

SUMMARY OF INTERIM REMEDIAL ACTION PLAN (IRAP)

The Chevron North America Exploration and Production Company, West Coast Decommissioning Program (Chevron WCD) has prepared an Interim Remedial Action Plan (IRAP) for the Chevron Oil and Gas Processing Facility properties located adjacent to Dump Road in the City of Carpinteria, Santa Barbara County, California (Project Site). The IRAP will be submitted to the United States Environmental Protection Agency (U.S. EPA) and County of Santa Barbara Environmental Health Services Division (SBCEHS) to coordinate remedial activities proposed at the Project Site. The following discussion provides a summary of the information contained within the IRAP for the purposes of supporting an application submittal to the City of Carpinteria for the proposed Project.

The location of the Project Site is illustrated on Plate 1 - Site Location Map and Plate 2 - Site Vicinity Map. Chevron WCD is planning to demolish and remove surface and subsurface facilities and subsequent remediation of any impacted soils at the onshore Carpinteria Oil and Gas Processing Facility to accommodate the site's potential future redevelopment.

The Carpinteria Oil and Gas Processing Facility and associated properties consist of a total of six parcels that comprise approximately 55-acres of Chevron U.S.A. (Chevron)-owned land (refer to the Area Designations table below and Plate 2).

Area Designations

Area Designations	Santa Barbara County Assessor's Parcel Number
Carpinteria Oil and Gas Processing Facility (OGPF): including Main Plant Area, Shop and Maintenance Area, Chevron Pipeline Area (Including Tank 861)	001-170-014, 001-170-022, and 001-170-023
Marine Spill Response Corporation (MSRC) Lease Area, Sales Gas Area, and Peninsula Area	001-170-023
Former Nursery Area, Former Marketing Terminal Area (FMTA)	001-170-004
Buffer Zone Area (BZA)/Drainage Area No. 4 (DA4)	001-170-003
Pier Parking Lot/Formal Sand Blast Area (FSBA)	001-170-021

OVERVIEW

Historical Use

The Project Site is located within an area that has been historically utilized for agricultural production and more recently for oil and gas development support activities. Historical agricultural production activities documented at the Project site from the 1920's through 1959 included dry farming, row crop production, orchards (fruit trees and nuts), and commercial flower production (plant nursery). In the early 1950s portions of the Project Site were developed for oil and gas processing, distribution, and associated offshore support services resulting in documented oil and gas related impacts to soil and groundwater at the Project Site. The Project Site was historically

operated by Chevron to receive, process, and transport oil and gas produced from offshore oil platforms located within the Santa Barbara Channel beginning in approximately 1959 (refer to Plates 1 and 2). Chevron sold its Santa Barbara assets to Venoco, Inc. in 1998. Although Platform Grace ceased production in 1998, the Main Plant Area and Tank 861 continued to receive oil and gas production from Platform Gail until approximately 2017.

Previous Site Assessment and Remediation

Soil and groundwater assessment activities were performed at the Project Site by Padre and other engineering consultants during the period of 1985 to 2019. The historical oil and gas processing, storage, and distribution activities and agricultural activities have resulted in documented oil and gas related impacts to soil and groundwater at the Project Site, as well as residual concentrations of chlorinated pesticides in surface soil and sediment located in the vicinity of the Project Site that are unrelated to oil and gas activities and attributable to historical agricultural uses of the property.

1986 through 2016 Remedial Excavations

The following remediation activities, all resulting in case closure from the respective local oversight agency(ies), were completed by Chevron at the Project Site during the period of 1986 to 2016 (refer to Plate 2A - Historical Remedial Excavations):

- Shallow polychlorinated biphenyl (PCB) soil remediation activities at southeast portion of the OGPf, (1986);
- Fuel hydrocarbon-containing soil and groundwater remediation at the FMTA and Drainage Area No. 4 (DA4), (1999-2000);
- Shallow heavy metals-containing soil remediation activities at the FSBA located at the east end of the Casitas Pier Parking Lot, (2011); and
- Shallow chlorinated pesticides-containing soil remediation activities at the FNA, BZA, and DA4 located west of Dump Road, (2011 and 2016).

2018 and 2019 Site Assessment

In preparation for planned site decommissioning, remediation, and site restoration activities, Chevron WCD initiated supplemental site assessment activities at Project Site. During the period of November 2018 to October 2019 Padre performed site-wide soil and groundwater assessment activities at the OGPf, Former Marketing Terminal Area, and MSRC Lease Area to verify and validate previously documented soil and groundwater impacts, as well as assess additional areas of potential concern. The results of the site assessment activities indicated constituents of concern (COCs) in excess of applicable soil screening levels including total petroleum hydrocarbons (TPH), (PCBs), California-regulated metals, and chlorinated pesticides, as well as localized TPH and PCB impacts to groundwater at the Project Site. The distribution of assessment locations at the Project Site in 2018 and 2019 are presented on Plate 3 - Site Plan.

OBJECTIVES

The objective of the Chevron Oil and Gas Processing Facility properties remediation project (Project) is to remove soil containing COCs at concentrations above the respective residential use standards (Soil Cleanup Goals) from the Project Site. To achieve this objective, Chevron WCD will utilize the services of an earthwork contractor to excavate impacted soil and surface materials from the Project Site and transport the materials for disposal at an appropriate State of California approved disposal facility.

REGULATORY AGENCY FRAMEWORK

Chevron plans to perform site assessment and remediation activities at the Project Site in accordance with approvals and permits from the following regulatory agencies:

- SBCEHS - Lead Enforcement Agency (LEA) for drill hole permits, and soil assessment / remediation of all COCs, except PCBs;
- U.S. EPA PCB Facility Approval Streamlining Toolbox (FAST) Program - LEA for soil assessment / remediation of PCBs;
- California Regional Water Quality Control Board, Central Coast Region (RWQCB-CCR) - LEA for groundwater related impacts;
- City of Carpinteria, Planning and Development - Review and ensure approvals are in-place to issue Coastal Development Permit (CDP) for the overall site decommissioning, remediation, and restoration project;
- City of Carpinteria, Public Works Department - Review and issue the Grading Permit for remedial excavation and overall site grading; and
- County of Santa Barbara Air Pollution Control District (APCD) - Air quality related approvals to issue Grading Permit and CUP/CDP.

OVERVIEW OF PROJECT SCOPE

Additional soil and groundwater assessment activities will be completed at the Project Site to better define the lateral and vertical extent of COCs in soil and groundwater. Assessment findings will be summarized and assimilated into the Project Site analytical data set and a Remedial Action Plan (RAP) prepared documenting the proposed limits of remedial excavation. Chevron will provide the RAP and any other supplemental information to the applicable regulatory agencies as the project progresses.

Following the removal of aboveground infrastructure (buildings, infrastructure, equipment, and pipelines), surface construction materials including asphalt, concrete, and hydrocarbon-based oil spray slope protection materials will be removed from the Project Site and transported offsite under wastes manifest / bill of lading procedures to a State of California licensed disposal facility appropriate for the wastes stream for disposal / recycling. Areas of surface materials removal are presented Plate 4 - Areas of Surficial Construction Materials Removal.

The Project includes the excavation of approximately 65,792 cubic yards of soil using conventional and limited access earth moving equipment. The excavated earth materials will be transported offsite under wastes manifest procedures to a State of California licensed disposal facility appropriate for the wastes for disposal. The excavations will be backfilled using certified clean, import materials and mechanically compacted in accordance with the approved Grading Plan. The estimated lateral extent of excavation by COC is presented on Plate 5 - Estimated Limits of Remedial Excavation.

PROJECT CLEANUP STANDARDS

The Carpinteria Oil and Gas Processing Facility properties are expected to remain in operation to support planned offshore platform abandonment activities, subsequently be decommissioned and restored, and later re-purposed for potential future unrestricted land use. Therefore, the Remedial Action Objective (RAO) is remediation to an unrestricted land use standard consistent with the approvals from SBCEHS, RWQCB and U.S. EPA. To meet this RAO, the proposed remediation goals are presented below:

- **Total Petroleum Hydrocarbons (TPH)** - Chevron proposes using the Tier 1 ESLs as TPH cleanup goals.

Regulatory Threshold	TPH C ₄ - C ₁₂	TPH C ₁₃ - C ₂₂	TPH C ₂₃ - C ₄₀
RWQCB Tier 1 ESL	100	260	1,600

Values are in milligrams per kilogram (mg/kg)

- **PCBs** - Tier 1 ESL of 0.23 mg/kg (RWQCB-SFB, 2019).
- **Metals** - Cleanup goals established by RWQCB-CCR under CAO R3-2004-0081 (RWQCB-CCR, 2011) or applicable regional naturally occurring background concentration (Hunter, 2005).
- **Chlorinated Pesticides** – Cleanup goals established by RWQCB-CCR under CAO R3-2004-0081 (RWQCB-CCR, 2011); and
- **All Other Compounds** - Tier 1 ESLs for residential land use (RWQCB-SFB, 2019).

SOIL EXCAVATION LIMITS

Soil excavation limits were defined using in-situ soil sample results for TPH, total PCBs, Title 22 metals, and chlorinated pesticides. Based on existing soil analytical data, Padre estimates the following soil volumes impacted with COCs will be removed from the OGP, MSRC and FMTA (refer to Plate 5). Note that these volumes may change once additional soil assessment data is collected at the Project Site.

Estimated Soil Volumes to be Removed from the Project Site

Volume estimates presented below are in cubic yards (yd³)

Constituent of Concern	Oil and Gas Processing Facility: Estimated Volume (cubic yards)	MSRC Lease Area: Estimated Volume (cubic yards)	Former Marketing Terminal: Estimated Volume (cubic yards)
PCBs	12,572	818	293
Anthropogenic TPH	30,097	0	7,873
Pesticides	961	6,243	5,562
Metals	200	0	1,171
Combined Estimated Totals (cubic yards): 65,792 CY for 3 Areas	43,831	7,061	14,899
Combined Estimated Totals (tons) (cy to tons = x 1.39 ton/cy): 91,451 Tons for 3 Areas	60,925	9,815	20,710

Dust control measures required to be implemented during the course of remedial excavation activities will be consistent with the Dust Control Plan reviewed and accepted by APCD, as well as presented in the site-specific Health and Safety Plan (HASP) prepared for the Project. Additionally, ambient air in the work zone and excavated material at the Project Site will be monitored for potential volatile organic compound (VOC) emissions using a hand-held photoionization detector (PID).

During the course of remedial excavation activities subsurface pipelines will likely be encountered. The pipelines will be removed from the excavations and managed as part of the scrap metal wastes stream.

Following removal of the impacted soils from the respective excavation, verification soil samples will be collected for chemical analyses from the excavation floor and sidewalls to validate Soil Cleanup Goals are achieved. After the RAOs have been achieved, the remedial excavation will be considered complete.

EXCAVATION BACKFILLING ACTIVITIES

After the RAO has been achieved, the excavations will be backfilled using imported certified-clean backfill material that meets or exceeds requirements outlined by the State of California Department of Toxic Substances Control (DTSC) document titled *Information Advisory, Clean Imported Fill Material*, dated October 2001. The excavations will be backfilled and compacted by CEMC's remedial construction contractor using mechanical compaction equipment

in accordance with the approved Grading Plan / Permit. Padre proposes to oversee the compaction testing during the course of the project to achieve a minimum of 90% of the maximum dry density of the selected fill material, as determined by ASTM Method D-1557.

SITE REMEDIATION REPORT

Padre will prepare a Site Remediation Report, which will be signed and stamped by a California-licensed Professional Geologist and/or Professional Engineer and will include the following:

- A description of the Project Site location, land uses (historical, current, and potential future), geology, hydrogeology, historical research, assessment / remediation data, including data summary tables and plates illustrating sample locations/analytical data (i.e., contaminant distribution maps, geologic cross-sections);
- A summary of the site remediation activities, including analytical / survey data summary tables and plates illustrating the surveyed verification soil sample locations and limits of excavation(s);
- Copies of permits obtained for the Project;
- Photographs of the work performed;
- Summary of the field monitoring data collected during the course of the Project;
- Copies of the laboratory reports for verification soil samples; and
- Copies or summary tables of waste manifests for soils and materials disposed at off-site facilities.



LEGEND:

Approximate Limits of Chevron-Owned Land

MAP EXTENT:



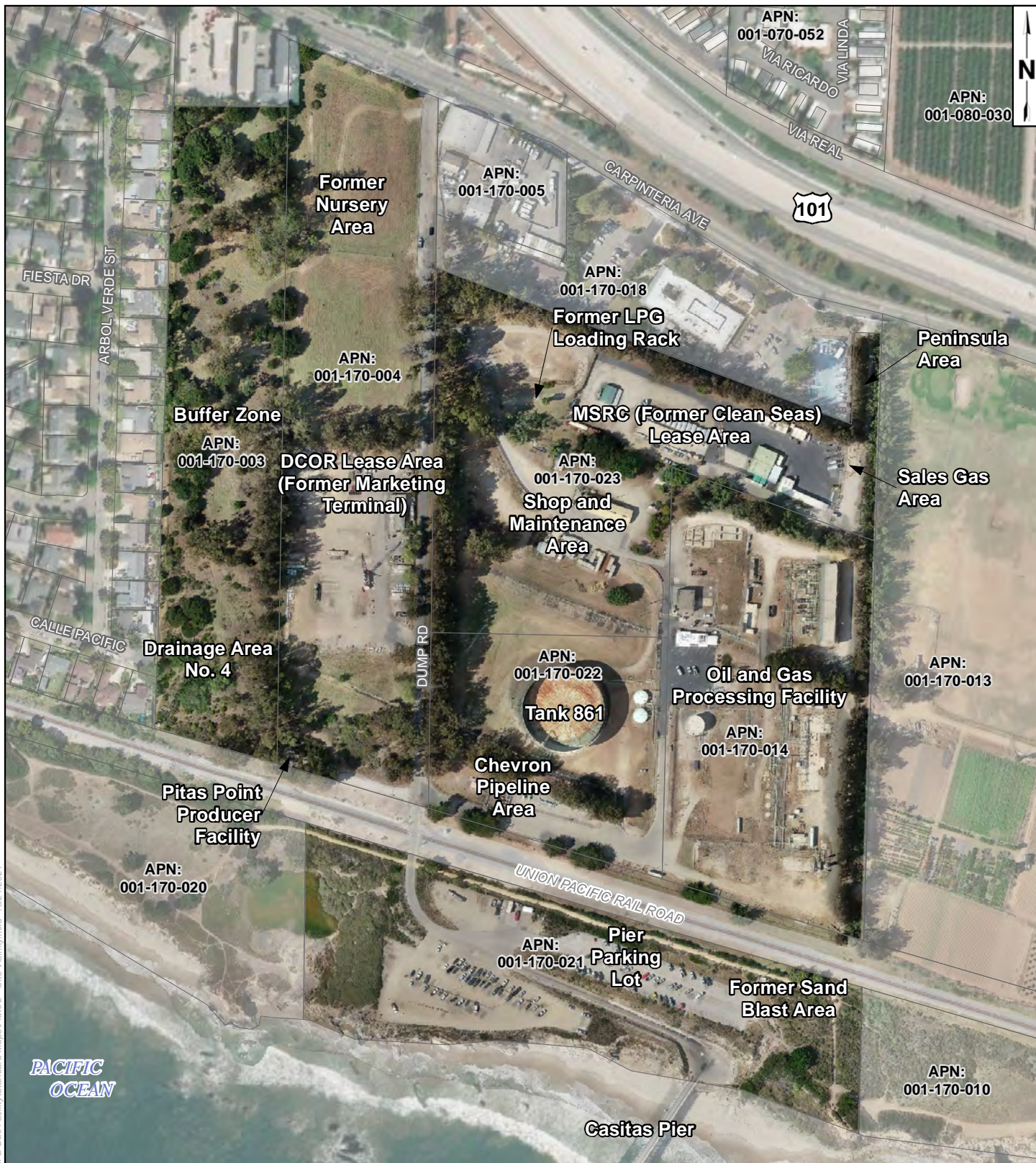
Source: Esri Online Topo Basemap, County of Santa Barbara
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
 Notes: This map was created for informational and display purposes only.

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 ENGINEERS, GEOLOGISTS &
 ENVIRONMENTAL SCIENTISTS

PROJECT NAME: CHEVRON CARPINTERIA OIL AND GAS PROCESSING FACILITY PROPERTIES SANTA BARBARA COUNTY, CA	
PROJECT NUMBER: 1901-0503	DATE: October 2021

SITE LOCATION MAP

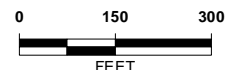
PLATE
1



LEGEND:

Assessor Parcel Boundary

Source: KCSI Aerial Patrol 2020, Assessor parcels downloaded from County of Santa Barbara
 Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
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SITE VICINITY MAP

PLATE
 2



LEGEND:

- | | |
|---|--|
| <p>Assessor Parcel Boundary</p> <p>Remedial Excavations</p> <p>Approximate Extent of Oil and Gas Processing Facility Excavation Area, PCBs (1986)</p> <p>Former Marketing Terminal / Buffer Zone Area Excavation Boundary, TPHg / Benzene (1999 and 2000)</p> | <p>Former Sandblast Area Soil Excavation Limits, Heavy Metals (2011)</p> <p>Former Nursery Area / Buffer Zone / Drainage Area No.4 Soil Removal Area, Chlorinated Pesticides (2011 and 2016)</p> |
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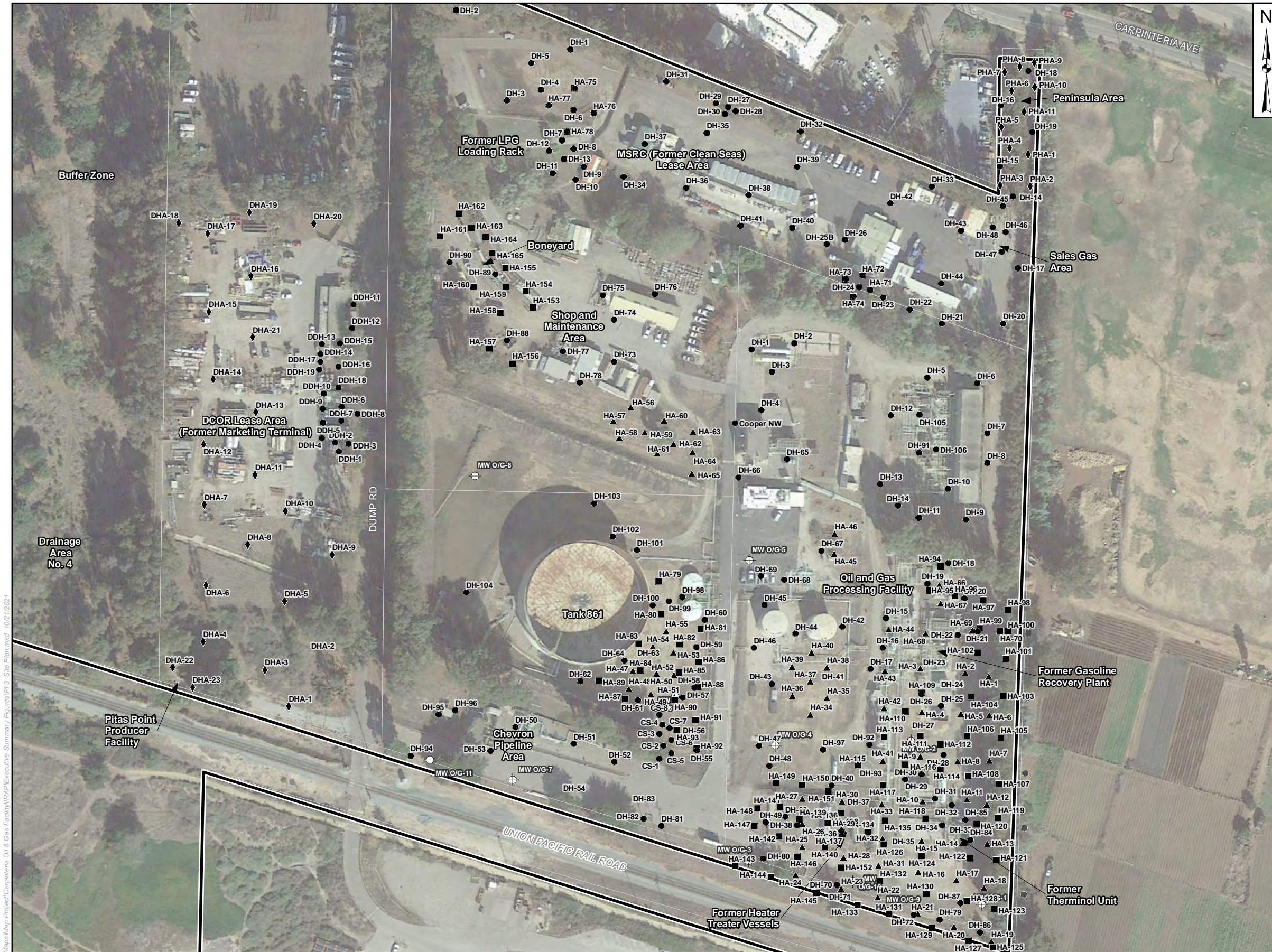
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**HISTORICAL
REMEDIAL EXCAVATIONS**

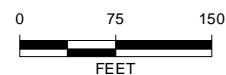
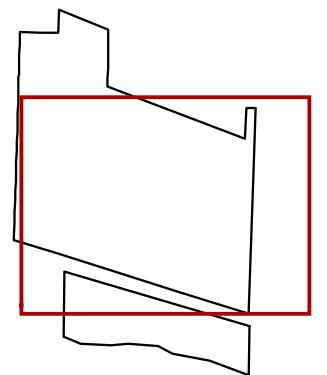
PLATE
2A



LEGEND:

- Groundwater Monitoring Well Location
- Project Site Boundary
- Assessor Parcel Boundary
- B2 Geoprobe Drill Hole Location, PSI (May 2014)
- DH-7 Geoprobe Drill Hole Location, Padre (November 2018 - May 2019)
- HA-1 Hand Auger Drill Hole Location, Padre (December 10, 2018 - December 14, 2018)
- DHA-1 Hand Auger Drill Hole Location, Padre (March 2019 - July 2019)
- PHA-2 Hand Auger Drill Hole Location, Padre (March 2019 - July 2019)
- DH-45 Hand Auger Drill Hole Location, Padre (March 2019 - July 2019)
- HA-71 Hand Auger Drill Hole Location, Padre (July 30, 2019 - August 6, 2019)
- Cooper NW Soil Sample Location, Padre (April 2019 - October 2019)
- CS-1 Soil Sample Location, Padre (April 2019 - October 2019)

MAP EXTENT:



Source: Google Earth Pro Image 2018, Meagher 2020, Assessor parcels downloaded from County of Santa Barbara
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: PCB = polychlorinated biphenyls; mg/Kg = milligrams per kilogram
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1901-0503

DATE:
October 2021

SITE PLAN

PLATE
3



LEGEND:

- Operational Area
- Project Site Boundary

Surface Construction Material Types to be Removed

- Asphalt Surface
- Concrete Surface
- Gravel Surface
- Oil Spray Erosion Control

MAP EXTENT:



Source: KCSI Aerial Patrol 2020
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: This map was created for informational and display purposes only.



PROJECT NAME:
CARPINTERIA PLANT DECOMMISSIONING
SANTA BARBARA COUNTY, CA
PROJECT NUMBER:
1901-0503
DATE:
October 2021

ESTIMATED EXTENT OF
SURFACE CONSTRUCTION
MATERIAL REMOVAL

PLATE
4



LEGEND:

- Geoprobe Drill Hole Location
- ▲ Hand Auger Drill Hole / Soil Sample Location
- Abandoned Oil Well
- ⊕ Idle Oil Well
- ⊕ Groundwater Monitoring Well Location
- ▭ Limits of Naturally Occurring Tar Seeps
- ▭ Assessor Parcel Boundary
- ▭ Project Site Boundary

Approximate Extent of Planned Remedial Excavation

- Chlorinated Pesticides > Tier 1 ESL
- Tier 22 Metals > TTLC and / or Tier 1 ESL and Background Value
- PCBs > Tier 1 ESL
- TPH > Tier 1 ESL

Source: KCSI Aerial Imagery 2020, Esri Online Imagery Basemap, Meagher 2020, County of Santa Barbara
Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
Notes: PCBs = Polychlorinated biphenyls; TPH = Total Petroleum Hydrocarbons; Tier 1 ESL = RWQCB-SFS Tier 1 environmental screening level for residential soil (January 2019); Regional Background Values (Hunter, et al., March 2005); TTLC = Total Threshold Limit Concentration; This map was created for informational and display purposes only.

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**CHEVRON CARPINTERIA
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SANTA BARBARA COUNTY, CA**

PROJECT NO.: 1901-0503
DATE: OCTOBER 2021

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**ESTIMATED LIMITS
OF REMEDIAL EXCAVATIONS**

PLATE
5