CCPS, NFPA Standards, and the IRI guidelines or the CAL FIRE requirements;
- The Project facilities do not have sufficient capabilities in early fire detection according to the NFPA requirements;
- The Project equipment layout and access structure do not meet the API, NFPA, IFC, and IRI or CAL FIRE recommendations for equipment spacing and clearances;
- The Project Site is more than 10 miles (15 minutes) from an emergency response location with fire-fighting capabilities (i.e., a fire station or facility with fire-fighting and emergency response capabilities) or accessibility to the site is difficult or limited causing issues in terms of access, evacuations, and response;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;

- 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 Fire Protection service; or
- The Project Site does not have an emergency response plan.

4.6.4 Project Impacts and Mitigation Measures

This section characterizes the fire protection and emergency response impacts generated by the Proposed Project.

4.6.4.1 CUP Requirements

The Proposed Project would be required to comply with the 1993 Conditional Use Permit. Applicable requirements for Fire Protection are listed below.

- Adequate fire detection and fighting equipment and supplies, approved by the Fire Department, shall be maintained on the drillsite and tank production facility at all times.
- A supplementary analysis by a professional consultant shall be provided detailing any necessary improvements the Fire Department may need to prevent, and to halt oil related fires and shall also include the following: public notification, warning and evacuation plan.
- Oil sumps, drip pans, etc. shall be cleaned at regular intervals to reduce fire hazards and prevent minor spills.
- Oily rags, paper and miscellaneous waste shall be disposed of in an appropriate manner to reduce fire hazards.
- Signs warning of flammable fluids and prohibiting smoking shall be installed where appropriate.
- The drillsite and production facility shall be protected by automatic fire detection sensors and suppression systems. The fire suppression systems shall include a tank-cooling sprinkler system.
- Drilling operations shall be conducted in accordance with appropriate Division of Oil and Gas regulations and shall utilize all required blowout prevention equipment and safety devices.
- Fire flows to service the operation shall meet Fire Department requirements.
- All equipment necessary to contain an oil fire or blowout shall be provided and or maintained on site and all fire personnel shall be trained on its use.

4.6 Fire Protection and Emergency Response

4.6.4.2 Proposed Oil Project and Pipeline Impacts

Impact #	Impact Description	Phase	Residual Impact
FP.1	Oil development activities at the site could be deficient in water supplies, detection systems, access or emergency response.	Phase 2, 4	Class II Less Than Significant With Mitigation

Water Supply

Water used to fight fires would be obtained from the connection to the reclaimed water system that runs along the Greenbelt. The West Basin Municipal Water District would supply the reclaimed water. Potable water would be supplied to the site by California Water Services Company (CalWater) for domestic uses. The closest fire hydrants are located near the corner of 6th and Valley Drive along 6th Street and at the corner of 6th Street and Cyprus. Flow testing by CalWater is conducted only upon request and payment. That is the only time these hydrants appear to be tested. CalWater indicates that a 4 inch hydrant (at 6th and Valley Dr.) and a 6 inch hydrant at 6th and Cyprus, both connected to the 6 inch main along Valley Drive. Recent testing of these hydrants by CalWater indicate flows of more than 2,432 gpm at 20 psi and 3,011 gpm at 20 psi, respectively, which would be insufficient or only marginally sufficient (only one of the hydrants is above the minimum 3,000 gpm), to supply adequate water service to the site. An 8 inch main is also located along 4th and 2nd Streets.

Peak flows and pressures from the reclaimed water system might help to provide sufficient water supply and the West Basin Municipal District indicates that its' reclaimed water can be used as water.

Current requirements by NFPA and the LACFD indicate that water supplies should be from 3,000 to 5,000 gpm. The lack of sufficient water supply flows at the site would be a significant impact.

Detection

Detailed design drawings are not yet available for the Project, so the exact layout of fire detection systems cannot be assessed. During the Drilling and Testing Phase 2, temporary equipment would include hydrogen sulfide monitors on the drilling rig and breathing air packs at the rig and in the safety trailer, as well as the use of the nearby fire hydrants to supply water.

The site's fire protection would include an automated alarm system and fire hydrant system as required by the LACFD. However, preliminary design documents have not yet been developed to address the details of the installation of fire detection and prevention systems, such as foam systems on crude oil storage tanks, flame detection, and flammable gas detection systems. Although these systems are anticipated to be developed and implemented, failure to do so would be a significant impact.

Response Capabilities and Response Time

If an incident required fire protection and emergency services, the closest fire stations to the Proposed Project Site would be Hermosa Beach Fire Station, just a few minutes away, followed by other nearby fire stations within 10 minutes. The closest hazmat unit is located in Torrance (15 minutes) or the LACFD in Carson (24 minutes response time). The LACFD has extensive HAZMAT resources and planning to fight an oil fire and, generally, a low number of historical incidents associated with existing oil facilities in the Los Angeles have occurred. For example, at the Baldwin Hills Oil Field, in Inglewood, which is close to 100 years old, has almost 1,000 active wells, over 50 tanks and almost 8 miles of internal piping, there has been only a few LACFD responses to release incidents in the last four years. The installation of the Proposed Project oil and gas processing facility would require a minimal increase in response or dispatch activities because the number of incidents at the facility is anticipated to be low.

The ICMA report prepared in 2013 indicated that slow dispatch times were a concern and could contribute to the potential for difficulties in incidents with flashover and critically ill or injured patients. This could be a significant impact if an incident were to occur at the Proposed Oil Project. Otherwise, response times comply with the established significance criteria, with some concerns related to dispatch capabilities.

For the capabilities of the response, the distance to an LACFD Hazmat team is relatively long at 24 minutes, and the Torrance HAZMAT is not currently a part of the Hermosa Beach mutual aid agreement. LACFD dispatch matrices indicate that the local Fire Departments (Hermosa, Manhattan and Redondo) would be able to provide some of the response capabilities to a pipeline incident or an oil well fire incident (such the appropriate number of fire engines, trucks, ambulances, etc), but would be lacking in such items as a Hazmat unit. The exact specifications of equipment requirements would be a function of the Project Site response equipment. For example, a foam truck might not be needed if the Project Site has sufficient foam systems installed. However, equipment and training for a crude oil spill (for the pipeline route) and Hazmat response would be needed as a minimum. This would be a significant impact for Hazmat response.

Inspection requirements may strain the capabilities of the local fire department. The local fire department already is below the goals defined in the Annual Performance Report for inspections and the inspection requirements associated with an oil and gas production facility would far exceed any inspection requirements that the department currently undertakes. The lack of appropriate inspection resources would be considered a significant impact.

Part of the response system is the ability to alert neighbors, residences and businesses in the event of a fire or other incident and allow for the implementation of rapid and effective shelter-in-place or evacuation procedures. Hermosa Beach has an alert system that could be utilized to assist in the notification of emergencies. The Project would need to be integrated into this existing alert system. The Proposed Project facilities would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The evacuation plans may need to be amended as a part of the emergency response planning, however. The current lack of these measures would be a significant impact.

4.6 Fire Protection and Emergency Response

Access to the Project Site appears to be adequate based on the preliminary design documents. Access is from two sides with adequate width for firefighting (26 feet as per the design documents).

Detailed plans associated with the Proposed Project have not been developed. These plans would include Emergency Response Plans, Spill Prevention Plans, and Oil Spill Response Plans. Additionally, Evacuation Plans would be developed to ensure the safety of the employees, and plans would be designed to communicate with surrounding residences and businesses regarding neighborhood evacuations in the event of flammable gas releases, crude oil tank fires, or other relevant events. These plans would be reviewed by the Fire Department and measures would be implemented as part of the permitting phase to ensure that appropriate response capabilities are in place. If these plans are not developed, this would be a significant impact.

Mitigation measures would include measures to ensure proper water supply, community outreach, and alert systems, plans reflect current codes, and the development of emergency response plans.

Mitigation Measures

Mitigation measure HWQ-2d required that onsite personnel be trained in oil spill response and containment with appropriate equipment onsite. This will help to improve response capabilities to an oil spill at the site or along the pipeline. The following mitigation measures shall also be implemented to enhance the response capabilities.

- FP-1a The Applicant shall ensure adequate (3,000-5,000 gpm) water supplies are available from the reclaimed water pipeline, the existing hydrant system, or some other source for water supplies that provides sufficient water supply rates, pressure and duration to comply with codes and the LACFD. Installation of a fire pump, or installation of a piping connection to area water mains that can supply the flows, may be required to ensure the appropriate water flow and pressure requirements. The Applicant shall ensure that all area hydrants and water supplies are tested annually as required by NFPA standards for water flows and pressures, and shall ensure that the results are reported to the City of Hermosa Beach and the Hermosa Beach Fire Department.
- FP-1b The Applicant shall implement a community alert notification system to automatically notify area residences and businesses in the event of an emergency at the oil field that would require residents to take shelter or take other protective actions.
- FP-1c The Applicant shall fund an additional FTE position at the HBFD, or equivalent, for personnel with specific capabilities in inspection and code compliance associated with oil and gas production facilities. This arrangement shall be to the satisfaction of the HBFD.
- FP-1d The Applicant shall develop emergency response plans addressing the facility's fire-fighting capabilities pursuant to the most recent NFPA requirements, Los Angeles County Fire Code, LACFD, California Code of Regulation, and API requirements, in coordination with and to the satisfaction of the LACFD and the City of Hermosa Beach Fire Department. These plans shall include, but not be limited to, fire monitor

placement, water capabilities, fire detection capabilities, fire foam requirements, facility condition relating to fire-fighting ease and prevention, and measures to reduce impacts to sensitive resources. The plan should also address coordination with local emergency responders and area schools and daycare facilities.

FP-1e The Applicant shall ensure that the emergency response planning includes development and testing of evacuation plans of neighbors for an emergency scenario at the facility, and the Applicant shall implement programs to ensure that all immediate neighbors are included in the notification system.

FP-1f The Applicant shall ensure and make funding available to 1) upgrade the dispatch system and procedures within Hermosa/Torrance/Redondo to implement a CAD-to-CAD system to improve dispatch times; and 2) extend the mutual aide agreements between the Hermosa Beach Fire Department and the Torrance Fire Department to include the Torrance HAZMAT unit, or provide for funding to provide additional equipment and to train a sufficient number of Hermosa Beach, Redondo Beach and/or Manhattan Beach Emergency Response personnel to provide first response HAZMAT capabilities.

Residual Impacts

The LACFD codes, and other codes and standards, require water supplies of 3,000 to 5,000 gpm. The water supply infrastructure in the area currently is not able to provide these levels of flow, but can be improved to do so with additional design and equipment (i.e. fire pumps, additional hydrants, and/or installation of pipelines). With this mitigation, the water supplies impact would be less than significant.

Early fire detection systems and preventative measures at the site, as well as fire fighting capabilities, including automatically activated foam systems on and around the crude oil tanks, within the containment area and around the well area, are critical for ensuring that any release response is effective and quick. Notification of area residences and businesses would also facilitate effective emergency response. Notification systems would be initiated by the HBFD or the sheriff or police departments. Upgrading the dispatch system to computer aided dispatch systems that ties together Hermosa/Torrance/Redondo Fire Departments would reduce dispatch times. Extension of the mutual aide agreements to include the Torrance Fire Department Hazmat units, or providing local capabilities in hazmat response, would reduce the time of a HAZMAT response.

Mitigation measures would reduce impacts to **less than significant with mitigation (Class II)**.

4.6 Fire Protection and Emergency Response

Impact #	Impact Description	Phase	Residual Impact
FP.2	Oil development activities at the site could be deficient in equipment spacing pursuant to applicable codes and standards.	Phase 2, 4	Class II Less Than Significant with Mitigation

Equipment Spacing

The Proposed Project is particularly challenged to provide sufficient spacing between equipment and between equipment and areas offsite due to the small size of the site. For example, the current design of the facility has the compressors, the low temperature separation equipment, the VRU and the flare all located within the containment area for the crude oil tanks. If a crude oil spill were to occur, crude oil would impact this equipment and substantially increase the ignition probabilities, leading to an almost certain crude oil fire in the event of a spill. NFPA 30 does not specifically prohibit the placement of combustion or other equipment within diked areas, but it does prohibit the placement of "combustible materials, drums or barrels" (NFPA 30.22.11.2.8) within a diked area, thereby implying combustion equipment within the diked area would not be considered "good engineering practice".

Based on preliminary design drawings, the site appears to have some issues with equipment spacing requirements, including:

- Well drilling equipment spacing from buildings (100 feet, as per LACFC) - well drilling equipment would be located 33 feet from adjacent buildings;
- Fired heater separation distances from property line (200 feet) and from storage tanks (15 feet) as per CCPS- the flare would be located 10-12 feet from the property line and 8 feet from the storage tanks;

Some equipment spacing could still create impacts, such as the location of the flare relative to process units or atmospheric storage tanks and distances from public areas. Inadequate equipment spacing would be a significant impact.

During the drilling phases of the Project, a 32 foot sound wall would be installed. The flare would be located immediately adjacent to the soundwall with the flare stack height 16 feet and the soundwall being 32 feet. This could produce a fire risk with the soundwall in such close proximity to the high temperatures of the flare exhaust. LACFD Code requires that "where soundproofing material is required during oil field operations, such material shall be noncombustible". Failure to provide proper separation distances to combustible materials could also be a significant impact.

Mitigation Measures

FP-2a The Applicant shall ensure that design and construction comply with applicable codes and standards for equipment spacing, particularly those related to flare location and distances to public areas and distances from well drilling equipment to buildings. If

this cannot be achieved, additional requirements shall include the construction of thermal radiation barriers or insulation on the crude oil tanks, installation of thermal barriers/walls around the flare stack, increasing the height of the flare stack during drilling, relocation of the flare stack, providing thermal radiation modeling to estimate the impacts of equipment on the crude tanks and process piping and public areas. Fire rated barriers shall be established, as per LACFD requirements, to ensure that all buildings within 100 feet of well drilling would be protected from thermal radiation. The design and construction compliance status shall be verified by third-party audits under the direction of the City.

- FP-2b Fire protection measures specific to the crude oil containment system shall be provided, including the installation of automatic fire foam systems along the perimeter of the crude oil containment system and wellhead area and immediately adjacent to combustion or spark producing equipment within or immediately adjacent to the crude oil containment area that would be automatically and remotely activated in the event of a crude oil spill. The highest level electrical classification achievable shall be designated for all equipment located within the crude oil containment area.

Residual Impacts

Ensuring that equipment spacing complies with codes and standards before construction would ensure that impacts associated with equipment spacing would be less than significant. Ensuring that firefighting methods, including fire foam, would automatically and effectively be discharged in the event of a crude oil spill would help to reduce the impacts of a crude oil fire. Impacts would be **less than significant with mitigation (Class II)**.

Valve Box Options

The Proposed Project includes a number of different options for the location of the valve box for the tie-in to the crude oil system. For fire protection and emergency response, there is no difference between the locations as long as appropriate access would be provided. It appears from the preliminary plans that access would be appropriate.

Pipeline Route Options

The Proposed Project includes a number of different options for the pipeline route for tie-in to the crude oil system. Scenario 1 and Scenario 2 involve construction in the roadway, which would require additional construction activities, which would potentially produce some traffic congestion, and potentially slow fire response activities that would use these roadways. Scenario 3 would be installed within the mostly dirt SCE right-of-way. Scenario 3 would therefore be preferable.

4.6.4.3 Proposed City Maintenance Yard Project Impacts

The operations of the permanent Proposed City Maintenance yard Project would have the same impacts on emergency response and fire protection as the current City Maintenance Yard operations. Water supply would be from existing fire hydrants. Early fire detection would be as per building codes for smoke alarms and sprinkler systems. Equipment spacing and code compliance for oil equipment would not be applicable. The City Maintenance Yard Project

4.6 Fire Protection and Emergency Response

would be located immediately next door to the Hermosa Beach Fire Department, so response times would be more than adequate. Therefore, permanent operations at the City Maintenance Yard would have less than significant impacts.

There is the potential to have adverse impacts on existing emergency response facilities.

Impact #	Impact Description	Phase	Residual Impact
FP.3	The temporary City Maintenance Yard Facilities could interfere with the Fire Department response activities.	Phase 1	Class II Less Than Significant with Mitigation

As the temporary City Maintenance Yard would utilize some space currently used by the Fire Department, there is the potential for the temporary facilities to interfere with the Fire Department response activities. The Fire Department currently utilizes 11th Street and Bard Street to occasionally move fire trucks in and out of the fire station. Loss of this route would require the fire trucks to negotiate a sharp turn when exiting the fire station onto Bard Street. This could cause some slowing of response times and affect emergency response capabilities and would be a significant impact.

Mitigation Measures

FP-3 The City Public Works Department shall coordinate with the Fire Department to ensure that fire trucks have adequate access to and from the fire station, and that the temporary City Maintenance Yard does not inhibit the ability of the Fire Department to respond to emergencies. This may require the elimination of some parking along Bard Street to ensure adequate room for fire truck turn-arounds, or other measures. Public Works shall incorporate the potential loss of parking into their parking plan.

Residual Impacts

Ensuring that the fire department is involved in the planning and design of the temporary City Maintenance Yard would ensure that fire response is not compromised by the temporary facilities. Impacts would be **less than significant with mitigation (Class II)**.

Proposed City Maintenance Yard Parking Options

The Proposed City Maintenance Yard Project has two options for parking: a No Added Parking option that would retain the same number of parking spaces as are currently available at Hermosa Storage; and a Parking Option, that would add 97 parking spaces. The two options would generate the same impacts on fire protection.

4.6.5 Other Issue Area Mitigation Measure Impacts

None of the mitigation measures proposed for impacts related to other issue areas would change fire protection and emergency service impacts. Therefore, the mitigation measures would not result in additional significant impacts, and additional analysis or mitigation is not required.

4.6.6 Cumulative Impacts and Mitigation Measures

Cumulative projects that would draw on the same emergency response resources could impact the fire protection analysis of the Proposed Project. The HBFD, the primary responder for the Project Site, maintains a fire station located proximate to the Project Site, which would be able to provide sufficient initial fire response services for the Proposed Project. Other cumulative projects in the area would not increase the fire response needs of the area. Therefore, cumulative impacts would be less than significant.

4.6.7 Mitigation Monitoring Plan

Proposed Oil Project Mitigation Measures				
Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
FP-1a	The Applicant shall ensure adequate (3,000-5,000 gpm) water supplies are available from the reclaimed water pipeline, the existing hydrant system, or some other source for water supplies that provides sufficient water supply rates, pressure and duration to comply with codes and the LACFD. Installation of a fire pump, or installation of a piping connection to area water mains that can supply the flows, may be required to ensure the appropriate water flow and pressure requirements. The Applicant shall ensure that all area hydrants and water supplies are tested annually as required by NFPA standards for water flows and pressures, and shall ensure that the results are reported to the City of Hermosa Beach and the Hermosa Beach Fire Department.	Review of water flow calcs and tests, annual reviews	Before Phase 2	City of Hermosa Beach HBFD
FP-1b	The Applicant shall implement a community alert notification system to automatically notify area residences and businesses in the event of an emergency at the oil field that would require residents to take shelter or take other protective actions.	Review and testing of system	Before Phase 2	City of Hermosa Beach HBFD
FP-1c	The Applicant shall fund an additional FTE position at the HBFD, or equivalent, for personnel with specific capabilities in inspection and code compliance associated with oil and gas production facilities. This arrangement shall be to the satisfaction of the HBFD.	Training and hiring completed at HBFD	Before Phase 2	City of Hermosa Beach HBFD
FP-1d	The Applicant shall develop emergency response plans addressing the facility's fire-fighting capabilities pursuant to the most recent NFPA requirements, Los Angeles	Review and approval of plans	Before Phase 2	City of Hermosa Beach HBFD

4.6 Fire Protection and Emergency Response

Proposed Oil Project Mitigation Measures				
Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
	County Fire Code, LACFD, California Code of Regulation, and API requirements, in coordination with and to the satisfaction of the LACFD and the City of Hermosa Beach Fire Department. These plans shall include, but not be limited to, fire monitor placement, water capabilities, fire detection capabilities, fire foam requirements, facility condition relating to fire-fighting ease and prevention, and measures to reduce impacts to sensitive resources. The plan should also address coordination with local emergency responders and area schools and daycare facilities.			
FP-1e	The Applicant shall ensure that the emergency response planning includes development and testing of evacuation plans of neighbors for an emergency scenario at the facility, and the Applicant shall implement programs to ensure that all immediate neighbors are included in the notification system.	Review of plan revision	Before Phase 2 and Phase 4	City of Hermosa Beach HBFD
FP-1f	The Applicant shall ensure and make funding available to 1) upgrade the dispatch system and procedures within Hermosa/Torrance/Redondo to implement a CAD-to-CAD system to improve dispatch times; and 2) extend the mutual aide agreements between the Hermosa Beach Fire Department and the Torrance Fire Department to include the Torrance HAZMAT unit, or provide for funding to provide additional equipment and to train a sufficient number of Hermosa Beach, Redondo Beach and/or Manhattan Beach Emergency Response personnel to provide first response HAZMAT capabilities.	Review of Mutual Aide agreement revision	Before Phase 2 and Phase 4	City of Hermosa Beach HBFD
FP-2a	The Applicant shall ensure that design and construction comply with applicable codes and standards for equipment spacing, particularly those related to flare location and distances to public areas and distances from well drilling equipment to buildings. If this cannot be achieved, additional requirements shall include the construction of thermal radiation barriers or insulation on the crude oil tanks, installation of thermal barriers/walls around the flare stack, increasing the height of the flare stack during drilling, relocation of the flare stack,	Third party audit report review	Before Phase 2 and Phase 4	City of Hermosa Beach HBFD

4.6 Fire Protection and Emergency Response

Proposed Oil Project Mitigation Measures				
Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
	providing thermal radiation modeling to estimate the impacts of equipment on the crude tanks and process piping and public areas. Fire rated barriers shall be established, as per LACFD requirements, to ensure that all buildings within 100 feet of well drilling would be protected from thermal radiation. The design and construction compliance status shall be verified by third-party audits under the direction of the City.			
FP-2b	Fire protection measures specific to the crude oil containment system shall be provided, including the installation of automatic fire foam systems along the perimeter of the crude oil containment system and wellhead area and immediately adjacent to combustion or spark producing equipment within or immediately adjacent to the crude oil containment area that would be automatically and remotely activated in the event of a crude oil spill. The highest level electrical classification achievable shall be designated for all equipment located within the crude oil containment area.	Review of design documents	Before Phase 2 and Phase 4	City of Hermosa Beach HBFD

Proposed City Maintenance Yard Project Mitigation Measures				
Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
FP-3	The City Public Works Department shall coordinate with the Fire Department to ensure that fire trucks have adequate access to and from the fire station, and that the temporary City Maintenance Yard does not inhibit the ability of the Fire Department to respond to emergencies. This may require the elimination of some parking along Bard Street to ensure adequate room for fire truck turn-arounds, or other measures. Public Works shall incorporate the potential loss of parking into their parking plan.	Review of design documents	Before the start of the temporary facility construction	City of Hermosa Beach HBFD

4.6 Fire Protection and Emergency Response

Table of Contents

4.6 Fire Protection and Emergency Response 1

4.6.1 Environmental Setting..... 1

4.6.1.1 Response Capabilities 1

4.6.2 Regulatory Setting 5

4.6.2.1 Codes and Standards 5

4.6.2.2 Federal and State Regulations 9

4.6.2.3 Equipment Spacing 11

4.6.3 Significance Criteria 14

4.6.4 Project Impacts and Mitigation Measures 15

4.6.4.1 CUP Requirements 15

4.6.4.2 Proposed Oil Project and Pipeline Impacts 16

4.6.4.3 Proposed City Maintenance Yard Project Impacts 21

4.6.5 Other Issue Area Mitigation Measure Impacts 22

4.6.6 Cumulative Impacts and Mitigation Measures 23

4.6.7 Mitigation Monitoring Plan 23

Table of Tables

Table 4.6-1 Fire Stations Available to Respond to an Emergency at the Project Site2

Table 4.6-2 Applicable Codes, Standards, and Guidelines5

Table 4.6-3 Applicable IRI, CCPS, NFPA, and API Equipment Spacing Requirements 11

Table of Figures

No table of contents entries found.