5.6 Hazardous Materials and Risk of Upset

This section describes environmental and regulatory settings related to hazardous materials and risk of upset, identifies reasonable worst-case scenario of potential hazardous material and risk of upset impacts of the proposed Project and cumulative impacts from this and other projects in the region, discusses alternatives and provides mitigation measures to reduce impacts ~~to less than significant levels~~.

The analysis in this section addresses both the crude oil pipeline and the SoCalGas pipeline. The risk of upset analysis addresses potential failures and accidents that could impact the public or the environment associated with the crude oil and natural gas pipelines, as well as equipment and operations at the pump stations. The analysis addresses the impacts associated with releases of hazardous materials such as oil spills, gas releases, potential fires, and cleanup and restoration activities.

The impacts on public health from fires that could result from a hazardous materials release is based upon a Quantitative Risk Assessment (QRA) prepared by the Applicant and peer reviewed by the EIR preparer. The analysis of the potential for impacts from a crude oil spill on the environment are discussed in this section as well as in the following sections: Section 5.2, Biological Resources; Section 5.4, Cultural Resources and Tribal Cultural Resources; Section 5.7, Land Use, Planning, and Recreation; and Section 5.9, Hydrology and Water Quality. Technical documents related to hazardous materials and risk of upset are provided in Appendix I.

For a list of references used in the preparation of this section, please refer to Section 5.6.10, References.

5.6.1 Environmental Setting/Existing Environment

This section discusses the environmental setting for the proposed Project consisting of the baseline and areas that could be affected by a release from the proposed Project facilities. For baseline operations, the existing pipeline would not be operating; therefore, risks associated with the baseline would be related to the periodic testing and maintenance of equipment, such as the valve and pump emergency generators.

~~Some~~ This section provides limited background on the May 2015 Refugio oil spill ~~is also presented~~. Additionally,

i~~I~~nformation on the SYU historical operations risk of upset impacts is also discussed in Section 5.6.3.5, Cumulative Effects.

5.6.1.1 Area Communities and Environmental Resources

The majority of the crude oil pipeline ROW passes through rural areas with scattered populations and residences as well as very remote areas with generally no populations. A portion of the pipeline ROW would also pass adjacent to the City of Buellton. Population densities vary along the pipeline route, from about 59 percent of the route having no recorded populations nearby, to a small percentage of the route with a population density peak of 8,400 persons per square mile near the City of Buellton (2010 Census data by block level). The average population density along the ROW is about 20 persons per square mile. About 69 miles of the 123-mile route has no recorded populations in the respective census block group. The pump stations are or would be remote and generally not accessible to the public.

The gas pipeline ROW passes through sparely populated areas of the eastern Santa Ynez valley, with some low-density residential areas located north of the community of Garey and passes along Santa Maria Mesa Road among mostly agricultural and some industrial areas.

Environmental resources within the Project ROW include river crossings at Gaviota Creek, Santa Ynez River, Sisquoc River, and the Cuyama River (all proposed for HDD installations), as well as over 140 smaller creeks and unnamed drainages (see Section 5.9, Hydrology and Water Quality). Flows in the rivers listed above vary substantially, with water flowing anywhere from 26 to 96 percent of the year (USGS 2020). Spills into flowing creeks and rivers would potentially result in substantially greater impacts than spills into dry areas. Environmental resources are discussed in more detail in Section 5.2, Biological Resources and Section 5.9, Hydrology and Water Quality.

5.6.1.2 Wildfire Risk

Portions of the proposed Project are within very high fire hazard areas, including areas within Gaviota, areas south of Buellton, and areas along the Santa Ynez River west of Cuyama. Very high fire hazard areas are those regions exposed to significant fuel loads, such as large areas of undisturbed native or naturalized vegetation or areas that due to location have less than optimal fire response times and are specifically designated as such by CalFIRE (CalFIRE 2020).

The proposed Project area is covered by a range of fire departments and locations within Santa Barbara County, San Luis Obispo County, and Kern County, depending on the location of the pipeline segment of concern.

5.6.1.3 Las Flores Canyon Fire Protection

The start of the proposed Project pipeline is at the LFC facility. The LFC area falls within the jurisdiction of the Santa Barbara County Fire Department (SBCFD) and is served by County Fire Station 38, which is located at 17200 Mariposa Reina in Gaviota. Station 38 is about 12 miles, or approximately 20 minutes, from the LFC facilities. The two other closest county fire stations to the LFC are Station 11, located at 6901 Frey Way in Goleta, and Station 14, at 320 Los Carneros Road in Goleta. Both stations are about 14 miles from the LFC facilities and have similar travel times as Station 38.

The LFC facilities have an Integrated Fire Protection Plan that is reviewed and approved by Santa Barbara County on a regular basis. The facilities are equipped with a fire protection water system that includes water storage tanks, fire pumps, fire service water mains and fire hydrants. The facility has several fixed fire protection systems including automatic fire sprinklers, deluge systems, foam systems, gaseous extinguishing systems and various manual firefighting equipment. The LFC facilities are also equipped with a hazards monitoring system that includes fire, combustible gas, and toxic gas alarms. Three types of fire detectors are used on-site, including ultraviolet, thermal, and smoke (ionization) detectors.

The natural vegetation in the area of the LFC facilities is dominated by chaparral, coastal sage scrub, riparian woodland, and grasslands. This represents a high fire hazard during the normal seasonal dry weather cycles experienced on the south coast. Fires in the developed areas could spread to the brush and threaten the nearby watershed. The LFC facilities (operated by ExxonMobil) has a Wildland Fire Protection Plan that requires that ExxonMobil maintain native plant communities within the LFC facilities. Flammable vegetation along the facility perimeter and access roads are mowed to approximately six inches in height and 10 feet away from the roads to minimize the potential spread of fires within the facilities to the undeveloped portion of the property.

Wildland fires could also originate outside the developed areas of the LFC. These fires could threaten equipment, structures, and other developed features. The LFC facilities maintains a Vegetation Management Plan to reduce the potential exposure of the developed site from wildland fire threats.

Additionally, there are various measures that are employed to protect the LFC facilities from wildland fires. These measures include, but are not limited to, the following:

- Posting of fire watches;
- Extinguishing embers;
- Activating fire monitors to create water curtains; and
- Using water spray and deluge system to keep facilities cool and having site personnel wet down critical areas.

~~5.6.1.4 Agency Spill Response~~

~~The SBCFD is the primary first responder for fire protection/spill response along the pipeline routes. The County relies on the CDFW Area Spill Response Plans (see below) as well as the facility-specific plans for emergency response planning. Primarily, the SBCFD uses the Santa Barbara County Operational Area Oil Spill Contingency Plan (SBCOA OSCP) revised in 2019. The 2019 version is in draft form, pending approval by the CDFW Office of Spill Prevention and Response (OSPR). The purpose of the SBCOA OSCP is to outline procedures for a coordinated response to an oil spill with local, state, and federal agencies and the responsible party. The SBCOA OSCP is to be used if an oil spill impacts or threatens to impact inland surface waterways, the Channel Islands, or the Santa Barbara County coastline. The SBCOA OSCP addresses many of the issues that arose from the Refugio spill (see below) and addresses the following issues:~~

- ~~Roles and responsibilities (first responders, incident management team, unified command, etc.);~~
- ~~Operations (discovery and notification, preliminary assessment, containment, and cleanup);~~
- ~~Logistics (staging areas, incident command posts, environmentally sensitive sites, and shoreline access); and~~
- ~~Plan review and exercises (training and drills).~~

~~Figure 5.6-1 shows the location of the proposed Project area fire stations that are located along the proposed pipeline route. All these stations have various types and quantities of firefighting equipment and personnel.~~

~~SBCFD has a hazardous material (HAZMAT) team that includes firefighters from Station 38 (Gaviota) and Station 31 (Buellton). The team is a group of firefighters and staff who have the specialized training in the prevention and mitigation of incidents involving hazardous materials. SBCFD maintains a HAZMAT trailer centrally located in the county at Station 31 in the City of Buellton. Inside the trailer are a host of equipment necessary in fulfilling the mission of mitigating a hazardous materials upset situation. The SBCFD also maintains oil spill prevention and response trailers at Station 38 (Gaviota) and Station 14 (Goleta). Construction equipment is maintained at Station 24 (Los Alamos).~~

~~The HAZMAT teams are trained to deploy the equipment in the response trailers. Other fire staff are trained to take initial action such as inflating hoses for use as containment booms; however, they are not necessarily trained in hazardous response. SBCFD conducts HAZMAT training on spills and conducts oil spill drills and training with operators for fixed facilities such as LFC and for transmission pipelines in the County's jurisdiction.~~

~~Response times along the proposed pipeline route vary depending upon the location, with the longest response times being to areas along State Route 166. Depending upon the location, type of incident, and~~

~~equipment needed, response times could vary from 20 minutes to over two hours for some of the far eastern stretches of the pipeline route.~~

~~Figure 5.6-1 Location of Key Fire Stations Along Proposed Pipeline Route~~

~~Source: prepared by EIR preparer using data from Santa Barbara County and City of Santa Maria Fire Departments.~~

~~The CDFW-OSPR has state oversite for spills that impact California waterways. OSPR's mission is to provide best achievable protection of California's natural resources by preventing, preparing for, and responding to spills of oil and enhancing affected resources.~~

~~In 2014, then-Governor Brown expanded the CDFW-OSPR program to cover all state surface waters at risk of oil spills from any source, including pipelines, production facilities, and the increasing shipments of oil transported by railroads. This expansion provided critical administrative funding for industry preparedness, spill response, and continued coordination with local, state, and federal government along with industry and nongovernmental organizations. State Senate Bill 861 authorized the expansion and provided the additional statutory and regulatory authority for the prevention, preparedness, and response activities in the new inland areas of responsibility.~~

~~CDFW-OSPR maintains a list of certified oil spill response organizations (OSROs) that are approved to help with oil spill cleanup operations. These OSROs play an integral part in CDFW-OSPR's planned response to any oil spill incident. Each certified OSRO has been evaluated through CDFW-OSPR's drill program and can rapidly respond to a variety of oil spill incidents. Several OSROs have been approved by CDFW-OSPR for terrestrial and marine spill response.~~

~~CDFW-OSPR has developed an oil spill response plan for Santa Barbara and San Luis Obispo counties (the Los Angeles – Long Beach Area Contingency Plan also includes Ventura, Los Angeles and Orange counties) that provides detailed response plans for the sensitive waterways that drain directly to the ocean. This~~

~~includes the following sensitive waterways along the Gaviota Coast that could be affected by a pipeline spill (CDFW 2019):~~

- ~~Canada Del Agua Caliente;~~
- ~~Gaviota Creek;~~
- ~~Canada Del Alcatraz and Cementario Creeks;~~
- ~~Arroyo Hondo Preserve and Creek;~~
- ~~Refugio Creek; and~~
- ~~Corral-Las Flores Creek.~~

~~A March 21, 2020, tanker truck oil spill on State Route 166 (discussed in more detail in the ExxonMobil Interim Trucking EIR [SBC 2020]), required response actions similar to a spill from the proposed Project pipeline, which would travel in parallel to portions of State Route 166, or other water locations. In this incident, a truck trailer carrying crude oil separated from the tractor and rolled down the embankment into the Cuyama River. A unified command was established to handle the containment, cleanup, and recovery operations. To limit the spread of the oil, a berm was constructed approximately two miles downstream from the spill site to contain the oil. Two pipes were installed beneath the berm to keep clean water flowing while absorbent pads were used to soak up the oil on the surface. Vacuum trucks and skimming devices were used to remove oil and contaminated water from a containment zone. CDFW-OSPR reported that the containment system held up well by preventing oil from moving toward the Twitchell Dam and Reservoir downstream of the spill site. Crews continuously monitored the river through visible observations and drone flights and did not document impacts downstream of the containment zone, including at the reservoir. As many as 79 people were involved in the on-site response during the peak response.~~

~~San Luis Obispo has an Emergency Operations Plan (SLOC 2016) and a Hazardous Materials Emergency Response Plan (SLOC 2013), both of which address a range of issues including organization, operations, recovery, and hazard assessments.~~

5.6.1.4 ~~Kern County has a Multi-Jurisdiction Hazard Mitigation Plan (Kern County 2020) addressing planning, risk assessment, mitigation strategies, plan implementation and maintenance. The plan addresses issue such as earthquake and landslide vulnerabilities. The Kern County Fire Department also maintains a Unit Strategic Fire Plan (Kern County 2018) primarily focused on wildland fire management and planning.~~Federal Lands Fire Protection and Emergency Response

Bureau of Land Management – Carrizo Plain National Monument

The Carrizo Plain National Monument area has two major sources of access. From the north, the access is via Soda Lake Road from State Route 58. The second major access is from the south via Soda Lake Road from State Route 33/166. The area is primarily comprised of dirt road access, which may become impassable during heavy rain or snowfall. Emergency response access restrictions may occur during high fire hazard periods or other hazard conditions. Project area on these lands is accessible via State Route 58 and State Route 33/166.

The Bureau of Land Management does not maintain a fire or hazardous materials (HazMat) team within the Carrizo Plain National Monument area. They maintain a Memorandum of Understanding with the Kern County HazMat team for response needs for Carrizo Plain land. Further, three HazMat teams are

assigned to Carrizo Plain as their response district. These teams include two teams within Santa Maria, San Luis Obispo County and one team in the city of San Luis Obispo. HazMat teams were mapped within ESRI for response times; the anticipated response time to the Project area is expected to be 1.15 hours to 1.5 hours.

Bureau of Land Management – Other BLM Managed Lands

The proposed Project would cross 0.55 miles of BLM managed lands that are categorized as Other lands. Project area on these lands is accessible via State Highway 33 with the nearest town being Maricopa located in Kern County, California.

The BLM does not maintain a fire or HazMat team within the Other Managed-Lands area. They maintain a Memorandum of Understanding with the Kern County HazMat team for the Other Managed-Lands area. HazMat teams were mapped within ESRI for response times, anticipated response time to the Project area is expected to be 0.5 hours to 1 hour.

U.S. Forest Service – Los Padres National Forest

The proposed Project would cross 5.06 miles of USFS-managed lands within the Los Padres National Forest. The Project area within the national forest is accessible via State Highway 166 and Forest Road, with the nearest town being Santa Maria in San Luis Obispo.

USFS personnel within Los Padres National Forest are trained for HazMat response. However, they currently do not maintain equipment to handle a spill or release. HazMat teams at Santa Barbara County Fire Stations 31 and 38 in Buellton and Gaviota, respectively, are responsible for HazMat response within the Los Padres National Forest as part of their response district. HazMat teams were mapped within ESRI for response times; anticipated response time to the Project area is expected to be 0.5 hours to 1.15 hours.

U.S. Fish and Wildlife Service – Bitter Creek National Wildlife Refuge

The proposed Project would cross 0.95 miles of USFWS-managed Lands within Bitter Creek NWR. The Project area located on these lands is accessible via State Highway 166, with the nearest town being Maricopa, California.

The Bitter Creek NWRe does not maintain a HazMat or fire team on the lands crossed by the Proposed project. The Refuge has a Fire Management Plan that identifies the Kern County Fire District as the provider for wildland fire and structural fire protection to the Refuge under a cooperative fire protection agreement. This agreement is a sub-agreement of the BLM mutual aid agreement that is tied to the Carrizo Plains. There are two HazMat teams located in Bakersfield, Kern County that are responsible for HazMat response within the Bitter Creek NWR. HazMat teams were mapped within ESRI for response times, anticipated response time to the project area is expected to be 1 hour to 1.5 hours.

5.6.1.5 Local Agency Spill Response

Santa Barbara County

The SBCFD is the primary first responder for fire protection/spill response along the pipeline routes. The County relies on the CDFW Area Spill Response Plans (see below) as well as the facility-specific plans for emergency response planning. Primarily, the SBCFD uses the Santa Barbara County Operational Area Oil Spill Contingency Plan (SBCOA OSCP) revised in 2019. The 2019 version is in draft form, pending approval by the CDFW Office of Spill Prevention and Response (OSPR). The purpose of the SBCOA OSCP is to outline

procedures for a coordinated response to an oil spill with local, state, and federal agencies and the responsible party. The SBCOA OSCP is to be used if an oil spill impacts or threatens to impact inland surface waterways, the Channel Islands, or the Santa Barbara County coastline. The SBCOA OSCP addresses many of the issues that arose from the Refugio spill (see below) and addresses the following issues:

- Roles and responsibilities (first responders, incident management team, unified command, etc.);
- Operations (discovery and notification, preliminary assessment, containment, and cleanup);
- Logistics (staging areas, incident command posts, environmentally sensitive sites, and shoreline access); and
- Plan review and exercises (training and drills).

Figure 5.6-1 shows the location of the proposed Project area fire stations that are located along the proposed pipeline route. All these stations have various types and quantities of firefighting equipment and personnel.

SBCFD has a hazardous material (HAZMAT) team that includes firefighters from Station 38 (Gaviota) and Station 31 (Buellton). The team is a group of firefighters and staff who have the specialized training in the prevention and mitigation of incidents involving hazardous materials. SBCFD maintains a HAZMAT trailer centrally located in the county at Station 31 in the City of Buellton. Inside the trailer are a host of equipment necessary in fulfilling the mission of mitigating a hazardous materials upset situation. The SBCFD also maintains oil spill prevention and response trailers at Station 38 (Gaviota) and Station 14 (Goleta). Construction equipment is maintained at Station 24 (Los Alamos).

The HAZMAT teams are trained to deploy the equipment in the response trailers. Other fire staff are trained to take initial action such as inflating hoses for use as containment booms; however, they are not necessarily trained in hazardous response. SBCFD conducts HAZMAT training on spills and conducts oil spill drills and training with operators for fixed facilities such as LFC and for transmission pipelines in the County's jurisdiction.

Response times along the proposed pipeline route vary depending upon the location, with the longest response times being to areas along State Route 166. Depending upon the location, type of incident, and equipment needed, response times could vary from 20 minutes to over two hours for some of the far eastern stretches of the pipeline route.

Figure 5.6-1 Location of Key Fire Stations Along Proposed Pipeline Route

Source: prepared by EIR preparer using data from Santa Barbara County and City of Santa Maria Fire Departments.

The CDFW-OSPR has state oversite for spills that impact California waterways. OSPR's mission is to provide best achievable protection of California's natural resources by preventing, preparing for, and responding to spills of oil and enhancing affected resources.

In 2014, then-Governor Brown expanded the CDFW-OSPR program to cover all state surface waters at risk of oil spills from any source, including pipelines, production facilities, and the increasing shipments of oil transported by railroads. This expansion provided critical administrative funding for industry preparedness, spill response, and continued coordination with local, state, and federal government along with industry and nongovernmental organizations. State Senate Bill 861 authorized the expansion and provided the additional statutory and regulatory authority for the prevention, preparedness, and response activities in the new inland areas of responsibility.

CDFW-OSPR maintains a list of certified oil spill response organizations (OSROs) that are approved to help with oil spill cleanup operations. These OSROs play an integral part in CDFW-OSPR's planned response to any oil spill incident. Each certified OSRO has been evaluated through CDFW-OSPR's drill program and can rapidly respond to a variety of oil spill incidents. Several OSROs have been approved by CDFW-OSPR for terrestrial and marine spill response.

CDFW-OSPR has developed an oil spill response plan for Santa Barbara and San Luis Obispo counties (the Los Angeles – Long Beach Area Contingency Plan also includes Ventura, Los Angeles and Orange counties) that provides detailed response plans for the sensitive waterways that drain directly to the ocean. This includes the following sensitive waterways along the Gaviota Coast that could be affected by a pipeline spill (CDFW 2019):

- Canada Del Agua Caliente;

- Gaviota Creek;
- Canada Del Alcatraz and Cementario Creeks;
- Arroyo Hondo Preserve and Creek;
- Refugio Creek; and
- Corral-Las Flores Creek.

A March 21, 2020, tanker truck oil spill on State Route 166 (discussed in more detail in the ExxonMobil Interim Trucking EIR [SBC 2020]), required response actions similar to a spill from the proposed Project pipeline, which would travel in parallel to portions of State Route 166, or other water locations. In this incident, a truck trailer carrying crude oil separated from the tractor and rolled down the embankment into the Cuyama River. A unified command was established to handle the containment, cleanup, and recovery operations. To limit the spread of the oil, a berm was constructed approximately two miles downstream from the spill site to contain the oil. Two pipes were installed beneath the berm to keep clean water flowing while absorbent pads were used to soak up the oil on the surface. Vacuum trucks and skimming devices were used to remove oil and contaminated water from a containment zone. CDFW-OSPR reported that the containment system held up well by preventing oil from moving toward the Twitchell Dam and Reservoir downstream of the spill site. Crews continuously monitored the river through visible observations and drone flights and did not document impacts downstream of the containment zone, including at the reservoir. As many as 79 people were involved in the on-site response during the peak response.

San Luis Obispo County

San Luis Obispo has an Emergency Operations Plan (SLOC 2016) and a Hazardous Materials Emergency Response Plan (SLOC 2013), both of which address a range of issues including organization, operations, recovery, and hazard assessments.

Kern County

Kern County has a Multi-Jurisdiction Hazard Mitigation Plan (Kern County 2020) addressing planning, risk assessment, mitigation strategies, plan implementation and maintenance. The plan addresses issue such as earthquake and landslide vulnerabilities. The Kern County Fire Department also maintains a Unit Strategic Fire Plan (Kern County 2018) primarily focused on wildland fire management and planning.

~~5.6.1.5~~5.6.1.1 ~~Marine Spill Response~~

~~For marine spill responses, area oil and gas operators, including historically Plains, contract with the Marine Spill Response Corporation (MSRC), which purchased Clean Seas in 2017. This company (then named Clean Seas) responded to and provided the marine response to the 2015 Refugio spill. The MSRC has the following equipment stationed in Santa Barbara County (as per the MSRC website):~~

- ~~Comet support vessel, located near Santa Barbara Harbor;~~
- ~~20,000 Feet 20/10" Curtain Internal Foam Boom, three Workboats, 17,657 Corexit Dispersant, five Skiffs, 900 Feet 24/6" Curtain Internal Foam Boom, An interior response trailer with 1000 feet of boom, boat, underflow dams and skimmer , located at a facility in Carpinteria; and~~
- ~~Fast Response vessel, 2,000 Curtain self-inflatable boom, skimmers, 250 gallons dispersant located at the Cojo Mooring near Point Conception.~~

~~5.6.1.6~~5.6.1.1 ~~Plains Spill Response~~

~~Plains has a Facility Response Plan that includes contingency planning for spill and emergency response for various facilities throughout California. Industry contingency plans, for both marine and inland facilities, are required per 14 CCR §790-820. Affected industry members were required to submit facility contingency plans and Certificates of Financial Responsibility by January 1, 2016, to OSPR (https://wildlife.ca.gov/OSPR/Financial-Responsibility). Adequate personnel, equipment, and response plans must be in place at all times in order to successfully implement the Facility Response Plan.~~

5.6.1.6 ~~Plains has a Facility Response Plan that includes contingency planning for spill and emergency response for various facilities throughout California. Industry contingency plans, for both marine and inland facilities, are required per 14 CCR §790-820. Affected industry members were required to submit facility contingency plans and Certificates of Financial Responsibility by January 1, 2016, to OSPR (https://wildlife.ca.gov/OSPR/Financial-Responsibility). Adequate personnel, equipment, and response plans must be in place at all times in order to successfully implement the Facility Response Plan.~~ Marine Spill Response

For marine spill responses, area oil and gas operators, including historically Plains, contract with the Marine Spill Response Corporation (MSRC), which purchased Clean Seas in 2017. This company (then named Clean Seas) responded to and provided the marine response to the 2015 Refugio spill. The MSRC has the following equipment stationed in Santa Barbara County (as per the MSRC website):

- Comet support vessel, located near Santa Barbara Harbor;
- 20,000 Feet 20/10" Curtain Internal Foam Boom, three Workboats, 17,657 Corexit Dispersant, five Skiffs, 900 Feet 24/6" Curtain Internal Foam Boom, An interior response trailer with 1000 feet of boom, boat, underflow dams and skimmer , located at a facility in Carpinteria; and
- Fast Response vessel, 2,000 Curtain self-inflatable boom, skimmers, 250 gallons dispersant located at the Cojo Mooring near Point Conception.

5.6.1.7 Plains Spill Response

Plains has a Facility Response Plan that includes contingency planning for spill and emergency response for various facilities throughout California. Industry contingency plans, for both marine and inland facilities, are required per 14 CCR §790-820. Affected industry members were required to submit facility contingency plans and Certificates of Financial Responsibility by January 1, 2016, to OSPR (https://wildlife.ca.gov/OSPR/Financial-Responsibility). Adequate personnel, equipment, and response plans must be in place at all times in order to successfully implement the Facility Response Plan.

~~5.6.1.7~~5.6.1.8 Refugio Oil Spill

On May 19, 2015, the Plains Pipeline Line 901 pipeline in Santa Barbara County ruptured, resulting in the release of crude oil that subsequently ran down drainages and reached the ocean. An estimated 123,228 gallons was spilled with an estimated 53,000 gallons reaching the ocean (Baker 2018). During installation, the pipelines were coated with coal tar urethane and covered with foam insulation, which in turn was covered by a tape wrap over the insulation. Shrink wrap sleeves, which provide a barrier between the steel pipeline and soil for corrosion prevention, were present at all of the pipeline joints on Line 901 and multiple locations on Line 903.

The Federal Department of Transportation PHMSA findings indicated that the proximate or direct cause of the Line 901 failure was external corrosion that thinned the pipe wall to a level where it ruptured suddenly and released heavy crude oil (PHMSA 2016). PHMSA's investigation identified numerous contributory causes of the rupture, including:

1. Ineffective protection against external corrosion of the pipeline;
2. Failure by Plains to detect and mitigate the corrosion; and
3. Lack of timely detection of and response to the rupture.

In addition, there was evidence of corrosion and degraded coating systems, allowing moisture to reach the steel pipe walls near the failure site. The consequences of the spill were additionally aggravated by an oil spill response plan that did not identify the culvert near the release site as a spill pathway to the Pacific Ocean.

After the spill, Lines 901 and 903 were purged with nitrogen in accordance with the PHMSA corrective action orders and remain out of service.

The following is a summary of the event from the PHMSA Failure Investigation Report (PHMSA 2016).

On the morning of May 19, 2015, Lines 901 and 903 were transporting crude oil with a flow rate setpoint of 1,240 barrels per hour leaving the LFC, and the discharge pressure was approximately 575 pounds per square inch in gauge (psig). Pumps were operating at the Las Flores Station on Line 901 and Sisquoc Station on Line 903. While a Plains technician was performing his work, the operational pump at the Sisquoc Station was shut down, unintentionally causing the pressure in Line 901 to increase. The pressure rose to a maximum of 696 psig at the LFC discharge. The controller shut down the pipeline pump at the LFC and the pressure remained at 677 psig. The pipeline pump at LFC was then restarted and the flow rate at LFC then climbed from zero to 2,042 barrels per hour. Concurrently, the line pressure rose to a high of 721 psig, then dropped to 199 psig, and then slightly increased to approximately 210 psig until the LFC pipeline pump was shut down a second and final time (PHMSA 2016).

Generally, a sudden increase in flow rate accompanied by a decrease in pressure is indicative of a release. PHMSA determined that the Sisquoc pump going offline was an abnormal event, but that this in itself should not have caused Line 901 to rupture. A PHMSA review of the Supervisory Control and Data Acquisition (SCADA) system event and alarm logs and pressure and flow records indicated that there was information reported by the SCADA system that indicated a release had occurred by approximately 10:55 a.m., and an alarm was generated on low pressure. The alarm, however, was not set at an appropriate value. The controller did not recognize the information they received as indicative of an abnormal operation and a potential release (PHMSA 2016).

The pipeline had undergone three Smart Pig Surveys in 2007, 2012, and 2015. In a Smart Pig Survey special instruments are passed through the inside of the pipeline to detect internal and external corrosion, dents, and other anomalies. The total number of metal loss anomalies had increased from 14 anomalies greater than 40 percent wall loss in 2007 to 94 anomalies greater than 40 percent wall loss in 2015, with two anomalies in 2015 being greater than 80 percent. The failure site was recorded as a wall loss of 47 percent, whereas subsequent analysis indicated that the actual wall loss was closer to 89 percent (PHMSA 2016). This inaccuracy was estimated to be due to buildup of corroded material outside of the pipeline between the pipe wall and the insulation.

Table 5.6-1 shows a timeframe of the incident.

Table 5.6-1 Refugio Beach May 2015 Spill Timeline

Time of Day (19 May 2015)	Elapsed Time From Release, hours:minutes	Event
10:42 a.m.	-0:13	Sisquoc pipeline pump shut down during maintenance activities

Table 5.6-1 Refugio Beach May 2015 Spill Timeline

Time of Day (19 May 2015)	Elapsed Time From Release, hours:minutes	Event
10:48 a.m.	-0:07	Plains controller shut down the LFC pipeline pump: 677 psig pressure and 1,220 bph
10:49 a.m.	-0:06	Sisquoc pipeline pump restarted
10:52 a.m.	-0:03	LFC pipeline pump restarted
10:52 – 10:56 a.m.	-0:03 to 0:01	Pressure increased to 721 psig and flow rate of 2,042 bph
10:55 a.m.	0:00	PHMSA determination of rupture time.
10:57 a.m.	0:02	Discharge pressure dropped to 199 psig, low-pressure alarm sounded.
10:58 a.m.	0:03	Discharge pressure increased to 210 psig, above the alarm setpoint, causing the alarm to reset.
11:00 a.m.	0:05	Flow rate of 1,458 bph
11:15 a.m.	0:22	Sisquoc pipeline pump shut down on high temperature
11:20 a.m.	0:27	Pressure in pipeline too low to accept crude oil from Venoco (an adjacent supplier entering the pipeline just downstream of the LFC)
11:22 a.m.	0:27	Pipeline leak monitoring system potentially indicated an “imbalance”
11:26 a.m.	0:31	Attempts to restart the Sisquoc pipeline pump failed.
11:30 a.m.	0:35	LFC pipeline pump stopped. Mainline valve at LFC closes. Pressure at 211 psig.
11:42 a.m.	0:47	A call reporting a petroleum smell was received at SBFD Station 18.
12:15 p.m.	1:20	A representative from the SB-OEM received a call from the SBFD reporting that there was oil on Refugio Beach.
12:43 p.m.	1:48	The Santa Barbara Dispatch notified the National Response Center
12:55 p.m.	2:00	Two Plains representatives arrived at the south side of U.S. Highway 101 where the SBFD personnel were located.
1:27 p.m.	2:32	The Plains representatives located the leak site on the Plains ROW. They called the controller to report the leak and to tell the controller to leave Line 901 shut down and to close the Refugio gate valve. The Plains representatives, along with fire department personnel, attempted to stop the flow of oil into the culvert. However, the culvert was too large to stop the flow with shovels, and sandbags were not readily available, so their immediate efforts were unsuccessful.
2:56 p.m.	4:01	A representative from Plains called the NRC to report the release of crude oil.
3:00 p.m.	4:05	Additional equipment and personnel arrived, the culvert was dammed, and oil was prevented from entering the culvert.

Source: PHMSA 2016
Key:
bph = barrels per hour
LFC = Las Flores Canyon
NRC = National Response Center
psig = pounds per square inch gauge
ROW = right of way
SBFD = Santa Barbara Fire Department
SB-OEM = Santa Barbara Office of Emergency Management

~~5.6.1.8~~5.6.1.9 Refugio Oil Spill Lessons Learned

As part of the post-spill assessment of the Refugio Oil Spill response, Santa Barbara County developed a report detailing the strengths and opportunities for improvement based on the lessons learned associated with the County’s response to the oil spill (SBC 2016). The document is aligned with the core capabilities

identified by the federal government under the National Preparedness Goal and was developed leveraging planning meetings as outlined under the Homeland Security Exercise and Evaluation Program.

Primary relevant recommendations for improvement include the following:

- Recommendation 2.1: Align and include cultural resources in planning;
- Recommendation 3.1: Develop and incorporate into plans (as appropriate) processes to select the local-on-scene-coordinator along with qualifications, required training, duties, responsibilities, authorities, and coordination and interaction with established structures for emergency management;
- Recommendation 10.1: Ensure a local liaison is established to support coordination with local governments and UCSB;
- Recommendation 13.3: Develop formal programs to expand county-level skilled volunteers and spontaneous volunteers;
- Recommendation 14.1: Develop a formal process and structure to engage local nontraditional nongovernmental organizations;
- Recommendation 16.1: Document the County's current capability and capacity to support immediate oil response operations. The County does not have a current inventory of assets, resources, and personnel capabilities to support response to an oil spill. The County should document their capabilities and understand potential capability gaps to support immediate and sustained response operations. Personnel, organization, equipment, training, and exercises should all be considered in this assessment;
- Recommendation 16.2: Review and assess the requirements contained in oil company contingency plans as they apply to contract support and increase requirements associated with standby resources;
- Recommendation 16.3: Consider expanding training programs for County staff to increase skill sets and capacity, particularly regarding Hazardous Waste Operations and Emergency Response (HAZWOPER) training;
- Recommendation 18.1: Pre-identify facilities that can be used as the incident command post; and
- Revise Response Plans to specify the management and maintenance of public information resources outside of the responsible party.

In addition, the report after-action meeting participant feedback produced these additional relevant recommendations/concerns:

- Initial response to incident could have been far more robust, both on- and offshore;
- The response suffered because of the lack of local knowledge by the responsible party/federal regulators;
- The County must not rely on the responsible party. Assuming the response is not the County's responsibility creates a lack of action environment;
- Interagency communication and coordination (state/federal/local) was slow to synchronize, resulting in issues throughout the cleanup process, as has been reported in greater detail by those involved in the decision-making process;
- Need more immediate and effective response, in particular for an oil spill that starts onshore and spreads offshore. There was a significant lack of available personnel, vessels, equipment, staging, and

planning. The fisherman's response program did not seem to be activated at the beginning of the spill. MSRC (then Clean Seas), while activated, could not prevent oil from reaching the ocean. The main response did not occur until almost 24 hours after the spill when much of the oil had already been washed to sea;

- Need better communication with the public, including open press conferences. Also, the lack of oil sampling information was frustrating for meeting participants. The responsible party should be required to provide information to the public such as the quantity of oil spilled;
- The Unified Command (a system of providing direction and control during a response activity i.e., how the representatives of all agencies having response role) should have consulted with scientists who had modeling and other information that would have improved oil spill response; and
- Need to integrate nongovernmental organizations in terms of assistance and communication;
- The volunteer program was extremely frustrating. The websites provided inaccurate information, then the websites stated that no volunteers were needed when volunteers were needed; training was deferred; the public was not adequately notified of volunteer opportunities other than beach cleanups, which were available earlier in the response process.

In addition, the National Academy of Sciences held a workshop in Santa Barbara in 2019 to address improving oil spill preparedness and response (NAS 2019). Some of the lessons learned from this workshop included:

- More timely communication, better coordination and transparency among emergency responders and media, clearer media guidelines, more centralized information, and multilingual resources;
- Establish baseline environmental conditions before a spill, require better coordination among entities carrying out sampling and monitoring efforts, and resolve issues related to site access restrictions that hinder monitoring efforts;
- Address site restrictions that hamper response efforts;
- Engage in data sharing and create databases; increase technological resources, such as drones; develop or obtain night lighting and nighttime imaging capabilities;
- Identify the best available science by bringing together scientists and experts from academia and government agencies;
- Take preventive measures, such as fixing vulnerabilities in pipelines that can cause great damage if overlooked, keeping spills small via better inspection of pipelines (including remote detection capability), addressing infrastructural vulnerabilities, and increasing the number of practice scenarios and drills within a year;
- Develop leak detection systems and shutoff systems;
- Incorporate new information into contingency plans regularly in order to improve them and facilitate rapid response operations;
- Streamline the authorization process associated with responsible party involvement delays and response;
- Develop better localized resource mobilization capabilities since mobilization is limited by time and distance;

- Identify pathways for potential spills in facility oil spill contingency plans and include mechanisms to prevent or minimize onshore-to-offshore spills by identifying how to prevent oil from reaching the ocean and how to contain nearshore spills;
- Allow the marine OSROs to effectively respond to nearshore leaks by improving access to shore;
- Provide effective training and allow mobilization of small vessel operators such as fishing vessels; and
- Provide better volunteer training.

5.6.1.10 Environmental Remediation Sites (Federal Lands Only)

Data sets were reviewed through both ESRI and NEPAssist for Environmental Remedial Sites within a two-mile radius of the Project area. Based on the data analysis, no remediation sites were identified within the portion of the Project area that crosses federal lands. Further, no remediation sites exist within the two-mile search radius of these lands that could have indirect impacts.

5.6.1.11 Underground/Aboveground Storage Tanks (Federal Lands Only)

During the analysis of ESRI data sets, only one area of interest was found. Reyes Service Station is located within one-half mile of the Project area within the Bitter Creek National Wildlife Refuge. The EPA Facility Report Services (from ESRI) denotes a leaking storage tank at this facility. Further research was conducted through the California State Water Resources Control Board GeoTracker. Based on the information reviewed, a case was opened in 1996. Site assessments continued through 2002. The case was marked as complete and closed in 2004. Based on the information reviewed, this facility is not suspected of negatively impacting the project site at this time.

~~5.6.1.9~~5.6.1.12 Baseline Operations Risk of Upset

The baseline for the proposed Project is the currently shut-down existing facilities. As the existing pipeline no longer contains any crude oil, it does not present a risk due to potential oil spills. Minor risk impacts exist for ongoing maintenance of the valves and pump station generators, and periodic maintenance of the pipeline segments due to the potential for localized spills of hydraulic fluids and/or diesel oils.

5.6.2 Regulatory Setting

This section presents the regulatory setting as it relates to the proposed Project.

5.6.2.1 Federal Regulations

Federal Pipeline Safety Regulations – 49 Code of Federal Regulations Parts 186–199

PHMSA oversees the federal pipeline safety regulations (49 Code of Federal Regulations [CFR] Parts 186–199). They are currently in the process of amending these rules to include the following:

1. Require the inspection of pipelines in areas affected by extreme weather and natural disasters;
2. Require integrity assessments at least once every ten years of onshore hazardous liquid pipeline segments located outside of high consequence areas and that they are “Smart Piggable”;
3. Extend the required use of leak detection systems beyond high consequence areas to all regulated, non-gathering hazardous liquid pipelines; and

4. Require that all pipelines in or affecting high consequence areas be capable of accommodating in-line inspection tools within 20 years, unless the basic construction of a pipeline cannot be modified to permit that accommodation.

Protecting Our Infrastructure of Pipeline and Enhancing Safety Act of 2016 – Title 14 Amended

The Protecting Our Infrastructure of Pipeline and Enhancing Safety Act (or "PIPES Act"), effective July 1, 2020, requires an analysis of pipeline age, condition, materials, and construction have on safety and risk related to high consequence areas and requires Federal or State regulators to review how those risks are being addressed.

Additional requirements include:

- (A) using internal inspection technology appropriate for the integrity threat are completed not less often than once every 12 months; and
- (B) using pipeline route surveys, depth of cover surveys, pressure tests, external corrosion direct assessment, or other technology that the operator demonstrates can further the understanding of the condition of the pipeline facility are completed on a schedule based on the risk that the pipeline facility poses to the high consequence area in which the pipeline facility is located."

Spill Prevention, Control, and Countermeasures

Overview of 40 CFR Parts 109, 110, 112, 113, and 114

The requirements identified in these regulatory programs apply to oil storage and transportation facilities and terminals, tank farms, bulk plants, oil refineries, and production facilities as follows:

- Part 109 establishes the minimum criteria for developing oil-removal contingency plans for certain inland navigable waters by state, local, and regional agencies in consultation with the regulated community (i.e., oil facilities);
- Part 110 prohibits discharge of oil such that applicable water quality standards would be violated or that would cause a film or sheen on or in the water. These regulations were updated in 1987 to adequately reflect the intent of Congress in Section 311(b) (3) and (4) of the Clean Water Act, specifically incorporating the provision "in such quantities as may be harmful.";
- Part 112 deals with oil spill prevention and preparation of Spill Prevention, Control, and Countermeasure Plans. These regulations establish procedures, methods, and equipment requirements to prevent the discharge of oil from onshore and offshore facilities into or upon the navigable waters of the United States. These regulations apply only to non-transportation-related facilities;
- Part 113 establishes financial liability limits; however, these limits were preempted by the Oil Pollution Act of 1990; and
- Part 114 provides civil penalties for violations of the oil spill regulations.

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is responsible for the National Contingency Plan and acts as the lead agency in response to an onshore oil spill. EPA also serves as co-chair of the Regional Response Team, which is a team of agencies established to provide assistance and guidance to the on-scene coordinator during the response to a spill. The EPA also regulates disposal of recovered oil and is

responsible for developing regulations for Spill Prevention, Control, and Countermeasures Plans. Spill Prevention, Control, and Countermeasures Plans are required for non-transportation-related onshore and offshore facilities that have the potential to spill oil into waters of the United States or adjoining shorelines (see above). Other EPA regulations are described below.

Emergency Planning and Community Right-to-Know Act

Under the Emergency Planning and Community Right-to-Know Act, or Title III of the Superfund Amendments and Reauthorization Act of 1986, the EPA requires local agencies to regulate the storage and handling of hazardous materials and requires development of a plan to mitigate the release of hazardous materials. Businesses that manage any of the specified hazardous materials must submit to government agencies (i.e., fire departments) an inventory of the hazardous materials, an emergency response plan, and an employee training program. The business plans must provide a description of the types of hazardous materials/waste on-site and the location of these materials. The information in the business plan can then be used in the event of an emergency to determine the appropriate response action, the need for public notification, and the need for evacuation.

Hazardous Waste Handling Requirements Resource Conservation and Recovery Act and Associated Hazardous and Solid Waste Amendments, 40 CFR 260.

Implementation of Hazardous Waste Handling Requirements Resource Conservation and Recovery Act (RCRA) resulted in the creation of a major federal hazardous waste regulatory program that is administered by the EPA. Under the RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The RCRA was amended by the Associated Hazardous and Solid Waste Amendments, which affirmed and extended the concept of regulating hazardous wastes from generation through disposal. The Hazardous and Solid Waste Amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes. Under the RCRA, individual states may implement their own hazardous waste programs, if the state program is at least as stringent as the federal Hazardous Waste Handling Requirements. The EPA approved California's program to implement federal hazardous waste regulations on August 1, 1992.

Hazardous Materials Management Planning Section 112(r) of the Clean Air Act Amendments of 1990, 40 CFR 68.

The EPA requires facilities that handle listed regulated substances to develop Risk Management Programs (RMP) to prevent accidental releases of these substances. Stationary sources with more than a threshold quantity of a regulated substance are to be evaluated to determine the potential for, and impacts of, accidental releases from that process. Under certain conditions, the owner or operator of a stationary source may be required to develop and submit an RMP. An RMP consists of three main elements: a hazard assessment that includes off-site consequences analyses and a five-year accident history; a prevention program; and an emergency response program. An RMP for the existing facilities was required to be submitted in 1999 and must be updated every five years.

Occupational Safety and Health Administration

OSHA is part of the United States Department of Labor. Congress created OSHA in 1970 to ensure safe and healthful working conditions for workers by setting and enforcing standards and by providing training, outreach, education and assistance. OSHA promulgates a number of relevant regulations related to hazardous materials as discussed below.

Process Safety Management, 29 CFR 1910.119.

Under this section, facilities that use, store, manufacture, handle, process, or move hazardous materials are required to:

1. Conduct employee safety training;
2. Have an inventory of safety equipment relevant to potential hazards;
3. Have knowledge on use of the safety equipment;
4. Prepare an illness prevention program;
5. Provide hazardous substance exposure warnings;
6. Prepare an emergency response plan; and
7. Prepare a fire prevention plan.

In addition, 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals, specifically requires prevention program elements to protect workers at facilities that have toxic, flammable, reactive or explosive materials. Prevention program elements are aimed at preventing or minimizing the consequences of catastrophic releases of chemicals and include process hazard analyses, formal training programs for employees and contractors, investigation of equipment mechanical integrity, and an emergency response plan. The Occupational Safety and Health Administration (OSHA) Process Safety Management regulation CFR 1910.119(a)(2)(ii) applies to oil and gas extraction operations.

Worker Health and Safety, 29 CFR 1910.

OSHA implements regulations under this part to ensure employers provide a healthy and safe work environment that included informing employees of workplace hazards (Hazard Communication, 29 CFR 1910.1200). Along with the California Division of Occupational Safety and Health (DOSH or Cal/OSHA), OSHA's goal is to ensure that employers provide their workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. OSHA 1910 contains several standards that describe requirements for the safe management of hazards associated with processes using, storing, manufacturing, handling, or moving highly hazardous chemicals on-site. It emphasizes the management of hazards through an established comprehensive program that integrates technologies, procedures, and management practices, including communication.

1. 1910.119 (Subpart H) – Process Safety Management of Highly Hazardous Chemicals;
2. 1910.120 (Subpart H) – Hazardous Waste Operations and Emergency Response; and
3. 1910 (Subpart N) – Materials Handling and Storage.

5.6.2.2 State Regulations

State laws address gas and liquid pipelines, oil and gas facilities, and hazardous materials and waste. Each is discussed below.

California Health and Safety Code (H&SC)

1. Division 20, Chapter 6.5, §25100-25249, Hazardous Waste Control;

2. Division 20, Chapter 6.95, §25500, et seq. Hazardous Materials Management Plan and Community Right-to-Know and Hazardous Materials Release Response Plans and Inventory (Business Plan Program);
3. Proposition 65 Compliance, H&SC §25249.5 et seq;
4. H&SC §25340-25392, Carpenter-Presley-Tanner Hazardous Substance Account Act; and
5. H&SC §25531 through 25541, Risk Management and Prevention Program.

California Code of Regulations

1. Title 8, §5189, Process Safety Management of Acutely Hazardous Materials;
2. Title 8, §5192, Hazardous Waste Operations and Emergency Response;
3. Title 14, Division 2, Department of Conservation;
4. Title 19, §2729, Employee Training Program;
5. Title 22, Division 4, Chapter 30, Hazardous Wastes;
6. Title 22, Division 4.5, §§66260 through 67786, Hazardous Waste Requirements; and
7. Title 22, §66265.50 through §66265.56, Contingency/Emergency Response Plan.

Lempert-Keene-Seastrand Oil Spill Prevention and Response Act

The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act created an Administrator appointed by the Governor who has the primary authority in California to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in marine waters of the state. The governor, through the administrator, must provide the best achievable protection of surface waters of the state. The administrator is also the Chief Deputy Director of the CDFW, and as such has been delegated the additional responsibilities of carrying out the statewide water pollution enforcement authority of the CDFW.

Senate Bill 861, adopted in 2014, expanded the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act and the administrator's responsibilities relating to oil spills to cover all waters of the state. The bill also imposed a state-mandated local program. The bill requires the regulators to provide for the best achievable protection of all waters and natural resources of the state. The existing Lempert-Keene-Seastrand Oil Spill Prevention and Response Act requires the administrator (upon request by a local government) to provide a program for training and certification of a local emergency responder designated as a spill response manager by a local government that has jurisdiction over or directly adjacent to waters of the state. This bill made this program optional at the discretion of the administrator.

Hazardous Materials Worker Safety

California OSHA requires that employers have an effective injury and illness prevention program that includes training and instruction on safe work practices. Additionally, the program should include a system for the employer to communicate with the employee with the aim of recognizing and reporting health and safety hazards.

California State Fire Marshal

The Pipeline Safety Division of the California Office of the State Fire Marshal (CSFM) has sole authority for the inspection and enforcement of federal and state regulations for intrastate pipelines within California.

Federal authority is granted through an agreement with the U.S. Department of Transportation, PHMSA. The following sections of state and federal law define the Pipeline Safety Division's authority:

The Elder Pipeline Safety Act of 1981 (California Government Code §51010 through 51019.1)

Gives regulatory jurisdiction to the CSFM for the safety of all intrastate hazardous liquid pipelines and all interstate pipelines used for the transportation of hazardous or highly volatile liquid substances. The law establishes the governing rules for interstate pipelines to be the federal Hazardous Liquid Pipeline Safety Act and federal pipeline safety regulations.

Recent amendments require pipelines to include means of leak prevention and cathodic protection, with acceptability to be determined by the CSFM. New pipelines must also be designed to accommodate passage of instrumented inspection devices (Smart Pigs) through the pipeline.

California Code of Regulations, Title 19 §2000 through 2075, Chapter 14

Addresses hazardous liquid pipeline safety under the CSFM. The chapter includes issues related to annual inspections, fees, operator drug testing, and enforcement proceedings. The annual inspections require the completion of the Intrastate Pipeline Operator Annual Report (form PSD-101) requirements, including pipeline specifications, distances, integrity testing, preventive and mitigative measures, and scheduled projects. Annual inspections include evaluations of the risks based on operator history, integrity testing results, preventive and mitigative measures, leak history and compliance history.

Federal Law 49 U.S.C. §60101-60141

Addresses pipeline safety for gas and liquid pipelines, incorporating inspection and maintenance, excess flow valves, response plans, etc.

49 CFR Part 194

Addresses response plans for onshore pipelines, including worst-case discharges, response plans, training and resources. The response shall include notification procedures, spill detection and mitigation procedures, training and drills, and equipment testing.

49 CFR Part 195

Addresses transportation of hazardous liquids by pipeline and incorporates reporting, design requirements, construction, pressure testing, cathodic protection requirements, operations and maintenance, corrosion control, and integrity management programs.

CSFM Notifications

State law requires pipeline operators to notify the CSFM, Pipeline Safety Division of certain activities or changes in operations. Starting December 2018, pipeline operators must notify the CSFM for the following: ownership change; change of service; hydrostatic testing notification; in-line inspection waiver requests; construction notification; and deferred maintenance requests (see advisory bulletin 2016-05).

Senate Bill 295 – Pipeline Safety Inspections

Requires, among other things, that the CSFM annually inspect all intrastate pipelines and operators of intrastate pipelines under its jurisdiction and requires the CSFM to adopt regulations needed to implement these requirements. Requires the submissions of the PSD-101 form annually that contains data

and validated inspection results from the previous calendar year. Regulations pursuant to Senate Bill 295 have been fully implemented.

Assembly Bill 864 - Requirements For New Or Replacement Pipeline Near Environmentally And Ecologically Sensitive Areas In The Coastal Zone:

As a result of the May 19, 2015, pipeline incident at Refugio Beach in Santa Barbara County, Assembly Bill 864 mandated the CSFM to develop regulations requiring the use of best available technology (BAT) on new, replacement, or retrofitted pipelines near (defined as within 0.5 miles) environmentally and ecologically sensitive areas in the Coastal Zone. The requirements include the following (as per August 28, 2020, final text, California Code of Regulations [CCR], Title 19, Division 1, Chapter 14, Article 7, Section 2100-2120):

1. Submittal of plans to equip new pipelines or to retrofit existing pipelines with BAT, including the installation of leak detection technology, automatic shutoff systems, emergency flow restrictive devices (EFRD), or remote-controlled sectionalized block valves, or any combination of these technologies, based on a risk analysis conducted by the operator, to reduce the amount of oil released in an oil spill to protect state waters and wildlife;
2. Coastal Zone and Environmentally and Ecologically Sensitive Areas datasets are used to define sensitive areas;
3. Risk analysis shall be prepared that include: piping and instrument diagrams; maps; a spill analysis including a trajectory analysis to determine potential rates of flow, direction of flow, and time of travel of a worst-case discharge; worst-case discharge volume based on response time, pipeline flow rate, drainage volume; training requirements for best available technologies; updating every five years;
4. Implementation plans to detail the time frame to implement the proposed upgrades;
5. Testing requirements include leak detection testing every three years, annual tests of automatic shutoff systems and EFRDs;
6. If a pipeline has a release that affects a sensitive area, the pipeline becomes subject to the article (if it was not already) and shall prepare a risk analysis;
7. Pipelines operating by gravity or at a stress level of 20 percent or less of the specified minimum yield strength of the pipe can be exempted;
8. The dates of compliance and BAT in place are set as seven months after the regulation effective date for new or replacement pipelines and 30 months after the regulation effective date for existing pipelines;
9. BAT regulated pipelines include all pipelines that meet the definition of a pipeline under California Government Code and are within ½ mile of the coastal zone and/or the environmentally and ecologically sensitive area. Per the BAT regulation, the environmentally and ecologically sensitive area is defined by the Administrator of the OSPR pursuant to subdivision(d) of Section 8574.7 of the California Government Code;
10. The BAT regulated pipelines include any regulated pipelines under California Government Code that is within a half mile of an environmentally and ecologically sensitive area or ecologically sensitive area with a connection to the coastal zone;
11. If a segment of regulated pipelines passes within ½ mile of coastal zone and/or environmentally and ecologically sensitive area, the entire line is subject to the BAT regulation; and

12. On May 1, 2021, the State Fire Marshal shall commence enforcement against any new or replacement pipeline; On October 1, 2021, the State Fire Marshal shall commence enforcement against an operator of an existing pipeline that is required to submit a risk analysis and a plan to retrofit existing pipelines with the BAT; On April 1, 2023, the State Fire Marshal shall commence enforcement of this Article against an operator of an existing pipeline that is required to complete retrofit of existing pipelines with the BAT.

California Public Utilities Commission General Order No. 112-F, State of California Rules Governing Design, Construction, Testing, Operation, and Maintenance of Gas Gathering, Transmission, and Distribution Piping Systems

The purpose of General Order No. 112-F is to establish, in addition to 49 CFR Parts 186-199 (federal pipeline safety regulations), minimum requirements for the design, construction, quality of materials, locations, testing, operations and maintenance of facilities used in the gathering, transmission and distribution of gas to safeguard life or limb, health, property and public welfare and to provide that adequate service will be maintained by gas operators under the jurisdiction of the California Public Utilities Commission. General Order No. 112-F is incorporated in addition to the federal pipeline safety regulations, specifically, Title 49 CFR Parts 190-199 which govern the design, construction, testing, operation, and maintenance of gas piping systems in California. General Order No. 112-F does not supersede the federal pipeline safety regulations, but rather supplements the federal regulations.

California Accidental Release Prevention Program

The California Accidental Release Prevention (CalARP) program mirrors the federal RMP except that it adds external events and seismic analysis to the requirements and includes facilities with lower inventories of materials. A CalARP or RMP for federal requirements is a document prepared by the owner or operator of a stationary source containing detailed information including:

1. Regulated substances held on-site at the stationary source;
2. Off-site consequences of an accidental release of a regulated substance;
3. The accident history at the stationary source;
4. The emergency response program for the stationary source;
5. Coordination with local emergency responders;
6. Hazard review or process hazard analysis;
7. Operating procedures at the stationary source;
8. Training of the stationary source's personnel;
9. Maintenance and mechanical integrity of the stationary source's physical plant; and
10. Incident investigation.

Hazardous Waste Control Law

The Hazardous Waste Control Law is administered by the California Environmental Protection Agency, Department of Toxic Substances Control, which has adopted extensive regulations governing the generation, transportation, and disposal of hazardous wastes. These regulations impose cradle-to-grave requirements for handling hazardous wastes in a manner that protects human health and the environment. The Hazardous Waste Control Law regulations establish requirements for identifying,

packaging, and labeling hazardous wastes. They prescribe management practices for hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. Hazardous waste is tracked from the point of generation to the point of disposal or treatment using hazardous waste manifests. The manifests list a description of the waste, its intended destination, and regulatory information about the waste.

Hazardous Materials Management Planning

The Office of Emergency Services, in support of local government, coordinates the overall state agency response to major disasters. The Office of Emergency Services is responsible for assuring the state's readiness to respond to and recover from natural, man-made, and war-caused emergencies, and for assisting local governments in their emergency preparedness, response, and recovery efforts. During major emergencies, the Office of Emergency Services may call upon all state agencies to help provide support. Due to their expertise, the California National Guard, California Highway Patrol, Department of Forestry and Fire Protection, Conservation Corps, Department of Social Services, and Caltrans are the agencies most often asked to respond and assist in emergency response activities.

California Education Code (§17210 et seq.)

The California Education Code (§17210 et seq.) describes the requirements of school facilities near or on known or suspected hazardous materials sites, or near facilities that emit hazardous air emissions, handle hazardous or acutely hazardous materials, substances, or waste (5 CCR 13). The code requires that, prior to commencing the acquisition of property for a new school site, an environmental site investigation be completed to determine the health and safety risk (if any) associated with a site.

CCR, Title 5, §14010 (School Site Selection Standards), and California Education Code §17212

Within the CCR Title 5, and under the existing Leroy F. Greene School Facilities Act of 1998 (5 CCR 13), there are certain criteria described for selecting or siting schools in regards to power line setbacks, railroad track setbacks, pipeline and fuel storage tanks, and hazardous waste setbacks (CDE 2007). The following is a partial list of minimum setback distances for school sites:

1. Power lines – 1,500 feet;
2. Railroad tracks – 1,500 feet;
3. On-site fuel tank storage (only listed as "near"); and
4. On-site hazardous pipelines or hazardous pipeline easements – 1,500 feet.

5.6.2.3 Local Regulations

Santa Barbara County

Petroleum Code

This code sets forth specific regulations for onshore oil and gas development that are intended to protect the health, safety, public welfare, physical environment and natural resources of the County. Sections 25-21 through 25-43 include specific requirements for well design, hazardous emission control, fire prevention, and well and equipment spacing, abandonment and restoration procedures. The Petroleum Code also provides for annual County inspections of lease sites, tanks and well sites, including associated pipelines, to ascertain conformity with the standards set forth in the Code.

Land Use and Development Code

Development standards applicable to oil and gas pipelines are listed in Section 35.52.080.B of the Land Use and Development Code:

a. *Zone regulations not applicable*. The regulations in Article 35.2 (Zones and Allowable Land Uses), for the applicable zones in which oil and gas pipelines are allowed, shall not apply to the oil and gas pipelines.

b. *Delivery hours*. Except in an emergency, materials, equipment, tools, or pipes shall not be delivered to or removed from a pipeline construction site through streets within a residential zone between the hours of 9 p.m. and 7 a.m. of the next day.

c. *Post-installation requirements*. After completion of backfilling and compacting of the pipeline ditch, the site shall be returned to grade where practical and the excess soil shall be removed to an appropriate disposal site.

d. *Drainage*. During construction of the pipeline, there shall not be permanent blocking of surface drainages.

e. *Location of pipeline corridor*. A pipeline corridor shall be sited so as to avoid significant impacts to resources (e.g., aquatic habitats, and archaeological areas) to the maximum extent feasible.

f. *Spills*. Where pipeline segments carrying hydrocarbon liquids pass through sensitive resource areas (e.g., aquatic habitats) as identified by the project environmental review, provisions identified in the environmental review shall be applied to minimize the amount of liquids released in the sensitive areas in the event of a spill. The potential for damage in those areas shall be minimized by considering spill volumes, duration, and trajectories in the selection of a pipeline corridor. In addition, appropriate measures for spill containment and cleanup (e.g., catch basins to contain a spill) shall be included as part of the required emergency response plan.

g. *Burial within corridor*. Permits for new pipeline construction shall require engineering of pipe placement and burial within a corridor to minimize incremental widening of the corridor during subsequent pipeline projects, unless the proposed route is determined to be unacceptable for additional pipelines. Storage tanks associated with the transfer of hydrocarbons to pipelines or tanker trucks may not be located closer than 500 feet to an occupied residence within a residential or commercial zone (Land Use and Development Code §35.52.050.B.b).

System Safety and Reliability Review Committee

The System Safety and Reliability Review Committee (SSRRC) is responsible for identifying and requiring mitigation of possible design and operational hazards for oil and gas projects prior to construction, during project operations, and for project modifications. The goal of SSRRC review is to substantially reduce the risks of project-related hazards that may result in loss of life and injury and/or damage to property and the natural environment. This process occurs through the review and approval of project design, operation and maintenance plants, and facility inspections and audits during operations. The SSRRC consists of representatives from the Planning and Development Department (Energy, Minerals & Compliance and Building & Safety Divisions), County Fire Department, Environmental Health Services Hazardous Materials Unit, Air Pollution Control District and County Executive Office (Office of Emergency Management). Other County departments participate for specific issues as needed. The SSRRC may employ a third-party technical review to help identify and correct possible design and construction hazards and to ensure mitigation of potential public risk prior to construction and for subsequent design modifications. The SSRRC also oversees the development and implementation of a Safety Inspection,

Maintenance, and Quality Assurance Program (SIMQAP). The SIMQAP is a guidance document that identifies a facility's safety, safety devices, equipment preventative maintenance, and operation processes and procedures. SSRRC oversight and preparation of a SIMQAP may be required for specific projects as conditions of approval by the County decision-makers.

San Luis Obispo County

Energy Element and Conservation and Open Space Element

In 1995, the County of San Luis Obispo adopted the Energy Element as part of the County's General Plan, subsequently merged with the Conservation and Open Space Element. The Conservation and Open Space Element contains a goal of protecting public health, safety, and environment and several policies that promote the stated goal. The applicable policies include:

1. Policy 56. Encourage existing and proposed facilities to focus on measures and procedures that prevent oil, gas, and other toxic releases into the environment. This policy is to ensure that facilities: (1) take measures to prevent releases and spills; (2) prepare for responding to a spill or release; and (3) provide for the protection of sensitive resources. A review of a facilities spill response plan, or reports from other agencies, should be completed to monitor compliance.
2. Policy 64. Guideline 64.1. To reduce the possibility of injury to the public, facility employees, or the environment, the Applicant shall submit an emergency response plan which details response procedures for incidents that may affect human health and safety or the environment. The plan shall be based on the results of the comprehensive risk analysis. In the case of a facility modification, the existing response plan shall be evaluated by the safety review committee and revisions made as recommended.
3. Flammable and Combustible Liquid Storage. County Coastal Zone Land Use Ordinance Section 23.06.126 includes requirements for flammable and combustible liquid storage relating to: applicability, permit requirements, limitation on use, limitation on quantity, setbacks, and including California Department of Forestry and Fire Prevention (CAL FIRE) recommendations, as applicable. Without approval through a Development Plan, aboveground storage limits of combustible liquid is 20,000 gallons and 2,000 gallons for flammable liquids.

Kern County

Kern County General Plan (KCGP)

The Project area is located within the Kern County General Plan (KCGP) area and, therefore, would be subject to applicable policies and measures of the KCGP. The Land Use, Conservation, and Open Space Element, Circulation Element, Safety Element, and Energy Element of the KCGP includes goals, policies, and implementation measures related to hazards and hazardous materials that apply to the Project, as described below.

Chapter 1. Land Use, Conservation, and Open Space Element.

1.4 Public Facilities and Services

Goals

Goal 9. Serve the needs of industries and Kern County residents in a manner that does not degrade the water supply and the environment and protect the public health and safety by avoiding surface and

subsurface nuisances resulting from the disposal of hazardous wastes, irrespective of the geographic origin of the waste.

Implementation Measures

Implementation Measure N. Secure complete and accurate information on all hazardous wastes generated, handled, stored, treated, transported, and disposed of within or through Kern County.

2.5.4. Transportation of Hazardous Materials

Goals

Goal 1. Reduce risk to public health from transportation of hazardous materials.

Policies

Policy 1. The commercial transportation of hazardous material, identification and designation of appropriate shipping routes will be in conformance with the adopted Kern County and Incorporated Cities Hazardous Waste Management Plan.

Policy 2. Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials.

Chapter 4. Safety Element

4.2. General Provisions

Goals

Goal 4. The County shall encourage extra precautions be taken for the design of significant lifeline installations, such as highways, utilities, and petrochemical pipelines.

4.3. Seismic Safety

Policy

Policy 1. The County shall require development for human occupancy to be placed at a location away from an active earthquake fault in order to minimize safety concerns.

Implementation Measures

Implementation Measure I. Design significant lifeline installations, such as highways, utilities, and petrochemical pipelines which cross an active fault, to accommodate potential fault movement without prolonged disruption of essential service or creating threat to health and safety.

4.9. Hazardous Materials

Implementation Measures

Implementation Measure A. Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent on-site hazards from affecting surrounding communities in the event of inundation.

Chapter 4.6. Wildland and Urban Fire

Hazard Identification

Access and Evacuation Routes - Good planning principles, as well as existing policies and laws, dictate that all developments must be planned with circulation routes that will assure safe access for fire and other emergency equipment. The circulation routes must include secondary means of ingress and egress, consistent with topography, to meet emergency needs.

The general circulation routes are provided throughout the County by federal, state, and County-maintained road systems which are adequate for access and evacuation. State and County laws regulate the standards for new public circulation routes.

Private circulation routes that are not maintained by the state or County are subject to the standards set forth in Kern County Ordinance No. G-1832.

Clearance of Vegetative Cover for Fire Control - In 1963 the State of California enacted the Public Resources Code clearance law. This is a minimum statewide clearance law of flammable vegetative growth around structures, especially in brush- and tree-covered watershed areas. The enactment of a local ordinance is necessary where more restrictive fire safety clearance measures are desirable to meet local conditions.

Fuel Breaks and Firebreaks - Fuel breaks and/or firebreaks separating communities or clusters of structures from the native vegetation may be required. Such fuel breaks may be “greenbelts,” as all vegetation need not be removed but thinned or landscaped to reduce the volume of fuel.

All fuel and firebreaks are required to meet the minimum design standards of the Kern County Fire Chief.

The Fire Department’s Chief may require a fire plan for a development during the critical fire season. This plan should reflect the proposed course of action for fire prevention and suppression.

The parcel size and setback distances of buildings placed thereon should be such that adequate clearance of flammable vegetation cover may be performed within the limits of the owner’s parcel of land.

Should the owner of a property fail to apply the required firebreak clearance, following proper notice, the County may elect to clear the firebreak vegetation and make the expense of the clearing a lien against the property upon which the work was accomplished.

Hazardous Fire Area - The Hazardous Fire Areas consists mainly of wildlands, which are mountain and hill land in an uncultivated, more or less natural state, covered with timber, wood, brush, and grasslands. This area includes some urban influence and agricultural use, such as exists around Isabella Lake and the Kern River, Woody/Glennville, Tehachapi/Cummings Valley, and Lebec/Frazier Park/Lake of the Woods.

The wildlands provide prime habitats for deer, mountain lions, bears, kit foxes, quail, chucker, wild turkeys, and condors. They also harbor fifteen identified and important rare botanic communities and vegetation associations.

The Kern County Hazardous Fire Area was established by an amendment to the Uniform Fire Code, Section 1.49H under Section 4016 of the Kern County Ordinance Code.

The boundaries of the Hazardous Fire Area are determined and publicly announced before the start of each annual “fire season” and is normally the period from April 15 to December 1 of each year, except when the Fire Chief extends this period.

The wildlands include valuable watersheds that must be preserved for receiving and passing water into surface streams and underground storage. Protection of the watersheds will prevent erosion and flood damages.

For the protection of our wildlands we must consider all factors which will aid in fulfilling the policy stated in the California Environmental Quality Act, Public Resources Code Section 21000 et seq., to "create and maintain conditions under which man and nature can exist in productive harmony to fulfill the social and economic requirements of present and future generations."

In implementing their Fire Prevention Program, Fire Department personnel periodically inspect the areas around all buildings for accumulations of flammable material and closure of openings of vacant buildings.

Policies

Policy 1. Require discretionary projects to assess impacts on emergency services and facilities.

Policy 2. The County will encourage the promotion of public education about fire safety at home and in the work place.

Policy 3. The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Policy 4. Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 5. Require that all roads in wildland fire areas are well marked and that homes have addresses prominently displayed.

Policy 6. All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measures

Implementation Measure A. Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Kern County Multi-Jurisdictional Hazard Mitigation Plan (2020)

The purpose of the hazard mitigation plan is to reduce or eliminate long-term risk to people and property from natural hazards and their effects in Kern County, California. This plan has been prepared to meet the Disaster Mitigation Act of 2000 requirements. The plan and planning process lay out the strategy that will enable Kern County to become less vulnerable to future disaster losses.

Kern County Hazardous Waste Management Plan (1988)

State Assembly Bill 2948 (1986) authorized local governments to develop comprehensive hazardous waste management plans. The intent of each plan is to ensure that adequate treatment and disposal capacity is available to manage the hazardous wastes generated within the local government's jurisdiction. The Kern County and Incorporated Cities Hazardous Waste Management Plan (Hazardous Waste Plan) was first adopted by Kern County and each incorporated city before September 1988 and was subsequently approved by the State Department of Health Services (Kern County 1991). The Hazardous Waste Plan was updated and incorporated by reference into the Kern County General Plan in 2004 as permitted by Health and Safety Code Section 25135.7(b) and thus must be consistent with all other aspects of the Kern County

General Plan (Kern County 2009). The Hazardous Waste Plan provides policy direction and action programs to address current and future hazardous waste management issues that require local responsibility and involvement in Kern County. In addition, the Hazardous Waste Plan discusses hazardous waste issues and analyzes current and future waste generation in the incorporated cities, county, and state and federal lands. The purpose of the Hazardous Waste Plan is to coordinate local implementation of a regional action to effect comprehensive hazardous waste management throughout Kern County. The action program focuses on development of programs to equitably site needed hazardous waste management facilities; to promote on-site source reduction, treatment, and recycling; and to provide for the collection and treatment of small quantity hazardous waste generators. An important component of the Hazardous Waste Management Plan is the monitoring of hazardous waste management facilities to ensure compliance with federal and state hazardous waste regulations. The siting criteria and any subsequent environmental documentation required pursuant to CEQA would also ensure the mitigation of adverse impacts associated with the siting of any new hazardous waste facility.

Kern County Certified Unified Program Agency

The Certified Unified Program Agency (CUPA) was developed to consolidate the administration of hazardous materials programs. In the Kern County, the CUPA is the Environmental Health Services Division. The city of Bakersfield's CUPA is the Bakersfield Fire Department. Under CUPA, site inspections of aboveground storage tanks, underground storage tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management and response plans, and the California Fire Code are consolidated in a single inspection. These departments also provide emergency response to hazardous materials events.

5.6.2.4 Fire Risk, Prevention, and Protection

Santa Barbara County

For unincorporated areas of the county, as well as smaller cities with cooperative agreements with the County, fires are generally the responsibility of the SBCFD.

Santa Barbara County Fire Development Standards

The following Santa Barbara County Fire Department standards address the following issues:

- Private Road and Driveway;
- Fire Hydrant Spacing and Flow Rates;
- Stored Water Fire Protection Systems;
- Automatic Fire Sprinkler System;
- Automatic Alarm System;
- Defensible Space; and
- Access Gates.

The following Santa Barbara County Fire Department standards are applied in evaluating impacts associated with the proposed Project.

- The emergency response thresholds include fire department staff standards of one on-duty firefighter per 4,000 persons (generally one engine company per 12,000 people, assuming three firefighters per station). The emergency response time standard is approximately five to six minutes;

- The ability of the County's engine companies to extinguish fires (based on maximum flow rates through hand-held line) meets state and national standards assuming a 5,000- square-foot structure. Therefore, in any portion of the fire department's response area, all structures over 5,000 square feet are an unprotected risk (a significant impact) and therefore should have internal fire sprinklers;
- Access road standards include a minimum width (depending on number of units served and whether parking would be allowed on either side of the road), with some narrowing allowed for driveways. Cul-de-sac diameters, turning radii, and road grade must meet minimum fire department standards based on project type; and
- Two means of egress may be needed, and access must not be impeded by fire, flood, or earthquake. A significant impact could occur in the event any of these standards is not adequately met.

San Luis Obispo County

Code Section 22.50 – Fire Safety: This section provides standards for precautions to minimize hazards to life and property in the event of fire. In rural areas, a Fire Safety Plan must be submitted to the CalFire or designated appointee. It must include the location of water storage, storage of fuel, explosives, flammable or combustible liquids and gases, and identification of the extent of vegetative fuel reduction areas.

San Luis Obispo County Fire Department standards include the following:

1. Defensible Space, water system verifications and fire watch requirements;
2. Water supply, water supply tanks;
3. Accessibility;
4. Road standards; and
5. Private driveway and access.

Kern County

Kern County Fire Code: Kern County has adopted, by reference, portions of the California Building Standards Code and the UFC, with modifications and amendments, in Chapter 17.32 of the Kern County Code of Building Regulations (Fire Code). The purpose of this code is to prescribe the minimum requirements necessary to establish a reasonable level of fire safety to protect life and property from hazards created by fire, explosion, and dangerous conditions.

The Kern County Fire Code defines a hazardous fire area as any land that is covered with grass, grain, brush, or forest and situated (e.g., in an inaccessible location) so that a fire originating upon such land would present an abnormally difficult job of suppression and would result in great and unusual damage through fire or the resulting erosion.

Kern County Fire Department Standards

Kern County Fire Department has a number of codes and requirements including the following:

1. Knox Box requirements;
2. Fire Code Ordinance 8866;
3. Fire Extinguishers;
4. Fire Sprinkler Systems; and

5. Underground Fuel Storage.

5.6.2.5 Other Applicable Guidelines, National Codes and Standards

The following is a list of professional association codes and standards that also may be incorporated into federal, state, and local regulations by reference.

1. Safety and Corrosion Prevention Requirements — American Society of Mechanical Engineers (ASME), NACE International (formerly National Association of Corrosion Engineers), American National Standards Institute (ANSI), American Petroleum Institute (API);
2. ASME and ANSI B16.1 Cast Iron Pipe Flanges and Flanged Fittings;
3. ASME and ANSI B16.9, Factory-Made Wrought Steel Butt Welding Fittings;
4. ASME and ANSI B31.1a, Power Piping;
5. ASME and ANSI B31.4a, Current Edition, Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols;
6. NACE Standard RP0190-95, Item No. 53071. Standard Recommended Practice External Protective Coatings for Joints, Fittings, and Valves on Metallic Underground or Submerged Pipelines and Piping Systems;
7. NACE Standard RP0169-07, Item No. 53002. Standard Recommended Practice Control of External Corrosion on Underground or Submerged Metallic Piping Systems; cited in regulations (latest edition 2013);
8. NACE MR-01-75, ISO 15156, Petroleum and natural gas industries – Materials for use in H2S-containing environments in oil and gas production, Parts 1, 2 and 3;
9. API 49, Recommended Practice for Drilling and Well Service Operations Involving Hydrogen Sulfide;
10. API 54, Recommended Practice for Occupational Safety for Oil and Gas Well Drilling and Servicing Operations;
11. API 510 Pressure Vessel Inspection Code;
12. API 570 Piping Inspection Code, applies to in-service metallic piping systems used for the transport of petroleum products;
13. API 572 Inspection of Pressure Vessels;
14. API 574 Inspection Practices for Pipe System Components;
15. API 575 API Guidelines and Methods for Inspection of Existing Atmospheric and Low-pressure Storage Tanks;
16. API 576 Inspection of Pressure-Relieving Devices;
17. API 651 Cathodic Protection of Aboveground Storage Tanks;
18. API 653, Tank Inspection, Repair, Alteration, and Reconstruction;
19. API 1130 Computational Pipeline Monitoring;
20. API 1175 Pipeline Leak Detection Management Systems;
21. API 2610, Design, Construction, Operation, Maintenance, and Inspection of Terminal & Tank Facilities; and

22. API Spec 12B – Bolted Tanks for Storage of Production Liquids.

Fire and Explosion Prevention and Control, National Fire Protection Agency Standards

1. National Fire Protection Association (NFPA) 11 Foam Extinguishing Systems;
2. NFPA 12 A&B Halogenated Extinguishing Agent Systems;
3. NFPA 15 Water Spray Fixed Systems;
4. NFPA 20 Centrifugal Fire Pumps;
5. NFPA 30 Flammable and Combustible Liquids Code and Handbook;
6. CEC California Electrical Code; and
7. CFC California Fire Code.

5.6.2.6 Significance Thresholds

CEQA Significance Thresholds

California Environmental Quality Act

Impacts resulting from hazards and hazardous materials, including risk of upset, are evaluated pursuant to the CEQA Appendix G (2019). As defined therein, a project will result in a significant impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school;
- Be located on a site which is included on a list of 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;
- 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, result in a safety hazard or excessive noise for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Santa Barbara County Public Safety and Risk of Upset Thresholds

Santa Barbara County adopted Public Safety Thresholds in August 1999. The County incorporated these thresholds into its Environmental Thresholds and Guidelines Manual (SBC 2021). The thresholds provide three zones—green, amber, and red—for guiding a determination of significance or insignificance of project specific impacts, based on the estimated frequency and consequences of an accident that would cause fatalities or serious injuries to the public (see Figure 5.6-2). In addition, a Safety Element Supplement was adopted in February 2000 covering hazardous materials (SBC 2000). The Safety Element

defines unacceptable risk in a manner that guides consistent and sound land use decisions involving hazardous facilities. The Safety Element also defines criteria applicable to new development as well as to modifications to existing development if those modifications increase risk.

The public safety thresholds do not address risk of environmental damage. The threshold applied in previous EIRs for risk of significant environmental impact due to accidental spills is as follows: an impact of spills would be significant if operations would increase the probability or volume of oil spills into the environment.

The County requires a QRA to be conducted on the potential for public exposure from projects that involve the storage or transport of hazardous materials. In order to determine the potential level of public safety impacts from risk of upset events, the Project is evaluated against Table 5.6-2, the Santa Barbara County's Potential Significance Classes for Risk and Figure 5.6-2, Santa Barbara County Fatality and Injury Risk Thresholds.

The injury and fatality risk profiles of a project are generated from the modeling completed as part of the QRA and are depicted as FN (Frequency Number) curves plotted on the societal risk graphs and which fall in the green, amber, or red zone (see Figure 5.6-2).

Table 5.6-2 County of Santa Barbara Potential Significance Classifications for Project Risks

Impact Classification	Description
Significant and Unavoidable Impacts	Significant and unavoidable impacts apply to adverse impacts that the County considers unavoidable and significant (i.e., cannot be mitigated to insignificance via feasible measures). The County considers a societal risk spectrum that falls in the red or amber zones after application of all feasible mitigation to be an unavoidable impact. Unreasonable risk shall be determined for each project individually, based on policies provided in the Safety Element and other relevant policies and codes. Lacking any such determination, project approval requires a statement of overriding considerations by the applicable authority, showing that the benefits of the proposed development exceed its adverse impacts to public safety.
Significant but Mitigable Impacts	Significant but mitigable impacts apply to adverse impacts that the County considers significant but avoidable through application of feasible mitigation (i.e., mitigation can render the impact to be insignificant). The County considers a societal risk spectrum that falls in either the red or amber zones to be a significant impact. Such risk is considered a significant but mitigable impact if application of feasible mitigation is sufficient to lower the risk spectrum so that it falls fully within the green zone.
Insignificant Impacts	Insignificant applies to adverse impacts that the County considers to be insignificant for purposes of complying with CEQA. The County considers a societal risk spectrum that falls completely in the green zone to be an insignificant impact to public safety and no mitigation is required for purposes of compliance with CEQA.
Beneficial Impacts	Impacts beneficial to the environment.

Source: SBC 2021
Key:
CEQA = California Environmental Quality Act

The County's FN curves were originally developed based upon the Netherlands and the United Kingdom's research and guidance on societal risk associated with facilities handling hazardous materials. The societal risk criteria developed by the United Kingdom Health and Safety Executive (UKHSE) for facilities handling hazardous materials is discussed in a guidance document titled *Reducing Risks, Protecting People* (UKHSE 2001). The UKHSE Hazardous Installation Directorate (HID) also developed an annex to this document titled *Societal Risk and Societal Concern* that specifically addresses societal concerns and societal risk and defines a set of acceptable and unacceptable societal risk areas for specific projects. The determinations

of acceptable and unacceptable social risk outlined in the aforementioned document emulate the green, amber, and red zones that are currently used by Santa Barbara County.

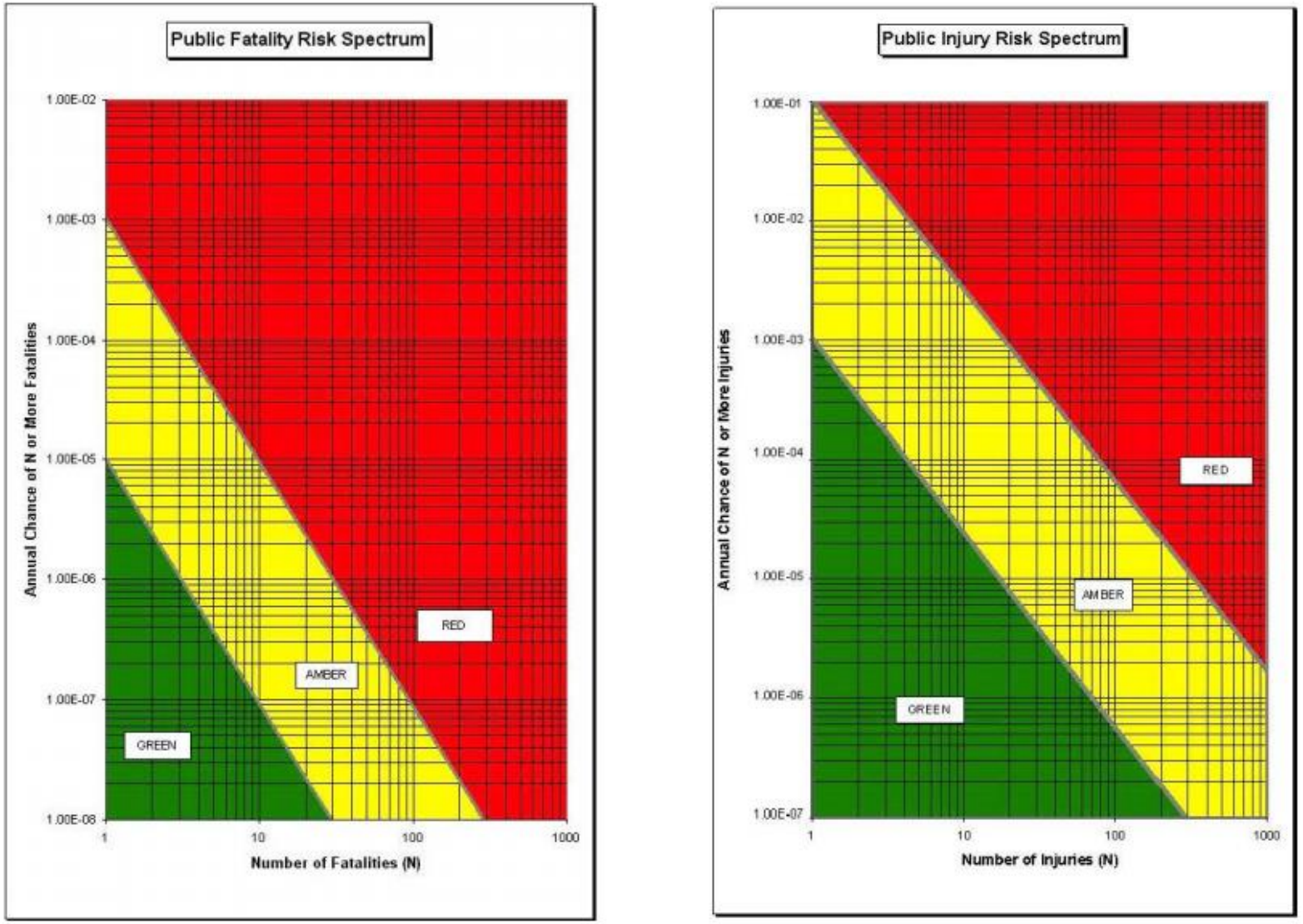
The UKHSE HID's annex document *Societal Risk and Societal Concern,* includes guidance on acceptable and unacceptable levels of risk for multiple projects (i.e., cumulative projects). The UKHSE HID's annex document asserts that when multiple sites contribute to societal risk the unacceptable region of risk will be taken an order of magnitude higher than the corresponding line for project specific societal risk (UKHSE 2001).

At this time, Santa Barbara County does not currently have formally adopted significance criteria and thresholds for assessing cumulative risk. Therefore, in order to assess cumulative risk of upset impacts, the County will utilize the guidance provided by the UKHSE that the green, amber and red areas of the FN curves shown in Figure 5.6-2 are shifted up one order of magnitude for cumulative risk. In assessing the significance of cumulative risk of upset impact the classifications in Table 5.6-2 would apply.

Occupational safety or risk is governed by state and federal OSHA standards and is considered 'voluntary' risk. Voluntary risk addresses exposure to potential hazards associated with an activity, such as driving a car, work activities and others, that is consciously undertaken by an individual and is evaluated according to different standards than those applied in assessing involuntary exposure. The public safety thresholds addressed under this EIR do not apply to occupational safety.

The Santa Barbara County Fire Department standards are also applied in evaluating impacts associated with the proposed Project (see regulatory section above, Section 5.6.2.4 Fire Risk, Prevention, and Protection).

Figure 5.6-2 Santa Barbara County Project Specific Fatality and Injury Risk Thresholds



Source: SBC 2000

San Luis Obispo County Thresholds

San Luis Obispo County relies on the CEQA guidelines Appendix G for thresholds. The San Luis Obispo County Fire Standards are also applicable (see Section 5.6.2.4 Fire Risk, Prevention, and Protection).

Kern County Thresholds

Kern County relies on the CEQA guidelines Appendix G for thresholds. The Kern County Fire Department standards are also applicable (see Section 5.6.2.4 Fire Risk, Prevention, and Protection).

CEQA Thresholds Used in this Document

The Santa Barbara County thresholds are used for CEQA in this document.

NEPA Significance Thresholds

The NEPA significance thresholds are the same as the CEQA significance thresholds discussed above.

5.6.3 Proposed Project

The proposed Projects environmental impacts, mitigation measures, residual impacts, CEQA significance conclusions and cumulative effects are discussed below.

5.6.3.1 Environmental Impacts

A release is defined as a loss of containment of the pipeline system and involves a release of liquid (e.g., crude oil) or gas (e.g., natural gas) depending on the pipeline system. A spill is a release of liquids, in this case crude oil.

The proposed Project could present risks due to potential for accidental spills and fires associated with the pipelines, pump stations, gas pipeline, and existing SYU facilities. The crude oil pipeline and the associated facilities could present risks due to the potential for accidental oil spills and fires associated with crude oil spills, both of which could cause impacts to the environment and public health. The gas pipeline could also present risks due to the potential for a release of natural gas that could result in a fire, causing the potential for thermal impacts to the public. The existing equipment at the SYU (i.e., from the Platforms and the LFC equipment) would also generate risks during the proposed Project operation phase. These risks are discussed in Section 5.6.3.5.

Issues related to impacts to public health from upset conditions, impacts from a spill, impacts to schools, and impacts due to wildfires are discussed in more detail in the sections below.

Applicant Proposed Avoidance and Minimization Measures (AMMs)

The Applicant has incorporated several Applicant-proposed Avoidance and Minimization Measures (AMMs) into the Project, most of which would be regulatory requirements but are included herein for emphasis, to ensure compliance and for full disclosure due to their importance. A list of the risk-related AMMs are presented in Table 5.6-3. The measures listed are all Project design features and have been included in the impact estimates summarized below.

Table 5.6-3 Applicant-Proposed AMMs Related to Risk of Upset

AMM #	Measure
AMM - Risk-01	Conduct an Excess Flow Restrictive Device (EFRD) study and the installation of a motor-operated valves (MOVs) and check valves that would reduce the size of spills.
AMM - Risk-02	Conduct a surge study identifying issues and measures in place to ensure protection of the pipeline equipment given emergency valve closures and emergency operations.
AMM - Risk-03	Installation of at least one belowground warning tape above each pipeline.
AMM - Risk-04	Use of leak detection SCADA system with 24-hour per day monitoring and control.
AMM - Risk-05	Compliance with a range of regulatory requirements, including those related to in-line inspection requirements, cathodic protection, pipeline route markers, etc.
AMM - Risk-06	Upgrades to the monitoring system, emergency response plans, and operator training as per the PHMSA corrective action orders requirements.
AMM - Risk-07	Security fencing around all valve and pump stations.

Notes: Based on Plains 2018.
Key:
AMM = avoidance and minimization measure
EFRD = emergency flow restriction device
MOV = motor-operated valve
PHMSA = Pipeline and Hazardous Materials Safety Administration
SCADA = supervisory control and data acquisition

Risks to Public Safety

This impact describes the potential release sizes and the estimated frequency of releases from the proposed Project pipeline systems and the potential for immediate (fires, etc.) health impacts on the public. Both the proposed Project crude oil pipeline and the gas pipeline are examined, and the risks combined to compared to the risk thresholds. Normal operations would not involve any release of materials. Upset conditions could result in a release of materials and potential impacts and are discussed below.

Impact #	Impact Description	Phase	Impact Classification
RISK.1	The proposed Project could generate risks to public safety and a significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Operations: Accidental Spill	Insignificant

In order to define a "significant hazard" related to upset conditions, this analysis utilizes a quantitative approach to estimating risk levels as specified in the Santa Barbara County CEQA Thresholds Guidelines Manual (SBC 2021). Public health risk related to the crude oil pipeline and the natural gas pipeline are discussed below. Impacts to the environment are discussed in RISK.2 below.

Crude Pipeline

The spill size from a crude oil pipeline is a function of a number of parameters including the location of the spill relative to the terrain, the location of valve stations and check valves, the pipeline diameter, and the pipeline throughput rate. The crude oil that would spill out of a leak or rupture would be composed of the pumping rate of the crude oil through the pipeline plus the drain down volume. The drain down volume is the volume of crude oil that would drain from a hole in the pipeline. For a rupture or leak located at a low point on the pipeline, the drain down volume could be substantial. For a rupture or leak located at a high point on the pipeline, the drain down volume could be much smaller.

In the event of a pipeline spill, the leak detection system should detect and shut down the pipeline by stopping pumps and closing valves. Leak detection systems operate by monitoring the flow rates into and out of the pipeline system (called volume balancing) as well as monitoring the pressures along the pipeline to identify any operating parameters that might indicate a potential release, such as sudden drops in pressure or imbalances in flow levels. Temperatures are also monitored to estimate "line pack," which accounts for the compressibility of the fluids.

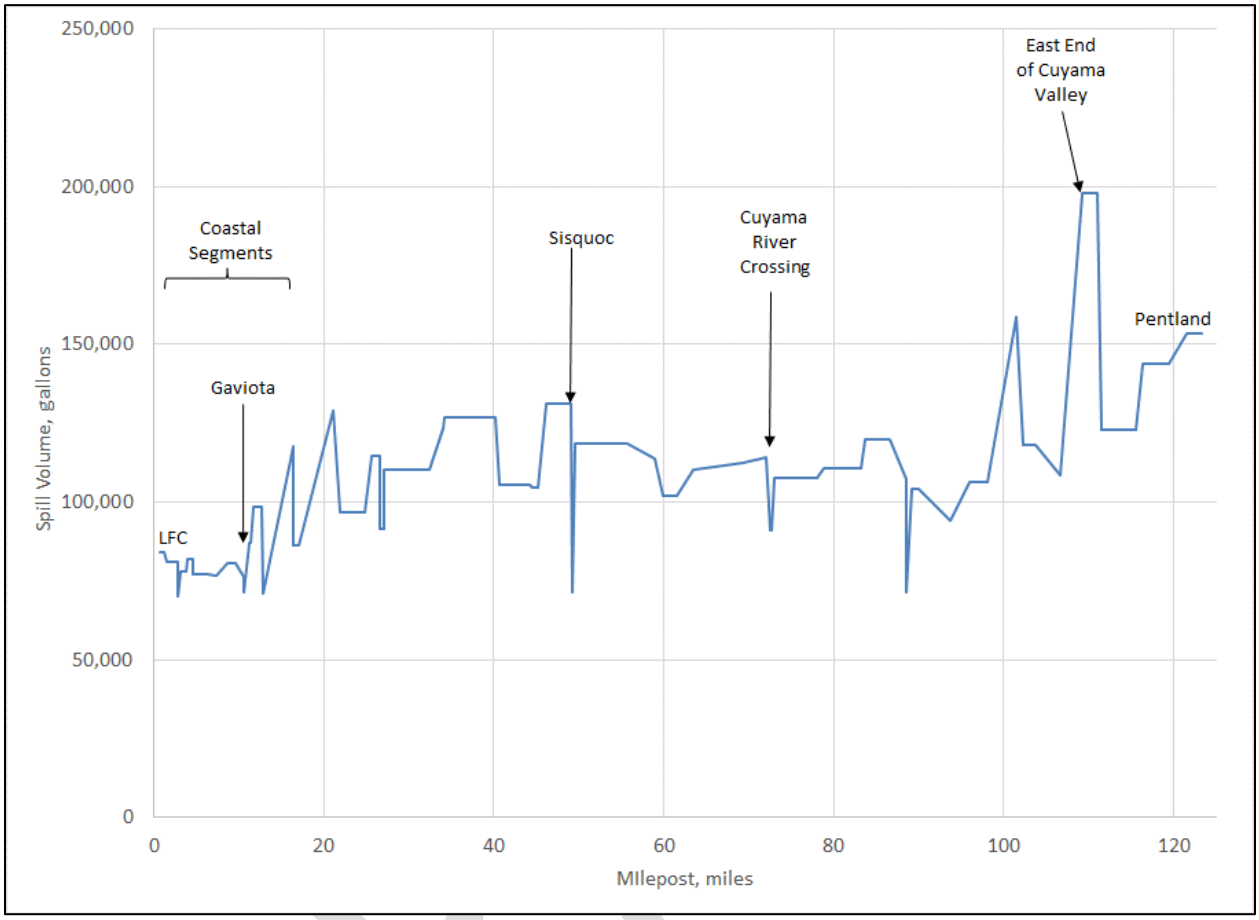
Given a spill, once the pipeline is shut down, the oil would continue to be released from the spill site until it drains from the associated segments of the pipeline between the closed valves as defined by the terrain "valleys" (the draindown volume). The leak detection system is designed as part of the Applicant Project design to shut down the pipeline in 15 minutes. For the public safety analysis in this impact, a shutdown period of 15 minutes is used. As there are a number of components of the risk analysis for public safety that are very conservative, such as assumptions related to spill spreading in a perfect circle as opposed to following drainages and contours, and that historically crude oil spills have rarely produced fatalities (see below), the QRA analysis with the use of a 15-minute response period for public health impacts is considered a very conservative analysis of risk levels from a crude oil pipeline.

Crude oil pipeline leaks are similar to ruptures, except that the leaks involve smaller-sized releases from a pipeline. This distinction between leaks and ruptures accounts for the different failure frequencies that exist between them. Pipeline leaks occur more frequently than pipeline ruptures and are most commonly a result of corrosion and erosion of the steel in the pipeline. Although a leak generally occurs more frequently than a rupture, it has a smaller impact area. Both leaks and ruptures are identified as possible release scenarios in this EIR in order to address a range of risk levels.

Crude Pipeline Spill Volumes

The spill volumes from the proposed Project crude pipeline were calculated based on the pipeline size and the associated terrain for different segments of the pipeline. Figure 5.6-3 shows the estimated spill volumes along the pipeline route for each segment as a worst case for that segment. The worst-case sized spill volume is shown in Table 5.6-4 for the different portions of the proposed Project crude oil pipeline.

Figure 5.6-3 Spill Volume by Segment Milepost for Crude Pipeline Segments



Source: Based on Plains 2018, worst case spill volume for each segment.

Table 5.6-4 Proposed Project Crude Oil Pipeline Worst-Case Spill Volumes

Location	Maximum Spill Volume, gallons
LFC – Gaviota Plant	84,000
Gaviota – Sisquoc	131,040
Sisquoc - Pentland	198,030
Coastal Segments	117,600

Source: Based on Applicant QRA and EFRD 2019, with modification to address spill duration of 60 minutes. Coastal segments are designated up to valve station 2-500.

Crude Pipeline SCADA System

A SCADA system is the computerized system that monitors the pipeline system. The pipeline system is equipped with flow meters that measure the amount of flow going into or out of the system, as well as pressure and temperature sensors. This information is fed into the computer system, which watches for situations that might represent a leak and generate an alarm. Given an alarm, the SCADA system could then either automatically shut down the pipeline system by stopping pumps and closing valves or alert the operators who could then take action (see Section 2.0, Project Description).

The Applicant provided a modeling analysis to estimate the responsiveness of the SCADA system for different sizes of spills. The following pipeline operating parameters were assumed for all segments of the pipelines:

- Steady State Flow: 1,450 barrels per hour;
- Custody quality flow meters: 0.25 percent of flow;
- API gravity of product: 18.1;
- Pressure gauge uncertainties: 11.25 pounds per square inch;
- Temperature uncertainties: 2.4 degrees Fahrenheit (°F);
- Discharge Pressures: 1,200 psig;
- Suction Pressures: 100 psig; and
- Temperature ranges: 140 °F to 155 °F.

Due to the variability of the pipeline diameters throughout the Line 901R and Line 903R system, the analysis was broken into four pipeline segments as delineated in Table 5.6-5. The table represents performance of the SCADA system for different spill sizes and release rates. The SCADA system takes longer to detect slower spill rates with a spill rate of greater than about 42 gallons per minute required in order to detect the spill in less than 10 minutes (along the Gaviota segment), while a spill rate of more than about four gallons per minute would be required to detect a spill over 24 hours. Spill volumes over longer periods can be larger even though the spill rate is lower. Based on the land adsorption rate seen in the Refugio spill, these longer duration, lower rate spills (24-hour detection time shown in Figure 5.6-8) could generate impacts about an additional 60 feet from the spill site assuming dry conditions. Water flowing or rain would generate substantially greater impact distances, and these distances do not include the draindown volumes, which can be substantial, as the draindown volume is a function of the exact spill location.

For spills that produce spill rates smaller than these, generally the SCADA system would not be able to detect the spill and the spill would need to be discovered in another manner, most likely visual inspections or encounters by the public.

Table 5.6-5 Proposed Project Crude Pipeline SCADA Flow Balancing Performance

Pipeline Segment	Parameter	SCADA Detection Time Flow Balancing Only*			
		< 10 Minutes	1 hour	5 hours	24 hours
Las Flores to Gaviota	Minimum Spill Size That Could Still Be Detected, gallons	416	467	1,154	5,184
	Spill Rate, gallons/minute	42	7.8	3.8	3.6
	Estimated Impacted Distance from Dry Spill Site, feet	5	5	12	56
Gaviota to Sisquoc	Minimum Spill Size That Could Still Be Detected, gallons	2,326	2,336	2,563	5,667
	Spill Rate, gallons/minute	233	38.9	8.5	3.9
	Estimated Impacted Distance from Dry Spill Site, feet	25	25	28	61
Sisquoc to Russell Ranch	Minimum Spill Size That Could Still Be Detected, gallons	1,833	1,845	2,126	5,483
	Spill Rate, gallons/minute	183	30.8	7.1	3.8

Table 5.6-5 Proposed Project Crude Pipeline SCADA Flow Balancing Performance

Pipeline Segment	Parameter	SCADA Detection Time Flow Balancing Only*			
		< 10 Minutes	1 hour	5 hours	24 hours
	Estimated Impacted Distance from Dry Spill Site, feet	20	20	23	59
Russell Ranch to Pentland	Minimum Spill Size That Could Still Be Detected, gallons	1,698	1,711	2,010	5,439
	Spill Rate, gallons/minute	170	28.5	6.7	3.8
	Estimated Impacted Distance from Dry Spill Site, feet	18	19	22	59

Source: Based on Applicant Application Submittals.
Note:
* for smaller leakers below the leak rates indicated most likely would not be detected. For larger leaks, the use of pressure sensors as part of the SCADA system would most likely detect the release rate in a shorter period of time. Spill sizes do not include draindown volumes released from the pipeline after the pipeline is shut down.
Key:
SCADA = Supervisory Control and Data Acquisition

Spills that are substantially larger (for example, the Refugio spill spilled over 123,000 gallons in about 30 minutes, or a rate of over 4,000 gallons per minute) the SCADA system should be able to detect this release using flow balancing in under 10 minutes. In addition, the use of pressure sensors along the pipeline allows for rapid detection of abnormal conditions associated with larger spills. For example, pressure sensors on the pipeline during the Refugio spill indicated a sudden pressure loss within 2 minutes of the estimated release time. But pressure sensors only can identify leaks if they are relatively large (and the SCADA system and operators respond appropriately), whereas flow balancing can identify smaller leaks. Effective SCADA systems utilize a combination of flow balancing and pressure changes to identify leaks.

Crude Oil Pipeline Spill Frequencies

Spill frequencies from a crude oil pipeline are based on the PHMSA failure rates from the California pipeline database. The PHMSA base failure rate for crude oil pipelines is shown in Table 5.6-6. The PHMSA database on liquid pipeline incidents indicates a total of 3,549 incidents on all liquid pipelines in the United States since 2010 with 1,788 of those on crude oil pipelines (PHMSA 2020). The all-liquid pipeline incidents resulted in four fatal accidents; three fatalities were due to releases of ammonia or propane and one fatality was from crude oil. In the incident involving a crude oil pipeline, the fatality was due to an automobile that crashed into a crude oil pipeline. Fatalities resulting from pipeline releases of crude oil are very low, with essentially none occurring in the last ten years.

Table 5.6-6 Proposed Project Crude Oil Pipeline Spill Frequencies

Location	Spill Frequency	Return Period, years rupture/leak/total
PHMSA California Crude oil base rate	1.62 per 1,000 mile years	-
Failure rate for L901R (49.2 miles)	0.08 failures per year	50/17/13 years
Failure Rate for L903R (74.1 miles)	0.12 failures per year	33/11/8 years
Failure Rate for L901R + L903R	0.20 failures per year	20/7/5 years

Sources: Plains 2018 and PHMSA 2020. The return period is the anticipated period between releases.

Crude Oil Pipeline Population Densities

The population densities along the route are based on estimates for remote, rural, low-density and high-density areas with some additions for highways. Generally, the Applicant QRA overestimated population densities to be conservative, with an estimated average population density along the route of about 60 persons per square mile, while the U.S. Census data block groups average density along the pipeline route is on the order of 20 persons per square mile.

Crude Oil Pipeline Fires

In the event of a crude oil spill and subsequent ignition resulting in a pool fire, the heat (i.e., thermal radiation) from the fire could result in a serious injury or fatality. Table 5.6-7 provides the assumptions related to a large and small pool fires.

Table 5.6-7 Crude Oil Pool Fires

Item	Risk Assessment Value
Fatality Exposures	10% fatality at exposures ≥ 10 kW/m^2
Injury Exposure Levels	90% injury at exposures ≥ 10 kW/m^2 10% injury at exposures between 5 kW/m^2 and 10 kW/m^2
Spill Size Distribution	25% large spills, 75% small spills
Large Spill Sizes	Defined by terrain and valve operations
Small Spill Sizes	Defined by SCADA system detection limits
Ignition Probabilities	Off-site: 0.00726, On-site: 0.0194 based on PHMSA data since 1986

Source: Plains 2019
Key:
kW/m^2 = kilowatt per square meter thermal energy

In the event of crude oil spill, a flammable vapor cloud could also form that, if ignited, would result in a flash fire. Ignition of a flammable vapor cloud could be caused by vehicles on a nearby road or an ignition source adjacent to the ROW. A flash fire could result in injury or fatality to people in the vicinity of the vapor cloud if they are not able to evacuate the area before the vapor cloud ignites.

The pool fire hazard areas are larger than the vapor cloud hazards and would be a greater threat to nearby populations. Energy from a pool fire radiates in 360 degrees and has the potential to impact a larger area, whereas the flammable vapor cloud dimensions are generally narrower and only occur in the direction of the wind. Also, due to the low gravity of the crude oil (18–19 API [API gravity]), the flammable vapor hazards are considered substantially smaller than the fire risks and are a much smaller risk and were therefore not considered.

Gas Pipeline

The Applicant prepared a QRA for the gas pipeline (Plains 2019) that was peer reviewed by the EIR preparer. A release of natural gas from the proposed Project gas pipeline could produce impacts to public health through jet fires and vapor clouds that result in deflagrations. The EPA Areal Locations of Hazardous Atmospheres Model (ALOHA, EPA 2013) was used to estimate the impacts associated with a rupture or leak from the natural gas pipeline. PHMSA data was utilized to estimate the frequency of a release with assumptions on large verses small release distributions. Table 5.6-8 shows the assumptions used in the gas pipeline QRA.

Table 5.6-8 Proposed Project Gas Pipeline Risk Analysis Assumptions

Parameter	Value
Pipeline release base frequency, per year, PHMSA data on	0.0354 incidents per 1,000-mile years
Large releases	25% of the time
Smaller releases	75% of the time
Jet fires immediate ignition	10% of the time
Met data	Assumes worst case F/1.5 m/s

Source: based on Applicant QRA. PHMSA data since 2010.
Key:
PHMSA = Pipeline and Hazardous Materials Safety Administration
F/1.5 = F stability and 1.5 m/s wind speed
m/s = meter/second

Population densities along the gas pipeline route are generally low as it passes through mostly agricultural areas with scattered residences. The residential area located north of the community of Garey along Foxen Canyon Road is the highest density residential area that could be exposed to potential gas pipeline releases.

Proposed Project Pipelines: Public Safety Risk

The combination of scenario frequency and consequences is used to estimate risk using FN curves. FN curves are depictions of the risk levels of a project and show the frequency (F) of scenarios that could produce a given fatality or injury level (N) or greater.

Crude oil spills could impact the public in the vicinity of the ROW as well as environmental resources such as biological, cultural and water resources (see **Impact RISK.2**). Other than crude oil and gas, other hazardous materials that are used as part of the proposed Project, including diesel fuels and oils related to pipeline construction or operational/maintenance procedures, do not present a significant hazard to the public due to their lack of flammability or toxicity and low amounts of use and storage.

The QRA evaluates the risk to the public from exposure to hazardous materials under upset conditions during potential pipeline releases. The QRA was prepared following the requirements of the Santa Barbara County Planning and Development Department thresholds, which specify thresholds for significant impacts to public safety.

The crude oil pipeline ROW was divided into 148 different segments based on potential spill sizes and population densities. Public safety risks were analyzed using frequencies (estimated annual chance of occurrence) in conjunction with modeled consequences (estimated number of serious injuries or fatalities) for various accident scenarios. Each segment represents a different scenario in developing the FN curves which define the risk levels.

The analysis conservatively assumes that a spill of crude oil would form a perfect circle with the circle diameter defined by the quantity of crude oil spilled and the pool thickness. This is a very conservative assumption as spill areas generally are defined by terrain and, in urban areas, curbs and drainage systems. For example, in Buellton, where the existing pipeline passes near a residential neighborhood in the western portion of the city, the spill would be assumed to create a circle with a diameter of 125 feet with impacts from a fire reaching out almost 300 feet in diameter. Historical crude oil spills have not demonstrated this level of impacts thereby indicating the level of conservative analysis.

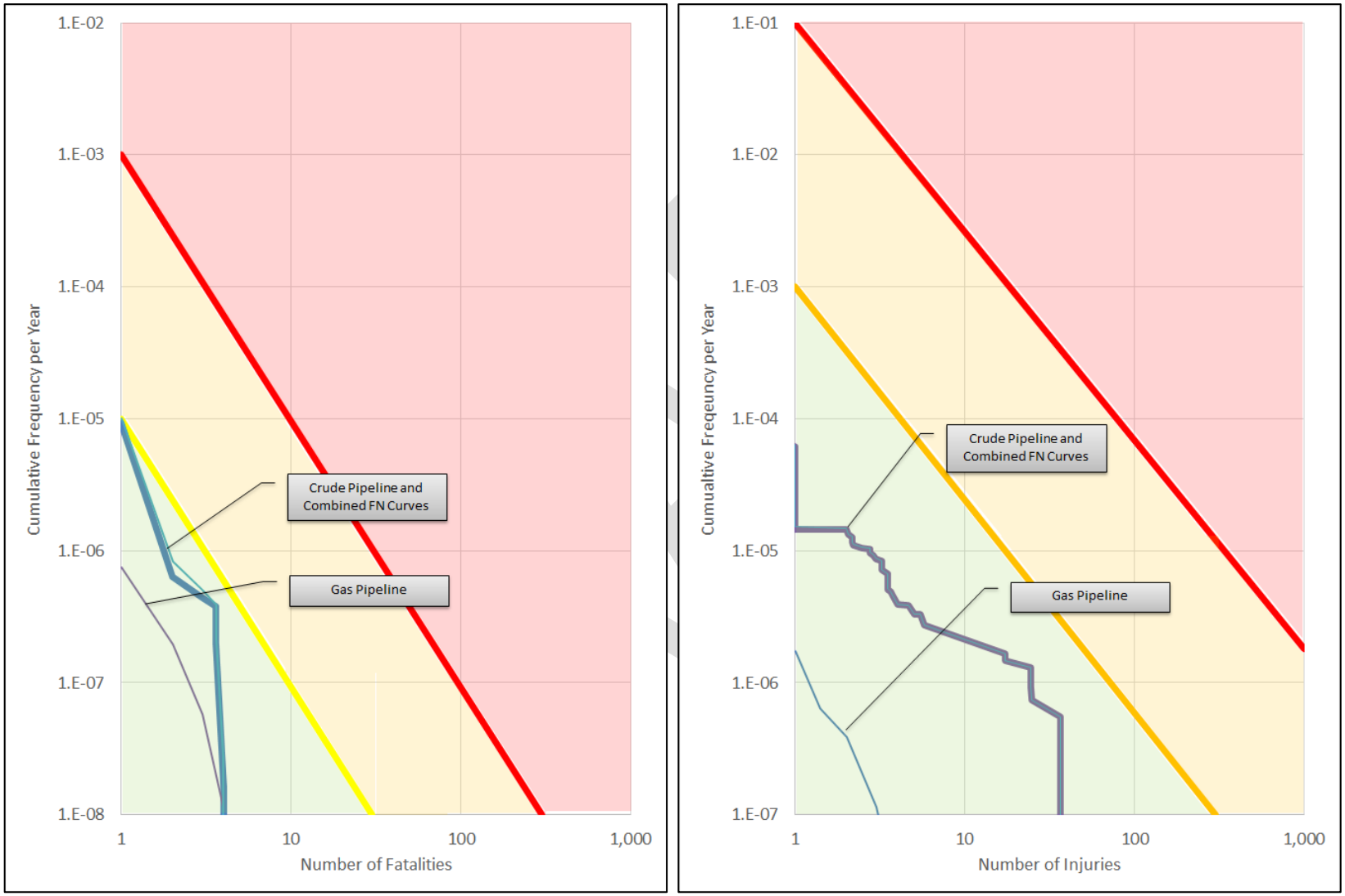
For the gas pipeline, the pipeline route was divided into eight segments based on population densities along the route. FN curves were developed based on the potential for impacts to the public along with the estimated frequency of releases and resulting fires.

The analysis for public risk impacts from fires does not include the impacts from pump stations scenarios on the public since they are remote and contained behind gated facilities. The analysis also does not include employees of the pipeline company, as this analysis only examines the risks to the public.

Santa Barbara County has established risk thresholds that use societal risk profiles (FN curves) to determine the significance of hazardous material releases. These FN curves address both injury and fatality. Santa Barbara County's adopted thresholds are generally applicable to fixed facilities and pipelines. The risk FN curves are shown in Figure 5.6-4 and are based on the FN curves developed as part of the Plains 2019 QRA analysis, with adjustments included to address the scenarios that could occur in low-density areas. The majority of the risk levels associated with the crude pipeline occur in the Buellton area and other areas where the pipeline passes nearby residential or industrial areas. The majority of the gas pipeline risk occurs near residential areas north of Garey near Foxen Canyon Road.

As the FN curves are located within the green region, the impacts to public health due to both crude oil and gas pipeline releases would be **insignificant.**

Figure 5.6-4 Proposed Project Pipeline Risk FN Curves



Source: Plains 2019 with modifications

Risks to the Environment

A crude oil spill from the pipeline could impact resources in the vicinity of the pipeline ROW as well as resources in lower topographical areas downstream of the ROW. See Section 5.2, Biological Resources; Section 5.4, Cultural Resources; and Section 5.9, Hydrology and Water Quality for discussions of the impacts of a crude oil spill on biological, cultural, and hydrological resources.

A release from the gas pipeline would not generate direct impacts to environmental resources aside from the immediate vicinity of a release due to fire impacts or fire response activities.

Impact #	Impact Description	Phase	Impact Classification
RISK.2	Oil spills associated with the pipeline transportation of crude oil could create a significant hazard to the environment through reasonably foreseeable upset and accident conditions and impact sensitive resources including biological, water, cultural, and marine resources along the pipeline route, and downstream of the ROW.	Operations: Accidental Spill	Significant and Unavoidable

In the event of a crude oil spill from the pipeline there could be impacts to sensitive natural resources depending upon the location of the spill, the size of the spill, and the weather conditions when the spill occurred. The probability of a spill of about five gallons[1] or more is estimated to be once in five years, and once in 20 years for larger spills (see Table 5.6-6).

Crude Pipeline Spill Volumes

The spill volumes are discussed above under **Impact RISK.1.** For the public health assessment under **Impact RISK.1**, a worst-case spill shutdown time of 15 minutes was used due to the already conservative analysis for fires and impacts to the public used in the QRA. However, for spills that could affect the environment, a longer time duration is used. As was the case for the May 2015 Refugio spill, there is the potential for a pipeline shutdown to take longer than 15 minutes. If the leak detection system is not operational, or is overridden by an operator, the crude oil pumping could continue for 60 minutes as a worst case, causing potentially more damage to the environment than a 15-minute shut down time. The 60-minute worst-case scenario response time for pump shutdown is used in this analysis for environmental spill impacts and is a conservative estimate based on the time taken to respond to the May 2015 Refugio spill of more than 30 minutes.

However, because the worst-case spill volume would also include the conditional probability of this longer shutdown period, it would not necessarily present higher risk levels associated with immediate public health impacts (fires, etc.) as discussed above under **RISK.1**.

Proposed Project Pipeline: Spills Affecting Onshore Areas

A crude oil spill from the pipeline could impact resources along numerous rivers, creeks, and drainages and other areas along the pipeline ROW. Liquids spills from pipelines generally follow the terrain. The exact location impacted by spills are a function of the material properties as well as the terrain type and slopes, the rockiness of the area, the absorption properties of the soil, the presence of flowing water and a wide range of variables. The historical adsorption rate of crude oil by a spill moving over dry terrain

[1] Five gallons is the federal reportable quantity for transportation (49 CFR part 171.16).

varies widely. For example, the May 2015 Refugio spill had an adsorption rate of about 98 gallons per foot of travel.

If there is moisture and water flow, either from rains causing flow through normally dry storm drains or culverts, or the spill reaches a creek/river over dry land, and the creek/river is flowing, then spills can travel a substantial distance. As discussed above, some rivers along the ROW are flowing most periods of the year. Rain days per year where more than 0.5 inches of rain is received averaged nine days per year along the ROW, with a peak of 27 days per year near Gaviota (for the years 1974 through 2018) (SBC 2020). The potential impacts to biological and water resources would be greater during periods of rain events since the oil could be transported more easily into waterways by the rain runoff along drainage areas and stormwater management systems.

Proposed Project Pipeline: Spills Affecting Marine Areas

Portions of the pipeline would extend along the Santa Barbara County coastline. A crude oil spill could drain from the spill location through existing culverts or drainages and enter the marine environment. This is what occurred during the May 2015 Refugio Beach spill. An estimated 43 percent of the oil entered the ocean from the Refugio spill location, that was an estimated 750-foot pathway from the ocean shoreline. As the proposed pipeline is located onshore at various distances from the shoreline, a rupture at different locations spilling the same amount of oil could allow for more or less oil to enter the marine environment. Assuming a linear function of oil being trapped and adsorbed onshore with distance, the maximum amount of oil could enter the ocean where the pipeline is closest to the ocean and potential worst-case spill volumes are large. This occurs at milepost 7.4, from the LFC where the pipeline is approximately 420 feet distance from the ocean and the worst-case spill size is 76,650 gallons (near Canada de la Pila and Arroyo Quemada).

Under the proposed Project operating conditions, with the maximum spill size along the coastal segment, an estimated maximum amount of 37,322 gallons of crude oil could enter the ocean if the worst-case spill were to occur at milepost 7.4 (Plains 2019 QRA with modifications to account for a 60-minute release time). An estimated 5.9 miles of the 16.6-mile coastal portion of the proposed Project pipeline (35 percent) would be vulnerable to spills entering the ocean if a spill were to occur along any of those segments and the adsorption rate were similar to that which occurred during the Refugio spill. This assumes that no rain event is occurring and that drainages are not flowing.

There are a number of variables affecting the amount of oil that could reach the ocean from an onshore spill, including the terrain, the location of drainages under the freeway and the railroad tracks, the soil type, and extent of rocky interfaces as well as the amount of moisture. During a rain event, when drainages and creeks are flowing, a spill into the waterways could follow the flow and enter the marine environment more readily and have more extensive terrestrial impacts and reach the marine environment more readily but would also be subjected to turbulence and mixing along the drainages.

The extent of the oil spills impacting the marine environment is discussed in Section 5.2, Biological Resources, and in Appendix D, Marine Oil Spill Impact Assessment Report.

Proposed Project Pipeline Coastal Segments: Hydraulic Drainage Analysis

Given a spill, the crude oil could enter drainages and travel along waterways to the ocean. If waterways and drainages are dry, the areas where a spill could reach the ocean and affect the marine environment are more limited than if waterways are flowing. To access the hydrologic flow pathways that a release could affect, the geographic information system (GIS) program ArcGIS, along with the ArcGIS hydraulic package, was used to estimate flow trajectories and the drainages that could be most affected by a spill.

The analysis divided the coastal portion of the pipeline into 100-foot segments and simulated a spill from each of these 100-foot segments, producing flow trajectories based on terrain. The analysis utilizes terrain and slope to define the pathway (trajectory) of the spill to the marine environment and indicates through which drainage a spill might pass. This helps to identify the drainages that are most likely to be affected by a spill and could therefore assist in developing mitigation to rapidly respond to a spill. Table 5.6-9 lists the drainages that could be most affected by a spill, and the resulting length of pipeline that could affect each drainage.

The coastal segment of the proposed Project crude oil pipeline (from LFC to Highway 1) would be equipped with ten MOVs (including at the LFC and Gaviota Pump Stations) and four check valves. MOVs have the advantage that they can stop the flow of oil, and therefore the draindown releases, from both directions along the pipeline. However, the disadvantage of MOVs is that they do not close unless they are instructed to do so by the SCADA system and/or the operators, and therefore could stay open in the event of a spill if it is not detected. Check valves have the disadvantage that they only stop the flow in the reverse direction, but the advantage that they act immediately, independent of any intervention for the operation. An effective valve protection system uses both types of valves, usually using an MOV upstream of a low point or stream crossing and a check valve immediately after, or downstream, of the crossing to prevent crude oil from flowing back toward the spill. MOVs are more equipment intensive as they require electricity and communications systems. Check valves do not require any electricity or communication systems.

Table 5.6-9 Proposed Project Pipeline Spill Affected Coastal Zone Drainages

Drainage Location	Length of Pipeline from Which a Spill Could Affect the Drainage, Feet	Could a Spill Reach the Marine Environment during Dry Conditions?	Pipeline Installation Method - HDD/Bore?	Valve Protection - MOV/Check?
Canada de Corral	7,000	N	N	N/N
Canada de la Vina	5,250	N	Y	N/N
Refugio	8,500	Y	N	Y/Y
Tajiguas	8,250	Y	Y	N/N
Arroyo Quemada	5,000	Y	Y	Y/N
Canada de la Pila	2,000	Y	Y	N/N
Canada Huerta	2,000	Y	Y	N/N
Arroyo Hondo	3,500	Y	Y	N/N
Canada de Guillermo	3,000	Y	Y	N/N
Canada de Posta	2,500	Y	N	N/N
Canada de Molino	3,000	Y	Y	N/N
Canada de las Zorillas	3,000	Y	N	Y/N
Canada San Onofre	2,500	N	Y	N/N
Canada de Leon	2,250	N	N	N/N
Canada Alcatraz	2,250	N	N	N/N
Canada Del Clementaria	3,250	N	Y	N/Y
Canada de Barro	3,500	N	N	N/N
Gaviota	19,000	N	Y	Y/Y
Hollister	3,250	N	N	NA

Source: based on ArcGIS hydrologic analysis using flow paths.
Key:
HDD = horizontal directional drilling
MOV = motor-operated valve

Figure 5.6-5 shows the drainage under the freeway at the Arroyo Hondo drainage. Drainages that the pipeline would cross with substantial HDD installations would not include MOVs or check valves due to the depth of the pipeline.

Figure 5.6-5 Drainage Under Freeway: Arroyo Hondo

Based on the lengths of pipeline from which a spill could impact a given drainage (Table 5.6-9), the most likely drainages that could be impacted by the proposed Project include Gaviota, Refugio, Tajiguas, Canada de Corral, Canada de la Vina and Arroyo Quemada. A summary of the designed protections for these drainages consists of the following:

1. Gaviota and Refugio are equipped with valve protection;
2. Tajiguas Creek is protected by a 3,606-foot-long HDD installation with check valve 1-700 and MOV 1-600 located upstream;
3. Canada de Corral is the canyon that the LFC sits in and is protected by the LFC drainage systems and a creek "gate" located near the entrance gate to the LFC. The gate is kept closed to prevent any spill from traveling to the marine environment without authorization;
4. Canada de la Vina is the drainage immediately to the west of the LFC and is protected by an MOV located immediately upstream. The proposed HDD is 216 feet. Note this segment is not estimated to affect the marine environment given a spill;
5. Arroyo Quemada is located farther west and is equipped with a proposed HDD of 1,831 feet. An MOV is located 2,300 feet downstream; and
6. Other areas of interest that could potentially drain to the marine environment include Canada de la Pila and Canada de la Posta, both of which are not protected by valve protection. Pila would be equipped with a 467-foot HDD and Posta does not have an HDD proposed nor any valve protection.

Proposed Project Pipeline Inland Segments Drainage Analysis

For inland segments of the pipeline, there are numerous areas where a spill could enter drainages or other low-lying areas. The principal locations of concern are those areas where rivers could be impacted, particularly because some of the rivers have flow for a high percentage of the year. Principal areas include Gaviota Creek, Santa Ynez River, Sisquoc River, and the Cuyama River—all of which would be crossed using HDD techniques and each are equipped with valve protections (MOV upstream, check valve downstream). Table 5.6-10 shows the U.S. Geological Survey average stream flow data for each of the major waterways along the pipeline ROW.

The pipeline ROW generally runs perpendicular to and crosses streams, except along the Pacific Ocean (16 miles running parallel), the Cuyama River (25 miles running parallel), Nojoqui Creek (three miles running parallel), and Aliso Creek (one mile running parallel). Once the pipeline ROW crosses the Cuyama River, it parallels the river until about valve 5-400 before moving northward toward Pentland. During this period, the pipeline slowly climbs from about 1,300 feet elevation to 2,100 feet elevation at the eastern end of the Cuyama Valley.

Table 5.6-10 Crude Pipeline Major Stream Data

Stream	Percentage of the year that the Stream is Flowing	Average Flow, ft^3/second (when stream is not dry)	Years of Data
Gaviota	96%	7	20
Santa Ynez	71%	123	82
Sisquoc	23%	227	80
Cuyama	68%	31	61

Source: USGS 2020
Key:
ft = feet

About 80 miles of the pipeline route is within 0.5 mile of a major stream as classified by the CDFW, with about 46 of those miles after the Cuyama River crossing in the Cuyama Valley. About 19 miles of the pipeline length are within 500 feet of a major stream, with about 11 of those miles after the Cuyama River crossing in the Cuyama Valley, where segments of the pipeline are as close as 160 feet from the Cuyama River.

The Cuyama River is the principal location of concern for the drainage analysis on inland pipeline sections as it has the most exposure to the pipeline. Based on the elevation profile, maximum spill volumes, and the adsorption rate seen in the Refugio 2015 spill, a spill along the Cuyama River portion of the pipeline could impact resources a distance as far as about 1,300 feet. About 18 miles of the pipeline is located within 1,300 feet of the Cuyama River.

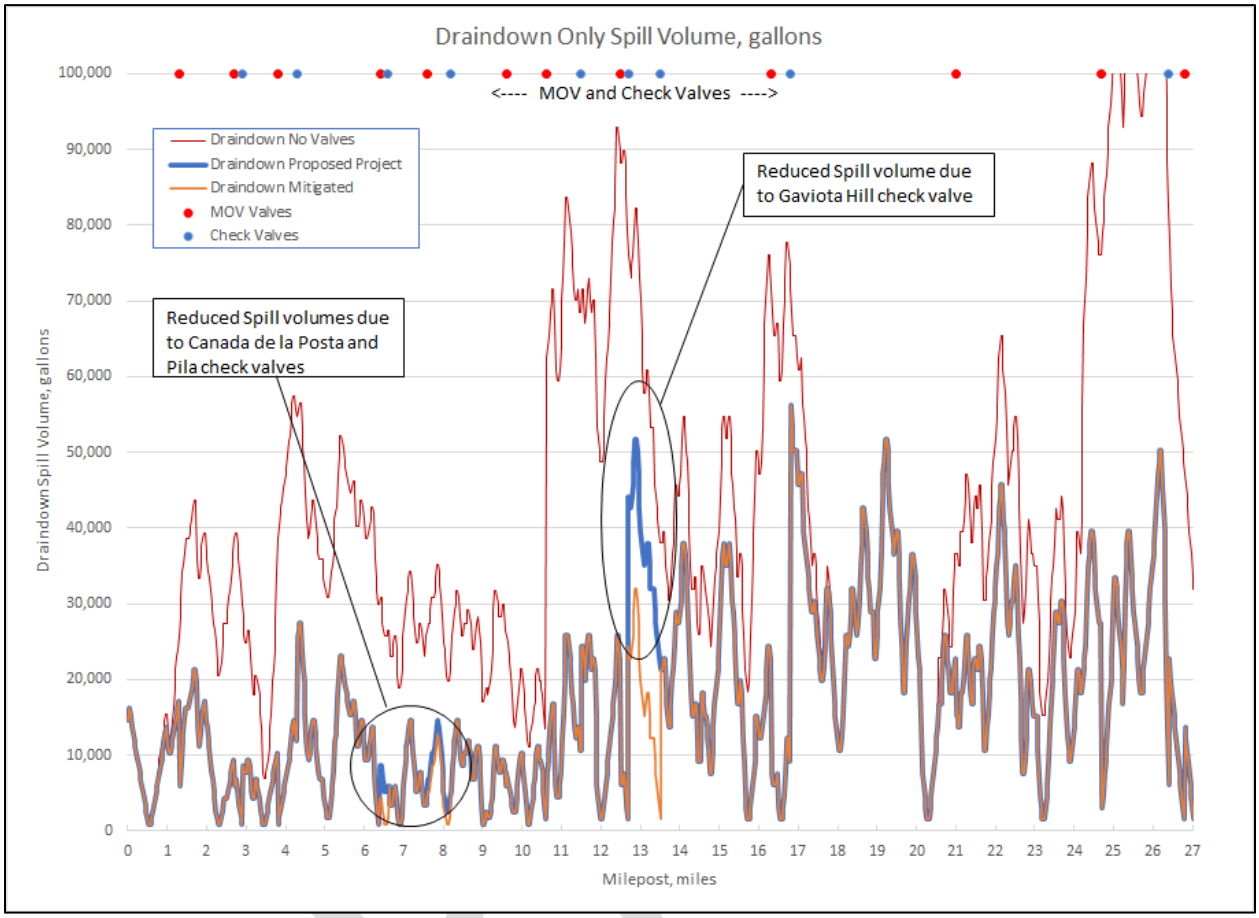
The average spacing of valves between the Cuyama River crossing, at valve 3-800, and when the proposed pipeline turns away from the river, at valve 5-400, is 2.8 miles, and includes seven check valves and four MOVs.

Proposed Project Valve Placement – Coastal Segments

The development of the specific locations of the check valves and MOVs along the pipeline route near the coastal areas can substantially affect the spill volumes impacting marine resources and onshore biological resources. The proposed placement of the valves produces a substantial reduction in the spill volumes over an installation with minimal valves, such as with the existing pipeline. Figure 5.6-6 shows the draindown volumes of the pipeline segments located along the coastal portion of the pipeline from the LFC to the area near Buellton. This draindown spill volume profile was developed by dividing the pipeline into 150-foot segments and examining the potential spill volume from each segment, utilizing different valve arrangements. Areas located at elevations above the spill location would drain to the spill location, depending on the location of MOVs and check valves and the terrain profile. The effect of the Applicant's proposed valve arrangement is shown in Figure 5.6-6 and produces a maximum spill volume of about 52,000 gallons with an average volume of 12,598 gallons along the coastal segments.

With the additional valves as proposed in the mitigation measures below, located along the two drainages at Canada de la Pila and Canada de la Posta, as well as at the base of the Gaviota Hill, average spill volumes could be further reduced to 12,481 gallons, with the advantage of reductions along portions of the pipeline where a spill could impact the ocean. For comparison, as an indication of the effectiveness of the valve installations, the coastal portion of the pipeline without any valves installed would have draindown spill volumes as high as almost 93,000 gallons with an average spill volume of about 39,000 gallons.

Figure 5.6-6 Drain Down Spill Volume by Segment – Coastal Areas



Source: based on spill volume draindown analysis. The "draindown no valves" scenario assumes a MOV at the Gaviota Pump Station.

Potential Impacts

Depending on the location of the spill, the environmental conditions, and the biological, cultural and water resources present, the short- and long-term effects to resources associated with a crude oil spill have the potential to be significant and unavoidable. The best method for preventing oil spills is to reduce the frequency of a spill occurring through effective pipeline maintenance programs. If a spill does occur, effective emergency response and cleanup is important. A number of recommendations have been developed as part of the Refugio Oil Spill Lessons Learned (see Section 5.6.1.8) and were used to develop the mitigation measures described below.

Mitigation measures aim to reduce impacts of an oil spill if it does occur, including:

1. That the pipeline is equipped with design features, such as leak detection and valve protection along segments of the pipeline where a spill could enter the marine environment;
2. Response plans that document information on the location of sensitive environmental resources along the ROW;
3. Identification of storm drains along the pipeline route;
4. Measures to be taken at each drainage and storm drain;

5. Identification of specific containments; and
6. Defined cleanup methods for sensitive areas to ensure effective, efficient, and rapid response to a spill.

These plans would allow for better coordination with first responders, particularly SBCFD and CDFW-OSPR.

In addition, mitigation measures to ensure response agencies are well equipped and trained and that the staging of response equipment is located near the highest probability drainages would improve response capabilities.

Below are listed mitigation measures that could help to reduce the impacts of an oil spill.

Mitigation Measures

RISK.2-1 **Oil Spill Contingency Plan and Emergency Response.** The Applicant shall complete an Oil Spill Contingency Plan (OSCP) that covers the entire pipeline route. The OSCP shall be consistent with existing plans, including the ExxonMobil LFC/SYU plans, Santa Barbara County Operational Area Oil Spill Contingency Plan, State Area Contingency Plans, San Luis Obispo/Kern County Fire Department Response Plans and Geographic Response Plans. Response Plan documents are dynamic and, as such, shall be reviewed jointly by the permittees and Santa Barbara/San Luis Obispo/Kern Counties and revised as appropriate to incorporate new planning strategies or changes in procedures, new technologies, and the acquisition and implementation of more effective feasible recovery and containment equipment as it becomes available. The permittees shall demonstrate the effectiveness of the OSCP by responding to no more than two surprise drills each year along the pipeline route, which may be called by Santa Barbara/San Luis Obispo/Kern Counties. If critical operations are underway, the permittees need not respond to the surprise drills but shall explain the nature of the critical operations and why response is not possible. The permittees shall implement reasonable changes as required by OSCP-reviewing agencies (Santa Barbara County Office of Emergency Management, Fire Department, and Energy, Minerals & Compliance Division-P&D, San Luis Obispo County agencies and Kern County agencies) after review of the permittees' drill performance. The plan shall contain at a minimum the following:

a. **Spill Notification Procedures –** A list of immediate contacts and phone numbers to call in the event of a threat of or actual spill of oil. This list shall include a designated qualified individual with the Applicant, the California Highway Patrol, local fire departments, California Governor's Office of Emergency Services, the State Warning Center, the National Response Center, the spill response organizations listed in the OSCP (e.g. CDFW, USFWS), the shipper of the oil (ExxonMobil and others in the future), agency jurisdiction (Santa Barbara County, San Luis Obispo County or Kern County), and any other care or treatment organizations listed in the OSCP. The notification procedures shall contain a checklist of the information that shall be reported to the various parties listed.

b. **Resources at Risk –** The OSCP shall contain the following information for all areas along the pipeline route*:*

    1. Habitat and shoreline types, as identified in Table 1 and in Appendix C of the National Oceanic and Atmospheric Administration Shoreline Assessment Manual (Aug. 2013),

or as identified in the American Petroleum Institute's Options for Minimizing Environmental Impacts of Inland Spill Response (Oct. 2016)*;*

2. A summary of potential state and federally listed rare, protected, and threatened and endangered species, as well as state species of special concern, including aquatic and terrestrial animal, fish, and plant resources*;*

3. A summary of aquatic resources including special status fish, amphibians, invertebrates, and plants including important spawning, migratory, nursery and foraging areas*;*

4. A summary of potential terrestrial animal and plant resources*;*

5. A summary of potential migratory and resident birds and mammals, including relevant migration routes, as well as breeding, stopover, nursery, haul-out, and population concentration areas by season*;*

6. Identification and appropriate contacts applicable to emergency response for the following: (i) Commercial and recreational fisheries areas, aquaculture sites, public beaches, parks, marinas, boat ramps, and recreational use areas; (ii) Industrial, irrigation, and drinking water intakes, dams, power plants, salt pond intakes, and important underwater structures; and (iii) Known historical and archaeological sites, and areas of cultural or economic significance to Native Americans*; and*

7. Representation (by listing and graphic) of all drainages and all storm drains that drain to the marine environment, as well as rivers and creeks. Each drainage and storm drain shall be identified by GIS coordinates and specific measures shall be detailed for each drainage and storm drain to ensure rapid techniques for closing and protecting the drainage or storm drain are available.

The OSCP may rely on and cite applicable State Area Contingency Plans, Geographic Response Plans, the Santa Barbara County Operational Area Oil Spill Contingency Plan, San Luis Obispo plans, Kern County plans and other sources to identify the information required by the items above.

c. **Response Resources –** The OSCP shall provide the following:

1. A list of rated oil spill response organizations that are under contract with the permittee. A rated oil spill response organization is one who has been certified by the California Department of Fish and Wildlife-Office of Spill Prevention and Response pursuant to CCR Title 14, Division 1, Subdivision 4, Chapter 3, Subchapter 3.5 § 819. (Oil Spill Response Organization Ratings). Oil spill response organizations under contract shall include those for near shore marine, on-waters, and terrestrial services*;*

2. A list of properly trained Native American Monitors who are qualified to monitor oil spill cleanup activities*;*

3. A detailed listing of all response resources, including equipment and personnel, and the resource locations, that could be used for responding to a spill in any location along the pipeline ROW. Standby resources shall be reviewed with and approved by Santa Barbara County P&D and the Fire Department, applicable San Luis Obispo County agencies and Kern County agencies to ensure adequate standby resources are

available for all spill locations. The Applicant shall provide additional standby response resources if these resources are determined to be inadequate*;*

4. The Applicant shall fund the cost of oil spill response trailers for the Santa Barbara County Fire Department to be located at Santa Maria/Cuyama Fire Stations, or other locations as determined by the Fire Department. The Applicant funding shall be limited to a maximum of $100,000*;*

5. The Applicant shall fund the cost of an unmanned aerial vehicle (UAV) for the Santa Barbara County Fire Department. The Applicant funding shall be limited to a maximum of $16,000 and shall include UAV training costs*;*

6. The Applicant shall fund the purchase of construction equipment suitable for stopping a spill into storm drains or drainages. Equipment at a minimum shall include a backhoe and portable underflow-dams (or equivalent). Equipment shall be housed at a South County fire station location (such as Station 38 in Gaviota) capable of rapid response to a spill along the coast, and with associated support equipment and operator training. The Applicant funding shall be limited to a maximum of $150,000*;*

7. The Applicant shall place emergency response equipment at strategic locations along the coastal zone drainages to ensure rapid response capabilities, including at the Refugio, Tajiguas, Arroyo Hondo, Gaviota and San Julian Road drainages. The location of the equipment shall be placed in weather-proof boxes, or equivalent, readily available to response personnel in the event of a release and located in close proximity to areas potentially affected at the drainage. Equipment shall be located at the following locations or other location agreed upon by the County Fire Department; at the Refugio valve station; along Calle Real near Tajiguas Creek drainage crossing underneath Highway 101; at the Arroyo Hondo drainage tunnel underneath Highway 101; at the Gaviota Beach Road Gaviota Creek bridge or at the Gaviota valve station; at the crossing near San Julian Road; and at the parking area along Highway 101 inside the entrance to the LFC facilities. The Applicant shall work with landowners, State Park and respective agencies in order to secure agreements to store equipment at these critical drainage locations. Equipment shall include at a minimum; sand bags, booms, shovels, and piping to allow for construction of a boom/under flow oil catch systems. Coordination with and access for the County Fire Department shall be established;

8. Additional response capabilities shall be installed at priority storm drain systems most likely to be impacted by a potential spill. Storm drains shall be equipped with response equipment, weir-type systems, or closable storm valve systems (such as flap valves) that allow for the capture or blockage of oil. Storm drain systems at priority locations and areas most likely to be affected shall be determined in coordination with the Fire Department and shall include the following: drainage into the east side of Refugio State Park (CaltransID# 511016003691), the storm drain at the Refugio Spill Location (CaltransID# 511010103775), Arroyo Quemada (CaltransID# 511010003981), Canada De Molino (CaltransID# 511010004268), Canada De Zorillas (CaltransID# 511014004331), and Canada De Barro (Caltrans ID# 51101000455), and any other locations determined to be high priority by the Fire Department;

9. A maintenance program to ensure that the additional spill response resources are readily available and properly maintained shall be implemented and documented. Documentation shall be provided to Santa Barbara County P&D, applicable San Luis Obispo County agencies and Kern County agencies and the Fire Department on an annual basis*;*

10. The OSCP shall pre-identify facilities that can be used as an Incident Command Post*;*

11. The OSCP shall consult with and designate scientists who have oil spill modeling experience and other information that can ensure effective oil spill response so that it can be utilized during a spill event*; and*

12. The Applicant shall fund the development of marine nearshore response capabilities, including a nearshore boat (similar to the Chevron El Segundo Refinery M/V Duke J or equivalent), nearshore boom, other appropriate equipment and training for boom and boat deployment. Funding shall be directed to the Fire Department. The Applicant funding shall be limited to a maximum initial of $250,000 with an additional annual cost of maintenance and training of up to $50,000.

d. **Training –** The OSCP shall document that Applicant staff receive training applicable to their role in a spill including but not limited to:

1. Incident command system, including command or general staff position-specific training;

2. Oil spill emergency response training as required by state and federal health and safety laws for the pipeline company personnel likely to be engaged in oil spill response. The level of training shall be commensurate with the level of engagement for company personnel that would be involved in the oil spill response; and

3. Training records shall be maintained for at least three years from the date of the training.

e. **Desktop Exercises –** The plan holder shall conduct an annual tabletop exercise that covers the following:

1. Notifications: Make notifications about the spill scenario to the oil spill response organization, qualified individuals, the spill management team listed in the OSCP, the California Governor's Office of Emergency Services, and the National Response Center*;*

2. Staff Mobilization: Assemble the spill management team and other appropriate personnel identified in the OSCP and discuss the approach to spill response along with required roles and responsibilities*;*

3. HAZMAT Training: conduct HAZMAT training with the Santa Barbara County Fire Department, applicable San Luis Obispo County agencies and Kern County agencies on an annual basis. The training shall include in the field assessments of different potential challenges presented by a pipeline spill at different locations, with documentation and planning for appropriate response activities added to the OSCP*; and*

4. Equipment Review and Testing: The annual tabletop exercise shall include review, and testing where applicable, of the oil spill response equipment listed in Section (c) above to confirm the availability and condition of that equipment.

f. **In The Field Exercises**– In the field response activities shall be performed to ensure effective response and to identify any deficiencies in response capabilities. In the field response drills shall utilize different locations along the coastal segment (or other areas as agreed to with the Santa Barbara County, applicable San Luis Obispo County agencies and Kern County agencies) to familiarize response personnel with the different potential spill locations and the particularities of each location (i.e., site access, drain blocking techniques, location of and mobilization of response equipment, etc.). In the field response drills shall include the County of Santa Barbara, applicable San Luis Obispo County agencies and Kern County agencies, responsible fire departments, CDFW, and other agencies as applicable. In the field response drills shall be conducted annually with associated documentation, including implementation of lessons learned and recommendations for improvements. Offshore boom deployment drills shall also be conducted annually, in coordination with applicable agencies and local NGOs and fisherman-related resources with associated documentation, including implementation of lessons learned and recommendations for improvements.

g. **Coordination with Agencies** – The Applicant shall include procedures for coordination with local agencies. The Applicant shall also develop and incorporate an organization chart into the OSCP, including qualifications, required training, duties, responsibilities, authorities, and the process for coordination and interaction. A person from the responsible party shall be designated within the plan as the company liaison for all communications.

h. **GIS and Website Systems**– The Applicant shall fund Santa Barbara County for the establishment, implementation and maintenance of a GIS website system that can provide information to responders and the public in the event of a spill. All information related to any project incident shall be coordinated with and posted through the website. The GIS system shall be readily available to all responders and shall include: the locations of sensitive resources; locations of pipeline ROW access points; locations of potential access to areas that could be affected by a spill (such as beach or drainage access); access point gate codes; access points ownership contact information; the location and inventory of response equipment; the location and information of all drainages and storm drains; and any other information that could be related to spill response. The website shall be utilized during desktop and in the field drills and shall be maintained current at all times. The annual funding shall not exceed $75,000 per year

i. **Initial Spill Response Responsibility** – The Santa Barbara County Fire Department shall be designated as the initial spill response Local-On-Scene-Coordinator for all spills in Santa Barbara County's jurisdiction, with associated authority to mobilize personnel and equipment and other response resources, including Applicant owned, contracted, and operated resources, as necessary to effectively and rapidly respond to any spill scenario. Similar arrangements shall be established with San Luis Obispo and Kern Counties. This designation and authority shall be clearly delineated in all response planning documents.

j. **Contingency Plan Updates –** Contingency Plans shall be updated whenever changes to response activities could generate modification to planning including, but not limited to;

changes to response planning measures due to in the field or tabletop drills; modifications to response equipment staging and storage locations or arrangements; modifications to leak detection systems and alarms due to testing; and any other issues determined by the Applicant or Santa Barbara County or applicable San Luis Obispo County agencies and Kern County agencies to warrant updates to the contingency planning. Notifications' listings shall be verified and updated as necessary on a biannual basis to ensure contact staff and telephone numbers are current.

PLAN REQUIREMENTS AND TIMING: The OSCP shall be submitted to Santa Barbara County P&D, applicable San Luis Obispo County agencies and Kern County agencies and the Santa Barbara Fire Department for review and approval prior to the issuance of the proposed Project CUP. The requirements of the approved OSCP shall be implemented by the plan holder in the event of a spill along the pipeline routes. The approved OSCP shall be submitted to Kern County Planning and Natural Resources prior to issuance of grading or building permits.

MONITORING: Permit Compliance Staff and Fire Department shall be invited to the annual oil spill tabletop and in the field drills and in the event of a spill, on-site inspection(s) to verify and document implementation of emergency action measures.

RISK.2-2 **Pipeline Design Review.** Prior to construction of each project component, and prior to making subsequent modifications to such components, the permittees shall submit to the Santa Barbara County System Safety and Reliability Committee (SSRRC), and applicable San Luis Obispo County agencies and Kern County agencies, relevant construction drawings and supporting text and calculations demonstrating compliance with relevant conditions. Construction may not commence until Santa Barbara County, or applicable San Luis Obispo County agencies and Kern County agencies, has approved this submittal and all necessary construction permits are issued. Santa Barbara County, or applicable San Luis Obispo County agencies and Kern County agencies, shall either provide written notice to proceed with construction or indicate in writing conditions which have not been met. When such conditions have been met, construction approval shall be granted. Santa Barbara County SSRRC, or applicable San Luis Obispo County agencies and Kern County agencies, may require post-construction inspections and review of as-built drawings, as necessary to confirm consistency with the approved submittals. At a minimum, the following plans and design considerations shall be submitted to the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies, for review and approval.

a. **Plans and design documentation** - shall include, but not be limited to, the following:

   1. All requirements associated with the PHMSA Corrective Action Orders that are applicable to the proposed Project pipeline design and installation with all documentation used to complete these measures;

   2. The Process Flow Diagrams (PFDs); Process & Instrumentation Diagrams (P&IDs) and Process Hazard Analyses conducted for the Pipelines, Pump Stations, Storage Tanks and other installations;

   3. The AB 864 required Risk Analysis, the Risk Analysis Assessment provided by the CSFM (for review only), and the Risk Analysis Implementation Plan with all associated documentation and analyses;

4. The Final Surge Study details associated with the pipeline design and full documentation of the analysis, including: the hydraulic analysis with hydraulic modeling inputs and outputs; the full analysis and results of the hydraulic analysis used to develop the surge study; assumptions and design criteria; and electronic numerical inputs and outputs (such as spreadsheets or other software-related tools associated with the analysis);

5. The Final Excess Flow Restrictive Device (EFRD) study associated with the pipeline design including a complete High Consequence Area impact analysis and ERFD assessment (such as those performed by G2 Integrated Solutions or equivalent). Full documentation of the analysis shall be submitted, including assumptions and design criteria for the EFRD, and electronic numerical inputs and outputs (such as spreadsheets or other software-related tool inputs/outputs) associated with the EFRD analysis;

6. A Final SCADA and leak detection system design and associated analysis including: thresholds for alarms and shutdown setpoints for flow, pressure and temperature system; flow, pressure and temperature system locations and placement; and any other design considerations associated with the implementation of the SCADA and leak detection systems including their detection criteria, accuracy, and limitations;

7. All components of the Project and their operators, shall be linked together by emergency communications systems, such as radio, satellite phone or other equivalent technology that allows for communications along all portions of the pipeline ROW for purposes of emergency response. All pipelines shall have adequate safety measures to provide rapid detection of small or large leaks, and automatic shutdown. An automatic shutdown is defined as a shutdown that is performed independent of operator input. Any break, rupture, and/or damage to the pipeline system shall result in the orderly shutdown of the operations and will activate shut down valves in a manner to minimize environmental damage. The permittees shall demonstrate to the satisfaction of the Santa Barbara County SSRRC, and applicable San Luis Obispo County agencies and Kern County agencies, the performance of the SCADA system interconnection and emergency communications systems prior to pipeline operations;

8. The SCADA system shall include specific thresholds for alarms and automatic shutdowns, including any five percent deviation from normal operating pressures to trigger an alarm, and any 10 percent deviation to trigger an automatic shutdown, or otherwise agreed-upon thresholds as reviewed and approved by Santa Barbara County, and applicable San Luis Obispo County agencies and Kern County agencies. Any SCADA system failure shall trigger an automatic shutdown. In case of a low-pressure shutdown, the entire pipeline system shall be assessed for a leak or a rupture and the pipeline shall not be restarted without Santa Barbara County, and applicable San Luis Obispo County agencies and Kern County agencies, approval. Any other shutdown and restart shall require immediate notification to Santa Barbara County and applicable San Luis Obispo County agencies and Kern County agencies;

9. Documentation demonstrating compliance with American Petroleum Institute Standards API 1130 (Computational Pipeline Monitoring for Liquid Pipelines) and API 1175 (Pipeline Leak Detection Program Management);

10. All emergency response plans associated with the pipeline system and all associated documentation and analysis, including drainage and storm culvert identification and planning;

11. Results of any CSFM determinations or directives or other requirements and associated documentation and analysis;

12. Any other design and installation considerations and analysis that Santa Barbara County, or applicable San Luis Obispo County agencies and Kern County agencies, determines are related to safety and risk of upset;

13. Upon completion of pipeline construction, the permittees shall provide all jurisdictional agencies with maps, in both PDF and GIS format, showing the finished pipeline routes and shall include locations accessible by fire department emergency response vehicles;

14. The Applicant shall submit Welding Procedure Specifications, Procedure Qualification Records, and Welder Qualification Records to Santa Barbara County, and applicable San Luis Obispo County agencies and Kern County agencies, for review and approval prior to construction. During construction, the Applicant shall submit weld x-rays and other Non-Destructive Testing (NDT) inspection details including the weld maps for review and approval as well as all pertinent Quality Assurance /Quality Control (QA/QC) documents; and

15. A plastic ribbon or other suitable material shall be buried 12 to 78 inches above the pipeline and shall cover the length of the pipeline. The material shall be brightly colored and be labeled with a warning that this area contains a hazardous liquid pipeline trench. This measure shall be noted on the design and construction plans to be reviewed and approved by the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies.

b. **Additional Valve Protection**– The Applicant shall add additional block valves or check valves on the coastal segments of the proposed pipeline ROW to ensure that spills that could reach the marine environment are minimized. These shall include, but not be limited to: additional check valves at Canada de Pila, Canada de Posta, and at the base of the Gaviota Hill. Plans and design calculations shall be submitted to the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies, for review and approval.

PLAN REQUIREMENTS AND TIMING: The pipeline designs and plans, including full documentation of the EFRD and Surge study and Hydraulic analysis, shall be submitted to the Santa Barbara County SSRRC, and applicable San Luis Obispo County agencies and Kern County agencies, for review and approval prior to issuance of the proposed Project Zoning Clearance.

MONITORING: Permit Compliance Staff shall document implementation of measures through plan review and in the field inspections.

RISK.2-3 **Pipeline Operations Management Plan.** The Applicant shall submit a Pipeline Operations Management Plan to the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies, for review and approval. The Pipeline Operations Management Plan shall include the following:

a. **Pipeline Internal Inspections –** Enhanced pipeline internal inspection by the Smart Pig Surveys using the most recent technologies, such as magnetic flux technology, ultrasonic or their combination shall be implemented within the first six months of pipeline operation in order to establish a baseline pipeline condition, and then on an annual basis for the first three years of pipeline operations. Pigging frequency and tools selection shall be determined after three years with the review and approval of Santa Barbara County SSRRC, and applicable San Luis Obispo County agencies and Kern County agencies, with the period between Smart Pig Surveys not to exceed five years. Thresholds for pipeline anomaly in the field confirmation inspection and remediation shall be set at 40 percent to ensure timely capture of any potential issues.

b. **Pipeline Leak Detection System Testing –** the Applicant shall test the leak detection system and operator response activities annually at a minimum through unannounced simulations of a leak , utilizing in the field measures to simulate leaks with the use of bypass valves around flow meters, leaving a drain line valve open, pressure sensor control systems/isolation mechanisms, or other equivalent measures. System design shall include the use of leak-simulation equipment (bypass valves, etc.) and shall be included in system design documentation. In the field testing and simulation of leaks shall be coordinated with Santa Barbara County, and applicable San Luis Obispo County agencies and Kern County agencies, but performed unannounced to operators. In the field leak simulations shall document the leak system performance and shall include estimates of leak detection capabilities and leak size response sensitivities. Documentation of the testing shall be submitted to Santa Barbara County and applicable San Luis Obispo County agencies and Kern County agencies.

c. **PHMSA Corrective Action Orders (CAO) Requirements –** all requirements associated with the PHMSA CAOs that are applicable to the proposed Project pipeline operations shall be completed and all documentation used to complete these measures shall be provided to the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies. These shall include, but not be limited to, the following:

    1. Midland Control Room Enhancements;
    2. Revised Facility Response Plan and Training Records;
    3. Emergency Response Plan and Training Review; and
    4. Enhanced Preventative and Mitigation Measures.

d. **Maintenance Oversight** – all maintenance activities, including those part of regulatory and non-regulatory activities. These include, but are not limited to, the following:

    1. Pipeline internal inspections, including Smart Pig Surveys, hydrotesting, direct inspections of pipeline issues, confirmation digs, anomaly repairs, etc.;
    2. Operating records including operating pressures, flow records and pump operations;
    3. Any maintenance records and activities associated with any pipeline appurtenances, including MOVs, check valves, pipe segment replacement, pump station equipment, etc.;
    4. Emergency response or spill plan updates and revisions;

5. Spill incident reports and reviews;

6. Monthly operating data, including throughput, maintenance activities, fuel use, incidents, scheduled events such as Smart Pig Survey, and any other operating information as determined by Santa Barbara County and applicable San Luis Obispo County agencies and Kern County agencies, in the form of monthly production and maintenance reports; and

7. The use of any specialty tools such as Cracking Tool Smart Pig Survey.

e. **Regulatory Submittals –** all submittals as required by regulatory requirements, such as AB 864, or any CSFM requirements, shall also be submitted to Santa Barbara County and applicable San Luis Obispo County agencies and Kern County agencies for review and approval.

f. **Hydrotesting** - The pipeline shall be hydrotested per State Fire Marshal guidelines prior to operation. Any relocated or realigned portion of the pipeline shall be hydrotested prior to operation. Within 60 days of each hydrotest inspection, the permittees shall provide the report to the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies for review.

g. **Cathodic Protection** - A baseline pipe-to-soil cathodic profile and readings shall be obtained after the pipeline has been installed, but before any cathodic protection facilities are connected. Other utilities shall disconnect their bonds as well. This measure shall be included on the construction plans which shall be reviewed by the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies.

PLAN REQUIREMENTS AND TIMING: The Pipeline Management Plan shall be reviewed and approved by the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies prior to issuance of the proposed Project CUP.

MONITORING*:* Permit Compliance Staff shall document implementation of measures through plan review and in the field inspections including review of the annual leak detection system testing.

RISK.2-4 Safety, Inspection, Maintenance, and Quality Assurance Program (SIMQAP). The Applicant shall submit a SIMQAP to the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies for review and approval. The SIMQAP shall be consistent with the Santa Barbara County SSRRC Administrative Guidelines document dated February 2002 (revised 11/6/2003). The SIMQAP shall be a dynamic document updated at least every 2 years or sooner if warranted by design, Pipeline Operating Procedures and their Annual Revalidations; and operation, or maintenance changes. The Program shall include, but not be limited to:

a. Establishing procedures for review of safety inspection records, including smart pig inspections, valve and pressure sensor maintenance and inspections, and compliance with manufacturers minimum inspection and maintenance procedures;

b. Regular maintenance and safety inspections, including frequency of inspection, written procedures to following during inspections, recordkeeping requirements, and submissions to agency requirements;

c. Periodic safety audits, including a detail audit protocols, recordkeeping requirements, audit personnel minimal capabilities, and agency submittal requirements;

d. Development of safety system testing protocols, including testing of SCADA systems and in-field testing of leak detection capabilities and responses, pressure detection system testing; alarm system response, automatic shutdown system testing procedures, and recordkeeping and report methods.

e. Training and experience standards for personnel, including auditors, maintenance personnel, operators, SCADA system operators and response personnel;

f. Use of simulators in training programs, including SCADA system operators; and

g. Monitoring of critical safety devices and systems including flow meters use in the SCADA system, pressure sensor and detection system used in the SCADA system and alarms and automate shutdown systems.

The Program shall be reviewed and approved by the Santa Barbara County SSRRC and/or its consultants and applicable San Luis Obispo County agencies and Kern County agencies prior to the pipeline system start up. The permittees shall implement the approved SIMQAP and shall provide for involvement of the Santa Barbara County Onsite Environmental Coordinator and County staff or its consultants, and applicable San Luis Obispo County agencies and Kern County agencies, in all inspections. All costs associated with this review process shall be borne by the permittee.

PLAN REQUIREMENTS AND TIMING: The SIMQAP shall be reviewed and approved by the Santa Barbara County SSRRC and applicable San Luis Obispo County agencies and Kern County agencies prior to issuance of the proposed Project CUP.

MONITORING*:* Permit Compliance Staff shall document implementation of the SIMQAP through program review and in the field inspections including SIMQAP audits as outlined in the Section IV.D of the Santa Barbara County SSRRC Guidelines.

RISK.2-5 Environmental Quality Assurance Program (EQAP). The permittee shall prepare an EQAP. The program shall include (or if separate plans exist, reference) all plans relevant to construction and operations of the proposed facilities specified by these conditions and shall describe the steps the permittee will take to assure compliance. This plan is intended to provide a framework for all other programs and plans specified by these conditions. As such, the EQAP is a comprehensive reference document for Santa Barbara County, applicable San Luis Obispo County agencies and Kern County agencies, other agencies, and the public regarding the project. The plan shall also provide a structure for data collection, environmental monitoring, and management coordination by a contractor selected by Santa Barbara County and applicable San Luis Obispo County agencies and Kern County agencies, after consultation with the permittee. The contractor will be under contract and responsible to the County. Preparation and implementation of the plan shall be funded by the permittee.

As part of the EQAP, the permittee shall provide semi-annual reports throughout construction and annual summary reports during operations to Santa Barbara County P&D and applicable San Luis Obispo County agencies and Kern County agencies. These reports shall describe:

a. Project status, including but not be limited to:

1. extent to which construction has been completed;

2. the rate of production/throughput during operation;
3. environmental planning and implementation efforts; and
4. any revised time schedules or timetables of construction and operation that will occur within the following one year period.

b. Evidence of compliance, including letters of commitment, written approvals, and memoranda of Agreements as identified in various permit conditions.

c. Results and analyses of all data collection efforts being conducted by the permittee pursuant to these permit conditions.

PLAN REQUIREMENTS AND TIMING: The EQAP shall be reviewed and approved by Santa Barbara County and applicable San Luis Obispo County agencies and Kern County agencies, prior to issuance of the proposed Project Zoning Clearance. The approved EQAP, shall be provided to Kern County Planning and Natural Resources prior to the issuance of grading or building permits. All subsequent annual reports shall be submitted to Kern County Planning and Natural Resources concurrent with submittal to Santa Barbara County.

MONITORING*:* Permit Compliance Staff shall document implementation of EQAP through program review and in the field inspections including EQAP audits.

RISK.2-6 **County Emergency Response Funding.** The permittee shall enter into an agreement with Santa Barbara County and applicable San Luis Obispo County agencies and Kern County agencies, to provide training for Santa Barbara County staff, Fire Department staff, and applicable San Luis Obispo and Kern County staff, including but not limited to: HAZMAT training; HAZWOPER training; and spill-response volunteer coordination and training. In addition, the Applicant shall provide funding to Santa Barbara County and applicable San Luis Obispo County agencies and Kern County agencies, to develop a formal process and structure to engage local NGOs and other local resources, including a Fisherman's Oil Response Program or other equivalent, to assist in the event of an oil spill. The annual funding shall not exceed $250,000 per year.

PLAN REQUIREMENTS AND TIMING: The funding arrangement shall be reviewed and approved by Santa Barbara County P&D and applicable San Luis Obispo County agencies and Kern County agencies, prior to issuance of the proposed Project Zoning Clearance.

MONITORING*:* Permit Compliance Staff shall document the implementation of the funding arrangement.

RISK.2-7 **Fire Protection Plan.** The permittee shall submit and obtain approval of a Fire Protection Plan (FPP) from the Santa Barbara County Fire Department, San Luis Obispo Fire Department and the Kern County Fire Department for the pipeline route, the pump stations and the valve stations in each respective county. The FPP shall be revalidated annually or updated as deemed necessary by the Fire Department to reflect any operational changes or facility modifications which may present a fire hazard risk. Modifications to the FPP must be reviewed and approved by the Fire Department. The FPP shall address, but not be limited to the following, as they apply to the Project construction and operations:

a. Facility Description*;*

b. Process Description*;*

c. Potential Fire Hazards;

d. Potential Ignition Sources;

e. List of Personnel Responsible for Fire Prevention Measures;

f. Housekeeping Practices;

g. On-Site Fire Fighting Equipment and Water Supply;

h. Fire and Gas Detection Equipment;

i. Fire Department Access;

j. Vegetation Management;

k. Employee Training and Safe Practices;

l. Process Control and Monitoring;

m. Drainage and Containment;

n. Inspection and Maintenance Practices;

o. Inspection and Maintenance Schedule;

p. Hazard and Risk Analysis;

q. Tank Fire Preplans; and

r. Site Map.

PLAN REQUIREMENTS AND TIMING: The FPP shall be reviewed and approved by Santa Barbara County P&D and applicable San Luis Obispo County agencies and Kern County agencies, and Fire Department prior to issuance of the proposed Project Zoning Clearance.

MONITORING: Permit Compliance Staff and the Fire Department shall document implementation of FPP through program review and in the field inspections including FPP audits.

Impacts Remaining After Mitigation

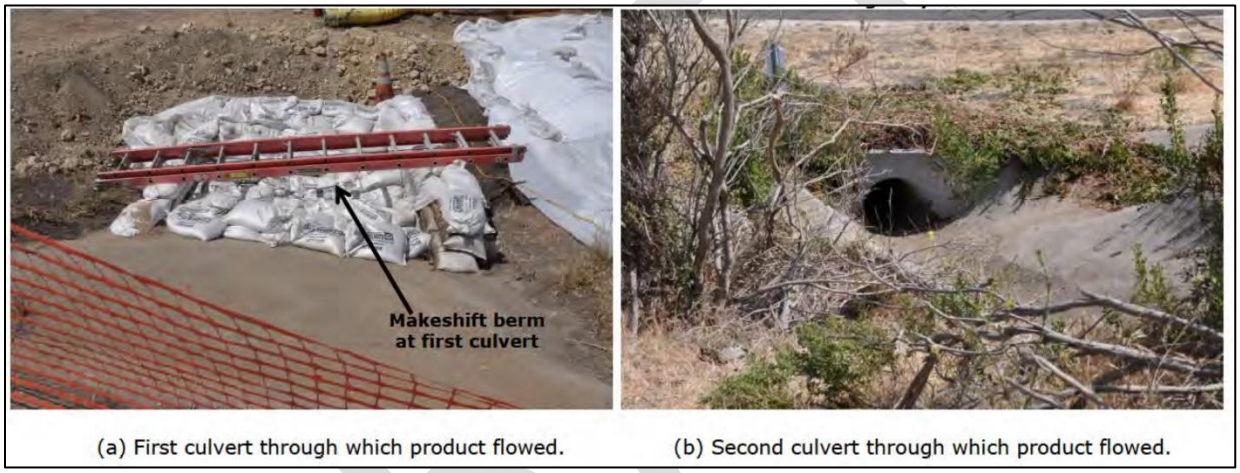
Mitigation measure RISK.2-1 listed above would help improve the response to an oil spill by developing route-specific oil spill response plans and providing additional oil spill response resources, including spill response trailers and specifying the SBCFD as the principal initial responder. These oil spill plans and equipment would allow quicker notification in the event an oil spill and for better coordination with the first responders, particularly the SBCFD and CDFW-OSPR. As shown during the Refugio spill from 2015, the lack of sufficient coordination and available means of blocking the storm drain system allowed substantial amounts of crude oil to drain into the storm drain system. The installation of a flap valve (pictured in Figure 5.6-7 and listed under mitigation measure RISK.2-1.c.8) or readily available equipment on this drainage and/or on storm drains that could be the most impacted by a spill may also allow for control of spills. Although flap valves are

Figure 5.6-7 Flap Valve

commonly installed on drain systems, they are normally installed on the outlet ends of drainage culverts to prevent backflow, but they, or an equivalent system, could be used to prevent flow from entering a storm drain system as well through manually closing the valve in the event of a spill (they would normally be in the open position for storm water drainage). Ensuring systems are immediately available and located adjacent to drainages and storm drains to allow for drain blockage and spill control would help to reduce the probability of oil impacting larger areas and areas potentially in the marine environment.

A number of locations are specified in mitigation measure RISK.2-1 for the installation of response equipment and modifications to priority storm drains. Storms drains were identified based on Caltrans storm drain database and the hydrology trajectory analysis for areas that could be most impacted by a spill. Figure 5.6-8 shows the storm drains that were affected by the 2015 Refugio spill and allowed the crude oil to drain to the marine environment. Figure 5.6-9 shows the locations along the coastal segments where equipment is proposed for installation.

Figure 5.6-8 2015 Refugio Spill Storm Drains



(a) First culvert through which product flowed. (b) Second culvert through which product flowed.

Source: DNVGL 2015

Mitigation measure RISK.2-2 would ensure that appropriate pipeline design is implemented with Santa Barbara County oversight, review, and approval of all design documentation. For SCADA system design parameters, during the 1997 Nuevo rupture, the pipeline was shut down safely due to low pressure. However, the operator restarted the pipeline immediately without any investigation of the low pressure and that subsequently caused a major offshore spill. Therefore, ensuring that there is approval prior to restart of the pipeline after SCADA alarms will ensure that this type of scenario is not repeated.

Mitigation measure RISK.2-2 would also provide additional valve protection along areas of the pipeline that have the potential for impacting the marine environment and would also help reduce the spill sizes. Although the Applicant has proposed more valves than the historical configuration, thereby reducing the potential spill sizes on most parts of the pipeline system, the addition of check valves (e.g., as shown in Figure 5.6-10) along the coastal segment will ensure that spill sizes are minimized regardless of the response time of the SCADA system (check valves operate independently of the SCADA system). This would provide the greatest degree of protection of nearby sensitive resources.

Figure 5.6-9 Locations of Spill Response Equipment – Coastal Segments

Source: Google Earth Aerial

Mitigation measures RISK.2-3, RISK.2-4, and RISK.2-5 would ensure the appropriate Santa Barbara County operation oversight, through operational parameters and maintenance records review and SIMQAP and EQAP implementations. These mitigation measures would ensure that the well-established Santa Barbara County oversight programs are fully implemented for the pipeline, and that Plains is well aware of these requirements and accepts them prior to any issuance of a land use permit or a CUP. This oversight would minimize the potential for spills due to failed maintenance or operational programs.

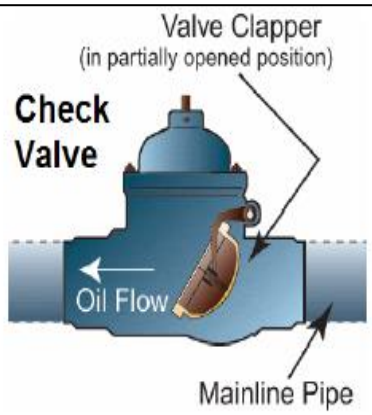


Figure 5.6-10 Check Valve

Mitigation measure RISK.2-6 would ensure that proper training of Santa Barbara County staff, including SBCFD staff, is implemented annually. The Santa Barbara County Office of Emergency Management, 2015 Refugio Oil Spill After-Action Report and Improvement Plan (SBC 2016) documented the need for additional training and resources (as also included in mitigation measure RISK.2-1). A high level of training and coordination among County staff, volunteers, and fisherman/public resources is vital for efficient and effective responses.

Mitigation measure RISK.2-7 provides planning and implementation of specific fire protection measures to reduce the risk of fires from operations.

However, even with the implementation of the above mitigation measures, the potential impacts to sensitive biological, water, marine, recreational, and cultural resources for an oil spill would be **significant and unavoidable** if a spill were to impact any of these resources.

Risks to Schools

Impact #	Impact Description	Phase	Impact Classification
RISK.3	The proposed Project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.	Operations	Insignificant

The pipeline construction activities would be performed in mostly rural areas except for near the City of Buellton, where the pipeline would be installed about 190 feet from the Oak Valley School in western Buellton.

The operational phase of the Project would involve the operation of the pipeline in proximity to the Oak Valley Elementary School in Buellton and the K-8 Vista de las Cruzes school near Highway 1. The California Department of Education (CDE) school siting risk protocol was utilized to determine the risk levels to these schools.

The CDE developed an advisory protocol to assist local education agencies in assessing the safety of locating schools within 1,500 feet of a pipeline. The acceptability of a new school or pipeline proposal is determined by an estimation of individual risk at the school site. If the estimated risk of fatality is less than one in a million years (1×10^{-6} per year), it is below the threshold of significance, and no significant safety hazard is predicted for the individual school. If the estimated risk of fatality is greater than one in a million years, mitigation measures are required to reduce the risk to acceptable limits.

The CDE protocol was developed to ensure that risks are calculated in a consistent manner. The methodology uses historic data to estimate the probability of a pipeline release, models to determine the consequences of a release, the probability of fatality for different exposures, and school attendance hours. These are combined to estimate the risk of fatality. The CDE protocols are provided in the Guidance Protocol for School Site Pipeline Risk Analysis, 2007 (CDE 2007). Although the protocol is developed for natural gas releases, it can easily be applied to pipeline releases of any material that have the potential for public impacts. The resulting risk levels are used to determine significance under CEQA.

The CDE protocol was applied to the Oak Valley Elementary School and Vista de las Cruzes School, and the analysis incorporated the spill frequencies as discussed above. The assessments demonstrated that the risk levels are acceptable under the CDE Risk Protocols. As the CDE protocol indicates acceptability for these closest schools to the pipeline route, risks to schools would be **insignificant**.

Risks of Wildfires

Operations of the pipeline generally would not involve activities that could generate sparks or other fire control issues, as the pipeline would be located below ground. However, operationally the pipeline valve stations would involve the use of emergency generators with hot exhausts that could potentially create sparks and start a wildfire if not sufficiently controlled or if the surrounding areas are not cleared of combustible materials.

Construction of the pipeline would involve clearing of ROW materials, including brush and grasses and trees that could be ignited by hot exhaust systems from construction equipment or sparks from welding activities and could be a potential impact.

Impact #	Impact Description	Phase	Impact Classification
RISK.4	Operations and construction in a very high fire hazard areas without adequate firefighting capabilities or adequate access for firefighting could contribute to wildfire risks.	Construction and Operation	Significant but Mitigable

In the unlikely event of a spill and resultant fire at the pump station operations, any oil would be contained within the pump station spill containment system. The LFC facility has an existing Integrated Fire Protection Plan (IFPP). The IFPP was prepared pursuant to Permit Condition XI-2.i of the Santa Barbara County Final Development Plan for ExxonMobil's onshore oil and gas facilities at LFC and Permit Condition P-10 of the POPCO Compliance Program. The IFPP addresses the potential fire hazards associated with operations within LFC and identifies the firefighting capabilities available at the site. The County has found the IFPP adequate for the current LFC facilities.

Other pump stations would fall under the Plains fire protection and emergency response planning program. Additional equipment added at the Sisquoc, Cuyama and/or Russell Ranch pump stations or the Cuyama or Rancho pump stations would need to be added to any existing emergency response planning programs.

A spill along the pipeline route, as discussed under **Impact RISK.1** related to public safety, if ignited, could cause a fire and subsequent wildfire. Ignition probabilities for crude oil spills are very low, particularly for spills located away from populated areas. Spills within populated areas would normally generate rapid response activities thereby minimizing the potential for wildfires to develop. As the frequency of spills with subsequent ignition in unpopulated areas where a wildfire could develop would be very low, the impacts are considered insignificant.

Operational activities related to valve station generators could introduce hot exhaust into areas with very high fire hazards. Construction activities, particularly related to clearing of vegetation using construction equipment or welding, could introduce the potential for spark-initiation of wildfires and could be significant.

Mitigation Measures

RISK.4-1 **Pump Station Equipment Spacing and Fire Protection Equipment.** The operator shall ensure that design and construction of equipment comply with applicable codes and standards for equipment spacing, particularly those related to tank locations and distances to public areas, installation of fire detection and prevention systems, flame detection, flammable gas detection, fire foam, protection of storm drains from spills, and associated alarms and alert systems. These codes and standards shall include, at a minimum, California Fire Code, SBCFD Fire Prevention Standards, API 2610, NFPA 11 and NFPA 30. The design and construction compliance status shall be verified by audits overseen by the County Fire Department.

RISK.4-2 **Emergency Response and Planning.** The field operator shall develop or include in existing emergency response plans the pump station's fire-fighting capabilities pursuant to the most recent NFPA requirements, California Code of Regulation, and API requirements, in coordination with County Fire Department. The plan should also address coordination with local emergency responders. Emergency response plans shall address the issues related to wildfire risks and response, including development of fuel management/modification zone, as well as first response tactics and equipment.

RISK.4-3 **Fuel Modification Zones and Generator Configurations.** The operator shall ensure that fuel modification areas create at least 30 feet of clearance from all pump stations and pipeline valve station equipment and 10 feet from all roadways to reduce the potential for ignition sources starting wildfires. Valve generators shall be equipped with spark arrestors on exhaust outlets.

RISK.4-4 **Construction Measures.** The Applicant shall ensure that appropriate wildfire response equipment is located at all construction sites, including the availability of water trucks full of water and hot work requirements implementing a fire watch designated at all times. All construction equipment shall be equipped with spark arrestors, and monitoring and training to prevent vehicle traffic off roadways to ensure activities do not impact dry brush and lead to fire, and placing firefighting equipment at the construction site. Requirements shall be posted at all construction areas and placed on construction plans.

Impacts Remaining After Mitigation

The pump station operations would represent a small change to the overall fire hazards at the LFC facility and at other pipeline pump stations. However, valve station generators or construction activities through very high fire hazard areas could produce significant impacts. With mitigation impacts would be **significant but mitigable**.

5.6.3.2 Mitigation Measures

Table 5.6-11 lists the mitigation measures proposed for addressing potential impacts from the hazardous materials.

Table 5.6-11 Mitigation Monitoring and Reporting Program

MM #	MM Title	Monitoring/ Reporting Action	Timing & Method of Verification	Agency or County Responsibilities	Applicant Responsibilities
RISK.2-1	Oil Spill Contingency Planning	P&D and SBCFD attendance at annual oil spill tabletop and in the field drills and in the event of a spill, on-site inspection(s) to verify and document implementation of emergency action measures	Prior to the issuance of the proposed Project CUP	P&D	Development and implementation of measures and plans.
RISK.2-2	Pipeline Design Review	Submission of plans and programs to P&D, in-field inspection of plan requirements	Submission of plans prior to Zoning Clearance.	P&D	Development and implementation of measures and plans.
RISK.2-3	Pipeline Management Plan	Document implementation of measures through plan review and in-field inspections including review of the annual leak detection system testing	Prior to issuance of the proposed Project CUP	P&D	Development and implementation of measures and plans.

Table 5.6-11 Mitigation Monitoring and Reporting Program

MM #	MM Title	Monitoring/ Reporting Action	Timing & Method of Verification	Agency or County Responsibilities	Applicant Responsibilities
RISK.2-4	SIMQAP	Program review and in-field inspections including SIMQAP audits	Prior to issuance of the proposed Project CUP	P&D	Development and implementation of measures and plans.
RISK.2-5	EQAP	Program review and in the field inspections including EQAP audits	Prior to issuance of the proposed Project Zoning Clearance	P&D	Development and implementation of measures and plans.
RISK.2-6	Emergency Response Funding	Document the implementation of the funding arrangement.	Prior to issuance of the proposed Project Zoning Clearance	P&D	Development and implementation of measures and plans.
RISK.2-7	Fire Protection Plan	Program Review and in-field inspections	Prior to issuance of the proposed Project Zoning Clearance.	P&D	Development and implementation of measures and plans.
RISK.4-1	Pump Station Equipment Spacing and Fire Protection Equipment	Submission of design plans to P&D, review and approval of documents, in-field inspections	Submission of plans and documentation prior to CUP issuance.	P&D	Development and implementation of measures and plans.
RISK.4-2	Emergency Response and Planning	Submission of plans to P&D, review and approval of documents, in-field inspections	Submission of plans and documentation prior to CUP issuance.	P&D	Development and implementation of measures and plans.
RISK.4-3	Fuel Modification Zones and Generator Configurations	Submission of plans to P&D, review and approval of documents, in-field inspections	Submission of plans and documentation prior to CUP issuance.	P&D	Development and implementation of measures and plans.
RISK.4-4	Construction Measures	Submission of plans to P&D, review and approval of documents, in-field inspections	Submission of plans and documentation prior to CUP issuance.	P&D	Development and implementation of measures and plans.

Key:
CUP = Conditional Use Permit
EQAP = Environmental Quality Assurance Program
SBCFD = Santa Barbara County Fire Department
SIMQAP = Safety Inspection, Maintenance, and Quality Assurance Program

5.6.3.3 Residual Impacts

Residual impacts associated with the proposed Project would be significant and unavoidable for crude oil spills **(RISK.2),** insignificant for public safety risks **(RISK.1)** and schools **(RISK.3)**, and significant but mitigable for wildfire **(RISK.4)**.

5.6.3.4 Significance Conclusions

CEQA Significance Conclusions

Evaluating the proposed Project against CEQA Appendix G issues (see Section 5.6.2.6), the following Appendix G issues are considered having no impacts or not applicable:

- The Project would not create a potential impact through the routine transport, use, or disposal of hazardous materials;
- The Project would not create a significant hazard through the mobilization of contaminated soils or other materials;
- The Project would not conflict with any airport land use; and
- The Project would not interfere with any adopted emergency response plans.

During normal, routine operations, the crude oil transported by the pipeline systems would be contained within the pipeline and would not produce impacts to the public or the environment. During normal, routine operations, the gas transported by the gas pipeline would be contained within the pipeline and would not produce impacts to the public or the environment. Impacts are related to accidental releases, as discussed in **RISK.1** and **RISK.2**.

The Project would be located within the existing ROW of the existing pipeline and therefore would not be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5. As a result, the Project would not create a significant hazard to the public or the environment through the mobilization of contaminated soils or other materials.

The proposed Project would not conflict with any airport land use plan and would not result in a safety hazard or excessive noise for people residing or working within two miles of a public, or public use, airport. The proposed Project also would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan as the construction areas would be relatively remote, and during operations, there would not be any obstructions to areas as the pipeline would be located underground.

CEQA significance conclusions for other areas are shown in Table 5.6-12.

Table 5.6-12 CEQA Significance Conclusions for the Proposed Project

Impact #	Impact Description	Phase	Impact Classification
RISK.1	The proposed Project could generate risks to public safety and a significant hazard to the public through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Operations	Insignificant
RISK.2	Oil spills associated with the pipeline transportation of crude oil could create a significant hazard to the environment through reasonably foreseeable upset and accident conditions and impact sensitive resources including biological, water, cultural, and marine resources along the pipeline route, and downstream of the ROW.	Operations	Significant and Unavoidable
RISK.3	The proposed Project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school.	Operations	Insignificant

Table 5.6-12 CEQA Significance Conclusions for the Proposed Project

Impact #	Impact Description	Phase	Impact Classification
RISK.4	Operations and construction in a very high fire hazard areas without adequate firefighting capabilities or adequate access for firefighting could contribute to wildfire risks.	Construction and Operations	Significant but Mitigable

NEPA Significance Conclusions

The NEPA significance conclusions are the same as the CEQA significance conclusions discussed above.

5.6.3.5 Cumulative Effects

Cumulative projects include the restart or continued operations of the ExxonMobil SYU facilities, oil and gas projects proposed for the area, and other residential, commercial, and industrial projects in the area. A summary of cumulative projects is presented below. Cumulative projects are discussed in detail in Section 4.0, Cumulative Effects.

SYU Cumulative Projects

Cumulative projects at the SYU facilities would include the restart of the SYU facilities consisting of a continuation of the SYU operations as delineated under the ExxonMobil Interim Trucking project (County Case No. 17RVP-00000-00081) with a decrease in production over historical SYU operations, or full pre-restart activities of the SYU facilities that could take place during the pipeline construction (see Section 4.0, Cumulative Effects).

The SYU facility operations include various hazardous materials used as part of the operations of the facilities. ExxonMobil is both required to prepare a Hazardous Material Business Plan that provides an inventory of the hazardous materials. This plan would be submitted to the respective fire departments (i.e., SBCFD). The hazardous materials stored may include crude oil, lubricant oils, and fuels.

The major risk of upset events associated with the operations of the SYU are crude oil spills and releases of produced gas. These risk of upset events are evaluated in previous environmental documents, including the Environmental Impact Statement/Report [EIS/EIR] for the Santa Ynez Unit/Las Flores Canyon Development and Production Plan (June 1984), the Supplemental Environmental Impact Report [SEIR] for the Exxon Santa Ynez Unit Project (August 1986), and the 1984 EIR/EIS completed for the Celeron/All American and Getty Pipeline Project (SCH # 83110902, Contract # R-8353. A summary of upset events from both offshore and onshore SYU facilities are summarized below.

Offshore Platforms

Between May 2010 and May 2015 there were a total of ten reportable spills from the offshore portion of the SYU project. These are listed in Table 5.6-13. The combined volume of oil spilled from these reportable releases was less than one gallon.

Table 5.6-13 Reportable Offshore Spills from SYU Operations (May 2010 through May 2015)

Date Occurred - Incident	Release Type	Primary Medium	Chemical Spill Vol. Released, gal	Oil Spill Vol. Released, gal	Executive Summary
6/21/2010	Oil	Surface Water-Offshore	0.000	0.008	A fusible loop inadvertently parted, activating the platform deluge

Table 5.6-13 Reportable Offshore Spills from SYU Operations (May 2010 through May 2015)

Date Occurred - Incident	Release Type	Primary Medium	Chemical Spill Vol. Released, gal	Oil Spill Vol. Released, gal	Executive Summary
					system. The water from the deluge swept residual light hydrocarbon through a deck penetration.
7/7/2010	Oil	Surface Water-Offshore	0.000	0.004	Pin-hole leak at deck penetration on low-pressure drain header upstream of low-pressure sump vessel.
7/11/2010	Oil	Surface Water-Offshore	0.000	0.017	Condensed water from air conditioning unit leaked on decking and picked up a small amount of oil and then leaked into water.
10/20/2011	Oil	Surface Water-Offshore	0.000	0.008	A contract ROV lost power under the facility and light oil droplets appeared on the surface causing a very light sheen.
10/24/2011	Oil	Surface Water-Offshore	0.000	0.004	While making repairs to an ROV aboard the dive boat, a small amount of hydraulic fluid leaked onto deck of the vessel and was washed overboard by-passing crew boats.
12/17/2011	Oil	Surface Water-Offshore	0.000	0.008	The diesel tank on an engine driven fire water pump was being filled. The sight glass was restricted, and diesel overflowed out of the atmospheric vent into the water.
4/22/2012	Chemical	Surface Water-Offshore	0.004	0.000	Pin-hole leak at deck penetration on vent line coming off glycol sump vessel.
1/26/2013	Oil	Surface Water-Onshore	0.000	0.004	Small amount of diesel from generator line rupture.
2/13/2013	Oil	Surface Water-Offshore	0.000	0.004	While depressuring accumulator bottle, small amount of hydraulic fluid blew into the ocean.
4/22/2013	Oil	Surface Water-Offshore	0.000	0.004	Droplets of lubricant expelled from wireline lubricator and fell into water.

Source: SBC 2020
Key:
ROV = remotely operated vehicle
SYU = Santa Ynez Unit

The 1984 EIR identified a number of risk of upset events for the offshore SYU operations. Table 5.6-14 provides a list of the potential major risk of upset events identified for the offshore SYU operations. Most of these are related to oil spills that could occur from well blowouts or equipment failures. The largest identified potential risk of upset oil spill was 1,000,000 barrels, which was associated with a subsea blowout. The 1984 EIR and subsequent CEQA documents identified the risk of upset as a significant and unavoidable impact.

Table 5.6-14 1984 EIR Identified Risk of Upset Events for Offshore SYU Operations

Event	Worst-Case Consequence	Likelihood Range (frequency per year)
Ship Hits Platform (major)	500,000 bbl Oil Spilled	10^{-4} to 10^{-6}
Ship Hits Platform (minor)	15,000 bbl Oil Spilled	10^{-2} t0 10^{-4}
Blowout on Platform (major)	500,000 bbl Oil Spilled Possible H_2S Release	10^{-4} to 10^{-6}
Blowout on Platform (minor)	15,000 bbl Oil Spilled Possible H_2S Release	10^{-2} t0 10^{-4}
Subsea Blowout (major)	1,000,000 bbl Oil Spilled	10^{-4} to 10^{-6}
Subsea Blowout (minor)	3,000 bbl Oil Spilled	10^{-2} t0 10^{-4}
Emulsion Pipeline/Riser Rupture	15,000 bbl Oil Spilled	10^{-2} t0 10^{-4}
Gas Pipeline/Riser Rupture	60 tons Flammable/ Toxic Gas Release	10^{-2} t0 10^{-4}

Source: SBC 1984
Key:
bbl = barrel
EIR = environmental impact report
H2S = hydrogen sulfide
SYU = Santa Ynez Unit

Onshore SYU Facilities

Between May 2010 and May 2015 there were no reportable spills at LFC. The 1984 EIR and 1986 SEIR identified a number of risk of upset events for the LFC operations. Table 5.6-15 provides a list of the potential major risk of upset events identified for the LFC operations.

Table 5.6-15 1984 EIR Identified Risk of Upset Events for Las Flores Canyon Operations

Event	Worst-Case Consequence	Likelihood Range (frequency per year)
Oil Tank Spill (major)	250,000 bbl oil spilled	10^{-4} to 10^{-6}
Oil Tank Spill (minor)	44,000 bbl oil spilled	10^{-2} t0 10^{-4}
NGL Tank Rupture	2,000 bbl NGL spilled	10^{-4} to 10^{-6}
NGL Tank Leak	1,000 bbl NGL spilled	10^{-2} t0 10^{-4}
NGL Truck Spill (major)	Full volume of truck	10^{-4} to 10^{-6}
NGL Truck Spill (minor)	Minimal NGL spill	10^{-2} t0 10^{-4}
Ammonia Release*	Full tank release	10^{-4} to 10^{-6}

Source: SBC 1984
Note:
*Likelihood range is an MRS Environmental estimate. Not estimated in previous EIR or SEIR.
Key:
bbl = barrel
EIR = environmental impact report
NGL = natural gas liquid
SEIR = supplemental environmental impact report

The potential major risk of upset events at the LFC are related to oil spills, natural gas liquid releases, and ammonia releases. The largest identified risk of upset oil spill was 250,000 barrels from a crude oil tank spill, that would be contained within facility berms. The 1984 EIR and subsequent CEQA documents identified the risk of upset as a significant and unavoidable impact.

Portions of the LFC facility are subject to CalARP, which is the Federal Risk Management Plan Program with additional state requirements. In Santa Barbara County, this program is administered by the County Department of Environmental Health. The major risk of upset hazards identified in the most recent SYU CalARP documents were a release of ammonia from the storage tank, and a release of flammable gas from the crude oil treating plant. For the POPCO gas plant, the release scenarios identified in the most recent CalARP document was a release of natural gas liquids from the processing facility.

Hazards associated with the operation of the onshore and offshore SYU facilities would remain the same as the historical operations, which were evaluated under prior environmental analysis, and no new hazards at the SYU facilities would occur with the proposed Project.

Oil Spills

Spill risks related to the operation of the existing onshore LFC and offshore platforms were addressed in prior environmental analyses. The major spill risk associated with the existing SYU facilities consists of an oil spill from the platforms due to equipment and pipeline failures and release from production wells. In addition, LFC oil spills could occur from equipment, pipeline, and storage tank failures. These spill impacts were found to be significant and unavoidable in the previous EIR/EIS prepared for these facilities.

Under the proposed Project, no new potential spill risk at the SYU facilities would occur, as the historical spill risks with the LFC included crude pipeline transportation.

Spills from the SYU facilities offshore could impact the same marine resource receptors as a spill from the proposed Project pipeline would. As potential spills from the SYU offshore operations were determined to be significant and unavoidable, and the proposed Project operations associated with oil spills is determined to be significant and unavoidable, the cumulative impacts would also be **significant and unavoidable.**

Other Oil Development Cumulative Projects

Santa Barbara County has been processing applications for several proposed crude oil development projects within the Cat Canyon area that would involve the trucking of crude oil and/or light oil for blending that would travel along similar routes as the pipeline ROW (e.g., along Highway 166). Some of the larger projects, such as the Aera project, the ERG West Cat Canyon Revitalization project, and the PetroRock project, have been withdrawn and are no longer considered cumulative projects. Other small oil development projects could add a few truck trips per day and could add additional oil trucks along portions of U.S. Highway 101 or State Route 166.

As indicated in Section 4.0, Cumulative Projects, the Phillips 66 Santa Maria Refinery Decommissioning project may alter the movement of crude oil in the region, shift some of the crude oil transportation from pipeline transportation to transportation by truck and reroute existing trucks. Once the Santa Maria Refinery (SMR) is shutdown to begin decommissioning, the Santa Maria Pump Station (SMPS) would no longer be operational and would no longer receive trucks for offloading with subsequent pipeline transportation to the SMR (SMPS tanks to SMR is done by pipeline). Pipelines which receive crude oil from area producers for transport to the SMR would also be shut down.

The historical trucks using the SMPS have averaged 138 trucks per day (SBC 2020), which includes 92 oil trucks coming from the East to the SMPS. Under this cumulative scenario, the 92 crude oil trucks per day currently using the SMPS would most likely no longer occur. Although the resulting destination of crude oil trucks currently using the SMPS once the SMR and SMPS shut down is speculative, as they could go south to Los Angeles or other areas, it is possible that other crude oil trucks currently going to the SMPS from the Santa Maria area could start using State Route 166 to get to the Pentland Terminal (the remaining 46 trucks coming from other non-easterly locations).

In addition, producers that historically have used pipelines to supply crude oil to the SMR could shift this transportation mode to truck and utilize State Route 166 to Pentland, or other destinations. Some producers, such as the OCS Pt. Pedernales and LOGP, do not have truck loading facilities and this would require additional construction and permitting of truck loading facilities. Some other producers, such as

Arroyo Grande oil field, have truck loading facilities and up until recently have utilized trucks as the transportation method (the Arroyo Grande oil field converted to pipeline transportation recently). Current production levels transported by pipeline to the SMR include sources such as OCS sources, Arroyo Grande Oil Field, Orcutt Area oil fields, LOGP area, etc. and, if all of this production is converted to truck transportation, could total over 80 trucks per day if not more. Under this cumulative scenario with the SMPS and SMR not in operation, the net change in crude oil trucks using State Route 166 could increase.

For projects that transport crude oil by truck along State Route 166, as State Route 166 runs parallel to the Cuyama River, as does the proposed Project ROW, a spill from a crude oil truck accident could impact the same areas that a spill from the proposed Project pipeline could affect. Trucking of crude oil along State Route 166 was identified as a significant and unavoidable impact in the ExxonMobil Interim Trucking EIR (SBC 2020), although the ExxonMobil trucking project would not be operational when the proposed Project pipeline is operational. Other projects, such as the smaller oil projects, could utilize State Route 166 for the transportation of either crude oil or light oils and would generate significant and unavoidable spill impacts from trucking. As the proposed Project would also be a significant and unavoidable impact due to oil spills along this same area of the Cuyama Valley, there would be a **cumulatively significant and unavoidable impact** due to oil spills.

Residential, Commercial, and Infrastructure Cumulative Projects

A number of projects would involve construction at potential similar timeframes as the proposed Project in somewhat close proximity. Each of these projects would involve construction that could overlap with the proposed Project construction activities. All of these projects would utilize construction equipment with the potential for small spills of diesel fuel or hydraulic oils. As none of these construction projects would generate large spills that could impact the same areas as the proposed pipeline construction Project, cumulative construction impacts would be **insignificant**.

Operations of the cumulative projects would not involve the transportation or use of large quantities of hazardous materials that could produce environmental spills or impacts to public health. Therefore, cumulative operational impacts would be **insignificant**.

5.6.4 No Project/No Action Alternative

Under the no project alternative, the proposed Project and the installation of a new pipeline would not be constructed. Under this scenario, there are multiple variations that could occur, each of these reasonably expected to occur in the foreseeable future if the proposed Project were to not be installed. The Applicant could abandon the project and not move forward with transporting oil via pipeline, or the Applicant could restart the operation of the existing pipeline. Each of these is discussed below.

5.6.4.1 Environmental Impacts

No Project, No Pipeline Alternative

Under this alternative, there would be no pipeline utilized and no transportation of crude oil via pipeline would occur. The existing pipeline would need to be abandoned and, in some areas as per ROW agreements, removed. The removal of pipeline segments and the removal of valve stations and pump stations would require construction activities. Removal of addition elements of the oil and gas infrastructure, such as the ExxonMobil SYU facility, are not addressed in this analysis and would be subject to additional decommissioning permits and CEQA analysis.

Impacts related to Hazardous Materials and Risk of Upset would only be related to maintenance and construction activities and these maintenance activities would have a minor impact on risk due to the potential for localized spills of hydraulic or diesel oils. **Impact RISK.1, RISK.2, RISK.3** would not be applicable and mitigation measures RISK.2-1 through RISK.2-7 would not be applicable. Impacts would therefore be **insignificant**.

Construction activities related to valve stations, pump stations and some segments of the pipeline that could be abandoned could potentially produce an increased risk of wildfires during construction, and **RISK.4** would still be applicable and mitigation measures RISK.4-1 through RISK.4-4 would still be applicable. Impacts related to **Impact RISK.4** and wildfires would therefore be **significant but mitigable**.

No Project, Existing Pipeline Restart Alternative

Under this alternative, the existing pipeline would be utilized instead of a new pipeline being installed, and transportation of crude oil would occur through the existing pipeline. The existing pipeline would be brought into compliance with existing requirements related to AB 864 and CSFM best available technologies (BAT), including the installation of additional valves along the pipeline route. The Applicant would have to apply to the CSFM for a waiver to utilize the existing pipeline since the existing pipeline is subject to corrosion under insulation, which could affect the efficacy of cathodic protection systems. Generally, a pipeline is not allowed to operate with ineffective cathodic protection systems. There is uncertainty as to whether the Applicant could demonstrate to the CSFM that the pipeline could be operated safely, and therefore this variation and the variation above (no Project, No Pipeline Alternative) are both addressed.

Assuming that a CSFM waiver is granted, the Applicant would have to install additional valves along the pipeline in order to comply with AB 864 and BAT requirements, similar to the proposed Project pipeline design. The installation of these additional valves would require some construction activities and some limited clearing at multiple locations along the pipeline ROW.

The existing pipeline is insulated, and therefore there would be no need for heaters at the Sisquoc Pump Station or the installation of the gas pipeline.

The installation of valves would most likely be at locations similar to the proposed Project valve installations as the pipeline would follow a similar ROW and similar terrain.

Hazards are associated with risks to the public from a spill and subsequent fire, as well as impacts from a spill to the environment, impacts to schools and potential wildfire impacts. The existing pipeline is a larger diameter pipeline, and therefore the draindown spill volumes would be larger than the proposed Project. This results in potentially larger spills and larger fires, impacting more people, as well as larger spills to the environment. In addition, the frequency of a spill from the existing pipeline would be higher due to its age and the potential for the cathodic protection to be compromised by the insulation. These factors have been incorporated into the analysis presented below.

Risks to Public Safety

Impact RISK.1 describes the potential spill sizes and the estimated frequency of spills from the pipeline system and the potential for immediate (fires, etc.) health impacts on the public.

Crude Pipeline Spill Volumes

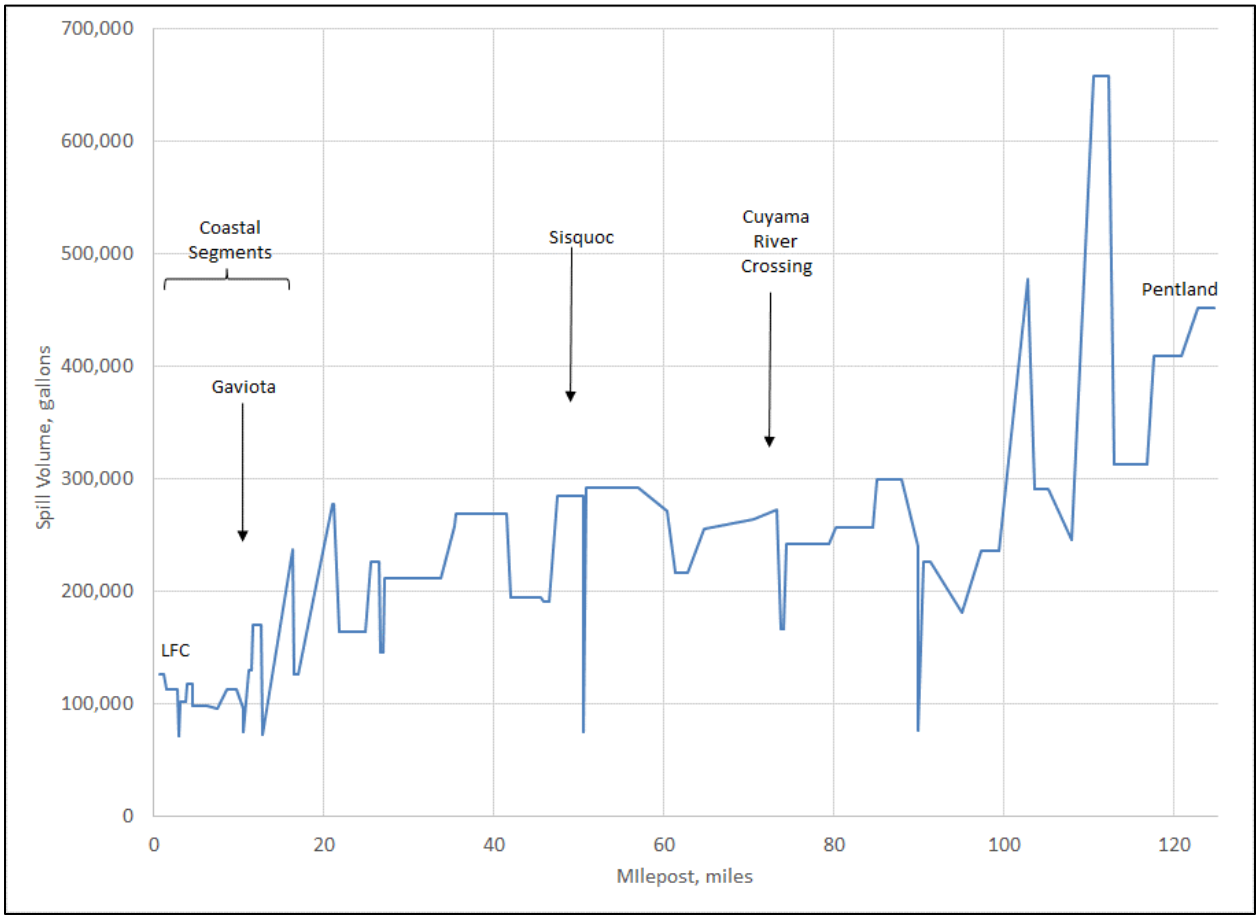
The spill volumes for this alternative were calculated based on the pipeline size, which would be larger than the proposed Project, and the associated terrain for different segments of the pipeline. The Applicant

provided a risk assessment for the proposed Project and this analysis was utilized to estimate the spill volumes associated with a larger pipeline size. Figure 5.6-11 shows the estimated spill volumes along the pipeline route for each segment as a worst case for that segment. The worst-case sized spill volume is shown in Table 5.6-16 for the different portions of the crude oil pipeline alternative.

Crude Pipeline Spill Frequencies

Spill frequencies from a crude pipeline are based on the PHMSA failure rates for the California pipeline database. The PHMSA base failure rate for crude oil pipelines is shown in Table 5.6-17. The spill frequencies are adjusted for the pipeline potential higher failure rate due to the compromised cathodic protection system and the potential for corrosion under the insulation issues. This correction is based on the CSFM report (CSFM 1993) indicating a five times increase in failure frequencies for pipelines that are not equipped with cathodic protection over the average failure rate. In addition, because the existing pipeline is older, it could experience a higher failure rate due to age. However, the CSFM study indicated a minimal increase in failure rate for pipelines that are less than 40 years old and the PHMSA database used to estimate the base failure rate includes many older pipelines. Therefore, only the five times factor was applied as an estimate of the increased failure rate for this pipeline.

Figure 5.6-11 No Project – Existing Pipeline Restart Alternative Spill Volume by Segment Milepost



Source: based on Applicant QRA and EFRD 2019, with adjustments for the size of the existing pipeline.

Table 5.6-16 No Project – Existing Pipeline Restart Alternative Crude Pipeline Worst Case Spill Volumes

Location	Proposed Project - Maximum Spill Volume, gallons	Alternative - Maximum Spill Volume, gallons
LFC – Gaviota Plant	84,000	126,000
Gaviota – Sisquoc	131,040	284,594
Sisquoc - Pentland	198,030	657,893
Coastal Segments	117,600	237,344

Source: based on Applicant QRA and EFRD 2019, with modification to address spill duration of 60 minutes. Coastal segments include up to valve station 2-500. Includes the installation of additional valve stations as per the proposed Project locations.

Table 5.6-17 No Project – Existing Pipeline Restart Alternative Crude Pipeline Spill Frequencies

Location	Spill Frequency	Return Period, years rupture/leak/total
PHMSA California Crude oil base rate	1.62 per 1,000-mile years	-
Adjustment due to Pipeline Condition	5.3 factor	-
PHMSA Adjusted Rate	8.56 per 1,000-mile years	-
Failure rate for L901R (49.2 miles)	0.43 failures per year	9/3/2 years
Failure Rate for L903R (74.1 miles)	0.63 failures per year	6/2/2 years
Failure Rate for L901R + L903R	1.07 failures per year	4/1/1 years

Source: based on Applicant QRA and EFRD 2019 with CSFM 1991 adjustment factor. PHMSA data since 2010. The return period is the anticipated period between releases. Includes leaks and ruptures.

Crude Pipeline Population Densities

The population densities along the route are based on estimates for remote, rural, low density and high-density areas with some additions for highways. The population densities are similar to those used for the proposed Project except for the area through the City of Buellton, since the existing pipeline would pass through the City of Buellton and the proposed Project would pass around the City of Buellton to the west.

Crude Pipeline Fires

In the event of a spill of oil and subsequent ignition resulting in a pool fire, the heat (i.e., thermal radiation) from the fire could result in a serious injury or fatality. The assumptions for impacts would be the same as for the proposed Project.

Gas Pipeline

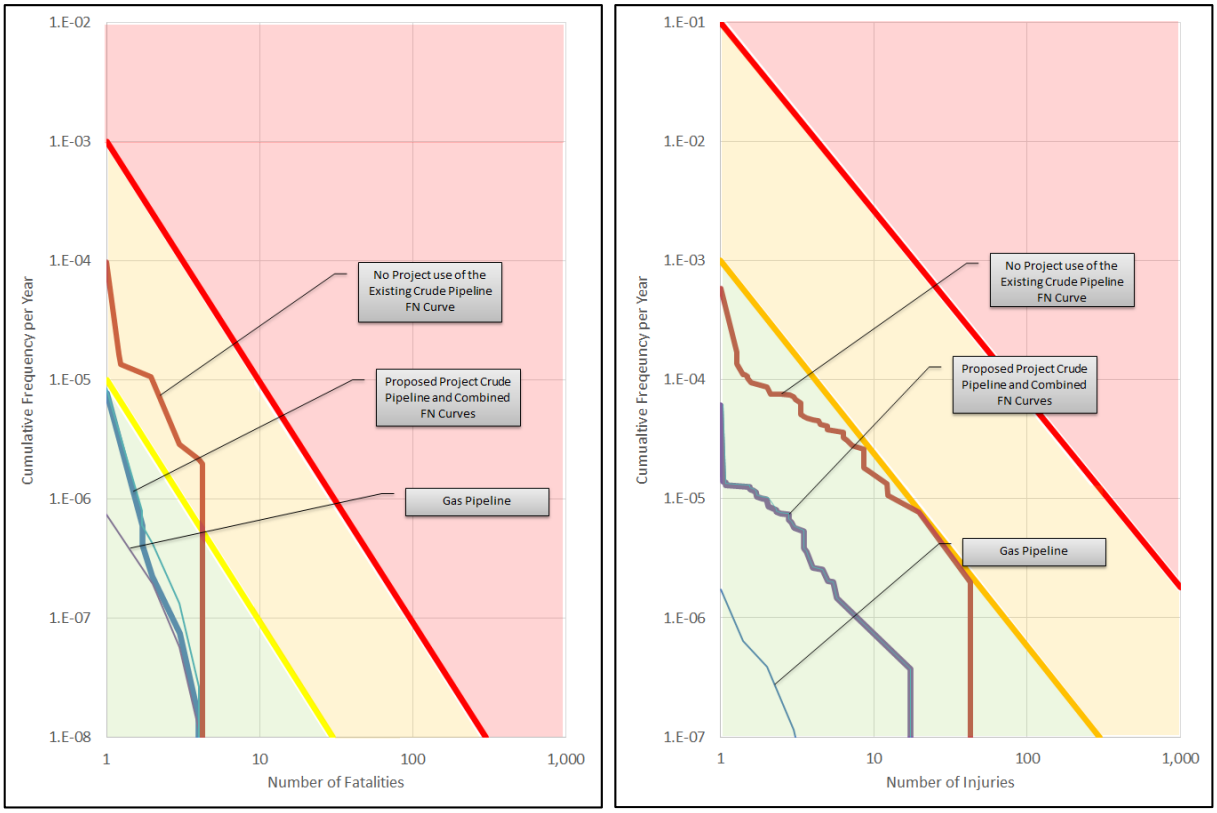
The proposed gas pipeline would not be installed as part of this alternative since heaters at Sisquoc would not be installed.

Alternative Pipeline: Public Safety Risk

The combination of scenario frequency and consequences is combined to estimate risk using FN curves. FN curves are depictions of the risk levels of a project and show the frequency (F) of scenarios that could produce a given fatality or injury level (N) or greater. These are presented for the proposed Project in **Impact RISK.1**. Santa Barbara County has established risk thresholds that use societal risk profiles (FN curves) to determine the significance of hazardous material releases. These FN curves address both injury and fatality. The Santa Barbara County's adopted thresholds are generally applicable to fixed facilities and pipelines. The risk FN curves are shown in Figure 5.6-12 and are based on the FN curves developed as part of the Plains 2019 QRA analysis, with adjustments for the existing pipeline (increased pipeline diameter

and failure frequency). The FN curves would be located within the amber region, and the impacts to public health due to pipeline releases would be **significant and unavoidable.**

Figure 5.6-12 No Project – Existing Pipeline Restart Alternative Pipeline Risk FN Curves



Source: Plains 2019 with modifications

Risks to the Environment

A spill of crude oil from the pipeline could impact resources in the vicinity of the pipeline ROW. See Section 5.2 Biological Resources, Section 5.4 Cultural Resources and Section 5.9 Hydrology and Water Quality for a discussion of the impacts of a crude oil spill on biological, hydrological and cultural resources along the crude oil pipeline ROW.

Crude Pipeline Spill Volumes

The spill volumes are discussed above under **Impact RISK.1**. For the public health assessment under **Impact RISK.1**, a worst-case spill shutdown time of 15 minutes was used due to the already conservative analysis for fires and impacts to the public used in the QRA. However, for spills that could affect the environment, a longer duration is used. As evidenced by the May 2015 Refugio spill, there is the potential for a pipeline shutdown to take longer than 15 minutes.

Crude Pipeline SCADA System

The SCADA system used for the alternative would be the same as that used for the proposed Project since the SCADA system would be required to be updated per CSFM and AB864 requirements.

Proposed Project Pipeline: Spills Affecting Marine Resources

Portions of the pipeline extend along the Santa Barbara County coastline. A crude oil spill could drain from the spill location through existing culverts or drainages and enter the marine environment. This is what occurred during the May 2015 Refugio Beach spill. An estimated 43 percent of the oil entered the ocean from the Refugio spill location, which was an estimated 750-foot pathway from the ocean shoreline. Because the proposed pipeline is located onshore at various distances from the shoreline, a rupture at different locations spilling the same amount of oil could allow for oil to enter the marine environment. Assuming a linear function of oil being trapped and adsorbed onshore with distance, the maximum amount of oil could enter the ocean where the pipeline is closest to the ocean and potential worst-case spill volumes are large. An estimated maximum amount of 71,621 gallons of crude oil could enter the ocean at the worst-case spill location. An estimated 11.8 miles of the 16.6-mile coastal portion (71 percent) of the pipeline would be vulnerable to spills entering the ocean if a spill were to occur along any of those segments and the adsorption rate were similar to that which occurred during the Refugio spill. This assumes that no rain event is occurring and that drainages are not flowing.

There are a number of variables affecting the amount of oil that could reach the ocean from an onshore spill, including the terrain, the location of drainages under the freeway and the railroad tracks, the soil type, and extent of rocky interfaces as well as the amount of moisture. During a rain event, when drainages and creeks are flowing, a spill into the waterways could follow the flow and enter the marine environment more readily. A spill under these conditions would also have more extensive terrestrial impacts and reach the marine environment more readily but would also be subjected to turbulence and mixing along the drainages.

For inland areas, the area with the largest potential impacts is along the Cuyama River. Based on the elevation profile and the spill volumes, the maximum spill volume along the Cuyama River segments of the pipeline (between proposed Project valve 3-800 and 5-400 nearest the Cuyama River) and using the absorption rate as seen in the Refugio spill, a spill along the Cuyama River portion of the pipeline could impact resources a distance as far as about 3,200 feet, which means that pipeline segments within about 3,200 feet of the Cuyama River could potentially impact the river in the event of a spill.

Potential Impacts

Depending on the location of the spill, the environmental conditions, and the biological resources present, Impact RISK.2 short and long-term effects to biological resources associated with a crude oil spill has the potential to be significant and unavoidable. Mitigation measures RISK.1-1 through RISK.1-7 would apply. Due to the increased size and frequency of spills, this significant and unavoidable impact would be a greater severity than that presented by the proposed Project.

Risks to Schools

For **Impact RISK.3** (schools), the pipeline construction activities for the existing pipeline would only affect areas near the proposed valve installations. The existing pipeline is located about 500 feet from the Oak Valley School in western Buellton. In order to address the risk levels to this school, the California Department of Education (CDE) school siting risk protocol was utilized to determine the risk levels.

The assessments demonstrated that the risk levels are acceptable under the CDE Risk Protocols with a Total Individual Risk/Individual Risk Criteria (TIR/IRC) ratio of 0.29, with a 1.0 TIR/IRC ratio being the CDE Protocol threshold. It is important to note that the CDE protocol examines the individual risk at the closest school and does not examine the risks cumulatively along the entire pipeline route. Because the CDE

Protocol indicates acceptability for the closest school to the pipeline route, risks to schools and the impacts of hazardous materials would be **insignificant**.

Risks of Wildfires

For **Impact RISK.4**, operations of the pipeline generally would not involve activities that could generate sparks or other fire control issues because the pipeline would be located below ground. However, operationally the pipeline valve stations would involve the use of emergency generators, which have hot exhausts and could potentially create sparks and start a wildfire if not sufficiently controlled or areas are not cleared of combustible materials.

Construction of the pipeline valve stations would involve some clearing of materials, including brush and grasses and trees, which could be ignited by hot exhaust systems from construction equipment or sparks from welding activities and could generate a potential impact.

The pump station operations would represent no change to the overall fire hazards at the LFC facility and at other pipeline pump stations. However, valve station generators or construction activities through very high fire hazard areas could produce significant impacts. With mitigation measures RISK.4-1 through RISK.4-4, including fire prevention measures and appropriate firefighting capabilities, impacts would be **significant but mitigable**.

5.6.4.2 Mitigation Measures

All mitigation proposed under the proposed Project would be applicable to this alternative variation of the existing pipeline use.

5.6.4.3 Residual Impacts

Residual significant and unavoidable impacts would exist for the public safety risks and for the crude oil spill risks. The severity of the significant and unavoidable crude oil spill risk impact would be greater under this alternative than under the significant risk identified for the proposed Project.

5.6.4.4 Significance Conclusions

CEQA Significance Conclusions

CEQA significance for this alternative where the existing pipeline is utilized would be as follows for each of the impacts identified for the proposed Project:

- **RISK.1,** public safety risks, would be **significant and unavoidable**. This is an increase over the proposed Project from insignificant;
- **RISK.2**, spill risks, would be **significant and unavoidable** with greater severity than the proposed Project with mitigation measures RISK.2-1 through RISK.2-7 applicable;
- **RISK.3**, for risks to schools, would be **insignificant;** and
- **RISK.4**, for wildfire risks**,** would be **significant but mitigable** with mitigation measures RISK.4.1 through RISK.4-4 applicable.

No new impacts, aside from those above, would be realized with this alternative over the proposed Project.

NEPA Significance Conclusions

The NEPA significance conclusions are the same as the CEQA significance conclusions discussed above.

5.6.4.5 Cumulative Effects

Cumulative effects would be the same as the proposed Project, except that the **cumulatively significant and unavoidable** crude oil spill risks would be greater severity.

5.6.5 Alternative A (Construction of a Greater [Further West] Reroute around the City of Buellton)

Under the Construction of a Greater [Further West] Reroute around the City of Buellton Alternative, the proposed Project would be installed in the same location as the proposed Project pipeline except that the pipeline location near Buellton would be installed further west and farther away from Buellton.

5.6.5.1 Environmental Impacts

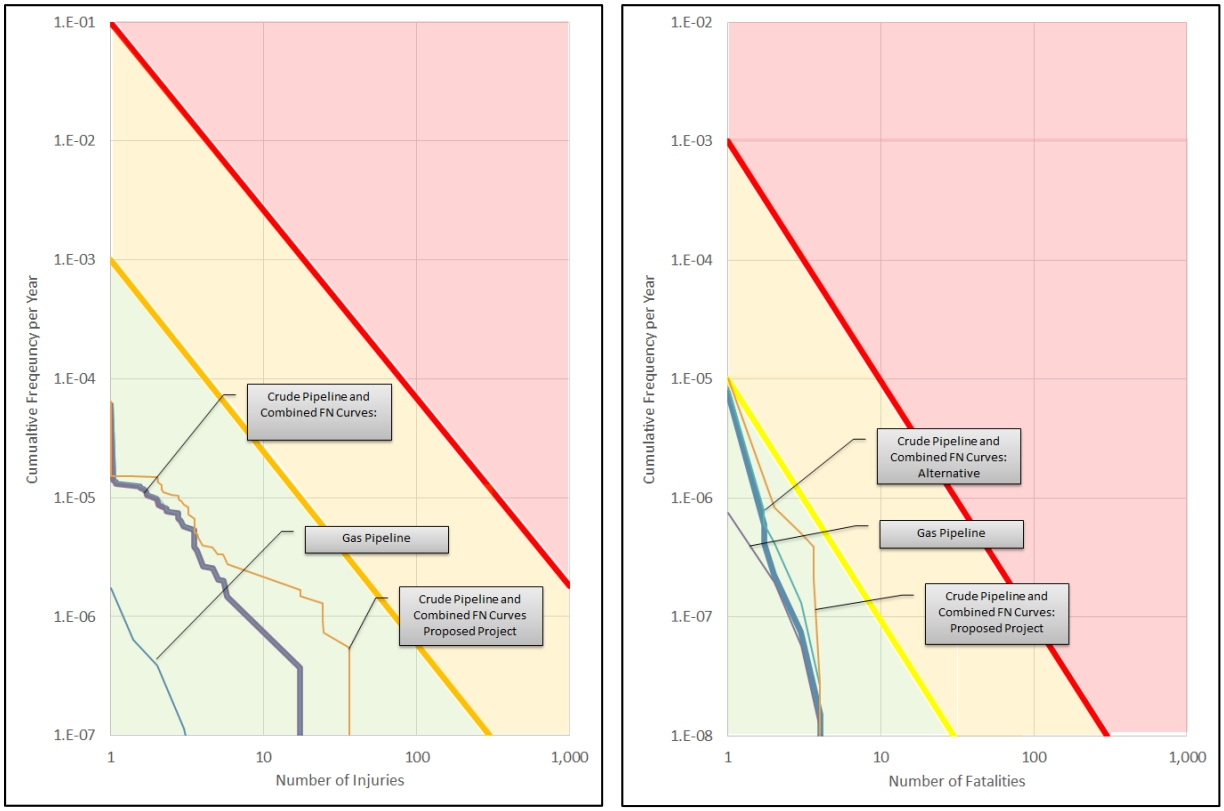
All impacts associated with this alternative would be the same as the proposed Project except that the pipeline would be longer, as it is located farther west of Buellton, by about 6,675 feet. In addition, the pipeline would pass through less densely populated areas as it would be farther away from the Buellton. The longer pipeline would cause the failure rate to increase slightly and may cause the pipeline spill volume to marginally increase as well. Overall pipeline failure frequency would increase by about one percent. The FN curves associated with public safety **Impact RISK.1** would be slightly less severe as shown in Figure 5.6-13 due to the lower population density along this alternative route and would remain insignificant.

Impact RISK.2 related to crude oil spill volumes would increase in severity slightly with this alternative as the pipeline would be longer, and the resulting spill frequency would increase by about one percent. **Impact RISK.2** would remain **significant and unavoidable**.

Impacts RISK.3 related to schools would continue to be **insignificant** under the CDE criteria yet would be reduced in severity as the pipeline would be moved farther away from the schools.

Impact RISK.4 would remain the same as the proposed Project and would be **significant but mitigable**.

Figure 5.6-13 Alterative A Project Pipeline Risk FN Curves



5.6.5.2 Mitigation Measures

Mitigation measures would be the same as the proposed Project.

5.6.5.3 Residual Impacts

Residual significant and unavoidable impacts would remain for the crude oil spills, with slightly greater severity than the proposed Project.

5.6.5.4 Significance Conclusions

CEQA Significance Conclusions

CEQA significance for this alternative where the pipeline is routed more west of Buellton would be as follows for each of the impacts identified for the proposed Project:

- **RISK.1,** public safety risks, would be **insignificant**. There is a slight decrease in severity over the proposed Project, and still remains insignificant;
- **RISK.2**, spill risks, would be **significant and unavoidable** with slightly greater severity than the proposed Project with mitigation measures RISK.2-1 through RISK.2-7 applicable;
- **RISK.3**, for risks to schools, would be **insignificant;** and
- **RISK.4**, for wildfire risks**,** would be **significant but mitigable** with mitigation measures RISK.4.1 through RISK.4-4 applicable.

No new impacts, aside from those above, would be realized with this alternative over the proposed Project.

NEPA Significance Conclusions

The NEPA significance conclusions are the same as the CEQA significance conclusions discussed above.

5.6.5.5 Cumulative Effects

Cumulative effects would be the same as the proposed Project.

5.6.6 Alternative B (Use of Existing Pipeline Trench [Removing Existing Pipeline and Install Replacement Pipeline in Same Trench])

Under the Use of Existing Pipeline Trench Alternative, the proposed Project would be installed in the same trench as the existing pipeline and the existing pipeline would be removed entirely. An exception is the area near Buellton, where the pipeline would be rerouted and follow the proposed Project route.

5.6.6.1 Environmental Impacts

Impacts related to Hazardous Materials and Risk of Upset would be related to operation of the crude oil pipeline and the potential for spills resulting in fires or environmental impacts. This alternative would deviate from the existing pipeline route at the City of Buellton and would utilize the proposed Project route around the City of Buellton. Therefore, **Impact RISK.1** (public safety) would produce the same risks to the public as the proposed Project due to the use of the same route which would pass through the same population areas. Impacts would be **insignificant.**

Impact RISK.2 (environmental impacts) would also be the same as the proposed Project as the pipeline **route** would be similar to the proposed Project, valves would be installed at the same locations and environmental resources would be the same. Mitigation measures RISK.2-1 through RISK.2-7 would be applicable to this alternative. Impacts would be **significant and unavoidable.**

Impact RISK.3 (schools) would be the same as the proposed Project and impacts would be **insignificant.**

Impact RISK.4 (wildfires) would be the same as the proposed Project. As construction activities related to valve stations, pump stations and segments of the pipeline and valve generators exhaust during operations could potentially produce an increased risk of wildfires, mitigation measures RISK.4-1 through RISK.4-4 would still be applicable. Impacts related to **Impact RISK.4** and wildfires would therefore be **significant but mitigable.**

5.6.6.2 Mitigation Measures

Mitigation measures would be the same as the proposed Project and all mitigation measures would be applicable.

5.6.6.3 Residual Impacts

Residual impacts would be the same as the proposed Project and would be significant and unavoidable for crude oil spills (RISK.2), insignificant for public safety risks (RISK.1) and schools (RISK.3), and significant but mitigable for wildfire (RISK.4).

5.6.6.4 Significance Conclusions

CEQA Significance Conclusions

CEQA significance conclusions would be the same as the proposed Project.

NEPA Significance Conclusions

The NEPA significance conclusions are the same as the CEQA significance conclusions discussed above.

5.6.6.5 Cumulative Effects

Cumulative effects would be the same as the proposed Project.

5.6.7 Alternative C (Reduced Temporary Construction Corridor at Eight Waters of the U.S Crossings)

This alternative would follow the same route and construction techniques as the proposed Lines 901R and 903R. Other elements of the proposed Project, including pipeyards, installation of valve stations, improvements to existing pump stations, and construction of new pump stations, would be the same under this alternative. This alternative includes a reduced temporary construction corridor (50 feet) at eight of the 123 open trench locations. Otherwise, all activities would be the same as the proposed Project.

5.6.7.1 Environmental Impacts

Impacts related to Hazardous Materials and Risk of Upset would be related to operation of the crude oil pipeline and the potential for spills resulting in fires or environmental impacts. This alternative would have the same pipeline route and operations as the proposed Project. Therefore, **Impact RISK.1** (public safety) would produce the same risks to the public as the proposed Project due to the use of the same route which would pass through the same population areas. Impacts would be **insignificant.**

Impact RISK.2 (environmental impacts) would also be the same as the proposed Project as the pipeline route would be the same as the proposed Project, valves would be installed at the same locations and environmental resources would be the same. Mitigation measures RISK.2-1 through RISK.2-7 would be applicable to this alternative. Impacts would be **significant and unavoidable.**

Impact RISK.3 (schools) would be the same as the proposed Project and impacts would be **insignificant.**

Impact RISK.4 (wildfires) would be the same as the proposed Project. As construction activities related to valve stations, pump stations and segments of the pipeline and valve generators exhaust during operations could potentially produce an increased risk of wildfires, mitigation measures RISK.4-1 through RISK.4-4 would still be applicable. Impacts related to **Impact RISK.4** and wildfires would therefore be **significant but mitigable.**

5.6.7.2 Mitigation Measures

Mitigation measures would be the same as the proposed Project and all mitigation measures would be applicable.

5.6.7.3 Residual Impacts

Residual impacts would be the same as the proposed Project and would be significant and unavoidable for crude oil spills **(RISK.2)**, insignificant for public safety risks **(RISK.1)** and schools **(RISK.3)**, and significant but mitigable for wildfire **(RISK.4)**.

5.6.7.4 Significance Conclusions

CEQA Significance Conclusions

CEQA significance conclusions would be the same as the proposed Project.

NEPA Significance Conclusions

The NEPA significance conclusions are the same as the CEQA significance conclusions discussed above.

5.6.7.5 Cumulative Effects

Cumulative effects would be the same as the proposed Project.

5.6.8 Alternative D (Construction of Line 901R and Restart of a Portion of Existing Line 903 Pipeline)

Under this alternative, only the proposed Line 901R (approximately 49.3 miles) would be constructed from Las Flores Canyon to the Sisquoc Pump Station. From the Sisquoc Pump Station, oil would be transported through the existing portion of Line 903 from the Sisquoc Pump Station to the Pentland Delivery Point.

5.6.8.1 Environmental Impacts

The impacts of this alternative would be a combination of the proposed Project for the first section of the pipeline (SYU to Sisquoc) and the no project alternative, existing pipeline restart for the section of the pipeline between Sisquoc and Pentland.

As the pipeline between Sisquoc and Pentland would utilize the existing, larger diameter pipeline, the spill sizes would be larger along this section of the alternative pipeline. In addition, as this pipeline would be older and insulated, it could experience higher rates of failure than the new pipeline, as discussed under the no project alternative, existing pipeline restart variation.

For **Impact RISK.1**, public safety, almost all of the public exposure is located between SYU and Sisquoc, primarily the City of Buellton. The public exposure from Sisquoc to Pentland is minimal. Therefore, the FN curves defined by the proposed Project would be about the same as this alternative and risk levels would be insignificant.

For **Impact RISK.2**, spill volumes along the Sisquoc to Pentland portion of the pipeline would be larger, relating in potentially larger spills if a leak or rupture were to occur. Figure 5.6-11 and Table 5.6-16 show the graphs of spill volumes for the Sisquoc-Pentland portion as well as the worst-case spill volumes. As part of the pipeline would be new, without insulation, and would have a lower failure rate, the overall pipeline failure rate would be lower than the no project alternative, existing pipeline restart, with the overall spill frequency being once every six years for large spills and once every two years for small spills. Impacts would be significant and unavoidable, as per the proposed Project, except that the severity would increase as the potential spill sizes along the Sisquoc to Pentland segments and the overall pipeline spill frequency would increase.

For **Impact RISK.3**, impacts to schools would be the same as the proposed Project and would be insignificant.

For **Impact RISK.4**, for wildfire risks, impacts would be similar to the proposed Project, mitigations measures RISK.4-1 through RISK.4-4 would still be applicable, and impacts would be significant but mitigable.

5.6.8.2 Mitigation Measures

Mitigation measures would be the same as the proposed Project.

5.6.8.3 Residual Impacts

Residual significant and unavoidable impacts would remain for the crude oil spills, with greater severity than the proposed Project.

5.6.8.4 Significance Conclusions

CEQA Significance Conclusions

CEQA significance for this alternative where new pipeline is installed between SYU and Sisquoc, and the existing pipeline is utilized between Sisquoc and Pentland, would be as follows for each of the impacts identified for the proposed Project:

- **RISK.1**, public safety risks, would be **insignificant**. There is a slight increase in severity over the proposed Project, and still remains insignificant;
- **RISK.2**, spill risks, would be **significant and unavoidable** with greater severity than the proposed Project with mitigation measures RISK.2-1 through RISK.2-7 applicable;
- **RISK.3**, for risks to schools, would be **insignificant;** and
- **RISK.4**, for wildfire risks**,** would be **significant but mitigable** with mitigation measures RISK.4.1 through RISK.4-4 applicable.

No new impacts, aside from those above, would be realized with this alternative over the proposed Project.

NEPA Significance Conclusions

The NEPA significance conclusions are the same as the CEQA significance conclusions discussed above.

5.6.8.5 Cumulative Effects

Cumulative effects would be the same as the proposed Project.

5.6.9 Alternative E (Trucking to the Pentland Delivery Point)

Under the Trucking to Pentland Alternative, the proposed Project would involve the installation of a truck loading rack at the LFC facility and the movement of the crude oil via truck to Pentland instead of a pipeline. ExxonMobil has submitted an application to the County of Santa Barbara for the interim movement of crude oil via trucks from the LFC, titled “ExxonMobil Interim Trucking for Santa Ynez Unit (SYU) Phased Restart Project” (County EIR No. 19EIR-00000-00001). Therefore, a scaled-down version of this alternative has been evaluated for environmental impacts in ExxonMobil Project’s EIR. Under that

project, trucking would occur seven days per week, 24-hours per day, with no more than 68 trucks leaving the LFC facility within a 24-hour period for the Pentland Facility. Each truck would transport approximately 160 barrels of crude oil (equivalent to 6,720 gallons). Production from the SYU facilities during the ExxonMobil Project's trucking operations would be about 11,200 barrels per day of oil.

Under this alternative, crude oil would be trucked from the Las Flores Canyon Facility to the Pentland Delivery Point. The truck loading rack at the LFC would load and transport up to 252 trucks per day or approximately 40,000 bbls of oil per day. There would be an estimated 15 loading racks installed at the LFC.

5.6.9.1 Environmental Impacts

Impacts related to Hazardous Materials and Risk of Upset would be related to operation of the crude oil loading rack and the potential for spills along highways resulting in fires or environmental impacts. Under this alternative, the existing pipeline selected portions would still be removed, and some pipeline construction related to removal would still occur.

Risks to Public Safety

Impact RISK.1 (public safety) would follow a similar analysis as that for pipeline, except it would be applicable to the truck route. The ExxonMobil EIR examined the risks of upset on public safety for the trucking of crude oil. This analysis was utilized and scaled upwards to address the public safety risks associated with the increased level of trucking in this alternative over the ExxonMobil Project.

It was assumed that all trucks entering and leaving the LFC facility would use the Refugio Road on and off-ramps at U.S. 101. Trucks traveling to the Pentland Terminal would exit U.S. 101 at the State Route 166 Interchange and use State Route 166 to Basic School Road. The analysis used route specific accident data from the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS) to develop the likelihood of a truck accident rate along each of the proposed transportation routes. In developing the overall truck accident rate, one of the sources of data used was route specific accident data from the State of California that covered the years 2012 to 2016. The accident data was categorized by road segment for the proposed truck routes. Local influences on accident data associated with road access, road gradients, visibility and weather are inherently included within these route specific accident rates.

The length of the route from LFC to the Pentland Terminal is 140 miles. The annual number of truck trips (roundtrips) to the Pentland Terminal would be a maximum 91,980.

In the event of a truck accident that results in the release of crude oil, there is a potential for the crude to ignite, which could result in a pool fire. If the spill does not ignite, then a flammable vapor cloud would form that if ignited by a remote source such as an automobile could result in a flash fire. In the event of a truck accident that results in a spill of oil and subsequent pool fire, the heat (i.e., thermal radiation) from the fire could result in a serious injury for fatality.

Impacts at the LFC facility of a crude oil spill and fire would be limited to those areas on-site and would not impact the public.

Table 5.6-18 shows the frequency of spills and crude oil fires. Table 5.6-19 shows the potential hazards areas associated with spills and fires.

Table 5.6-18 Trucking Alternative Frequency of Crude Oil Fires and Spills

Item	Truck Route to Plains Pentland Terminal
Route Length (miles)	140
Average Incident Rate per million miles	0.46
Truck Incident Rate per Trip	6.4E-05
Number of Daily Laden Trips	252
Number of Annual Laden Trips	91,980
Truck Incidents per Year (collision and non-collision)	5.94
Probability of Large Fire on Incident	0.0043
Frequency of Large Fire per year	0.026 (1 in 39 years)
Probability of Small Fire on Incident	0.00064
Frequency of Small Fire per year	0.0038 (1 in 263 years)
Probability of a Large Spill per year	0.13 (1 in 7.8 years)

Source: ExxonMobil TQRA 2020 with modifications, for laden trucks only.

Table 5.6-19 Trucking Alternative Hazard Distances for Spill of 160 Barrels of Crude to Pavement

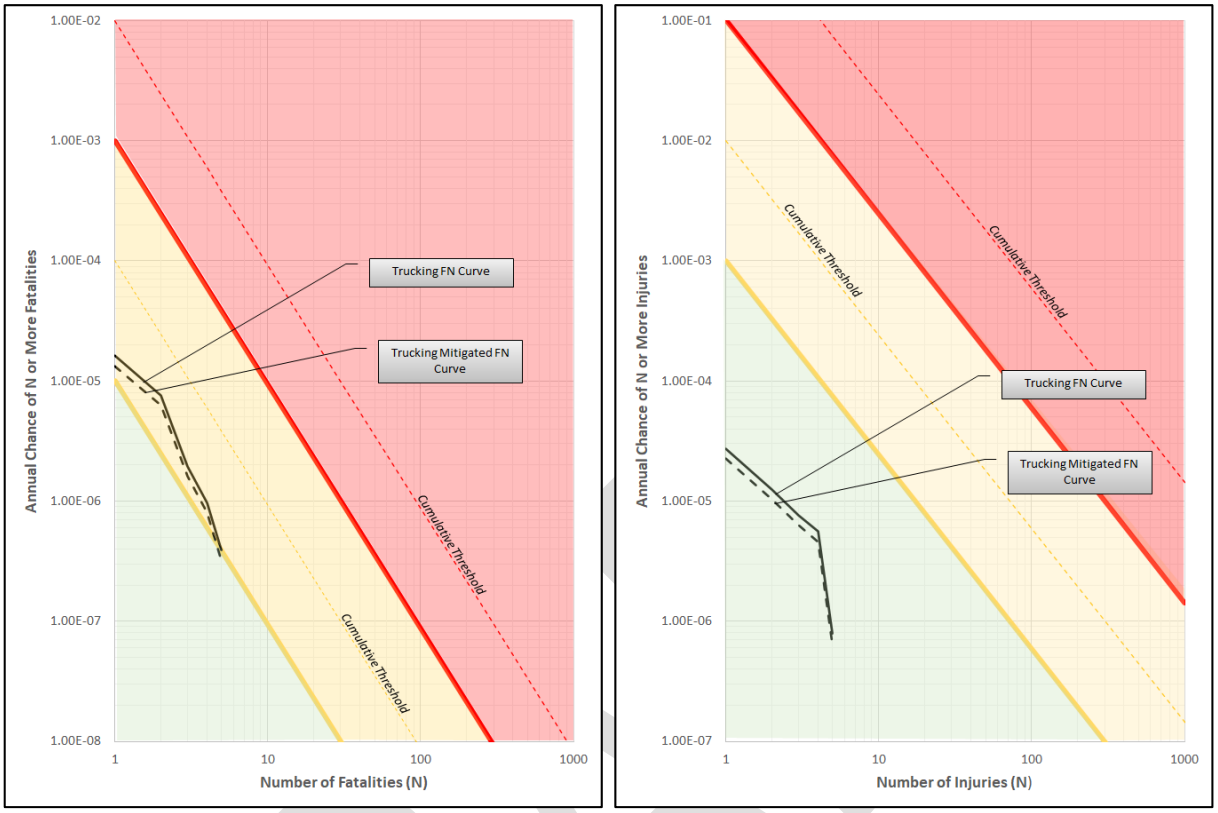
Hazard Type	Meteorological Conditions Stability Class /Wind Speed (m/s)	Hazard Distance (feet)		
		Pool Fire	Thermal Radiation Fatality	Thermal Radiation Injury
Large Pool Fire	F/1.5	59	110	160
	D/4	59	178	239
Hazard Type	**Meteorological Conditions Stability Class /Wind Speed (m/s)**	**Hazard Distance (feet)**		
		LFL	**½ LFL**	
Flammable Vapor Fire	F/1.5	69	94	
	D/4	25	38	

D Stability – Neutral air stability with minimal mixing.
F Stability – Stable air with windspeeds less than 3 m/s.
LFL – Lower Flammability Limit.
½ LFL – ½ the Lower Flammability Limit.
Source: ExxonMobil TQRA 2020

Santa Barbara County has established risk thresholds that use societal risk profiles (known as F/N curves) to determine the significance of hazardous material releases. These F/N curves address both injury and fatality. The Santa Barbara County's adopted thresholds are generally applicable to fixed facilities when the hazard potential and public exposure is limited to that within the impact range around the facility. Figure 5.6-13 provides the injury and fatality risk profiles (F/N curves) for the proposed truck route to the Pentland Terminal. Risk levels would be in the amber region and are significant.

There are a number of mitigation measures which could help to reduce the risks, including training and hiring and truck inspection protocols. These are listed below. Note that many of these elements would be applicable to the LFC operations and planning as the truck loading facilities would be located within the LFC oil and gas facility.

Figure 5.6-13 Trucking Alternative Risk FN Curves



Source: ExxonMobil TQRA 2020 with modifications

Risks to the Environment

Impact RISK.2, risks to the environmental, would be applicable. Risks to the environment would exist due to the potential for a spill from a truck accident impacting sensitive biological, water or cultural resources along the trucking route. The ExxonMobil EIR examined the risks of upset on the environment for the trucking of crude oil, listed a large number of biological, water and cultural resources along the trucking route, which would be the same as the trucking route under this alternative. The ExxonMobil EIR and concluded that risks to the environment would be significant and unavoidable. As this alternative would involve substantially more trucks, and a higher frequency of potential accidents, the impacts would also be significant and unavoidable.

Risks to Schools

Impact RISK.3 (schools) would be applicable to this alternative as the truck route would pass by a number of schools, including Alan Hancock College and Fester Junior high School in Santa Maria, Family Partnership Charter in Orcutt and the Cuyama Valley High School in Cuyama. The closest portions of these schools to the travel lanes of the highways which would be carrying the laden trucks is 180 feet. As described in the impact zones listed above, none of the impact zones associated with fatalities would reach these schools given a truck accident and subsequent spill and fire. The injury impact for the thermal zone under favorable meteorological conditions would just reach the closest portions of the schools. However, as none of the fatality zones would reach the schools, and only a small portion of the injury zones would reach the schools, the CDE protocol would not be applicable, and risks would be **insignificant**.

Risk of Wildfires

Impact RISK.4 (wildfires) would be similar to the proposed Project for the pipeline removal construction. As construction activities related to valve stations, pump stations and segments of the pipeline removal could potentially produce an increased risk of wildfires during construction, mitigation measures RISK.4-1 through RISK.4-4 would still be applicable. Impacts related to **Impact RISK.4** and wildfires would therefore be **significant but mitigable**.

Risk of wildfires does exist for trucks, as accident associated with trucks can start fires which could evolve into a wildfire. In October 2021, a crude truck crashed east of Santa Maria which started a fire in nearby vegetation and burned about ¼ acre (https://www.ksby.com/news/local-news/crash-involving-oil-tanker-truck-sparks-fire-east-of-santa-maria). However, fire response was rapid as the truck driver was able to notify the local fire department. Therefore, wildfire risk from trucks is not anticipated to be significant.

5.6.9.2 Mitigation Measures

Table 5.6-20 lists the mitigation measures proposed for addressing potential impacts from the hazardous materials for the trucking alternative.

Note these are the same mitigation measures as prescribed in the ExxonMobil Trucking EIR.

Table 5.6-20 Mitigation Monitoring and Reporting Program

MM #	MM Title	Monitoring/ Reporting Action	Timing & Method of Verification	Agency or County Responsibilities	Applicant Responsibilities
Alt E – RISK.1-1	Truck Hazard Mitigation Plan	Prepare and Implement a Truck Hazard Mitigation Plan.	Approval of Hazard Mitigation Plan prior to Issuance of Zoning Clearance. Periodic review of trucking records and site inspections.	P&D review and approval. P&D staff to monitor implementation.	Prepare and submit a Truck Hazard Mitigation Plan as part of CO-TRMPP. Implement Plan requirements for the life of the trucking Project.
Alt E – RISK.1-2	Updated SYU Emergency Plans	Update and implement the SPCC, ERP, and FRP to include the trucking loading operations.	Approval of updated Plans Prior to Issuance of Zoning Clearance. Onsite review of implementation requirements and participation in spill drills.	P&D review and approval. P&D staff to monitor implementation.	Prepare and submit the updates to the SPCC, ERP, and FRP to include the trucking loading operations. Implement requirements of the Plans for the life of the trucking Project.
Alt E – RISK.1-3	Trucking Company Financial Responsibility	Obtain proof of financial responsibility from each trucking company.	Verify proof of financial responsibility prior to use of trucking company.	P&D review and approval of financial responsibility documents.	Obtain financial responsibility documents from truck companies. Assure financial responsibility maintained for duration of trucking contract.

Table 5.6-20 Mitigation Monitoring and Reporting Program

MM #	MM Title	Monitoring/ Reporting Action	Timing & Method of Verification	Agency or County Responsibilities	Applicant Responsibilities
Alt E – RISK.1-4	Trucking Route Oil Spill Contingency Plan	Obtain copy of trucking company Oil Spill Contingency Plan for the trucking routes.	Approval of trucking route Oil Spill Contingency Plan prior to use of trucking company. Onsite review of implementation requirements and participation in spill drills.	P&D review and approval. P&D staff to monitor implementation.	Obtain copy of trucking company Oil Spill Contingency Plan for the trucking routes and assure meets all the specified requirements.
Alt E – RISK.1-5	Oil Spill Response Trailer	Provided to SBCFD funds for the purchase of an oil spill trailer.	Funds for oil spill trailer have been provide to SBCFD prior to shipment of oil from LFC via truck.	SBCFD receives funds for oil spill response trailer. P&D verifies receipt of funds and purchase of trailer.	Provide funds to SBCFD for the oil spill response trailer.
Alt E – RISK.1-6	Unmanned Aerial Vehicle	Provided to SBCFD funds for the purchase of an unmanned aerial vehicle.	Funds for unmanned aerial vehicle have been provide to SBCFD prior to shipment of oil from LFC via truck.	SBCFD receives funds for unmanned aerial vehicle. P&D verifies receipt of funds and purchase of unmanned aerial vehicle.	Provide funds to SBCFD for the unmanned aerial vehicle.

Alt E-RISK.1-1 Transportation Risk Management and Prevention Program. A Transportation Risk Management and Prevention Program (TRMPP) shall be prepared that addresses the various aspects of truck operation safety with the goal of minimizing the potential for an accident or release to occur. The Plan shall include the following:

7. Drivers shall have a minimum of two years of commercial driver experience for hazardous materials, plus extensive training in defensive driving, emergency response, and other driving skills and shall be subject to a drug and alcohol testing program;
8. Drivers shall be trained on Project-specific requirements, including loading and transportation procedures, local traffic concerns and hazards, driver safety, and driver courtesy;
9. Drivers shall be trained to use dedicated routes;
10. All trucks shall be linked to an integrated fleet geographical information management system that provides real-time satellite tracking and mapping of locations, speeds, and other parameters;
11. The geographical information management system shall be used to set and measure compliance to speed limits, acceleration, and de-acceleration for trucks in a specific area and/ or at a specific time of day;
12. All tanker trucks shall be equipped with dual-sided dashboard video cameras;
13. All tanker trucks shall be equipped with Roll Stability Control (RSC) systems;

14. The fleet shall operate an Electronic Driver Vehicle Inspection Report system, integrated with its maintenance system;
15. Truck carriers shall be required to complete a Crude Oil - Motor Carrier Safety Survey prior to starting shipments from LFC to assure proper contractor selection;
16. Crude oil trucks shall be equipped with speed monitor and limiting systems;
17. LFC Operators shall have an approved procedure for the trucks to follow during the truck loading that includes over filing and grounding protections;
18. All crude oil trucks shall be model year 2017 or newer; and
19. LFC operations personnel shall conduct a safety and operability inspection of each crude oil truck and truck driver prior to loading and prior to departing from LFC. Any crude oil truck or driver that receives an unsatisfactory inspection shall no longer be permitted to transport crude from LFC until the issue has been corrected.

In addition, incident and annual reporting procedures shall be included.

PLAN REQUIREMENTS and TIMING: The Truck Hazard Mitigation Plan shall be submitted to P&D for review and approval prior to issuance of the Zoning Clearance.

MONITORING: P&D shall verify implementation of the approved Truck Hazard Mitigation Plan through review of incident and annual reports, and site inspection as needed throughout Project operations.

Alt E-RISK.1-2 Updated SYU Emergency Plans. The following existing plans shall be updated to include the trucking operations that would occur at the LFC facility.

a. **LFC Spill Prevention Control and Countermeasure Plan (SPCC) –** Section 2.6 shall be updated to cover the truck loading racks. The section shall include a brief description of the rack and loading operations, and the measures in place to avoid releases of oil;

b. **LFC Emergency Response Plan (ERP) -** The ERP shall be updated to include the truck loading operations with the FLC facility. This shall include a discussion of the actions to be taken in the event of an oil spill from the loading operations, and trucks traveling within the LFC facility including reference to other emergency plans; and

c. **SYU Facility Response Plan (FRP)** – The FRP shall be updated to include the truck loading operations with the LFC facility. This shall include a discussion of the actions to be taken in the event of an oil spill from the loading operations, and trucks traveling within the LFC facility including reference to other emergency plans.

PLAN REQUIREMENTS AND TIMING: The updated emergency plans shall be submitted to P&D for review and approval prior to issuance of the Zoning Clearance. The requirements of the approved Emergency Plans shall be implemented by the Owner/Applicant as necessary in the event of a spill with the LFC facility. The Owner/Applicant shall report its implementation of emergency measures to P&D consistent with the Santa Barbara County's Emergency Notification Guidance Matrix, which is part of the approved LFC Emergency Response Plan.

MONITORING: P&D shall conduct on-site inspection(s) to verify and document implementation of emergency action measures.

Alt E-RISK.1-3 Trucking Company Financial Responsibility. The Applicant shall assure that the trucking companies have demonstrated financial responsibility to cover the costs of an oil spill cleanup in the amount of at least $5,000,000.

PLAN REQUIREMENTS and TIMING: The Applicant shall provide evidence of financial responsibility from the trucking companies to P&D for review and approval prior to the Applicant using a trucking company to haul SYU crude from the LFC facility. The Applicant may use any of the methods identified in CCR Title 14, Division 1, Subdivision 4, Chapter 2, § 795. (Evidence of Financial Responsibility) to demonstrate financial responsibility. The Applicant shall assure that the financial responsibility is maintained by the trucking company for the duration of the trucking contract.

MONITORING: P&D shall review the evidence of financial responsibility on an annual basis for all trucking companies under contract with the Applicant to transport crude oil.

Alt E-RISK.1-4 Trucking Route Oil Spill Contingency Plan. The Applicant shall assure that each trucking company used to haul SYU crude from the LFC facility has an Oil Spill Contingency Plan that covers the trucking routes. The Oil Spill Contingency Plans shall contain at a minimum the following.

a. **Spill Notification Procedures –** A list of immediate contacts and phone numbers to call in the event of a threat of or actual spill of oil. This list shall include a designated qualified individual with the trucking company, the California Highway Patrol, the local fire department, California Governor's Office of Emergency Services, State Warning Center, the National Response Center, the spill response organizations listed in the contingency plan, the shipper of the oil, Santa Barbara County Planning and Development, and any other care or treatment organizations listed in the contingency plan. The notification procedures shall contain a checklist of the information that shall be reported to the various parties.

b. **Spill Protection Measures –** The contingency plan shall describe measures that reduce or mitigate the potential for truck accidents. Such description may include, but is not limited to the following: (1) Schedules, methods and procedures for testing, maintaining and inspecting the trucks; and (2) items that are included in the design and operation of the trucks that serve to reduce the potential for an accident. At a minimum this would include the measures identified in mitigation measures RISK-1.

c. **Resources at Risk –** The contingency plan shall contain the following information for the specific truck routes.

20. Habitat and shoreline types, as identified in Table 1 and in Appendix C of the National Oceanic and Atmospheric Administration Shoreline Assessment Manual (Aug. 2013), or as identified in the American Petroleum Institute's Options for Minimizing Environmental Impacts of Inland Spill Response (Oct. 2016);

21. A summary of potential state or federally-listed rare, fully protected, or threatened or endangered species, or state species of special concern, which includes aquatic and terrestrial animal, fish, and plant resources;

22. A summary of aquatic resources including state fish, amphibians, invertebrates, and plants including important spawning, migratory, nursery and foraging areas;

23. A summary of potential terrestrial animal and plant resources;

24. A summary of potential migratory and resident bird and mammal, including relevant migration routes, breeding, stopover, nursery, haul-out, and population concentration areas by season; and

25. Identify the following, and include appropriate contacts, as applicable to emergency response: (i) commercial and recreational fisheries areas, aquaculture sites, public beaches, parks, marinas, boat ramps, and recreational use areas; (ii) Industrial, irrigation, and drinking water intakes, dams, power plants, salt pond intakes, and important underwater structures; and (iii) Known historical and archaeological sites, and areas of cultural or economic significance to Native Americans.

The contingency plan may rely on and cite applicable State Area Contingency Plans, Geographic Response Plans, Santa Barbara County Operational Area Oil Spill Contingency Plan, and other sources to identify the information required by items 1 through 5 above.

a. **Response Resources –** The contingency plan shall provide the following:

   1. A list of rated oil spill response organizations that are under contract. A rated oil spill response organization is one who has been certified by the California Department of Fish and Wildlife-Office of Spill Prevention and Response pursuant to CCR Title 14, Division 1, Subdivision 4, Chapter 3, Subchapter 3.5 § 819. (Oil Spill Response Organization Ratings). Oil spill response organizations under contract shall include ones for near shore marine, on-waters, and terrestrial services; and

   2. A list of properly trained Native American Monitors who are qualified to monitor oil spill cleanup activities.

b. **Training –** The contingency plan shall document that trucking company personnel employed by the plan holder regularly receive training applicable to their role in a spill including but not limited to:

   1. Incident command system, including command or general staff position-specific training;

   2. Oil spill emergency response training as required by state and federal health and safety laws for trucking company personnel likely to be engaged in oil spill response. The level of training shall be commensurate with the level of engagement for each of the trucking company personnel that would be involved in the oil spill response; and

   3. Training records shall be maintained for three years from the date of the training.

c. **Exercises –** The plan holder shall conduct an annual tabletop exercise that covers the following:

   1. Notifications: Make actual notifications about the spill scenario to the oil spill response organization, qualified individual, and spill management team listed in the contingency plan, and to the California Governor's Office of Emergency Services and the National Response Center.

   2. Staff Mobilization: Assemble the trucking company spill management team and other personnel identified in the contingency plan as appropriate for the training and discuss the approach to spill response along with required roles and responsibilities.

PLAN REQUIREMENTS and TIMING: The trucking route contingency plans shall be submitted to P&D and Santa Barbara County Fire for review and approval prior commencing of a trucking company operation to haul SYU crude from the LFC facility. The requirements of the approved contingency plans shall be implemented by the plan holder in the event of a spill along the trucking routes.

MONITORING: P&D and Santa Barbara County Fire shall be invited in the annual tabletop drills and in the event of a spill, on-site inspection(s) to verify and document implementation of emergency action measures.

Alt E-RISK.1-5 Oil Spill Response Trailer. The Applicant shall fund the cost of an oil spill response trailer for the Santa Barbara County Fire Department to be located at one of the County Fire Stations in Santa Maria. The Applicant funding shall be limited to a maximum of $25,000.

PLAN REQUIREMENTS and TIMING: Santa Barbara County Fire shall provide the Applicant with a cost breakdown of the oil spill response trailer and the Applicant shall provide the required funding to Santa Barbara County Fire prior to any oil being hauled via truck from the LFC facility.

MONITORING: P&D shall verify that the oil spill response trailer is stationed at one of the County Fire Stations in Santa Maria.

Alt E-RISK.1-6 Unmanned Aerial Vehicle. The Applicant shall fund the cost of an unmanned aerial vehicle (UAV) for the Santa Barbara County Fire Department. The Applicant funding shall be limited to a maximum of $8,000.

PLAN REQUIREMENTS and TIMING: Santa Barbara County Fire shall provide the Applicant with a cost quote for the UAV and the Applicant shall provide the required funding to Santa Barbara County Fire prior to any oil being hauled via truck from the LFC facility.

MONITORING: P&D shall verify that Santa Barbara County Fire has purchased the UAV.

5.6.9.3 Residual Impacts

Implementation of mitigation measure Alt E-RISK.1-1 would reduce the likelihood of a truck accident and would serve to reduce the probability of an oil spill impacting public safety.

Mitigation measures Alt E-RISK.1-2 through Alt E-RISK.1-6 would help to improve the response to an oil spill by having truck route specific oil spill response plans and providing additional oil spill response resources. These oil spill plans would allow quicker notification in the event an oil spill and for better coordination with the first responders, particularly Santa Barbara County Fire Department and CDFW-OSPR.

However, even with the implementation of these mitigation measures, the impacts to public safety would be **significant and unavoidable**.

Impact RISK.2 (environmental impacts) would apply to this alternative as truck accidents and spills into area creeks and waterways could occur, as indicated by the 2020 truck spill into the Cuyama River. However, spill volumes would be smaller than the proposed Project pipeline and would most likely not reach the marine environment if the spill were to occur along the coastal areas and if no water is flowing in area creeks. With water flowing, spills from a truck accident could have substantial reach and impacts could reach the marine environment for a spill along the coast. Impacts would be significant.

Mitigation measures for spills are detailed above under public safety risks. These address issues such as emergency preparedness, resources, and planning. Even with the implementation of these mitigation measures, the impacts to sensitive biological, water, marine and cultural resources would be **significant and unavoidable** if a spill were to impact any of these resources.

5.6.9.4 Significance Conclusions

CEQA Significance Conclusions

CEQA significance for this alternative where the crude oil is moved by truck would be as follows for each of the impacts identified for the proposed Project:

- **RISK.1,** public safety risks, would be **significant and unavoidable**. This is an increase in impact over the proposed Project, which was insignificant;
- **RISK.2**, spill risks, would be **significant and unavoidable** with mitigation measures RISK.2-1 through Alt E-RISK.1-1 through Alt E-RISK.1-5 applicable;
- **RISK.3**, for risks to schools, would be **insignificant;** and
- **RISK.4**, for wildfire risks**,** would be **significant but mitigable** with mitigation measures RISK.4.1 through RISK.4-4 applicable.

No new impacts, aside from those above, would be realized with this alternative over the proposed Project.

NEPA Significance Conclusions

The NEPA significance conclusions are the same as the CEQA significance conclusions discussed above.

5.6.9.5 Cumulative Effects

For risk of upset, there are several smaller North County oil development projects identified in the cumulative scenario (see Section 4.0). These smaller projects could add additional oil trucks along portions of U.S. Highway 101 or Highway 166 that would be used by the proposed Project. As indicated in the ExxonMobil Truck EIR, these numbers would be small (about 10 trucks per day) and the cumulative impacts to public safety would therefore be less than the cumulative thresholds (see FN curves and the ExxonMobil Trucking EIR) and would be cumulative less than significant.

As this alternative would present significant and unavoidable risk to the environment, and other crude oil transportation projects would also present incremental increases in the spill risk, the short- and long-term effects of these impacts could be **cumulatively significant and unavoidable** depending upon the location and extent of the spill as well as what resources were affected.

Risks due to wildfires would be mitigated under this alternative and cumulative impacts would be insignificant.

5.6.10 References

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