2.0 Project Description

Phillips 66 Company (Phillips 66) is requesting a Development Plan (DP) and Coastal Development Permit (CDP) from the County of San Luis Obispo (County) for the proposed Santa Maria Refinery (SMR or Refinery) Demolition and Remediation Project (Project). This section describes the SMR Project as proposed by Phillips 66.

2.1 Objectives and Purpose

The Phillips 66 Project objectives include:

- Demolish the Santa Maria Refinery aboveground facilities (equipment and associated infrastructure).
- Achieve soil remediation at the Project site that meets applicable risk-based industrial standards in a cost-effective manner.
- Minimize ground disturbance by retaining existing surface hardscapes and existing belowground infrastructure except where removal is necessary for site remediation.
- Retain essential infrastructure or utilities required to be kept in place by regulatory authorities, and features retained for site security or for other site uses by potential future users; and
- To the extent practicable, minimize costs and maximize economic returns associated with material, facilities, equipment, and other infrastructure removed from Project site.

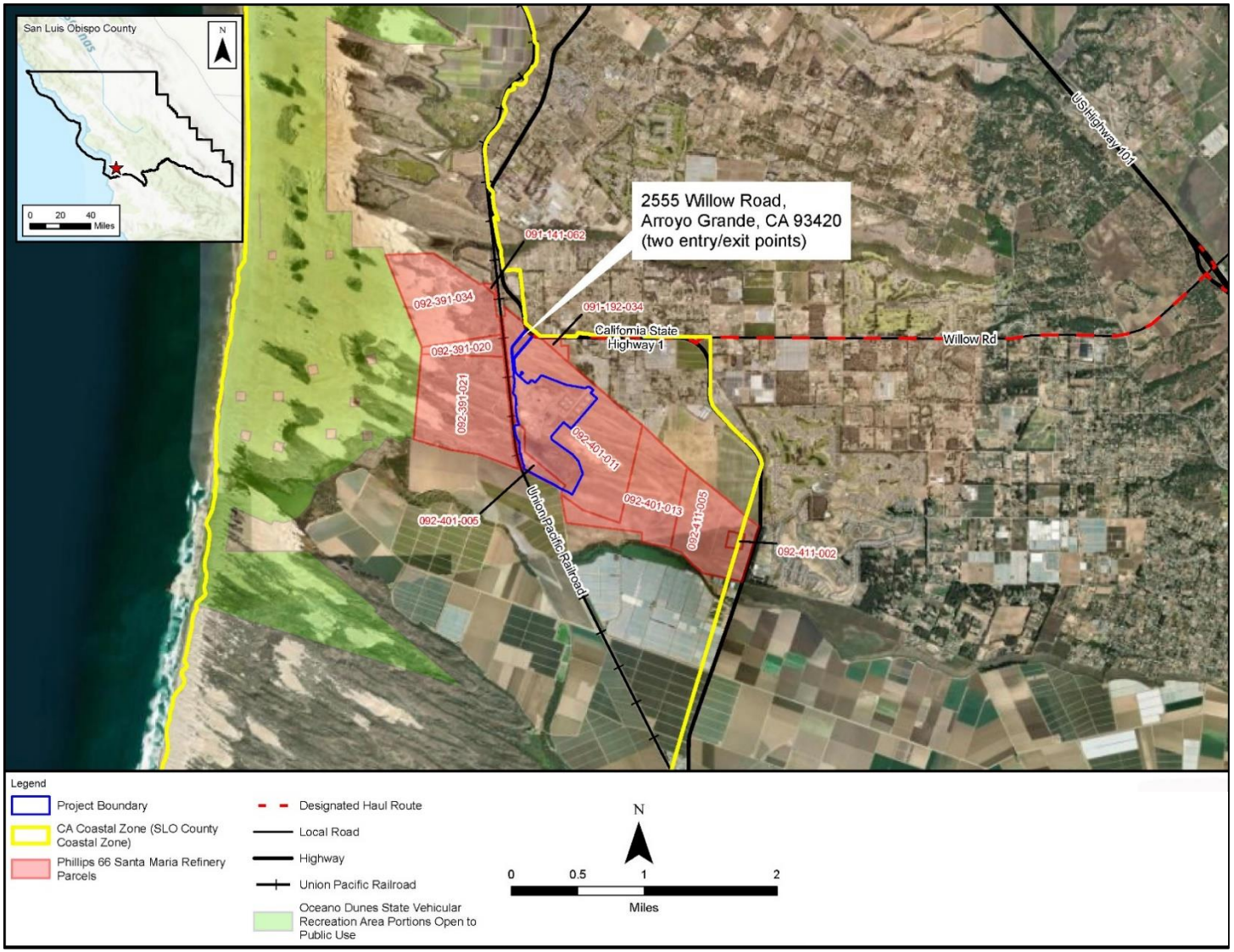
The purpose of this Project Description is to describe the demolition and remediation activities to support agency reviews and approvals, including environmental review under the California Environmental Quality Act (CEQA).

2.2 Project Summary

The SMR is on a portion of property owned by Phillips 66 at 2555 Willow Road in Arroyo Grande, California (see Figure 2-1). The SMR includes petroleum storage and processing facilities, primarily for high-sulfur heavy crude oil. The crude oil historically came primarily from offshore platforms along the California coast and oil fields in and near the Santa Maria Valley. The majority of crude oil was delivered to the Refinery by pipeline. The remainder of petroleum-based products was delivered by truck. See Chapter 4.0 for a discussion of baseline and the historical Refinery operations.

Semi-refined liquid products from the SMR have historically been transported by pipeline as feedstocks to the Phillips 66 Rodeo Refinery in Contra Costa County (Contra Costa County 2021), California for upgrading into finished petroleum products. Other SMR products include petroleum coke (a byproduct of oil refining), which is shipped to off-site market destinations by rail and truck, and granular sulfur (recovered from the crude oil), which is shipped to off-site market destinations by truck.

Figure 2-1 Project Location



Source: Phillips 66 Application 2023

In 2022, Phillips 66 received approval from Contra Costa County to modify the Rodeo Refinery to process renewable feedstocks into renewable diesel and other renewable products. Since the Rodeo Refinery will no longer process crude oil, product from the SMR is no longer needed. Given this, in January 2023, Phillips 66 discontinued processing crude oil at the SMR and began to shut down and decontaminate the facility (under separate existing permits). Under the Project, Phillips 66 intends to demolish most of the aboveground structures, facilities, and equipment within the perimeter fence line of the SMR site. Some aboveground features would remain as described in Section 2.4.7. Once aboveground features are removed, site characterization soil testing would be conducted to determine what areas require soil remediation and what belowground infrastructure would require removal to support the remediation effort. Site characterization cannot be conducted until the aboveground structures are removed, allowing access to conduct the soil testing. As a result, the extent of remediation necessary is not known. Given this, the projected volume of contaminated soil to be removed and exported off site for disposal is estimated at a conservative upper range based on data from previous site assessments and Regional Water Quality Control Board (RWQCB) industrial worker environmental screening levels (ESL). This estimate ensures a conservative evaluation of truck and rail trips for off-site disposal of demolition debris and contaminated soils and associated environmental analyses pursuant to the California Environmental Quality Act (CEQA).

In areas that do not require remediation, only the aboveground features (except those identified in Section 2.4.7) would be removed and the surface hardscapes (concrete, asphalt, compacted base/gravel, or asphalt emulsion coating covering banks and berms) and belowground infrastructure would be left in place; there would be no earthmoving or site restoration in the areas not requiring remediation.

In areas where soil remediation is required, surface hardscapes and clean soil would be removed and set aside. Belowground infrastructure such as concrete building slabs, perimeter footings, pad footings, containment walls, pipe rack pedestals, equipment columns, tank ring foundations, underground utilities, and piping would be selectively removed to enable access to the contaminated soil. Once required clean-up standards are met within remediated areas, clean soil previously set aside and soil from an on-site borrow area would be used to backfill the excavations. Remediated areas would then be covered and "re-hardened" with available material such as aggregate from crushed concrete, poured concrete slurry, or asphalt, and returned to the original contour. The volume of hardscape would depend on the surface area of the disturbance and thickness of the hardening material. Clean hardscape material may need to be imported to supplement the existing site backfill material to restore the removed hardscape.

In areas where vegetation requires removal in order to complete remediation, the appropriate plant palettes and seed mixes would be selected for revegetation during the detailed planting phase (see Section 2.6). The Project is expected to result in an increase in vegetated area from the existing site (49 percent of the site would be vegetation due to the removal of coke and revegetation of the coke area in Area 6 whereas the existing site has 31 percent vegetation with 18 percent coke [non-vegetated] area).

Potential future uses of the SMR site once the Project is complete are unknown and are speculative at this time; therefore, future uses are not considered in this Project. Project summary statistics are

listed below in Table 2.1. A summary of the project schedule is shown in Figure 2-2 below. More detailed schedules are provided in Sections 2.4 and 2.5.

Table 2.1 Project Overview Characteristics and Statistics

Characteristics	Project Characteristics
Site Address	2555 Willow Road, Arroyo Grande
Year Refinery Built	1955
Refinery Site Area	218 acres
Entire Parcel Areas combined	1,642 acres
Pipeline Connections: Refinery feed/input	Pipeline system incoming from the Santa Maria Pump Station and from the Lompoc Oil and Gas Plant in Santa Barbara County.
Pipeline Connections: product/output	Pipeline extending off site to Rodeo Refinery in the San Francisco Bay Area
Historical Site Statistics Summary	
Historical Water Use	1,100 acre-feet per year average (982,000 gal/day average)
Site vegetated area	31 percent
Historical Refinery Truck Trips	37 truck trips per day average
Historical Refinery Train Trips	52 per year, 405 rail cars per year
Historical Refinery Employees	141–197 average employees per day
Project Statistics Summary	
Proposed Water Use during Project	Up to 14 acre-feet per year
Aboveground Demolition Phase duration	8 months
Aboveground Demolition Phase daily schedule	7 a.m. to 9 p.m. weekdays, 8 a.m. to 5 p.m. weekends/holidays. No nights
Aboveground Demolition Phase truck trips	60 trips per week maximum, total of 650 truck trips
Aboveground Demolition Phase train cars	Minimal rail car loads, approximately 1 train
Aboveground Demolition Phase employees	45 employees per day maximum including overlapping with remediation
Aboveground Demolition Phase total waste generated	12,800 cubic yards
Remediation and Associated Belowground Demolition Phase duration	10 months to 10 years (including remediation)
Remediation and Associated Belowground Demolition Phase truck trips	83 trips per week maximum, total of up to 1,181[a]
Remediation and Associated Belowground Demolition Phase train cars	Up to 2,046 rail car loads, 256 trains
Remediation and Associated Belowground Demolition Phase employees	38 employees maximum after aboveground is completed
Remediation and Associated Belowground Demolition Phase Impacted Soil Volume	200,500 cubic yards (estimated contaminated soil export)
Remediation and Associated Belowground Demolition Phase total waste generated (exported off site)	206,120 cubic yards[b]
Remediation and Associated Belowground Demolition Phase total recycled material	956 cubic yards[b]
Proposed truck routes	Highway 1 to Willow Rd to Highway 101
Average train loads	192 trains per year based on the peak quarter (x4)
Total Cut (soil and miscellaneous materials, including estimated contaminated export)	409,040 cubic yards
Total Fill (soil and miscellaneous hardscape, from on site)	206,120 cubic yards[c]
Total Grading (including non-soil fills)	615,160 cubic yards[d]
Revegetated area after Project	49 percent

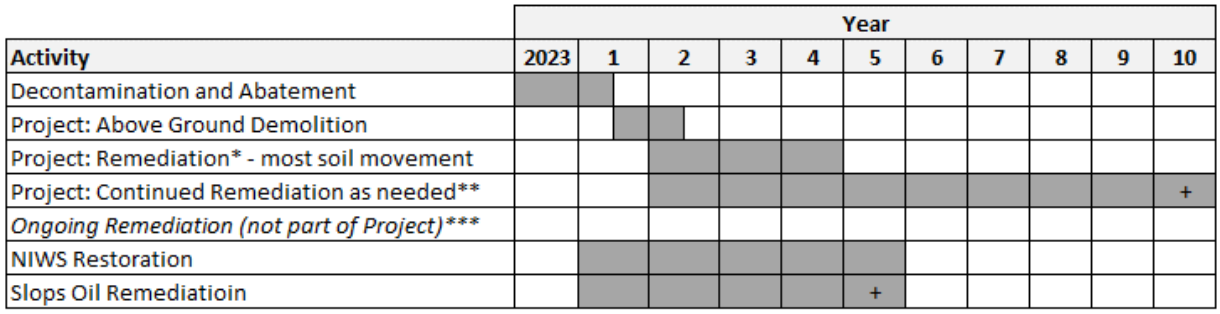
Table 2.1 Project Overview Characteristics and Statistics

Characteristics	Project Characteristics
Revegetation schedule	3 years from time of seeding, 5-year planning period
Site Parcels	Project Parcels: 092-411-005, 092-401-011 Adjacent Applicant-owned Parcels (not a part of the Project): 092-401-013, 092-411-002, 092-401-005, 091-192-034, 091-141-062, 092-391-021, 092-391-020, 092-391-034

Notes:
a. Refer to Section 2.5, Tables 2.8 and 2.10 for additional details. The actual number of truck trips would depend on the amount of impacted soil and other subsurface waste that can be carried by rail, and the amount of impacted concrete and asphalt that must be removed by truck.
b. Refer to Section 2.5, Table 2.10 for additional details.
c. Refer to Section 2.5, Table 2.12 for additional details.
d. Refer to Grading Plan Sheet 1A in Appendix A

Source: Phillips 66 Application 2023

Figure 2-2 Project Schedule Summary



Notes:
* Includes associated belowground demolition.
** The 10-year overall duration is worst case and is at a lower intensity than Years 1–4.
*** These durations will vary and may extend beyond the indicated timeline.

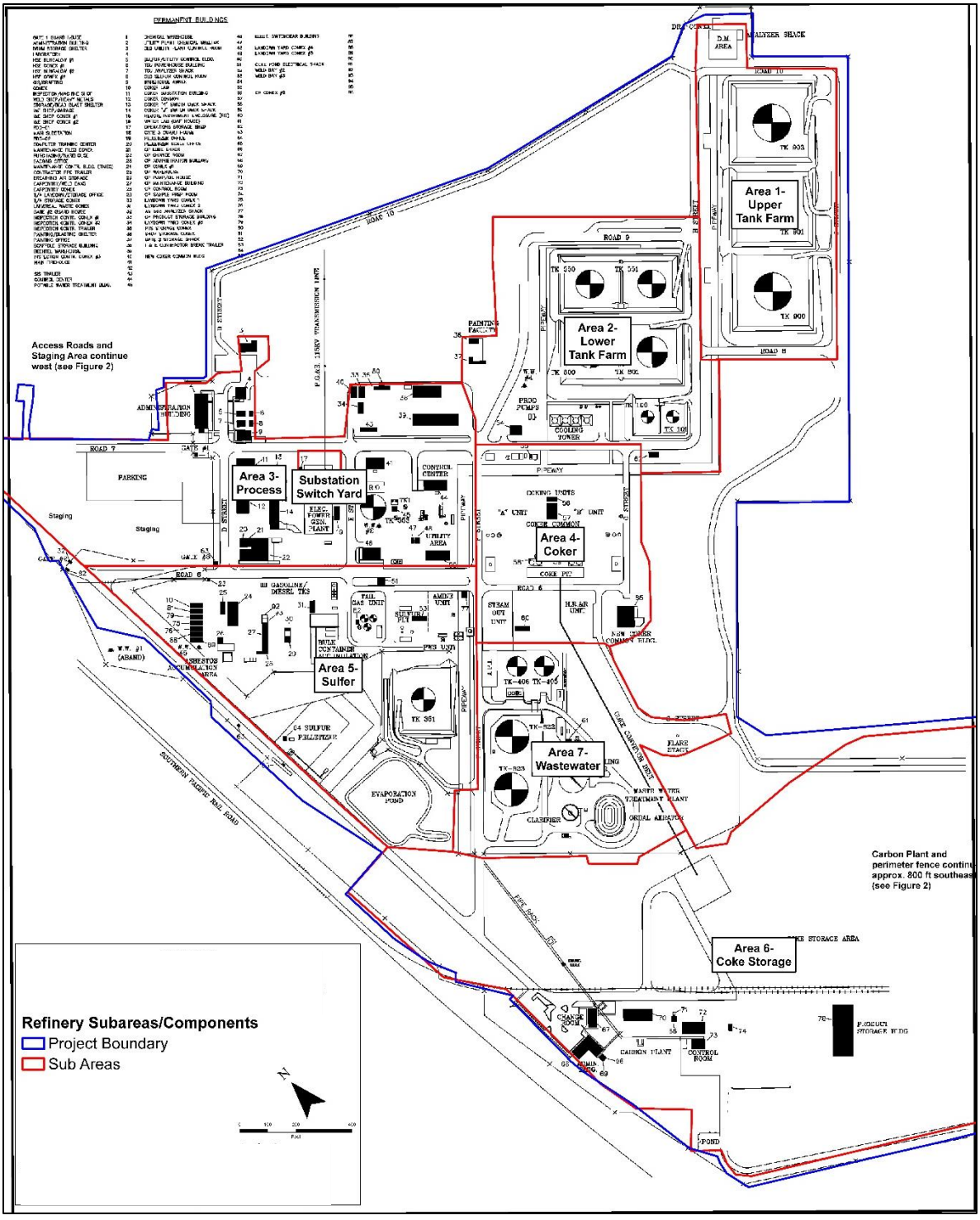
2.3 Site Background

The SMR was built in 1955. Refinery operations occupy approximately 218 acres within the following two adjoining parcels:

- Assessor's Parcel Number 092-401-011; and
- Assessor's Parcel Number 092-401-005.

The SMR is located in unincorporated San Luis Obispo County. The site lies within the Coastal Zone, on the Nipomo Mesa generally north of Oso Flaco Lake Road, west and south of Highway 1, and east of Oceano Dunes State Vehicular Recreation Area. The Union Pacific Railroad (UPRR) bisects the property along the western edge of the Refinery site and serves the facility via rail spurs. Figure 2-3 shows the Refinery site details. Refinery sub-areas 1 through 7 are indicated in Figure 2-3; these sub-areas are intended for general reference throughout this Project Description.

Figure 2-3 Refinery Site



Source: Phillips 66 Application 2023

The SMR site's currently applicable conditions are contained in DP/CDP D890278D (approved September 1990). Associated air emissions improvements were processed concurrently and approved under Minor Use Permit D890530P in August 1990, to enable these improvements to proceed more quickly.

In November 2009, the County accepted a DP/CDP application for the SMR site from Phillips 66 (DRC2008-00146) to increase the daily maximum throughput. An EIR (SCH #20081010111) was prepared for the project and certified with approved findings and conditions on December 13, 2012. One condition required compliance with the standards of Section 23.04.420 of the Coastal Zone Land Use Ordinance (CZLUO) associated with coastal access. Phillips 66 proceeded with environmental compliance for the application in 2014–2015, but in January of 2021, Phillips 66 filed a request to withdraw and abandon that application (DRC2008-00146), except for Condition 17, Offer of Dedication for Coastal Access, and revert back to the 1990 County conditions for SMR operations under County DP/CDP D890287D. The Board approved the request for withdrawal in May 2021. The conditions of D890278D, as well as the requirement for an Offer of Dedication for Coastal Access, currently apply to the site. Phillips 66 has provided an offer of dedication for coastal access.

In 2013, Phillips 66 applied to the County to install a rail spur at the SMR to allow for the receiving of crude oil by rail. The Final EIR was completed in December 2015 (SCH #2013071028) and the project was denied by the Board of Supervisors. The uncertified rail spur EIR included an analysis of coastal access options. This analysis and other data presented in these prior environmental documents provide reference information for review of the current application.

2.3.1 Relationship to Rodeo Renewed Project

In 2023, Phillips 66 received final approval from Contra Costa County to modify the Rodeo Refinery, located in the community of Rodeo, in Contra Costa County, California, in the San Francisco Bay Area, into a repurposed facility that will process renewable feedstocks into renewable diesel fuel, renewable components for blending with other transportation fuels, and renewable fuel gas. Because the Rodeo Renewed Project will discontinue the processing of crude oil at the Rodeo Refinery, the SMR will no longer be necessary to provide feedstock to the Rodeo Refinery. Consequently, Phillips 66 ceased processing of crude oil at the SMR in January 2023. Phillips 66 proposes to proceed with demolition and remediation of the SMR after Project approval.

The Rodeo Renewed Project is described and analyzed in the Rodeo Renewed Project Final Environmental Impact Report (Contra Costa County 2021) prepared by Contra Costa County (Cardno 2022; Contra Costa County File No. CDLP20-02040/State Clearinghouse No. 2020120330 and subsequent Draft Revised EIR October 2023). That EIR contained the following explanation regarding the analytical approach taken by Contra Costa County with respect to the SMR:

> *Demolition at the [SMR] would be a direct consequence of the proposed Project. Therefore potential impacts of the demolition at the [SMR] are addressed in this EIR. Demolition of the [SMR] will undergo CEQA review by San Luis Obispo County because it has the primary discretionary authority to determine whether or how to approve demolition and issue required county permits. The analysis is*

> *intended to provide both San Luis Obispo County and Contra Costa County, other governmental agencies, and the public with information necessary to understand the type of environmental impacts that could occur.*
>
> *While the Santa Maria Refinery demolition activities are included in the EIR, future use and required level of remediation of the [SMR] is unknown, and therefore not addressed in this EIR. Any potential future development of the [SMR], and the associated level of required remediation, is speculative at this time, and would be a separate project and evaluated in a separate CEQA process by San Luis Obispo County. The EIR acknowledges this uncertainty and incorporates these realities into the methodology to evaluate the environmental effects of demolition of the [SMR].*

Although the full details of site remediation are still not yet known, San Luis Obispo County planning staff has communicated its desire to evaluate both the demolition activities concurrent with the site remediation activities in the same CEQA analysis. Therefore, site remediation activities are contained in this Project Description.

2.3.2 Off-site Pipelines

The Santa Maria Refinery Demolition and Remediation Project does not include disposition of pipelines outside the SMR fence line. The abandonment in place of these facilities was addressed in the Rodeo EIR discussed above. The following information is provided as background information.

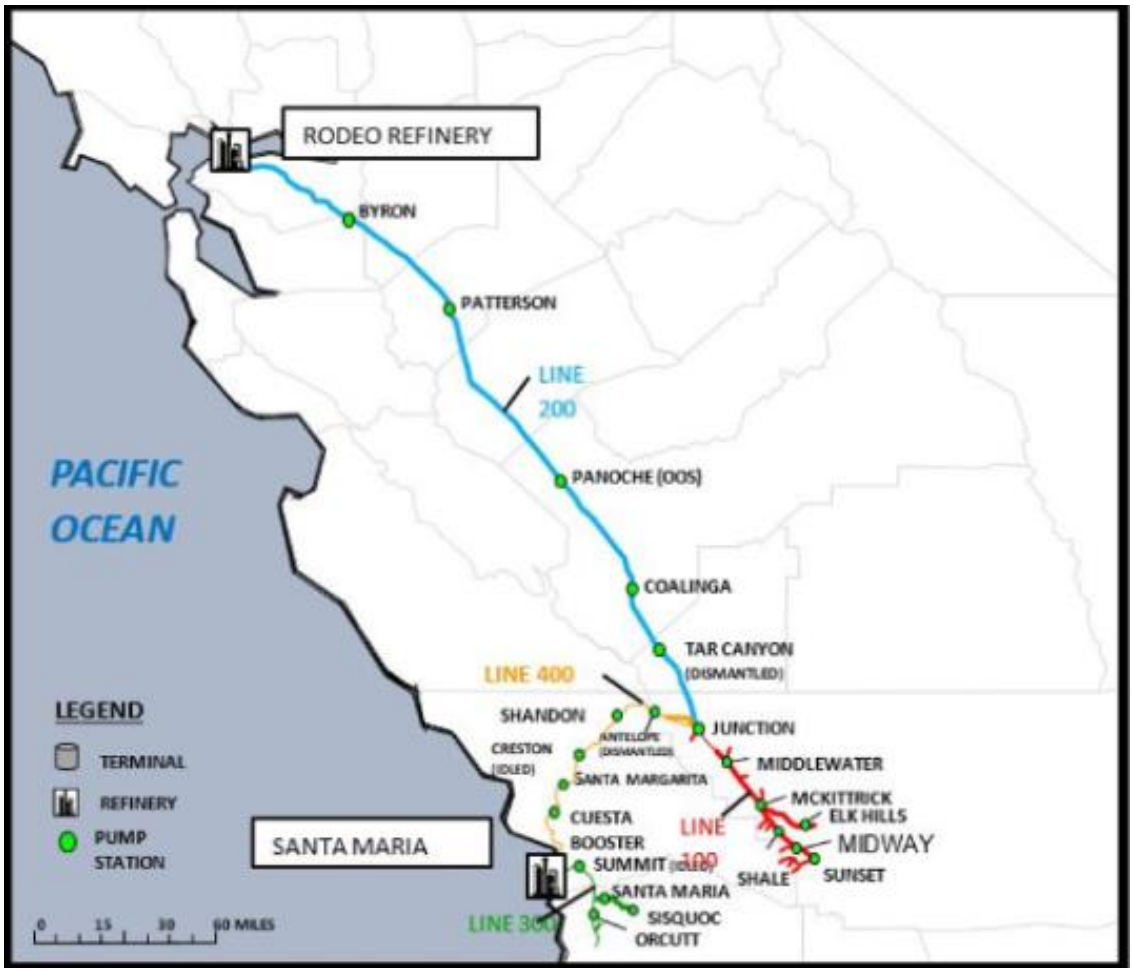
The Rodeo EIR addressed the off-site pipeline system associated with the Rodeo Refinery and Santa Maria Refinery. Specific to the Santa Maria Refinery, the Rodeo EIR at Section 3.3.3 describes "Existing Pipeline Sites" as the four pipelines (i.e., Lines 100, 200, 300, and 400) that transport crude oil and/or pressure petroleum distillate from the SMR Site to the Rodeo Refinery. These lines are described in the Rodeo EIR at Section 3.4.4 and shown on Rodeo EIR Figure 3-5, excerpted below as Figure 2-4.

The Rodeo EIR Section 3.4.4 reads:

> *The [Rodeo Renewed] Project includes the Pipeline Sites - four regional pipelines serving the Santa Maria Site and the Rodeo Refinery. The Santa Maria Site is connected to the Rodeo Refinery by approximately 200 miles of subterranean pipeline (Figure 3-5), designated Line 400 and Line 200. Line 400 runs north and east from the Santa Maria Site through the Coastal Range of central California in San Luis Obispo and Kern Counties, a region of dry grassland, pasture, and open live oak woodland, to connect with Line 200 north of McKittrick. Line 200 runs northwest up the west side of the San Joaquin Valley, through a mixture of Coastal Range grasslands and pasture and San Joaquin Valley agricultural land, and then west to the Rodeo Refinery. Line 200 runs through Kern, Kings, Fresno, Merced, Stanislaus, San Joaquin, Alameda, and Contra Costa Counties. Two other pipelines - Line 100 and Line 300 - connect the Santa Maria Site to crude oil collection facilities elsewhere in California (Figure 3-5). Line 100 runs underneath San*

Joaquin Valley agricultural land and Coastal Range grasslands and pasture lands in Kern County, and Line 300 runs beneath agricultural land and grasslands in the Santa Maria Valley area in San Luis Obispo and Santa Barbara Counties." (Rodeo EIR Project Description Page 3-21).

Figure 2-4 Off-site Pipelines



Source: Contra Costa County 2021

Removal of pipeline facilities was not examined in the Rodeo EIR, only the abandonment. The following excerpts from the Rodeo EIR provide additional discussion of pipeline disposition.

The Rodeo EIR Project Summary states, in part:

Pipeline Sites collect crude oil for the Santa Maria Refinery and deliver semi-refined feedstock to the Rodeo Refinery and, therefore, would not be necessary. The pipelines would be cleaned and taken out of service, or sold.

The Rodeo EIR Section 3.9.4 describes the general approach to off-site pipeline idling:

> *The Pipeline Sites are located throughout the state in San Luis Obispo, Santa Barbara, Kern, Kings, Fresno, Merced, Stanislaus, San Joaquin, Alameda, and Contra Costa Counties. The Project would not involve construction or modifications at the Pipeline Sites (i.e., Lines 100, 200, 300, and 400). Upon completion of the Project, the Pipeline Sites (Figure 3-5) would be unnecessary to transport crude-based feedstocks to the Rodeo Refinery. However, the Pipeline Sites are currently being marketed for sale. If a sale is completed, the pipelines could continue to operate at the discretion of the new owner.*
>
> *For purposes of analysis, it is assumed that Phillips 66 would decommission the Pipeline Sites. The pipelines would be cleaned and taken out of service, or sold; they would not be excavated as part of this [Rodeo Renewed] Project. Phillips 66 would empty and clean the collection points with pipeline inspection gages (PIGs). The PIGs are inserted into the line via PIG traps. The PIG is then forced through the pipelines sweeping the inside walls along the way by scraping the sides and pushing along any debris with it. PIGs are also used to inspect the interior condition of the pipeline to detect and prevent problems such as corrosion, deformations and metal loss.*
>
> *Material removed from the pipelines would be handled in accordance with applicable regulations and standard practices, which include processing as much as possible in Phillips 66 refining facilities and disposing of the remainder in approved facilities, including hazardous waste facilities, as appropriate (Rodeo EIR Project Description Page 3-31).*

The Rodeo EIR Section 3.11 states, in part:

> *It is possible that all or a portion of the Pipeline Sites would be transferred to a third-party and/or used in a different service. However, for purposes of analysis it is assumed the pipelines would be decommissioned.*

The Rodeo EIR Section 3.12.6.2 provides additional information regarding off-site pipeline idling:

> *The process of decommissioning the Pipeline Sites would include the following actions, which are anticipated to be completed within 6 months of final process runs:*
>
> - *Complete final process runs. Shut down all equipment.*
> - *Drain and remove process hydrocarbon contents of equipment. Purge product using nitrogen and a combination of some or all of the following: disc, cup, brush or foam pigging (pigging is the use of a mechanical device, or PIG, to clean and perform other maintenance on pipelines). Specific protocols would depend on the types of material and residuals present in the equipment and its structural design (Rodeo EIR Project Description Page 3-35).*

Note that disposition of the pipelines outside the Santa Maria Refinery fence line is not a part of this Project and is included here only for information and context. These Common Carrier

pipelines will continue to be regulated by the U.S. Department of Transportation and the California Office of the State Fire Marshal. The pipeline terminus within the SMR Project fence line will be retained as part of the off-site pipeline system (see Section 2.4.6 and 2.5.11).

2.3.3 Existing Facilities

The Refinery is comprised of the following functional areas and associated structures (refer to Figure 2-3 for sub-area locations):

- Upper and Lower Tank Farms (Area 1 and Area 2);
- Utilities (Area 3 and facility-wide); includes electrical substation, electrical switchyard equipment, and aboveground poles and conductors;
- Buildings/facilities (facility-wide); includes dual access roads from Willow Road, parking and staging areas, helipad, entry gates, guard house, administration building, machine shop, storage, bulk container accumulation, rail spur (serving the warehouse), and other buildings;
- Coker/flare (Area 4); includes Cokers A & B, Steamout, Hydrocarbon Release and Recovery System;
- Sulfur plant (Area 5); includes Amines A and B, Sulfur Recovery Units A and B, process water stripper, and Tail Gas Unit;
- Carbon plant area (Area 6); includes the sulfur pelletizer area, coke storage area, Pond A, and rail spur;
- Reverse osmosis unit; includes storage tanks and reverse osmosis skids (Area 7);
- Other tankage including decoking, process, waste, and raw waters (facility-wide);
- Stormwater management and conveyances (facility-wide);
- Septic systems with associated leach fields (facility-wide);
- Water Effluent Treatment (WET) plant (Area 7) and associated drainage system, trickling filter, Orbal aeration system, clarifier, and sumps (the WET plant and associated outfall handle refinery wastewater only);
- An active wastewater outfall line; this line is comprised of 12-inch- to 14-inch-diameter pipe that originates at the wastewater plant (Area 7) and runs west through the Pismo/Oceano dunes for two miles to the shoreline and then terminates at a seafloor diffuser located 0.5 mile offshore in State Lands lease Public Resources Code (PRC)1449.1;
- Natural gas line (8-inch), crude line (10-inch) and product line (8-inch) (three lines total); these lines run for approximately 200 feet from the Refinery fence line near the product tank farm to the property line and would remain in place from the pig receiver/launcher to the property line and be blinded from the Refinery (Area 1);
- An idle natural gas line (6-inch); this line runs for approximately 200 feet from the Refinery fence line near the product tank farm to the property line and would remain in place from the pig receiver/launcher to the property line (Area 1); and

- A bundle of dormant pipelines comprised of an 8-inch gas fuel line, 8-inch oil line, and 4-inch diluent line; these lines were previously cut and capped at the Phillips 66 property boundary. An approximately 1,200-foot segment of this pipeline alignment remains in place on Phillips 66 property extending southwesterly from the Refinery fence line near the wastewater treatment plant (Area 7) to the Phillips 66 property line. These pipelines are already abandoned and safe. No additional efforts are needed.

These facilities are shown in Figure 2-3 and Appendix A, Preliminary Grading Plan Sheet 3A Existing Site Plan. Table 2.2 lists the functional areas.

Table 2.2 Existing Refinery Areas

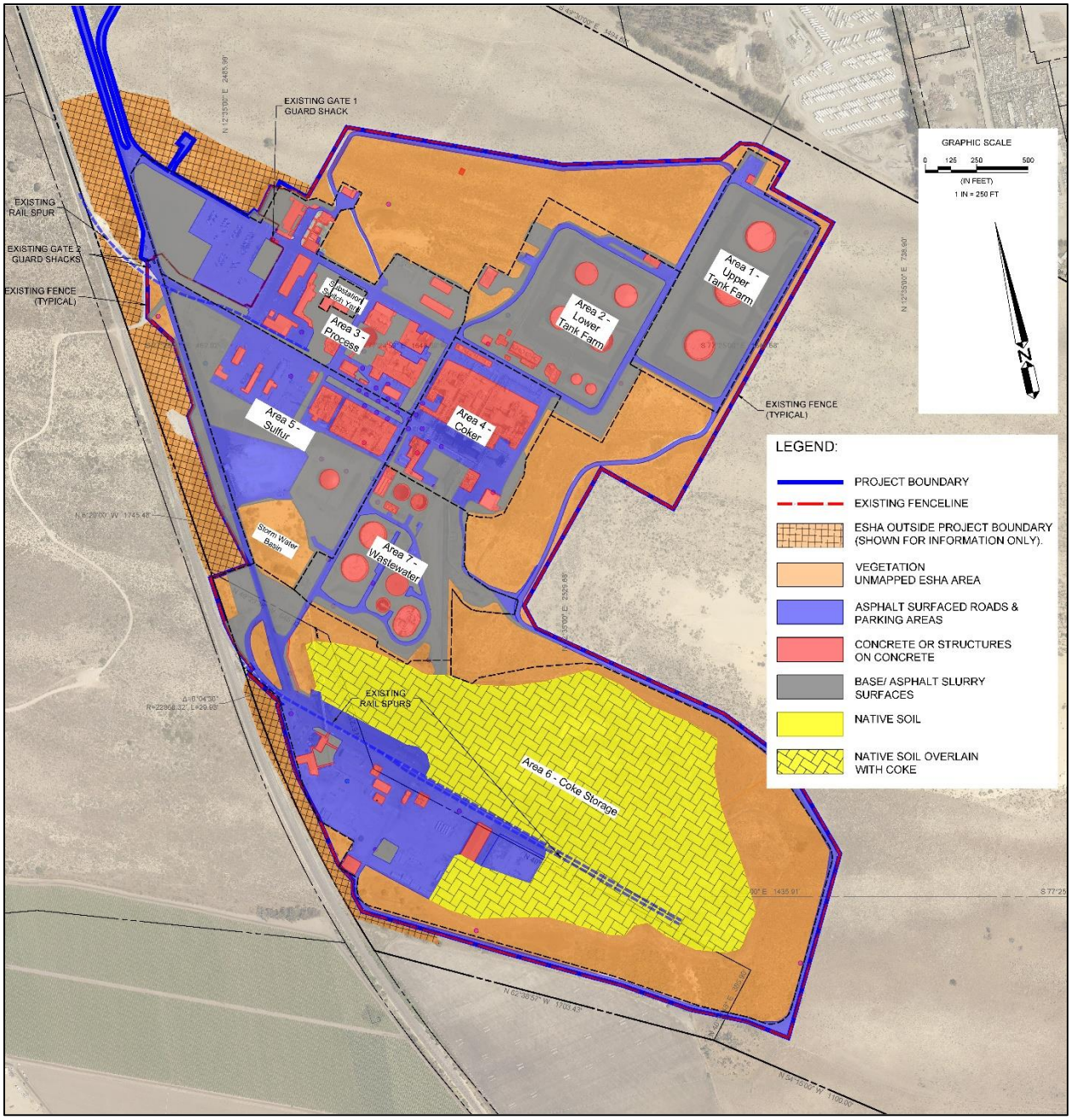
Area	Description	Area, acres
Area 1	Upper Tank Farm	12.3
Area 2	Lower Tank Farm	16.6
Area 3	Process, total area	20.8
	Sub area: acres within the fence line, including the electrical substation switchyard	*14.3*
	Sub area: acres outside the fence line consisting of the paved parking lots and contractor staging area	*6.5*
Area 4	Coker	9.7
Area 5	Sulfur	19.5
Area 6	Coke Storage	79.4
Area 7	Wastewater	11.9
Area 8	Remainder of Site, total	48.9
	Sub area: entry roads between the Refinery main gate and Willow Road	*3.3*
	Sub area: open space within the Refinery fence line	*45.6*
Total	All areas	217.7

Source: Phillips 66 Application 2023

The existing Refinery site hardscapes, along with areas that are designated as Environmentally Sensitive Habitat Areas (ESHA), are shown in Figure 2-5. Note that no work is planned in open space outside the Refinery fence line.

The combined demolition and remediation project site is approximately 218 acres. Approximately 208.2 acres are within the Refinery perimeter fence line. The remaining approximately 9.5 acres are located outside the facility fence line and consists of paved parking, staging, and access roads between Willow Road and the fenced gate entrance. The respective areas by type are listed in Table 2.3.

Figure 2-5 Existing Refinery Site Hardscape and ESHA



Notes: The remaining ESHA located outside the fence line are shown on Project exhibits for informational purposes and are not a part of the Project).
Source: Phillips 66 Application 2023

Unmapped ESHA within the facility fence line is primarily located along the internal perimeter roadways (facility-wide), within the Coke Storage Area, and around the perimeter of the Coke Storage Area (Area 6 of Figure 2-5).

Table 2.3 Existing Refinery Area by Type

Area Type	Area, acres
Asphalt-surfaced roads and parking areas	47.1 *40.7 inside fence line* *6.4 outside fence line*
Concrete or structures on concrete slab	15.3
Stabilized with base or asphalt slurry	49.1 *46.0 inside fence line* *3.1 outside fence line*
Vegetation ESHA	67.4
Native soil overlain with coke (non-ESHA)	38.8
Total	217.7 total *208.2 inside fence line* *9.5 outside fence line*

Note: Outside the fence line is primarily the parking lot area.
Source: Phillips 66 Application 2023

2.3.4 Existing Refinery Vehicle Trips and Workforce

SMR operations entail various material deliveries to and from the Refinery and transportation of Refinery products, including solid petroleum coke by rail or haul truck and recovered sulfur by haul truck.

The number of crude oil, sulfur, petroleum coke, and chemical trucks entering the SMR during the baseline period (2017–2021) averaged 37 trucks per day. These trip counts excluded waste disposal truck trips. Daily trip data for the baseline period are provided in the Air Quality Report (dated 15 February 2023 as part of the Applicant Application). These data provide the number of truck trips by material type including crude oil, coke, sulfur, and the number of truck trip miles per day (based on annual average), per quarter, and per year. See Section 4.3, Air Quality.

The on-site workforce varied during the baseline period (2017–2021). The combined number of Phillips 66 employees plus full-time equivalent contractors ranged from a low of 141 in 2021 to a high of 197 in 2019, with approximately 40 on-site employees on weekends. Typically, two security personnel are present during nights and weekends. General Refinery employees include office staff, operators, supervisors, and maintenance technicians.

2.3.5 Existing Water Use

Water use data for the Refinery are reported annually in the Nipomo Mesa Management Area Annual Report for this adjudicated basin. Annual reports for the 14-year period 2008 through 2021 are available online at: https://ncsd.ca.gov/resources/reports-by-subject/#nmma.

As noted in the five most recent annual reports, the calendar year groundwater production for the Refinery has been consistent at 1,100 acre-feet per year (AFY). Refer to Table 3-3 of the 2017 report, and Table 3-4 of the 2018, 2019, 2020, and 2021 reports.

As noted in Section 4.2.3 of the 2021 report:

> *The P66 refinery expects future production to be similar to recent years' production amounts of approximately 1,100 AFY.*

This volume is equivalent to approximately 358 million gallons per year (at 325,800 gallons per acre-foot) or an average of 982,000 gallons per day.

2.3.6 Refinery Shutdown, Decontamination and Abatement Activities

In January 2023, the SMR ceased operations. Phillips 66 then began to isolate process-related equipment and piping, remove bulk materials, ship remaining product by pipeline, truck, and rail, and decontaminate process equipment and piping. These activities were performed largely by the existing Refinery personnel, using existing equipment and methods, under the existing operations and maintenance permits held by the Refinery and administered by the San Luis Obispo County Air Pollution Control District (SLOCAPCD) and other agencies. These activities are currently ongoing and planned to be completed in 2023 or early 2024.

Regulated materials and equipment include, but may not be limited to, asbestos-containing materials such as pipe insulation, lead-based materials, universal waste (e.g., fluorescent lamps, lamp ballasts, mercury-containing equipment, batteries, electronic waste, cathode ray tubes, and aerosol cans), used oils and dielectric fluids, and refrigerants. These materials were managed in accordance with ongoing compliance requirements and appropriately removed, collected, segregated, and transported for off-site disposal or recycling in accordance with local, state, and federal regulations.

Asbestos containing materials such as pipe insulation were managed in accordance with ongoing compliance requirements as specified in the facility's Title V permit. Materials were either contained or removed for safety and environmental reasons. This activity is covered under the existing SLOCAPCD Title V permit. The majority of asbestos abatement and removal would be performed during Project demolition (e.g., during removal of structures) and would be performed in coordination with SLOCAPCD.

Regulatory notifications have been filed prior to initiating the abatement and removal activities, including a 10-day asbestos abatement notification to SLOCAPCD and San Luis Obispo County, and a lead work pre-job notification to California Division of Occupational Safety and Health (Cal/OSHA). Abatement and removal work was implemented by properly licensed, specialty personnel. Abated and removed materials were segregated and containerized for subsequent off-site disposal/recycling.

The Refinery stopped producing new product in early 2023 but the carbon plant remains operational until the salable portion of the stockpiled coke material has been removed. Hauling of salable product has continued and is anticipated to be completed in 2025. Salable coke is hauled by a combination of truck and rail. Coke hauling activities are in the baseline historical operations and are not a part of the Project but may continue during the Project demolition and remediation activities. However, as discussed further in Section 2.5.9, overall truck trips, including baseline plus Project, would be managed to remain under the historical baseline of 37 trucks per day.

Note that the above activities are not a part of the DP/CDP application, except asbestos abatement in aboveground structures and any required remediation of the coke storage area. The other shutdown, decontamination, and abatement activities are described for information and context. The activities described below are part of the Project.

2.4 Project Activities: Aboveground Demolition

This section outlines the proposed approach for demolition of aboveground structures and on the Project site. Aboveground demolition would involve the removal of most of the aboveground facilities at the site. This would include planning, scheduling, personnel, equipment, and site access and staging, each of which is discussed below.

2.4.1 Aboveground Demolition Planning

Prior to initiating demolition work, a pre-demolition engineering survey of the buildings and field structures scheduled for demolition would be conducted by qualified personnel, as required by California Code of Regulations (CCR) Title 8, Section 1734. Supervision. In addition to regulatory requirements and approvals described elsewhere in this Project Description, demolition-related regulatory notifications and permits would be applied for and obtained, including the following:

- Demolition permit(s) from San Luis Obispo County;
- Cal/OSHA notification regarding demolition of structures higher than 36 feet (per CCR Title 8, Section 341); and
- Lead work pre-job notification to Cal/OSHA Division of Occupational Health and Safety.
- SLOCAPCD and NESHAPs requirements associated with regulated asbestos-containing material (RACM) removal.
- SLOCAPCD requirements related to hydrocarbon contaminated soil processes.
- SLOCAPCD requirement related to pipeline purging and odor control plans.
- SLOCAPCD requirements related to lead-based coated structures requirements.

Structures would be demolished top-down, side-to-side, therefore minimizing potential for uncontrolled collapse. Demolition would progress in a systematic manner, largely by the functional areas listed in Section 2.3 and shown on Figure 2-3; however, the actual work areas may differ depending on the aboveground demolition work plans at the time of mobilization. Demolition debris would be segregated, downsized, and processed, as needed, for off-site transportation or on-site reuse. Debris would be managed as it is generated to avoid unsafe work conditions, minimize storm water runoff, and promote good housekeeping. Specific health, safety, and environmental (HSE) protection measures that would be implemented during demolition are described in Section 2.7.

Demolition activities would occur within the Refinery fence line. Outside the fence line, a bundle of pipelines (8-inch gas fuel line, 8-inch oil line, and 4-inch diluent line) that extends approximately 1,200 feet southwesterly from the western fence line to the Phillips 66 property line would be abandoned in place in their current idled and emptied condition. The pipelines have been

previously nitrogen purged and capped in compliance with regulatory requirements. Therefore, these pipelines are already abandoned and safe, and no additional demolition efforts are needed. This alignment is in a sensitive habitat area. Specifically, this pipeline alignment is within the federally designated La Graciosa thistle critical habitat and the San Luis Obispo County-designated San Luis Bay ESHA. Alternative approaches such as grouting and abandonment in place or pipeline removal would disturb native vegetation within this habitat.

Existing groundwater monitoring wells located outside the fence line will remain in place and will continue to be operated and maintained using currently available access points (these wells are not part of this Project).

No physical work is planned on the wastewater treatment system ocean outfall pipeline. Phillips 66' lease with the State Lands Commission is valid until 2028. Phillips 66 is not proposing to remove the outfall line at this time. Disposition of the outfall would ultimately be determined by the California State Lands Commission.

2.4.1.1 Aboveground Demolition Schedule and Sequence

Aboveground demolition would begin once San Luis Obispo County land use and other required permits have been obtained. Aboveground demolition activities would take approximately eight months to complete, including an initial three-month period of mobilization and abatement and removal of asbestos and other regulated building material. There would likely be one month of overlap between completion of the abatement/removal work and the start of demolition work. Table 2.4 illustrates the anticipated work sequence and durations for these activities, as well as the anticipated maximum daily haul trips and commuter trips. This schedule represents a conservative planning estimate. The schedule may be refined after a demolition contractor is selected, but it is not anticipated to substantially change from this estimate. Additional schedule information is presented in Section 2.5, with consideration of belowground demolition and remediation activities that overlap with aboveground demolition. A further breakdown of demolition activity (truck trips by week during Year 1) is provided in Section 4.3, Air Quality.

Aboveground demolition and associated off-site hauling would take place during daylight working hours, consistent with San Luis Obispo County Ordinance 23.06.042(d). This ordinance for Noise Standards exempts short-term Project excavations, provided such activities do not take place before 7:00 a.m. or after 9:00 p.m. any day except Saturday or Sunday, or before 8:00 a.m. or after 5:00 p.m. on Saturday or Sunday. Demolition activities would occur within the time limitations of this ordinance.

Table 2.4 Aboveground Demolition, Schedule, Haul Trips, and Work Force Summary

Activity	Schedule (Months)							
	1	2	3	4	5	6	7	8
Demolition Activity								
Mobilization and Asbestos/Regulated Material Abatement and Removal								
Aboveground Demolition								
Haul Trips and Workforce								
Haul Trips maximum weekly	4	25	29	23	49	60	16	16

Table 2.4 Aboveground Demolition, Schedule, Haul Trips, and Work Force Summary

Activity	Schedule (Months)							
	1	2	3	4	5	6	7	8
Maximum Daily Work Force	34	34	45	25	32	20	20	20
Anticipated Total Number On-Site Work Force per Day								
Abatement Removal	34							
Overlap Between Phases	45							
Aboveground Demolition	20							

Source: Phillips 66 Application 2023

2.4.1.2 Aboveground Demolition Personnel

Table 2.4 lists the anticipated maximum on-site workforce personnel during aboveground demolition. In addition, abatement/removal may also be occurring during aboveground demolition. The on-site workforce would vary, with an estimated maximum of 45 workers per day during these activities.

Table 2.4 lists heavy duty haul trips that involve the loading and transport of demolition material (e.g., scrap metal and mixed construction debris). Additional trips will occur during this period for delivery of materials and equipment. Most delivery trips would entail light-duty vehicles. Delivery trips would be on site for relatively short periods of time, as needed, for loading and unloading cargo and general supplies.

2.4.1.3 Aboveground Demolition Equipment

Conventional demolition equipment would be used during aboveground demolition. Heavy equipment would include mobile cranes (including use of the on-site 80-ton crane), excavators, front-end loaders, skid steers, high reach forklifts, man lifts, and water truck. Lighter-duty equipment would include generators and negative air machines (scrubbers and filters) that would be used to abate/remove the regulated materials and demolish the aboveground structures. Explosives would not be necessary to demolish the on-site structures.

Table 2.5 lists the anticipated quantity of each major equipment type by work activity.

Table 2.5 Demolition Major Equipment by Work Activity

Activity	On Sight Heavy Equipment Total Daily Maximum							
	Crane	Excavator	Front End Loader	High Reach Forklift	Man Lift	Water Truck	Street Sweeper	Generator
Abatement and Removal	0	0	0	3	4	1	1	8
Activity Overlap	1	4	1	3	6	1	1	8
Aboveground Demolition	2	4	1	1	2	1	1	4

Notes: The actual types and quantities of equipment used on any given day would vary based on work scheduled for that day.
Source: Phillips 66 Application 2023

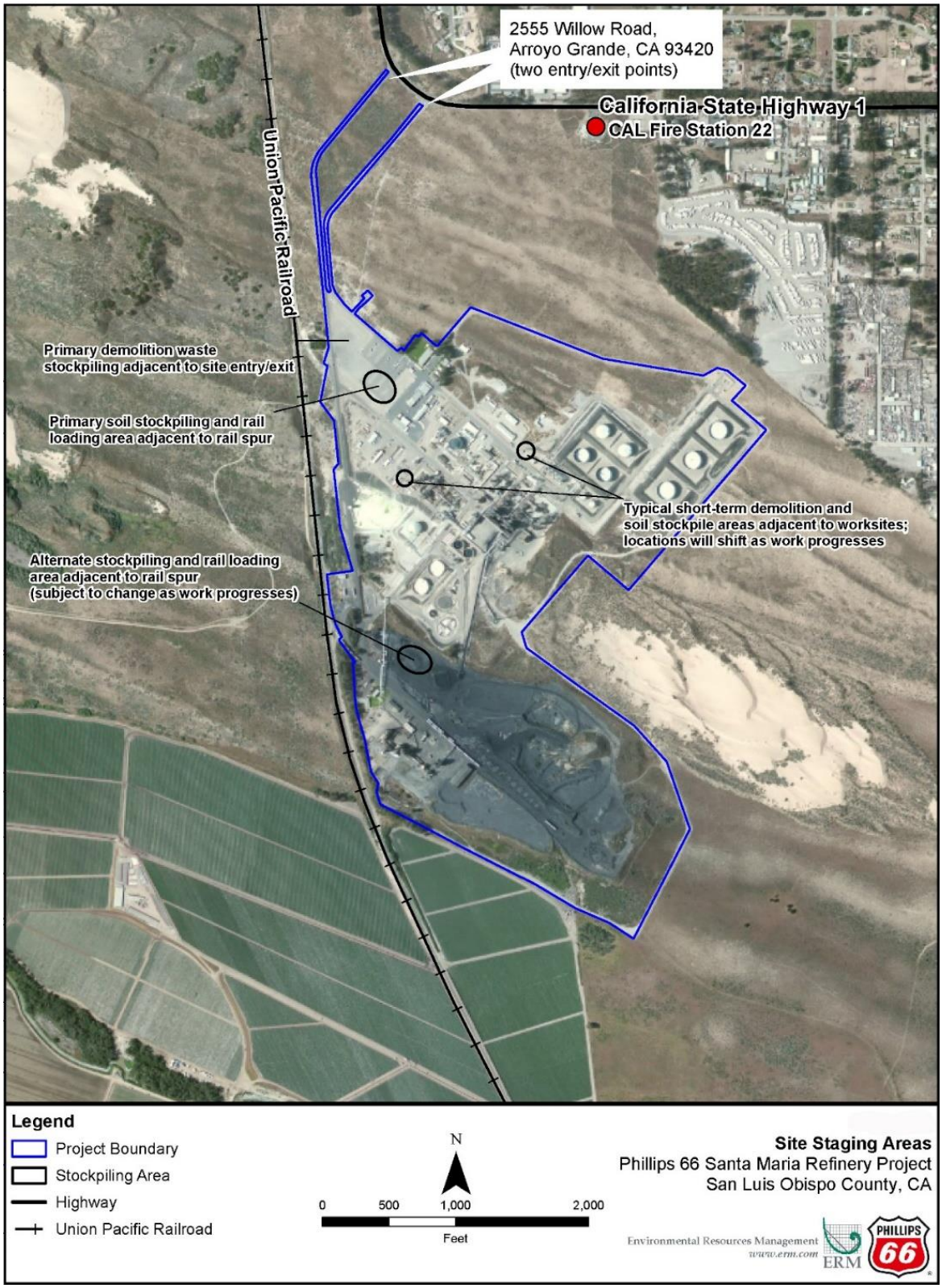
2.4.1.4 Aboveground Site Access and Staging

The Refinery's existing perimeter chain-link security fence and gates would remain in place during demolition. Demolition work areas would be accessed using the existing system of access roadways and gates, consistent with current operations. Site security is discussed further in Section 2.7.

Existing on-site parking would be provided for workers and deliveries. Temporary worker administrative, sanitary, and comfort services would be provided within on-site designated areas. Routine vehicular traffic would include construction workers, Project oversight and administrative personnel, security personnel, and delivery drivers. Asphalt surfaces would be retained, as practical, during aboveground demolition in each area.

Equipment, demolition debris, and waste materials would be staged within the various Refinery work areas and existing primary staging area (see Figure 2-6). In addition to the primary designated laydown areas, smaller areas would be used throughout the site for temporary storage and staging of materials and equipment. Demolition staging and support areas may be moved as the work progresses.

Figure 2-6 Site Staging Areas



Source: Phillips 66 Application 2023

2.4.2 Aboveground Demolition Waste Management

Demolition waste and recyclable materials would be disposed of in accordance with applicable federal and California regulations. Anticipated waste types include asbestos and other regulated building materials, mixed metals, aboveground concrete, treated wood, and mixed debris. Mixed debris refers to construction and demolition materials that are typically not eligible for recycling. Typical mixed debris materials include insulation, wood framing, ceiling tiles, carpet, vinyl tile, ceramic tile, stone tile, and drywall.

Table 2.6 provides the estimated types, weight, and volume of abatement and aboveground demolition waste streams. Demolition planning specialists with experience on similar facilities developed these estimates by conducting an inventory of Refinery facilities accompanied by Phillips 66 on-site personnel. For estimating purposes, facilities were segregated into major categories including buildings, generating plant, utility plant, coker units, fuel tanks, containment tanks and associated piping, tail gas unit, sulfur and amine units, steamout, HC relief unit, water effluent treatment plant, carbon plant, and aboveground storage tanks. For each facility, construction materials were identified (e.g., steel, wood, treated wood, presence of insulation, and aboveground concrete). Dimensions were measured in terms of height, number of levels, length, width, and thickness. These measurements were used by Phillips 66 to calculate tons and cubic yards of aboveground demolition material (steel, other recoverable metals, treated wood waste, mixed debris, aboveground concrete, and asbestos) and corresponding truckloads.

The estimated aboveground demolition volumes assume that all large equipment pedestals, pipe rack pedestals, containment walls and other above-grade concrete would be removed down to existing slab or surrounding grade, and that equipment pads and miscellaneous near-grade raised improvements six inches high or less would likely remain. Near-grade concrete improvements that may remain include various pump and motor pads, linear curbs, sidewalks around structures, and similar low-profile structures.

Based on this analysis, aboveground demolition would generate an estimated 2,200 cubic yards of concrete waste. Stockpiled concrete generated during aboveground demolition would remain on site until it can be consolidated with concrete generated during any necessary belowground demolition. As described in Section 2.5, concrete that is suitable for on-site reuse would be downsized/crushed and reused on site to the extent practical, such as for excavation backfill, and the remainder would be hauled off site and recycled, if practical.

Table 2.6 Demolition Material Volumes and Off-site Haul Truck Loads

Material	Classification	Volume (cubic yards)	Weight (tons)	Off-site Truck Loads	Disposition Notes
Mixed Metal	Recyclable material	1,100	7,050	390	Transport to a metal recycling facility
Concrete	Recyclable material	2,200	4,350	0	Consolidate concrete with belowground concrete and then crush and reuse on site to the extent practical
Asbestos	Regulated waste (not eligible for recycling)	1,000	350	35	Dispose at a permitted asbestos landfill
Treated wood	Regulated waste (not eligible for recycling)	1,000	1,250	25	Dispose at a permitted landfill
Mixed debris	C&D (partially eligible for recycling)	7,500	5,650	200	Transport to a transfer station for sorting
Total loads transported off site				**650**	

Waste Breakdown	**Cubic Yards**
Total waste generated	12,800
Total waste generated eligible for recycling	10,800
Total volume of mixed debris available for sorting and recycling	7,500
Total mixed debris recycled at 65% recovery rate	4,876
Total concrete and steel recycled	3,300
Total quantity of materials recycled	8,176
Percentage of materials generated to be recycled (Excludes Regulated Waste)	**76%**

Notes: C&D = construction and demolition.
Source: Phillips 66 Application 2023

Other waste and recyclable materials would be transported for off-site disposal and/or recycling. An estimated total of 650 truck trips would be needed to transport the aboveground demolition materials to off-site waste disposal and recycling facilities. The following hauling capacity assumptions were used by Phillips 66 to calculate the number of truckloads of each material type:

- Mixed metal: 18 tons per truckload (about 3 cubic yards per truck at 6.4 tons per cubic yard);
- Concrete: 10 cubic yards, 20 tons per truckload;
- Asbestos: 30 cubic yards per truckload;
- Treated wood: 40 cubic yards per truckload;
- Mixed debris: 40 cubic yards per truckload (mixed debris refers to construction and demolition materials that are typically not eligible for recycling and may include insulation, wood framing, ceiling tiles, carpet, vinyl tile, ceramic tile, stone tile, and drywall).
- Soil: 20 tons per truckload (13 cubic yards), 100 tons per rail car (67 cubic yards) at 1.5 tons per cubic yard; and

- Asphalt: 20 tons per truckload (10 cubic yards per truck) at 2 tons per cubic yard.

Material transportation for aboveground demolition would take place over an approximately 8-month (30-week) period. As presented in Table 2.4, the maximum weekly haul trips would ramp up during the first 4 months (up to 28 trips per week in month 3), then peak in months 5 and 6 (up to 45 trips per week), and then ramp down in months 7 and 8 (up to 15 trips per week).

Actual quantities of materials to be transported off site would be documented with truck and weight tickets for each load.

Minor grading or excavation may be necessary to complete the aboveground demolition activities. In these cases, excavated soil would be tested and handled in accordance with the procedures described in Section 2.5. Vegetation removal would not be necessary during aboveground demolition except in small, isolated locations.

2.4.3 Aboveground Abatement and Demolition Disposal Facilities

Table 2.7 lists the aboveground abatement and demolition waste materials, estimated haul trips, preliminary disposal locations, hauling distance, and haul routes for the following waste materials:

- **Asbestos.** Asbestos would likely be hauled by rail to a waste facility in Utah consistent with historic practice. Approximately, three to four rail cars would be required. Alternatively, if trucks are used, then an estimated 35 truck trips would be required;
- **Treated wood.** An estimated 25 truckloads of treated wood would likely be hauled to the Santa Maria Landfill in Santa Maria or to the Cold Canyon Landfill in San Luis Obispo;
- **Mixed metals.** Mixed metals would make up the largest number of haul trips (390) and be transported to one or more regional recycling facilities, depending on capacity at the time of the Project;
- **Mixed debris.** An estimated 200 truckloads of mixed debris would likely be hauled to the Santa Maria Transfer Station in Nipomo for sorting or potentially to Cold Canyon Landfill; and
- **Concrete.** As discussed above, concrete would be consolidated with material generated during belowground demolition and remediation, and it would be either crushed and reused on site or hauled off site, as described further in Section 2.5.

2.4.4 Aboveground Demolition Designated Haul Routes

Demolition-related equipment and material delivery vehicles and waste hauling trucks would use the existing designated haul route between the Refinery entry/exit points and the Willow Road/U.S. 101 interchange. From the site entry/exit on Willow Road, this route runs 1.25 miles east on SR 1/Willow Road to the Willow Road intersection, and then east on Willow Road for approximately four miles on Willow Road to the Willow Road/U.S. 101 interchange. This route is shown in Figure 2-7, and haul routes to specific disposal locations details are also shown in Figure 2-8.

Table 2.7 Aboveground Abatement and Demolition Waste Hauling Destinations

Waste Material	Truck Haul Trips	Disposal Transportation Mode and Destination	One-way Off-site Truck Haul Distance (Miles)	Transport Route
Asbestos	35	By rail to Republic Services ECDC Landfill, East Carbon City, Utah (or by truck to Veolia, 107 South Motor Ave., Azusa CA 91702)	200	Interstate rail to Utah or by truck via US Hwy 101 and CA 134 (or other regional highways in Los Angeles region)
Treated Wood	25	By truck to Santa Maria Landfill, 2065 E. Main Street, Santa Maria, CA[a] (or to Santa Maria Transfer Station in Nipomo)	23	Willow Road to U.S. 101 south, east on E. Main Street
Mixed Metal	390	By truck to SA Recycling (Bedford Enterprises, Inc.) 1599 W. Betteravia Road Santa Maria, California	22	Willow Road to U.S. 101 south, west on Betteravia Road (or west on E. Main Street, south on Black Road, and east on Betteravia Road)
Mixed Debris	200	By truck To Santa Maria Transfer Station 325 Cuyama Lane Highway 166 Nipomo, California	11	Willow Road to U.S. 101 south to Cuyama Lane
Concrete[b]	0	On-site disposal	NA	NA

Notes: Haul distances are measured from the SMR facility entry/exit points at Willow Road. Excludes on-site hauling. This table presents haul truck equivalents, assuming 33 cubic yards per haul truck. The primary haul mode would be via rail, and an alternate disposal location is via truck to a regional facility. NA = not applicable.

a. An alternate disposal location is Cold Canyon Landfill at 2268 Carpenter Road, San Luis Obispo, approximately 22 miles from the Refinery and accessible via Willow Road to 101 north, north on Price Canyon Road, and south on Carpenter Canyon Road. The haul distance from the SMR to either landfill is roughly equal.

b. Concrete would be consolidated with belowground concrete material and then crushed and reused on site to the extent practical. A portion of the concrete may be transported to an off-site handling facility, such as Gator Crushing and Recycling, located on Willow Road adjacent to the SMR.

Source: Phillips 66 Application 2023

Figure 2-7 Haul Routes and Destinations - General

Source: Phillips 66 Application 2023

Figure 2-8 Haul Routes and Destinations - Detail

Source: Phillips 66 Application 2023

Materials hauled by rail would utilize existing Union Pacific rail routes. Trains servicing the Project would be delivered to the SMR by UPRR. The UPRR lines are shown in Figure 2-9. Trains would access the SMR via the Union Pacific Coast Line, which runs from San Jose to about Moorpark. Freight rail services along this line are operated by UPRR, providing service that roughly parallels the Highway 101 corridor between San Jose in the north, and Camarillo in the south. Trains would not utilize the Santa Maria Valley Railroad system.

Figure 2-9 UPRR South-Western Area Freight Rail Lines

Source: UPRR Maps I-5 Region, https://www.up.com/aboutup/reference/maps/

2.4.5 Aboveground Demolition Vehicle Trips

The maximum number of haul truck trips during the 8-month abatement and aboveground demolition period (excluding belowground demolition and remediation activity) is anticipated to peak at 45 trips per week (an average of less than 10 trips per day) during Month 6. In all months of aboveground demolition, average daily trips are anticipated to be under the baseline level of trucking. Trip estimates for the combined aboveground and belowground and remediation activities are presented in Section 2.5.

The on-site workforce would vary, with an estimated maximum of 45 workers per day during the 8-month abatement and aboveground demolition period.

Abatement and demolition workers are anticipated to originate from nearby Central Coast communities. On-site personnel are anticipated to commute on average 22 miles each way; for reference, this is approximately the distance between the City of San Luis Obispo and the Refinery or between the City of Santa Maria and the Refinery.

2.4.6 Aboveground Demolition Water Supply and Demand

Water uses during demolition would include sanitary/comfort needs, dust control, equipment washing, and other incidental uses. The total estimated water demand for demolition is 900,000 gallons per year (2.8 acre-feet per year). This estimate assumes 180 days of work at a typical rate of 5,000–6,000 gallons per day, over the course of one year. Demolition work would typically include two on-site water trucks of 2,000-gallon capacity and apply 5,000 to 6,000 gallons per day, primarily for localized dust control. Water would be sprayed onto aboveground structures as they are cut, and as cut materials are staged, to capture fugitive dust from concrete, drywall, and other building materials. Cutting and staging would take place on hard surfaces, with no soil disturbance. Usage could be greater if there were longer haul trips.

2.4.7 Post-Aboveground Demolition Condition

This section identifies the facilities that would remain at Project completion, and those facilities that would remain after aboveground demolition to be removed during belowground demolition and remediation (refer to Figure 2-3 for Area locations).

- These facilities would remain after aboveground demolition and at Project completion:
  - Internal roads (facility-wide);
  - Rail spurs (Area 3, Area 5, and Area 6);
  - Truck scale (west of Area 5);
  - Berms (Area 1, Area 2, and facility-wide);
  - Asphalt areas (facility-wide);
  - Water supply wells (Areas 2, 3, 5, and 6);
  - Phillips 66-controlled electrical substation and Pacific Gas and Electric Company (PG&E) power line to the substation, and telecommunications line (Area 3);
  - Natural gas supply pipeline blinded at the fence line (Area 1);
  - Non-contact storm drain system and conveyance to Stormwater Basin (Evaporation Pond) (conveyances are facility-wide, Stormwater Basin is in Area 5);
  - Wastewater outfall line (Area 7);
  - Buried pipelines (facility-wide);
  - Equipment and structural foundations, generally to within six inches above grade level (facility-wide); and

  - Monitoring wells (facility-wide) and slop oil remediation tank (Area 3).

- These facilities would remain after aboveground activities but would be removed during belowground demolition and remediation:
  - Water tank TK-553, fire/industrial water tank (Area 3);
  - Buried pipelines (as needed to accommodate remediation);
  - Equipment and structural foundations, generally to within six inches above grade level; (as needed to accommodate remediation);
  - Septic systems (Areas 3, 4, 5, and 6); and
  - Temporary offices (Area 3).

As noted, some of these facilities would be removed as necessary during belowground remediation (e.g., foundations and belowground pipeline) in order to complete remediation. Some facilities would remain until the later stages of belowground work to support work activity (e.g., fire water tank, septic leach fields). The facilities remaining on site at completion of remediation and belowground activities are described further in Section 2.5.15 Post-Remediation Condition and shown in Appendix A on Preliminary Grading Plan Sheet 9A.

2.4.8 Pre-Existing Site Conditions and Remediation Considerations

Planning estimates of existing or potentially present impacts on soil and groundwater rely on the current understanding of site conditions based on the following data sources:

- Previous site assessments (investigations that included data collection that delineated potential impacts following the discovery of a release);
- Release reporting (documentation produced by the SMR to catalogue leaks and releases, some of which included data collection);
- Observational information (documentation, excluding chemistry data, of potential impacts such as leaks or soil staining found in site assessment reports); and
- The SMR site-wide groundwater monitoring program, Central Coast RWQCB Monitoring and Reporting Program No. R3-2008-0070.

Of these sources, the site assessment reports and the groundwater monitoring program provide the best data for characterizing current site conditions because these documents include soil and/or groundwater chemistry data. Data sources include a Phase I Environmental Site Assessment that was prepared for the Refinery. The findings, conclusions, and recommendations from this report are provided in Appendix A. These data were used to develop the preliminary remediation plan describing where known impacts occur. The preliminary remediation plan also includes hypothetical impacts that may require remediation in other portions of the SMR (i.e., areas in which a release may have occurred but has not been discovered). For these areas, quantitative data limitations exist. There is either observational information that suggests a release may have occurred (e.g., documentation of leaky valves or stained soil) or facility uses and activities in that portion of the site are potential sources of contamination. For example, even if evidence of a release

is lacking, there is the possibility that impacted material is present underneath an existing aboveground storage tank.

The following subsections describe major features of the site, areas of known impacts that require remediation (or continuation of ongoing remediation), and areas where data are lacking. For areas where data are lacking, assumptions were made regarding the potential extent of remediation for the purposes of this Project Description. These areas are shown in Figure 2-10.

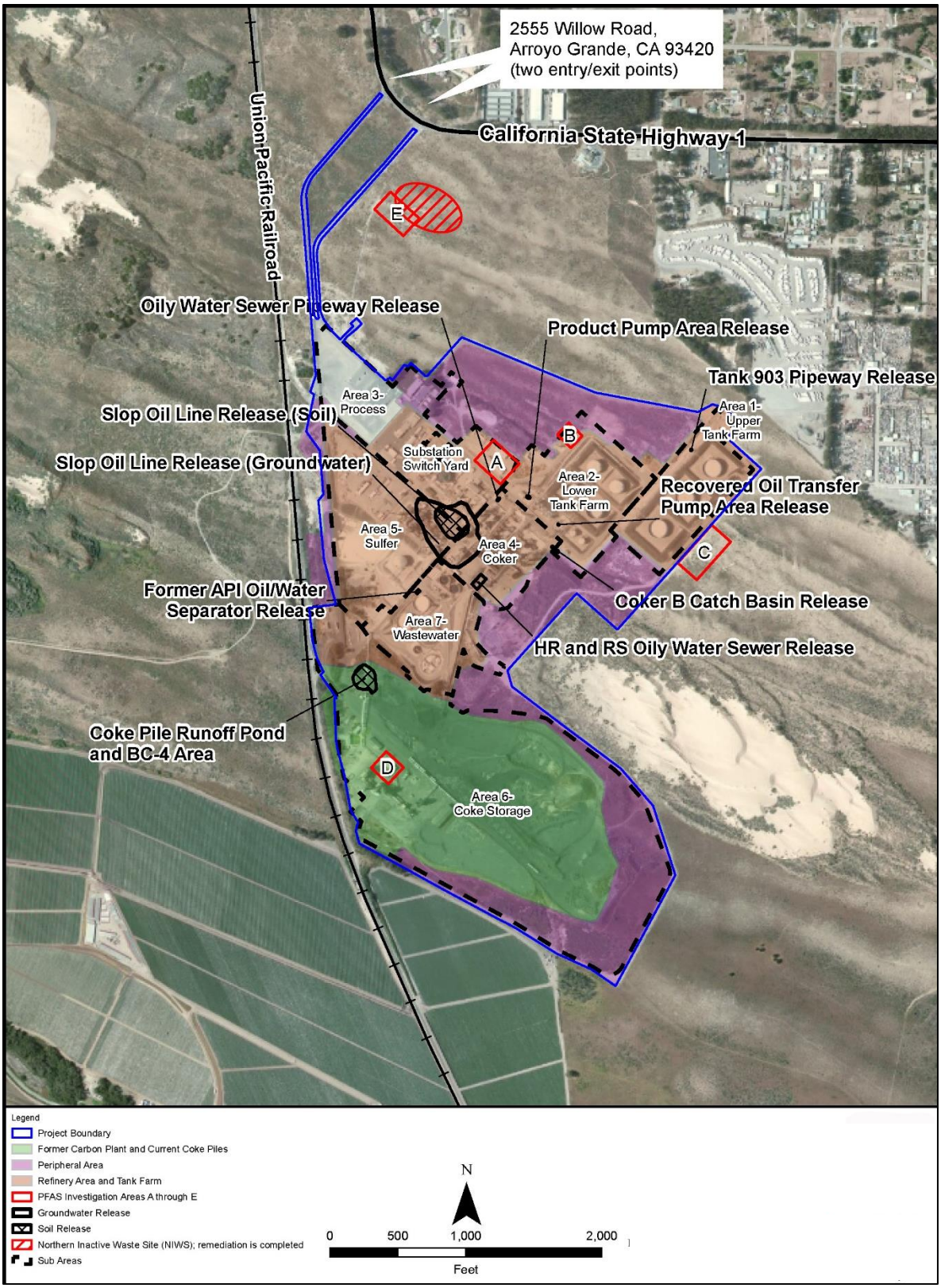
2.4.8.1 Ongoing Remediation and Monitoring Activities

The SMR site has some historical contamination of soils and groundwater, remediation of which is currently ongoing in some areas. Phillips 66 indicates that it is currently coordinating its investigation and remediation programs for identified releases with the RWQCB. Below is a list of areas with known or potential contamination. These areas are shown in Figure 2-10:

1. Tank 903 Pipeway Release (Area 1);
2. Recovered Oil Transfer Pump Area Release (Area 2);
3. Product Pump Area Release (Area 2);
4. Slop Oil Line Release (Area 3);
5. Oily Water Sewer Pipeway Release (Area 3);
6. Northern Inactive Waste Site (NIWS) (north of Area 3);
7. Coker B Catch Basin Release (Area 4);
8. HR and RS Oily Water Sewer Release (Area 4);
9. Coke Pile Runoff Pond and BC-4 Area (Area 6);
10. Former API Oil/Water Separator Release (Area 7);
11. PFAS Investigation Areas A (Area 3), B (north of Area 2), C (south of Area 3), and D (Area 6); and
12. Coke Pile Remediation (Area 6).

Existing site conditions and remediation planning assumptions for the SMR are detailed below. Planning assumptions would be refined after collection and analysis of additional site characterization data to fill current data gaps. Additional data collection may be performed prior to, and concurrent with, aboveground demolition where feasible (i.e., where it would not interfere with existing operations or demolition activities). Additional characterization by Phillips 66 may also be performed after aboveground demolition to provide safe access to belowground soils.

Figure 2-10 Ongoing and Potential Remediation Activities



Source: Phillips 66 Application 2023

2.4.8.2 Peripheral Areas

Peripheral areas within the Project limits consist of the three general areas discussed below: 1) developed areas within and outside the Refinery fence line that are separated from operating equipment areas. These developed areas include access roads and contractor staging and parking between Willow Road and the Refinery gates, helipad, administrative buildings, fence line perimeter roads, and interior parking lots; 2) undeveloped open space within the Refinery fence line; and 3) undeveloped open space outside the Refinery fence line.

Developed Areas Separated from Operating Equipment Areas. Pending further confirmation studies, soil conditions within these developed areas (i.e., access roads, staging areas, administrative buildings, parking lots) are likely to have low or no significant levels of impacted soil. However, conservatively high estimates of impacted soil are assumed in order to cover the unlikely event that undetected releases have occurred in these areas. Soil volume estimates for these hypothetical releases are included in the soil volume estimates.

Open Space Within the Refinery Fence Line. Vegetated areas within the fence line are composed primarily of non-native veldtgrass intermixed with native species identified as ESHA. Approximately 67 acres of ESHA is located inside the fence line, generally near the site perimeter (see Figures 2-5 and 2-11). Areas currently in ESHA within the fence line could be impacted by surface demolition and/or remediation activity. For example, access may be needed to reach existing abandoned water wells that need to be capped. The final contour for these potential activities would be unchanged; therefore, no new hardscape areas are anticipated. Any areas of existing ESHA that are affected by this activity would be revegetated.

Approximately 26.5 acres of open space within the Refinery fence line overlap with areas of potential historical debris or materials (refer to Preliminary Grading Plan Sheet 16A and 17A, areas noted as “Disturbed ESHA” and further broken down as “ESHA A” through “ESHA L”). For example, open space in the northern portion of the Refinery includes features such as ditches and unspecified fill areas for which there are observations or reports of unspecified debris or materials that were historically disposed (refer to Appendix A, Preliminary Grading Plan Sheet 16A and 17A, areas noted as areas “Disturbed ESHA A” through “Disturbed ESHA D”). There is limited contemporary evidence of impacted soil impacts in these features. For this analysis, and pending further confirmation studies, it is assumed that these areas have some degree of impacts, and a portion of these areas would require remedial action to remove impacted material. Soil volume estimates for these areas are included in the soil volume estimates.

Open Space Outside the Refinery Fence Line. Vegetated areas surrounding the Project site are composed primarily of non-native veldtgrass intermixed with native species identified as ESHA. No demolition or remediation ground disturbance is planned within open space areas outside the Refinery fence line.

Remediation previously permitted on Phillips 66 property in areas outside the Project boundary are not part of the Project. In particular, remediation of the Northern Inactive Waste Site (NIWS) was recently completed. RWQCB has issued a No Further Excavation letter for this site. However, site restoration under the County’s grading permit PMTG2020-00056 is ongoing and is expected to be completed in three years.

2.4.8.3 Refinery Areas and Tank Farm (Areas 1, 2, and 3)

The Refinery areas and tank farm include the SMR petroleum refining, conveyance, and tank storage facilities. It also includes supporting facilities such as the utility plant, wastewater treatment facilities, warehouses, and maintenance facilities. It does not include the former carbon plant or coke piles, which are described separately below. A number of documented releases have occurred within the Refinery areas and tank farm that necessitated a site assessment that included collecting soil data. Data from the release assessments were used to delineate the approximate extent of impacted soil not excavated as part of a corrective action (e.g., soil left in place and covered with a pavement cap). Soil volume from these delineations were included in the soil volume estimates.

With the exception of the site assessments noted above, soil data are not available for identifying or delineating impacts. For portions of the Refinery areas and tank farm without soil data, other available information was used to estimate soil volumes. The SMR implements spill response and reporting procedures upon discovery of a release, including notification of the agencies when notification criteria are met. The logs from this program describe where the release occurred, what material was released, and what actions were taken to mitigate the release. If impacted soil was not removed as part of the mitigation measures, this information was used to estimate volumes of impacted soil in the areas in which they occurred. Additionally, many of the facilities and aboveground storage tanks located in the Refinery areas and tank farm process, convey or store petroleum, or other potentially hazardous constituents, which if released, could impact soil. Some of these facilities have documented observational information from baseline environmental assessments and Phase I investigations suggesting releases may have occurred (e.g., leaking valves, staining, etc.). For the purpose of estimating the remediation volume, it was assumed that releases have occurred from facilities that have either observational evidence of releases or involve activities that include hazardous constituents. The estimated severity of these hypothetical releases was based on the volumes and durations of releases implied by observational evidence, as well as the types of hazardous materials that were potentially released.

2.4.8.4 Former Carbon Plant and Coke Pile Area (Areas 4 and 6)

The former carbon plant and current coke piles occupy the southeast portion of the Refinery. At the request of the Central Coast RWQCB, Phillips 66 assessed potential impacts on soil and groundwater from coke processing operations and storage (SECOR 2001). The assessment investigated potential contamination from coke and coke process water and included collection of analytical chemistry samples from coke in the piles, leachate samples from coke, process and pond water, soil beneath coke piles, soil leachate, soil-pore moisture, and ground water under and around the carbon plant and coke pile area. The study concluded that unprocessed coke had moderately high petroleum hydrocarbons and elevated metal concentrations. Processed coke contained very low petroleum hydrocarbons and metal concentrations. All other media sampled (water, soil, leachates, pore-moisture, and groundwater) had minimal to non-detectable concentrations of contaminants. Thus, the study concluded that the carbon plant and coke piles were not a significant concern for soil and groundwater contamination, with the exception of a small area around a runoff pond, referred to as the "BC-4 area" (Figure 2-10). At this location, biogeochemical processes were potentially causing low pH in groundwater that periodically mobilized metals in soil, raising

metal concentrations in groundwater. The study also noted that coke was not mixing with underlying soil, as evident by a visibly sharp transition between coke and soil.

As noted previously, coke is a carbon by-product of the refining process which Phillips 66 continues to sell to buyers. It is assumed that much of the coke present on site could be sold and would not require remediation and off-hauling. However, the perimeter of the storage pile has areas of lower-quality coke that may be considered "non-salable" (e.g., due to high sand content); some of these areas have been undisturbed for a number of years. These undisturbed areas are covered by a mix of native and non-native vegetation that has been identified as containing ESHA. In general, pending further site investigation, it is possible that all of the non-salable material would remain in place.

However, it is also possible that some residual non-salable coke and a shallow horizon of underlying soil would need to be excavated and hauled off site either prior to or during remediation due to regulatory requirements. For planning purposes, soil volume from the coke pile was estimated based on the ground surface area of the coke pile and an assumed shallow excavation depth; this volume is included in the remediation soil volume estimate. To the extent that coke underlying ESHA designated vegetation is removed, the disturbed vegetation would be stabilized and restored using appropriate plant palettes and seed mixes that would be selected during the detailed planning phase.

For a conservative evaluation of grading quantity for the Project, it is assumed that soil under the former carbon plant may be impacted from former industrial activity. It is also assumed that the coke pile runoff retention area that potentially causes periodic groundwater pH issues would be excavated to eliminate the source. Conservative material estimates from these areas are included in the remediation soil volume estimate. These areas would be investigated during site characterization to confirm whether excavation of impacted soil is needed and to what extent.

In the easternmost corner of Area 6, sensitive habitat was restored in 2014 under PMT2013-00473, as mitigation for site remediation in the Coke Storage area. This remediation area would remain undisturbed as identified in Appendix A, Preliminary Grading Plan Sheet 10A.

2.4.8.5 Slop Oil Line Release (Areas 3, 4, and 5)

The Slop Oil Line Release potentially impacted both soil and groundwater (Figure 2-10). The release was discovered in April 2016 and subsequent investigations discovered that a light non-aqueous phase liquid (LNAPL) plume covers approximately 3.7 acres beneath the central portion of the SMR. The cleanup activities are performed under Central Coast Water Board oversight (GeoTracker Case #SL203121248). Manual extraction of LNAPL was conducted as an interim remediation measure. A long-term Hydrocarbon Recovery System, referred to as the SMR Groundwater Remediation Project (GWRP), was installed and the system was brought online in April 2023 as part of the Slop Oil Line Release remediation activities. Central Coast Water Board staff will continue to oversee implementation of the Slop Oil Line Release remediation activities and the post-remediation groundwater monitoring activities and will determine when the cleanup is complete.

The SMR GWRP consists of 12 recovery wells, seven monitoring wells, a 15-horsepower air compressor, and a 1,380-barrel aboveground holding tank. The tank has a diameter of 10 feet and is 15 feet tall. The recovery wells are below grade and enclosed in concrete vaults. The delivered air to and recovered material from the recovery wells are transferred by piping, both below and above grade. The fluid from the recovery system is stored in an aboveground tank on site and then a vacuum truck picks up the fluids and transports the fluid to the Phillips 66 Los Angeles Refinery in Wilmington, CA. Phillips 66 anticipates transfers from the Santa Maria Refinery about every two months for up to 20 years (per RWQCB estimates).

The current RWQCB requirements for the Slop Oil Line Release do not require soil excavation for remediation. However, to be conservative on the volume of soil excavation, the Phillips 66 soil volume estimate assumes impacted soil (estimated from site assessment data) would be excavated, including excavation needed to remove the LNAPL.

In addition to the Slop Oil Line remediation system, there is an existing stormwater basin located in Area 5 which has vegetative overgrowth including sensitive species identified as ESHA. It is not anticipated that soil remediation is necessary in this area; however, the vegetation would be cleared to restore basin function.

Based on the most recent ten years of groundwater data, with the exception of periodic impacts on groundwater in the BC-4 area and groundwater impacted by the Slop Oil Line Release, there is limited evidence of groundwater impacts elsewhere beneath the site that necessitate remediation. However, the additional sitewide sampling performed as part of the Project may identify additional areas where groundwater impacts need to be investigated.

2.4.8.5 PFAS Investigation Areas

A Per-and polyfluoralkyl substances (PFAS) Preliminary Site Investigation was performed in 2022. A report of findings was submitted to the Central Coast RWQCB on February 17, 2023, related to potential PFAS-containing material at four locations identified as areas with historical storage/use of firefighting foam and one location where disposal of PFAS-containing material may have occurred. PFAS investigation areas, referred to as Areas A through E, are shown in Figure 2-10. Area A is comprised of two buildings that were formerly used to house fire engines that stored Aqueous Film Forming Foams (AFFF). Area B is comprised of the handheld fire extinguisher training area. Area C is comprised of the foam training area and was used to conduct AFFF training exercises. Training with AFFF was ceased during the first quarter of 2018. Area D is a building designated as the Storage House. Fire Engine 1 and the foam tender are stored in this building. Both vehicles contain AFFF. The foam tender contains a 2,000-gallon tank. Area E is comprised of the NIWS. PFAS was not encountered in soil or groundwater during the investigation work at the NIWS. The full extent of per- and polyfluoroalkyl substances (PFAS) identified in soil and groundwater during initial site investigation activities in 2022 have not been fully delineated.

2.4.8.6 Site-Wide Groundwater Monitoring

The SMR conducts a site-wide groundwater monitoring program (Monitoring and Reporting Program [MRP] No. R3-2008-0700) that has been in place for over two decades. Data are collected semiannually, with monitoring reports viewable through GeoTracker (Case #SL203121248). The Central Coast RWQCB is in the process of revising MRP No. R3-2008-0070. The locations of

existing groundwater monitoring wells are shown in Appendix A, Preliminary Granding Plan Sheet 3A (sourced from Trihydro 2022).

As noted above, remediation of hydrocarbon-impacted soil was recently completed at the NIWS (Figure 2-10). The NIWS currently has post-excavation groundwater monitoring to verify whether the waste associated with the NIWS has impacted groundwater. In addition, final site restoration and revegetation compliance is in process for closeout of County Grading Permit PMTG2020-00056.

For the purpose of this Project Description, the most recent 10 years of groundwater data were reviewed to evaluate the potential need for remediation associated with groundwater impacts. With the exception of periodic impacts on groundwater in the BC-4 area and groundwater impacted by the Slop Oil Line Release, there is limited evidence of groundwater impacts elsewhere beneath the site that would necessitate remediation. The two exceptions noted above would be addressed as part of site-wide remediation, and the estimated volumes are included in the remediation soil volume estimate.

Independent of the groundwater data review, the SMR would conduct a per- and polyfluoroalkyl substances investigation in accordance with Order WQ 2021-0006-DWQ. The SMR's workplan for this investigation is currently under RWQCB review. The workplan and other available documentation for the per- and polyfluoroalkyl substances investigations are viewable on GeoTracker (Case #T10000017182). These groundwater monitoring and investigation efforts are ongoing under RWQCB oversight, under separate regulatory programs, and are not a part of this Demolition and Remediation Project.

2.4.8.7 Area 6 Coke Pile Historical Remediation

Contamination was identified in the eastern area of Area 6 (Coke Pile) in 2013. This area was remediated by removal of portions of soil and debris mounds containing vanadium and nickel. A total of 106 rail cars were loaded, covered, and shipped to waste receiving facility in Utah. The area was restored with habitat.

2.5 Project Activities: Site Remediation and Belowground Demolition

This section outlines the proposed approach for soil remediation and associated belowground demolition, where necessary. It also describes the conceptual remediation plan developed for this Project to estimate the types and volumes of impacted soil that would be managed during remediation and the logistics plan for the belowground demolition and remediation work, including on-site reuse and off-site disposal plans for various materials.

2.5.1 Remediation and Belowground Demolition General Approach

Site characterization testing would be performed after aboveground demolition to determine where contaminated soils must be removed (see Section 2.5.2 below). The assumptions to preliminarily identify specific areas and volumes of hardscape disturbance and potential re-hardening of those areas are discussed in Section 2.5.3.

Where testing indicates remediation is required, hardscape surface cover and clean soils would be removed and set aside. Belowground piping in the remediation area would be purged and cleaned prior to excavation. Piping requiring removal to accommodate soil remediation would be cut and capped and the cut sections would be removed. Remediation excavation would be performed until required clean-up standards are met. Where remediation is not needed, belowground infrastructure and surface hardscape would not be removed (see Section 2.5.3.3).

Contaminated soil and excavated material would be loaded and hauled off site for disposal. Clean borrow soil from Area 6 (Coke Pile area and north side of the rail spur) and clean soil from the excavated area would then be used for backfill and the final surface would be closed with removed and replacement hardscape (concrete slurry, crushed concrete, base) or revegetated (if the area was vegetated prior to remediation). The Project assumes that a maximum facility-wide volume of 200,500 cubic yards of contaminated soil export could result, and that grading and excavation would be confined to the extent possible in order to retain existing hardscape or vegetation. Disturbance and re-hardening could potentially occur anywhere on existing hardscape or vegetated areas. The volume of re-hardening material would depend on the surface area of disturbance and thickness of the hardening material. Clean hardscape material may need to be imported to supplement the existing site backfill material to restore the removed hardscape.

All disturbance areas would be stabilized to reduce the potential for fugitive dust. Where hardscape is removed, the disturbed area would be replaced with hardscape. For areas that are revegetated, the appropriate plant palettes and seed mixes would be selected during the detailed planning phase.

2.5.2 Remediation and Belowground Demolition – Site Characterization

Site characterization is the process by which soil contamination is identified. Site characterization would be conducted after the aboveground infrastructure is removed in a specific area and would involve drilling & testing core samples. Where testing results indicate no remediation is needed, non-impacted belowground infrastructure and surface hardscapes would be left in place, as earthwork in these areas would not occur unless necessary (e.g., to accommodate nearby remediation earthwork). No site restoration would occur in the areas where surface hardscape remains intact.

Subsurface site characterization testing would be done with conventional mechanical sampling equipment to identify areas of contamination. Additional testing would be performed in the area after initial remediation to ensure completion, possibly extending the remediation area as necessary and proceeding to ensure that required standards are met.

Groundwater remediation is not anticipated to be required, as discussed further below.

Subsurface site characterization would entail the following general sequence of activities. This sequence is not prescriptive. The actual need for, and scope of, these activities would be developed by Phillips 66 as it proceeds with characterizing environmental conditions at the site.

- Preparation of one or more Sampling and Analysis Plans (SAP). SAPs describe the field sampling methods and equipment; sampling locations; analytes to be laboratory tested; laboratory analytical methods, chain of custody requirements, and other sampling and testing protocols; and a reporting plan. SAPs also typically describe the purpose and objectives of site

characterization investigation; and summarize previously obtained data and remaining data gaps.

- Mobilization of field equipment for sample data collection. Collection of samples below ground surface would be accomplished with conventional drilling equipment (e.g., truck-mounted or track-mounted drill rig for direct push boring, hand auguring, etc.). The appropriate method(s) will be determined on a case-by-case basis, selected based on sample location accessibility, sampling depth, ground surface (e.g., sand, concrete, asphalt, etc.), slope, and other factors.
- Laboratory analysis would be conducted for target analytes, with associated chain of custody documentation and reporting.
- Data would be analyzed and reported to document environmental conditions at the site and to support remediation decision making, if warranted.
- As field sampling and analyses are conducted the SAPs may be amended to support additional sampling or modified sampling methods.

The full extent of testing locations within the Refinery is unknown. In general, it is anticipated that site testing would be set up in a grid pattern across the extent of the site. The spacing of the grid is unknown at this time and would be based on accessibility and other factors. For example, grid spacing may be more concentrated within the operational areas of the Refinery where there is a higher potential for contamination based on the types of operations, such as at the tank farms (Areas 1 and 2) and the coker facility (Area 4).

After the site is tested, the identified contamination would be remediated as part of the Project. However, it is anticipated that a large portion of the site would require little or no soil remediation. The remediation plan described here is based on a combination of existing site characterization data and, where data gaps exist, utilization of assumptions intended to provide a conservatively high estimate of the likely volume of impacted soil. Based on the conceptual planning performed to date, site remediation would generate an estimated overall volume of 200,500 cubic yards of waste soil.

2.5.3 Remediation Objectives and Planning

This section describes conceptual remediation objectives and planning steps that would be followed prior to remediation.

2.5.3.1 Remediation Objectives

The site is zoned by San Luis Obispo County for industrial use; therefore, Phillips 66 plans to manage or divest the site as an industrial property. Accordingly, this Project Description assumes the site would be remediated to a level that meets applicable risk-based industrial standards as determined by the RWQCB.

The soil excavation estimates are based on data from previous site assessments and utilized RWQCB industrial worker environmental screening levels (ESL) to determine potential volumes. Environmental screening levels are conservative relative to site-specific risk-based cleanup goals that may be developed to support remedial action planning. If it is determined that a greater level

of activity is needed than anticipated in order to achieve the goals, then remedial actions would be adjusted accordingly, and additional regulatory review would be performed as warranted.

2.5.3.2 Remediation Planning

Remediation would entail assessment and characterization of site soil and excavation in areas of identified impacted soils, where needed, and stockpiling, loading, and hauling of impacted material for off-site disposal.

Soil volume estimates are partially based on past site assessment data collected from portions of the site. Phillips 66 indicated that conservative estimates were used, with the intent of producing conservative estimates of soil volumes. Phillips 66 would conduct a site characterization to further investigate and delineate areas that potentially require remediation, and soil volume estimates would be revised accordingly. If concentrations of the impacted material are above the level that presents an unacceptable risk to potential future industrial workers, then Phillips 66 would work with the proper oversight agency (i.e., RWQCB) to properly address the impacted area. Documentation (work plans, technical memorandums, reports, etc.) would be provided for agency review and approval, as appropriate.

As noted above, during initial site characterization, Phillips 66 anticipates using the RWQCB ESLs for commercial and industrial workers to initially screen site characterization data. If ESLs are exceeded, then Phillips 66 indicates that the appropriate oversight agencies would be consulted to determine how to address impacted soils. If needed, Phillips 66 would develop site-specific, risk-based cleanup levels, protective of future industrial workers, for use in risk management and remediation decision-making.

2.5.3.3 Remediation and Belowground Demolition Logistics

Belowground demolition would be limited to facilities that must be removed as part of the site remediation effort and would be based on the results of site characterization soil testing. Removed facilities may include excavation and removal of concrete building slabs, perimeter footings, pad footings, containment walls, pipe rack pedestals, equipment columns, and tank ring foundations, as well as asphalt surfaces from site paving and roads, underground utilities and piping (including potential regulated coating materials such as transite), and other belowground construction and demolition (C&D) debris. Where there is no need to remediate an area, the existing belowground infrastructure would remain.

Hardscapes (concrete, asphalt, compacted base/gravel, or asphalt emulsion coating) would remain in all areas, including areas within 100 feet of ESHA. The precise location and extent of hardscape to remain would be determined during detailed demolition planning and site characterization. The areas of existing hardscape to remain, including the hardscape to remain within 100 feet of ESHA, are shown in Appendix A, Preliminary Grading Plan Sheet 19A.

Any concrete and asphalt that is removed would be crushed on site and reused for backfill and for final contouring wherever feasible. Prior to crushing the material would be tested for suitability for on-site reuse. Criteria for suitability for reuse include:

- Material that is free of hydrocarbon or other unsuitable constituents (e.g., metals that have been applied to or absorbed into the concrete), as determined by visual and olfactory inspection, and laboratory testing when appropriate; and
- Material that is of a suitable size after crushing.

If there is excess or impacted material that cannot be used as backfill, it may be recycled or disposed of off-site when necessary. Other demolition material would be sorted and processed for off-site disposal.

Remediation and associated belowground demolition would progress in a systematic manner from one major functional area to the next. The general functional areas are shown in Appendix A, Preliminary Grading Plan Sheet 3A; however, the actual work areas may differ depending on the remediation work plans at the time of mobilization. Within each functional area, belowground work steps would entail equipment mobilization, initial excavation and demolition, site sampling and analysis, preparation and approvals of remediation plans (as needed), and then further excavation and remediation (if needed), followed by backfill, compaction, and site stabilization. Demolition debris would be segregated, downsized, and processed, as needed, for off-site transportation or on-site reuse. Debris would be managed as it is generated to avoid unsafe work conditions, minimize storm water runoff, and promote good housekeeping. Project-specific HSE protection measures that would be implemented during belowground demolition and remediation are described in Section 2.7.

Impacted soils and any other impacted materials would be segregated from non-impacted materials. Clean soils would be segregated from waste materials and side-cast at the excavation site for backfilling, or the soil may be stockpiled for use as fill in another functional area. Excavations would have appropriate sloping and side wall controls to minimize the potential for uncontrolled collapse.

Remediation and associated belowground demolition would likely be completed in at least one area of the Refinery concurrently with aboveground demolition in other functional areas. In general, once the remediation and associated belowground demolition begins in a given area, the duration and sequencing of activity would be determined as the work progresses and would vary from one functional area to the next, depending on the extent of physical belowground infrastructure; the extent and timing of soil testing, assessments, and remediation planning; and the physical area and depth of soil that requires removal and backfill.

The timing, sequence, and duration of necessary soil remediation and associated belowground demolition would vary within each functional area depending on site conditions. Overall site remediation and associated belowground demolition would likely occur over multiple years and is expected to continue after completion of aboveground demolition. A substantial amount of the remediation and associated belowground demolition work would be completed in the first three years. If an area of belowground demolition work is not associated with remediation, then that work would also be completed in the first three years. Remediation and associated belowground demolition would likely continue, but at a substantially slower pace, over additional years (potentially up to 10 years), to finalize remediation depending on site conditions and work plans.

For permit planning and to identify the peak period of activity for impact assessment purposes, it was assumed that remediation and associated belowground demolition would occur in one area (e.g., Area 1, the Upper Tank Farm) concurrently with ongoing aboveground demolition in other areas, and that the remainder of site remediation and associated belowground demolition would be completed after completion of Refinery-wide aboveground demolition. Table 2.8 illustrates the monthly progression of activities during this period of overlapping activities in Year 1. (Note that remediation and associated belowground demolition would extend beyond Year 1.)

Table 2.8 Remediation and Belowground Demolition General Sequence and Associated Off-site Truck Haul Trips and Workforce Overlapped with Aboveground Demolition in Year 1

Site Activity	Month									
	1	2	3	4	5	6	7	8	9	10+[b]
Mobilization and regulated material abatement/removal										
Aboveground demolition										
Remediation and associated belowground demolition[a, b]										
Reasonably Foreseeable Maximum weekly off-site truck haul trips[c] (Assumed Impacted Concrete, Asphalt, and Sewer Debris Truck Trips)	4	25 (1)	29 (1)	23 (1)	75 (7)	83 (4)	39 (4)	34	30	30
Reasonably Foreseeable Maximum daily on-site workforce	34	34	45	25	27	38	27	27	25	25

Notes:

a. This planning scenario assumes that remediation and associated belowground demolition are initiated in one area of the Refinery (e.g., the aboveground storage tank farm) concurrent with aboveground demolition in other areas. The scenario also assumes that soil hauling begins in Month 5, at start of remediation and associated belowground demolition, with an estimated 38 rail cars per week, and 19 trucks per week. Excludes on-site hauling.

b. Remediation and associated belowground demolition would continue through Year 1 and a substantial amount of the remediation and associated belowground demolition work would be completed in the first three years. Remediation and associated belowground demolition would likely continue beyond Year 3, but at a substantially slower pace.

c. Excludes rail trips. Impacted soil, concrete, and asphalt, and other impacted debris, are intended to be hauled by rail. These estimates include a contingency scenario in which a portion of the impacted material would require truck transport. This contingency is also considered in the air quality emissions estimates.

Source: Phillips 66 Application 2023

Table 2.8 also indicates the anticipated maximum daily haul trips and commuter trips per month for the combined activities and, thus, represents a reasonable worst-case scenario for the purpose of estimating on-site equipment and personnel, and off-site hauling.

Pending site characterization and detailed work planning, the overall duration of activity may be longer than this scenario, but the intensity of on-site work is not expected to be greater than the scenario illustrated.

As presented above in Section 2.4.7, certain infrastructure would be left in place after aboveground demolition for use during the remediation and associated belowground demolition work. As

presented in Section 2.5.15, certain facilities would remain in place after completion of remediation.

2.5.3.4 Remediation and Belowground Demolition Equipment

Remediation and associated belowground demolition would be accomplished using conventional excavation and demolition methods and equipment. Heavy equipment would include a combination of 100,000- to 150,000- or 180,000-pound capacity excavators, D8 dozer, a front-end loader or bobcat, a water truck, and off-road haul trucks to move materials from the excavation site to designated staging areas. Table 2.9 lists the anticipated quantity of each major equipment type by work activity.

A portable concrete crusher with an associated front-end loader would be staged on site to crush concrete for reuse on site, such as for backfill of impacted soil. A portable asphalt pulverizer would also be staged on site to break down the asphalt for reuse on site.

Table 2.9 Remediation and Belowground Demolition - Major Equipment by Work Activity

Activity	Equipment					
	100k-pound Excavator	150k- to 180k-pound Excavator	D8 Dozer, Front-end Loader or Bobcat	Off-Road Truck	Concrete Crusher Plant with Front-end Loader	Asphalt Pulverizer
Slabs, foundations, and site paving	2	2	1	1	1	0
Asphalt paved roads	1	0	1	1	0	1
Underground utilities	1	0	1	1	0	0
Soil excavation	2	2	3	2	0	0

Source: Phillips 66 Application 2023

The actual types and quantities of equipment used on any given day would vary based on work scheduled for that day. Table 2.9 lists heavy duty off-road equipment and off-road trucks that would be operating on site during belowground demolition and remediation. Additional smaller equipment and utility vehicles would also be on site during this period for various demolition and remediation activities. In addition, various delivery vehicles would be on site for relatively short periods of time, as needed, for loading and unloading cargo and general supplies.

2.5.4 Remediation and Belowground Demolition Schedule and Sequence

Remediation and associated belowground demolition work and off-site hauling would take place during daylight working hours, consistent with San Luis Obispo County Ordinance 23.06.042(d). This ordinance for Noise Standards exempts short-term Project excavations, provided such activities do not take place before 7:00 a.m. or after 9:00 p.m. any day except Saturday or Sunday, or before 8:00 a.m. or after 5:00 p.m. on Saturday or Sunday. Work activities would occur within the time limitations of this ordinance. After the remediation activity is completed, the Project site

would not generate sources of noise or generate new trips, except for occasional inspection and restoration maintenance trips.

2.5.5 Remediation and Belowground Demolition - Site Access and Staging

Site access and staging would be consistent with the aboveground demolition work described in Section 2.4. Asphalt paved areas and road surfaces would be retained or replaced for internal circulation after remediation work is completed.

2.5.6 Remediation and Belowground Demolition - Waste Management

Remediation and associated belowground demolition waste materials would be disposed of in accordance with applicable federal and California regulations. Anticipated waste types include concrete, asphalt, general construction and demolition mixed debris, regulated materials (e.g., asbestos) and waste soil. Table 2.10 provides the estimated types, weight, and volume of remediation and associated belowground demolition waste streams for the Project, and the estimated volume of imported backfill material. Table 2.11 shows the recycled waste materials generated.

Table 2.10 Remediation and Belowground Demolition Material, Volumes and Off-site Haul Loads

Material	Classification	Volume (Cubic Yards)	Weight (Tons)	Off-site Haul Truck or Rail Loads[a]
Impacted Concrete[b]	Regulated waste (not eligible for recycling/reuse)	2,075	4,150	An assumed 10% of facility-wide belowground concrete would be impacted and not suitable for reuse. This material would be hauled off site by rail (up to 21 rail trips). Up to 10% of the impacted material (208 cubic yards) would not be suitable for rail transport and would be hauled by truck (up to 21 truck trips).
Impacted Asphalt[b]	Regulated waste (not eligible for recycling/reuse)	1,875	3,750	An assumed 10% of facility-wide asphalt and not suitable for reuse. This material would be hauled off site by rail (up to 19 rail trips). Up to 10% of the impacted material (188 cubic yards) would not be suitable for rail transport and would be hauled by truck (up to 19 truck trips).
Impacted sewer trunk or other impacted debris[b]	Regulated waste (not eligible for recycling/reuse)	Mixed debris + 200	150	As assumed 50% of facility-wide sewer trunk lines or other impacted debris are removed as impacted material. This material would be hauled off site by rail (up to 2 rail trips). It is assumed 10% (20 cubic yards) would not be suitable for rail transport and would be hauled by truck (up to 2 truck trips).
Non-impacted belowground demolition debris[b]	Partially eligible for recycling	1,470	1,103	An assumed 50% of the remaining facility-wide belowground utilities are removed as clean belowground demolition debris. This material would

Table 2.10 Remediation and Belowground Demolition Material, Volumes and Off-site Haul Loads

Material	Classification	Volume (Cubic Yards)	Weight (Tons)	Off-site Haul Truck or Rail Loads[a]
				be hauled by truck to an off-site recycler (up to 37 truck trips).
Impacted soil[c]	Regulated waste (not eligible for recycling/reuse)	200,500	300,750	Estimated facility-wide quantity of impacted soil. This material would be hauled off site by rail to a landfill (up to 2,005 rail trips). Up to 5% (10,025 cubic yards) would not be suitable for rail transport and would be hauled by truck (up to 1,003 truck trips).
Total waste generated		206,120	311,903	
Imported hardscape material[d]	Imported material	1,000	2,000	Estimated volume of imported hardscape material would be hauled on site by truck (up to 100 truck trips).
Total truckloads transported on or off site			137 – 1,181	
Total rail car loads transported off site			1,842 – 2,046	

Notes: [a] Excludes on-site material hauling. Peak day air quality emissions assume 37 off-site truck trips during the peak day for all combined materials.
[b] This analysis assumes that 10% of the facility-wide concrete and asphalt, and up to 50% sewer trunk line would be removed due to impacted conditions and hauled off site by rail, and that up to 50% of the remaining underground utilities are removed as clean demolition debris and hauled off site by truck.
[c] This analysis assumes that potentially 100% of impacted soil is transported by rail, or potentially up to 5% of impacted soil is transported by truck.
[d] This analysis assumes that potentially 1,000 cubic yards of clean imported hardscape material would be delivered by truck. Peak quarter rail emissions for the combined waste materials assume 38 rail cars per week during weeks 4 through 13 of the peak quarter; this represents 3,800 cubic yards per week over 10 weeks (total of 38,000 CY; 19% of the estimated total Project soil disposal volume) during the latter two months of the peak quarter (Months 6 and 7). Peak quarter air quality truck emissions assume 190 soil hauling truck trips (19% of the estimated 1,000 total Project soil hauling truck trips) would occur during the peak quarter, in addition to an estimated approximately 430 other Project-related truck trips during this peak quarter period. The remaining soil hauling truck trips are assumed to occur after the peak quarter as remediation progresses.
C&D = construction and demolition
Source: Phillips 66 Application 2023

Table 2.11 Remediation and Belowground Demolition Material, Recycled Waste

Material	Volume (Cubic Yards)
Recyclable Waste breakdown	
Total waste generated eligible for recycling (consists of mixed debris available for sorting and recycling)	1,470
Total mixed debris recycled at 65% recovery rate	956
Total concrete and asphalt recycled	0
Total quantity of materials recycled	956
Percentage of materials generated to be recycled	65%

Source: Phillips 66 Application 2023

As noted above, the precise location and extent of hardscape to remain would be determined during site characterization. For Project planning and impact assessment purposes, this Project Description assumes that existing hardscape would be retained or replaced, except for a portion of hardscape that is assumed to be impacted and thus not suitable for on-site reuse. Under this assumption, remediation and associated belowground demolition would generate an estimated 2,075 cubic yards of impacted concrete waste (in addition to the estimated 2,200 cubic yards of concrete waste generated during aboveground demolition) and an estimated 1,875 cubic yards of impacted asphalt waste. For Project planning purposes, 100 percent of this material is assumed to be unsuitable for on-site reuse, therefore it is assumed to be hauled off site. Impacted concrete and asphalt would be hauled by rail. However, for planning purposes, it is also assumed that up to 10 percent of the waste concrete and asphalt would be transported by truck, resulting in up to 40 truck trips.

If any concrete and asphalt is suitable for on-site reuse, it would be downsized/crushed and reused on-site to the extent practical. A portable concrete crusher unit with a dedicated backhoe and an asphalt pulverizer would be staged at an existing Refinery staging area. Off-road heavy equipment trucks would transport reusable materials from the demolition sites to the crusher and pulverizer units.

Belowground demolition would generate an estimated volume of 200 cubic yards of impacted sewer trunk lines and other impacted mixed debris. These materials would be hauled by rail. However, for planning purposes, it is also assumed that up to 10 percent of these wastes would be transported by truck, resulting in an estimated two truck trips to off-site waste disposal facilities.

Belowground demolition would generate an estimated volume of 1,470 cubic yards of clean (non-impacted) belowground demolition debris, generally from removal of subsurface utilities and other incidental belowground materials encountered during remedial excavations. These materials would be hauled by truck to a regional sorting facility, resulting in an estimated 37 truck trips.

Excavated soil would be tested and handled in accordance with applicable procedures. Clean soil generated during excavation would be segregated and stockpiled for use as backfill. Impacted soil would be hauled to a centralized staging area near the rail spur. Remediation would generate an estimated volume of 200,500 cubic yards of waste soil. For Project planning purposes, 95 percent of this material is assumed to be suitable for transport by rail to an off-site landfill, and the remainder is assumed to be hauled by truck to a regional waste management facility, resulting in up to 1,003 truck trips over the life of the Project.

An estimated volume of up to 1,000 cubic yards of clean hardscape material may need to be imported to backfill excavations where the existing hardscape is removed as impacted material, resulting in up to 100 truck trips for imported material.

Pending further site characterization, vegetation disturbance within the fence line is anticipated to be limited to isolated locations throughout the Refinery as shown in Appendix A, Preliminary Grading Plan Sheet 16A and 17A. Areas of potential remediation disturbance comprise an estimated 177 acres facility-wide, of which approximately 150 acres are within existing hardscapes, and 27 acres are within vegetated areas. These areas are shown in Appendix A, Preliminary Grading Plan Sheet 16A and 17A.

If remediation and associated ground disturbance is necessary outside the fence line, then the disturbance footprint would be minimized to the extent practical, and vegetation and soil that is disturbed during this work would be preserved and reused on site. The area of impact would be revegetated with an appropriate seed mix.

Actual quantities of materials to be transported off site would be documented with truck and weight tickets for each load.

Material transport would occur regularly throughout the remediation and associated belowground demolition activities. As presented in Table 2.8, the number of truck trips would range from 39 to 83 trips per week during a period of overlapping aboveground demolition and remediation. As noted above, remediation would continue after completion of aboveground demolition; however, once aboveground demolition is completed, the overall site activity and off-site hauling activity (i.e., continued remediation and associated belowground demolition) would be less intensive than during the estimated four-month period of overlapping activities shown in Table 2.8. Remediation and associated belowground demolition would continue through Year 1 and a substantial amount of the remediation work would be completed in the first three years. Remediation and associated belowground demolition would likely continue beyond Year 3, but at a substantially slower pace.

2.5.7 Remediation and Belowground Demolition Disposal Facilities

Table 2.12 lists the remediation and associated belowground demolition waste materials, estimated haul trips, and the primary disposal locations, as well as hauling distance and haul routes for the following waste materials:

- **Impacted Concrete.** An estimated volume of 2,065 cubic yards of impacted concrete would be identified for removal and hauled by truck to a regional facility. This volume represents 10 percent of the estimated facility-wide volume of concrete. For planning purposes, it is assumed that up to ten percent of this material would not be suitable for hauling by rail; this portion of the material would be hauled off site by truck to a regional waste management facility. Any concrete that is removed to accommodate soil remediation that is not impacted would be crushed and reused on site.
- **Impacted Asphalt.** An estimated volume of 1,875 cubic yards of impacted asphalt would be removed from the site and hauled by truck to a regional facility. This volume represents 10 percent of the estimated facility-wide volume of asphalt. For planning purposes, it is assumed that up to ten percent of this material would not be suitable for hauling by rail; this portion of the material would be hauled off site by truck to a regional waste management facility. Any asphalt that is removed to accommodate soil remediation that is not impacted would be crushed and reused on site.
- **Impacted Underground Sewer.** An estimated volume of 200 cubic yards of impacted sewer trunk would be identified for removal from the site and hauled by rail with the impacted soil. This volume represents 50 percent of the estimated facility-wide volume of sewer trunk lines. For planning purposes, it is assumed that up to ten percent of this material would not be suitable for hauling by rail; this portion of the material would be hauled off site by truck to a regional waste management facility.

- **Non-impacted Underground Utilities.** Belowground demolition will generate an estimated volume of 1,470 cubic yards of non-impacted subsurface utilities and other mixed debris, resulting in an estimated 37 truck trips to off-site waste disposal and recycling facilities.
- **Impacted soil.** An estimated volume of 200,500 cubic yards of impacted soil would be identified for removal and hauled from the site. Impacted soil would be hauled by rail to a waste facility in Utah consistent with historic practice. For planning purposes, it is assumed that up to five percent of impacted soil would not be suitable for hauling by rail; this material would be hauled off site by truck to a regional waste management facility.
- **Imported Hardscape Material.** An estimated volume of 1,000 cubic yards of imported hardscape material would be delivered to the site for use in backfilling the remedial excavations, resulting in an estimated 100 truck trips.

Clean soil, concrete, and asphalt that is removed to accommodate remediation would be reused on site as backfill and for final contouring.

Table 2.12 Remediation and Belowground Demolition Waste Hauling Destinations

Material	Truck and Rail Haul Trips[a]	Transportation Mode and Destination	One-way Off-site Truck Haul Distance[b] (Miles)	Transport Route
Impacted Concrete	Truck trips: 0–21[c]	By rail to Republic Services ECDC Landfill, East Carbon City Utah By truck to Waste Management, 56533 Highway 58 West McKittrick, California 93251	Truck trips: 128.0	Rail: Union Pacific interstate rail Truck: via Willow Road to U.S. 101 north, SR 46/41 east, SR 33 south to 2nd Street
Impacted Asphalt	Truck trips: 0–19[c]	By rail to Republic Services ECDC Landfill, East Carbon City Utah By truck to Waste Management, 56533 Highway 58 West McKittrick, California 93251	Truck trips: 128.0	Rail: Union Pacific interstate rail Truck: via Willow Road to U.S. 101 north, SR 46/41 east, SR 33 south to 2nd Street
Impacted Sewer Trunk	Truck trips: 0–2 [c]	By rail to Republic Services ECDC Landfill, East Carbon City Utah By truck to Waste Management, 56533 Highway 58 West McKittrick, California 93251	Truck trips: 128.0	Rail: Union Pacific interstate rail Truck: via Willow Road to U.S. 101 north, SR 46/41 east, SR 33 south to 2nd Street
Non-Impacted Belowground Utilities and other clean debris	Truck trips: 37	By truck to Santa Maria Transfer Station 325 Cuyama Lane Highway 166 Nipomo, California 93444	Truck trips: 11.4	Willow Road to U.S. 101 south to Cuyama Lane
Impacted Soil	Rail cars: 1,805–2,005	By rail to Republic Services ECDC Landfill, East Carbon City Utah	Truck trips: 128.0	Rail: Union Pacific interstate rail

Table 2.12 Remediation and Belowground Demolition Waste Hauling Destinations

Material	Truck and Rail Haul Trips[a]	Transportation Mode and Destination	One-way Off-site Truck Haul Distance[b] (Miles)	Transport Route
	Truck trips: 0–1,003[d]	By truck to Waste Management, 56533 Highway 58 West McKittrick, California 93251		Truck: via Willow Road to U.S. 101 north, SR 46/41 east, SR 33 south to 2nd Street
Imported Hardscape Material	Truck trips: 100	By truck from Gator Crushing and Recycling, 2363 Willow Road, Arroyo Grande, California 34201	Truck trips: 0.4	Willow Road facility exit to 2363 Willow Road, Arroyo Grande (adjacent to SMR)

Notes:
a. This information is from Table 2.10.
b. Haul distances are measured from the SMR entry/exit points at Willow Road. Excludes on-site hauling.
c. Impacted concrete, asphalt, and sewer trunk would be hauled off site by train. For planning purposes, it is assumed that up to 10% of this impacted material would be hauled by truck to a regional waste management facility.
d. Impacted soil would be hauled by train. For planning purposes, it is assumed that up to 5% of impacted soil would be hauled by truck to a regional waste management facility.

SMR = Santa Maria Refinery.
Source: Phillips 66 Application 2023

2.5.8 Remediation and Belowground Demolition Designated Haul Route

Consistent with the aboveground demolition activities, the belowground demolition and remediation equipment and material delivery vehicles and waste hauling trucks would use the existing designated haul route between the Refinery entry/exit and the Willow Road/U.S. 101 interchange, as described in Section 2.4.4.

2.5.9 Remediation and Belowground Demolition and Designated Truck Route

As presented in Table 2.8, an estimated maximum of 83 haul truck trips per week would occur during a period of combined aboveground and belowground demolition and remediation; under this scenario, peak activity would occur during Month 6. This estimate is conservatively high because it assumes a portion of impacted soil would be hauled by truck (versus by rail), and a percentage of impacted concrete and asphalt would be hauled by truck (versus reused on site) during this period of overlapping demolition and remediation. In the event a greater volume of these materials must be hauled by truck, there would be additional trips. In this case, overall truck trips would be managed to remain under the baseline of 37 trucks per day.

2.5.10 Remediation and Belowground Demolition Water Supply and Demand

Water use would increase during belowground demolition and remediation work as the area of ground disturbance and vehicle tracking increases. This work would include two on-site water trucks of 2,000-gallon capacity. A conservative estimate for water during this period is 6,000 to 8,000 gallons per day, primarily for dust control. This volume is adequate to cover one acre per

day of actively working area. Assuming one acre of active working areas, and assuming 180 days of work at a typical rate of 7,000 gallons per day, the water demand for remediation would be approximately 1,260,000 gallons per year (3.9 acre-feet per year).

2.5.11 Workforce Commutes During Remediation and Belowground Demolition

As presented in Table 2.8, an estimated maximum of 38 workers would be on-site during a period of combined aboveground and belowground demolition and remediation. Remediation work crews would commute to the site from throughout the region, depending on the selection of contractors at the time of the work.

2.5.12 Post-Remediation Grading Contouring, and Restoration Approach

Existing vegetation that has been designated as ESHA would remain intact unless an area needs to be disturbed to accomplish subsurface remediation. In these cases, the disturbed area would be backfilled with available site material (including segregated clean native material) and the surface would be revegetated with an appropriate seed mix.

At completion of remediation and associated belowground demolition in a given area, the work site would be backfilled to the pre-excavation contour. The disturbed site would be backfilled with clean soil from a borrow site within the Coke Storage Area (Area 6 of Figure 2-3) and other available material such as aggregate from crushed concrete or asphalt. No site restoration/revegetation would occur in these areas unless there were previously some ESHA in the location.

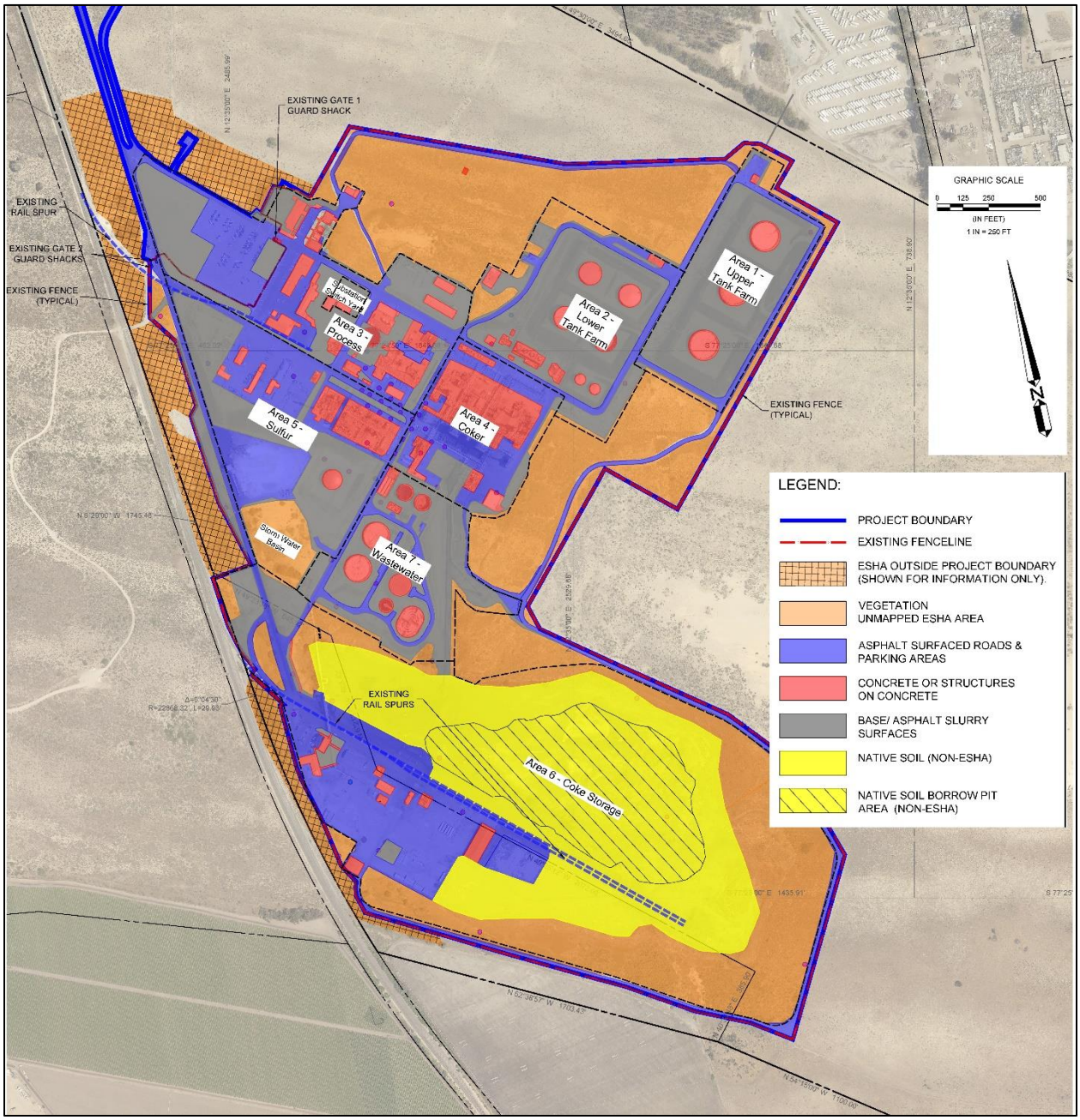
Hardscape is defined as concrete, asphalt, compacted base/gravel, or asphalt emulsion coating covering banks and berms. Existing hardscapes are shown in Figure 2-5 and in Appendix A, Preliminary Grading Plan Sheet 4A. No new areas would be hardscaped. Existing hardscapes would remain intact unless an area needs to be disturbed to accomplish subsurface demolition or remediation. In these situations, the disturbed sites would be backfilled with available material such as aggregate from crushed concrete or asphalt. The disturbed site would be returned to the original contour (except for the coke storage borrow area in Area 3). The surface may be 're-hardened' with aggregate, concrete slurry, emulsion, or comparable methods, to stabilize the site and preserve the pre-existing hardscape surface area and contour. The areas of existing hardscape to remain are shown in Figure 2-11 and Appendix A, Preliminary Grading Plan Sheet 19A.

Pending site characterization, the specific areas and volumes of hardscape disturbance and potential re-hardening of those areas are not defined. Disturbance and re-hardening could potentially occur anywhere on existing hardscape. The volume of re-hardening material would depend on the surface area of disturbance and thickness of the required hardening material.

Where existing hardscape is removed as impacted material, an estimated volume of up to 1,000 cubic yards of clean hardscape material may need to be imported. This material would supplement existing site backfill material with sufficient volume to restore the removed hardscape.

In general, all disturbance areas would be stabilized in order to reduce the potential for fugitive dust. Areas that are not replaced with hardscape will be revegetated; the appropriate plant palettes and seed mixes would be selected during the detailed planning phase.

Figure 2-11 Post-Remediation Plan



Note: Native soil areas and native soil borrow pit area would be revegetated.
Source: Phillips 66 Application 2023

Coke Storage Area Restoration. The existing coke pile and vegetated areas within Area 6 (generally located north of the rail spur as shown on Preliminary Grading Plan Sheet 4A), including the soil borrow area, would be revegetated. These earthen areas could be used for replacement of ESHA that is disturbed by the overall Project activities. The hardscape areas within Area 6 (generally west of the rail spur), would remain as hardscape.

Refinery area types would be the same as the existing area types except that the coke pile area would be used as a borrow site and then would be revegetated with native soil, thereby increasing the amount of vegetated areas from 31 percent for the existing site to 49 percent of the site after the Project has been completed.

2.5.13 Earthwork Calculations

The estimated cumulative totals of earthwork to establish the anticipated total volume of earth moved on or off the site for the proposed Project are listed in Table 2.13 and in Appendix A, Preliminary Grading Plan Sheet 1A. The Project would require an estimated 615,160 cubic yards of earthwork and non-earth fill.

Table 2.13 Project Cut and Fill

Description	Volume CY – Soil only	Volume, CY
Cut		
Remediation Soil (exported)	200,500	200,500
Native Soil cut from Area 6	200,500	200,500
Native Soil Recontouring cut	2,420	2,420
Subtotal - Soil Cut Only	***403,420***	-
Miscellaneous concrete/asphalt export (not soil)	-	5,620
Total Cut – all materials (Soil + Concrete/Asphalt)	**-**	**409,040**
Fill		
Native Soil from Area 6	200,500	200,500
Native Soil Recontouring fill	2,420	2,420
Subtotal - Soil Fill Only	***202,920***	-
Miscellaneous concrete/asphalt export (not soil)	-	3,200
Total Fill – All Materials (Soil + Concrete/Asphalt)	-	**206,120**
Total Soil - Cut and Fill Grading	***606,340***	-
Total Cut and Fill – All Materials	-	**615,160**

Source: Phillips 66 Application 2023

2.5.14 Requests for Permit Adjustments

Various Project features require adjustments or variances associated with the CZLUO. These are discussed below.

Grading Adjustment per CZLUO 23.05.034.b

SLO County CZLUO 23.05.034.b.3 allows a Request for Adjustment for areas where grading would occur on existing 20%+ slopes. Pending site characterization, the Project may require remediation excavation and finish grading in areas exceeding 20% slopes. Assuming that grading would occur in certain areas between 20% and 30% slopes, Phillips 66 herein requests an Adjustment to in accordance with SLO County CZLUO Section 23.05.034.

Grading Variance for Slopes >30% per CZLUO 23.01.045

SLO County CZLUO 23.01.045 allows a Grading Variance for areas where grading would occur on existing 30%+ slopes. Pending site characterization, the Project may require remediation excavation and finish grading in areas exceeding 30% slopes. Assuming that grading would occur

in certain areas with slope >30%, Phillips 66 herein requests a Variance for these areas in accordance with CZLUO 23.01.045.

ESHA Setback Adjustment per CZLUO 23.05.034.c
SLO County CZLUO Section 23.05.034.c requires a 100-foot setback from ESHA and allows a Request for Adjustment to Setbacks to be considered, with findings for approval. The Preliminary Grading Plan indicates that grading may need to occur within this setback (Appendix A, Preliminary Grading Plan Sheets 16A and 17A). Therefore, Phillips 66 herein requests an Adjustment to ESHA Setbacks in accordance with SLO County CZLUO Section 23.07.172 and/or 23.07.174. The extent of encroachment into the 100-foot setback based on site constraints would be determined in the CEQA process.

2.5.15 Post-Remediation Condition

Phillips 66' objective for the post-remediation condition of the site is to remove the Refinery infrastructure with the exception of hardscapes, non-impacted subsurface structures, and certain other infrastructure that are necessary for site security (e.g., perimeter fencing, lighting, and maintenance roads) or for ongoing remediation and restoration (e.g., water production wells, groundwater monitoring wells, Slop Oil Line remediation project); or infrastructure that may be of value to future users.

The following facilities would remain after remediation:

- Hardscapes (concrete, asphalt, compacted base/gravel, or asphalt emulsion coating) (facility-wide);
- Perimeter security fencing and solar-powered perimeter lighting (facility-wide);
- Guard shacks (Area 3);
- Rail spurs (Areas 3, 5, and 6);
- Truck scale (west of Area 5);
- Berms (Areas 1 and 2, and facility-wide);
- Buried pipelines (facility-wide);
- Equipment and structural foundations, generally below six inches above grade level;
- Groundwater production wells #2, #4, #5 and #6 (used for potable water, fire water, and industrial water at the Refinery) (Areas 2, 3, 5, and 6);
- Groundwater monitoring wells (facility-wide);
- Phillips 66-controlled electrical substation and PG&E power line to the substation and telecommunication line (within Area 3);
- Non-contact storm drain system and conveyance to Stormwater Basin (Evaporation Pond) (conveyances are facility-wide, Stormwater Basin is in Area 5);
- Wastewater outfall line (Area 7).

- Slop Oil Line Release remediation system components (remediation is in progress under separate permit) (Area 3);
- Natural gas line (8-inch), crude line (10-inch) and a product line (8-inch) (three lines total); these lines would remain in place from the pig receiver/launcher to the property line and be blinded from the Refinery (Area 1);
- An idle natural gas line (6-inch) would remain in place from the pig receiver/launcher to the property line (Area 1);
- Pig receivers/launcher at north boundary for maintenance of off-site pipelines (Area 1);
- Other non-impacted subsurface structures such as foundations, footings, and stormwater conduit (facility-wide), and;
- Belowground pipelines (former 8-inch gas fuel line, 8-inch oil line, and 4-inch diluent line) in an approximately 1,200-foot segment extending southwesterly from within the Refinery fence line near the wastewater treatment plant to the Phillips 66 property line. The lines would remain "as is" in their current condition (Area 6 and outside the fence line west of Area 6).

These facilities are shown in Figure 2-12 and in Appendix A, Preliminary Grading Plan Sheet 9A. Future land uses are speculative and thus the potential future use or removal of the remaining infrastructure is not a part of Phillip 66' CDP application.

Future users would elect to either retain, modify, or remove the remaining facilities, and such future use decisions would be addressed by the future user(s) under separate future permitting efforts. In general, areas located beyond 100 feet of the County-designated ESHA may be left in place for potential future development. The finished condition within these areas would be a combination of existing paved roads, other hardscape, and areas revegetated after ground disturbance.

Phillips 66 indicates that demolition and removal of the remaining structures would be relatively minor activities compared to the currently proposed demolition and remediation activity, and if proposed in the future would be conducted under appropriate review and permitting.

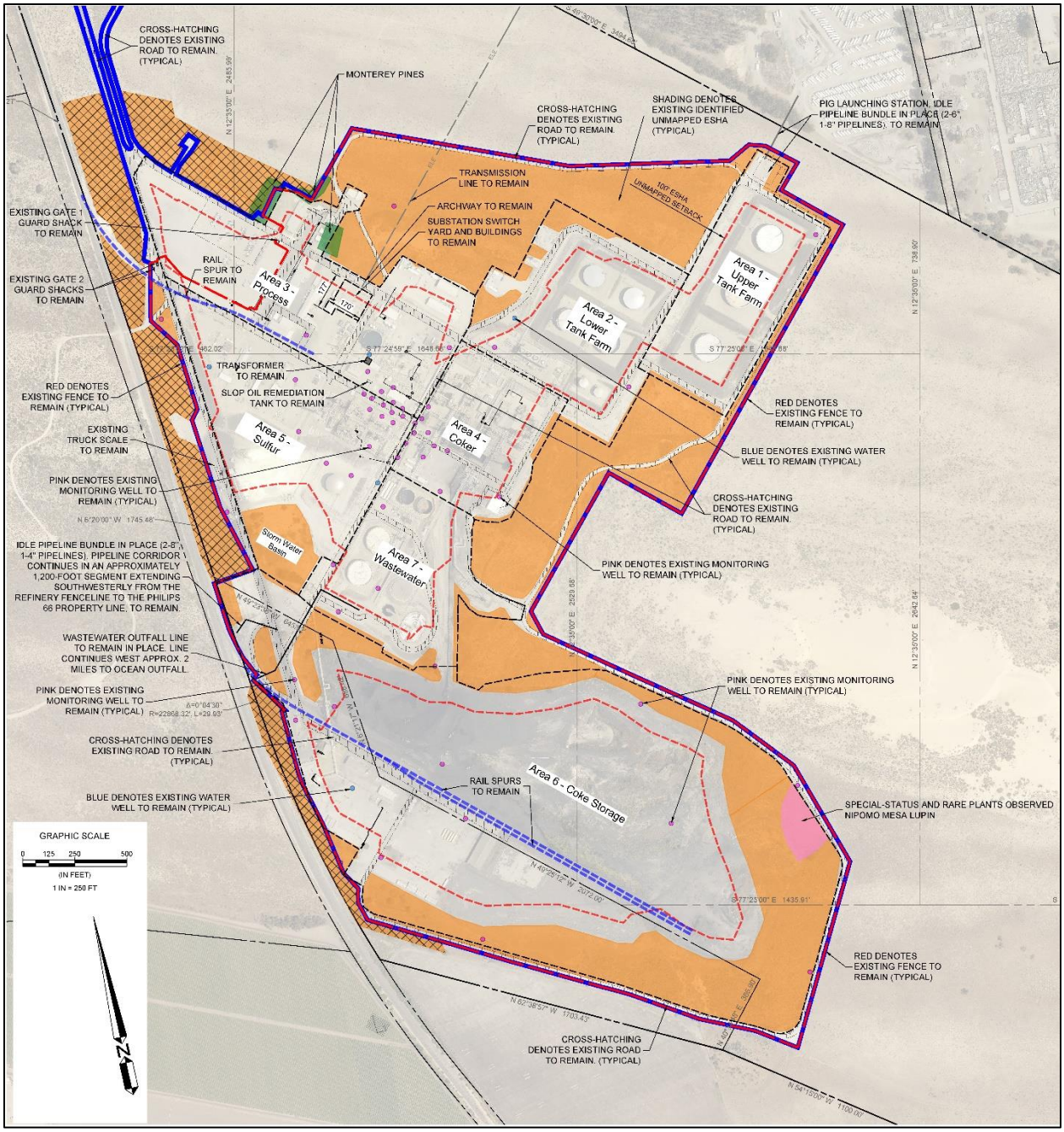
The post remediation grading plan is shown in Appendix A, Preliminary Grading Plan Sheet 10A.

2.6 Project Activities: Site Stabilization and Restoration

Disturbance areas would be stabilized in order to reduce the potential for fugitive dust. Existing hardscape would be replaced with hardscape, as described under Section 2.5. The precise locations and extent of hardscape to be removed or replaced will be determined during detailed demolition planning and site characterization, and the remaining hardscape will remain in place. The final contour will be unchanged; therefore, no new hardscape areas are anticipated.

Where vegetation is impacted, including the coke storage borrow area, the area would be restored with appropriate soil stabilizers, plant palettes and seed mixes that would be selected during the detailed planning phase.

Figure 2-12 Facilities to Remain



Source: Phillips 66 Application 2023

Estimated areas of ESHA that could be affected total 26.5 acres in a range of locations throughout the site (see Preliminary Grading Plan Sheet 16A and 17A). As noted in Section 2.5.14, the existing coke pile and vegetated areas within Area 6 (generally located north of the rail spur as shown on Preliminary Grading Plan Sheet 4A), including the soil borrow area, could be used for replacement of ESHA that is disturbed by the overall Project activities. Hardscaped areas within Area 6 will be retained as hardscape.

Existing vegetation includes a variety of native dune and chaparral species, as well as ruderal non-native species. The most prevalent native species present included silver dune lupine (*Lupinus chamissonis*), dune-heather (*Ericameria ericoides*), and coyote brush (*Baccharis pilularis*), which are part of the silver dune lupine–mock heather scrub global and state vulnerable vegetation alliance. Non-native plant species include veldt grass (*Ehrharta calycina*), iceplant (*Carpobrotus* spp.), and pampas grass (*Cortaderia selloana*).

The site's non-hydric dune land soils are prone to becoming airborne during high wind events; therefore, a goal of the restoration program is to stabilize exposed areas as soon as practical after ground disturbance. Site restoration would be implemented directly after completion of demolition and remediation within the SMR demolition and remediation work areas. This area-by-area approach would ensure that the exposed areas are stabilized and revegetated in a timely manner. Once the vegetation provides sufficient ground cover, it would provide effective long-term dust control.

Based on these site conditions, the restoration objectives for vegetated areas that are impacted during demolition and remediation include:

- Site stabilization and revegetation that achieves effective long-term dust control and minimizes potential erosion and sedimentation; and
- Establishment of plant cover that is compatible with surrounding areas of native vegetation using local genetic sources of seed or cuttings for native plant material to the extent practicable.

Site Preparation. Site preparation would include topsoil segregation and storage, finish grading, surface scarification, and other specifications. The preliminary grading plan finish grade contour discussed above would provide basins to retain stormwater within the work sub-areas and within the overall Project site consistent with current drainage patterns. These depressions in the landscape would also promote plant establishment by providing areas suitable for seed germination.

Certain infrastructure would be retained for use during restoration, including most of the internal road network, perimeter fencing and gates, electrical power distribution, water production wells, and a water storage tank.

Phillips 66 indicates that grading disturbance would be limited to the extent practicable. Existing vegetation that does not require ground disturbance would be protected by installing temporary barriers such as fences to restrict access to vegetated areas. Signs would be installed to delineate revegetation areas. Temporary fencing and signage would be left in place until vegetation becomes established.

Standard construction Stormwater Pollution Prevention Plan (SWPPP) best management practices (BMPs) would be implemented for sediment and erosion control during site demolition and site grading. Applicable BMPs may include surface roughening, mulching, and installation of silt fences and straw bale barriers to reduce erosion and sedimentation rates during vegetation establishment. Sediment control structures would be inspected and maintained until vegetation becomes adequately established.

If clearing of previously undisturbed areas is required, topsoil would be removed and stockpiled as part of surface clearing activities. General guidelines would be followed when stockpiling soils:

- The height of soil stockpiles would be limited to the extent possible to minimize compaction and to maintain the integrity of soils; and
- Soil material would not be handled when it is too wet or too dry. Generally, soil is best handled when barely moist, but not damp or wet.

Soil Amendments and Topsoil Import. Currently, the need to import topsoil or to amend the existing sandy soil through the application of fertilizer is not anticipated. The use of native seed mixes would limit the need for soil amendments.

Stockpiled soils would be redistributed as part of reclamation activities where available.

Where excavation occurs on existing hardscape areas and where roads are to be removed, compacted soils would be scarified to remove compaction and regraded to blend in with the local topography, limit erosion, and promote natural drainage.

Where excavation occurs on existing vegetated areas, minor scarification, regrading, and revegetation would be required to return existing open areas to their natural topography and to provide proper drainage.

Revegetation Method. Revegetation would be installed primarily by hydroseeding. Hydroseeding may be supplemented by broadcast seeding of sensitive annual species. Container plantings would be installed where appropriate. Leguminous species included in the seed mix that require pretreatment in order to germinate would be provided with that pretreatment. Because of the scale of the planting area, and in consultation with the hydroseed contractor, hydroseeding may need to be applied in a two-pass process to improve seed/soil contact and to protect seed from bird predation.

Plant Palette and Seed Mix. A plant palette and seed mix would be selected during the detailed planning phase. The seed mix may vary within portions of the site based on current and post-demolition conditions. In general, vegetated areas within 100 feet of County-designated ESHA that are disturbed by Project activities will be stabilized for dust control and erosion control. Stabilization in these areas may include use of a seed mix that compares to the native vegetation characteristic of the site and surrounding vegetation communities.

The seed mix (bulk pounds/acre) would take into consideration species availability, purity rates, germination rates, and other factors. In general, seed mixes would be developed that have species mixes similar to adjacent reference areas. However, the species composition used on previously vegetated areas may be different than the seed mix applied to previous hardscape areas. Local genetic sources of native plant materials would be used to the extent practicable to avoid genetic contamination of local plant populations.

Soil Stabilization. Hydromulch would be used to reduce erosion potential and foster vegetation establishment on newly seeded areas. Mulch is primarily used for moisture conservation and soil stabilization. Care would be taken when using mulch because it may contain weed seeds. Only

weed-free and seed-free would be used. Mycorrhizae would be added to the hydroseed mixture to facilitate establishment of vegetation. Rice straw plugs may be installed at random intervals to provide microsite shelter for seeds or seedlings, serve as water catchment for condensation, and to reduce wind scouring.

Planting Schedule. A planting schedule would be developed as part of the detailed Revegetation Plan. In general, reseeding and planting would occur during the first fall, and prior to the rainy season, following the completion of ground disturbance within a work area. Similarly, container plants would be installed in October and November. Seed and mycorrhizae would be applied via hydroseeding immediately following container plant installation, but not later than November.

Irrigation. Irrigation would be performed during the initial planting phase and likely continue outside of the rainy season. In general, the primary method of irrigation would be by water truck with use of on-site well water. Other logistics would include on-site storage and pumping equipment, as needed.

Water volumes and application rates would be designed to provide an adequate supply of moisture to the entire root zone of each plant during the normal growth period of the plant. Irrigation for plantings would be supplied as infrequent, deep waterings, as determined by the restoration manager. Water would be applied in a manner that avoids erosion, damage to plants, runoff, or damage to existing or colonizing vegetation.

Weed Abatement. Noxious weeds would be treated using the appropriate physical, chemical, or biological methods. Weed treatment areas would be marked in the field prior to weed treatment. Weed abatement, removal, and treatments would focus on CAL-IPC high risk/high priority noxious weeds that are known to be present in the area. These include veldt grass, pampas grass, and various other weedy species (primarily herbaceous or non-native annual grass species). Potentially applicable treatment methods would include mechanical control and chemical control with appropriate herbicides. Appropriate guidelines would be established for the treatment methods to avoid affecting native species (e.g., through overspray).

Monitoring and Repair. Restoration areas would be monitored to evaluate vegetation establishment, erosion and sediment control, and noxious weed establishment. Specific monitoring criteria would include:

- Exotic species management;
- Inventory of the flora;
- Percent of bare ground (annual quantitative monitoring);
- Percent vegetative cover (annual quantitative monitoring);
- Plant density (annual quantitative monitoring);
- Plant health (qualitative);
- Plant size (qualitative);
- Evidence of erosion or burying of plants;
- Evidence of wildlife usage; and
- Hydrology (qualitative).

If on-site conditions fail to meet performance targets, then corrective steps would be implemented.

Reseeded areas would be observed at more frequent intervals during the first two growing seasons to determine seedling survival and overall revegetation success, and then less frequently after the initial establishment objectives are achieved.

Areas of excessive erosion or sedimentation and the establishment of noxious weeds would be monitored. Areas with poor vegetation establishment or areas exhibiting excessive erosion or sedimentation would be repaired and stabilized.

Monitoring Schedule. The anticipated timeline to meet stormwater, dust control, and revegetation criteria is three years from the time of seeding. However, depending on seasonal precipitation and given the site's relatively arid environment, a five-year planning period is anticipated to be required for restoration maintenance. Monitoring and maintenance would likely consist of six (6) monthly site visits for the first six months, three (3) bi-monthly site visits in the latter six months, and four (4) quarterly site visits in Years 2 through 5. The restoration contractor would ensure that plantings, weeding, and erosion control performance standards are met through maintenance activities during the maintenance period. These activities include weed eradication; reseeding, if needed; supplemental irrigation, if needed; repairs and maintenance of erosion control materials and other materials, if needed; general site housekeeping and cleanup; and the general care and nurturing of seedlings, cuttings, and native plants within the restoration areas. Additional monthly watering during the first year would be conducted if necessary.

Adaptive Management and Contingency Measures. An adaptive management approach would be implemented during site restoration. If regional issues negatively affect restoration success that cannot be feasibly controlled by the restoration team, or if other unforeseen problems result in significant deviations from performance targets, then Phillips 66 would consult with agencies having regulatory oversight to discuss contingency measures.

Various factors could have a negative influence on restoration success. The restoration plan would include contingency measures for situations that are common for restoration projects and address these issues should they arise. Potential contingencies include:

- Predation by Animals (Gophers/Ground Squirrels/Rabbits/Deer): No protection of the restoration area is currently planned to prevent predation by gophers, ground squirrels, rabbits, deer, or other herbivores. If animal damage becomes a significant problem, an active control program may be developed;
- Predation by Insects: No protection of restoration areas is currently planned from predation by insects. If insect damage becomes a significant problem, an active treatment program may be developed;
- Weeds: If continued weed infestation occurs and/or new weed species invade the restoration area, then the frequency and type of weed maintenance would be increased or modified. Weed problems would be addressed through removal and or treatment of weeds depending on the species and the location; and
- Erosion: If targets set for erosion in the restoration area are not met, the eroded areas would be repaired and re-seeded as necessary. Erosion control measures may include installation of erosion control blankets, wattles, straw bales, or other measures.

Success Criteria and Performance Standards. The general goals of the restoration plan are to provide functional habitat value for native plants within the restoration area, with weed constituents lower than current levels, and to provide effective site stabilization for erosion control and dust control. Phillips 66 indicates they would work with San Luis Obispo County to establish quantitative and qualitative performance criteria that take into consideration existing site conditions including the area of existing Refinery infrastructure. Specific criteria may be different for the formerly vegetated areas versus the former hardscape areas.

Cover data of native and non-native species would be collected prior to the start of restoration. An incremental increase in native cover and an incremental decrease in non-native cover would be determined and used for evaluation each year.

Performance would be measured during the monitoring period to document progress towards the final standards. Annual performance results that fall below the established targets would result in an assessment of causative factors and potential remedial solutions. Activities necessary to achieve the performance standards may include additional seeding or plant protection, increased weed control, erosion control efforts, or other contingency measures.

Invasive species would be controlled during the performance period. However, non-native species such as veldt grass have naturalized extensively in local dune communities and cannot be entirely eradicated due to adjacent seed sources. If an increase in native cover is not achieved, then the performance standards may be adjusted, and/or adaptive management practices would be utilized such as additional supplemental seeding or non-native removal.

Reporting. Monitoring would address the progress of the Project and the various categories of established success criteria. Regular monitoring of site recovery and weed conditions would occur at least every six months during initial restoration efforts. Deficiencies would be noted and remedial actions including supplemental irrigation, weed abatement, or reseeding/planting may be recommended as necessary.

Reporting would occur at different stages:

- During site preparation, weed control efforts, and other initial phases;
- During seeding;
- After seeding and weed control treatments;
- Annual reporting; and
- Final report.

Photographs would be taken from established photo-points during each phase of the Project and annually in spring. Photograph locations would be noted on site plans provided with the report. At the end of the first restoration season, a report would be prepared to document all activities accomplished during the year. Subsequent annual reports would summarize monitoring data collected each succeeding year and compare results against the performance criteria to evaluate restoration success. The annual reports would include recommended maintenance activities and corrective measures, if needed, and specify when such measures would be implemented.

Restoration Phase Stormwater and Erosion Control. Construction SWPPP BMPs would be maintained, as appropriate, through site stabilization and restoration. Final site contouring would be configured such that site drainage continues to be retained on site, with no off-site runoff. The preliminary grading plan final site contour is configured to retain post-construction site drainage on site and to convey on-site flows in a non-erosive manner that prevents potential off-site stormwater impacts. The drainage plan is designed to protect surrounding habitat resources by minimizing impervious surfaces and promoting on-site infiltration and management of stormwater runoff through developing a network of drainage swales (or similar) strategically located within the site and designed to retain and treat stormwater flows.

Restoration planning would include an analysis of site hydrology, and the post-grading drainage plan and monitoring program would be designed to support successful restoration. Where appropriate, existing stormwater management features, such as basins, would be recontoured and connected to the newly graded site.

Stormwater management techniques would be designed to control stormwater flow rates and erosion using accepted methods of hydrologic and hydraulic analysis. Stormwater management features that support restoration of the site would include revegetation, vegetated swales, and basins.

Natural rock riprap or turf reinforced mats may be placed along channels and slopes as reinforcement and biodegradable fiber rolls or wattles may be placed on slopes during initial site preparation and after hydroseeding to spread runoff as sheet flow during the plant establishment period. Use of these features would be minimized as much as feasible to maintain natural conditions but may be necessary for erosion and sediment control. Silt fences and/or straw bale barriers may be required to contain sediments in rapidly eroding areas.

The Construction SWPPP would include an Operation, Monitoring, and Maintenance [OM&M] Plan to monitor and maintain BMP effectiveness. The OM&M Plan would consist of monitoring by a Qualified Storm Water Practitioner (QSP), or trained delegate, until the Notice of Termination for coverage under the Construction General Permit (CGP) is accepted (i.e., when the CGP parameters for site stabilization are achieved).

The OM&M Plan would describe the expected types and frequency of maintenance activities that would be implemented to ensure that stormwater features effectively convey stormwater runoff throughout the site. Maintenance activities may include, but are not limited to, removal of sediment from conveyance swales, repair of riprap, maintenance of fiber rolls, and maintenance of the perimeter security fence. Natural stormwater management features would be selected for final implementation to the extent practicable. Maintenance of the features should not be required after the site vegetation is fully established.

Restoration Phase Dust Control. Fugitive dust measures for each phase of the Project, including the restoration installation and performance period, would be listed in a Dust Control Plan as part of the mitigation compliance program, as appropriate. A major objective of the restoration plan is to stabilize and manage the post-demolition site so as to minimize the potential for windborne dust during the restoration installation and plant establishment period. As site remediation progresses from one major functional area to the next, remediation would be followed by backfill,

compaction, and site stabilization and restoration. This area-by-area approach would ensure that the exposed areas are stabilized as soon as practical in order to minimize fugitive dust. Once the vegetation is established it would function as effective dust prevention.

Dust control measures for restoration (e.g., watering, use of tackifiers, covering stockpiles, etc.) would be implemented during the installation phase and during the performance period, and may include the following measures:

- Water trucks or sprinkler systems would be used in sufficient quantities to prevent airborne dust from leaving the site;
- Exposed ground subject to revegetation would be stabilized prior to plant establishment such as by using approved chemical soil binders, jute netting, or other appropriate methods; and
- Maintenance of the perimeter security fence and internal driving areas to prevent unauthorized vehicle entry into restoration areas.

The restoration effort would incorporate plan elements as appropriate, including plant selections and seeding program that are similar to restoration efforts within portions of the nearby Oceano Dunes State Vehicular Recreation Area (ODSVRA). The California Department of Parks and Recreation Off-Highway Motor Vehicle Recreation Division manages the ODSVRA Dust Control Program. This program implements dust control measures for the ODSVRA, including the backdune areas west and northwest (generally upwind) of the Refinery. Dust-related measures would also be coordinated with the SLOCAPCD.

As part of an overall adaptive management strategy for long-term dust control, Phillips 66 would leverage lessons learned from revegetation and dust control measures implemented within comparable backdune restoration areas in the ODSVRA. As the Refinery restoration plan is more fully developed, and throughout the performance period, certain measures from the ODSVRA Dust Control Program may inform the restoration and dust control measures to be employed at the Refinery. For example, the following measures evaluated for the ODSVRA may warrant consideration for inclusion in the restoration plan:

- Planting native vegetation during the fall, when rains support the establishment of native dune vegetation;
- Deploying seasonal dust control measures from approximately March to September such as wind fencing, straw bales, porous roughness elements (PREs), and, potentially, non-toxic, environmentally friendly soil stabilizers to control and minimize dust on a seasonal basis;
- Deploying seasonal sand fencing to control natural sand drift;
- Preventing track-out onto public roads;
- Potentially planting native, fast growing trees on lands located downwind of the Refinery for the long-term dust control; and
- Potentially other measures as new control measures are identified by the OHMVR Division for implementation at ODSVRA.

Refinery-specific measures may be implemented to align with these measures to the extent they are demonstrated to provide effective dust control in comparable settings.

Additional details of the ODSVRA Dust Control Program are provided in the 2nd Draft Annual Report and Work Plan, dated September 14, 2022, available at:
https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/2ndDraft2022ARWP_2022914.pdf

Air quality monitoring stations closest to the SMR include the Mesa2 and California Department of Forestry (CDF [CAL FIRE/County Fire]) stations. Both stations are located within one mile of the Refinery. The Mesa2 station monitors particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$), and the CDF (Arroyo Grande) station monitors PM_{10} and $PM_{2.5}$, as well as sulfur dioxide. The Nipomo Regional Park station, approximately five miles east of the Refinery, measures ozone (O_3) and PM_{10}. These stations are anticipated to remain operational during the site restoration performance period, and data from these stations would be used to monitor dust levels and dust control measure effectiveness.

Restoration and dust control planning would also leverage lessons learned from other restoration efforts in the area, as well as other guidance materials developed during the CEQA process.

Water Use. Restoration activities would require water for irrigation. Irrigation water would likely be applied to active restoration areas by water trucks in a similar manner as used for dust control. Assuming 5,000 gallons per irrigation day over 10 acres of active restoration area, and a watering frequency of once every four days (90 days per year), the water demand for restoration would be approximately 4,500,000 gallons per year (14 acre-feet per year, or 1.4 acre-feet per acre per year). This volume estimate would vary based on the total area of open land under active restoration and seasonal changes in water demand, and annual demand would drop as the restoration areas become more established.

2.7 Response Planning, Security and Stormwater Management

The following plans are in place at the SMR and would be utilized during the Project.

2.7.1 Hazardous Materials Business Plan

The present inventory of stored hazardous materials would be removed during Refinery shutdown and decommissioning, prior to the start of demolition. Demolition and remediation would require chemical use such as fuel (e.g., portable fuel tank for small equipment), hydraulic fluids, and lubricants for equipment operations; and some specialty demolition materials such as mastic remover. Large equipment fueling would be handled by a fueling service. All chemicals would be managed in accordance with Cal/OSHA's HazCom requirements.

Upon cessation of Refinery operations and subsequent removal of chemicals from the site, the hazardous materials business plan (HMBP) would be updated accordingly in coordination with the Certified Unified Program Agencies.

If necessary, the HMBP would be updated to include any hazardous material above the reportable quantity that may be brought on site during demolition and remediation. Chemical-specific information would be provided in safety data sheets available through the WebMSDS system.

2.7.2 Emergency Response Plan

The SMR maintains an emergency response plan to ensure that in the event of a fire, hazardous material release, medical emergency, or rescue situation, personnel would be able to respond to the emergency quickly and effectively to minimize personal injuries, environmental damage, and/or property damage. The emergency response plan describes the responsibilities of all Refinery personnel and defines the types of actions that personnel with different levels of training may take in response to an emergency. The emergency response plan also describes and defines the chain of command to be followed by personnel in an emergency, as outlined in the National Incident Management System.

The SMR updated the site operating plan and prepared a Memorandum of Understanding (Operating Plan/MOU) with CAL FIRE/County Fire to address various aspects of site safety and emergency response, including rescue teams for confined space entries as required by Cal/OSHA; emergency responder requirements; CAL FIRE/County Fire notification requirements; and continued access to internal roads and the surrounding dunes.

2.7.3 Emergency Response Capabilities

Under its existing operational systems, the SMR is prepared to respond to emergencies internally, with support from outside authorities if needed. The emergency response team at the SMR is trained and equipped to respond to fires, rescues, hazardous material releases, and other emergencies.

The SMR is coordinating this planning effort with CAL FIRE/County Fire to ensure that adequate and appropriate fire and emergency response resources would be available during demolition and remediation in accordance with the California State Fire code and other applicable codes such as National Fire Protection Association (NFPA) 51B, “Standard for Fire Prevention During Welding, Cutting, and Other Hot Work;” and NFPA 241, “Standard for Safeguarding Construction, Alteration, and Demolition Operations.”

Fire protection and emergency response services and capabilities would continue to be available throughout the Project and would be coordinated with CAL FIRE/County Fire. The SMR has worked closely with CAL FIRE/County Fire to establish an Operating Plan/MOU that would ensure appropriate response measures are established. As the Project evolves, the required level of emergency services and capabilities would decrease. As the Refinery decreases the volume and type of chemicals managed on site, demolishes infrastructure, and reassigns personnel to other locations, the emergency response needs would be comparatively less. These changes have been reviewed and Source coordinated with CAL FIRE/County Fire and are summarized in Table 2.14.

Table 2.14 Emergency Response Logistics During Demolition and Remediation

System/Equipment	Aboveground Infrastructure Demolition	Belowground Infrastructure Demolition
Emergency response[a]	Emergency medical team on site and 911	911
Rescue team	Phillips 66 or contractor as required by tasks	911
Portable emergency response equipment[b]	Reallocated	Reallocated
Fixed fire monitors	Demolish	NA
Deluge system[c]	Demolish	NA
Firewater loop	Operational/transition to utility water system	Transition to utility water system
Firewater pumps[d,e]	Phased out/demolish	NA
Firewater tank	Transition to industrial water tank	Phased out/demolish
Building 85	Demolish	NA
Temporary trailers	Per CAL FIRE/County Fire Code	Per CAL FIRE/County Fire Code

Notes:

a. Refinery emergency response team members would be gradually released as the work scope reduces. The fire brigade would be dissolved by the end of facility shutdown and decontamination, and transition to emergency management system personnel during operational hours only.
b. Portable emergency response equipment includes fire engines, tender, monitors, hazardous materials equipment, rescue equipment, fire hose, etc.
c. Once the deluge system pumps are cleared and the unit is isolated, the deluge system would be taken out of service.
d. Upon discontinued use of the stationary firewater pumps, electric pumps may be used to sustain pressure during demolition and remediation.
e. Firewater pumps would remain in service until demolition of permanent buildings is completed or other suppression methods are approved.

CAL FIRE = California Department of Forestry and Fire Protection; NA = not applicable; SMR = Santa Maria Refinery.

Source: Phillips 66 Application 2023

2.7.4 Firewater System Components

The firewater system is comprised of the following equipment:

- Firewater loop (48 including hose reels, 200 hydrant locations, and 16 elevated monitors);
- Firewater tank (TK-553) (55,000 barrels);
- Firewater pumps (515-3, 515-4) (2,500 gallons per minute per pump);
- Deluge systems (Coker A/B north and south pump row); and
- Suppression system (Building 85).

The firewater loop would remain in place during facility shutdown and decontamination and during part of demolition. The loop would transition into a utility water system during demolition after building structures have been demolished. The utility water system would remain in place for remediation activities. Some locations of the firewater loop would need to be demolished or reconfigured in process units to allow for demolition activities of surrounding equipment. Elevated monitors would be demolished as elevated equipment is shut down and decontaminated.

The firewater tank (TK-553) would remain in service until buildings are demolished and then it would transition into an industrial water tank. This tank may be used as a utility water tank during remediation for dust control and for irrigation water during restoration. Pending further evaluation, a different tank may be used for these purposes because the capacity of TK-553 is greater than needed during these later activities.

Firewater pumps would continue to undergo annual inspection, testing, and maintenance in accordance with NFPA 25, "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems." Pump tests include weekly operation for 30 minutes. In accordance with permit restrictions, the firewater pumps are not operated for greater than 50 hours per year.

Firewater and elevated monitors would be taken out of service and demolished with the process units. They would not be required for remediation activities.

2.7.5 Security

Security personnel would monitor all entry points onto the property and perform multiple perimeter checks during their shifts. Consistent with current practice, entry onto SMR property would be subject to inspection at any time while entering on or leaving the property.

2.7.6 Stormwater Management

Stormwater management for the SMR's existing operations is covered under Individual National Pollutant Discharge Elimination System (NPDES) Permit #CA0000051. This permit allows the Refinery to discharge up to 0.575 million gallons per day of treated production wastewater and stormwater. Contact stormwater is precipitation runoff from areas within the tank berms and from the operating units. Process wastewater and contact stormwater have historically been treated in the water effluent treatment (WET) plant. Most process units and operations areas are located on concrete pads, and tanks have containment berms. Oily wastewater collects in drains within the process areas and routes through an oily-water collection system to an oil/water separator and then to the WET plant.

Non-contact stormwater is stormwater that flows off of Refinery access roads, hardscape areas, and unimproved areas not in contact with process equipment, raw materials, or product or within the oil storage tank containment areas. Non-contact stormwater collects in the non-contact stormwater sewer system and flows by gravity to an evaporation/percolation basin (Stormwater Basin, Figure 2-3, Area 5). Non-contact stormwater does not discharge to the ocean outfall.

Stormwater at the carbon plant has historically been managed independently of the Refinery individual permit. There historically has been no stormwater runoff from the carbon plant. Stormwater management at the carbon plant is the subject of a 2015 no-discharge determination (Order 2014-0057-DWQ) that would remain in effect during facility shutdown and decontamination, and during demolition. The inward grade and soil conditions at the carbon plant result in retention and infiltration of stormwater that flows off of equipment pads. Analysis and observations demonstrate the infiltration capacity of the dune sand soils and the absence of runoff.

The Refinery site topography is generally graded inward. This condition supports retention and infiltration of stormwater that flows off of equipment pads and minimizes potential for off-site runoff. The highly permeable sandy soils and site topography result in no observable stormwater runoff from the facility. Even during heavy rainfall, stormwater runoff from the operations pads infiltrates soon after encountering the surrounding sandy soil, and there is no observable overland flow or stormwater runoff. These direct observations and the carbon plant no-discharge analysis demonstrate the infiltration capacity of the dune sand soils and the absence of runoff.

Aboveground Demolition
Per the Central Coast RWQCB, Phillips 66 would be required to provide a written Notice of Termination at least 30 days prior to the shutdown of the WET Plant. The WET plant would be shut down following approval from the Central Coast RWQCB and after all runoff from the cleaned pads meets acceptable standards for stormwater quality.

After the WET plant shuts down, stormwater would be managed under the California Industrial General Permit (IGP; NPDES Permit #CAS000001). Pad and equipment cleaning and filing of a Notice of Intent under the IGP would occur before starting demolition.

Belowground Demolition and Remediation
Belowground demolition and remediation would include removal of belowground infrastructure, as necessary, and excavation of contaminated soil. Before starting belowground demolition and remediation, Phillips 66 indicates they would establish coverage under the Construction General Permit (CGP; Water Quality Order 99-08-DWQ). The CGP applies to construction or demolition, including clearing, grading, grubbing, excavation, or any other activity that disturbs greater than one acre. Coverage under the CGP requires electronic filing of a Notice of Intent, preparing a construction SWPPP, and paying the permit fee to the RWQCB.

Post-Remediation Site Contouring and Restoration
As discussed above in Section 2.6, the grading plan would specify final grades, backfill, and compaction. In addition, a sedimentation and erosion control plan would be prepared by Phillips 66, if necessary, in accordance with CZLUO Section 23.05.03 (e.g., if exposed soil areas are left in an unfinished state during the period from October 15 through April 15). In general, selected areas would be re-graded to reduce slopes, with a balance of on-site cut and fill. Existing drainage patterns, soil absorption, and surface runoff patterns would generally be retained, and erosion control and slope stabilization BMPs would be implemented in accordance with the grading plan. Construction SWPPP BMPs would be maintained, as appropriate, through site stabilization and implementation of a restoration plan.

2.8 Required Agency Actions and Required Permits

Table 2.15 lists the regulatory permits, approvals, and reviews that are anticipated for the Project. Phillips 66 would consult with these and potentially other agencies, as needed.

Table 2.15 Agency Permits, Notifications, and Approvals

Regulatory Agency	Potential Permits, Notifications, and Approvals
San Luis Obispo County	▪ DP/CDP with CEQA review ▪ Demolition permit ▪ Grading Plan ▪ Sedimentation and Erosion Control Plan ▪ Grading Slope Variance ▪ Grading ESHA Adjustment ▪ Other ministerial permits ▪ Potential Land Use Covenant
CAL FIRE and San Luis Obispo County Fire Department (CAL FIRE/County Fire)	Updated operations planning, including operational plan, and Fire Marshal approval.
San Luis Obispo County APCD	▪ Dust control plan and other mitigation review ▪ Hydrocarbon contaminated soils PTO ▪ Asbestos notifications ▪ Portable equipment approvals (if required based on size/duration)
Santa Barbara County APCD	The Project may include equipment or operations subject to District permit requirements and prohibitory rules. Therefore, the District may be a responsible agency under the California Environmental Quality Act
Central Coast RWQCB and State Water Resources Control Board	▪ On January 9, 2023, Phillips 66 provided the Central Coast RWQCB NPDES permitting staff a Notice of Planned Changes in the WET Plant regarding treatment processes and shutdown. ▪ Coverage under IGP (National Pollutant Discharge Elimination System Permit #CAS000001) (during aboveground demolition) ▪ Coverage under the Construction General Permit (CGP), with a Stormwater Pollution Prevention Plan (SWPPP) (during belowground demolition and remediation) ▪ Possible remediation plan review and permit
Cal/OSHA and San Luis Obispo County Environmental Health	▪ Asbestos, lead, and elevated structure demolition notifications ▪ Certified Unified Program Agency (CUPA) review, Business Plan updates, and closure planning
California State Lands Commission	Wastewater Outfall disposition
California Department of Fish and Wildlife and U.S. Fish and Wildlife Service	Potential need for state and/or federal Incidental Take Permits for impacts to listed species if avoidance is not feasible

Notes: ACPD = Air Pollution Control District; CAL FIRE = California Department of Forestry and Fire Protection; Cal/OSHA = California Division of Occupational Safety and Health; CDP = Coastal Development Permit; CEQA = California Environmental Quality Act; CGP = Construction General Permit; IGP = Industrial General Permit; NPDES = National Pollutant Discharge Elimination System; RWQCB = Regional Water Quality Control Board; SWPPP = Stormwater Pollution Prevention Plan

2.9 References

Phillips 66. 2023. Project Application Materials, Available at https://energov.sloplanning.org/EnerGov_Prod/SelfService#/plan/4947ff7d-43ca-429b-8a75-43df23d047af?tab=attachments.

Contra Costa County. 2021. Rodeo Renewed EIR. Phillips 66 Rodeo Renewed Project. Available at: https://ceqanet.opr.ca.gov/2020120330/6.

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