DUST SUPPRESSION AND AIR MONITORING PLAN

PACIFIC COAST PIPELINE (PCPL) SUPERFUND SITE FILLMORE, CALIFORNIA

Submitted to:

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LIST OF ACRONYMS AND ABBREVIATIONS

ags	above ground surface
Ac-Ft	acre-feet
BAM	Beta Attenuation Monitor
BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
CCR	California Code of Regulations
CF	cubic feet
CFR	Code of Federal Regulations
Chevron	Chevron Environmental Management Company
COC	Chemical of Concern
CY	cubic yards
DSAMP	Dust Suppression and Air Monitoring Plan
EPA	United States Environmental Protection Agency
FEM	Federal Equivalent Method
HASP	Health and Safety Plan
mg/kg	milligram per kilogram
mg/m^3	milligram per cubic meter
mm	Millimeter
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NGL	Net Ground Level
NIOSH	National Institute for Occupational Safety
OEHHA REL	California Office of Environmental Health Hazard Assessment Reference Exposure Levels
OSHA PEL	Occupational Safety and Health Administration Permissible Exposure Limit
PAH	Polycyclic Aromatic Hydrocarbon
PCPL	Pacific Coast Pipeline
PID	photo-ionization detector
PM_{10}	particulate matter less than 10 microns in diameter
PPM	parts per million by volume
QAPP	Quality Assurance Project Plan
QC	quality control
RAWP	Remedial Action Work Plan
RECON	Remedial Construction Services, L.P.
RI/FS	Remedial Investigation / Focused Feasibility Study
ROC	Reactive Organic Compound
ROD	Record of Decision
RSL	EPA Regional Screening Level
SWPPP	Stormwater Pollution Prevention Plan
$\mu g/m^3$	Micrograms per cubic meter
URS	URS Corporation
VCAPCD	Ventura County Air Pollution Control District
VOC	volatile organic compounds

1.0 INTRODUCTION

This document comprises the Dust Suppression and Air Monitoring Plan (DSAMP) for the excavation and consolidation of contaminated shallow soils currently present at the Chevron Pacific Coast Pipeline (PCPL) Superfund site (the Site) in Fillmore, California. The plan was prepared by URS Corporation (URS) on behalf of Chevron Environmental Management Company (Chevron), working under an environmental services agreement on behalf of Texaco, Inc.

This plan contains the approach for dust suppression measures and perimeter air monitoring that will be implemented during remedial excavation, consolidation area construction, and mass grading activities by Remedial Construction Services, L.P. (RECON). The monitoring will be conducted to: 1) document the air quality in the vicinity of the work; and 2) minimize the potential for unacceptable levels of airborne contaminants to leave the Site during remediation.

This DSAMP does not address Site workers' safety issues, including the use of a photo-ionization detector (PID) to monitor excavation volatile organic compounds (VOC). The Site worker safety will be addressed in separate site specific Health and Safety Plans (HASPs) prepared by RECON and URS.

1.1 SITE BACKGROUND

The Site is located at 67 East Telegraph Road in Fillmore, California (Figure 1). The City of Fillmore is immediately west of the Site; and open space borders the northern, eastern, and southern property limits. The nearest school structure is approximately 150 feet west of the Site. There are six churches and no hospitals within 1 mile of the Site, and the nearest residences are approximately 120 feet to the west.

The Site was formerly an oil refinery from circa 1915 until 1950. The refinery was shut down in 1950, dismantled by 1951, leaving approximately eight aboveground storage tanks, and converted to a crude oil pumping station by 1952. Six of the aboveground storage tanks were dismantled and removed in 2000. Pumping station operations discontinued in 2002, and the last remaining aboveground storage tank was removed in August 2004.

1.2 SOURCES OF CONTAMINANTS

Numerous investigations have been conducted at the Site since the 1980s. Contaminants found during historical investigations are typical of petroleum industry operations that were ongoing at the Site since circa 1915.

Previous investigations identified primary sources of groundwater contamination as a series of nine unlined waste pits that were used to store liquid waste generated during refining operations and was subsequently removed during soil remediation (excavation) conducted in 1986. Because the pits more or less continuously contained liquid waste while they were in service during refinery operations, they provided a mechanism by which hydrocarbons could migrate into the subsurface. Once refinery operations ceased, waste was no longer added to the pits (ENSR, 1990), thereby reducing the hydraulic head contributing to the vertical migration of hydrocarbon liquids. After the waste within the former pits

was removed in 1986, potential for vertical migration and lateral spreading was severely curtailed or eliminated.

The majority of soil impacts were addressed as part of the 1986 waste removal actions. Residual soil impacts are present across the Site, predominantly in shallow soils, and are likely associated with historical operations and incidental releases.

1.2.1 Contaminant Distribution – Shallow Soils

A three-phased soil sampling program was conducted at the Site from 2006 through 2009. The first phase of the investigation documented subsurface conditions generally located at the former tank areas (URS, 2006). The second phase of the investigation was to characterize subsurface conditions beneath areas of known historical operations at the Site (URS, 2008). The third phase (URS, 2009) was intended to be the final data-gathering effort; it focused on filling gaps in information from the previous two investigation phases, and collecting soil vapor data necessary to complete a human health risk assessment for shallow soils at the Site. In addition, a qualitative ecological scoping assessment was conducted to determine the need for a quantitative screening evaluation. Through each phase of this shallow soil investigation, a seven-step data quality objective process was followed to ensure that appropriate data quality objectives were defined and met.

The objective of the shallow soil investigation was to assess whether detectable concentrations in soils beneath the former process areas (to depths of 10 feet below ground surface) might pose a health risk to future industrial or construction/excavation workers. Future land use options for the Site do not include residential use, and a deed restriction is intended to enforce this decision.

Quantitative human health and ecological risk assessments were completed as part of a remedial investigation and focused feasibility study (RI/FS) (URS, 2011a). Following submittal of the RI/FS, the United States Environmental Protection Agency (EPA) issued a Record of Decision (ROD) amendment in 2011 (EPA, 2011b). The ROD amendment identified the following Chemicals of Concern (COCs) in shallow soil:

- Lead
- Polycyclic Aromatic Hydrocarbons (PAHs) including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and naphthalene

The soil areas requiring excavation are shown on Figure 2.

1.3 PROJECT SCOPE OF WORK

The remedial action covered by this DSAMP includes the following work elements:

- Tree Removal – Removal of trees within the limits of grading (several dozen trees not protected under the Ventura County Zoning Ordinance).

- Utility Locating – Utility clearance for excavations at the Site. Utility clearance measures include marking the extent of each pipeline removal, and remedial excavation for Underground Services Alert. Remaining petroleum pipeline segments associated with past operations will be removed, as well as excavation of remedial area soils.
- Foundation Demolition – Several remaining concrete slabs/foundations will be removed.
- Remedial Areas Excavation and Backfilling – Several dozen (approximately 80 locations with an in-place volume of up to approximately 18,500 cubic yards [CY]) remedial areas will be excavated to approximately 10 feet below grade, backfilled with onsite borrow soils, and compacted.
- Consolidation Area Construction – An approximately 60-foot-wide by 1,050-foot-long Consolidation Area will be excavated for backfilling and compaction with remedial area excavated soils (approximate in-place volume of 23,500 CY).
- Mass Grading – Most "flat" areas of the Site will be graded to remove historic earthen berms and form roadway access and storm water drainage features, including incidental westerly sloped areas adjacent to Pole Creek and the easterly lower slope areas (approximate in-place cut volume of 160,590 CY).
- Drainage Features Construction – Two detention ponds will be excavated and incidental interim drainage swales (Post-Construction Best Management Practices [BMPs]).
- Post-Construction BMPs – Northern Infiltration Pond – 0.4 acre-feet [Ac-Ft] (17,500 cubic feet [CF]) of storage; and Southern Infiltration Pond – up to 0.84 Ac-Ft (36,500 CF). Drainage swales and detention ponds will be lined with 6 inches (minimum) of crushed concrete over non-woven geotextile fabric to control erosion. Each area with drainage swale will have a corner detention area with an overflow structure to control migration of sediment. Each area with adjacent downslopes will incorporate a 1-foot-high edge berm to avoid flow down slopes, and direct flow to corner detention areas and overflow structures.
- Installation of interim erosion control features within the Site. These features will include wattles, swales, inlet protection and perimeter berms to protect offsite receiving drainage features until which time the project is redeveloped.

The scope of work described in this section is expected to last approximately 6 months.

1.4 SCREENING EVALUATION

The concentrations of the COCs in shallow soil were evaluated to develop a protective air monitoring plan. Based on the maximum concentration of each of the COCs detected during previous investigations, the highest anticipated concentration of each COC in air was calculated by the following equation:

$$C_{air}\left(\frac{\mu g\ coc}{m^3\ air}\right) = C_{soil}\left(\frac{mg\ coc}{kg\ soil}\right) \times 10^{-6}\left(\frac{kg}{mg}\right) \times 50\left(\frac{\mu g\ soil\ [= dust]}{m^3\ air}\right)$$

Where:

C_{dust} = *Concentration of COC in air (micrograms per cubic meter [µg/m^3])*

C_{soil} = *Concentration of COC in soils (milligrams per kilogram [mg/kg])*

The calculation was conservatively based on the assumptions that the evaluated concentration in soil would become airborne and present at the property boundary, therefore representing a "worst-case" scenario. In addition, the screening evaluation assumed dust would be maintained below the California Ambient Air Quality Standard (CAAQS) concentration of 50 µg/m^3 (17 California Code of Regulations [CCR] 70200). The maximum anticipated concentrations for lead and PAHs in air are provided in Table 1.

The concentrations for lead and PAHs were compared to available screening levels (national ambient air quality standards [NAAQS] (40 Code of Federal Regulations [CFR] 50) and California Office of Environmental Health Hazard Assessment Reference Exposure Levels [OEHHA RELs], Occupational Safety and Health Administration Permissible Exposure Limits (OSHA PELs).

In addition to the screening levels above, these predicted PAH concentrations were compared to the corresponding EPA regional screening levels (RSLs) for ambient residential air (EPA, 2012). These ambient air RSLs are concentrations protective of human health in a residential setting for a continuous, long-term (30-year) exposure duration, at a cancer risk level of one-in-one-million (the lower threshold of significance). However, excavation and soil disturbance activities at this site are only expected to last 2 to 6 months maximum, which means that comparison to RSLs based on 30-year exposure is extremely protective. For predicted PAH concentrations in perimeter dust, 23 of 24 concentrations (the combination of 8 PAHs and the 3 soil concentration values) were lower than the corresponding RSLs for long-term residential exposure. Only the onsite, maximum detected concentration of benzo(a)pyrene yielded a potential site-perimeter dust concentration greater than its RSL. The condition that the onsite maximum detected concentration of benzo(a)pyrene would be present continually in site-perimeter dust is highly unlikely. The median concentration would be the more plausible concentration expected, and its predicted site-perimeter dust concentration is well below the RSL. The evaluation of PAH Residential RSLs is provided in Table 2.

Based on these predicted concentrations, dust-control measures that limit perimeter-dust concentrations to 50 µg/m^3, even if that were to occur in area(s) with the maximum detected PAH concentrations, result in predicted air concentrations that are almost universally below 30 year health protective air concentrations even though excavation activities are expected to be completed within 6 months. As long as site-perimeter dust concentrations are limited to 50 µg/m^3, PAH concentrations would be protective of residential health and off-site PAH monitoring would not be required. However, on-site samples for PAHs will still be collected for compliance with OSHA standards. Because lead has the potential to exceed NAAQS screening levels, sampling of lead in air is required.

1.5 WIND SPEEDS

Wind direction and speed data collected during previous demolition and excavation activities indicate that winds blow from the west the majority of the time during the construction season, typically ranging from southwest to west-northwest at a mean speed of less than 2 miles per hour (mph), (URS, 2011b). A rose diagram depicting the ambient wind directions is provided in Figure 3.

2.0 DUST SUPPRESSION

The dust suppression measures will be implemented during the course of all work to minimize the generation and potential movement of fugitive dust off the Site in accordance with federal and local regulations. Specifically, control measures are intended to comply with Ventura County Air Pollution Control District (VCAPCD), PM_{10} standard for CAAQS, and the lead standard listed in the NAAQS.

VCAPCD Rule 55

The provisions of this rule apply to any operation, disturbed surface area, or man-made condition capable of generating fugitive dust, including bulk material handling, earth-moving, construction, demolition, storage piles, unpaved roads, track-out, or off-field agricultural operations. The general requirements (including monitoring) applicable to the soil remediation activity are as follows:

- Prevent visible dust from extending beyond the property boundary of the Site. The dust will be monitored using handheld instrumentation capable of collecting "real-time" measurements at the soil excavation, consolidation area, and each monitoring station located around perimeter of the Site.
- Prevent dust emissions with opacity greater than 20 percent. The opacity will be observed continuously by trained field staff in accordance with EPA Method 9.
- Limit the track-out of dust to no more than 25 feet. This rule has limited applicability as the impacted soils will be transported directly from the excavations to an on-site consolidation area (i.e., not a dig-and-haul). The contractor will control vehicle traffic at one common location and will install a sufficient length of gravel (ample supply present at the site based on last year's concrete crushing operations) to prevent track-out issues at the Site. This method was successfully implemented in 2012. The field staff will monitor compliance throughout the project and take appropriate action to address any track-out discrepancy at the Site.

VCAPCD Rule 62.1

The provisions of this rule indicate that no hazardous materials shall be discharged from any source so as to result in concentrations at or beyond the property line in excess of any State, Federal, or local standards or emission limits established. In the absence of specific standards for a particular hazardous material, the airborne concentrations of such materials shall not exceed those levels and time intervals established by the State Division of Industrial Safety or the Occupational Safety and Health Administration.

The DSAMP adequately addresses this rule with analytical testing of site constituents at various monitoring stations along the perimeter of the Site. The data will be evaluated regularly and reported as requested in biweekly reported submitted to the EPA.

VCAPCD Rule 74.29

The provisions of this rule apply to soils that contain gasoline, diesel fuel, or jet fuel. The general requirement (including monitoring) applicable to the soil remediation activity includes preventing the emission of reactive organic compounds (ROCs). The monitoring requirements will be accomplished by measuring volatile constituents (if present) per the regulation using a calibrated PID. Action will only be

required if the measure concentration (above background) is greater than 50 parts per million by volume (PPM).

CAAQS PM_{10}

The CAAQS PM_{10} standard will be used for particulate matter with a diameter of less than ten micrometers (PM10), which is 50 µg/m^3. The dust will be monitored using handheld instrumentation capable of collecting "real-time" measurements at the soil excavation, consolidation area, and each monitoring station located around perimeter of the Site.

NAAQS for Lead

Lead is listed as a criteria pollutant in the NAAQS. The action level is a three month rolling average of 0.15 µg/m^3. A dust monitoring network will be established to verify compliance with the lead active level per the NAAQS.

Dust control measures to be used to achieve these objectives may include, but are not limited to, the following:

- Water exposed areas that have been disturbed at least twice daily to prevent visible dust emissions, except when rain or on-site conditions provide adequate moisture content to prevent visible dust emissions.
- Apply process concrete or gravel, water three times daily, or apply appropriate soil stabilizers (dust control agent or palliative [Soil Sement®]; rate of application will depend on conditions such as work activity and weather, and will also vary according to recommendations by the manufacturer) on all unpaved access roads, parking areas, and staging areas.
- Wet-sweep daily any paved access roads, parking areas, or staging areas.
- Wet-sweep daily public streets if visible soil material is carried from the Site.
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Cover and protect with wattles all loose stockpiled construction materials (including clean soil) that are not being actively used against rain and wind. Active use is defined as materials that are scheduled for use within 14 days.
- Post a publicly visible sign with the project contact name and telephone number for dust complaints. This person shall respond and take corrective action within 48 hours. The VCAPCD phone number shall also be visible to ensure compliance with applicable regulations.
- Perform air monitoring as described in this plan.

Site runoff generated by application of water for dust control shall be minimized and controlled in a manner established by the project Storm Water Pollution Protection Plan (SWPPP).

3.0 AIR MONITORING APPROACH

The primary purpose of the air monitoring and dust suppression program will be to monitor the levels of particulates in the air at and near the Site during remedial activities; and, based on the levels, adjust dust suppression measures to minimize the dust generated during the work. The monitoring will consist of a combination of real-time monitoring for PM_{10} supplemented with laboratory testing. The air monitoring network is shown on Figure 4.

Because dedicated electrical power is unavailable at the Site, the selected equipment is capable of being powered by batteries. The proposed monitoring and sampling equipment includes:

- A Met One E-BAM beta attenuation monitor (BAM) for PM_{10} located at Station #3
- BGI PQ100 federal equivalent method (FEM) PM_{10} and Lead Samplers located on- and off-site
- Sensidyne GilAir personal sampling pumps for PAHs located on-site
- A portable handheld TSI Dust Trak 8532 for PM_{10}
- A Davis Instruments Vantage Pro2 Weather Station

A matrix of the field sampling schedule is provided in Table 3.

The overall monitoring approach was developed to be protective of on-site workers and the residential community adjacent to the Site. As such, the majority of the air monitoring stations is located along the western property boundary of the Site. Air monitoring stations will also be placed within the community near the most sensitive receptors (Boy Scout House, San Cayetano Elementary School, etc.). The data collected during the air monitoring events will be compared to the health risk-based standards and reported on a biweekly basis to EPA. However, the first line of defense will be the application of the dust suppression methods and subsequent dust monitoring as discussed in Section 2.0. If the on-site dust is managed per the plan there should be no significant impact to the residents of Fillmore.

3.1 MONITORING LOCATIONS

Ten (10) monitoring stations will be deployed at the Site (Figure 4). Station #3 will be established at the eastern terminus of Sespe Avenue (adjacent to a Boy Scout House). Station #5 will be located near the southeast property boundary of San Cayetano Elementary School (near Pole Creek). Station #10 will be placed near the southeast property boundary of the Site (200 feet north of the railroad tracks). The remaining stations will be established along the Site property boundary. The sampling locations are spaced approximately 600 feet apart. The air monitoring array provides more than adequate coverage to protect nearby residents and far exceeds the number of air monitoring stations typically deployed at similar sites in California.

3.2 MONITORING AND SAMPLING EQUIPMENT

A description of the sampling equipment and methods is provided in the following sections.

3.2.1 Met One E-BAM Monitor

The Met One E-BAM is a battery-powered monitor, and provides real-time PM_{10} dust concentrations. The E-BAM will be located along the Site perimeter at Station #3, and will operate continuously through the project. The E-BAM will be used to evaluate compliance with the CAAQS PM_{10} screening level (50 µg/m3 over a 24-hour period). The E-BAM monitor was selected because it can provide real-time data through the day (i.e., samples are not submitted for laboratory testing) and it can operate on rechargeable batteries, allowing continuous operation without dedicated site power. Field personnel will visit the monitoring station every two hours (approximately four times per day) during normal working hours (7AM to 5PM).

3.2.2 BGI PQ100 Samplers

The BGI PQ100 samplers will be deployed on- and off-Site. The sampler is an EPA-approved FEM (designation number RFPS-1298-124) for sampling PM_{10} and lead. The sampler pulls air over a 47 millimeter (mm) filter at a rate of approximately 16.7 liters per minute (LPM). The inlet of the air samplers will be set approximately 6 feet above ground surface (ft ags). The filter is then submitted to a fixed laboratory for analysis.

When deployed, the off-Site samplers (Station #3, 5, and 10) will operate for 24-hours to demonstrate compliance with the CAAQS for PM_{10} and the NAAQS for lead. The on-Site samplers (Station #1, 2, 4, 6, 7, 8, and 9) will operate for 8-hours to demonstrate compliance with the OSHA PELs.

In accordance with 40 CFR 50 Appendix J, the samples will be analyzed for PM_{10} and for lead by EPA Method 12.

3.2.3 Sensidyne GilAir5 Sampling Pumps

GilAir® personal sampling pumps (or equivalent) will be set at Station #1, 2, 4, 6, 7, 8, and 9. The pump will draw air through sampling cassettes and sorbent tubes throughout the entire work day at a rate of approximately 2 LPM. The air samples will be analyzed by National Institute for Occupational Safety and Health (NIOSH) Method 5506 for PAHs. The sample results will be compared to OSHA PELs.

The placement of high volume samplers in the nearby community was also evaluated in accordance with the NAAQS (primarily for PAH's). However, the installation is problematic due to the excessive amount of noise that will be generated by the equipment, exceeding noise attenuation prohibitions for the City of Fillmore (Article III – General Regulations, Section 6.04.1805 (14).

Time Period	Maximum Noise Level
7:00 AM – 7:00 PM	68 dBA
7:00 PM – 10:00 PM	50 dBA
10:00 PM – 7:00 AM	45 dBA

The sampling equipment will need to operate continuously for 24 hours and has a decibel (dBA) rating of approximately 80 dBA. We are unaware of any modifications that can be made to reduce the noise nuisance that are also compliant with the sampling methods described in the NAAQS.

3.2.4 TSI Dust Trak 8532

A handheld TSI Dust Trak 8532 will be used to evaluate real-time PM_{10} concentrations during normal working hours (7AM to 5PM). The monitor will be used to collect PM_{10} measurements 50 feet downwind of the excavation areas and at each of the 10 air monitoring stations. An upwind / downwind calculation will be used to incorporate the potential contribution from a nearby agricultural community and would more accurately reflect dust generated from the Site. This is also supported by the fact that the NAAQS design value at the 98^{th} percentile for PM_{10} is 69.3 $\mu g/m^3$ (as referenced in the comment letter from EPA).

The measured upwind concentration will be subtracted from the measured downwind concentration to determine the net ground level (NGL) concentration. The NGL will be compared with the target air concentration (50 $\mu g/m^3$). Significant effort will be applied at the source (i.e., soil excavations, consolidation area, etc.). If dust is detected above the target air concentration 50 feet downwind of an active excavation (sustained for 15 minutes), then additional dust suppression methods (primarily potable water) will be applied by the remedial excavation contractor as directed by URS. Background dust concentrations will be measured using the monitor at the beginning of each day prior to the initiation of any work activities. The background value will be noted on the daily recordkeeping log and used to determine whether dust concentrations require additional actions are required.

For high wind days, the upwind/downwind subtraction will be used to calculate the dust contribution from the site at the property boundary as well as the ten percent contribution above the agency required PM_{10} value of 150 $\mu g/m^3$. For example, the site would be in compliance with the agency requirement assuming the following:

- PM_{10} (upwind) = 200 $\mu g/m^3$
- PM_{10} (downwind) = 220 $\mu g/m^3$
- Contribution from the Site = 20 $\mu g/m^3$
- Total loading at ten percent of 220 $\mu g/m^3$ = 22 $\mu g/m^3$

In addition to the above monitoring requirements, Site activities will conform to VCAPCD requirements (Rule 55), including monitoring requirements related to opacity levels (EPA Method 9) on the Site.

3.2.5 Davis Instruments Vantage Pro2 Weather Station

The on-site weather station is centrally located within the Site, and will record weather data at one minute intervals for the duration of the project (see Figure 4). The wind vane and anemometer will be set approximately 33 ft ags. The remaining sensors (temperature, humidity, and barometer) will be set approximately 6 ft ags. If high wind conditions occur during excavation activities and additional dust suppression methods are not successful at controlling dust as noted above, excavation activity will be suspended. A high wind condition is defined as 25 mph sustained for at least 5 minutes in any 1 hour

period, as measured by an anemometer with a minimum resolution of 1.0 mph. This is consistent with VCAPCD Rule 55. The weather data will be included in the Soil Remedial Action Report submitted to the EPA.

3.2.6 Stockpile Monitoring with Photoionization Detector (PID)

Excavated soils may contain petroleum related constituents that if stockpiled may require vapor monitoring in accordance with VCAPCD Rule 74.29. The rule states that inactive stockpiles must be monitored with a certified organic vapor analyzer, which for this project will be accomplished using a calibrated Photoionization Detector (PID). The rule will be implemented only if an inactive soil stockpile exceeds a vapor concentration of 50 PPM.

It's anticipated this rule will not apply as the impacted soil will be loaded into trucks and transported directly to the consolidation area located within the former Main Waste Pit (consistent with exemption 2.b of Rule 74.29). However, if soil is placed in an inactive stockpile, site personnel will implement vapor monitoring and potential mitigation steps such as vapor suppression and/or cover with heavy duty plastic sheeting per Rule 74.29.

3.3 MONITORING SCHEDULE

The weather station will be installed on or near the Site prior to the start of remedial activities. Both the meteorological station and the dust monitors will be operated throughout the remediation effort (estimated to be approximately 6 months). The proposed work is scheduled to be performed during April 2013 through October 2013. Operations will be conducted Monday through Friday, 7:30 am to 5:30 pm. A detailed sampling schedule is provided in Table 3 and is summarized below:

Task Description	On-Site Monitoring	Off-Site Monitoring
Remove Remaining Infrastructure	• Weekly sampling for lead, PAHs, and PM_{10} (8 hour sample time) • Daily monitoring for PM_{10} at site perimeter throughout the day with portable Dust Trak	• Weekly sampling for lead and PM_{10} (24 hour sample time) • Daily monitoring for PM_{10} at site perimeter throughout the day with portable Dust Trak • Continuous monitoring for PM_{10} with Met One E-BAM
Build Consolidation Area / Remedial Excavations	• Weekly sampling for lead, PAHs, and PM_{10} (8 hour sample time) • Daily monitoring for PM_{10} at excavation areas and site perimeter throughout the day with portable Dust Trak	• Weekly sampling for lead and PM_{10} (24 hour sample time) • Daily monitoring for PM_{10} at site perimeter throughout the day with portable Dust Trak • Continuous monitoring for PM_{10} with Met One E-BAM
Mass Grading	• Monthly sampling for lead, PAHs, and PM_{10} (8 hour sample time) • Daily monitoring for PM_{10} at site perimeter throughout the day with portable Dust Trak	• Weekly sampling for lead and PM_{10} (24 hour sample time) • Daily monitoring for PM_{10} at site perimeter throughout the day with portable Dust Trak • Continuous monitoring for PM_{10} with Met One E-BAM

3.4 PROJECT ORGANIZATION

The Site remediation work (including all air monitoring and dust control activities) will be conducted by URS under contract to Chevron.

Training for Site air monitoring operations will be the responsibility of URS. A copy of this DSAMP will be maintained on the Site or in the field logbook for reference. Manufacturers' manuals also will be provided where needed for reference.

The project organizational structure (discussed in Section 2.0) and an organizational chart of the project team (provided as Figure 3) is included in the *Final Soil Remedial Action Work Plan* (Soil RAWP) dated *February 15, 2013* (URS, 2013).

3.5 PERIMETER DUST MONITORING

Perimeter dust monitoring action levels will alert field staff responsible for operations of the need for better dust suppression or termination of activities at the Site. The action levels for dust are presented in Table 4.

The dust monitoring results will be recorded digitally and validated manually on preformatted data sheets for submittal to Chevron. Upon completion of a round of monitoring, field personnel will evaluate the wind direction (from the on-Site weather station) and calculate the NGL concentration (downwind – upwind). The field personnel will compare the NGL concentration to the action levels and implement corrective actions in accordance with Table 4.

All manual entries are to be made in a legible and orderly manner using permanent ink. Erasures are to be avoided. If an error is made, it is to be crossed out with a single line and the correction immediately made. Cancellations or insertions should be initialed, dated, and explained (in the margin, if possible) by an appropriate notation. All operating details and conditions should be recorded. Each page must be signed and dated by the individual who makes the entry and does the work. Sample field sheets are provided in Appendix A.

The URS Technical Manager will have overall onsite responsibility for monitoring the dust control program; and the RECON Site Superintendent will have onsite responsibility for adjusting dust suppression measures, as necessary, to prevent transport of dust off site.

3.6 DOCUMENTATION AND RECORDS

Thorough documentation of project activities will be conducted during this monitoring effort. The main areas of documentation are field operation and monitoring data records.

Field operation records include field logbooks, operator checklists, and maintenance logbooks. Monitoring data include all air monitoring readings collected through the duration of the remediation project. These records may be submitted to the EPA as part of the Soil Remedial Action Report prepared at the conclusion of the project.

Air monitoring corrective actions must be documented. Corrective action may be taken in response to a quality control (QC) check that does not meet specifications, or any other obvious malfunction in hardware or software. Documentation of any corrective action should show the nature of the deficiency, actions taken, and evidence gathered to verify resolution of the deficiency.

As described in the Soil RAWP (URS, 2013), twenty photographs will be taken each week to document the construction activity occurring at the Site. Photos will also be taken of the monitoring stations and various dust mitigation measures used at the Site.

4.0 QUALITY CONTROL

The QC activities for this project were described in an EPA-approved Quality Assurance Project Plan (QAPP) dated July 2, 2012 (URS, 2012). A revised QAPP is in process. The QC functions for this project are summarized in the following sections. The QAPP was included as Appendix C of the Soil RAWP (URS, 2013).

4.1 QUALITY CONTROL FOR LABORATORY SAMPLES

The QC requirements for air samples are described in Worksheet #12d of the QAPP. Trip (field) blanks will accompany air samples submitted for analytical testing. Duplicate samples (i.e., collocated) will be collected every time a sample is collected from the adjacent primary sampling equipment, which represents a rate of approximately 10 percent. Station #4 was selected as a duplicate sampling station (i.e., collocated sample) due to its close proximity to the consolidation area where the heaviest amount of construction activity (i.e., placement of impacted soil) will occur at the Site. The QC requirements for the laboratory methods are specified in Worksheets 24, 25, 28f, and 28g of the QAPP.

Data verification and validation procedures are defined in Worksheets 34 through 37 of the QAPP. Data verification and validation will be conducted in accordance with *Data Quality Assessment: A Reviewer's Guide, EPA QA/G-9R* dated February 2006 (EPA, 2006a) and *Data Quality Assessment: Statistical Methods for Practitioners, EPA QA/G-9S* dated February 2006 (EPA, 2006b).

4.2 QUALITY CONTROL FOR FIELD INSTRUMENTS

URS will maintain a file of Site information that will include visit logs, air monitoring equipment calibration data, and a maintenance log. Copies of this documentation will be retained in the project files.

The air monitors, samplers, and the weather station will be inspected and calibrated in accordance with the manufacturer's recommendations. Specific tasks for periodic testing, inspection, and maintenance are required for the air monitoring equipment to provide sufficient QC to remain within the manufacturer's operating specifications, and ensure that the project air monitoring goals are met. The maintenance tasks for each type of equipment are summarized below.

- Met One E-BAM PM_{10} Monitor Maintenance – the flow of the monitor will be calibrated monthly with a BGI DeltaCal flow meter. Other maintenance will be conducted as-needed in accordance with manufacturer specifications.
- BGI PQ 100 Samplers – The flow of the samplers will be calibrated each day samples are collected. Calibration will be conducted with a BGI DeltaCal flow meter. Other maintenance will be conducted as-needed in accordance with manufacturer specifications.
- GilAir Sampling Pumps – The flow of the samplers will be calibrated each day samples are collected. Calibration will be conducted with a DryCal DC-Lite flow meter. Other maintenance will be conducted as-needed in accordance with manufacturer specifications.
- Weather Station Maintenance – The weather station does not require calibration according to the equipment manufacturer (Davis Instruments). However, the URS Technical Manager shall inspect

and operable, and that the temperature aspiration fan is operable. An inspection of the signal cables and fastening hardware will also be conducted at this time. Field personnel will visually correlate the reported wind direction to a wind sock installed adjacent to the weather station. A north/south demarcation will be added to the stand to assist field personnel in evaluating wind direction and will be recorded using a similar quadrant method used by the weather station (i.e., north, northeast, east, southeast, south, southwest, west, and northwest). The wind sock manufacturer provides an estimated wind speed based on the sock position as follows:

Sock Position	Approximate Wind Speed (miles per hour)
At Rest	0 – 4
At 45º	4 – 8
At 60	8 – 14
Straight	14 – 18

These activities must be documented. A schedule for all maintenance activities and checklists will be included in the field logbook. A limited number of common consumable parts will be maintained at the Site.

5.0 REFERENCES

17 CCR 70200, California Administrative Code Title 17, §70200, Ambient Air Quality Standards, March 20, 2008.

40 CFR 50, Code of Federal Regulations Title 40, §50, National Ambient Air Quality Standards, November 12, 2008.

ACGIH (American Conference of Governmental Industrial Hygienists, Inc.). 2004. Documentation of the Threshold Limit Values and Biological Exposure Indices. (as cited in DTSC, 2011).

DTSC (Department of Toxic Substances Control). 2011. Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Hazardous Waste Sites and Permitted Facilities. Human Health Risk Assessment (HHRA) Note Number 1. California Department of Toxic Substances Control (DTSC), Office of Human and Ecological Risk (HERO). Issue Date: May 20, 2011.

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EPA, 2011a. EPA Memorandum regarding PM_{10} and $PM_{10-2.5}$ Air Quality Analyses. April 14, 2011.

EPA, 2011b. EPA Superfund Record of Decision Amendment, Pacific Coast Pipeline, EPA ID: CAD980636781, Fillmore, CA. September 2011.

EPA, 2012. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table update. November, 2012.

URS (URS Corporation), 2006. *Soil Sampling Report Phase 1—Former Tank Areas, Pacific Coast Pipeline (PCPL) Superfund Site Fillmore, California,* Revised September 8, 2006.

URS, 2008. Soil Sampling Report, Phase 2 – Historical Operations, PCPL Superfund Site Fillmore, California, April 15, 2008.

URS, 2009. Phase 3—Shallow Soil Investigation: Data Gap Sampling and Human Health Risk Assessment, Pacific Coast Pipeline (PCPL) Superfund Site, Fillmore, California. May 8, 2009.

URS, 2011a. Remedial Investigation / Focused Feasibility Study (RI/FS), Pacific Coast Pipeline (PCPL) Superfund Site, Fillmore, California. January 14, 2011.

URS, 2011b. Soil Delineation Sampling and Infrastructure Removal Report, Pacific Coast Pipeline (PCPL) Superfund Site, Fillmore, California, December 16, 2011.

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URS, 2013. Final Soil Remedial Action Work Plan, Pacific Coast Pipeline (PCPL) Superfund Site, Fillmore, California, February 15, 2013.

Tables

Table 1
Calculated Maximum Potential Concentrations for Lead and PAHs
Texaco PCPL Superfund Site - Fillmore, California

Chemical of Concern	Number of Samples Analyzed	Maximum Detection in Soil (mg/kg)	Average Detection in Soil (mg/kg)	Median Detection in Soil (mg/kg)	Samples With Potential to Exceed Air Screening Level PM10 = 50 µg/m^3		Required Concentration in Soil to Reach Air Screening Level (mg/kg)	Calculated Maximum Detection in Air PM10 = 50 µg/m3 (µg/m^3)	Regulatory AgencyAir Screening Levels (µg/m^3)	Proposed Screening Levels (µg/m^3)
					Number	Percent				
Lead	1902	34,000	251	8	**31**	**1.6**	3,000	1.7	0.15 (NAAQS)	0.15
Benzo(a)anthracene	1584	150	2.5	0.120	0	0	4,000,000	0.0075	200 (OSHA PEL)	200
Benzo(a)pyrene	1584	80	1.8	0.067	0	0	4,000,000	0.0040	200 (OSHA PEL)	200
Benzo(b)fluoranthene	1583	99	1.7	0.072	0	0	NA	0.0050	Not Established	200
Benzo(k)fluoranthene	1583	25	1.3	0.082	0	0	NA	0.0013	Not Established	200
Chrysene	1584	650	3.6	0.098	0	0	4,000,000	0.0325	200 (OSHA PEL)	200
Dibenz(a,h)anthracene	1584	5.8	0.48	0.100	0	0	4,000,000	0.0003	200 (OSHA PEL)	200
Indeno(1,2,3-cd)pyrene	1584	21	0.48	0.040	0	0	NA	0.0011	Not Established	200
Naphthalene	1584	150	4.9	0.170	0	0	180,000	0.0075	9 (OEHHA REL)	9

Notes:
mg/kg = Milligrams per kilogram
µg/m^3 = Micrograms per cubic meter
NA = Not applicable
NAAQS = National ambient air quality standard
PM10 = Particulate matter greater than 10 micrometers
OSHA PEL = Occupational Safety and Health Administration Permissible Exposure Limit
OEHHA REL = California Office of Environmental Health Hazard Assessment Reference Exposure Level

Table 2
Evaluation of PAH Residential RSLs
Texaco PCPL Superfund Site - Fillmore, California

Chemical of Concern	Number of Samples	Detected Concentration in Soil (mg/kg)			Predicted Concentration in Site-Perimeter Dust (µg/m^3)[(a)]			EPA Residential Air RSL
		Maximum	Average	Median	Maximum	Average	Median	(µg/m^3)
Benzo(a)anthracene	1584	150	2.5	0.12	0.0075	0.000125	0.000006	0.0087
Benzo(a)pyrene	1584	80	1.8	0.067	0.004	0.00009	0.00000335	0.00087
Benzo(b)fluoranthene	1583	99	1.7	0.072	0.00495	0.000085	0.0000036	0.0087
Benzo(k)fluoranthene	1583	25	1.3	0.0815	0.00125	0.000065	0.000004075	0.0087
Chrysene	1584	650	3.6	0.098	0.0325	0.00018	0.0000049	0.087
Dibenz(a,h)anthracene	1584	5.8	0.48	0.1	0.00029	0.000024	0.000005	0.0008
Indeno(1,2,3-cd)pyrene	1584	21	0.48	0.04	0.00105	0.000024	0.000002	0.0087
Naphthalene	1584	150	4.9	0.17	0.0075	0.000245	0.0000085	0.072

[(a)] Assuming a maximum onsite dust generation of 50 µg/m^3 at the site perimeter, the chemical of concern concentration is:

$$C_{dust}\left(\frac{\mu g\ COC}{m^3\ air}\right) = C_{soil}\left(\frac{mg\ COC}{kg\ soil}\right) \times 10^{-6}\left(\frac{kg}{mg}\right) \times 50\left(\frac{\mu g\ soil\ [=dust]}{m^3\ air}\right)$$

Shaded cells indicate predicted concentrations lower than the residential air RSL

mg/kg = milligrams per kilogram
µg/m^3 = micrograms per cubic meter
RSL = USEPA's regional screening level for residential air and a continuous long-term (30-year) exposure duration (http://www.epa.gov/region9/superfund/prg/index.html)
EPA = United States Environmental Protection Agency

Table 3
Air Monitoring Plan
Texaco PCPL Superfund Site - Fillmore, California

Task (listed in Order)	Description	Sampling Details	Construction Wokers (On-Site)			Nearby Community (Off-Site)			
			Lead [1]	PAH	PM_{10} [1]	Lead [1] [2]	PAH [2]	PM_{10} [1] [2]	PM_{10}
1	Remove Remaining Infrastructure	Sampling Frequency	wkly	wkly	wkly	wkly	(3)	wkly	Continuous Real Time Data
		Sampling Duration	8 hrs	8 hrs	8 hrs	24 hrs		24 hrs	24 hrs
2	Build Consolidation Area / Remedial Excavations	Sampling Frequency	wkly	wkly	wkly	wkly		wkly	Continuous Real Time Data
		Sampling Duration	8 hrs	8 hrs	8 hrs	24 hrs		24 hrs	24 hrs
3	Mass Grading	Sampling Frequency	monthly	monthly	monthly	monthly		monthly	Continuous Real Time Data
		Sampling Duration	8 hrs	8 hrs	8 hrs	24 hrs		24 hrs	24 hrs
Sampling Equipment			BGI PQ100	Gilair	BGI PQ100	BGI PQ100		BGI PQ100	e-BAM
Number of Stations			7	7	7	3		3	1
Regulatory Limit [4]			50 ($\mu g/m^3$)	Naphthalene - 9 ($\mu g/m^3$) Remaining PAHs - 200 ($\mu g/m^3$)	50 ($\mu g/m^3$)	0.15 ($\mu g/m^3$)		50 ($\mu g/m^3$)	50 ($\mu g/m^3$)

Notes:
- PAH = Polycyclic Aromatic Hydrocarbons .
- PM_{10} = Particulate Matter less than 10 micrometers.
- wkly = weekly (once per week).
- biwkly = biweekly (once every other week).
- monthly = monthly (once every fourth week).
- hrs = hours (time sampling equipment will be operating while collecting a sample).
- PUF = Polyurethane Foam.

- (1) Filter samples will be collected daily at each Station. The samples will be placed on hold and will only be analyzed during periods of high wind (i.e., sustained winds greater than 25 mph).
- (2) Protective measure for the community to demonstrate compliance with the agency approved Dust Suppression and Air Monitoring Plan (DSAMP).
- (3) Sampling not required based on screening assessment described in the DSAMP.
- (4) Concentrations limits are listed as follows:
  - Construction worker limits are based on an eight hour time weighted average (TWA).
    - Lead permissible exposure limit (PEL) established by the California Occupational Safety and Health Administration (Cal/OSHA) - California Code of Regulations (CCR), Title 8, Section 5198. The 10 hr equivalent is 40 $\mu g/m^3$.
    - PM10 standard selected for this project is the more restrictive value listed in CCR, Title 17, Section 70200 versus the 150 $\mu g/m^3$ federal standard listed in the National Ambient Air Quality Standard (NAAQS).
    - PAH standard selected for this project is the more restrictive PEL for Cal/OSHA. Naphthalene does not have a PEL, instead the recommended exposure limit (REL) was used from the Office of Environmental Health Hazard Assessment (OEHHA).

~Benz[a]anthracene	200 (OSHA PEL)
~Benzo[a]pyrene	200 (OSHA PEL)
~Benzo[b]fluoranthene	Not Established
~Benzo[k]fluoranthene	Not Established
~Chrysene	200 (OSHA PEL)
~Dibenz[a,h]anthracene	200 (OSHA PEL)
~Indeno[1,2,3-cd]pyrene	Not Established
~Naphthalene	9 (OEHHA REL)

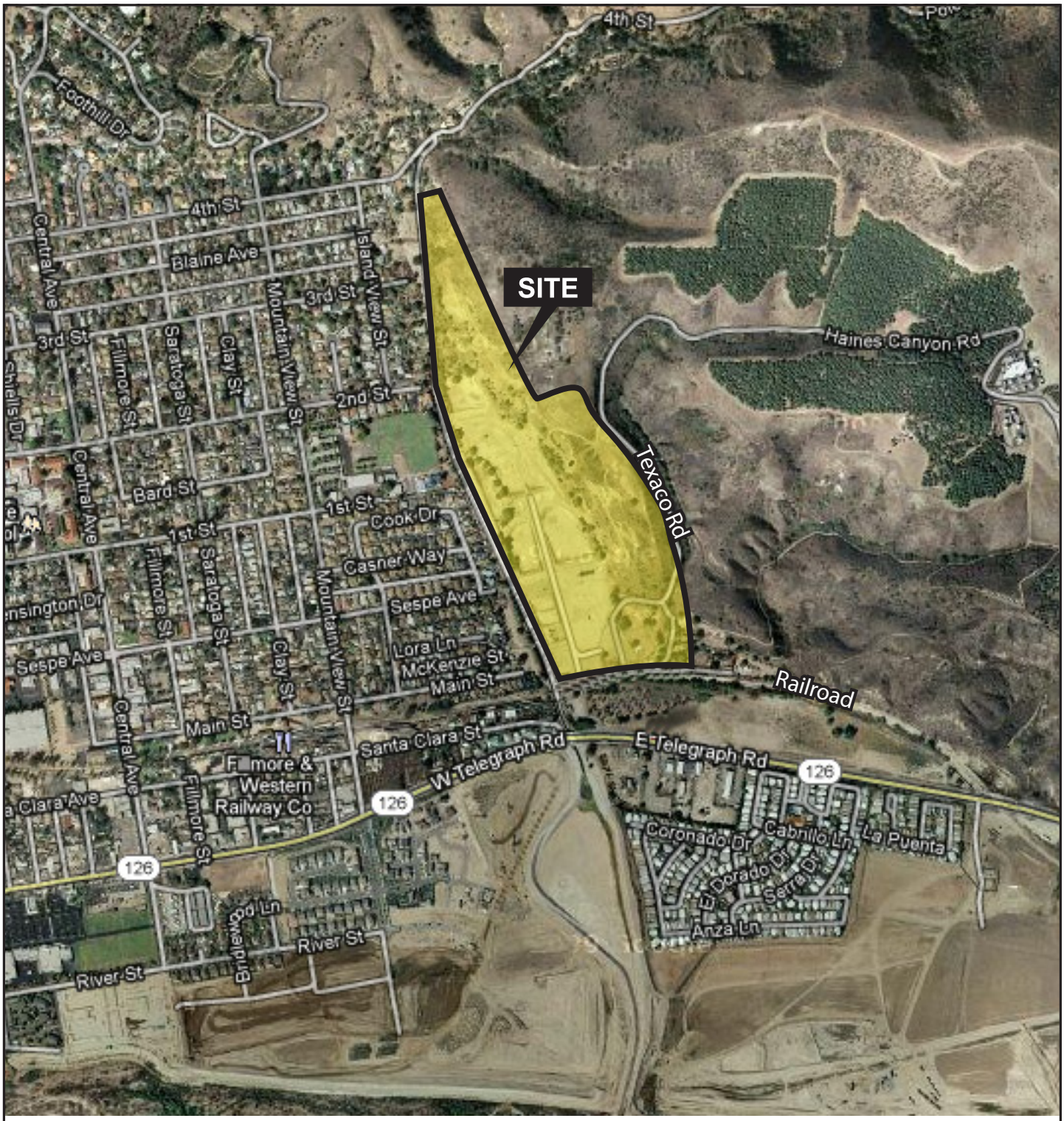
  - Nearby community limits are based on the following:
    - Lead standard from NAAQS. This is a three month rolling average (73 Federal Register Volume 73, Page 66964 dated November 12, 2008).
    - PM10 standard selected for this project is the more restrictive value listed in CCR, Title 17, Section 70200 versus the 150 $\mu g/m^3$ federal standard listed in the National Ambient Air Quality Standard (NAAQS).

Table 4
Action Levels
Texaco PCPL Superfund Site - Fillmore, California

Type	Measurement	Action
Opacity	Dust emissions from site activities with opacity > 20 %.	Implement dust controls measures required by VCAPCD.
Wind Speed	Wind speed > 25 mph. (sustained for 5 min)	Stop work as required by VCAPCD.
PM_{10}	Dust readings measured above background directly downwind of the soil remedy locations > 50 µg/m^3 (at 50 ft). (sustained for 15 min)	Cease Operations. Identify / Mitigate emission source originating from the Site.
	Dust readings measured above background at the property boundary > 50 µg/m^3. (sustained for 5 min)	Cease Operations. Identify / Mitigate emission source originating from the Site.
	Dust readings on high wind days measured above background at the property boundary can be up to ten percent above 150 µg/m^3.	Cease Operations. Identify / Mitigate emission source originating from the Site. If needed, apply Soil Sement® to soil remedy locations currently in progress at the Site.

Notes:
Based on net ground level concentration (downwind - upwind)
µg/m^3 = Micrograms per cubic meter
PM_{10} = Particulate matter greater than 10 micrometers
ft = feet
min = minutes
mph = miles per hour
% = percent
VCAPCD = Ventura County Air Pollution Control District

Figures



SITE LOCATION MAP

Project No.: 29875030	Date: March 2012	Project: Texaco PCPL (Fillmore Refinery)	Figure 1

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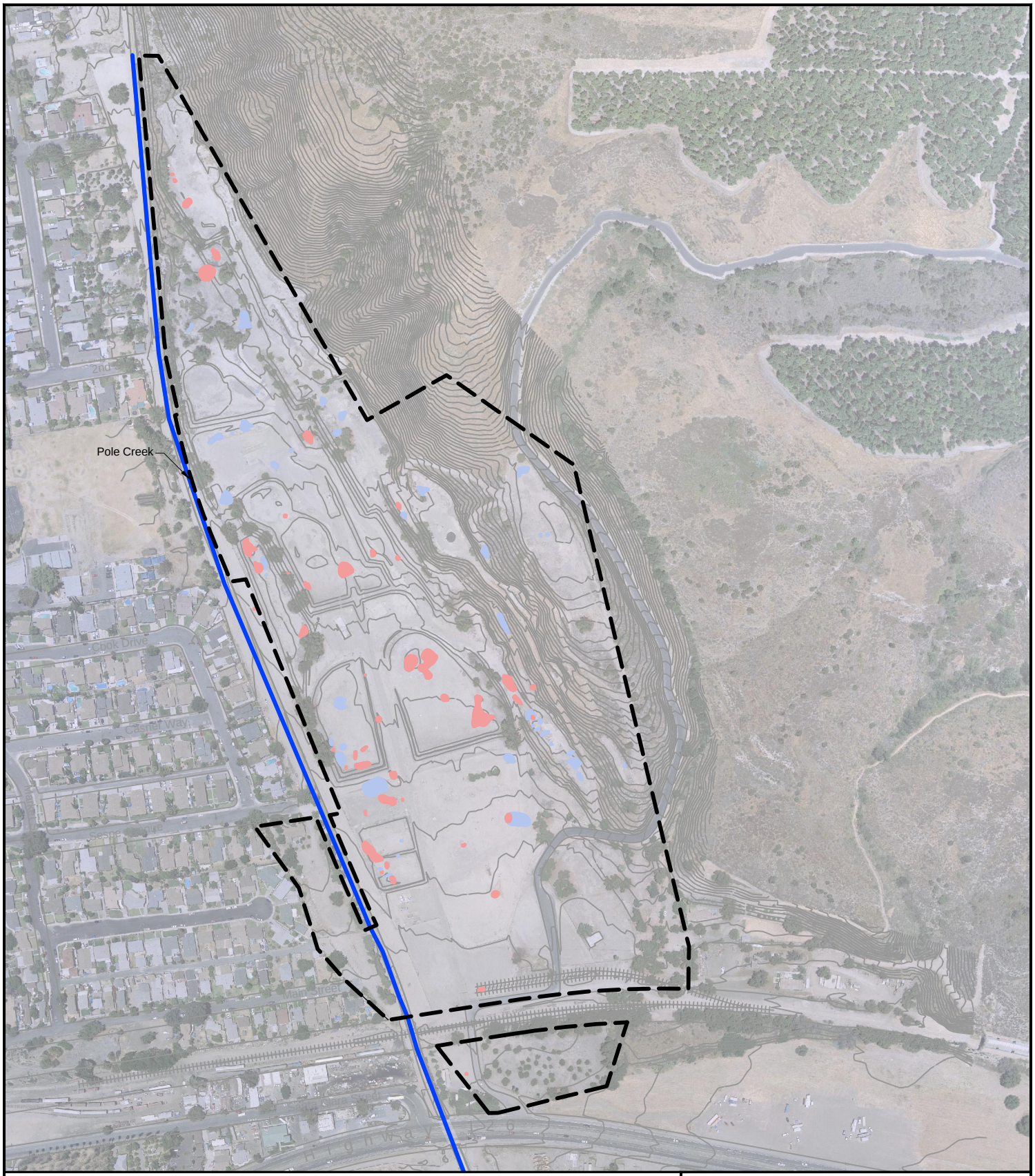
URS



EXPLANATION

- Area Requiring Remediation for Lead
- Area Requiring Remediation for PAHs
- Property Boundary
- Topographic Contour (Contour Interval is 5 feet)

N

0 200 400

SCALE IN FEET

URS

SOIL AREAS REQUIRING EXCAVATION

Proj. No.:	30990336	Date:	MARCH 2012
Project:	TEXACO PCPL FILLMORE, CALIFORNIA	Figure:	2

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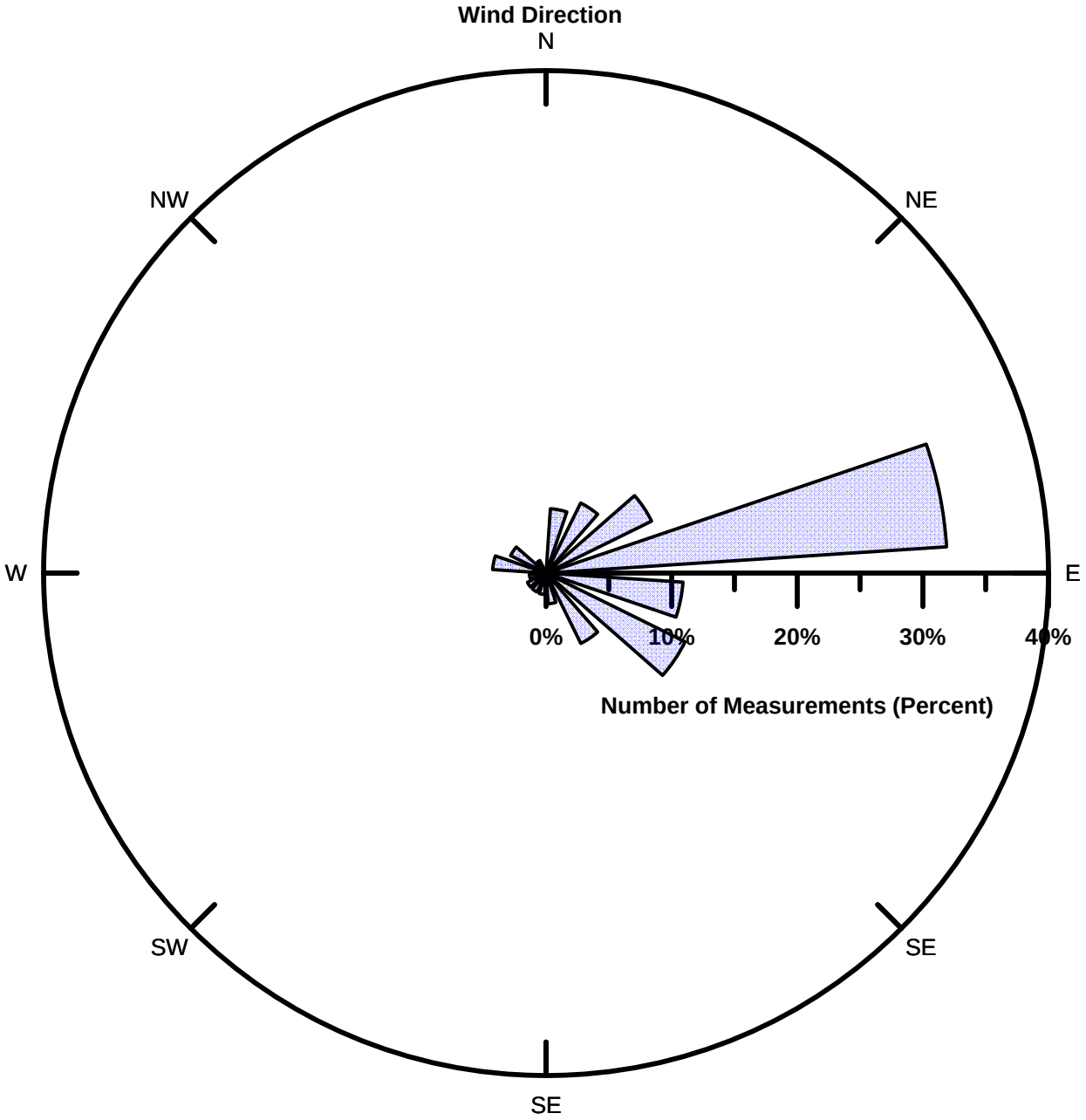
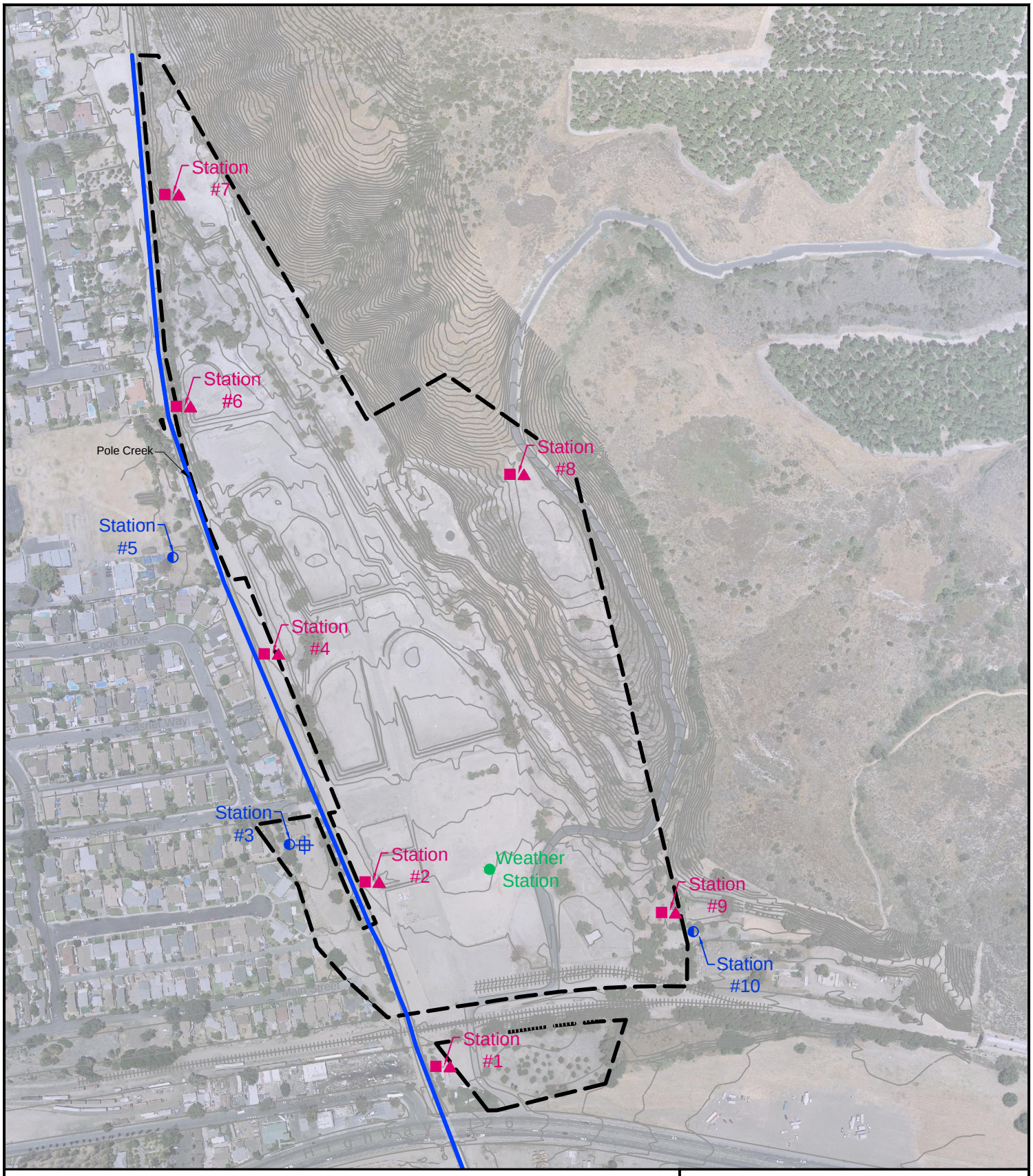
Figure 3
Distribution of Wind Direction
June 2011 - November 2011
June 2012 - November 2012

Texaco PCPL Superfund Site
Fillmore, California





EXPLANATION

- BGI PQ100 PM10 and Lead Sampler (8 hour)
- Gilair PAH Sampler (8 hour)
- E-BAM Real-Time PM10 Monitor (24 hour)
- BGI PQ100 PM10 and Lead Sampler (24 hour)
- Weather Station
- Property Boundary
- Topographic Contour (Contour Interval is 5 feet)

N

0 200 400

SCALE IN FEET

URS

DUST MONITORING AND AIR SAMPLING LOCATIONS

Proj. No.:	30990336	Date:	MARCH 2012
Project:	TEXACO PCPL FILLMORE, CALIFORNIA	Figure:	4

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Appendix A

Sample Field Sheets

Weather Observation Log

Recorded By: _____ **Site:** Texaco PCPL

Date: **Location:** Fillmore, California

Time	Temperature (°F)	Wind Speed (mph)	Wind Direction	Humidity (%)	Barometric Pressure (inHg)	Rainfall (inches)	General Conditions (Sunny, Cloudy, etc.)

Air Monitoring Station Log					
Station ID:			**Air Samples Collected (Yes / No):**		
Recorded By:			***Complete If air samples are collected:***		
Date:			**PAH Sampling Pump Serial Number:**	**PAH Pump Sampling Flow:**	
Dust Monitor Serial Number:			**PAH Sampling Start Time:**	**PAH Sampling End Time:**	
Dust Monitor Model:			**Lead Sampling Pump Serial Number:**	**Lead Sampling Pump Flow:**	
Site:	Texaco PCPL		**Lead Sampling Start Time:**	**Lead Sampling End Time:**	
Location:	Fillmore, California		**Sample Identification:**		
Time	**Dust Monitor Operating (Yes / No)**	**Dust Concentration (mg/m^3)**	**Lead Sampling Pump Operating (Yes / No / NA)**	**PAH Sampling Pump Operating (Yes / No / NA)**	**Comments**

Excavation Dust Log			
Recorded By:		**Site:**	Texaco PCPL
Date:		**Location:**	Fillmore, California
Dust Monitor Serial Number:		**Dust Monitor Model:**	Dust Trak 8532

Time	Background Dust Concentration (mg/m^3)	Dust Concentration 50 feet Downwind of Excavation (mg/m^3)	Comments