STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ADVISORY TEAM SUMMARY REPORT
MEETING DATE: November 14, 2018

ITEM: **7**

SUBJECT: **Union Oil Company of California, Inc., and Novato Properties LLC, for the property located at 7455 Redwood Boulevard, Novato, Marin County** – Adoption of Site Cleanup Requirements

CHRONOLOGY: The Board has not previously considered this item.

DISCUSSION: The Revised Tentative Order (Appendix A) would establish site cleanup requirements (SCR) for a contaminated former Unocal gas station site in Novato. The SCR would set residential cleanup levels and require the named dischargers to prepare and implement a corrective action plan to meet those cleanup levels.

Separate Functions: The Cleanup Team, consisting of Water Board staff overseeing this site, is separated from the Advisory Team staff, who are advising the Board. The Cleanup Team includes Bruce Wolfe, Lisa Horowitz McCann, Tamarin Austin (legal counsel), Stephen Hill, Laurent Meillier, and John Jang. The Advisory Team includes Thomas Mumley, Marnie Ajello (legal counsel), and Celina Hernandez.

Background: The site is located in downtown Novato. Union Oil Company of California (Unocal) operated a gas station at the site from 1953 to 1992. In January 1992, Unocal ceased operations at the site and removed all associated facilities and some polluted soil. In 2005, Unocal merged with Chevron U.S.A., Inc. (Chevron). The site is currently owned by Novato Properties LLC. The City of Novato (City) has initiated a process of rezoning the site from commercial to mixed-use residential. The City's General Plan, including this rezoning, is scheduled for adoption in May 2019, and the Environmental Impact Report for the General Plan is being prepared.

Petroleum-related compounds including Total Petroleum Hydrocarbons as Gasoline (TPH-g), benzene, ethylbenzene, and naphthalene have been released at the site and have impacted soil, groundwater, and soil vapor. Unocal previously conducted some cleanup activities to address petroleum releases at the gas station. The Cleanup Team asserts these activities did not adequately clean up the pollution and recommends additional cleanup.

Tentative Order Comments: The Cleanup Team circulated a tentative order for public comment on May 10, 2018. The comment period ended on June 29, 2018. The Cleanup Team received comments from representatives of Chevron, Chevron's consultant, and the current owner, Novato Properties LLC

(Appendix B) and made some revisions to the tentative order in response to these comments. The Cleanup Team's response to comments is contained in Appendix C. Below is a summary of the key issues raised in the comments received:

Applicability of Low-Threat Closure Policy: Chevron argues that the criteria for low-threat closure under the State Water Board's *Low-Threat Underground Storage Tank Case Closure Policy* (LTC Policy) have been met, and that it is inappropriate for the Cleanup Team to require additional cleanup. The Cleanup Team responds that six of the LTC Policy criteria have not been met. These include: (1) free product removal; (2) secondary source removal; (3) absence of a nuisance; (4) groundwater media-specific criteria; (5) vapor intrusion to indoor air media-specific criteria; and (6) direct contact and outdoor air media-specific criteria. Chevron and its consultant dispute the Cleanup Team's findings on the site's failure to meet these criteria.

Residential versus Commercial Cleanup Levels: Chevron argues that the site is currently zoned for commercial use, the City's proposed rezoning to allow residential use on the second floor and above is uncertain, and therefore, cleanup levels for the site should be based on commercial use. The Cleanup Team responds that residential cleanup levels are more appropriate. Under the LTC Policy, low-threat vapor intrusion criteria apply to sites where buildings for human occupancy are reasonably expected to be constructed in the future. The Cleanup Team asserts that it is reasonable to expect that residential units will be constructed based upon the surrounding property use, the ongoing rezoning process by the City, and Novato Properties LLC's redevelopment plans. The Cleanup Team notes City officials' confirmation that the rezoning process is underway, that there has been no public opposition to rezoning to date, and that rezoning is expected to be completed in May 2019. Ms. Carla Ravipati, the majority owner of Novato Properties LLC, has stated that once the rezoning is finalized, Novato Properties LLC plans to redevelop the site with commercial use on the ground floor and residential use on the upper floors.

The Revised Tentative Order would maintain cleanup levels based on residential use but allows some flexibility for the dischargers to propose alternate soil vapor cleanup levels based on attenuation between the ground-floor commercial use and the upper-floor residential use.

Mitigation Measures versus Cleanup: Chevron argues that the LTC Policy's vapor intrusion criteria allow dischargers to use mitigation measures, such as institutional or engineering controls, in lieu of cleanup. Chevron's consultant asserts that interim remedial measures have reduced previously elevated concentrations of pollutants and that free product and secondary sources have already been removed to the extent practicable. The Cleanup Team disagrees with Chevron regarding the success of interim remedial measures to date and asserts that active cleanup is necessary for the following reasons:

- Significant vadose-zone cleanup is needed to meet soil vapor screening levels in the Policy for both residential and commercial use scenarios.

- *State Water Board Resolution No. 92-49* states that the Regional Water Board shall concur with any investigation and cleanup proposal that has a "*substantial likelihood to achieve compliance, within a reasonable time frame*." Without additional remediation, compliance with the cleanup levels for soil, groundwater, and soil vapor would not occur in a reasonable time. Resolution No. 92-49 prefers *"permanent cleanup and abatement solutions which do not require ongoing maintenance, wherever feasible"*. Cleanup permanently removes the source of contamination of vapor intrusion to indoor air, while vapor mitigation measures require regular, ongoing activities including inspections, maintenance/repairs, and possibly indoor air sampling. The site is currently vacant, and there are no impediments to conduct cleanup work.
- Guidance documents from the Department of Toxic Substances Control and U.S. EPA recommend cleanup action to address vapor intrusion rather than solely relying on vapor mitigation measures.

Timeframe to Conduct Cleanup: Chevron argues that cleanup work should be completed in conjunction with redevelopment activities. The Cleanup Team has changed the Revised Tentative Order to allow cleanup work to be completed in conjunction with redevelopment activities. However, the Revised Tentative Order retains a hard deadline (December 31, 2019) for completion of cleanup regardless of the status of redevelopment, which the Cleanup Team finds is consistent with the reasonable timeframe required by Resolution No. 92-49.

Board Hearing: The Advisory Team anticipates that this item will be contested at the Board meeting by Chevron and possibly others. Each party (including the Cleanup Team) is allotted up to 15 minutes to present evidence, cross-examine witnesses (if warranted), and provide a closing statement at the hearing.

RECOMMEN-DATION: The Advisory Team will have a recommendation following the hearing testimony.

File No. 21-0203 (JMJ)

Appendices: A – Revised Tentative Order
B – Correspondence
C – Cleanup Team Response to Comments

APPENDIX A

REVISED TENTATIVE ORDER

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REVISED TENTATIVE ORDER

ADOPTION OF SITE CLEANUP REQUIREMENTS for:

UNION OIL COMPANY OF CALIFORNIA, INC.
NOVATO PROPERTIES LLC

for the property located at:

7455 REDWOOD BOULEVARD
NOVATO, MARIN COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Regional Water Board), finds that:

1. **Site Location**: The site at 7455 Redwood Boulevard, Novato (Site) (Parcel Number 141-244-03), is in northern downtown Novato, south of Olive Avenue. The less than one-acre Site is bound on the north by a Shell-branded retail fueling station, on the west by a self-service car wash facility, to the south by commercial-retail properties, and to the east by a frontage road. The area immediately surrounding the Site is currently zoned commercial with numerous residential properties as near as 200 feet west of the Site. The City of Novato is in the process of rezoning the commercial area as mixed residential/commercial. According to the City, the draft Environmental Impact Report for the rezoning is expected to be completed in fall 2018. Adoption of the Updated General Plan for this rezoning is expected in early 2019. The current property owner intends to redevelop the Site into mixed commercial/residential once rezoning is complete.

2. **Site History**: Prior to 1953, the Site was undeveloped. The Site operated as a Union Oil Company of California, Inc. (Unocal) service station from approximately 1953 to 1992. In January 1992, Unocal ceased operations at the Site, and the underground fuel storage tanks, waste oil tank (WOT), dispenser islands, and associated piping were removed. Chevron U.S.A., Inc. (Chevron) merged with Unocal in 2005. Chevron never owned or operated the Site or the former Unocal station. The Site was subsequently occupied by an automotive repair facility/moving truck and trailer rental center from 1993 until February 28, 2013. Two hydraulic lifts and an oil-water separator were removed in May 2014 along with all onsite buildings. The Site is currently unoccupied, and no buildings are present at the Site.

   The table below lists property ownership during and after the period when the Unocal station operated at the Site:

Time Period	Property Ownership
2005 – present	Novato Properties LLC (majority ownership Ms. Carla Ravipati)
2000 - 2005	100% Nancy Johnson (mother of Ms. Carla Ravipati) & Mr. Kleve Johnson (father of Ms. Carla Ravipati)

Prior to 2000	100% Mr. Fred Galbreath (father of Ms. Nancy Johnson) who first leased the land to Unocal

3. **Named Dischargers**: Unocal is named as a Discharger because it discharged pollutants to soil and groundwater at the Site. Novato Properties LLC is named as a Discharger because it is the current owner of the property on which there is an ongoing discharge of pollutants, it has knowledge of the discharge or the activities that caused the discharge, and it has the legal ability to control the discharge.

   If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the Site where it entered or could have entered waters of the State, the Regional Water Board will consider adding those parties to this order.

4. **Site Hydrogeology and Hydrology**: The City of Novato is located in the Novato Valley Groundwater Basin of the San Francisco Bay Hydrologic Region. Drinking water is provided to the Site and neighboring properties by the North Marin Water District. Asphalt and artificial fill are present at the Site to a depth of one to five feet below ground surface (bgs). The fill material is composed of fine- to coarse-grained sand and gravel. The fill material is found directly above the native silty sands and gravels. In general, silty to clayey sands and gravels underlie the clay from about 10 to 25 feet (ft) bgs. This sand and gravel unit is the principal groundwater-bearing zone at the Site. However, water has been encountered in two distinct lithologic units at the Site: the artificial fill unit and the sand and gravel unit. Groundwater in the fill material is likely due to localized surface infiltration, dependent on seasonal variations and localized lithologic heterogeneities. Historically, depth to groundwater is shallow, usually less than 7 feet bgs. The direction of groundwater flow is typically to the northeast at an average gradient of about 0.005 ft/ft (since 2012).

5. **Remedial Investigations:** Starting in 1992, Unocal conducted several environmental investigations at the Site including the following:

- Installation of ten groundwater monitoring wells;
- Installation eight permanent soil vapor probes in 2013 and 2014; and
- Conducting the most recent comprehensive subsurface soil investigation in June 2016.

Soil and groundwater samples at and downgradient of the former WOT are defined below detectable concentrations (or within expected background concentrations for the five heavy WOT metals). The groundwater plume extends less than 150 feet downgradient of the Site. In summary, subsurface contamination in soil, groundwater, and soil vapor are adequately defined. Significant soil, groundwater, and soil vapor contamination remains at the Site that presents a potential threat to human health and the environment (see Finding 6).

6. **Low-Threat Closure Evaluation**: In Resolution No. 2012-0016, the State Water Resources Control Board (State Water Board) adopted the *Low-Threat Underground Storage Tank Case Closure Policy* (LTCP) on May 1, 2012. The purpose of the LTCP is to establish consistent statewide case closure criteria for low-threat petroleum UST sites. The LTCP states that *"in the absence of unique attributes of a case or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents, cases that meet the general and media-specific criteria described in this policy pose a low threat to human health, safety or the*

environment and are appropriate for closure [...] *Cases that meet the criteria in this policy do not require further corrective action and shall be issued a uniform closure letter."* The following table compares the Site to the LTCP criteria:

LTCP General Criteria	Meets LTCP Criteria?
a. The unauthorized release is located within the service area of a public water system;	**Yes**
b. The unauthorized release consists only of petroleum;	**Yes**
c. The unauthorized ("primary") release from the UST system has been stopped;	**Yes**
d. Free product has been removed to the maximum extent practicable;	**NO**
e. A conceptual site model that assesses the nature, extent, and mobility of the release has been developed;	**Yes**
f. Secondary source has been removed to the extent practicable;	**NO**
g. Soil or groundwater has been tested for methyl tert-butyl ether (MtBE) and results reported; and	**Yes**
h. Nuisance as defined by Water Code section 13050 does not exist at the Site.	**NO**
Groundwater Media-Specific Criteria	**NO**
Vapor Intrusion to Indoor Air Media-Specific Criteria	**NO**
Direct Contact and Outdoor Air Exposure Media-Specific Criteria	**NO**

The Site does not meet the following LTCP criteria:

General Criteria (d). Free product has been removed to the maximum extent practicable.
Since 2016, groundwater samples from MW-2 have contained up to 0.14 feet of free product. Free product was also detected from borings S-14 and S-24 (approximately six inches of free product). A grab groundwater sample from boring S-24 collected on June 28, 2016, contained 390,000 µg/L of TPH-g, 17,000 µg/L of benzene, and 5,400 µg/l of ethylbenzene. These high concentrations in S-24 indicate a strong likelihood that free product is present at S-24. MW-2, S-14, and S-24 are located near the downgradient northeastern corner of the property. No free product removal was conducted in this area. See Finding 7 for a summary of remediation at the Site, none of which included free product removal from the area encompassing MW-2, S-14, and S-24. This area of free product represents about 10% of the entire Site but about 50% of the Site downgradient of the former dispenser area. California Code of Regulations (CCR) title 23, division 3, chapter 16, section 2655 requires that free product be removed to the maximum extent practicable.

General Criteria (f). Secondary source has been removed to the extent practicable.
The most recent comprehensive subsurface soil investigation was conducted in June 2016. Significant soil contamination remains at up to 6,400 mg/kg of Total Petroleum Hydrocarbon as gasoline (TPH-g), 9.3 mg/kg of benzene, 89 mg/kg of ethylbenzene, and 54 mg/kg of naphthalene. These high concentrations are located beneath the primary sources or adjacent to the primary sources. These high soil concentrations are the source of the residual high concentrations in groundwater at the Site. These high soil concentrations also present a potential threat to human health via direct contact and outdoor air exposure. The residual high concentrations in the soil and groundwater are the source of the high concentrations of contaminants of concern (COCs) detected in soil vapor, presenting a potential threat to human

health via vapor intrusion to indoor air. Because of these residual high concentrations in soil, groundwater, and soil vapor, secondary sources have not been removed to the extent practicable.

General Criteria (h). Nuisance as defined by Water Code section 13050 does not exist at the Site. "Nuisance" at the Site meets all of the following requirements:

(1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.

(2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

(3) Occurs during, or as a result of, the treatment or disposal of wastes

The remaining contamination on the Site constitutes a nuisance. Residual contamination concentrations in soil gas significantly exceed odor thresholds, with the result that future site users are likely to be exposed to offensive odors. Current soil and groundwater contamination at the Site pose a threat to future sites users via future vapor intrusion. This condition is injurious to the health of future site users during and after redevelopment of the Site. The presence of contamination at the Site will adversely affect a considerable number of people (future occupants of the Site and future subsurface workers). The presence of contamination at the Site is the result of the disposal of wastes.

Groundwater-Specific Criteria
The Site does not meet the LTCP groundwater-specific criteria:

Groundwater-Specific Criteria Number	Meets Criteria?
1. Contaminant plume < 100 feet in length; No free product; Nearest supply well or surface water body > 250 feet from plume boundary	NO (due to plume length and free product)
2. Contaminant plume < 250 feet in length; No free product; Nearest supply well or surface water body > 1,000 feet from plume boundary; Dissolved benzene < 3,000 µg/L & dissolved MtBE < 1,000 µg/L	NO (due to free product, nearest well or water body, and benzene/MtBE concentrations)
3. Contaminant plume < 250 feet in length; Free product removed to the maximum extent practicable, may still be present but does not extend offsite; Plume stable or decreasing for > five years; Nearest supply well or surface water body > 1,000 feet from plume boundary; Property owner willing to accept a land use restriction	NO (due to free product, nearest well or water body, and land use restriction)
4. Contaminant plume < 1,000 feet in length; No free product; Nearest supply well or surface water body > 1,000 feet from plume boundary;	NO (due to free product, nearest well or water body, and benzene/MtBE concentrations)

Dissolved benzene < 1,000 µg/L & dissolved MTBE < 1,000 µg/L	
5. The regulatory agency determines based upon current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health, safety, and the environment and that water quality objectives will be achieved within a reasonable time frame	NO (not low threat)

Vapor Intrusion to Indoor Air Risk Specific Criteria. Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air.

Three rounds of soil vapor sampling in 2013 and 2014 contained the following COCs at concentrations significantly above the LTCP vapor intrusion to indoor air criteria for sites without a bio-attenuation zone for both residential and commercial land uses: ethylbenzene and naphthalene and probably benzene. This Site does not have a bio-attenuation zone due to oxygen below 4% in the soil vapor samples. The high concentrations of soil vapor ethylbenzene, naphthalene, and benzene present a potential threat to human health. Methane (a chemical not covered in the LTCP) was detected at up to 40 % in the 3-foot bgs samples. The methane concentrations exceed the upper explosive limit (15% by volume). Methane is a known asphyxiant. Therefore, methane in soil vapor is a potential human health hazard. The following table summarizes the soil vapor information against the LTCP criteria:

Chemical	**LTCP Residential Criteria** (µg/m^3)	**LTCP Commercial Criteria** (µg/m^3)	**Maximum concentration** of soil vapor at the Site (µg/m^3)
Benzene	85	280	< 6,900
Ethylbenzene	1,100	3,600	430,000
Naphthalene	93	310	>11,000

Direct Contact and Outdoor Air Exposure Media Specific Criteria

Soil samples at the Site from 2016 significantly exceed this LTCP criteria and present a potential threat to human health:

Chemical	**Shallow Soil (0-5 ft bgs)**		**Deeper Soil (5-10 ft bgs)**	
	Residential Direct Contact Criteria (mg/kg)	**2016 Maximum Concentrations** (mg/kg)	**Outdoor Air Exposure Criteria** (mg/kg)	**2016 Maximum Concentrations** (mg/kg)
Benzene	1.9	2.4	2.8	9.3
Ethylbenzene	21	47	32	89
Naphthalene	9.7	48	9.7	54

The June 2016 investigation involved analyzing soil samples from 67 locations; 29 of these locations contained concentrations of benzene, ethylbenzene, and/or naphthalene that exceeded the LTCP residential criteria for direct contact and outdoor air exposure.

Significant contamination remains in soil, groundwater, and soil vapor and presents a potential threat to human health and the environment. Active remediation is needed to meet the LTCP closure criteria.

7. **Interim Remedial Measures**: To date, interim remedial activities have included excavating the areas at the former underground storage tank pit, former product piping trenches, and the former WOT pit. In addition, approximately 15,000 gallons of groundwater were removed from the Site during the 1993 excavation activities. In 2001, oxygen releasing compound (ORC®) socks were installed in monitoring wells MW2, MW-3, and MW-5 to enhance biodegradation of the dissolved petroleum hydrocarbons. Two groundwater extraction events were conducted on two monitoring wells in the third and fourth quarters of 2005 from MW-3 and MW-5. In-situ chemical oxidation pilot test injections were conducted for 10 days in April 2011. The LTCP requires the removal of secondary sources to the extent practicable within a year. This contamination has remained at the Site unabated for years. Additional active remediation is needed since prior remedial activities have not sufficiently reduced contaminant concentrations in soil, soil vapor, and groundwater.

   In a letter dated February 27, 2017, Chevron proposed no active remediation and, instead, proposed using engineering and institutional controls to address the residual contamination.

   Active cleanup is necessary for the following reasons:

   - The soil vapor concentrations at the Site indicate a substantial vapor intrusion to indoor air threat to future Site building occupants under both residential and commercial land use scenarios. Significant vadose-zone cleanup is needed to meet soil vapor screening levels in the LTCP for both residential and commercial land use scenarios.

     State Water Board Resolution No. 92-49 states that a Regional Water Board shall concur with any investigation and cleanup and abatement proposal which has a "*substantial likelihood to achieve compliance, within a reasonable time frame*." Without additional remediation, compliance with the cleanup levels for soil, groundwater, and soil vapor (see B. CLEANUP LEVELS below) would not occur in a reasonable time due to the presence of free product and the high concentrations of COCs in soil, groundwater, and soil vapor. Excavation is a cleanup strategy that could be implemented at the Site.

   - State Water Board Resolution No. 92-49 expressly states the Board's preference for *"permanent cleanup and abatement solutions which do not require ongoing maintenance, wherever feasible."* Engineering and institution controls are not a substitute for cleanup work. Cleanup permanently removes the source of contamination of vapor intrusion to indoor air at commercial or residential buildings. To remain effective and to avoid unintended "breaches", vapor mitigation measures require ongoing attention such as: inspections, maintenance/repairs, and indoor air sampling.

   - Guidance documents from the Department of Toxic Substances Control[1] and U.S. EPA[2] recommend cleanup action to address vapor intrusion, rather than solely relying on vapor mitigation measures.

   - Engineering and institutional controls do not address the LTCP criteria for removal of free product and adequate source removal.

   In this case, the reasonable timeframe to complete cleanup and meet low-threat closure criteria is within 90 days after Novato Properties LLC notifies the Regional Water Board and Unocal

[1] http://dtsc.ca.gov/SiteCleanup/Vapor_Intrusion.cfm. See October 2011 Vapor Intrusion Guidance.
[2] See June 2015 OSWER Technical Guidance. https://www.epa.gov/vaporintrusion/technical-guide-assessing-and-mitigating-vapor-intrusion-pathway-subsurface-vapor.

of the City of Novato's final approval of the Site's redevelopment project (e.g., development agreement) or December 31, 2019, whichever is earlier. This reasonable timeframe is based on the following rationale:

- *State Water Board Resolution No. 92-49* states that a Regional Water Board shall concur with any investigation and cleanup and abatement proposal which has a "*substantial likelihood to achieve compliance, within a reasonable time frame*."
- The LTCP requires the removal of secondary sources to the extent practicable within a year. The LTCP also states that even if the secondary source is removed, additional cleanup may be required by the regulatory agency if it is necessary to abate a demonstrated threat to human health such as petroleum vapor intrusion to indoor air. In addition, the LTCP requires meeting the petroleum vapor intrusion media-specific criteria for existing occupied and reasonably expected future occupied buildings.
- The property owner intends to redevelop the Site once rezoning allows residential usage. Conducting active cleanup within 90 days after the final approval by City of Novato of entitlement to develop the Site (e.g., development agreement) or December 31, 2019, whichever is earlier to meet residential criteria prior to or during redevelopment, will protect future occupants of the Site from significant exposure to contaminants via vapor intrusion and direct contact/outdoor exposure.
- The Site is currently vacant. There are no impediments to implementation of cleanup. The LTCP requires vapor intrusion cleanup actions even in the absence of a current exposure pathway such as at a vacant property or unoccupied buildings.

8. **Regulatory Status**: This Site is currently not subject to a Water Code section 13304 cleanup and abatement order. In general, Unocal has complied with past Regional Water Board Water Code section 13267 directive letters (between 1995 – 2017) requiring submittal of technical reports (workplans, investigation reports, implementation reports, and corrective action plans). Unocal submitted two Feasibility Study/Corrective Action Plans (FS/CAPs), in 2007 and 2015, conditionally approved by Regional Water Board staff. However, Unocal is unwilling to implement either of its approved FS/CAPs. A Water Code section 13304 cleanup and abatement order is needed to require cleanup.

9. **Adjacent Sites**: Within 2,000 feet upgradient of the Site, there are two known closed underground storage tank cases: Novato Fire Station at 1000 Grant Avenue and Pini Hardware at 1107 Grant Avenue. There are two downgradient or cross-gradient closed underground storage tank cases within 300 feet of the Site: an operating Shell station at 7473 Redwood Boulevard and an operating Chevron station at 7474 Redwood Boulevard.

10. **Basis for Cleanup Levels**

    a. **General**: State Water Board Resolution No. 68-16, "*Statement of Policy with Respect to Maintaining High Quality of Waters in California,*" applies to this discharge. It requires maintenance of background levels of water quality unless a lesser water quality is consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in exceedance of applicable water quality objectives. This order and its requirements are consistent with Resolution No. 68-16.

State Water Board Resolution No. 92-49, *"Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304"* applies to this discharge. It directs the Regional Water Boards to set cleanup levels equal to background water quality or the best water quality which is reasonable, if background levels cannot be restored. The cleanup levels established in this order are consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of such water, and will not result in exceedance of applicable water quality objectives. Cleanup levels established in this order are greater than background because there is no feasible technology that can cost-effectively cleanup to background levels. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

b. **Beneficial Uses**: The *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, Office of Administrative Law, and U.S. EPA, where required.

Regional Water Board Resolution No. 88-63, *"Sources of Drinking Water"* defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels. Groundwater underlying and adjacent to the Site qualifies as a potential source of drinking water.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Site:

- Municipal and domestic water supply
- Industrial process water supply
- Industrial service water supply
- Agricultural water supply

In a 2003 well survey by Cambria for the adjacent Shell site at 7473 Redwood Boulevard, 19 supply wells were found within a 2,400-foot radius of the Shell site: 6 domestic wells, 5 municipal wells, 3 irrigation wells, 3 industrial wells, and 2 unknown use wells. The nearest supply well was an irrigation well located about 300 feet cross-gradient from the Shell site and the Site.

c. **Basis for Groundwater Cleanup Levels**: The groundwater cleanup levels for the Site are based on applicable water quality objectives and are the more stringent of the U.S. EPA and California primary maximum contaminant levels (MCLs). Cleanup to this level will protect beneficial uses of groundwater and will result in acceptable residual risk to humans.

d. **Basis for Soil Cleanup Levels**: The soil cleanup levels for the Site are based on the LTCP criteria for protection of human health due to direct contact and outdoor air exposure.

e. **Basis for Soil Vapor Cleanup Levels**: The soil vapor cleanup levels for the Site are intended to prevent vapor intrusion into occupied buildings and will result in acceptable residual risk to humans. Cleanup levels for soil vapor are based on the LTCP criteria for protection of human health due to vapor intrusion to residential buildings.

11. **Future Changes to Cleanup Levels**: If new technical information indicates that the established cleanup levels are significantly over-protective or under-protective, the Regional Water Board will consider revising those cleanup levels.

12. **Reuse or Disposal of Extracted Groundwater**: Regional Water Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

13. **Basis for Order**: Water Code section 13304 authorizes the Regional Water Board to issue orders requiring a discharger to cleanup and abate waste where the discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance. As discussed above, these conditions are present here. Water Code section 13267 authorizes the Regional Water Board to issue orders requiring a discharger to submit technical or monitoring program reports where the discharger has discharged, discharges, or who is suspected of having discharged or discharging waste that could affect the quality of water, as is the case here. The burden of preparing the required reports, including costs, bears a reasonable relationship to the need for the report and the benefits to be obtained, namely ensuring the protection of human health and the environment.

14. **California Safe Drinking Water Policy:** It is the policy of the State of California that, every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

15. **California Environmental Quality Act (CEQA):** This action is an order to enforce the laws and regulations administered by the Regional Water Board. As such, this action is categorically exempt from the provisions of CEQA pursuant to CCCR title 13, section 15321.

16. **Notification**: The Regional Water Board has notified the Dischargers and all interested agencies and persons of its intent under Water Code section 13304 to prescribe site cleanup requirements for the discharge and has provided them with an opportunity to submit their written comments.

17. **Public Hearing**: The Regional Water Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to sections 13304 and 13267 of the California Water Code, that the Dischargers (or their agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows and submit technical and monitoring program reports described in the tasks and Self-Monitoring Program below:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner that will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup that will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. CLEANUP LEVELS

1. **Groundwater Cleanup Levels**: The following groundwater cleanup levels shall be met in all wells identified in the attached Self-Monitoring Program:

Constituent	**Concentration** (µg/l)	**Basis***
Benzene	1	MCL
Ethylbenzene	700	MCL
MtBE	5	MCL
TPH-g	300	MCL/odor
Toluene	150	MCL
Total Xylenes	1,750	MCL

*MCL: Lower of the U.S. EPA or Cal/EPA primary or secondary MCL.

MCL/odor: Cal/EPA's secondary MCL for odor is 3.0 units, or 3 times the odor threshold for any constituent. The Regional Water Board's environmental screening levels define the odor threshold for TPH-g at 100 µg/l. See also Bay Basin Table 3-5 (water quality objectives for municipal supply).

2. **Soil Vapor Cleanup Levels**: The following soil vapor cleanup levels shall be met in all onsite vadose-zone soils beneath the proposed building(s) and in a buffer area within 30 feet of the proposed building(s):

Constituent	**Concentration** (µg/m^3)	**Basis***
Benzene	85	LTCP
Ethylbenzene	1,100	LTCP
Naphthalene	93	LTCP

*LTCP criteria for Petroleum Vapor Intrusion to Indoor Air assuming residential land use and no bio-attenuation zone. There is no bio-attenuation zone because soil vapor samples collected in 2013 and 2014 contain oxygen at less than 4%.

3. **Soil Cleanup Levels**: The following soil cleanup levels shall be met in all onsite vadose-zone soils:

Constituent	**Concentration** (mg/kg) (0 – 5 ft bgs)	**Concentration** (mg/kg) (5 – 10 ft bgs)	**Basis***
Benzene	1.9	2.8	LTCP
Ethylbenzene	21	32	LTCP
Naphthalene	9.7	9.7	LTCP

*LTCP criteria for Direct Contact and Outdoor Air Exposure Criteria assuming residential land use

C. TASKS

1. **FEASIBILITY STUDY / CORRECTIVE ACTION PLAN**

COMPLIANCE DATE: December 31, 2018

Submit a technical report acceptable to the Executive Officer containing:

a. Summary of remedial investigation
b. Summary of risk assessment (if necessary)
c. Evaluation of the installed interim remedial actions
d. Feasibility study evaluating alternative final remedial actions
e. Recommended final remedial actions to meet residential cleanup levels
f. Implementation tasks and time schedule

The Feasibility Study/Corrective Action Plan (FS/CAP) must propose remedial work to eliminate unacceptable threats to human health and restoring beneficial uses of water in a reasonable time of within 90 days after final approval by City of Novato of entitlement to develop the Site (e.g., development agreement) or December 31, 2019, whichever is earlier (see Finding 7 for rationale). The FS/CAP must address the full extent of contamination originating at the Site, including any contamination extending beyond the source-property boundary. The FS/CAP must contain all the details of how the final recommended remedial action(s) will be implemented and a time schedule of implementation.

Item d shall include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action.

Items a through d shall be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 C.F.R. § 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code section 25356.1(c), and State Water Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

In item e, the Dischargers may propose alternate residential soil vapor cleanup levels based on additional attenuation between ground-floor commercial use and upper-floor residential use.

2. **FS/CAP IMPLEMENTATION PLAN**

COMPLIANCE DATE: February 28, 2019

Submit a technical report acceptable to the Executive Officer. The report shall include a detailed plan for implementing the chosen remedial action alternative outlined in the FS/CAP. This FS/CAP Implementation Plan must include the following:

- Detailed design of the chosen remedial action alternative;
- Groundwater management plan for managing the discharge of any extracted groundwater during implementation of the FS/CAP;
- Methane Management Plan (to mitigate the potential risk of explosion from methane in the soil vapor during the implementation of the remedy and future redevelopment); and
- CAP implementation schedule.

3. **IMPLEMENTATION OF REMEDIATION SYSTEM**

COMPLIANCE DATE: 90 days after Novato Properties LLC notifies the Water Board and Unocal of the City of Novato's final approval of the Site's redevelopment project or December 31, 2019, whichever is earlier

Complete tasks in the Task 2 implementation plan and submit a technical report acceptable to the Executive Officer documenting their completion. For ongoing actions, such as soil vapor extraction or groundwater extraction, the report shall document system start-up (as opposed to completion) and shall present initial results on system effectiveness (e.g., capture zone or area of influence). Proposals for further system expansion or modification may be included in annual reports (see attached Self-Monitoring Program).

4. **CLEANUP COMPLETION REPORT**

COMPLIANCE DATE: 120 days after Executive Officer approval of the Task 3 report

Submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the approved remedial action plan. The report shall include:

a. Summary of effectiveness in controlling contaminant migration and protecting human health and the environment
b. Comparison of contaminant concentration trends with cleanup levels
c. Comparison of anticipated versus actual costs of cleanup activities
d. Performance data (e.g., groundwater volume extracted, chemical mass removed, mass removed per million gallons extracted)
e. Cost effectiveness data (e.g., cost per pound of contaminant removed)
f. Summary of additional investigations (including results) and significant

modifications to remediation systems
g. Additional remedial actions proposed to meet cleanup levels as applicable including a time schedule

If cleanup levels have not been met and are not projected to be met within a reasonable time, the report shall assess the technical practicability of meeting cleanup levels and discuss one or more alternative cleanup strategies.

5. **VAPOR INTRUSION AND SOIL MITIGATION WORKPLAN**

COMPLIANCE DATE: 60 days after Executive Officer approval of the Task 4 report

If the cleanup does not result in meeting the residential cleanup levels in this Order, submit a technical report acceptable to the Executive Officer consisting of a mitigation workplan for mitigating the pollution above the cleanup levels. These mitigation measures may include vapor intrusion engineering controls, a risk management plan, and a deed restriction.

6. **VAPOR INTRUSION AND SOIL MITIGATION IMPLEMENTATION REPORT**

COMPLIANCE DATE: 60 days after Executive Officer approval of the Task 5 Workplan

Submit a technical report acceptable to the Executive Officer. The report shall include detailed documentation of the implementation of the mitigation workplan.

7. **PROPOSED DEED RESTRICTION**

COMPLIANCE DATE: 90 days after required by the Executive Officer

If the cleanup does not result in meeting the residential cleanup levels in this Order, submit a proposed deed restriction acceptable to the Executive Officer whose goal is to limit onsite occupants' exposure to Site contaminants to acceptable levels. The proposed deed restriction shall prohibit the use of shallow groundwater beneath the Site as a source of drinking water until cleanup levels are met, and prohibit sensitive uses of the Site such as residences and daycare centers outside the cleaned-up area (including the buffer area) unless additional investigation demonstrates that there would be no unacceptable vapor intrusion threat. The proposed deed restriction shall incorporate by reference the risk management plan. The proposed deed restriction shall name the Regional Water Board as a beneficiary and shall anticipate that the Regional Water Board will be a signatory. Novato Properties LLC shall be responsible for this task. The Executive Officer will require this task once active cleanup is completed.

8. **RECORDATION OF DEED RESTRICTION**

COMPLIANCE DATE: 60 days after Executive Officer approval of the proposed deed restriction

Record the approved deed restriction and submit a technical report acceptable to the Executive Officer documenting that the deed restriction has been duly signed by all parties and has been recorded with the appropriate County Recorder. The report shall include a copy of the recorded deed restriction. Novato Properties LLC shall be responsible for this task.

9. **PROPOSED CURTAILMENT**

COMPLIANCE DATE: 60 days prior to proposed curtailment

Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes system closure (e.g., well closure), system suspension (e.g., cease extraction but wells retained), and significant system modification (e.g., major reduction in extraction rates, closure of individual extraction wells within extraction network). The report shall include the rationale for curtailment. Proposals for final closure shall demonstrate that cleanup levels have been met, contaminant concentrations are stable, and contaminant migration potential is minimal.

10. **IMPLEMENTATION OF CURTAILMENT**

COMPLIANCE DATE: 60 days after Executive Officer approval of Task 10

Implement the approved curtailment and submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in the proposed curtailment report.

11. **EVALUATION OF NEW HEALTH CRITERIA**

COMPLIANCE DATE: 90 days after Executive Officer requirement letter

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved remedial action plan of revising one or more cleanup levels in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

12. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: 90 days after Executive Officer requirement letter

Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved remedial action plan and cleanup levels for this Site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be required unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved remedial action plan or cleanup levels.

13. **Delayed Compliance**: If the Dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the

Dischargers shall promptly notify the Executive Officer of the reasons for delay, and the Regional Water Board or Executive Officer may consider revision to this order.

D. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in Water Code section 13050(m).

2. **Good Operation and Maintenance (O&M)**: The Dischargers shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this order.

3. **Access to Site and Records**: In accordance with Water Code section 13267(c), the Dischargers shall permit the Regional Water Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this order.
   b. Access to copy any records required to be kept under the requirements of this order.
   c. Inspection of any monitoring or remediation facilities installed in response to this order.
   d. Sampling of any groundwater or soil that is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Dischargers.

4. **Self-Monitoring Program**: The Dischargers shall comply with the Self-Monitoring Program as attached to this order and as may be amended by the Executive Officer.

5. **Contractor / Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

6. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Regional Water Board using approved U.S. EPA methods for the type of analysis to be performed. Quality assurance/quality control (QA/QC) records shall be maintained for Regional Water Board review. This provision does not apply to analyses that can only reasonably be performed onsite (e.g., temperature).

7. **Document Distribution**: Copies of all correspondence, technical reports and other documents pertaining to compliance with this order shall be provided to the following agencies:

   a. Regional Water Board
   b. City of Novato
   c. County of Marin, Office of Waste Management

   The Executive Officer may modify this distribution list as needed.

   Electronic copies of all correspondence, technical reports, and other documents pertaining to compliance with this order shall be uploaded to the State Water Board's

GeoTracker database within five business days after submittal to the Regional Water Board. Guidance for electronic information submittal is available at: http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal

8. **Reporting of Changed Owner or Operator**: The Dischargers shall file a technical report on any changes in contact information, Site occupancy, or Site ownership associated with the property described in this order. An amendment to this order would be necessary to transfer this order requirements to the new owner.

9. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the Dischargers shall report such discharge to the Regional Water Board by calling the spill and complaint line at: (510) 622-2369.

   A written report shall be filed with the Regional Water Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

   This reporting is in addition to reporting to the California Emergency Management Agency required pursuant to the Health and Safety Code.

10. **Periodic Order Review**: The Regional Water Board will review this order periodically and may revise it when necessary. The Dischargers may request revisions and upon review, the Executive Officer or the Regional Water Board may revise these requirements.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____.

_____
Bruce H. Wolfe
Executive Officer

Failure to comply with the requirements of this order may subject you to enforcement action, including but not limited to: imposition of administrative civil liability under Water Code sections 13268 or 13350 or referral to the Attorney General for injunctive relief or civil or criminal liability.

Attachments: Site Map
Self-Monitoring Program

LEGEND:

- MW-1 GROUNDWATER MONITORING WELL
- IW-1 INJECTION WELL
- VP-1 VAPOR PROBE
- SB-15 SOIL BORING
- HA-16 HAND AUGER SOIL BORING
- SW1-6 SOIL SAMPLE LOCATION
- S3 SOIL BORING LOCATION (STANTEC 2016)
- MW-7 DESTROYED MONITORING WELL
- APPROXIMATE EXTENT OF EXCAVATION
- **PROPERTY BOUNDARY**

NOTES:

1. BASE MAP ADAPTED FROM GOOGLE EARTH OVERLAY AND DRAWINGS FROM ARCADIS.
2. IW-1 WAS CONVERTED TO A MONITORING WELL, AND MW-8A WAS CONVERTED TO AN INJECTION WELL.
3. SB-1* ADVANCED AND SAMPLED IN APRIL 2008 AND SB-1** ADVANCED AND SAMPLED ON JULY 9, 2013.

REFERENCE: THIS MAP IS BASED ON FIGURES FROM ARCADIS AND GOOGLE EARTH PRO.

Stantec

FOR:
CHEVRON SITE NO. 306574
(FORMER UNOCAL NO. 3642)
7455 REDWOOD BOULEVARD
NOVATO, CALIFORNIA

SITE PLAN

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750365	STA/RJO	RC	BW	02/27/17

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM for:

UNION OIL COMPANY OF CALIFORNIA (UNOCAL)
NOVATO PROPERTIES LLC

for the property located at:

7455 REDWOOD BOULEVARD
NOVATO, MARIN COUNTY

1. **Authority and Purpose**: The Regional Water Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Regional Water Board Order No. *R2-2018-XXXX* (site cleanup requirements).

2. **Groundwater and Soil Vapor Monitoring**: The Dischargers shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following schedule:

Well #	Sampling Frequency	Analyses
MW-2, MW-3, MW-5, MW-8A, IW-1 (for groundwater)	Monthly for three months after implementation of the RAP, quarterly thereafter	TPH-g, TPH-d, BTEX, Naphthalene
VP-1 thru VP-8 (for soil vapor)	Monthly for three months after implementation of the RAP, quarterly thereafter	TPH-g, BTEX, Naphthalene, Fixed Gas (O_2, CO_2, CH_4, leak detection compound)

Key: TPH-g = Total Petroleum Hydrocarbon as gasoline
TPH-d = Total Petroleum Hydrocarbon as diesel
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
O_2 = Oxygen
CO_2 = Carbon Dioxide
CH_4 = Methane

The Dischargers shall sample any new monitoring, extraction, injection, and soil vapor wells according to the above schedule and analyze groundwater or soil vapor samples for the same constituents as shown in the above table. The Dischargers may propose changes in the above table. Any proposed changes are subject to Executive Officer approval.

3. **Quarterly Monitoring Reports**: The Dischargers shall submit quarterly monitoring reports to the Regional Water Board no later than 30 days following the end of each

calendar quarter (e.g., report for first quarter of the year due April 30). The first quarterly monitoring report shall be due on January 30, 2019. The reports shall include:

a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the Dischargers' duly authorized representative(s), and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map shall be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the fourth quarterly report each year.

c. Groundwater, Soil Vapor, and Indoor Air Analyses: Groundwater, soil vapor, and indoor air sampling data shall be presented in tabular form, and an iso-concentration map should be prepared for the key contaminants of concern for the vadose zone and each monitored water-bearing zone, as appropriate. The report shall indicate the analytical methods used, detection limits obtained for each reported constituent, and a summary of QA/QC data. A line graph showing historical groundwater, soil vapor, and indoor air sampling results for each sampling location shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report and any measures proposed to address the increases. Laboratory data sheets need not be included in the hard copy of the report submitted to the Regional Water Board. Laboratory data sheets should be included in electronic copies of the report submitted to the Regional Water Board and uploaded to the GeoTracker database.

d. Groundwater Extraction: The report shall include groundwater extraction results in tabular form, for each extraction well and for the Site as a whole, expressed in gallons per minute and total groundwater volume for the quarter. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g., soil vapor extraction), expressed in units of chemical mass per day and mass for the quarter. Historical mass removal results shall be included in the fourth quarterly report each year.

e. Status Report: The quarterly report shall describe relevant work completed during the reporting period (e.g., site investigation, interim/final remedial measures) and work planned for the following quarter.

4. **Violation Reports**: If the Dischargers violates requirements in the Site Cleanup Requirements, then the Dischargers shall notify the Regional Water Board office by telephone as soon as practicable once the Dischargers have knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the Dischargers to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The Dischargers shall notify the Regional Water Board in writing prior to any Site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The Dischargers or their agent(s) shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Regional Water Board upon request.

7. **Self-Monitoring Program Revisions**: Revisions to the Self-Monitoring Program (SMP) may be ordered by the Executive Officer, either on his/her own initiative or at the request of the Dischargers. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

APPENDIX B

CORRESPONDENCE

Stantec

Technical Memo

From: **Jaff Auchterlonie/Marty Minter**
Stantec Consulting Services

File: 185750560 (Chevron Site No. 306574) Date: June 29, 2018

Reference: **Technical Comments on San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB) Tentative Order for Chevron Service Station 306574, 7455 Redwood Boulevard, Novato, California, Marin County, SFBRWQCB File Number 21-0203**

In its May 10, 2018, letter the SFBRWQCB provided a Tentative Order for Adoption of Site Cleanup Requirements (Tentative Order) for the above-referenced site ("Site"). This memo was prepared at the request of the client, Chevron Environmental Management Company (CEMC), in response to technical issues raised by the Tentative Order. The purpose of this memo is to identify specific assertions in the Tentative Order that Stantec does not agree with in addition to providing the basis, data and/or analysis, that support Stantec's position.

1. TENTATIVE ORDER MAKES INCORRECT LAND USE IDENTIFICATION

According to the Tentative Order item 1 – Site location (on page 1 of 17 of the agency letter), the SFBRWQCB identified the land use as follows:

> *"The area immediately surrounding the Site is currently zoned commercial with numerous residential properties as near as 200 feet west of the Site. The City of Novato is in the process of rezoning the commercial area as mixed residential/commercial. According to the City, the draft Environmental Impact Report (EIR) for the rezoning is expected to be completed in the Spring of 2018. The City expects to approve the draft EIR in July 2018 following a comment period and public hearings. Adoption of the Updated General Plan for this rezoning is expected by the end of July 2018. The current property owner intends to redevelop the Site into mixed commercial/residential once rezoning is complete."*
>
> (P.1, Tentative Order.)

However, Stantec spoke with the Vivek Damodran, City Planner for the City of Novato, on June 11, 2018, and was informed that the City's General Plan won't likely be adopted until the end of 2018. Also, a review of the City's General Plan indicated the property, currently zoned commercial, is located within the proposed LU 14: Mixed Use re-zoning area that will allow 2nd and 3rd story residential units above ground floor commercial. Therefore, the ground floor construction for any new developments at the property and in the surrounding area will need to meet commercial standards.

2. SITE DATA SUPPORTS CASE CLOSURE UNDER WATER BOARD'S LOW-THREAT CLOSURE POLICY; RESPONSE TO TENTATIVE ORDER FINDINGS UNDER LOW-THREAT CLOSURE POLICY

Item 6 "Low-Threat Closure Evaluation" of the Tentative Order (page 3 of 17), identifies the following criteria required by the State Water Resources Control Board's Low-Treat Underground Storage Tank Case Closure Policy ("Low-Threat Closure Policy" or "LTCP") as not being satisfied:

- General Criterion (d) - Free product recovery to the maximum extent practicable.
- General Criterion (f) - Secondary source has not been removed to the extent practicable.

Reference: **Technical Comments on San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) Tentative Order for Chevron Service Station 306574, 7455 Redwood Boulevard, Novato, California, Marin County, SFBRWQCB File Number 21-0203**

- General Criterion (h) - Nuisance as defined by Water Code section 13050 does not exist at the Site.
- Groundwater Media-Specific Criteria.
- Vapor Intrusion to Indoor Air Media-Specific Criteria.
- Direct Contact and Outdoor Air Exposure Media-Specific Criteria.

Stantec respectfully disagrees with the SFBRWQCB's evaluation under the LTCP and provides these technical comments in response. The SFBRWQCB's stated reason for issuing the Tentative Order in its May 10, 2018, letter (with the respective section pages referenced in parenthesis) are summarized in italics and bold, where appropriate, and Stantec's responses are presented below. Pertinent figures and tables for the site have been included as attachments to this document.

A. Removal of Free Product

The Tentative Order states:

> **General Criterion (d). Free product has been removed to the maximum extent practicable.** ***Since 2016, groundwater samples from MW-2 has contained up to 0.14 feet of free product. Also, a grab groundwater sample from boring S-24 collected on June 28, 2016, contained 390,000 µg/L of TPH-g, 17,000 µg/L of benzene, and 5,400 µg/l of ethylbenzene. These high concentrations in S-24 indicates a strong likelihood that free product is present at S-24. MW-2 and S-24 are located near the downgradient northeastern property boundary. No free product removal was conducted in this area.***
>
> ***California Code of Regulations (CCR), Title 23, Division 3, Chapter 16, Section 2655 requires that free product be removed to the maximum extent practicable.***
>
> (Page 3 of 17 of the Tentative Order.)

It is Stantec's opinion that free product has been recovered to extent practicable based on the following facts:

Light non-aqueous phase liquid (LNAPL) were reported in soil borings S14 and S24 at 7-8 feet bgs in June 2016 and in well MW-2 in July 2016, following the record drought period that lowered water levels in MW-2. The water levels reported in well MW-2 were the lowest since 1993, the year the well was installed (Stantec, *First Semi-annual 2018 Groundwater Monitoring Report* dated April 18, 2018, **Table 2**). By January 2017, the LNAPL declined to a sheen and the benzene concentration was 620 micrograms per liter (ug/L), indicating the free product has undergone significant biodegradation since the fueling facility was removed in 1992. The water sample collected from MW-2 in January 2018 with visible sheen contained benzene at 380 ug/L and MtBE at 15 ug/L, which are below the LTCP numeric concentrations.

In June 2016, a grab groundwater sample was collected from boring S24 following observation of LNAPL. The water sample reported TPH-GRO at 390,000 ug/L, benzene at 17,000 ug/L, and ethylbenzene at 5,400 ug/L. This grab

groundwater sample was observed to contain silt during collection and likely contained non-dissolved petroleum components (e.g., petroleum-affected soil particles), that likely biased the sample results high.

The State Water Resources Control Board's (SWRCB) *Technical Justification for Groundwater Media-Specific Criteria (final 04-24-2012), Section 2.2 Free Product*: discussed various conditions in which light non-aqueous phase liquid (LNAPL) can exist in the subsurface. It is Stantec's opinion that the following condition; "residual or immobile LNAPL (LNAPL that is trapped in the soil pore spaces by capillary forces and is not mobile)" exists at this Site.

In the case of well MW-2, the product appears to be held in the formation pore space and is only mobilized to move into the void space of the well after groundwater levels were at historic lows. The product is residual or immobile and will not move laterally or vertically within the low permeability clayey formation without a void space (i.e., an open bore hole or well and, it appears, only when groundwater is at historic lows). With water level changes, the free product reduced to a sheen, consequently, recovery of free product locked in the soil pore space is not an LTCP remedial goal for the site. For the same reason, free product is not expected to be present offsite in the street adjacent to well MW-2.

The SWRCB *Technical Justification for Groundwater Plume Lengths, Indicator Constituents, Concentrations, and Buffer Distances (Separation Distances) to Receptors* provides further detail of the criteria that must be satisfied to be considered for closure under LTCP. Per the plume length criteria for Class 2; "*The maximum concentrations of benzene (3,000 ug/l) and MTBE (1,000 ug/l) are conservative indicators that a free product source is not present. These concentrations are approximately 10% and 0.02%, respectively, of the typical effective solubility of benzene and MTBE in unweathered gasoline*. *These concentrations are expected to biodegrade/naturally attenuate to WQOs within a reasonable time frame."* The water sample collected from MW-2 in January 2018 with visible sheen contained benzene at 380 ug/L and MtBE at 15 ug/L, which are below the LTCP numeric concentrations. During the January 2018 event, benzene was detected in only 2 out of the 10 monitoring wells, and MtBE was detected in 3 out of 10 monitoring wells. In addition, benzene and MtBE concentrations at the Site are at historic low concentrations. Please see attached linear regressions.

The SWRCB *Technical Justification for Groundwater Media-Specific Criteria (final 04-24-2012), Section 3.4 Free Product Removal notes*: "… *Free product shall be removed in a manner that minimizes the spread of contamination into previously uncontaminated zones. For most sites, stable or declining concentrations of dissolved constituents in groundwater indicate that petroleum is no longer acting as a significant source."* As seen in the linear regressions and discussed later in plume stability section of this memo, the dissolved benzene and MtBE concentrations are declining in the onsite wells MW-2, MW-3, and MW-5, documenting "petroleum is no longer acting as a significant source".

The SWRCB *Technical Justification for Vapor Intrusion Media-Specific Criteria Section 3.1, Low Concentration Sources (weathered residual in soil and/or dissolved concentrations in groundwater)* provides the following clarification *"…Note: weathered LNAPL is analogous to low concentration sources in cases where the LNAPL is depleted of VOCs"*. This is supported by the BTEX concentrations reported in the water samples collected from MW-2 with the presence of sheen or product.

Based on these facts, it is Stantec's opinion that Low-Threat Closure Policy general criterion d, removal of free product to the maximum extent practicable, has been met and therefore no further remedial action is warranted to address free product.

Reference: **Technical Comments on San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) Tentative Order for Chevron Service Station 306574, 7455 Redwood Boulevard, Novato, California, Marin County, SFBRWQCB File Number 21-0203**

B. Secondary Source Removal

The Tentative Order states:

> **General Criterion (f). Secondary source has been removed to the extent practicable.**
>
> ***The most recent comprehensive subsurface soil investigation was conducted in June 2016. Significant soil contamination remains [up to 6,400 mg/kg of Total Petroleum Hydrocarbon as gasoline (TPH-g), 9.3 mg/kg of benzene, 89 mg/kg of ethylbenzene, and 54 mg/kg of naphthalene]. These high soil concentrations are the source of the residual high concentrations in groundwater at the Site. These high soil concentrations also present a potential threat to human health via direct contact and outdoor air exposure. The residual high concentrations in the soil and groundwater is the source of the high concentrations of contaminants of concern (COCs) detected in soil vapor that presents a potential threat to human health via vapor intrusion to indoor air. Because of these residual high concentrations in soil, groundwater, and soil vapor, secondary source has not been removed to the extent practicable.***
>
> (Page 4 of 17 of the Tentative Order.)

Secondary source removal has been completed previously at the Site by over-excavation following the UST system and dispenser island removal, and subsequent natural source depletion that continued to reduce residual source mass. During the 2016 site assessment, only 2 of 157 soil samples exceeded the LTCP direct contact and outdoor air exposure criteria for only one petroleum constituent, Naphthalene, under commercial land use. This demonstrates that the residual source on the Site is limited in extent and further active remediation is not warranted. The 2016 soil sample concentrations referenced above were collected from the saturated smear zone and are likely biased by groundwater. Soil samples collected in the unsaturated zone and below the smear zone are significantly less than the samples taken in the saturated smear zone as shown in the attached soil table.

In addition, the SWRCB's *Technical Justification for Groundwater Media-Specific Criteria (final 04-24-2012) Section 3.6 Secondary Source Removal* defines secondary source as "petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source". This remedial action was completed at the Site with soil excavation completed in 1992. Two 12,000-gallon USTs, waste oil tank and dispenser island area were excavated. Additional soil was removed from the area underlying the dispenser islands (53 feet x 36 feet x 5 feet) and from around the former waste oil UST (25 feet x 15 feet x 5 feet) (Arcadis FS/CAP Dated February 2015). Although a reported quantity of the petroleum hydrocarbon impacted soil that was removed could not be identified, Stantec estimates approximately 500 cubic yards of soil were removed from the over-excavation activities. In addition, approximately 9,000 gallons of groundwater were removed from the dispenser island excavation and approximately 6,000 gallons of groundwater was removed from the waste oil excavation. Consequently, secondary source has been removed from the primary sources at the Site.

Monitored natural attenuation (MNA) processes have led to the reduction of the benzene and MTBE plumes at the Site and MNA parameter analyses indicate that biodegradation is occurring (ENSR/AECOM, Revised Final Correction Action Plan, September 6, 2007). It should also be noted that the current benzene concentrations in all wells remain below the

historical highs and show a decreasing trend over time. Also, the dissolved groundwater plume downgradient of the site is stable and decreasing (Stantec, First Semi-annual 2018 Groundwater Monitoring Report dated April 18, 2018, **Table 2**).

Based on these facts, it is Stantec's opinion that general criterion f of the LTCP, secondary source removal to the extent practicable, has been met.

C. Nuisance Not Present

The Tentative Order states:

> ***General Criteria (h). Nuisance as defined by Water Code section 13050 does exist at the Site. "Nuisance" at the Site meets all of the following requirements:***
>
> ***(1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.***
>
> ***(2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.***
>
> ***(3) Occurs during, or as a result of, the treatment or disposal of wastes***
>
> ***The remaining contamination on the Site constitute a nuisance. The presence of contamination at the Site impairs the ability of the property owner to utilize the property for unrestricted use, including residential. The presence of contamination at the Site will adversely affect a considerable number of people (future occupants of the Site and future subsurface workers). The presence of contamination at the Site is found as a result of the disposal of wastes.***
>
> (P. 4 of 17 of the Tentative Order.)

The conditions of "nuisance" as defined by Water Code section 13050 do not exist at the Site. Per the SWRCB *Technical Justification for Groundwater Media-Specific Criteria (final 04-24-2012)* nuisance applies only to groundwater. As discussed below, groundwater conditions at the Site meet Class 3 of the Groundwater-Specific Criteria described under the LTCP. Accordingly, groundwater meeting this criteria cannot be deemed a nuisance, as it is permitted by the LTCP. In addition, Site conditions do not "affect at the same time an entire community or neighborhood, or any considerable number of persons", nor are they occurring "during, or as a result of, the treatment or disposal of wastes". Therefore, in Stantec's opinion a nuisance, as defined by Water Code Section 13050, and according to the LTCP, does not exist at the Site.

D. Media-Specific Criteria - Groundwater

The Tentative Order states that the Site does not meet any of the LTCP groundwater-specific criteria. (P.4-5 of 17 of the Tentative Order.) This statement is not supported by site specific facts, and Stantec therefore does not agree with this conclusion. Based on the current site conditions, the site qualifies for multiple Groundwater-Specific Criterias of the LTCP. However, we are presenting the following criterias that site conditions meet:

- Contaminant plume < 250 feet in length;
- Free product removed to the maximum extent practicable, may still be present but does not extend off-site;
- Plume stable or decreasing for > five years;
- Nearest supply well or surface water body > 1,000 feet from plume boundary;
- Dissolved benzene < 3,000 µg/L & dissolved MtBE <1,000 µg/L
- Property owner willing to accept a land use restriction

The following sections summarize the Site-specific information supporting its applicability for Groundwater-Specific Criteria Class 3 of the LTCP as follows:

Contaminant plume < 250 feet in length

As stated by SFBRWQCB in item 5 - Remedial Investigations of the Tentative Order (starting on page 2 of 17 of the agency's letter), "the groundwater plume extends less than 150 feet downgradient of the Site". Stantec is in agreement with that statement given that the dissolved BTEX and MtBE concentrations in the down gradient wells MW-6 and MW-7 in 2013 have either been below the laboratory detection limits or below the BTEX and MtBE Maximum Contaminant Levels (MCLs) since 2001, the dissolved groundwater plume downgradient of the Site is stable and decreasing (Stantec, First Semi-annual 2018 Groundwater Monitoring Report dated April 18, 2018, **Table 2**). Both wells MW-6 and MW-7 are located approximately 105 to 145 feet down gradient of wells MW-2 and MW-5, the dissolved BTEX and MtBE plume length is less than 250 feet in length.

Free product removed to the maximum extent practicable

As discussed above, free product has been removed to the maximum extent practicable. LNAPL has been observed historically only in well MW-2. In addition to the details provided in the previous section, it should be noted that measurable LNAPL was reported in well MW-2 during 3 of 75 monitoring events over 26 years between March 1993 and January 2018 (see attached **Table 2** from Stantec's 1Q18 Groundwater Monitoring report).

Reference: **Technical Comments on San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) Tentative Order for Chevron Service Station 306574, 7455 Redwood Boulevard, Novato, California, Marin County, SFBRWQCB File Number 21-0203**

Plume stable or decreasing for > five years

In the SWRCB's *Technical Justification for Groundwater Media-Specific Criteria (final 04-24-2012), Section 4.1, Low-Threat Groundwater Justification* notes: *"A plume is considered stable or decreasing if a contaminant mass has expanded to its maximum extent: the distance from the release where attenuation exceeds migration. There are two common ways to demonstrate plume stability. The first common way is to routinely observe non-detect values for groundwater parameters in down gradient wells. The second common way is to show stable or decreasing concentration levels in downgradient wells at the distal end of the plume. It should be noted that concentration levels may exhibit fluctuations due to seasonal variations. These variations may be also attributed to man-made factors, including but not limited to: varying sampling techniques, false positive results, or laboratory inconsistencies."*

As discussed above, the concentration trends from down gradient wells clearly demonstrate the plume is stable and declining. The definition above excludes source area wells from the evaluation of plume stability as fluctuations in groundwater levels can result in concentration fluctuations. This is evidenced in the concentration versus time plot for MW-2 where California went through a period of drought followed by a near record water year. This resulted in an increase in both benzene and TPH-GRO concentrations. It should be noted the current benzene concentrations in all wells remain below the historical highs and are decreasing over time (see attached Linear Regressions and **Table 2** from Stantec's 1Q18 Groundwater Monitoring report).

Nearest Supply Well (From Plume Boundary): > 1,000 Feet

Using the Groundwater Ambient Monitoring and Assessment (GAMA) Program available on Geotracker, Stantec confirmed that there were no supply wells within 1,000 feet of the Site. The GAMA search confirmed what was been previously reported in the Arcadis *FS/CAP* dated February 27, 2015. There is a small creek located approximately 900 feet east (cross-gradient) that runs along Railroad Avenue; however, based on the defined plume extent and cross-gradient location, it is highly unlikely that the creek would be impacted by the dissolved-phase plume associated with this Site.

As detailed in the Arcadis *FS/CAP* dated February 27, 2015, drinking water is provided to the Site and neighboring properties by North Marin Water District (NMWD).

Dissolved benzene & dissolved MtBE < 1,000 µg/L

The current dissolved concentration of benzene in wells MW-2, MW-3, and MW-5 are all below 1,000 ug/L (see attached **Table 2** from Stantec's 1Q18 Groundwater Monitoring report). Laboratory analytical results and chromatograms of groundwater sample from MW-2 during the First Quarter 2018 indicate that it is depleted of VOCs.

A review of the benzene and MtBE concentrations in the three onsite wells documents the following:

- MW-2, <1,000 ug/L since 2012 with one exception of Benzene at 1,100 ug/L reported in January 2016.
- MW-3, <1,000 ug/L since 2003 with one exception of Benzene at 3,100 ug/L reported in October 2007.

- MW-5, <1,000 ug/L since August 2001.

Property owner willing to accept a land use restriction

The property owner has indicated their acceptance of a deed restriction and installation of a protective vapor intrusion system in letters dated December 22, 2015 and July 14, 2017, respectively. (see attached letters).

E. Media-Specific Criteria - Vapor Intrusion

The Tentative Order states:

> **Vapor Intrusion to Indoor Air Risk Specific Criteria. Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air.**
>
> ***Three rounds of soil vapor sampling contained the following COCs at concentrations significantly above the LTCP vapor intrusion to indoor air criteria for sites without a bioattenuation zone for both residential and commercial land uses: ethylbenzene and naphthalene and probably benzene. This Site does not have a bioattenuation zone due to oxygen below 4% in the soil vapor samples collected in 2013 and 2014. The high concentrations of soil vapor ethylbenzene, naphthalene, and benzene presents a potential threat to human health. Methane (a chemical not covered in the LTCP) was detected at up to 40 percent in the 3-foot bgs samples. The methane concentrations exceed the upper explosive limit (15% by volume). Methane is a known asphyxiant. Therefore, methane in soil vapor is a potential human health hazard. The following table summarizes the soil vapor information against the LTCP criteria:***

Chemical	**LTCP Residential Criteria** ($\mu g/m^3$)	**LTCP Commercial Criteria** ($\mu g/m^3$)	**Maximum concentration** of soil vapor at the Site ($\mu g/m^3$)
Benzene	85	280	< 6,900
Ethylbenzene	1,100	3,600	430,000
Naphthalene	93	310	3,800

> (Page 5 of 17 of the Tentative Order)

Based on current on-site land use, there is no risk to human health associated with Site soil vapor concentrations, because there are no buildings on Site where vapor intrusion may occur, and nearby buildings are not at risk based on the limited extent of soil and groundwater contamination. Therefore, the Site currently satisfies category b of the petroleum vapor intrusion to indoor air criteria based on this Site-specific risk assessment.

Reference: **Technical Comments on San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) Tentative Order for Chevron Service Station 306574, 7455 Redwood Boulevard, Novato, California, Marin County, SFBRWQCB File Number 21-0203**

If or when the on-site land use changes through property redevelopment, the LTCP allows for sites that do not meet the site- specific conditions to use category c. "*As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health*".

Stantec believes that the potential mitigation measure (vapor barrier) and engineering control (passive venting) would be an appropriate plan and protective of human health from vapor intrusion regardless of the any future zoning or land use change. Furthermore, the current Tentative Order stipulates Chevron must meet LTCP residential vapor intrusion concentrations and does not acknowledge the proposed remedy of soil removal during redevelopment in conjunction with the above proposed vapor barrier. To address potential vapor intrusion, soil excavation would target the vadose zone. The proposed soil removal into saturated zone is based on the residential LTCP direct exposure numeric values and may be adjusted based on final design drawings, as needed.

The agency has expressed concern about the presence of methane in soil at the Site above the lower explosive limit. When evaluating potential methane hazards, concentration, pressure, and volume should be taken into account (ASTM, 2016). The methane observed on Site is associated with methanogenic (methane producing) biodegradation of petroleum hydrocarbons. This typically occurs as a result of depletion of dissolved oxygen (DO), nitrate, ferric iron, manganese, and sulfate in groundwater leading to biodegradation of petroleum hydrocarbon via fermentation and reduction of carbon dioxide to produce methane. This is not likely to result in accumulation of methane in any confined spaces at the ground surface for the following two reasons: (1) The rate of methane production due to methanogenic biodegradation of hydrocarbons is not fast enough to build pressure in the subsurface; and, (2) methane biodegrades rapidly in presence of oxygen (near the ground surface). Also, since the Site is vacant, during an excavation the methane in will be exposed to open air. The vapor density of methane is 0.55 (air = 1), so when shallow soil is excavated, the vadose zone soil will be exposed to open air, and the methane in soil gas will diffuse and degrade.

F. Media-Specific Criteria - Direct Contact and Outdoor Air Exposure

The Tentative Order states:

> **Direct Contact and Outdoor Air Exposure (DC/OAE) Media Specific Criteria**
>
> ***Soil samples at the Site from 2016 significantly exceed this LTCP criteria and presents a potential threat to human health:***

Chemical	Shallow Soil (0-5 ft bgs)		Deeper Soil (5-10 ft bgs)	
	Residential Direct Contact Criteria (mg/kg)	2016 Maximum Concentrations (mg/kg)	Outdoor Air Exposure Criteria (mg/kg)	2016 Maximum Concentrations (mg/kg)
Benzene	1.9	2.4	2.8	9.3

Ethylbenzene	21	47	32	89
Naphthalene	9.7	48	9.7	54

> ***The June 2016 investigation involved analyzing soil samples from 67 locations. 29 of these locations contained concentrations of benzene, ethylbenzene, and/or naphthalene that exceeded the LTCP residential criteria for DC/OAE.***
>
> ***Significant contamination remains in soil, groundwater, and soil vapor and present a potential threat to human health and the environment. Active remediation is needed to meet the LTCP closure criteria.***
>
> (Page 5 of 17 of the Tentative Order)

Current site conditions satisfy the commercial LTCP direct contact and outdoor air exposure criteria, except for two discreet naphthalene detections. It is Stantec's opinion that the LTCP volatilization to outdoor air exposure criteria do not apply to saturated soil, because the emission pathway is precluded. Specifically, there is no exposure pathway as soil samples collected in the saturated zone are unlikely to volatilize into the dry vadose zone. In addition, soil samples are biased by groundwater as they were collected in saturated soil conditions. Therefore, residual contamination exceeding direct contact and outdoor air is limited in extent.

The Site, which is a currently a vacant lot with no receptors, is covered by asphalt. Because secondary source site soils were previously excavated or remain covered, there is no potential for direct human contact with site soil or for off-site wind dispersion of current soil. Therefore, the direct contact exposure pathways (i.e., ingestion, dermal contact, and inhalation of particulates) with soil is incomplete and is expected to remain the same in the future even if the property Site is redeveloped with a new building.

The only potential receptor to have direct contact with soil would be future construction and/or utility worker. All 157 soil samples collected in 2016 are below the direct contact and outdoor air criteria soil screening levels for the utility worker scenario between 0 to 10 ft bgs.

The average depth-to-groundwater is approximately 4.75 feet bgs. It is Stantec's position that the LTCP volatilization to outdoor air exposure criteria do not apply to saturated soil, because the emission pathway is precluded. Excavating deeper into saturated soil is not necessary due to an incomplete exposure pathway.

Nonetheless, soil excavation during redevelopment has been proposed based on LTCP residential direct exposure levels for benzene, ethylbenzene, and naphthalene to an appropriate depth which will likely extend below groundwater levels.

3. REQUIREMENT FOR ACTIVE REMEDIATION

The Tentative Order states:

> **Interim Remedial Measures**
>
> ***To date, interim remedial activities included excavating the areas at the former underground storage tank pit, former product piping trenches, and the former waste oil tank pit. In addition,***

Reference: **Technical Comments on San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) Tentative Order for Chevron Service Station 306574, 7455 Redwood Boulevard, Novato, California, Marin County, SFBRWQCB File Number 21-0203**

> ***approximately 15,000 gallons of groundwater were removed from the Site during the 1993 excavation activities. In 2001, oxygen releasing compound (ORC®) socks were installed in three of the monitoring wells to enhance biodegradation of the dissolved petroleum hydrocarbons. Two groundwater extraction events were conducted on two monitoring wells in the third and fourth quarters of 2005. In-situ chemical oxidation (ISCO) pilot test injections were conducted in April 2011. The LTCP requires the removal of secondary source to the extent practicable within a year. This contamination has remained at the Site unabated for years. Additional active remediation is needed since prior remedial activities have not sufficiently reduced contaminant concentrations in soil, soil vapor, and groundwater.***
>
> ***In a letter dated February 27, 2017, Chevron proposed no active remediation and, instead, proposed using engineering and institutional controls to address the residual contamination***.
>
> (Pages 6 through 8 of 17 of the Tentative Order.)

The SFBRWQCB asserts that active cleanup is necessary at the site for multiple reasons including the following:

- The soil vapor concentrations at the Site indicate a substantial vapor intrusion to indoor air threat to future Site building occupants under both residential and commercial land use scenarios. Significant vadose-zone cleanup is needed to meet soil vapor screening levels in the LTCP for both residential and commercial land use scenarios. (Page 6 of 17 of the Tentative Order.);
- SWRCB Resolution 92-49 indicating the Board's preference for cleanup proposals with a "substantial likelihood to achieve compliance, within a reasonable time frame" and "permanent cleanup and abatement solutions which do not require on-going maintenance, wherever feasible." (Pages 6 and 7 of 17 of the Tentative Order.);
- The LTCP requires the removal of the secondary source to the extent practicable within a year. (Page 7 of 17 of the Tentative Order.);
- The property owner's intent to redevelop the property once the rezoning allows residential usage. (Page 6 and 7 of 17 of the Tentative Order.)

Stantec does not agree with SFBRWQCB's conclusion that interim remedial measures have not achieved remedial objectives. Past remedial efforts consisting of excavation, application of oxygen releasing compounds persulfate and in-situ chemical oxidation injections, and natural attenuation have been conducted at the Site. The results of the 2016 soil assessment indicate that reductions of previously elevated concentrations have been reduced due to the remedial efforts previously implemented. In addition, as shown above, groundwater concentrations have significantly reduced and currently meet LTCP groundwater specific criteria. Furthermore, as stated above secondary source has been removed to the extent practicable.

In addition, excavation of soil (during site redevelopment) exceeding the residential LTCP direct exposure numeric values and installation of a passive vapor barrier beneath the proposed buildings at the property has been proposed.

Stantec recommends that an excavation be completed in conjunction with the redevelopment activities so a separate remedial excavation is not warranted. There are a variety of benefits to execute these activities, including coordination with the City, and minimizing any impacts to the community, . And depending upon future design plans, it may be beneficial to for the developer to access portions of the excavation while they are exposed. Stantec and CEMC will would coordinate these logistical details with the property owner directly.

4. PROPOSED CLEANUP LEVELS

A. Basis for Proposed Cleanup Levels Is Incorrect

The SFBRWQCB justifies its cleanup levels based on reference to the following documents: (1) State Water Board Resolution No. 68-16, *"Statement of Policy with Respect to Maintaining High Quality of Waters in California";* (2) State Water Board Resolution 92-14 *"Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304*"; (3) Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan); and (4) Regional Water Board Resolution 88-63 *"Sources of Drinking Water"*. (Pages 8 through 9 of the Tentative Order)

The Tentative Order also states the following in pertinent part:

> ***Basis for Groundwater Cleanup Levels:*** *The groundwater cleanup levels for the Site are based on applicable water quality objectives and are the more stringent of the EPA and California primary maximum contaminant levels (MCLs). Cleanup to this level will protect beneficial uses of groundwater and will result in acceptable residual risk to humans.*
>
> ***Basis for Soil Cleanup Levels:*** *The soil cleanup levels for the Site are intended to prevent leaching of contaminants to groundwater and will result in acceptable residual risk to humans. The soil cleanup levels are based on the LTCP criteria for protection of human health due to direct contact and outdoor air exposure.*
>
> ***Basis for Soil Vapor Cleanup Levels:*** *The soil vapor cleanup levels for the Site are intended to prevent vapor intrusion into occupied buildings and will result in acceptable residual risk to humans. Cleanup levels for soil vapor are based on the LTCP criteria for protection of human health due to vapor intrusion to residential buildings.*
>
> (Page 9 of 17 of the Tentative Order.)

As detailed in the Arcadis *FS/CAP* dated February 27, 2015, drinking water is provided to the site and neighboring properties by North Marin Water District (NMWD).

Since groundwater is shallow at the Site and is not used for drinking water immediately down gradient of the Site, stipulating a short cleanup time frame to meet groundwater MCLs is unnecessary. Also, groundwater samples from several wells at the adjacent Shell property had laboratory detections of total iron above the secondary MCL for drinking

water in California. Therefore, the shallow groundwater in the vicinity of the Site is currently inappropriate for drinking water (Cambria, Case Closure Summary and Request for Closure, Shell-Branded Service Station, September 26, 2006).

Current site conditions satisfy the commercial LTCP direct contact and outdoor air exposure criteria, except for two discreet naphthalene detections which CEMC proposed to remove during discussions with SFRWQCB earlier this year. In addition, residential soil cleanup requirements will be achieved after the completion of soil excavation which will occur during any redevelopment. This scope has been proposed based on LTCP residential direct exposure levels for benzene, ethylbenzene, and naphthalene to an appropriate depth which will likely extend below groundwater levels.

In addition, the soil removed during any redevelopment activities will assist to meet the cleanup of the soil vapor to meet LTCP residential concentrations. In conjunction with the proposed soil removal, the planned mitigation measure (vapor barrier) and engineering control (passive venting) is protective of human health from vapor intrusion regardless of the zoning and land use, commercial or mixed use.

B. Cleanup Levels Are Inconsistent with LTCP and Use of Engineering Controls

The SFBRWQCB has specified numeric cleanup standards for groundwater, soil, and soil vapor. (Pages 11 through 12 of the Tentative Order.) However, the agency is specifying cleanup to maximum contaminant levels (MCLs) for groundwater when the groundwater on Site currently meets the LTCP criteria. Cleanup Levels for onsite groundwater should be consistent with LTCP cleanup levels.

Soil vapor cleanup levels will be met through the use of mitigation measures and engineered controls.

Soil cleanup levels to LTCP criteria in the vadose zone should be met through the proposed soil excavation during redevelopment. LTCP volatilization to outdoor air exposure criteria do not apply to saturated soil. In addition, the proposed Soil cleanup levels referenced by SFBRWQCB use residential concentrations. However, the correct soil cleanup level should be for commercial as the future rezoning will be mixed use which is commercial at ground level.

5. PROPOSED CLEANUP SCHEDULE IS LIKELY UNACHIEVABLE

The SFBRWQCB's proposed schedule for implementation of the tasks (pages 12 through 14 of the Tentative Order) is unnecessarily aggressive and not likely achievable, given the inherit complexities associated with completing remedial activities at a third-party site. In addition, conceptual drawings received from the property owner on February 3, 2014, do not comply with City of Novato's current commercial zoning designation for the property, but rather assume implementation of potential future zoning of mixed use. Until the property owner has applied for and received appropriate entitlements, and the finalized redevelopment plans are approved by the City and/or County, only assumptions as to the placement of any building on the property can be made. As part of our remedial approach, a specific design for the vapor barrier and passive venting system cannot be provided without approved building design plans. Thus, unless and until there are specific plans for any redevelopment of the Site, no vapor barrier and passive venting system can be appropriately designed.

Reference: **Technical Comments on San Francisco Bay Regional Water Quality Control Board's (SFBRWQCB's) Tentative Order for Chevron Service Station 306574, 7455 Redwood Boulevard, Novato, California, Marin County, SFBRWQCB File Number 21-0203**

Please contact us if you have any questions or want to discuss the contents of this memorandum.

Sincerely,

Stantec Consulting Services Inc.

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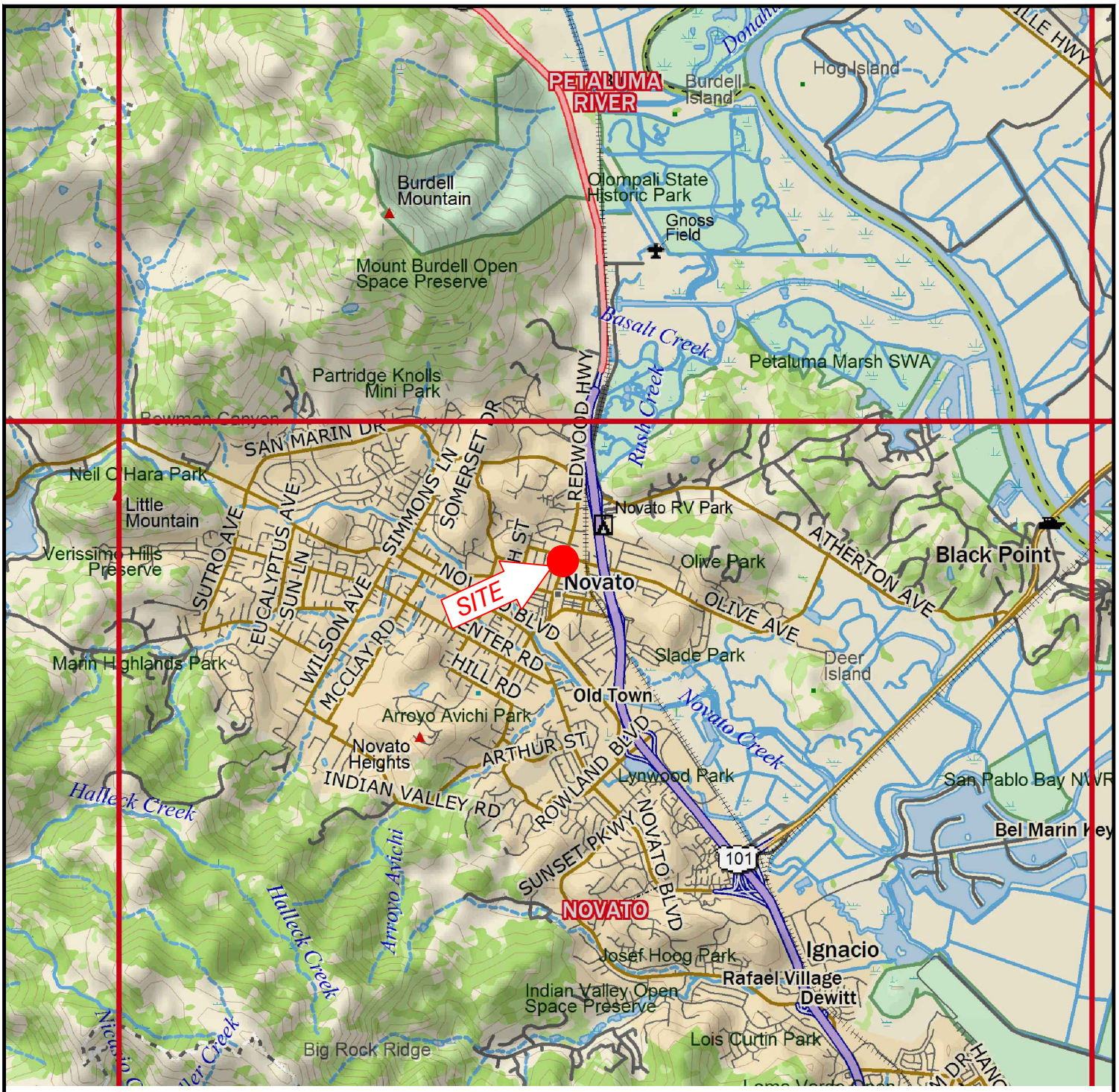
Attachments:
1Q18 Groundwater Report Figures – April 2018
1Q18 Groundwater Report Tables – April 2018
Current and Historical Soil Analytical Results
Linear Regressions for wells MW-2, MW-3, and MW-5
Letters from Property Owner



0 1/2 1
SCALE (MILES)

2000 0 2000 4000 6000
SCALE (FEET)

REFERENCE: DELORME TOPO MAP, NOVATO, CALIFORNIA

Stantec

FOR:
CHEVRON SITE NO. 306574
(FORMER UNOCAL NO. 3642)
7455 REDWOOD BOULEVARD
NOVATO, CALIFORNIA

SITE LOCATION MAP

FIGURE: **1**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750447.716.94041	STA	RC	BW	09/29/16

FILEPATH:M:\CHEVRON\306574\FIG 1_CH 306574_SITE LOCATION MAP.dwg | Layout Tab: 8-5X11 | Drafter: saguinaldo | Sep 29, 2016 at 22:21

LEGEND:

- MW-1 GROUNDWATER MONITORING WELL
- IW-1 INJECTION WELL
- MW-7 DESTROYED MONITORING WELL (DECOMMISSIONED APRIL 2 AND 3, 2013)
- PROPERTY BOUNDARY

NOTES:

1. BASE MAP ADAPTED FROM GOOGLE EARTH OVERLAY AND DRAWINGS FROM ARCADIS.
2. IW-1 WAS CONVERTED TO A MONITORING WELL, AND MW-8A WAS CONVERTED TO AN INJECTION WELL.

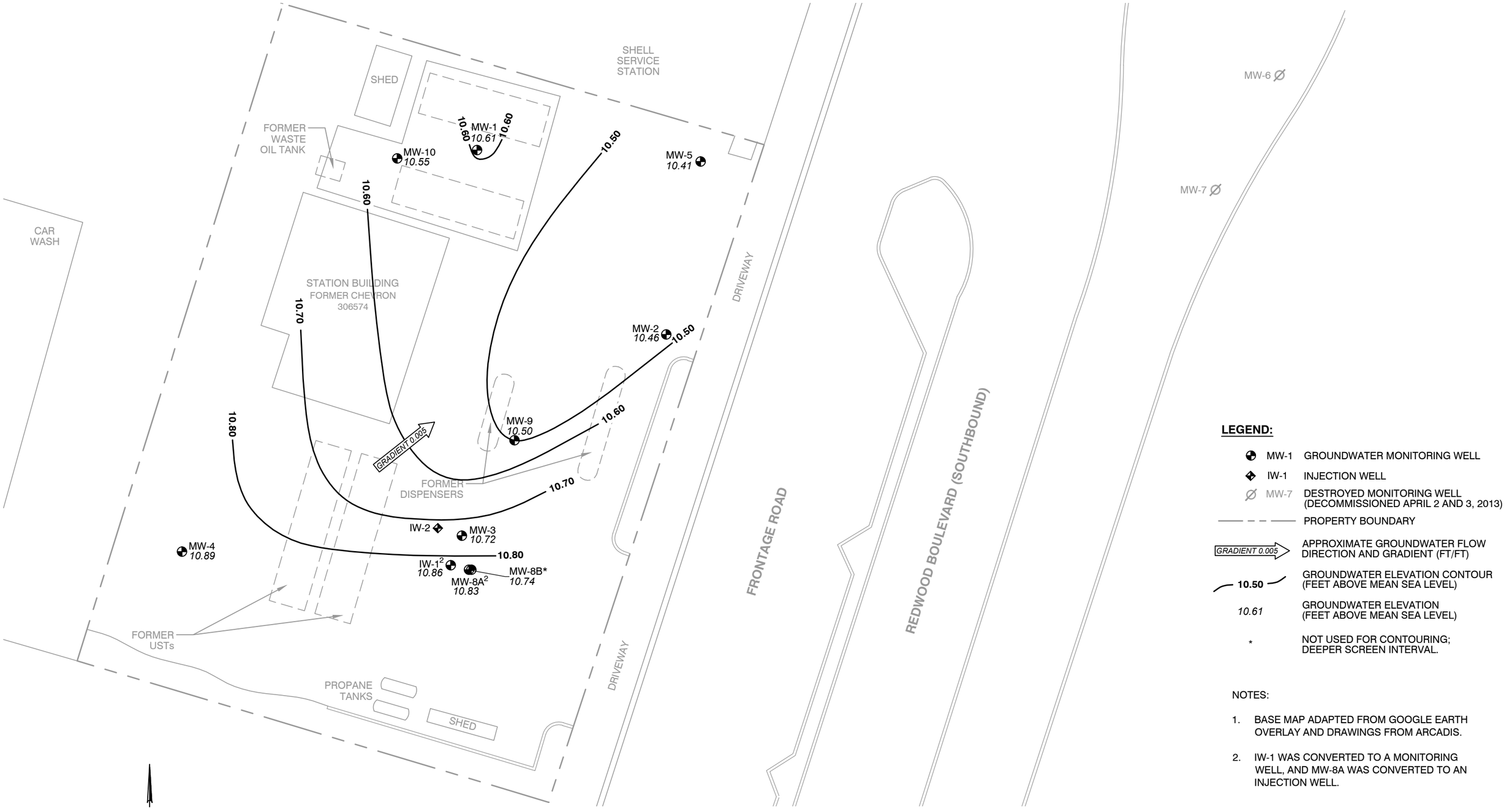
Stantec

FOR:
CHEVRON SITE NO. 306574
(FORMER UNOCAL NO. 3642)
7455 REDWOOD BOULEVARD
NOVATO, CALIFORNIA

SITE PLAN

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750447	STA	RC	JSA	02/12/18



LEGEND:

MW-1	GROUNDWATER MONITORING WELL
IW-1	INJECTION WELL
MW-7	DESTROYED MONITORING WELL (DECOMMISSIONED APRIL 2 AND 3, 2013)
	PROPERTY BOUNDARY
GRADIENT 0.005	APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)
10.50	GROUNDWATER ELEVATION CONTOUR (FEET ABOVE MEAN SEA LEVEL)
10.61	GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
*	NOT USED FOR CONTOURING; DEEPER SCREEN INTERVAL.

NOTES:

1. BASE MAP ADAPTED FROM GOOGLE EARTH OVERLAY AND DRAWINGS FROM ARCADIS.
2. IW-1 WAS CONVERTED TO A MONITORING WELL, AND MW-8A WAS CONVERTED TO AN INJECTION WELL.

Stantec

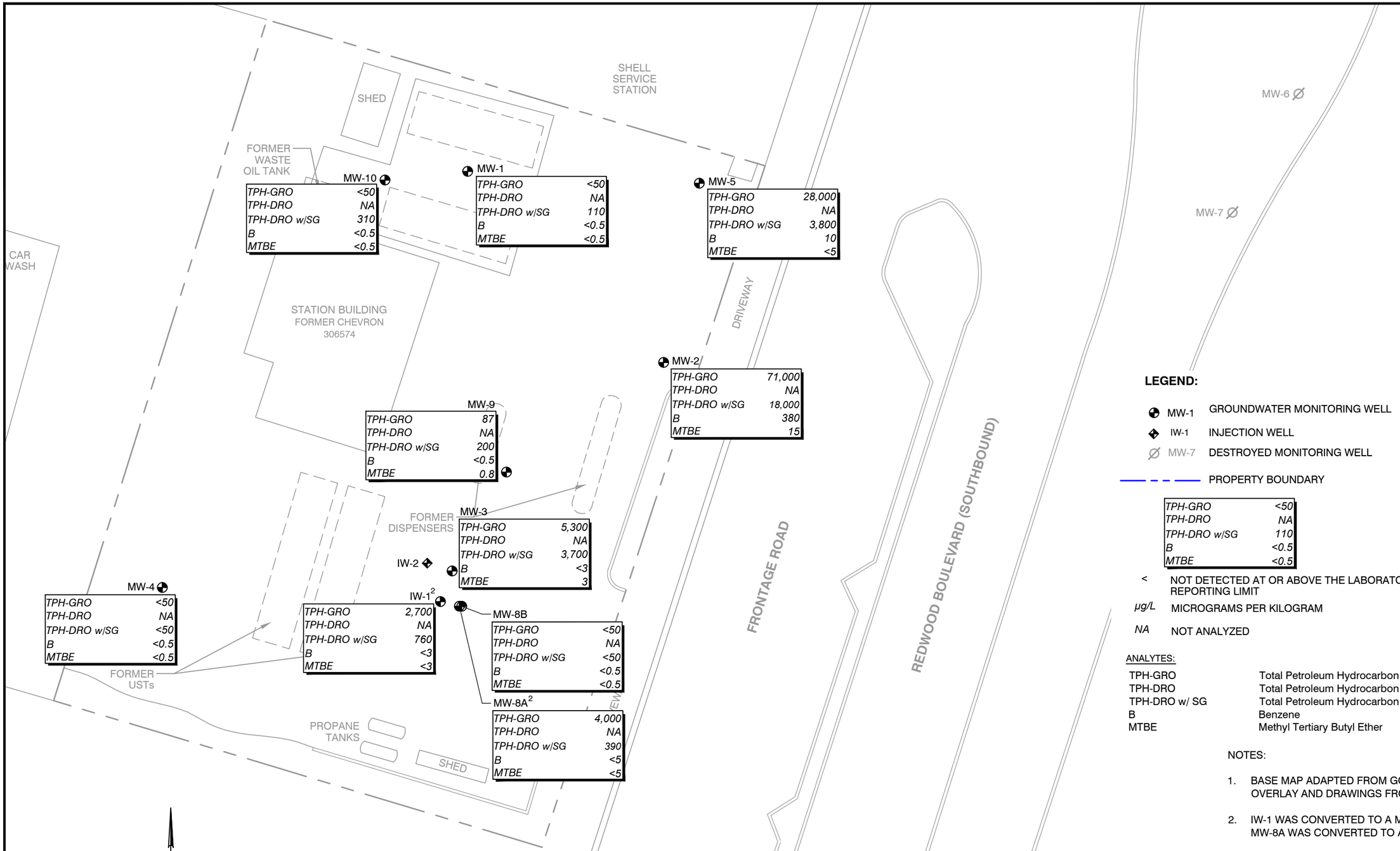
FOR:
CHEVRON SITE NO. 306574
(FORMER UNOCAL NO. 3642)
7455 REDWOOD BOULEVARD
NOVATO, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP FIRST QUARTER 2018

FIGURE: **3**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750447	STA	RC	JSA	02/12/18

FILEPATH:V:\1857\active\Secor\CADD\CHEVRON\306574\2018\1Q 2018\FIG 3_CH306574_GW ELEVATION CONTOUR MAP.dwg | Layout Tab: 11x17 LS | Drafter: SAguinaldo | Mar 14, 2018 at 19:07



LEGEND:

- MW-1 GROUNDWATER MONITORING WELL
- IW-1 INJECTION WELL
- MW-7 DESTROYED MONITORING WELL
- PROPERTY BOUNDARY

TPH-GRO	<50
TPH-DRO	NA
TPH-DRO w/SG	110
B	<0.5
MTBE	<0.5

< NOT DETECTED AT OR ABOVE THE LABORATORY REPORTING LIMIT

µg/L MICROGRAMS PER KILOGRAM

NA NOT ANALYZED

ANALYTES:

TPH-GRO	Total Petroleum Hydrocarbon - Gasoline Range Organics
TPH-DRO	Total Petroleum Hydrocarbon - Diesel Range Organics
TPH-DRO w/ SG	Total Petroleum Hydrocarbon - Diesel Range Organics w/ Silica Gel
B	Benzene
MTBE	Methyl Tertiary Butyl Ether

NOTES:

1. BASE MAP ADAPTED FROM GOOGLE EARTH OVERLAY AND DRAWINGS FROM ARCADIS.
2. IW-1 WAS CONVERTED TO A MONITORING WELL, AND MW-8A WAS CONVERTED TO AN INJECTION WELL.

Stantec

FOR:
CHEVRON SITE NO. 306574
(FORMER UNOCAL NO. 3642)
7455 REDWOOD BOULEVARD
NOVATO, CALIFORNIA

GROUNDWATER CONCENTRATIONS MAP FIRST QUARTER 2018

FIGURE: **4**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185750447	STA	RC	JSA	02/12/18

TABLE 1
Current Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Comments
MW-1	01/04/18		15.79	5.18	0.00	10.61	<50	**110**	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	--	--	
MW-2	01/04/18		15.13	4.67	Sheen	10.46	**71,000**	**18,000**	--	**380**	**930**	**2,900**	**13,000**	**15**	**62**	--	--	--	--	--	--	
MW-3	01/04/18		16.20	5.48	0.00	10.72	**5,300**	**3,700**	--	<3	<3	**370**	**260**	**3**	**41**	--	--	--	--	--	--	
MW-4	01/04/18		16.72	5.83	0.00	10.89	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	--	--	
MW-5	01/04/18		15.14	4.73	0.00	10.41	**28,000**	**3,800**	--	**10**	**5**	**2,300**	**6,100**	<5	<20	--	--	--	--	--	--	
MW-8A	01/04/18		15.80	4.97	0.00	10.83	**4,000**	**390**	--	<5	<5	**330**	**170**	<5	**32**	--	--	--	--	--	--	
MW-8B	01/04/18		15.79	5.05	0.00	10.74	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	--	--	
MW-9	01/04/18		15.58	5.08	0.00	10.50	**87**	**200**	--	<0.5	<0.5	<0.5	<0.5	**0.8**	**13**	--	--	--	--	--	--	
MW-10	01/04/18		16.12	5.57	0.00	10.55	<50	**310**	**500**	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	
IW-1	01/04/18		16.04	5.18	0.00	10.86	**2,700**	**760**	--	<3	<3	**91**	**9**	<3	**17**	--	--	--	--	--	--	
QA	01/04/18		--	--	--	--	<50	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	

Notes:

TPH-GRO = Total petroleum hydrocarbons as gasoline range organics
TPH-DRO = Total petroleum hydrocarbons as diesel range organics
TPH-MRO = Total petroleum hydrocarbons as motor oil range organics
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total xylenes
MTBE = Methyl tert-butyl ether
TBA = Tert-butyl alcohol
DIPE = Di-isopropyl ether
ETBE = Ethyl tert-butyl ether
TAME = Tert-amyl methyl ether
1,2-DCA = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane
TDS = Total Dissolved Solids
D.O. = Dissolved Oxygen; rounded to the nearest tenth
ORP = Oxidation Reduction Potential
SPH = Separate-phase hydrocarbons
TOC = Top of casing (surveyed)
DTW = Depth to Water
GWE = Groundwater Elevation
Calc. GW Elev. = Calculated groundwater elevation = TOC - Depth to Water + 0.75*(Measured SPH Thickness); assuming a specific gravity of 0.75 for SPH
ft-MSL = feet above mean sea level
ft = feet
mg/L = Milligrams per liter
µg/L = Micrograms per liter
< = Analyte was not detected above the specified method reporting limit
-- = Not measured or analyzed

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-1	04/19/93		14.44	4.75	0.00	9.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	04/27/93		14.44	5.04	0.00	9.40	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-1	06/28/93		14.44	5.01	0.00	9.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	07/28/93		14.04	5.21	0.00	8.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	08/28/93		14.04	6.25	0.00	7.79	100	52	--	--	33	ND	1.6	1.3	--	--	--	--	--	--	--	--	--	--	--	
MW-1	09/27/93		14.04	5.37	0.00	8.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	10/26/93		14.04	6.50	0.00	7.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	11/26/93		14.04	5.33	0.00	8.71	ND	ND	--	--	2.6	ND	0.82	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-1	12/21/93		14.04	6.21	0.00	7.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	01/25/94		14.04	4.24	0.00	9.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	02/20/94		14.04	3.32	0.00	10.72	ND	ND	--	--	11	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-1	03/23/94		14.04	4.71	0.00	9.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	04/13/94		14.04	4.84	0.00	9.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	05/12/94		14.04	4.56	0.00	9.48	50	ND	--	--	9.0	0.57	0.62	0.72	--	--	--	--	--	--	--	--	--	--	--	
MW-1	08/23/94		14.04	5.45	0.00	8.59	ND	ND	--	--	2.5	ND	2.5	0.92	--	--	--	--	--	--	--	--	--	--	--	
MW-1	11/22/94		14.04	4.49	0.00	9.55	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-1	02/22/95		14.04	4.16	0.00	9.88	ND	ND	--	--	4.4	ND	1.0	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-1	05/24/95		14.04	4.65	0.00	9.39	ND	ND	--	--	0.72	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-1	08/30/95		14.04	5.33	0.00	8.71	ND	ND	--	--	0.91	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-1	11/03/95		14.04	5.30	0.00	8.74	ND	ND	--	--	5.4	ND	0.75	0.55	29	--	--	--	--	--	--	--	--	--	--	
MW-1	02/01/96		14.04	3.15	0.00	10.89	ND	ND	--	--	6.0	ND	ND	ND	7.1	--	--	--	--	--	--	--	--	--	--	
MW-1	05/03/96		14.04	4.70	0.00	9.34	ND	ND	--	--	ND	ND	ND	ND	59	--	--	--	--	--	--	--	--	--	--	
MW-1	11/08/96		14.04	5.33	0.00	8.71	ND	ND	--	--	1.6	2.2	1.0	5.9	5.0	--	--	--	--	--	--	--	--	--	--	
MW-1	05/08/97		14.04	5.12	0.00	8.92	ND	ND	--	--	7.2	ND	1.3	ND	14	--	--	--	--	--	--	--	--	--	--	
MW-1	11/06/97		14.04	5.38	0.00	8.66	58	ND	--	--	11	ND	1.7	0.60	13	--	--	--	--	--	--	--	--	--	--	
MW-1	04/28/98		14.04	4.45	0.00	9.59	ND	ND	--	--	2.8	ND	ND	ND	46	--	--	--	--	--	--	--	--	--	--	
MW-1	08/31/98		14.04	5.11	0.00	8.93	73	ND	--	--	9.0	ND	0.62	ND	170	--	--	--	--	--	--	--	--	--	--	
MW-1	11/12/98		14.04	4.78	0.00	9.26	ND	ND	--	--	ND	ND	ND	ND	88	--	--	--	--	--	--	--	--	--	--	
MW-1	02/15/99		14.04	4.01	0.00	10.03	ND	ND	--	--	ND	ND	ND	ND	35	--	--	--	--	--	--	--	--	--	--	
MW-1	05/06/99		14.04	4.65	0.00	9.39	ND	63	--	--	0.57	ND	ND	ND	180	--	--	--	--	--	--	--	--	--	--	
MW-1	08/10/99		14.04	5.07	0.00	8.97	ND	78	--	--	ND	ND	ND	ND	120	--	--	--	--	--	--	--	--	--	--	
MW-1	11/10/99		14.04	4.80	0.00	9.24	ND	88	--	--	ND	ND	ND	ND	79	--	--	--	--	--	--	--	--	--	--	
MW-1	02/01/00		14.04	4.04	0.00	10.00	ND	ND	--	--	ND	ND	ND	ND	57	--	--	--	--	--	--	--	--	--	--	
MW-1	05/12/00		14.04	4.49	0.00	9.55	ND	ND	--	--	ND	ND	ND	ND	104	--	--	--	--	--	--	--	--	--	--	
MW-1	08/03/00		14.04	5.09	0.00	8.95	ND	ND	--	--	ND	ND	ND	ND	44	--	--	--	--	--	--	--	--	--	--	
MW-1	11/03/00		14.04	4.72	0.00	9.32	ND	ND	--	--	ND	ND	ND	ND	18	--	--	--	--	--	--	--	--	--	--	
MW-1	02/12/01		14.04	3.61	0.00	10.43	ND	ND	--	--	ND	ND	ND	ND	43	--	--	--	--	--	--	--	--	--	--	
MW-1	05/02/01		14.04	4.02	0.00	10.02	ND	60.8	--	--	ND	ND	ND	ND	208	--	--	--	--	--	--	--	--	--	--	
MW-1	08/08/01		14.04	5.24	0.00	8.80	<50	69	--	--	<0.50	<0.50	<0.50	<0.50	3.4	--	--	--	--	--	--	--	--	--	--	
MW-1	11/05/01		14.04	5.08	0.00	8.96	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	41	--	--	--	--	--	--	--	--	--	--	
MW-1	02/04/02		14.04	4.48	0.00	9.56	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	9.5	--	--	--	--	--	--	--	--	--	--	
MW-1	05/06/02		14.04	4.89	0.00	9.15	<50	<53	--	--	<0.50	<0.50	<0.50	<0.50	40	--	--	--	--	--	--	--	--	--	--	
MW-1	08/05/02		14.04	5.27	0.00	8.77	69	56	--	--	1.1	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	--	--	--	
MW-1	11/04/02		14.04	5.61	0.00	8.43	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	39	--	--	--	--	--	--	--	--	--	--	
MW-1	02/03/03		14.04	4.60	0.00	9.44	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	5.4	--	--	--	--	--	--	--	--	--	--	
MW-1	05/14/03		14.04	4.29	0.00	9.75	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	3.2	--	--	--	--	--	--	--	--	--	--	
MW-1	08/05/03		14.04	5.24	0.00	8.80	74	<50	--	--	<0.50	<0.50	<0.50	<0.50	130	--	--	--	--	--	--	--	--	--	--	
MW-1	10/31/03		14.04	5.31	0.00	8.73	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-1	03/10/04		14.04	4.22	0.00	9.82	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	31	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-1	05/06/04		14.04	5.00	0.00	9.04	310	140	--	--	20	30	18	57	52	--	--	--	--	--	--	--	--	--	--	
MW-1	07/29/04		14.04	5.27	0.00	8.77	<50	<50	--	--	0.77	0.70	<0.50	1.9	110	--	--	--	--	--	--	--	--	--	--	
MW-1	11/04/04		14.04	4.50	0.00	9.54	<50	<50	--	--	0.56	0.67	0.65	<1.0	39	--	--	--	--	--	--	--	--	--	--	
MW-1	02/01/05		14.04	3.99	0.00	10.05	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	2.2	--	--	--	--	--	--	--	--	--	--	
MW-1	05/04/05		14.04	4.61	0.00	9.43	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	6.8	--	--	--	--	--	--	--	--	--	--	
MW-1	08/01/05		15.21	5.01	0.00	10.20	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	2.4	--	--	--	--	--	--	--	--	--	--	
MW-1	12/01/05		15.21	4.52	0.00	10.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	12/29/05		15.21	3.72	0.00	11.49	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	2.8	--	--	--	--	--	--	--	--	--	--	
MW-1	03/15/06		15.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	06/15/06		15.21	5.03	0.00	10.18	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	4.5	--	--	--	--	--	--	--	--	--	--	
MW-1	09/25/06		15.21	5.29	0.00	9.92	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	6.5	--	--	--	--	--	--	--	--	--	--	
MW-1	11/16/06		15.21	4.63	0.00	10.58	<50	<50	--	--	<0.50	<0.50	<0.50	<1.5	7	--	--	--	--	--	--	--	--	--	--	
MW-1	03/15/07		15.21	4.66	0.00	10.55	<50	72	--	--	<0.5	<0.5	<0.5	<1.5	2	--	--	--	--	--	--	--	--	1.0	63	
MW-1	06/15/07		15.21	5.15	0.00	10.06	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	3	--	--	--	--	--	--	--	--	1.6	70	
MW-1	09/14/07		15.21	5.48	0.00	9.73	<50	51	--	--	<0.5	<0.5	<0.5	<1.5	0.7	--	--	--	--	--	--	--	--	1.5	69	
MW-1	12/11/07		15.21	4.79	0.00	10.42	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	0.9	--	--	--	--	--	--	--	--	1.9	69	
MW-1	03/07/08		15.21	4.59	0.00	10.62	<50	78	--	--	<0.5	<0.5	<0.5	<1.5	1	--	--	--	--	--	--	--	--	1.7	156	
MW-1	06/06/08		15.21	5.31	0.00	9.90	<50	160	--	--	<0.5	<0.5	<0.5	<1.5	9	--	--	--	--	--	--	--	--	2.0	166	
MW-1	09/04/08		15.21	5.40	0.00	9.81	<50	81	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.8	160	
MW-1	12/04/08		15.21	5.24	0.00	9.97	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	2	<2	--	--	--	--	--	--	--	1.9	159	
MW-1	03/30/09		15.21	4.98	0.00	10.23	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	1	<2	--	--	--	--	--	--	--	1.7	143	
MW-1	06/01/09		15.21	5.36	0.00	9.85	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	1	<2	--	--	--	--	--	--	--	2.0	169	
MW-1	01/14/10		15.21	4.68	0.00	10.53	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	0.6	<2	--	--	--	--	--	--	--	1.6	135	
MW-1	07/26/10		15.21	5.33	0.00	9.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	01/24/11		15.21	4.76	0.00	11.03	<0.5	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-1	07/11/11		15.79	5.08	0.00	10.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	01/18/12		15.79	5.50	0.00	10.29	<0.5	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-1	07/16/12		15.79	5.48	0.00	10.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	01/21/13		15.79	--	--	--	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-1	10/07/13		15.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	03/10/14		15.79	4.50	0.00	11.29	<50	<50	<50	--	<0.5	<0.5	<0.5	--	<0.5	<5	--	--	--	--	--	--	--	--	--	
MW-1	07/28/14		15.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	01/26/15		15.79	4.88	0.00	10.91	<50	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--	--	--	
MW-1	08/10/15	NSP	15.79	5.79	0.00	10.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Monitor Only
MW-1	01/25/16		15.79	3.89	0.00	11.90	<50	<50	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	291000	--	--	
MW-1	07/18/16	NSP	15.79	5.46	0.00	10.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Monitor Only
MW-1	01/27/17		15.79	3.63	0.00	12.16	<50	--	490	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-1	07/03/17	NSP	15.79	5.15	0.00	10.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Monitor only
MW-1	**01/04/18**		**15.79**	**5.18**	**0.00**	**10.61**	**<50**	**--**	**110**	**--**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-2	04/19/93		13.67	4.09	0.00	9.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	04/27/93		13.67	4.40	0.00	9.27	12,000	650	--	--	2,200	1,800	210	1,400	--	--	--	--	--	--	--	--	--	--	--	
MW-2	06/28/93		13.38	4.44	0.00	8.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	07/28/93		13.38	4.64	0.00	8.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	08/28/93		13.38	5.71	0.00	7.67	64,000	2,100	--	--	10,000	8,000	1,500	4,600	--	--	--	--	--	--	--	--	--	--	--	
MW-2	09/27/93		13.38	4.80	0.00	8.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	10/26/93		13.38	5.92	0.00	7.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	11/26/93		13.38	4.77	0.00	8.61	10,000	1,200	--	--	2,800	1,900	410	1,600	--	--	--	--	--	--	--	--	--	--	--	
MW-2	12/21/93		13.38	5.65	0.00	7.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	01/25/94		13.38	3.86	0.00	9.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-2	02/20/94		13.38	2.78	0.00	10.60	3,400	230	--	--	660	230	90	320	--	--	--	--	--	--	--	--	--	--	--	
MW-2	03/23/94		13.38	4.19	0.00	9.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	04/13/94		13.38	4.29	0.00	9.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	05/12/94		13.38	4.01	0.00	9.37	11,000	820	--	--	1,600	670	210	790	--	--	--	--	--	--	--	--	--	--	--	
MW-2	08/23/94		13.38	4.91	0.00	8.47	3,800	470	--	--	680	280	120	480	--	--	--	--	--	--	--	--	--	--	--	
MW-2	11/22/94		13.38	3.98	0.00	9.40	5,600	1,100	--	--	1,500	430	260	940	--	--	--	--	--	--	--	--	--	--	--	
MW-2	02/22/95		13.38	3.63	0.00	9.75	8,400	1,300	--	--	2,100	680	330	1,100	--	--	--	--	--	--	--	--	--	--	--	
MW-2	05/24/95		13.38	4.10	0.00	9.28	5,800	1,100	--	--	1,200	330	180	540	--	--	--	--	--	--	--	--	--	--	--	
MW-2	08/30/95		13.38	4.78	0.00	8.60	4,100	630	--	--	800	96	170	520	--	--	--	--	--	--	--	--	--	--	--	
MW-2	11/03/95		13.38	4.80	0.00	8.58	12,000	1200	--	--	2,900	850	470	1,500	720	--	--	--	--	--	--	--	--	--	--	
MW-2	02/01/96		13.38	2.63	0.00	10.75	10,000	1100	--	--	3,000	1,200	390	1,700	450	--	--	--	--	--	--	--	--	--	--	
MW-2	05/03/96		13.38	4.20	0.00	9.18	9,800	530	--	--	800	200	140	540	280	--	--	--	--	--	--	--	--	--	--	
MW-2	11/08/96		13.38	4.81	0.00	8.57	4,400	61	--	--	950	220	230	560	650	--	--	--	--	--	--	--	--	--	--	
MW-2	05/08/97		13.38	4.62	0.00	8.76	49,000	3,700	--	--	9,600	4,100	1,900	5,800	1,600	--	--	--	--	--	--	--	--	--	--	
MW-2	11/06/97		13.38	4.92	0.00	8.46	28,000	2,800	--	--	7,700	370	1,500	1,300	1,100	--	--	--	--	--	--	--	--	--	--	
MW-2	04/28/98		13.38	3.94	0.00	9.44	37,000	930	--	--	3,900	490	590	1,300	830	--	--	--	--	--	--	--	--	--	--	
MW-2	08/31/98		13.38	4.14	0.00	9.24	6,500	1,000	--	--	2,000	ND	510	97	750	--	--	--	--	--	--	--	--	--	--	
MW-2	11/12/98		13.38	4.24	0.00	9.14	1,700	280	--	--	540	ND	130	71	390	--	--	--	--	--	--	--	--	--	--	
MW-2	02/15/99		13.38	3.47	0.00	9.91	31,000	2,200	--	--	8,700	3,000	980	3,900	1,200	--	--	--	--	--	--	--	--	--	--	
MW-2	05/06/99		13.38	4.12	0.00	9.26	4,700	310	--	--	1,600	200	230	400	510	--	--	--	--	--	--	--	--	--	--	
MW-2	08/10/99		13.38	4.52	0.00	8.86	3,100	430	--	--	830	22	170	100	510	--	--	--	--	--	--	--	--	--	--	
MW-2	11/10/99		13.38	4.24	0.00	9.14	1,500	310	--	--	350	25	84	61	360	--	--	--	--	--	--	--	--	--	--	
MW-2	02/01/00		13.38	3.50	0.00	9.88	3,600	302	--	--	1,300	240	220	450	410	--	--	--	--	--	--	--	--	--	--	
MW-2	05/12/00		13.38	4.08	0.00	9.30	18,700	1,510	--	--	6,660	603	1,180	1,600	1,170	--	--	--	--	--	--	--	--	--	--	
MW-2	08/03/00		13.38	4.55	0.00	8.83	1,500	470	--	--	1,000	12	260	53	710	--	--	--	--	--	--	--	--	--	--	
MW-2	11/03/00		13.38	4.36	0.00	9.02	1,980	482	--	--	309	ND	201	ND	573	--	--	--	--	--	--	--	--	--	--	
MW-2	02/12/01		13.38	3.09	0.00	10.29	11,000	2,000	--	--	4,100	2,000	730	2,300	650	--	--	--	--	--	--	--	--	--	--	
MW-2	05/02/01		13.38	3.77	0.00	9.61	19,600	1,110	--	--	3,850	736	712	1,320	1,020	--	--	--	--	--	--	--	--	--	--	
MW-2	08/08/01		13.38	4.59	0.00	8.79	920	200	--	--	92	2.9	36	21	430	--	--	--	--	--	--	--	--	--	--	
MW-2	11/05/01		13.38	4.50	0.00	8.88	2,200	780	--	--	180	3.1	180	11	860	--	--	--	--	--	--	--	--	--	--	
MW-2	02/04/02	NP	13.38	3.94	0.00	9.44	6,900	360	--	--	1,400	520	190	620	1,100	--	--	--	--	--	--	--	--	--	--	
MW-2	05/06/02	NP	13.38	4.33	0.00	9.05	17,000	2,100	--	--	5,000	570	270	1,300	41	--	--	--	--	--	--	--	--	--	--	
MW-2	08/05/02		13.38	4.73	0.00	8.65	240	87	--	--	18	1.6	6.8	7.0	210	--	--	--	--	--	--	--	--	--	--	
MW-2	11/04/02		13.38	5.07	0.00	8.31	1,100	330	--	--	180	17	16	50	280	--	--	--	--	--	--	--	--	--	--	
MW-2	02/03/03		13.38	4.05	0.00	9.33	22,000	1,800	--	--	5,200	1,900	450	2,500	900	--	--	--	--	--	--	--	--	--	--	
MW-2	05/14/03		13.38	3.71	0.00	9.67	9,000	1,400	--	--	2,100	820	410	1,500	520	--	--	--	--	--	--	--	--	--	--	
MW-2	08/05/03		13.38	4.67	0.00	8.71	3,200	860	--	--	290	41	120	280	750	--	--	--	--	--	--	--	--	--	--	
MW-2	10/31/03	NP	13.38	4.72	0.00	8.66	240	79	--	--	2.1	<2.0	<2.0	<2.0	180	--	--	--	--	--	--	--	--	--	--	
MW-2	03/10/04		13.38	3.90	0.00	9.48	7,100	1,300	--	--	1,800	490	300	830	200	--	--	--	--	--	--	--	--	--	--	
MW-2	05/06/04		13.38	4.80	0.00	8.58	2,500	600	--	--	600	61	97	180	120	--	--	--	--	--	--	--	--	--	--	
MW-2	07/29/04		13.38	4.75	0.00	8.63	340	150	--	--	37	3.6	7.8	5.4	110	--	--	--	--	--	--	--	--	--	--	
MW-2	11/04/04		13.38	3.92	0.00	9.46	320	110	--	--	44	18	12	23	66	--	--	--	--	--	--	--	--	--	--	
MW-2	02/01/05		13.38	3.44	0.00	9.94	1,500	620	--	--	670	220	68	230	90	--	--	--	--	--	--	--	--	--	--	
MW-2	05/04/05		13.38	4.92	0.00	8.46	970	<50	--	--	390	66	55	100	77	--	--	--	--	--	--	--	--	--	--	
MW-2	08/01/05		14.51	4.92	0.00	9.59	120	<50	--	--	15	4.1	1.8	2.8	49	--	--	--	--	--	--	--	--	--	--	
MW-2	12/01/05		14.51	4.13	0.00	10.38	8,400	5,500	--	--	320	480	390	1300	52	--	--	--	--	--	--	--	--	--	--	
MW-2	03/15/06		14.51	3.16	0.00	11.35	4,900	2,000	--	--	990	750	170	660	68	--	--	--	--	--	--	--	--	--	--	
MW-2	06/15/06		14.51	4.43	0.00	10.08	11,000	3,900	--	--	1,600	1,400	570	1,900	66	--	--	--	--	--	--	--	--	--	--	
MW-2	09/25/06		14.51	4.73	0.00	9.78	3,300	3,800	--	--	430	470	170	67	0.82	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-2	11/16/06		14.51	4.05	0.00	10.46	7,800	940	--	--	460	240	200	750	36	--	--	--	--	--	--	--	--	--	--	
MW-2	03/15/07		14.51	4.11	0.00	10.40	60,000	6,000	--	--	7,300	7,600	1,900	8,100	210	--	--	--	--	--	--	--	--	--	0.8	46	
MW-2	06/15/07		14.51	4.58	0.00	9.93	55,000	5,500	--	--	6,700	4,900	1,800	6,700	180	--	--	--	--	--	--	--	--	--	0.9	13	
MW-2	09/14/07		14.51	4.90	0.00	9.61	13,000	3,500	--	--	1,800	450	620	1,700	71	--	--	--	--	--	--	--	--	--	1.2	-67	
MW-2	12/11/07		14.51	4.22	0.00	10.29	35,000	5,200	--	--	5,200	4,000	1,100	5,700	170	--	--	--	--	--	--	--	--	--	1.4	-21	
MW-2	03/07/08		14.51	4.10	0.00	10.41	34,000	20,000	--	--	5,200	3,600	1,100	5,400	160	--	--	--	--	--	--	--	--	--	1.4	87	
MW-2	06/06/08		14.51	4.55	0.00	9.96	67,000	3,400	--	--	8,100	6,100	2,200	8,700	240	--	--	--	--	--	--	--	--	--	1.0	26	
MW-2	09/04/08		14.51	4.81	0.00	9.70	21,000	5,900	--	--	3,300	290	720	3,600	120	--	--	--	--	--	--	--	--	--	1.1	30	
MW-2	12/04/08		14.51	4.67	0.00	9.84	18,000	5,800	--	--	3,100	1,000	950	3,400	140	<50	--	--	--	--	--	--	--	--	0.8	29	
MW-2	03/30/09		14.51	4.40	0.00	10.11	18,000	3,100	--	--	2,400	800	690	2,500	55	48	--	--	--	--	--	--	--	--	1.0	23	
MW-2	06/01/09		14.51	4.80	0.00	9.71	36,000	4,600	--	--	4,200	1,700	1,600	6,300	140	45	--	--	--	--	--	--	--	--	0.9	39	
MW-2	01/14/10		14.51	4.08	0.00	10.43	7,300	1,600	--	--	1,100	110	410	890	49	27	--	--	--	--	--	--	--	--	0.9	58	
MW-2	07/26/10		14.51	4.76	0.00	9.75	38,000	5,800	--	--	3,600	410	1,700	4,000	150	62	--	--	--	--	--	--	--	--	--	--	
MW-2	01/24/11		14.51	4.20	0.00	10.93	24,000	6,800	--	--	3,400	940	1,200	3,200	100	43	--	--	--	--	--	--	--	--	--	--	
MW-2	07/11/11		15.13	4.51	0.00	10.62	30,000	5,100	--	--	3,400	610	1,700	4,400	150	73	--	--	--	--	--	--	--	--	--	--	
MW-2	01/18/12		15.13	4.95	0.00	10.18	4,600	2,900	--	--	390	52	160	560	30	34	--	--	--	--	--	--	--	--	--	--	
MW-2	07/16/12		15.13	4.90	0.00	10.23	14,000	6,000	--	--	560	170	600	2,200	63	93	--	--	--	--	--	--	--	--	--	--	
MW-2	01/21/13		15.13	--	--	--	6,500	3,000	--	--	640	130	270	880	49	64	--	--	--	--	--	--	--	--	--	--	
MW-2	10/07/13		15.13	--	--	--	1,800	830	530	--	18	2.8	25	82	11	37	--	--	--	--	--	--	--	--	--	--	
MW-2	03/10/14		15.13	3.88	0.00	11.25	1,400	830	500	--	22	4.3	24	41	11	29	--	--	--	--	--	--	--	--	--	--	
MW-2	07/28/14		15.13	--	--	--	1,600	2,000	920	--	7.0	2.1	8.8	18	11	39	--	--	--	--	--	--	--	--	--	--	
MW-2	01/26/15		15.13	4.32	0.00	10.91	2,600	640	340	--	150	30	100	190	10	27	--	--	--	--	--	--	--	--	--	--	
MW-2	08/10/15		15.13	5.25	0.00	9.88	810	550	280	--	2.8	<2.0	2.1	2.1	4	15	--	--	--	--	--	--	--	1.6	-92	
MW-2	01/25/16		15.13	3.36	0.00	11.77	63,000	7,100	6,400	--	1,100	3,600	1,800	9,400	--	57	--	--	--	--	--	--	368,000	--	--	
MW-2	07/18/16	SPH	15.13	5.26	0.14	9.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	07/28/16	SPH	15.13	5.32	0.11	9.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	10/06/16	SPH	15.13	5.61	0.01	9.53	15,400	1,400	--	--	90.5	806	568	2,780	5.6	<35.7	<3.6	<3.6	<3.6	--	<3.6	<3.6	--	--	--	
MW-2	01/27/17		15.13	3.21	Sheen	11.92	47,000	--	5,700	--	620	1,100	1,400	6,500	14	44	--	--	--	--	--	--	--	--	--	
MW-2	07/03/17		15.13	4.63	0.00	10.50	43,000	--	4,900	--	340	980	1,200	5,800	14	<40	--	--	--	--	--	--	--	--	--	
MW-2	**01/04/18**		**15.13**	**4.67**	**Sheen**	**10.46**	**71,000**	**--**	**18,000**	**--**	**380**	**930**	**2,900**	**13,000**	**15**	**62**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-3	04/19/93		14.76	4.76	0.00	10.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	04/27/93		14.76	5.13	0.00	9.63	250,000	9,700	--	--	33,000	49,000	5,700	34,000	--	--	--	--	--	--	--	--	--	--	--	
MW-3	06/28/93		14.48	5.26	0.00	9.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	07/28/93		14.48	5.47	0.00	9.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	08/28/93		14.48	6.45	0.00	8.03	93,000	2,200	--	--	13,000	21,000	2,600	15,000	--	--	--	--	--	--	--	--	--	--	--	
MW-3	09/27/93		14.48	5.63	0.00	8.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	10/26/93		14.48	6.68	0.00	7.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	11/26/93		14.48	5.59	0.00	8.89	11,000	1,800	--	--	2,000	2,300	440	2,100	--	--	--	--	--	--	--	--	--	--	--	
MW-3	12/21/93		14.48	6.38	0.00	8.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	01/25/94		14.48	4.43	0.00	10.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	02/20/94		14.48	3.55	0.00	10.93	62,000	2,100	--	--	10,000	13,000	2,000	11,000	--	--	--	--	--	--	--	--	--	--	--	
MW-3	03/23/94		14.48	4.94	0.00	9.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	04/13/94		14.48	5.04	0.00	9.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	05/12/94		14.48	4.75	0.00	9.73	56,000	2,700	--	--	8,100	11,000	1,800	10,000	--	--	--	--	--	--	--	--	--	--	--	
MW-3	08/23/94		14.48	5.71	0.00	8.77	37,000	1,100	--	--	3,800	5,500	1,300	7,200	--	--	--	--	--	--	--	--	--	--	--	
MW-3	11/22/94		14.48	4.65	0.00	9.83	39,000	2,800	--	--	8,300	8,500	1,800	9,100	--	--	--	--	--	--	--	--	--	--	--	
MW-3	02/22/95		14.48	4.26	0.00	10.22	87,000	2,600	--	--	16,000	17,000	3,200	18,000	--	--	--	--	--	--	--	--	--	--	--	
MW-3	05/24/95		14.48	4.75	0.00	9.73	91,000	4,400	--	--	13,000	11,000	2,700	15,000	--	--	--	--	--	--	--	--	--	--	--	
MW-3	08/30/95		14.48	5.49	0.00	8.99	75,000	3,900	--	--	7,400	9,000	2,600	14,000	--	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-3	11/03/95		14.48	5.50	0.00	8.98	54,000	3,700	--	--	6,500	5,700	1,700	9,000	540	--	--	--	--	--	--	--	--	--	--	
MW-3	02/01/96		14.48	3.31	0.00	11.17	96,000	3,900	--	--	15,000	19,000	3,100	20,000	850	--	--	--	--	--	--	--	--	--	--	
MW-3	05/03/96		14.48	4.83	0.00	9.65	70,000	4,300	--	--	5,300	5,800	2,500	7,400	260	--	--	--	--	--	--	--	--	--	--	
MW-3	11/08/96		14.48	5.53	0.00	8.95	33,000	2,600	--	--	3,800	2,000	1,300	5,700	390	--	--	--	--	--	--	--	--	--	--	
MW-3	05/08/97		14.48	5.31	0.00	9.17	89,000	4,000	--	--	10,000	14,000	3,000	16,000	ND	--	--	--	--	--	--	--	--	--	--	
MW-3	11/06/97		14.48	5.53	0.00	8.95	75,000	3,900	--	--	11,000	9,000	3,600	17,000	940	--	--	--	--	--	--	--	--	--	--	
MW-3	04/28/98		14.48	4.65	Sheen	9.83	110,000	4,300	--	--	8,700	7,700	3,400	17,000	5,000	--	--	--	--	--	--	--	--	--	--	
MW-3	08/31/98		14.48	5.38	0.00	9.10	72,000	5,000	--	--	11,000	12,000	4,100	21,000	ND	--	--	--	--	--	--	--	--	--	--	
MW-3	11/12/98		14.48	5.00	Sheen	9.48	58,000	5,200	--	--	7,800	89	3,700	18,000	270	--	--	--	--	--	--	--	--	--	--	
MW-3	02/15/99		14.48	4.20	Sheen	10.28	100,000	12,000	--	--	12,000	11,000	3,600	20,000	860	--	--	--	--	--	--	--	--	--	--	
MW-3	05/06/99		14.48	4.88	0.00	9.60	110,000	7,900	--	--	9,200	11,000	3,600	18,000	430	--	--	--	--	--	--	--	--	--	--	
MW-3	08/10/99		14.48	5.26	Sheen	9.22	56,000	8,200	--	--	6,800	5,700	2,600	13,000	360	--	--	--	--	--	--	--	--	--	--	
MW-3	11/10/99		14.48	5.00	0.00	9.48	60,000	3,400	--	--	5,600	4,700	2,100	11,000	220	--	--	--	--	--	--	--	--	--	--	
MW-3	02/01/00		14.48	4.27	Sheen	10.21	95,000	6,280	--	--	8,100	11,000	3,900	22,000	530	--	--	--	--	--	--	--	--	--	--	
MW-3	05/12/00		14.48	4.76	0.00	9.72	77,700	5,450	--	--	8,290	8,650	4,300	19,800	318	--	--	--	--	--	--	--	--	--	--	
MW-3	08/03/00		14.48	5.29	0.00	9.19	34,000	4,400	--	--	4,900	2,000	3,200	11,000	300	--	--	--	--	--	--	--	--	--	--	
MW-3	11/03/00		14.48	4.84	0.00	9.64	44,500	5,130	--	--	4,440	2,980	3,290	12,800	277	--	--	--	--	--	--	--	--	--	--	
MW-3	02/12/01		14.48	4.12	0.00	10.36	52,000	5,000	--	--	3,900	4,600	3,300	14,000	150	--	--	--	--	--	--	--	--	--	--	
MW-3	05/02/01		14.48	4.39	0.00	10.09	95,200	1,740	--	--	4,630	7,950	3,810	17,900	202	--	--	--	--	--	--	--	--	--	--	
MW-3	08/08/01		14.48	5.34	0.00	9.14	21,000	1,800	--	--	2,000	580	1,900	3,800	210	--	--	--	--	--	--	--	--	--	--	
MW-3	11/05/01		14.48	5.27	0.00	9.21	52,000	4,500	--	--	3,200	3,100	3,600	14,000	210	--	--	--	--	--	--	--	--	--	--	
MW-3	02/04/02	NP	14.48	4.72	0.00	9.76	86,000	2,900	--	--	3,400	7,200	3,400	18,000	220	--	--	--	--	--	--	--	--	--	--	
MW-3	05/06/02	NP	14.48	5.13	0.00	9.35	89,000	4,600	--	--	4,600	9,200	4,000	20,000	140	--	--	--	--	--	--	--	--	--	--	
MW-3	08/05/02		14.48	6.13	0.00	8.35	9,100	1,400	--	--	370	320	480	1,500	64	--	--	--	--	--	--	--	--	--	--	
MW-3	11/04/02		14.48	5.81	0.00	8.67	24,000	4,900	--	--	820	1,500	1,500	6,900	80	--	--	--	--	--	--	--	--	--	--	
MW-3	02/03/03		14.48	4.72	0.00	9.76	55,000	6,800	--	--	2,400	4,000	2,600	12,000	170	--	--	--	--	--	--	--	--	--	--	
MW-3	05/14/03		14.48	4.46	0.00	10.02	1,000	490	--	--	47	5,100	80	15,000	130	--	--	--	--	--	--	--	--	--	--	
MW-3	08/05/03		14.48	5.48	0.00	9.00	45,000	1,400	--	--	1,200	2,400	2,300	10,000	84	--	--	--	--	--	--	--	--	--	--	
MW-3	10/31/03	NP	14.48	5.56	0.00	8.92	8300	1700	--	--	250	250	<10	2800	76	--	--	--	--	--	--	--	--	--	--	
MW-3	03/10/04		14.48	4.80	0.00	9.68	15,000	9,800	--	--	510	870	930	3,700	26	--	--	--	--	--	--	--	--	--	--	
MW-3	05/06/04		14.48	5.75	0.00	8.73	34,000	5,700	--	--	670	2,000	2,400	7,500	23	--	--	--	--	--	--	--	--	--	--	
MW-3	07/29/04		14.48	5.66	0.00	8.82	3,700	2,200	--	--	78	72	330	780	9.5	--	--	--	--	--	--	--	--	--	--	
MW-3	11/04/04		14.48	4.77	0.00	9.71	11,000	24,000	--	--	240	460	750	2,800	22	--	--	--	--	--	--	--	--	--	--	
MW-3	02/01/05		14.48	4.17	0.00	10.31	32,000	25,000	--	--	980	2,200	2,600	9,600	51	--	--	--	--	--	--	--	--	--	--	
MW-3	05/04/05		14.48	5.66	0.00	8.82	13,000	<50	--	--	290	390	930	2,700	19	--	--	--	--	--	--	--	--	--	--	
MW-3	08/01/05		15.62	5.93	0.00	9.69	6,300	4,100	--	--	93	13	900	1,300	7.8	--	--	--	--	--	--	--	--	--	--	
MW-3	12/01/05		15.62	4.97	0.00	10.65	17,000	12,000	--	--	73	350	1,200	3,900	11	--	--	--	--	--	--	--	--	--	--	
MW-3	03/15/06		15.62	3.82	0.00	11.80	66,000	5,900	--	--	510	1,600	4,900	16,000	38	--	--	--	--	--	--	--	--	--	--	
MW-3	06/15/06		15.62	5.46	0.00	10.16	13,000	8,800	--	--	230	130	1,500	3,200	20	--	--	--	--	--	--	--	--	--	--	
MW-3	09/25/06	DUP	15.62	--	--	--	4,100	4,700	--	--	51	35	490	780	54	--	--	--	--	--	--	--	--	--	--	
MW-3	09/25/06		15.62	5.53	0.00	10.09	1,100	25,000	--	--	12	5.1	62	120	8.5	--	--	--	--	--	--	--	--	--	--	
MW-3	11/16/06	DUP	15.62	--	--	--	36,000	14,000	--	--	320	570	2,100	5,800	22	--	--	--	--	--	--	--	--	--	--	
MW-3	11/16/06		15.62	4.69	0.00	10.93	48,000	5,100	--	--	390	780	2,500	7,000	28	--	--	--	--	--	--	--	--	--	--	
MW-3	03/15/07		15.62	4.82	0.00	10.80	82,000	27,000	--	--	630	2,300	5,100	17,000	32	--	--	--	--	--	--	--	--	1.1	23	
MW-3	03/15/07	DUP	15.62	--	--	--	75,000	24,000	--	--	620	1,900	4,700	14,000	31	--	--	--	--	--	--	--	--	--	--	
MW-3	06/15/07		15.62	5.32	0.00	10.30	90,000	1,700	--	--	640	1,800	5,000	16,000	29	--	--	--	--	--	--	--	--	1.4	35	
MW-3	06/15/07	DUP	15.62	--	--	--	77,000	18,000	--	--	560	1,400	4,400	14,000	28	--	--	--	--	--	--	--	--	--	--	
MW-3	09/14/07		15.62	5.67	0.00	9.95	30,000	9,500	--	--	190	280	1,900	4,300	25	--	--	--	--	--	--	--	--	1.2	-24	
MW-3	09/14/07	DUP	15.62	--	--	--	38,000	17,000	--	--	3,100	3,900	1,300	6,400	19	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-3	12/11/07		15.62	4.99	0.00	10.63	58,000	18,000	--	--	270	780	3,600	11,000	21	--	--	--	--	--	--	--	--	1.4	-38	
MW-3	12/11/07	DUP	15.62	--	--	--	60,000	18,000	--	--	280	780	3,700	11,000	18	--	--	--	--	--	--	--	--	--	--	
MW-3	03/07/08		15.62	4.89	0.00	10.73	51,000	21,000	--	--	310	880	3,400	8,900	43	--	--	--	--	--	--	--	--	1.8	67	
MW-3	03/07/08	DUP	15.62	--	--	--	45,000	19,000	--	--	300	720	3,100	7,700	39	--	--	--	--	--	--	--	--	--	--	
MW-3	06/06/08		15.62	5.48	0.00	10.14	65,000	7,200	--	--	290	930	3,400	10,000	18	--	--	--	--	--	--	--	--	2.1	5	
MW-3	06/06/08	DUP	15.62	--	--	--	61,000	7,400	--	--	270	960	2,900	8,200	18	--	--	--	--	--	--	--	--	--	--	
MW-3	09/04/08		15.62	5.58	0.00	10.04	22,000	7,500	--	--	96	77	1,500	2,700	17	--	--	--	--	--	--	--	--	2.0	28	
MW-3	09/04/08	DUP	15.62	--	--	--	20,000	14,000	--	--	86	85	1,300	2,500	15	--	--	--	--	--	--	--	--	--	--	
MW-3	12/04/08		15.62	5.40	0.00	10.22	35,000	20,000	--	--	150	170	2,100	5,000	25	95	--	--	--	--	--	--	--	1.5	43	
MW-3	12/04/08	DUP	15.62	--	--	--	31,000	12,000	--	--	140	170	1,900	4,600	24	120	--	--	--	--	--	--	--	--	--	
MW-3	03/30/09		15.62	5.03	0.00	10.59	14,000	4,600	--	--	69	67	870	1,400	14	81	--	--	--	--	--	--	--	1.4	-31	
MW-3	03/30/09	DUP	15.62	--	--	--	26,000	7,000	--	--	140	190	1,500	2,900	14	82	--	--	--	--	--	--	--	--	--	
MW-3	06/01/09		15.62	5.54	0.00	10.08	24,000	6,800	--	--	89	250	1,200	3,400	10	52	--	--	--	--	--	--	--	1.5	17	
MW-3	06/01/09	DUP	15.62	--	--	--	26,000	7,400	--	--	100	260	1,400	3,800	10	55	--	--	--	--	--	--	--	--	--	
MW-3	01/14/10		15.62	4.85	0.00	10.77	13,000	5,100	--	--	38	17	860	1,000	16	71	--	--	--	--	--	--	--	1.5	-37	
MW-3	01/14/10	DUP	15.62	--	--	--	12,000	5,100	--	--	35	12	840	960	15	66	--	--	--	--	--	--	--	--	--	
MW-3	07/26/10		15.62	5.51	0.00	10.11	25,000	6,900	--	--	50	78	1,100	2,600	8	37	--	--	--	--	--	--	--	--	--	
MW-3	07/26/10	DUP	15.62	--	--	--	19,000	8,900	--	--	43	54	960	2,000	8	41	--	--	--	--	--	--	--	--	--	
MW-3	01/24/11		15.62	4.90	0.00	11.30	25,000	10,000	--	--	62	38	1,400	2,800	15	120	--	--	--	--	--	--	--	--	--	
MW-3	01/24/11	DUP	15.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	07/11/11		16.20	5.27	0.00	10.93	13,000	8,400	--	--	15	88	750	2,000	3	28	--	--	--	--	--	--	--	--	--	
MW-3	07/11/11	DUP	16.20	--	--	--	18,000	7,400	--	--	20	110	950	2,500	4	<25	--	--	--	--	--	--	--	--	--	
MW-3	01/18/12		16.20	5.70	0.00	10.50	10,000	5,600	--	--	18	14	800	820	4	26	--	--	--	--	--	--	--	--	--	
MW-3	01/18/12	DUP	16.20	--	--	--	8,900	6,700	--	--	17	14	730	640	3	22	--	--	--	--	--	--	--	--	--	
MW-3	07/16/12		16.20	5.63	0.00	10.57	5,300	3,800	--	--	<8.0	5	290	170	2	13	--	--	--	--	--	--	--	--	--	
MW-3	01/21/13		16.20	--	--	--	8,200	6,700	2,300	--	17	7.1	550	430	7	54	--	--	--	--	--	--	--	--	--	
MW-3	10/07/13		16.20	--	--	--	1,700	1,900	480	--	5.9	2.0	92	32	3	38	--	--	--	--	--	--	--	--	--	
MW-3	03/10/14		16.20	4.58	0.00	11.62	7,300	4,300	--	--	8.5	19	380	270	4	42	--	--	--	--	--	--	--	--	--	
MW-3	07/28/14		16.20	--	--	--	690	640	--	--	<3.0	1.0	35	6.1	2	15	--	--	--	--	--	--	--	--	--	
MW-3	01/26/15		16.20	4.98	0.00	11.22	4,900	5,300	--	--	7.6	3.7	330	300	7	140	--	--	--	--	--	--	--	--	--	
MW-3	08/10/15		16.20	6.00	0.00	10.20	1,900	2,400	--	--	<2.0	1.7	46	68	2	41	--	--	--	--	--	--	--	1.5	-92	
MW-3	01/25/16		16.20	4.00	Sheen	12.20	44,000	19,000	--	--	21	9.6	2,900	4,300	--	86	--	--	--	--	--	--	1,000,000	--	--	
MW-3	07/18/16		16.20	5.85	Sheen	10.35	7,500	--	3,200	--	<3	<3	440	350	3	67	--	--	--	--	--	--	--	--	--	
MW-3	10/06/16		16.20	6.45	0.00	9.75	3,410	1,300	--	--	1.4	<0.84	317	110	2.2	<8.4	<0.84	<0.84	<0.84	--	<0.84	<0.84	--	--	--	
MW-3	01/27/17		16.20	3.78	Sheen	12.42	50,000	--	9,100	--	<5	7	2,700	3,900	<5	74	--	--	--	--	--	--	--	--	--	
MW-3	07/03/17		16.20	5.35	0.00	10.85	8,500	--	2,300	--	2	1	550	380	5	90	--	--	--	--	--	--	--	--	--	
MW-3	**01/04/18**		**16.20**	**5.48**	**0.00**	**10.72**	**5,300**	**--**	**3,700**	**--**	**<3**	**<3**	**370**	**260**	**3**	**41**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-4	04/19/93		15.46	4.43	0.00	11.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	04/27/93		15.46	5.66	0.00	9.80	180	542	--	--	19	31	4.1	26	--	--	--	--	--	--	--	--	--	--	--	
MW-4	06/28/93		14.99	5.58	0.00	9.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	07/28/93		14.99	5.78	0.00	9.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	08/28/93		14.99	6.78	0.00	8.21	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	09/27/93		14.99	5.96	0.00	9.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	10/26/93		14.99	6.97	0.00	8.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	11/26/93		14.99	5.92	0.00	9.07	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	12/21/93		14.99	6.68	0.00	8.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	01/25/94		14.99	4.76	0.00	10.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	02/20/94		14.99	3.88	0.00	11.11	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	03/23/94		14.99	5.28	0.00	9.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-4	04/13/94		14.99	5.40	0.00	9.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	05/12/94		14.99	5.11	0.00	9.88	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	08/23/94		14.99	6.06	0.00	8.93	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	11/22/94		14.99	5.04	0.00	9.95	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	02/22/95		14.99	4.66	0.00	10.33	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	05/24/95		14.99	5.16	0.00	9.83	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	08/30/95		14.99	5.90	0.00	9.09	ND	ND	--	--	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	
MW-4	11/03/95		14.99	5.88	0.00	9.11	ND	ND	--	--	ND	ND	ND	ND	3.0	--	--	--	--	--	--	--	--	--	--	
MW-4	02/01/96		14.99	3.65	0.00	11.34	ND	ND	--	--	ND	ND	ND	ND	2.3	--	--	--	--	--	--	--	--	--	--	
MW-4	05/03/96		14.99	5.22	0.00	9.77	560	ND	--	--	15	15	ND	44	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	11/08/96		14.99	5.90	0.00	9.09	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	05/08/97		14.99	5.65	0.00	9.34	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	11/06/97		14.99	5.89	0.00	9.10	ND	82	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	04/28/98		14.99	5.06	0.00	9.93	ND	ND	--	--	ND	ND	ND	ND	4.8	--	--	--	--	--	--	--	--	--	--	
MW-4	08/31/98		14.99	5.67	0.00	9.32	ND	ND	--	--	ND	ND	ND	ND	2.8	--	--	--	--	--	--	--	--	--	--	
MW-4	11/12/98		14.99	5.38	0.00	9.61	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	02/15/99		14.99	4.57	0.00	10.42	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	05/06/99		14.99	5.24	0.00	9.75	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	08/10/99		14.99	5.62	0.00	9.37	ND	ND	--	--	ND	ND	ND	ND	3.4	--	--	--	--	--	--	--	--	--	--	
MW-4	11/10/99		14.99	5.39	0.00	9.60	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	02/01/00		14.99	4.65	0.00	10.34	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	05/12/00		14.99	5.17	0.00	9.82	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	08/03/00		14.99	5.67	0.00	9.32	ND	210	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	11/03/00		14.99	5.12	0.00	9.87	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	02/12/01		14.99	4.13	0.00	10.86	ND	ND	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	05/02/01		14.99	4.54	0.00	10.45	ND	68.4	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
MW-4	08/08/01		14.99	5.73	0.00	9.26	<50	57	--	--	<0.50	<0.50	<0.50	<0.50	2.0	--	--	--	--	--	--	--	--	--	--	
MW-4	11/05/01		14.99	5.68	0.00	9.31	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	1.3	--	--	--	--	--	--	--	--	--	--	
MW-4	02/04/02		14.99	5.05	0.00	9.94	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	
MW-4	05/06/02		14.99	5.34	0.00	9.65	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	
MW-4	08/05/02		14.99	5.83	0.00	9.16	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	--	--	--	
MW-4	11/04/02		14.99	6.13	0.00	8.86	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	--	--	--	
MW-4	02/03/03		14.99	5.08	0.00	9.91	<50	53	--	--	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	05/14/03		14.99	4.73	0.00	10.26	<50	<50	--	--	<0.50	<0.50	<0.50	0.57	<2.0	--	--	--	--	--	--	--	--	--	--	
MW-4	08/05/03		14.99	5.80	0.00	9.19	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	0.55	--	--	--	--	--	--	--	--	--	--	
MW-4	10/31/03		14.99	5.87	0.00	9.12	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	03/10/04		14.99	4.76	0.00	10.23	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	05/06/04		14.99	5.55	0.00	9.44	110	<50	--	--	6	9.1	7.3	24	0.94	--	--	--	--	--	--	--	--	--	--	
MW-4	07/29/04		14.99	5.83	0.00	9.16	<50	<50	--	--	0.67	<0.50	<0.50	1.9	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	11/04/04		14.99	5.04	0.00	9.95	<50	<50	--	--	<0.50	<0.50	0.60	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	02/01/05		14.99	4.52	0.00	10.47	<50	<50	--	--	<0.50	<0.50	<0.50	1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	05/04/05		14.99	5.91	0.00	9.08	<50	<50	--	--	<0.50	<0.50	<0.50	1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	08/01/05		16.14	5.59	0.00	10.55	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	12/01/05		16.14	5.08	0.00	11.06	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	03/15/06		16.14	4.17	0.00	11.97	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	06/15/06		16.14	5.54	0.00	10.60	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	09/25/06		16.14	5.90	0.00	10.24	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	11/16/06		16.14	5.26	0.00	10.88	<50	<50	--	--	<0.50	<0.50	<0.50	<1.5	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-4	03/15/07		16.14	5.23	0.00	10.91	<50	78	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.6	95	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-4	06/15/07		16.14	5.73	0.00	10.41	<50	67	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	2.2	51	
MW-4	09/14/07		16.14	6.05	0.00	10.09	<50	150	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	2.0	146	
MW-4	12/11/07		16.14	5.36	0.00	10.78	<50	57	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	2.1	104	
MW-4	03/07/08		16.14	5.10	0.00	11.04	<50	75	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	2.2	141	
MW-4	06/06/08		16.14	5.88	0.00	10.26	<50	61	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.9	126	
MW-4	09/04/08		16.14	5.98	0.00	10.16	<50	75	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.9	127	
MW-4	12/04/08		16.14	5.80	0.00	10.34	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	2.0	124	
MW-4	03/30/09		16.14	5.52	0.00	10.62	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	2.0	134	
MW-4	06/01/09		16.14	5.91	0.00	10.23	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	2.1	133	
MW-4	01/14/10		16.14	5.25	0.00	10.89	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	1.9	131	
MW-4	07/26/10		16.14	5.87	0.00	10.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	01/24/11		16.14	5.31	0.00	11.41	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-4	07/11/11		16.72	5.60	0.00	11.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	01/18/12		16.72	6.07	0.00	10.65	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-4	07/16/12		16.72	6.02	0.00	10.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	01/21/13		16.72	--	--	--	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-4	10/07/13		16.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	03/10/14		16.72	5.02	0.00	11.70	<50	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-4	07/28/14		16.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	01/27/15		16.72	5.41	0.00	11.31	<50	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-4	08/10/15	NSP	16.72	6.40	0.00	10.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Monitor Only
MW-4	01/25/16		16.72	4.43	0.00	12.29	<50	<50	<50	--	<0.5	<0.5	<0.5	<1.0	<0.5	<2	<0.5	<0.5	<0.5	<50	<0.5	<0.5	282,000	--	--	
MW-4	07/18/16	NSP	16.72	6.22	0.00	10.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Monitor Only
MW-4	01/27/17		16.72	4.19	0.00	12.53	<50	--	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-4	07/03/17	NSP	16.72	5.75	0.00	10.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Monitor only
MW-4	**01/04/18**		**16.72**	**5.83**	**0.00**	**10.89**	**<50**	**--**	**<50**	**--**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-5	04/20/93		13.67	4.10	0.00	9.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	04/27/93		13.67	4.37	0.00	9.30	490	100	--	--	100	13	7.4	91	--	--	--	--	--	--	--	--	--	--	--	
MW-5	06/28/93		13.40	4.45	0.00	8.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	07/28/93		13.40	4.65	0.00	8.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	08/28/93		13.40	4.72	0.00	8.68	65,000	2,400	--	--	9,900	7,200	1,600	8,100	--	--	--	--	--	--	--	--	--	--	--	
MW-5	09/27/93		13.40	4.80	0.00	8.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	10/26/93		13.40	4.95	0.00	8.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	11/26/93		13.40	4.77	0.00	8.63	13,000	1,500	--	--	3,300	2,500	570	2,600	--	--	--	--	--	--	--	--	--	--	--	
MW-5	12/21/93		13.40	4.71	0.00	8.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	01/25/94		13.40	3.76	0.00	9.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	02/20/94		13.40	2.76	0.00	10.64	16,000	1,100	--	--	2,900	1,200	440	2,100	--	--	--	--	--	--	--	--	--	--	--	
MW-5	03/23/94		13.40	4.16	0.00	9.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	04/13/94		13.40	4.28	0.00	9.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	05/12/94		13.40	4.02	0.00	9.38	18,000	1,400	--	--	3,300	2,000	470	2,200	--	--	--	--	--	--	--	--	--	--	--	
MW-5	08/23/94		13.40	4.88	0.00	8.52	42,000	1,600	--	--	7,900	4,500	970	4,100	--	--	--	--	--	--	--	--	--	--	--	
MW-5	11/22/94		13.40	3.95	0.00	9.45	11,000	1,500	--	--	2,500	1,500	440	1,600	--	--	--	--	--	--	--	--	--	--	--	
MW-5	02/22/95		13.40	3.63	0.00	9.77	9,200	1,300	--	--	2,100	1,200	350	1,500	--	--	--	--	--	--	--	--	--	--	--	
MW-5	05/24/95		13.40	4.10	0.00	9.30	11,000	1,200	--	--	2,100	550	360	1,500	--	--	--	--	--	--	--	--	--	--	--	
MW-5	08/30/95		13.40	4.90	0.00	8.50	16,000	1,700	--	--	2,700	1,500	500	2,200	--	--	--	--	--	--	--	--	--	--	--	
MW-5	11/03/95		13.40	6.81	0.00	6.59	30,000	2,400	--	--	4,300	4,700	970	4,300	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	02/01/96		13.40	4.76	0.00	8.64	8,200	950	--	--	1,500	1,500	330	1,500	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	05/03/96		13.40	4.18	0.00	9.22	8,100	690	--	--	320	490	200	910	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	11/08/96		13.40	4.81	0.00	8.59	13,000	1,500	--	--	710	2,100	630	2,700	ND	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-5	05/08/97		13.40	4.60	0.00	8.80	68,000	3,900	--	--	3,400	12,000	3,200	15,000	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	11/06/97		13.40	5.02	0.00	8.38	7,900	4,000	--	--	4,900	3,400	3,100	12,000	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	04/28/98		13.40	3.88	0.00	9.52	25,000	1,500	--	--	1,200	2,200	870	3,800	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	08/31/98		13.40	4.06	0.00	9.34	25,000	2,600	--	--	1,900	980	1,700	5,000	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	11/12/98		13.40	4.22	0.00	9.18	3,600	620	--	--	330	240	280	700	46	--	--	--	--	--	--	--	--	--	--	
MW-5	02/15/99		13.40	3.44	0.00	9.96	45,000	3,800	--	--	3,000	5,200	1,800	10,000	360	--	--	--	--	--	--	--	--	--	--	
MW-5	05/06/99		13.40	4.09	0.00	9.31	8,400	800	--	--	690	630	550	1,600	3.4	--	--	--	--	--	--	--	--	--	--	
MW-5	08/10/99		13.40	4.52	0.00	8.88	5,400	990	--	--	490	220	410	1,100	4.0	--	--	--	--	--	--	--	--	--	--	
MW-5	11/10/99		13.40	4.35	0.00	9.05	3,900	790	--	--	330	150	270	550	4.4	--	--	--	--	--	--	--	--	--	--	
MW-5	02/01/00		13.40	3.50	0.00	9.90	5,100	396	--	--	340	590	290	1,100	78	--	--	--	--	--	--	--	--	--	--	
MW-5	05/12/00		13.40	4.02	0.00	9.38	41,200	2,760	--	--	3,320	4,250	3,100	9,840	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	08/03/00		13.40	4.54	0.00	8.86	15,000	3,100	--	--	1,300	1,700	1,500	4,500	14.0	--	--	--	--	--	--	--	--	--	--	
MW-5	11/03/00		13.40	4.27	0.00	9.13	21,000	2,390	--	--	1,810	1,710	2,160	4,940	15.5	--	--	--	--	--	--	--	--	--	--	
MW-5	02/12/01		13.40	3.07	0.00	10.33	15,000	2,400	--	--	970	1,100	1,200	3,100	130	--	--	--	--	--	--	--	--	--	--	
MW-5	05/02/01		13.40	3.62	0.00	9.78	39,200	3,870	--	--	1,870	2,950	2,240	6,270	ND	--	--	--	--	--	--	--	--	--	--	
MW-5	08/08/01		13.40	4.61	0.00	8.79	3,100	400	--	--	340	64	360	460	8.3	--	--	--	--	--	--	--	--	--	--	
MW-5	11/05/01		13.40	4.51	0.00	8.89	8,100	1,300	--	--	850	140	1,000	1,100	13	--	--	--	--	--	--	--	--	--	--	
MW-5	02/04/02	NP	13.40	3.97	0.00	9.43	2,400	150	--	--	200	93	240	460	18	--	--	--	--	--	--	--	--	--	--	
MW-5	05/06/02	NP	13.40	4.35	0.00	9.05	5,100	790	--	--	630	44	500	380	16	--	--	--	--	--	--	--	--	--	--	
MW-5	08/05/02		13.40	4.75	0.00	8.65	1,100	230	--	--	110	43	110	200	5.2	--	--	--	--	--	--	--	--	--	--	
MW-5	11/04/02		13.40	5.06	0.00	8.34	700	150	--	--	67	6.4	44	93	3.2	--	--	--	--	--	--	--	--	--	--	
MW-5	02/03/03		13.40	4.03	0.00	9.37	1,200	120	--	--	130	50	78	250	8.8	--	--	--	--	--	--	--	--	--	--	
MW-5	05/14/03		13.40	3.73	0.00	9.67	1,200	300	--	--	180	24	110	230	24	--	--	--	--	--	--	--	--	--	--	
MW-5	08/05/03		13.40	4.73	0.00	8.67	710	150	--	--	65	6.3	34	82	9.3	--	--	--	--	--	--	--	--	--	--	
MW-5	10/31/03	NP	13.40	4.85	0.00	8.55	<50	64	--	--	<0.50	<0.50	<0.50	<0.50	15	--	--	--	--	--	--	--	--	--	--	
MW-5	03/10/04		13.40	3.93	0.00	9.47	750	220	--	--	83	27	58	130	4.6	--	--	--	--	--	--	--	--	--	--	
MW-5	05/06/04		13.40	4.55	0.00	8.85	1,100	470	--	--	130	36	91	150	6.4	--	--	--	--	--	--	--	--	--	--	
MW-5	07/29/04		13.40	4.73	0.00	8.67	1,100	690	--	--	140	28	87	120	11	--	--	--	--	--	--	--	--	--	--	
MW-5	11/04/04		13.40	3.95	0.00	9.45	820	700	--	--	82	19	74	140	5.1	--	--	--	--	--	--	--	--	--	--	
MW-5	02/01/05		13.40	3.46	0.00	9.94	400	120	--	--	66	9.0	23	59	4.2	--	--	--	--	--	--	--	--	--	--	
MW-5	05/04/05		13.40	4.97	0.00	8.43	840	<50	--	--	130	11	70	130	6.8	--	--	--	--	--	--	--	--	--	--	
MW-5	08/01/05		14.54	4.82	0.00	9.72	1,200	620	--	--	120	25	160	290	2.8	--	--	--	--	--	--	--	--	--	--	
MW-5	12/01/05		14.54	3.93	0.00	10.61	1,100	450	--	--	30	28	110	210	3.7	--	--	--	--	--	--	--	--	--	--	
MW-5	03/15/06		14.54	3.21	0.00	11.33	1,300	890	--	--	66	34	130	280	4.6	--	--	--	--	--	--	--	--	--	--	
MW-5	06/15/06		14.54	4.48	0.00	10.06	380	150	--	--	18	3.6	47	63	2.0	--	--	--	--	--	--	--	--	--	--	
MW-5	09/25/06		14.54	4.79	0.00	9.75	65	340	--	--	4.7	0.65	11	13	1.7	--	--	--	--	--	--	--	--	--	--	
MW-5	11/16/06		14.54	4.37	0.00	10.17	940	140	--	--	11	5.3	60	130	2.0	--	--	--	--	--	--	--	--	--	--	
MW-5	03/15/07		14.54	4.19	0.00	10.35	4,700	1,000	--	--	52	16	320	950	5	--	--	--	--	--	--	--	--	0.7	58	
MW-5	06/15/07		14.54	4.73	0.00	9.81	590	380	--	--	13	0.7	28	40	3	--	--	--	--	--	--	--	--	1.0	18	
MW-5	09/14/07		14.54	4.90	0.00	9.64	360	240	--	--	3	0.6	23	39	5	--	--	--	--	--	--	--	--	0.9	-4	
MW-5	12/11/07		14.54	4.22	0.00	10.32	280	160	--	--	6.6	<0.5	2.7	<1.5	7	--	--	--	--	--	--	--	--	1.2	14	
MW-5	03/07/08		14.54	4.11	0.00	10.43	310	350	--	--	14	<0.5	7.2	28	10	--	--	--	--	--	--	--	--	1.5	123	
MW-5	06/06/08		14.54	4.75	0.00	9.79	200	89	--	--	3.2	<0.5	4.3	12	2	--	--	--	--	--	--	--	--	1.6	151	
MW-5	09/04/08		14.54	4.83	0.00	9.71	1,100	520	--	--	82	<2.5	48	170	8	--	--	--	--	--	--	--	--	1.5	141	
MW-5	12/04/08		14.54	4.69	0.00	9.85	120	260	--	--	0.9	<0.5	3.6	2.6	6	<2	--	--	--	--	--	--	--	1.4	156	
MW-5	03/30/09		14.54	4.41	0.00	10.13	1,900	630	--	--	180	4.0	92	170	9	3	--	--	--	--	--	--	--	1.3	98	
MW-5	06/01/09		14.54	4.74	0.00	9.80	1,200	520	--	--	220	1.0	22	22	16	<2	--	--	--	--	--	--	--	1.4	107	
MW-5	01/14/10		14.54	4.71	0.00	9.83	720	400	--	--	14	0.8	16	35	9	<2	--	--	--	--	--	--	--	1.3	90	
MW-5	07/26/10		14.54	4.85	0.00	9.69	350	140	--	--	11	0.5	0.8	<1.5	9	<2	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-5	01/24/11		14.54	4.20	0.00	10.94	970	540	--	--	90	1.4	12	15	15	<2	--	--	--	--	--	--	--	--	--	
MW-5	07/11/11		15.14	4.55	0.00	10.59	590	330	--	--	56	1.3	1.5	3	13	<2	--	--	--	--	--	--	--	--	--	
MW-5	01/18/12		15.14	4.94	0.00	10.20	280	83	--	--	3.6	<0.5	<0.5	<1.5	8	<2	--	--	--	--	--	--	--	--	--	
MW-5	07/16/12		15.14	4.91	0.00	10.23	93	<160	--	--	<0.5	<0.5	<0.5	<1.5	5	<2	--	--	--	--	--	--	--	--	--	
MW-5	01/21/13		15.14	--	--	--	1,500	1,000	--	--	100	1.3	50	27	13	2	--	--	--	--	--	--	--	--	--	
MW-5	10/07/13		15.14	--	--	--	400	230	130	--	1.4	<0.5	<0.5	<1.5	6	<2	--	--	--	--	--	--	--	--	--	
MW-5	03/10/14		15.14	3.99	0.00	11.15	1,900	610	210	--	70	1.3	46	170	10	<2	--	--	--	--	--	--	--	--	--	
MW-5	07/28/14		15.14	--	--	--	130	130	<50	--	0.8	<0.5	<0.5	<1.5	8	<2	--	--	--	--	--	--	--	--	--	
MW-5	01/26/15		15.14	4.33	0.00	10.81	400	300	64	--	11	<0.5	3.8	3.3	8	2	--	--	--	--	--	--	--	--	--	
MW-5	08/10/15		15.14	5.25	0.00	9.89	120	53	<50	--	<0.5	<0.2	0.2	<0.2	7	<2.0	--	--	--	--	--	--	--	1.8	6	
MW-5	01/25/16		15.14	3.38	0.00	11.76	6,300	1,800	840	--	81	29	200	1,400	--	<10	--	--	--	--	--	--	323,000	--	--	
MW-5	07/18/16		15.14	5.12	0.00	10.02	220	--	<50	--	<0.5	<0.5	<0.5	<0.5	5	<2	--	--	--	--	--	--	--	--	--	
MW-5	10/06/16		15.14	5.63	0.00	9.51	<100	140	--	--	<0.50	<0.50	<0.50	<1.5	3.5	<5.0	<0.50	<0.50	<0.50	--	<0.50	<0.50	--	--	--	
MW-5	01/27/17		15.14	3.21	0.00	11.93	2,700	--	140	--	22	3	200	340	6	<2	--	--	--	--	--	--	--	--	--	
MW-5	07/03/17		15.14	4.68	0.00	10.46	18,000	--	3,500	--	47	5	1,500	3,600	3	<10	--	--	--	--	--	--	--	--	--	
MW-5	**01/04/18**		**15.14**	**4.73**	**0.00**	**10.41**	**28,000**	**--**	**3,800**	**--**	**10**	**5**	**2,300**	**6,100**	**<5**	**<20**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-6	11/03/95		14.49	6.81	0.00	7.68	440	891	--	--	64	28	9.5	120	180	--	--	--	--		--	--	--	--		
MW-6	02/01/96		14.49	4.76	0.00	9.73	76	ND	--	--	15	ND	1.8	3.2	140	--	--	--	--	--	--	--	--	--	--	
MW-6	05/03/96		14.49	6.37	0.00	8.12	ND	160	--	--	ND	ND	ND	ND	130	--	--	--	--	--	--	--	--	--	--	
MW-6	11/08/96		14.49	6.91	0.00	7.58	120	ND	--	--	15	ND	11	12	85	--	--	--	--	--	--	--	--	--	--	
MW-6	05/08/97		14.49	6.80	0.00	7.69	160	ND	--	--	23	ND	10	14	88	--	--	--	--	--	--	--	--	--	--	
MW-6	11/06/97		14.49	6.96	0.00	7.53	ND	ND	--	--	1.1	ND	ND	0.84	32	--	--	--	--	--	--	--	--	--	--	
MW-6	04/28/98		14.49	6.09	0.00	8.40	120	ND	--	--	11	ND	3.6	13	63	--	--	--	--	--	--	--	--	--	--	
MW-6	08/31/98		14.49	6.34	0.00	8.15	70	71	--	--	9.4	ND	ND	3.6	42			--		--	--	--	--	--	--	
MW-6	11/12/98		14.49	6.21	0.00	8.28	170	61	--	--	9.4	ND	1.2	10		--	--	--	--	--	--	--	--	--	--	
MW-6	02/15/99		14.49	5.56	0.00	8.93	ND	ND	--	--	2.8	ND	ND	ND		--	--	--	--	--	--	--	--	--	--	
MW-6	05/06/99		14.49	6.17	0.00	8.32	5,500	81	--	--	52	ND	11	98	53	--	--	--	--	--	--	--	--	--	--	
MW-6	08/10/99		14.49	6.59	0.00	7.90	110	58	--	--	5.4	ND	0.99	7.3	37	--	--	--	--	--	--	--	--	--	--	
MW-6	11/10/99		14.49	6.22	0.00	8.27	77	ND	--	--	3.0	ND	ND	2.1	23	--	--	--	--	--	--	--	--	--	--	
MW-6	02/01/00		14.49	5.50	0.00	8.99	ND	ND	--	--	3.8	ND	ND	1.6	13	--	--	--	--	--	--	--	--		--	
MW-6	05/12/00		14.49	6.07	0.00	8.42	55	68.6	--	--	4.50	ND	ND	1.75	32.1	--	--	--	--	--	--	--	--	--	--	
MW-6	08/03/00		14.49	6.60	0.00	7.89	120	ND	--	--	1.9	ND	ND	7.8	10	--	--	--	--	--	--	--	--	--	--	
MW-6	11/03/00		14.49	6.24	0.00	8.25	577	309	--	--	14.0	ND	4.80	0.730	22.9	--	--	--	--	--	--	--	--	--	--	
MW-6	02/12/01		14.49	5.05	0.00	9.44	ND	ND	--	--	0.84	ND	ND	ND	5.2	--	--	--	--	--	--	--	--	--	--	
MW-6	05/02/01		14.49	5.47	0.00	9.02	ND	61.8	--	--	ND	ND	ND	ND	16.7	--	--	--	--	--	--	--	--	--	--	
MW-6	08/08/01		14.49	6.61	0.00	7.88	55	110	--	--	<0.50	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	--	--	--	
MW-6	11/05/01		14.49	6.48	0.00	8.01	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	1.8	--	--	--	--	--	--	--	--	--	--	
MW-6	02/04/02		14.49	5.99	0.00	8.50	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	15	--	--	--	--	--	--	--	--	--	--	
MW-6	05/06/02		14.49	6.38	0.00	8.11	<50	<53	--	--	<0.50	<0.50	<0.50	<0.50	62	--	--	--	--	--	--	--	--	--	--	
MW-6	08/05/02		14.49	6.78	0.00	7.71	<50	<51	--	--	<0.50	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	--	--	--	
MW-6	11/04/02		14.49	6.71	0.00	7.78	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	--	--	--	
MW-6	02/03/03		14.49	6.18	0.00	8.31	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	11	--	--	--	--	--	--	--	--	--	--	
MW-6	05/14/03		14.49	5.77	0.00	8.72	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	7.3	--	--	--	--	--	--	--	--	--	--	
MW-6	08/05/03		14.49	6.76	0.00	7.73	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	5.1	--	--	--	--	--	--	--	--	--	--	
MW-6	10/31/03		14.49	6.86	0.00	7.63	<50	<50	--	--	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-6	03/10/04		14.49	5.84	0.00	8.65	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	7.9	--	--	--	--	--	--	--	--	--	--	
MW-6	05/06/04		14.49	6.55	0.00	7.94	54	<50	--	--	1.5	2.2	1.4	5	11	--	--	--	--	--	--	--	--	--	--	
MW-6	07/29/04		14.49	6.72	0.00	7.77	<50	<50	--	--	<0.50	<0.50	<0.50	1.1	8.9	--	--	--	--	--	--	--	--	--	--	
MW-6	11/04/04		14.49	5.91	0.00	8.58	<50	<50	--	--	<0.50	<0.50	0.60	<1.0	4.3	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-6	02/01/05		14.49	5.53	0.00	8.96	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	4.8	--	--	--	--	--	--	--	--	--	--	
MW-6	05/04/05		14.49	8.55	0.00	5.94	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-6	08/01/05		15.65	8.88	0.00	6.77	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	0.89	--	--	--	--	--	--	--	--	--	--	
MW-6	12/01/05		15.65	8.13	0.00	7.52	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	3.3	--	--	--	--	--	--	--	--	--	--	
MW-6	03/15/06		15.65	5.18	0.00	10.47	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	3.3	--	--	--	--	--	--	--	--	--	--	
MW-6	06/15/06		15.65	6.51	0.00	9.14	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	3.5	--	--	--	--	--	--	--	--	--	--	
MW-6	09/25/06		15.65	6.64	0.00	9.01	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	2.2	--	--	--	--	--	--	--	--	--	--	
MW-6	11/16/06		15.65	5.97	0.00	9.68	<50	<50	--	--	<0.50	<0.50	<0.50	<1.5	2	--	--	--	--	--	--	--	--	--	--	
MW-6	03/15/07		15.65	6.16	0.00	9.49	<50	50	--	--	<0.5	<0.5	<0.5	<1.5	1	--	--	--	--	--	--	--	--	1.0	62	
MW-6	06/15/07		15.65	6.58	0.00	9.07	230	230	--	--	<0.5	<0.5	4.7	<1.5	<0.5	--	--	--	--	--	--	--	--	1.4	66	
MW-6	09/14/07		15.65	6.91	0.00	8.74	<50	88	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.0	8	
MW-6	12/11/07		15.65	6.14	0.00	9.51	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.2	34	
MW-6	03/07/08		15.65	6.10	0.00	9.55	<50	92	--	--	<0.5	<0.5	<0.5	<1.5	2	--	--	--	--	--	--	--	--	1.6	110	
MW-6	06/06/08		15.65	6.83	0.00	8.82	<50	62	--	--	<0.5	<0.5	<0.5	<1.5	1	--	--	--	--	--	--	--	--	2.1	84	
MW-6	09/04/08		15.65	6.77	0.00	8.88	<50	240	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.9	76	
MW-6	12/04/08		15.65	6.62	0.00	9.03	<50	57	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	1.7	69	
MW-6	03/30/09		15.65	6.43	0.00	9.22	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	1	<2	--	--	--	--	--	--	--	1.2	83	
MW-6	06/01/09		15.65	6.90	0.00	8.75	<50	82	--	--	<0.5	<0.5	<0.5	<1.5	0.7	<2	--	--	--	--	--	--	--	1.7	77	
MW-6	01/14/10		15.65	6.03	0.00	9.62	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	1	<2	--	--	--	--	--	--	--	1.7	92	
MW-6	07/26/10		15.65	6.85	0.00	8.80	<50	240	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-6	01/24/11		15.65	6.35	0.00	9.86	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-6	07/11/11		16.21	6.58	0.00	9.63	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2.	--	--	--	--	--	--	--	--	--	
MW-6	01/18/12		16.21	6.98	0.00	9.23	<50	<320	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-6	07/16/12		16.21	7.07	0.00	9.14	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-6	01/21/13		16.21	--	--	--	68	140	--	--	0.7	<0.5	4.7	12	0.9	<2	--	--	--	--	--	--	--	--	--	
MW-6	04/03/13		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well Destroyed
MW-7	05/02/05		20.18	--	0.00	--	<50	<50	--	--	<0.50	1.1	1.3	6.1	2.4	--	--	--	--	--	--	--	--	--	--	Well Development
MW-7	05/04/05		20.18	11.67	0.00	8.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	08/01/05		20.18	10.73	0.00	9.45	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	1.5	--	--	--	--	--	--	--	--	--	--	
MW-7	12/29/05		20.18	9.50	0.00	10.68	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-7	03/15/06		20.18	9.51	0.00	10.67	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	0.6	--	--	--	--	--	--	--	--	--	--	
MW-7	06/15/06		20.18	10.76	0.00	9.42	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	0.55	--	--	--	--	--	--	--	--	--	--	
MW-7	09/25/06		20.18	10.84	0.00	9.34	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-7	11/16/06		20.18	10.26	0.00	9.92	<50	100	--	--	<0.50	<0.50	<0.50	<1.5	<0.50	--	--	--	--	--	--	--	--	--	--	
MW-7	03/15/07		20.18	10.35	0.00	9.83	<50	91	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.2	19	
MW-7	06/15/07		20.18	10.81	0.00	9.37	<50	61	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.7	72	
MW-7	09/14/07		20.18	11.16	0.00	9.02	<50	160	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.4	56	
MW-7	12/11/07		20.18	10.43	0.00	9.75	<50	59	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.9	80	
MW-7	03/07/08		20.18	10.35	0.00	9.83	<50	80	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	2.2	139	
MW-7	06/06/08		20.18	11.06	0.00	9.12	<50	60	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.7	96	
MW-7	09/04/08		20.18	10.98	0.00	9.20	<50	110	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	--	--	--	--	--	--	--	--	1.6	132	
MW-7	12/04/08		20.18	10.87	0.00	9.31	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	1.6	110	
MW-7	03/30/09		20.18	10.72	0.00	9.46	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	1.8	88	
MW-7	06/01/09		20.18	11.14	0.00	9.04	<50	220	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	1.7	96	
MW-7	01/14/10		20.18	10.30	0.00	9.88	<50	61	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	1.9	82	
MW-7	07/26/10		20.18	11.10	0.00	9.08	<50	190	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-7	01/24/11		20.18	10.54	0.00	10.24	<50	84	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-7	07/11/11		20.78	10.85	0.00	9.93	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-7	01/18/12		20.78	11.26	0.00	9.52	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-7	07/16/12		20.78	11.15	0.00	9.63	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-7	01/21/13		20.78	--	--	--	<50	130	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-7	04/03/13		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Well Destroyed
MW-8A	01/24/11		15.80	4.48	0.00	11.32	10,000	2,400	--	--	15	62	690	1,900	4	<4	--	--	--	--	--	--	--	--	--	
MW-8A	07/11/11		15.80	4.77	0.00	11.03	3,700	4,300	--	--	3.3	6.9	140	450	0.6	3	--	--	--	--	--	--	--	--	--	
MW-8A	01/18/12		15.80	5.31	0.00	10.49	2,600	1,600	--	--	2.7	6.0	100	390	0.8	<2	--	--	--	--	--	--	--	--	--	
MW-8A	07/16/12		15.80	5.21	0.00	10.59	11,000	7,200	--	--	7.2	25.0	740	2,000	<3	<10	--	--	--	--	--	--	--	--	--	
MW-8A	01/21/13		15.80	--	--	--	7,600	6,700	--	--	10	55	630	1,300	6	11	--	--	--	--	--	--	--	--	--	
MW-8A	10/07/13		15.80	--	--	--	3,200	1,400	420	--	5.6	11	390	280	2	4	--	--	--	--	--	--	--	--	--	
MW-8A	03/10/14		15.80	4.18	0.00	11.62	11,000	7,700	2,300	--	6.6	50	820	1,500	8	16	--	--	--	--	--	--	--	--	--	
MW-8A	07/28/14		15.80	--	--	--	720	320	90	--	<3.0	1.7	98	47	1	2	--	--	--	--	--	--	--	--	--	
MW-8A	01/26/15		15.80	4.60	0.00	11.20	2,900	2,200	780	--	4.0	5.6	380	140	2	5	--	--	--	--	--	--	--	--	--	
MW-8A	08/10/15		15.80	5.60	0.00	10.20	180	140	<50	--	0.7	0.4	18	4.9	0.7	<2.0	<0.5	<0.5	<0.5	<50	<0.5	<0.5	--	1.5	12	
MW-8A	01/25/16		15.80	3.62	0.00	12.18	12,000	3,400	2,300	--	16	36	810	1,300	3	<10	<3	<3	<3	<250	<3	<3	626,000	--	--	
MW-8A	07/18/16		15.80	5.44	0.00	10.36	1,700	--	530	--	1	0.7	130	50	2	3	--	--	--	--	--	--	--	--	--	
MW-8A	01/27/17		15.80	3.33	0.00	12.47	17,000	--	2,700	--	<3	19	1,000	1,400	3	12	--	--	--	--	--	--	--	--	--	
MW-8A	07/03/17		15.80	4.95	0.00	10.85	5,200	--	440	--	1	2	350	320	2	7	--	--	--	--	--	--	--	--	--	
MW-8A	**01/04/18**		**15.80**	**4.97**	**0.00**	**10.83**	**4,000**	**--**	**390**	**--**	**<5**	**<5**	**330**	**170**	**<5**	**32**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-8B	01/24/11		15.79	4.53	0.00	11.26	300	140	--	--	0.8	0.6	32	39	<0.5	<5	--	--	--	--	--	--	--	--	--	
MW-8B	07/11/11		15.79	4.81	0.00	10.98	79	240	--	--	<0.5	<0.5	3.1	9.9	<0.5	<5	--	--	--	--	--	--	--	--	--	
MW-8B	01/18/12		15.79	5.25	0.00	10.54	<50	140	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<5	--	--	--	--	--	--	--	--	--	
MW-8B	07/16/12		15.79	5.25	0.00	10.54	<50	460	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<7	--	--	--	--	--	--	--	--	--	
MW-8B	01/21/13		15.79	--	--	--	<50	<50	70	--	<0.5	<0.5	<0.5	<1.5	<0.5	<5	--	--	--	--	--	--	--	--	--	
MW-8B	10/07/13		15.79	--	--	--	<50	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<0.5	<5	--	--	--	--	--	--	--	--	--	
MW-8B	03/10/14		15.79	4.23	0.00	11.56	91	55	--	--	<0.5	<0.5	8.8	7.4	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-8B	07/28/14		15.79	--	--	--	<50	64	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-8B	01/26/15		15.79	4.65	0.00	11.14	<50	<50	--	--	<0.5	<0.5	<0.5	<1.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-8B	08/10/15		15.79	5.63	0.00	10.16	<50	<50	--	--	<0.2	<0.2	<0.2	<0.2	<0.5	<2.0	--	--	--	--	--	--	--	2.1	86	
MW-8B	01/25/16		15.79	3.65	0.00	12.14	79	<50	--	--	<0.5	<0.5	9.2	<1.5	--	<2	--	--	--	--	--	--	285,000	--	--	
MW-8B	07/18/16		15.79	5.47	0.00	10.32	<50	--	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-8B	01/27/17		15.79	3.39	0.00	12.40	<50	--	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-8B	07/03/17		15.79	4.98	0.00	10.81	<50	--	<50	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	--	--	--	--	--	
MW-8B	**01/04/18**		**15.79**	**5.05**	**0.00**	**10.74**	**<50**	**--**	**<50**	**--**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9	01/24/11		15.58	4.55	0.00	11.03	510	140	--	--	1.8	<0.5	37	<1.5	5	9	--	--	--	--	--	--	--	--	--	
MW-9	07/11/11		15.58	4.88	0.00	10.70	750	240	--	--	<0.5	<2.0	1.4	2.3	4	12	--	--	--	--	--	--	--	--	--	
MW-9	01/18/12		15.58	5.27	0.00	10.31	200	84	--	--	1.4	<0.5	<0.5	<1.5	2	7	--	--	--	--	--	--	--	--	--	
MW-9	07/16/12		15.58	5.27	0.00	10.31	260	70	--	--	<0.5	<0.5	<0.5	<1.5	3	10	--	--	--	--	--	--	--	--	--	
MW-9	01/21/13		15.58	--	--	--	330	680	55	--	2.8	<0.5	<0.5	<1.5	4	21	--	--	--	--	--	--	--	--	--	
MW-9	10/07/13		15.58	--	--	--	160	390	57	--	0.6	<0.5	<0.5	<1.5	2	11	--	--	--	--	--	--	--	--	--	
MW-9	03/10/14		15.58	4.25	0.00	11.33	120	100	--	--	<0.5	<0.5	<0.5	<1.5	2	10	--	--	--	--	--	--	--	--	--	
MW-9	07/28/14		15.58	--	--	--	320	160	--	--	<2.0	<0.5	<0.5	<1.5	2	15	--	--	--	--	--	--	--	--	--	
MW-9	01/26/15		15.58	4.68	0.00	10.90	770	630	--	--	2.1	<0.8	28	<2.1	2	38	--	--	--	--	--	--	--	--	--	
MW-9	08/10/15		15.58	5.63	0.00	9.95	210	170	--	--	<0.2	<0.2	0.2	0.4	1	17	--	--	--	--	--	--	--	1.8	69	
MW-9	01/25/16		15.58	3.71	0.00	11.87	530	280	--	--	1	<0.5	23	2.4	--	27	--	--	--	--	--	--	425,000	--	--	
MW-9	07/18/16		15.58	5.51	0.00	10.07	140	--	55	--	<0.5	<0.5	<0.5	<0.5	0.9	13	--	--	--	--	--	--	--	--	--	
MW-9	01/27/17		15.58	3.45	0.00	12.13	330	--	92	--	<0.5	<0.5	12	<0.5	1	<2	--	--	--	--	--	--	--	--	--	
MW-9	07/03/17		15.58	5.02	0.00	10.56	460	--	120	--	<0.5	<0.5	<0.5	<0.5	2	35	--	--	--	--	--	--	--	--	--	
MW-9	**01/04/18**		**15.58**	**5.08**	**0.00**	**10.50**	**87**	**--**	**200**	**--**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**0.8**	**13**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-10	07/15/16		16.12	6.00	0.00	10.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			Well Development

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
MW-10	07/18/16		16.12	6.03	0.00	10.09	<50	870	550	690	<0.5	0.6	<0.5	2.7	<0.5	<5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	--			
MW-10	01/27/17		16.12	3.99	0.00	12.13	<50	--	130	310	<0.5	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--			
MW-10	07/03/17		16.12	5.43	0.00	10.69	<50	--	98	340	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<50	<0.5	<0.5	--			
MW-10	**01/04/18**		**16.12**	**5.57**	**0.00**	**10.55**	**<50**	**--**	**310**	**500**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5**	**<0.5**	**<0.5**	**<0.5**	**<50**	**<0.5**	**<0.5**	**--**			
IW-1	01/24/11		16.04	4.70	0.00	11.34	20,000	23,000	--	--	4.3	<2.5	1,100	1,900	6	<25	--	--	--	--	--	--	--	--	--	
IW-1	07/11/11		16.04	5.04	0.00	11.00	7,300	2,700	--	--	3.2	<2.5	280	680	<1	<10	--	--	--	--	--	--	--	--	--	
IW-1	01/18/12		16.04	5.50	0.00	10.54	8,500	6,200	--	--	6.2	2.3	820	320	1	<5	--	--	--	--	--	--	--	--	--	
IW-1	07/16/12		16.04	5.42	0.00	10.62	2,600	3,700	--	--	<7.0	1.7	390	22	1	<6	--	--	--	--	--	--	--	--	--	
IW-1	01/21/13		16.04	--	--	--	4,300	2,700	570	--	4.1	<2.0	350	160	3	12	--	--	--	--	--	--	--	--	--	
IW-1	10/07/13		16.04	--	--	--	180	370	150	--	1.4	<0.5	3.6	1.7	<0.5	<5	--	--	--	--	--	--	--	--	--	
IW-1	03/10/14		16.04	4.40	0.00	11.64	14,000	11,000	--	--	2.8	0.9	650	780	6	25	--	--	--	--	--	--	--	--	--	
IW-1	07/28/14		16.04	--	--	--	89	110	--	--	<0.5	<0.5	1.2	2.6	<0.5	<2	--	--	--	--	--	--	--	--	--	
IW-1	01/26/15		16.04	4.81	0.00	11.23	4,300	2,100	--	--	1.8	<0.5	320	78	2	9	--	--	--	--	--	--	--	--	--	
IW-1	08/10/15		16.04	5.61	0.00	10.43	91	180	--	--	<0.2	<0.2	2.1	1.4	<0.5	<2.0	--	--	--	--	--	--	--	1.4	7	
IW-1	01/25/16		16.04	3.84	0.00	12.20	24,000	6,200	--	--	6.1	4	870	1100	--	29	--	--	--	--	--	--	406,000	--	--	
IW-1	07/18/16		16.04	5.63	0.00	10.41	2,600	--	510	--	<0.5	<0.5	57	14	0.6	2	--	--	--	--	--	--	--	--	--	
IW-1	01/27/17		16.04	3.53	0.00	12.51	29,000	--	6,400	--	<5	<5	930	560	<5	30	--	--	--	--	--	--	--	--	--	
IW-1	07/03/17		16.04	5.18	0.00	10.86	4,600	--	2,800	--	<0.5	<0.5	140	66	<0.5	5	--	--	--	--	--	--	--	--	--	
IW-1	**01/04/18**		**16.04**	**5.18**	**0.00**	**10.86**	**2,700**	**--**	**760**	**--**	**<3**	**<3**	**91**	**9**	**<3**	**17**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
S-24	06/28/16		--	--	--	--	390,000	--	--	--	17,000	27,000	5,400	29,000	--	--	--	--	--	--	--	--				
Trip Blank	04/28/98		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	08/31/98		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	11/12/98		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	02/15/99		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	05/06/99		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	08/10/99		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	11/10/99		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	02/01/00		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	05/12/00		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	08/03/00		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	11/03/00		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	02/12/01		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	05/02/01		--	--	--	--	ND	--	--	--	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	
Trip Blank	08/08/01		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	<2.5	--	--	--	--	--	--	--	--	--	--	
Trip Blank	11/05/01		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	<5.0	--	--	--	--	--	--	--	--	--	--	
Trip Blank	02/04/02		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	05/06/02		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	08/05/02		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	--	--	--	
Trip Blank	11/04/02		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	02/03/03		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	05/14/03		--	--	--	--	<50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	08/05/03		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	10/31/03		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	03/10/04		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<0.50	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	05/06/04		--	--	--	--	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	07/15/04		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	11/04/04		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	02/01/05		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	05/04/05		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Well No.	Date	Notes	TOC (ft-MSL)	DTW (ft)	SPH (ft)	GWE (ft-MSL)	TPH-GRO (µg/L)	TPH-DRO (µg/L)	TPH-DRO w/ Silica Gel (µg/L)	TPH-MRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	TDS (µg/L)	D.O. (mg/L)	ORP (mV)	Comments
Trip Blank	08/01/05		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	12/01/05		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	12/29/05		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.0	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	03/15/06		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
Trip Blank	06/15/06		--	--	--	--	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
Trip Blank	09/25/06		--	--	--	--	<50	<50	--	--	<0.50	<0.50	<0.50	<1.0	<0.50	--	--	--	--	--	--	--	--	--	--	
Trip Blank	11/16/06		--	--	--	--	<50	--	--	--	<0.50	<0.50	<0.50	<1.5	<0.50	--	--	--	--	--	--	--	--	--	--	
Trip Blank	03/15/07		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	06/15/07		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	09/14/07		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	12/11/07		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	03/07/08		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	06/06/08		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	09/04/08		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	12/04/08		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	03/30/09		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	06/01/09		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	01/14/10		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	07/26/10		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	01/24/11		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	07/11/11		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	01/09/12		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	07/16/12		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	01/21/13		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	10/07/13		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	03/10/14		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	07/28/14		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
Trip Blank	01/26/15		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
QA	08/10/15		--	--	--	--	<50	--	--	--	<0.2	<0.2	<0.2	<0.2	--	--	--	--	--	--	--	--	--	--	--	
QA	01/25/16		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<1.5	--	--	--	--	--	--	--	--	--	--	--	
QA	07/18/16		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	
QA	01/27/17		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	--	
QA	07/03/17		--	--	--	--	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--	--	--	--	
QA	**01/04/18**		**--**	**--**	**--**	**--**	**<50**	**--**	**--**	**--**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	

TABLE 2
Historical Groundwater Monitoring & Analytical Data
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Notes:

TPH-GRO = Total petroleum hydrocarbons as gasoline range organics
TPH-DRO = Total petroleum hydrocarbons as diesel range organics
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total xylenes
MTBE = Methyl tert-butyl ether
TBA = Tert-butyl alcohol
DIPE = Di-isopropyl ether
ETBE = Ethyl tert-butyl ether
TAME = Tert-amyl methyl ether
1,2-DCA = 1,2-Dichloroethane
EDB = 1,2-Dibromoethane
TDS = Total Dissolved Solids
D.O. = Dissolved Oxygen; rounded to the nearest tenth
ORP = Oxidation Reduction Potential
SPH = Separate-phase hydrocarbons
TOC = Top of casing (surveyed)
DTW = Depth to Water
GWE = Groundwater Elevation
Calc. GW Elev. = Calculated groundwater elevation = TOC - Depth to Water + 0.75*(Measured SPH Thickness); assuming a specific gravity of 0.75 for SPH
ft-MSL = feet above mean sea level
ft = feet
mg/L = Milligrams per liter
µg/L = Micrograms per liter
mV = millivolts
< = Analyte was not detected above the specified method reporting limit
-- = Not measured or analyzed
DUP = Duplicate sample
ND = Not Detected
NP = No Purge
NSP = Well not sampled this event, in accordance with groundwater sampling schedule

Table 1
Current and Historical Soil Analytical Results - Petroleum Hydrocarbon Constituents
Chevron Site No. 306574 (Former Unocal #3642)
7455 Redwood Boulevard
Novato, California

Sample Name	Sample Date	Sample Depth (feet)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-DRO (Silica Gel) (mg/kg)	TPH-Motor Oil (mg/kg)	Total TPH (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
SW1 (3)	02/24/92	4.5	1.2	--	--	--	--	--	0.0088	0.0071	0.0058	0.011	--	--	--	--	--	--	--	--	--	--
SW5	02/24/92	4.5	<1.0	--	--	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
SW6	02/24/92	4.5	3.3	--	--	--	--	--	<0.005	<0.005	<0.005	0.0053	--	--	--	--	--	--	--	--	--	--
WO (SW1)	02/24/92	4.5	130	1,500	--	--	--	--	0.16	<0.005	0.29	1.8	--	--	--	--	--	--	--	--	--	--
WO (SW2)	02/24/92	4.5	25	330	--	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
WO (SW4)	02/24/92	4.5	9.8	190	--	--	--	--	<0.005	0.0097	0.017	0.056	--	--	--	--	--	--	--	--	--	--
WO (SW3)	02/24/92	4.5	<1.0	12	--	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
BS1	02/24/92	5.0	1,200	--	--	--	--	--	11	69	30	160	--	--	--	--	--	--	--	--	--	--
BS2	02/24/92	5.0	3,000	--	--	--	--	--	54	230	79	430	--	--	--	--	--	--	--	--	--	--
BS3	02/24/92	5.0	370	--	--	--	--	--	4.8	4.1	7.9	33	--	--	--	--	--	--	--	--	--	--
P(N)	03/03/92	4.5	3,400	280	--	--	--	--	43	270	110	570	--	--	--	--	--	--	--	--	--	--
P(S)	03/03/92	4.5	1,100	--	--	--	--	--	5.6	33	28	130	--	--	--	--	--	--	--	--	--	--
P(E)	03/03/92	4.5	53	6.4	--	--	--	--	1.8	0.65	1.2	3.6	--	--	--	--	--	--	--	--	--	--
P(W)	03/03/92	4.5	1,400	--	--	--	--	--	3.5	29	33	180	--	--	--	--	--	--	--	--	--	--
WO (SW1-6)	03/03/92	4.5	<1.0	<1.0	--	--	--	41	<0.005	<0.005	<0.005	0.0083	--	--	--	--	--	--	--	--	--	--
WO (SW2-W)	03/03/92	4.5	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
WO (SW4-2)	03/03/92	4.5	<1.0	<1.0	--	--	--	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
MW-1-5	April 1993	5.0	620	4.4	--	--	--	--	4.6	13	11	68	--	--	--	--	--	--	--	--	--	--
MW-1-7.5	April 1993	7.5	<1.0	<1.0	--	--	--	--	<0.005	0.0076	<0.005	0.023	--	--	--	--	--	--	--	--	--	--
MW-2-4	April 1993	4.0	760	29	--	--	--	--	5.2	33	22	130	--	--	--	--	--	--	--	--	--	--
MW-2-6.5	April 1993	6.5	2,000	51	--	--	--	--	28	130	48	270	--	--	--	--	--	--	--	--	--	--
MW-3-4.5	April 1993	4.5	2,500	23	--	--	--	--	41	170	80	450	--	--	--	--	--	--	--	--	--	--
MW-4-4.5	April 1993	4.5	<1.0	<1.0	--	--	--	--	<0.005	0.014	0.0055	0.036	--	--	--	--	--	--	--	--	--	--
MW-4-6.5	April 1993	6.5	<1.0	<1.0	--	--	--	--	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--	--
MW-5-4	April 1993	4.0	2,500	22	--	--	--	--	25	180	70	390	--	--	--	--	--	--	--	--	--	--
MW-5-6.5	April 1993	6.5	1.5	1.1	--	--	--	--	0.18	0.17	0.028	0.16	--	--	--	--	--	--	--	--	--	--
MW-6-5	10/10/95	5.0	27	3.9	--	--	--	--	0.61	3.0	0.65	5.0	--	--	--	--	--	--	--	--	--	--
MW-6 -7.5	10/10/95	7.5	3,600	260	--	--	--	--	18	180	83	480	--	--	--	--	--	--	--	--	--	--
MW-6-9.5	10/10/95	9.5	<1.0	1.0	--	--	--	--	<0.0050	0.017	0.0078	0.042	--	--	--	--	--	--	--	--	--	--
P1	01/03/04	5.5	1,700	--	--	--	--	--	22	140	57	300	--	--	--	--	--	--	--	--	--	--
P2	01/03/04	5.5	310	--	--	--	--	--	4.8	21	9.8	54	--	--	--	--	--	--	--	--	--	--
P3	01/03/04	5.5	1,600	--	--	--	--	--	25	130	44	260	--	--	--	--	--	--	--	--	--	--
P4	01/03/04	5.5	1,000	--	--	--	--	--	18	86	25	140	--	--	--	--	--	--	--	--	--	--
SW1	01/03/04	5.2	71	--	--	--	--	--	0.050	0.080	0.37	2.8	--	--	--	--	--	--	--	--	--	--
SW2	01/03/04	5.2	5.4	--	--	--	--	--	0.0088	0.057	0.012	0.082	--	--	--	--	--	--	--	--	--	--
SW3	01/03/04	5.2	4.0	--	--	--	--	--	0.012	0.058	0.048	0.37	--	--	--	--	--	--	--	--	--	--
SW4	01/03/04	5.2	<1.0	--	--	--	--	--	<0.0050	<0.0050	<0.0050	0.0069	--	--	--	--	--	--	--	--	--	--
WO1	01/03/04	6.0	120	130	--	--	--	--	0.056	0.057	0.25	0.76	--	--	--	--	--	--	--	--	--	--
WO1-8.5	01/03/04	8.5	10	96	--	--	--	--	0.017	0.024	0.043	0.24	--	--	--	--	--	--	--	--	--	--
HA-1-4	04/21/05	4.0	33	24	--	--	--	130	<0.0050	<0.0050	1.5	0.29	--	<0.0050	<0.0050	<0.0050	<0.0050	0.025	<0.0050	<0.0050	--	--
HA-2-4	04/21/05	4.0	190	160	--	--	--	<10	0.035	<0.025	6.3	2.1	--	<0.025	<0.025	<0.025	<0.025	<0.15	<0.025	<0.025	--	--
HA-3-4	04/21/05	4.0	<1.0	6.9	--	--	--	48	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	0.035	<0.0050	<0.0050	--	--
HA-4-4	04/21/05	4.0	<1.0	15	--	--	--	38	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	0.071	<0.0050	<0.0050	--	--
HA-5-4	04/21/05	4.0	<1.0	<5.0	--	--	--	19	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	0.0081	<0.0050	<0.0050	--	--
HA-6-4	04/21/05	4.0	140	41	--	--	--	<10	<0.025	<0.025	2.1	7.2	--	<0.025	<0.025	<0.025	<0.025	<0.15	<0.025	<0.025	--	--
HA-7-4	04/21/05	4.0	1,100	390	--	--	--	85	0.051	0.27	13	60	--	<0.025	<0.025	<0.025	<0.025	<0.15	<0.025	<0.025	--	--

Table 1
Current and Historical Soil Analytical Results - Petroleum Hydrocarbon Constituents
Chevron Site No. 306574 (Former Unocal #3642)
7455 Redwood Boulevard
Novato, California

Sample Name	Sample Date	Sample Depth (feet)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-DRO (Silica Gel) (mg/kg)	TPH-Motor Oil (mg/kg)	Total TPH (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
HA-8-4	04/21/05	4.0	2.4	21	--	--	--	<10	<0.0050	<0.0050	<0.0050	<0.0050	--	0.0085	<0.0050	<0.0050	<0.0050	0.0095	<0.0050	<0.0050	--	--
HA-9-4	04/21/05	4.0	<1.0	24	--	--	--	26	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--
HA-10-4	04/21/05	4.0	<1.0	8.0	--	--	--	<10	<0.0050	<0.0050	<0.0050	<0.0050	--	0.0095	<0.0050	<0.0050	<0.0050	0.016	<0.0050	<0.0050	--	--
HA-11-4	04/21/05	4.0	1,700	320	--	--	--	61	5.5	12	52	180	--	0.089	<0.025	<0.025	<0.025	<0.15	<0.025	<0.025	--	--
HA-12-4	04/21/05	4.0	1.4	11	--	--	--	32	0.068	<0.0050	0.015	<0.0050	--	0.057	<0.0050	<0.0050	<0.0050	0.082	<0.0050	<0.0050	--	--
HA-13-4	04/21/05	4.0	1.2	11	--	--	--	13	<0.0050	<0.0050	0.07	0.0083	--	<0.0050	<0.0050	<0.0050	<0.0050	0.0071	<0.0050	<0.0050	--	--
HA-14-20"	04/21/05	1.67	<1.0	930	--	--	--	610	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--
HA-15-4	04/21/05	4.0	14	190	--	--	--	14	<0.0050	<0.0050	0.14	0.38	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0090	<0.0050	<0.0050	--	--
HA-16-4	04/21/05	4.0	<1.0	<5.0	--	--	--	<10	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--
HA-17-4	04/21/05	4.0	<1.0	7.4	--	--	--	16.0	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--
MW-7-6.5	04/21/05	6.5	<1.0	<5.0	--	--	--	<10	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--
MW-7-10	04/21/05	10.0	<1.0	10	--	--	--	<10	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--
MW-7-11	04/21/05	11.0	<1.0	<5.0	--	--	--	<10	<0.0050	<0.0050	<0.0050	<0.0050	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--	--
COMP-1	April 2008	2.0	8.7	4.9	--	--	--	--	<0.024	<0.047	<0.047	<0.047	--	<0.024	<0.047	<0.047	<0.047	<0.94	<0.047	<0.047	--	--
COMP-2	April 2008	2.0	8.1	<4.0	--	--	--	--	<0.023	<0.047	0.32	<0.047	--	<0.023	<0.047	<0.047	<0.047	<0.93	<0.047	<0.047	--	--
COMP-3	April 2008	10.0-15.0	<1.0	<4.0	--	--	--	--	<0.0005	<0.001	0.006	0.024	--	<0.0005	<0.001	<0.001	<0.001	<0.021	<0.001	<0.001	--	--
COMP-4	April 2008	10.0-15.0	25	<4.0	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	--	0.0009	<0.001	<0.001	<0.001	<0.021	<0.001	<0.001	--	--
COMP-5	April 2008	10.0-15.0	<1.0	<4.0	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	--	<0.0005	<0.001	<0.001	<0.001	<0.021	<0.001	<0.001	--	--
COMP-6	April 2008	10.0-15.0	<1.0	<4.0	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	--	<0.0005	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--
SB-1-5	April 2008	5.0	3.8	<4.0	--	--	--	--	0.001	<0.0009	0.016	0.021	--	0.003	<0.0009	<0.0009	<0.0009	0.022	<0.0009	<0.0009	--	--
SB-1-10	April 2008	10.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0008	0.001	0.003	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	--	--	--
SB-1-15	April 2008	15.0	<0.9	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.017	<0.0008	<0.0008	--	--
SB-2-5	April 2008	5.0	760	290	--	--	--	--	<0.021	<0.043	10	23	--	<0.021	<0.043	<0.043	<0.043	<0.85	<0.043	--	--	--
SB-2-11	April 2008	11.0	<0.7	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	<0.0008	--	--
SB-2-16	April 2008	16.0	<0.9	<4.0	--	--	--	--	<0.0004	<0.0008	0.0008	0.004	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	<0.0008	--	--
SB-3-5	April 2008	5.0	1.2	<4.0	--	--	--	--	0.001	0.001	0.003	0.001	--	0.0006	<0.0008	<0.0008	<0.0008	0.047	<0.0008	--	--	--
SB-3-11	April 2008	11.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0007	<0.0007	<0.0007	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.015	<0.0007	<0.0007	--	--
SB-3-16	April 2008	16.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0007	<0.0007	<0.0007	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.015	<0.0007	<0.0007	--	--
SB-4-5	April 2008	5.0	99	78	--	--	--	--	<0.019	<0.038	4.0	4.8	--	<0.019	<0.038	<0.038	<0.038	<0.76	<0.038	--	--	--
SB-4-11	April 2008	11.0	<0.7	<4.0	--	--	--	--	<0.0004	<0.0007	<0.0007	<0.0007	--	0.0006	<0.0007	<0.0007	<0.0007	<0.015	<0.0007	<0.0007	--	--
SB-4-16	April 2008	16.0	<0.7	<4.0	--	--	--	--	<0.0005	<0.001	0.002	0.009	--	<0.0005	<0.001	<0.001	<0.001	<0.019	<0.001	--	--	--
SB-5-5	April 2008	5.0	96	71	--	--	--	--	<0.021	<0.042	4.1	9.5	--	<0.021	<0.042	<0.042	<0.042	<0.84	<0.042	<0.001	--	--
SB-5-11	April 2008	11.0	<0.9	<4.0	--	--	--	--	<0.0004	<0.0009	<0.0009	<0.0009	--	<0.0004	<0.0009	<0.0009	<0.0009	<0.017	<0.0009	<0.0009	--	--
SB-5-16	April 2008	16.0	<1.0	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	<0.0008	--	--
SB-6-5	April 2008	5.0	26	<4.0	--	--	--	--	<0.022	<0.044	0.14	0.16	--	<0.022	<0.044	<0.044	<0.044	<0.88	<0.044	0.009	--	--
SB-6-10	April 2008	10.0	<1.0	<4.0	--	--	--	--	<0.0004	<0.0008	0.001	0.005	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	0.009	--	--
SB-6-15	April 2008	15.0	6.2	64	--	--	--	--	<0.0004	0.003	0.015	0.073	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	0.009	--	--
SB-7-5	April 2008	5.0	230	51	--	--	--	--	0.066	0.048	6.5	14	--	<0.020	<0.041	<0.041	<0.041	<0.82	<0.041	0.009	--	--
SB-7-11	April 2008	11.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	0.004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	<0.0008	--	--
SB-7-16	April 2008	16.0	<0.7	<4.0	--	--	--	--	<0.0003	<0.0007	<0.0007	<0.0007	--	<0.0003	<0.0007	<0.0007	<0.0007	<0.013	<0.0007	<0.0007	--	--
SB-8-5	April 2008	5.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	<0.0008	--	--
SB-8-11	April 2008	11.0	<0.7	<4.0	--	--	--	--	0.0005	<0.0008	<0.0008	<0.0008	--	0.005	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	<0.0008	--	--
SB-8-16	April 2008	16.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	<0.0008	--	--
SB-9-5	April 2008	5.0	260	45	--	--	--	--	0.021	<0.038	1.1	0.094	--	<0.019	<0.038	<0.038	<0.038	<0.75	<0.038	0.009	--	--
SB-9-11	April 2008	11.0	<0.9	<4.0	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	--	<0.0005	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--
SB-9-16	April 2008	16.0	<1.1	<4.0	--	--	--	--	<0.0004	<0.0009	<0.0009	<0.0009	--	<0.0004	<0.0009	<0.0009	<0.0009	<0.018	<0.0009	<0.0009	--	--

Table 1
Current and Historical Soil Analytical Results - Petroleum Hydrocarbon Constituents
Chevron Site No. 306574 (Former Unocal #3642)
7455 Redwood Boulevard
Novato, California

Sample Name	Sample Date	Sample Depth (feet)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-DRO (Silica Gel) (mg/kg)	TPH-Motor Oil (mg/kg)	Total TPH (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
SB-10-5	April 2008	5.0	2.8	11	--	--	--	--	<0.004	<0.0009	<0.0009	0.001	--	0.003	<0.0009	<0.0009	<0.0009	<0.018	<0.0009	<0.0009	--	--
SB-10-11	April 2008	11.0	<0.9	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	<0.0008	--	--
SB-10-16	April 2008	16.0	<0.9	<4.0	--	--	--	--	<0.0004	<0.0009	<0.0009	<0.0009	--	<0.0004	<0.0009	<0.0009	<0.0009	<0.018	<0.0009	<0.0009	--	--
SB-11-5	April 2008	5.0	2,200	170	--	--	--	--	14	45	60	260	--	0.32	<0.038	<0.038	<0.038	<0.77	<0.038	0.009	--	--
SB-11-10	April 2008	10.0	<0.8	<4.0	--	--	--	--	0.001	0.003	0.005	0.016	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	0.009	--	--
SB-11-15	April 2008	15.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0007	<0.0007	<0.0007	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.015	<0.0007	<0.0007	--	--
SB-11-20	April 2008	20.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	<0.0008	--	--
SB-12-5	April 2008	5.0	3,300	240	--	--	--	--	16	150	100	580	--	<0.20	<0.41	<0.41	<0.41	<8.2	<0.41	0.009	--	--
SB-12-10	April 2008	10.0	24	<4.0	--	--	--	--	<0.016	<0.033	<0.033	0.070	--	<0.016	<0.033	<0.033	<0.033	<0.66	<0.033	<0.033	--	--
SB-12-15	April 2008	15.0	6.6	<4.0	--	--	--	--	0.009	0.049	0.035	0.14	--	<0.0003	<0.0005	<0.0005	<0.0005	<0.010	<0.0005	0.009	--	--
SB-12-20	April 2008	20.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	<0.0008	--	--
SB-13-5	April 2008	5.0	1.0	<4.0	--	--	--	--	0.002	<0.001	0.018	0.081	--	0.001	<0.001	<0.001	<0.001	<0.021	<0.001	0.009	--	--
SB-13-10	April 2008	10.0	<0.7	<4.0	--	--	--	--	<0.0004	<0.0007	0.015	0.053	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.014	<0.0007	<0.0007	--	--
SB-13-15	April 2008	15.0	<0.9	<4.0	--	--	--	--	<0.0004	<0.0009	<0.0009	0.002	--	<0.0004	<0.0009	<0.0009	<0.0009	<0.018	<0.0009	<0.0009	--	--
SB-14-5	April 2008	5.0	740	43	--	--	--	--	0.050	<0.041	11	52	--	<0.021	<0.041	<0.041	<0.041	<0.83	<0.041	0.009	--	--
SB-14-10	April 2008	10.0	<0.7	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	0.001	--	0.008	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	<0.0008	--	--
SB-14-15	April 2008	15.0	<0.7	<4.0	--	--	--	--	<0.0004	<0.0007	<0.0007	<0.0007	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.014	<0.0007	<0.0007	--	--
SB-15-5	April 2008	5.0	650	120	--	--	--	--	0.21	1.7	24	120	--	<0.016	<0.032	<0.032	<0.032	<0.65	<0.032	0.009	--	--
SB-15-10	April 2008	10.0	<0.8	4.2	--	--	--	--	0.006	0.004	0.059	0.21	--	<0.0005	<0.0009	<0.0009	<0.0009	<0.018	<0.0009	0.009	--	--
SB-15-15	April 2008	15.0	5.6	61	--	--	--	--	0.13	0.059	2.2	10	--	0.006	<0.0009	<0.0009	<0.0009	<0.017	<0.0009	0.009	--	--
SB-16-5	April 2008	5.0	23	4.2	--	--	--	--	<0.022	<0.044	<0.044	0.062	--	<0.022	<0.044	<0.044	<0.044	<0.88	<0.044	<0.044	--	--
SB-16-10	April 2008	10.0	<0.9	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	0.002	--	0.004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	<0.0008	--	--
SB-16-15	April 2008	15.0	<1.0	<4.0	--	--	--	--	<0.0005	<0.001	0.003	0.004	--	<0.0005	<0.001	<0.001	<0.001	<0.019	<0.001	0.009	--	--
SB-17-5	April 2008	5.0	1,600	120	--	--	--	--	0.14	5.2	15	80	--	<0.019	<0.039	<0.039	<0.039	<0.78	<0.039	0.009	--	--
SB-17-10	April 2008	10.0	<0.8	<4.0	--	--	--	--	0.030	0.002	0.012	0.008	--	0.004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	0.009	--	--
SB-17-15	April 2008	15.0	19	<4.0	--	--	--	--	<0.021	<0.042	<0.042	<0.042	--	<0.021	<0.042	<0.042	<0.042	<0.83	<0.042	<0.042	--	--
SB-18-5	April 2008	5.0	3,900	500	--	--	--	--	18	170	100	570	--	0.041	<0.071	<0.071	<0.071	<1.4	<0.071	0.009	--	--
SB-18-10	April 2008	10.0	<1.0	<4.0	--	--	--	--	0.003	<0.0009	<0.0009	0.002	--	0.003	<0.0009	<0.0009	<0.0009	<0.018	<0.0009	<0.0009	--	--
SB-18-15	April 2008	15.0	2.6	<4.0	--	--	--	--	0.003	0.013	0.003	0.014	--	<0.0005	<0.001	<0.001	<0.001	<0.019	<0.001	0.009	--	--
SB-18-20	April 2008	20.0	4.1	<4.0	--	--	--	--	0.002	0.004	0.006	0.020	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	0.009	--	--
SB-18-25	April 2008	25.0	<1.1	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.017	<0.0008	<0.0008	--	--
SB-19-5	April 2008	5.0	1,400	99	--	--	--	--	0.68	0.72	11	41	--	<0.032	<0.063	<0.063	<0.063	<1.3	<0.063	0.009	--	--
SB-19-10	April 2008	10.0	<1.3	<4.0	--	--	--	--	0.001	<0.001	<0.001	<0.001	--	<0.0005	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	--	--
SB-19-15	April 2008	15.0	2.5	<4.0	--	--	--	--	0.017	0.033	0.024	0.11	--	<0.0007	<0.001	<0.001	<0.001	<0.028	<0.001	0.009	--	--
SB-19-20	April 2008	20.0	420	62	--	--	--	--	1.6	0.73	3.1	10	--	0.027	<0.040	<0.040	<0.040	<0.80	<0.040	0.009	--	--
SB-19-25	April 2008	25.0	<0.8	<4.0	--	--	--	--	0.005	0.017	0.009	0.051	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	<0.0008	--	--
SB-20-5	April 2008	5.0	<1.2	<4.0	--	--	--	--	0.0005	<0.001	<0.001	<0.001	--	<0.0005	<0.001	<0.001	<0.001	0.028	<0.001	<0.001	--	--
SB-20-10	April 2008	10.0	<0.8	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	<0.0008	--	--
SB-20-15	April 2008	15.0	<0.7	<4.0	--	--	--	--	<0.0004	<0.0007	<0.0007	<0.0007	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.014	<0.0007	<0.0007	--	--
SB-21-5	April 2008	5.0	130	60	--	--	--	--	<0.020	<0.040	0.49	0.58	--	<0.020	<0.040	<0.040	<0.040	<0.80	<0.040	0.009	--	--
SB-21-10	April 2008	10.0	<0.7	<4.0	--	--	--	--	<0.0004	<0.0007	0.002	0.004	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.015	<0.0007	0.009	--	--
SB-21-15	April 2008	15.0	19	<4.0	--	--	--	--	0.0004	<0.0007	0.094	0.15	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.015	<0.0007	0.009	--	--
SB-22-5	April 2008	5.0	<0.9	<4.0	--	--	--	--	<0.0004	<0.0009	<0.0009	<0.0009	--	<0.0004	<0.0009	<0.0009	<0.0009	<0.018	<0.0009	<0.0009	--	--
SB-22-10	April 2008	10.0	<1.0	<4.0	--	--	--	--	<0.0004	<0.0008	<0.0008	<0.0008	--	<0.0004	<0.0008	<0.0008	<0.0008	<0.015	<0.0008	<0.0008	--	--
SB-22-15	April 2008	15.0	<0.7	17	--	--	--	--	<0.0004	<0.0007	<0.0007	0.0007	--	<0.0004	<0.0007	<0.0007	<0.0007	<0.014	<0.0007	<0.0007	--	--

Table 1
Current and Historical Soil Analytical Results - Petroleum Hydrocarbon Constituents
Chevron Site No. 306574 (Former Unocal #3642)
7455 Redwood Boulevard
Novato, California

Sample Name	Sample Date	Sample Depth (feet)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-DRO (Silica Gel) (mg/kg)	TPH-Motor Oil (mg/kg)	Total TPH (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
SB-1-S-2	07/09/13	2.0	<1.2	<4.5	<4.5	<11	<11	--	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	--	--	--	--	--	--	<0.001	<0.001
SB-1-S-4.5	07/09/13	4.5	<1.1	<4.6	<4.6	<35	<35	--	<0.0006	<0.001	<0.001	<0.001	<0.001	<0.0006	--	--	--	--	--	--	<0.001	<0.001
SB-1-S-6	07/09/13	6.0	<1.2	<4.7	<4.7	<12	<12	--	<0.0006	<0.001	<0.001	<0.001	<0.001	<0.0006	--	--	--	--	--	--	<0.001	<0.001
VP-1-S-2	07/09/13	2.0	<1.2	<4.8	<4.8	NA	NA	--	<0.0006	<0.001	<0.001	<0.001	<0.001	<0.0006	--	--	--	--	--	--	NA	NA
VP-1-S-3.5	07/09/13	3.5	<1.2	<4.6	<4.6	NA	NA	--	<0.0006	<0.001	<0.001	<0.001	0.002	<0.0006	--	--	--	--	--	--	NA	NA
VP-2-S-2	07/09/13	2.0	29	71	38	NA	NA	--	<0.0006	<0.001	<0.001	<0.001	0.003	0.001	--	--	--	--	--	--	NA	NA
VP-2-S-3.5	07/09/13	3.5	3.1	9.2	4.9	NA	NA	--	<0.0006	<0.001	<0.001	<0.001	0.14	0.001	--	--	--	--	--	--	NA	NA
VP-3-S-2	07/09/13	2.0	3.0	15	7.4	NA	NA	--	<0.0006	<0.001	<0.001	<0.001	<0.001	<0.0006	--	--	--	--	--	--	NA	NA
VP-3-S-3.5	07/09/13	3.5	150	410	330	NA	NA	--	<0.027	<0.054	<0.054	<0.054	0.89	<0.027	--	--	--	--	--	--	NA	NA
VP-4-S-2	07/09/13	2.0	98	24	16	NA	NA	--	<0.033	<0.065	0.55	<0.065	12	<0.033	--	--	--	--	--	--	NA	NA
VP-4-S-3.5	07/09/13	3.5	110	31	26	NA	NA	--	<0.030	<0.060	0.63	0.74	8.3	<0.030	--	--	--	--	--	--	NA	NA
VP-5-S-2	07/09/13	2.0	1.5	<4.8	<4.8	NA	NA	--	<0.0007	<0.001	<0.001	<0.001	<0.001	0.003	--	--	--	--	--	--	NA	NA
VP-5-S-3.5	07/09/13	3.5	4.9	<4.8	<4.8	NA	NA	--	<0.0006	<0.001	<0.001	<0.001	0.001	0.009	--	--	--	--	--	--	NA	NA
VP-6-S-2	07/25/14	2.0	9.7	15	--	--	--	--	<0.0006	<0.001	<0.001	<0.001	<0.001	0.002	--	--	--	--	--	--	--	--
VP-6-S-3.5	07/25/14	3.5	2.5	14	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	0.001	0.0006	--	--	--	--	--	--	--	--
VP-7-S-2	07/25/14	2.0	<1.3	<5.1	--	--	--	--	<0.0006	<0.001	<0.001	<0.001	<0.001	<0.0006	--	--	--	--	--	--	--	--
VP-7-S-3.5	07/25/14	3.5	<1.2	6.9	--	--	--	--	<0.0006	<0.001	<0.001	<0.001	<0.001	<0.0006	--	--	--	--	--	--	--	--
VP-8-S-2	07/25/14	2.0	<1.1	14.0	--	--	--	--	<0.0006	<0.001	<0.001	<0.001	<0.001	<0.0006	--	--	--	--	--	--	--	--
VP-8-S-3.5	07/25/14	3.5	<1.1	<4.5	--	--	--	--	<0.0006	<0.001	<0.001	<0.001	<0.001	<0.0006	--	--	--	--	--	--	--	--
S3-S-5	06/27/16	5-7	<0.5	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--
S3-S-7	06/27/16	7-9	<0.5	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--
S4-S-3	06/27/16	3-5	58	--	--	--	--	--	<0.027	<0.054	<0.054	<0.054	0.40	--	--	--	--	--	--	--	--	--
S4-S-5	06/27/16	5-7	3,100	--	--	--	--	--	<0.24	9.8	74	260	30	--	--	--	--	--	--	--	--	--
S4-S-7	06/27/16	7-9	24	--	--	--	--	--	<0.024	<0.048	<0.048	<0.048	<0.048	--	--	--	--	--	--	--	--	--
S4-S-9	06/27/16	9-11	71	--	--	--	--	--	<0.023	0.37	1.8	5.4	0.18	--	--	--	--	--	--	--	--	--
S5-S-1	06/22/16	1-3	17	--	--	--	--	--	<0.024	<0.049	<0.049	<0.049	<0.049	--	--	--	--	--	--	--	--	--
S5-S-3	06/22/16	3-5	610	--	--	--	--	--	<0.099	<0.20	2.4	0.53	5.8	--	--	--	--	--	--	--	--	--
S5-S-5	06/22/16	5-7	670	--	--	--	--	--	<0.10	<0.20	14	37	14	--	--	--	--	--	--	--	--	--
S5-S-7	06/22/16	7-9	110	--	--	--	--	--	<0.024	<0.048	0.10	0.10	0.18	--	--	--	--	--	--	--	--	--
S5-S-9	06/22/16	9-11	72	--	--	--	--	--	<0.024	<0.048	1.1	1.4	0.16	--	--	--	--	--	--	--	--	--
S6-S-3	06/20/16	3-5	250	--	--	--	--	--	<0.026	<0.052	2.6	4.0	6.8	--	--	--	--	--	--	--	--	--
S6-S-5	06/20/16	5-7	2,500	--	--	--	--	--	0.26	2.0	29	140	14	--	--	--	--	--	--	--	--	--
S6-S-7	06/20/16	7-9	540	--	--	--	--	--	0.21	0.047	7.7	23	4.3	--	--	--	--	--	--	--	--	--
S6-S-9	06/20/16	9-11	<0.5	--	--	--	--	--	0.012	<0.001	0.005	0.015	0.005	--	--	--	--	--	--	--	--	--
S7-S-3	06/22/16	3-5	1,200	--	--	--	--	--	<0.23	<0.46	13	56	14	--	--	--	--	--	--	--	--	--
S7-S-5	06/22/16	5-7	2,400	--	--	--	--	--	<0.23	1.0	20	100	9.9	--	--	--	--	--	--	--	--	--
S7-S-7	06/22/16	7-9	2.5	--	--	--	--	--	<0.0005	<0.001	0.028	0.11	0.011	--	--	--	--	--	--	--	--	--
S8-S-3	06/27/16	3-5	430	--	--	--	--	--	<0.027	<0.053	3.2	9.1	4.7	--	--	--	--	--	--	--	--	--
S8-S-5	06/27/16	5-7	27	--	--	--	--	--	<0.026	<0.053	0.49	0.94	0.63	--	--	--	--	--	--	--	--	--
S10-S-5	06/27/16	5-7	8.8	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--
S10-S-7	06/27/16	7-9	<0.5	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--
S11-S-3	06/20/16	3-5	2.2	--	--	--	--	--	<0.0005	<0.0009	<0.0009	<0.0009	0.003	--	--	--	--	--	--	--	--	--
S11-S-5	06/20/16	5-7	200	--	--	--	--	--	<0.026	0.053	1.4	4.1	4.3	--	--	--	--	--	--	--	--	--
S11-S-7	06/20/16	7-9	170	--	--	--	--	--	0.002	0.002	1.5	4.2	4.7	--	--	--	--	--	--	--	--	--
S12-S-3	06/23/16	3-5	1,100	--	--	--	--	--	0.29	3.5	18	61	25	--	--	--	--	--	--	--	--	--
S12-S-5	06/23/16	5-7	560	--	--	--	--	--	0.27	6.6	17	83	10	--	--	--	--	--	--	--	--	--
S12-S-7	06/23/16	7-9	17	--	--	--	--	--	<0.024	0.070	0.12	0.45	<0.047	--	--	--	--	--	--	--	--	--

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7455 Redwood Boulevard
Novato, California

Sample Name	Sample Date	Sample Depth (feet)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-DRO (Silica Gel) (mg/kg)	TPH-Motor Oil (mg/kg)	Total TPH (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
S13-S-3	06/27/16	3-5	380	--	--	--	--	--	0.34	1.8	4.5	16	4.4	--	--	--	--	--	--	--	--	--
S13-S-5	06/27/16	5-7	1,200	--	--	--	--	--	1.2	19	22	120	13	--	--	--	--	--	--	--	--	--
S13-S-7	06/27/16	7-9	140	--	--	--	--	--	<0.025	<0.050	0.52	0.29	0.52	--	--	--	--	--	--	--	--	--
S14-S-3	06/27/16	3-5	2,000	--	--	--	--	--	2.3	28	47	250	23	--	--	--	--	--	--	--	--	--
S14-S-5	06/27/16	5-7	4,500	--	--	--	--	--	9.3	94	89	440	30	--	--	--	--	--	--	--	--	--
S14-S-7	06/27/16	7-9	6,400	--	--	--	--	--	3.0	38	52	240	27	--	--	--	--	--	--	--	--	--
S15-S-5	06/23/16	5-7	790	--	--	--	--	--	2.6	1.7	24	38	9.8	--	--	--	--	--	--	--	--	--
S15-S-7	06/23/16	7-9	140	--	--	--	--	--	0.33	0.16	2.8	2.8	1.3	--	--	--	--	--	--	--	--	--
S15-S-9	06/23/16	9-11	0.9	--	--	--	--	--	0.004	<0.001	0.005	0.012	<0.001	--	--	--	--	--	--	--	--	--
S16-S-3	06/23/16	3-5	1,100	--	--	--	--	--	0.60	6.6	22	97	11	--	--	--	--	--	--	--	--	--
S16-S-5	06/23/16	5-7	380	--	--	--	--	--	0.56	3.1	6.9	34	2.4	--	--	--	--	--	--	--	--	--
S16-S-7	06/23/16	7-9	16	--	--	--	--	--	0.033	0.13	0.12	0.51	0.004	--	--	--	--	--	--	--	--	--
S17-S-7	06/29/16	7-9	7.4	--	110	--	--	--	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.020	<0.001	<0.001	<0.001	<0.001
S19-S-3	06/27/16	3-5	160	--	--	--	--	--	<0.026	<0.051	0.91	0.79	3.1	--	--	--	--	--	--	--	--	--
S19-S-5	06/27/16	5-7	67	--	--	--	--	--	<0.024	<0.048	0.58	0.83	0.92	--	--	--	--	--	--	--	--	--
S19-S-7	06/27/16	7-9	<0.5	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--
S20-S-1	06/27/16	1-3	47	--	--	--	--	--	0.042	<0.051	0.067	<0.051	0.70	--	--	--	--	--	--	--	--	--
S20-S-3	06/27/16	3-5	34	--	--	--	--	--	<0.024	<0.047	0.39	0.15	2.7	--	--	--	--	--	--	--	--	--
S20-S-5	06/27/16	5-7	250	--	--	--	--	--	<0.025	0.17	2.9	14	2.0	--	--	--	--	--	--	--	--	--
S20-S-7	06/27/16	7-9	190	--	--	--	--	--	<0.027	<0.054	0.57	1.6	0.098	--	--	--	--	--	--	--	--	--
S20-S-9	06/27/16	9-11	1,100	--	--	--	--	--	<0.025	0.12	3.7	15	0.92	--	--	--	--	--	--	--	--	--
S21-S-3	06/21/16	3-5	770	--	--	--	--	--	0.35	1.8	18	26	25	--	--	--	--	--	--	--	--	--
S21-S-5	06/21/16	5-7	870	--	--	--	--	--	0.41	4.7	20	95	9.0	--	--	--	--	--	--	--	--	--
S21-S-7	06/21/16	7-9	83	--	--	--	--	--	<0.023	<0.045	0.28	0.078	0.20	--	--	--	--	--	--	--	--	--
S21-S-9	06/21/16	9-11	1	--	--	--	--	--	<0.0005	0.002	0.006	0.025	0.006	--	--	--	--	--	--	--	--	--
S22-S-3	06/21/16	3-5	1,200	--	--	--	--	--	0.64	3.4	28	51	26	--	--	--	--	--	--	--	--	--
S22-S-5	06/21/16	5-7	1,900	--	--	--	--	--	0.67	11	34	170	26	--	--	--	--	--	--	--	--	--
S22-S-7	06/21/16	7-9	180	--	--	--	--	--	<0.028	<0.055	0.10	0.12	0.46	--	--	--	--	--	--	--	--	--
S23-S-3	06/21/16	3-5	560	--	--	--	--	--	0.96	2.3	18	41	9.0	--	--	--	--	--	--	--	--	--
S23-S-5	06/21/16	5-7	530	--	--	--	--	--	2.0	13	27	110	7.7	--	--	--	--	--	--	--	--	--
S23-S-7	06/21/16	7-9	110	--	--	--	--	--	0.033	<0.052	2.5	1.1	1.6	--	--	--	--	--	--	--	--	--
S23-S-9	06/21/16	9-11	1.5	--	--	--	--	--	0.071	0.093	0.094	0.29	0.017	--	--	--	--	--	--	--	--	--
S24-S-3	06/27/16	3-5	660	--	--	--	--	--	2.4	14	16	80	6.9	--	--	--	--	--	--	--	--	--
S24-S-5	06/27/16	5-7	850	--	--	--	--	--	7.9	32	30	150	10	--	--	--	--	--	--	--	--	--
S24-S-7	06/27/16	7-9	3,000	--	--	--	--	--	6.9	37	26	140	8.2	--	--	--	--	--	--	--	--	--
S25-S-5	06/23/16	5-9	180	--	--	--	--	--	<0.025	<0.050	<0.050	<0.050	0.86	--	--	--	--	--	--	--	--	--
S26-S-3	06/22/16	3-5	390	--	--	--	--	--	<0.027	<0.054	0.35	<0.054	0.079	--	--	--	--	--	--	--	--	--
S26-S-5	06/22/16	5-7	160	--	--	--	--	--	<0.027	<0.055	0.085	<0.055	<0.055	--	--	--	--	--	--	--	--	--
S26-S-7	06/22/16	7-9	14	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	0.001	--	--	--	--	--	--	--	--	--
S27-S-5	06/29/16	5-7	390	--	--	--	--	--	<0.046	<0.092	14	<0.092	13	--	--	--	--	--	--	--	--	--
S28-S-3	06/23/16	3-5	32	--	--	--	--	--	<0.025	<0.050	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
S28-S-5	06/23/16	5-7	2,000	--	--	--	--	--	<0.024	<0.049	20	75	13	--	--	--	--	--	--	--	--	--
S28-S-7	06/23/16	7-9	18	--	--	--	--	--	<0.0005	<0.001	0.010	0.005	0.001	--	--	--	--	--	--	--	--	--
S29-S-3	06/24/16	3-5	77	--	--	--	--	--	<0.025	<0.049	0.19	<0.049	1.4	--	--	--	--	--	--	--	--	--
S29-S-5	06/24/16	5-7	530	--	--	--	--	--	<0.049	0.20	6.7	26	7.1	--	--	--	--	--	--	--	--	--

Table 1
Current and Historical Soil Analytical Results - Petroleum Hydrocarbon Constituents
Chevron Site No. 306574 (Former Unocal #3642)
7455 Redwood Boulevard
Novato, California

Sample Name	Sample Date	Sample Depth (feet)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-DRO (Silica Gel) (mg/kg)	TPH-Motor Oil (mg/kg)	Total TPH (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
S29-S-7	06/24/16	7-9	110	--	--	--	--	--	<0.024	<0.048	<0.048	<0.048	<0.048	--	--	--	--	--	--	--	--	--
S30-S-3	06/24/16	3-5	1,100	--	--	--	--	--	0.67	5.7	24	120	11	--	--	--	--	--	--	--	--	--
S30-S-5	06/24/16	5-7	330	--	--	--	--	--	0.10	0.089	5.7	11	2.9	--	--	--	--	--	--	--	--	--
S30-S-7	06/24/16	7-9	16	--	--	--	--	--	0.027	0.001	0.17	0.028	0.13	--	--	--	--	--	--	--	--	--
S30-S-9	06/24/16	9-11	110	--	--	--	--	--	0.12	0.26	1.3	3.0	0.35	--	--	--	--	--	--	--	--	--
S31-S-1	06/21/16	1-3	80	--	--	--	--	--	0.037	<0.051	1.0	<0.051	0.30	--	--	--	--	--	--	--	--	--
S31-S-3	06/21/16	3-5	470	--	--	--	--	--	0.35	1.8	6.6	20	5.6	--	--	--	--	--	--	--	--	--
S31-S-5	06/21/16	5-7	680	--	--	--	--	--	2.1	14	16	80	5.6	--	--	--	--	--	--	--	--	--
S31-S-7	06/21/16	7-9	73	--	--	--	--	--	0.13	<0.047	0.69	0.77	0.50	--	--	--	--	--	--	--	--	--
S32-S-3	06/29/16	3-5	540	--	--	--	--	--	<0.091	<0.18	5.0	20	12	--	--	--	--	--	--	--	--	--
S32-S-5	06/29/16	5-7	920	--	--	--	--	--	<0.23	1.2	15	84	7.9	--	--	--	--	--	--	--	--	--
S32-S-7	06/29/16	7-9	260	--	--	--	--	--	0.091	0.39	6.8	34	7.0	--	--	--	--	--	--	--	--	--
S33-S-3	06/20/16	3-5	50	--	--	--	--	--	<0.025	<0.051	0.41	<0.051	3.0	--	--	--	--	--	--	--	--	--
S33-S-5	06/20/16	5-7	1,500	--	--	--	--	--	0.050	<0.094	60	1.7	54	--	--	--	--	--	--	--	--	--
S34-S-3	06/23/16	3-5	940	--	--	--	--	--	<0.10	<0.21	0.50	<0.21	0.29	--	--	--	--	--	--	--	--	--
S34-S-5	06/23/16	5-7	1,400	--	--	--	--	--	0.072	<0.11	43	0.58	14	--	--	--	--	--	--	--	--	--
S34-S-7	06/23/16	7-9	400	--	--	--	--	--	<0.025	<0.051	2.2	<0.051	0.52	--	--	--	--	--	--	--	--	--
S35-S-3	06/29/16	3-5	590	--	--	--	--	--	<0.047	<0.094	11	0.28	27	--	--	--	--	--	--	--	--	--
S35-S-5	06/29/16	5-7	130	--	--	--	--	--	<0.026	<0.053	3.8	0.49	7.2	--	--	--	--	--	--	--	--	--
S36-S-3	06/20/16	3-5	7.2	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	0.001	--	--	--	--	--	--	--	--	--
S36-S-5	06/20/16	5-7	78	--	--	--	--	--	<0.026	<0.051	0.14	<0.051	3.6	--	--	--	--	--	--	--	--	--
S39-S-5	06/23/16	5-7	120	--	--	--	--	--	<0.027	<0.054	5.9	7.9	1.4	--	--	--	--	--	--	--	--	--
S39-S-7	06/23/16	7-9	140	--	--	--	--	--	0.044	<0.051	1.8	0.11	0.87	--	--	--	--	--	--	--	--	--
S41-S-5	06/28/16	5-7	<0.5	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	<0.001	--	--	--	--	--	--	--	--	--
S42-S-5	06/28/16	5-7	2,100	--	--	--	--	--	<0.11	0.42	20	81	39	--	--	--	--	--	--	--	--	--
S43-S-3	06/22/16	3-5	31	--	--	--	--	--	<0.025	<0.051	0.23	<0.051	1.2	--	--	--	--	--	--	--	--	--
S43-S-5	06/22/16	5-7	210	--	--	--	--	--	<0.046	<0.092	3.5	0.59	8.4	--	--	--	--	--	--	--	--	--
S44-S-3	06/22/16	3-5	16	--	--	--	--	--	<0.026	<0.052	<0.052	<0.052	0.064	--	--	--	--	--	--	--	--	--
S44-S-5	06/22/16	5-7	120	--	--	--	--	--	<0.052	<0.10	4.1	2.0	3.7	--	--	--	--	--	--	--	--	--
S45-S-5	06/22/16	5-7	5.6	--	--	--	--	--	0.002	<0.001	0.20	<0.001	0.22	--	--	--	--	--	--	--	--	--
S45-S-7	06/22/16	7-9	18	--	--	--	--	--	<0.026	<0.052	0.053	<0.052	<0.052	--	--	--	--	--	--	--	--	--
S46-S-3	06/24/16	3-5	<0.5	--	--	--	--	--	<0.0005	<0.001	<0.001	0.002	<0.001	--	--	--	--	--	--	--	--	--
S46-S-5	06/24/16	5-7	670	--	--	--	--	--	0.51	1.2	9.6	45	3.7	--	--	--	--	--	--	--	--	--
S46-S-7	06/24/16	7-9	130	--	--	--	--	--	0.25	<0.049	3.5	1.9	1.3	--	--	--	--	--	--	--	--	--
S47-S-5	06/23/16	5-7	300	--	--	--	--	--	<0.049	<0.097	3.4	0.49	2.6	--	--	--	--	--	--	--	--	--
S47-S-7	06/23/16	7-9	200	--	--	--	--	--	<0.026	<0.052	4.7	0.16	3.2	--	--	--	--	--	--	--	--	--
S48-S-5	06/28/16	5-7	82	--	--	--	--	--	<0.024	<0.049	0.44	<0.049	0.38	--	--	--	--	--	--	--	--	--
S48-S-7	06/28/16	7-9	160	--	--	--	--	--	<0.027	<0.054	<0.054	<0.054	<0.054	--	--	--	--	--	--	--	--	--
S50-S-5	06/28/16	5-7	49	--	--	--	--	--	<0.023	<0.046	0.93	1.4	1.0	--	--	--	--	--	--	--	--	--
S51-S-3	06/22/16	3-5	4.6	--	--	--	`	--	<0.026	<0.052	<0.052	<0.052	0.059	--	--	--	--	--	--	--	--	--
S51-S-5	06/22/16	5-7	1,300	--	--	--	--	--	<0.25	<0.49	9.5	7.0	31	--	--	--	--	--	--	--	--	--
S52-S-5	06/22/16	5-7	<0.5	--	--	--	--	--	<0.0005	<0.001	0.004	<0.001	0.015	--	--	--	--	--	--	--	--	--
S53-S-5	06/23/16	5-7	100	--	--	--	--	--	<0.024	<0.049	<0.049	<0.049	<0.049	--	--	--	--	--	--	--	--	--
S53-S-7	06/23/16	7-9	110	--	--	--	--	--	<0.026	<0.053	<0.053	<0.053	<0.053	--	--	--	--	--	--	--	--	--
S54-S-3	06/23/16	3-5	34	--	--	--	--	--	<0.0005	<0.001	<0.001	<0.001	0.018	--	--	--	--	--	--	--	--	--
S54-S-5	06/23/16	5-7	310	--	--	--	--	--	0.36	<0.053	11	9.0	6.1	--	--	--	--	--	--	--	--	--

Table 1
Current and Historical Soil Analytical Results - Petroleum Hydrocarbon Constituents
Chevron Site No. 306574 (Former Unocal #3642)
7455 Redwood Boulevard
Novato, California

Sample Name	Sample Date	Sample Depth (feet)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-DRO (Silica Gel) (mg/kg)	TPH-Motor Oil (mg/kg)	Total TPH (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
S54-S-7	06/23/16	7-9	170	--	--	--	--	--	0.36	<0.050	2.0	3.7	1.1	--	--	--	--	--	--	--	--	--
S55-S-5	06/24/16	5-7	290	--	--	--	--	--	<0.024	<0.048	4.7	0.099	4.1	--	--	--	--	--	--	--	--	--
S55-S-7	06/24/16	7-9	130	--	--	--	--	--	<0.025	<0.050	0.49	<0.050	0.44	--	--	--	--	--	--	--	--	--
S59-S-5	06/24/16	5-7	150	--	--	--	--	--	<0.024	<0.049	0.42	0.086	9.0	--	--	--	--	--	--	--	--	--
S60-S-3	06/24/16	3-5	34	--	--	--	--	--	<0.025	<0.050	<0.050	<0.050	0.27	--	--	--	--	--	--	--	--	--
S60-S-5	06/24/16	5-7	1,700	--	--	--	--	--	<0.025	<0.050	31	97	21	--	--	--	--	--	--	--	--	--
S60-S-7	06/24/16	7-9	62	--	--	--	--	--	<0.025	<0.050	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
S60-S-9	06/24/16	9-11	240	--	--	--	--	--	<0.026	<0.051	1.5	4.0	0.66	--	--	--	--	--	--	--	--	--
S61-S-3	06/20/16	3-5	180	--	--	--	--	--	<0.023	<0.045	2.2	3.7	10	--	--	--	--	--	--	--	--	--
S61-S-5	06/20/16	5-7	2,100	--	--	--	--	--	<0.094	0.65	25	110	19	--	--	--	--	--	--	--	--	--
S62-S-4	06/21/16	4-6	880	--	--	--	--	--	<0.11	<0.22	11	31	20	--	--	--	--	--	--	--	--	--
S62-S-5	06/21/16	5-7	460	--	--	--	--	--	<0.026	<0.051	11	40	11	--	--	--	--	--	--	--	--	--
S63-S-3	06/21/16	3-5	18	--	--	--	--	--	<0.027	<0.053	0.16	0.096	3.5	--	--	--	--	--	--	--	--	--
S63-S-5	06/21/16	5-7	260	--	--	--	--	--	<0.026	<0.053	0.60	0.58	4.9	--	--	--	--	--	--	--	--	--
S64-S-5	06/28/16	5-7	110	--	--	--	--	--	<0.049	<0.098	0.62	0.79	0.78	--	--	--	--	--	--	--	--	--
S67-S-5	06/23/16	5-7	250	--	--	--	--	--	<0.024	<0.048	0.66	<0.048	9.0	--	--	--	--	--	--	--	--	--
S67-S-3	06/23/16	3-5	93	--	--	--	--	--	<0.025	<0.050	0.080	<0.050	1.9	--	--	--	--	--	--	--	--	--
S68-S-3	06/23/16	3-5	1,600	--	--	--	--	--	<0.25	<0.50	9.6	18	48	--	--	--	--	--	--	--	--	--
S68-S-5	06/23/16	5-7	620	--	--	--	--	--	<0.24	<0.47	6.4	23	6.6	--	--	--	--	--	--	--	--	--
S68-S-7	06/23/16	7-9	180	--	--	--	--	--	<0.051	<0.10	1.2	0.33	0.89	--	--	--	--	--	--	--	--	--
S69-S-5	06/24/16	5-7	500	--	--	--	--	--	<0.024	<0.048	5.9	13	9.1	--	--	--	--	--	--	--	--	--
S70-S-3	06/21/16	3-5	330	--	--	--	--	--	<0.054	<0.11	5.4	3.6	17	--	--	--	--	--	--	--	--	--
S70-S-5	06/21/16	5-7	300	--	--	--	--	--	<0.024	<0.048	7.9	13	10	--	--	--	--	--	--	--	--	--
S71-S-3	06/24/16	3-5	1,100	--	--	--	--	--	<0.098	<0.20	14	45	30	--	--	--	--	--	--	--	--	--
S71-S-5	06/24/16	5-7	640	--	--	--	--	--	<0.025	<0.051	10	32	24	--	--	--	--	--	--	--	--	--
S72-S-3	06/21/16	3-5	0.8	--	--	--	--	--	<0.0005	<0.001	0.002	0.002	0.001	--	--	--	--	--	--	--	--	--
S72-S-5	06/21/16	5-7	14	--	--	--	--	--	<0.028	<0.055	0.11	0.13	0.29	--	--	--	--	--	--	--	--	--
S76-S-5	06/24/16	5-7	340	--	--	--	--	--	<0.024	<0.048	2.1	3.2	4.8	--	--	--	--	--	--	--	--	--
S76-S-7	06/24/16	7-9	3.7	--	--	--	--	--	<0.0005	<0.001	0.022	0.01	0.007	--	--	--	--	--	--	--	--	--
S77-S-5	06/24/16	5-7	530	--	--	--	--	--	<0.025	<0.050	2.8	0.62	8.7	--	--	--	--	--	--	--	--	--
S78-S-5	06/28/16	5-7	73	--	--	--	--	--	<0.024	<0.048	0.83	1.3	0.88	--	--	--	--	--	--	--	--	--
S79-S-5	06/28/16	5-7	1,600	--	--	--	--	--	<0.11	<0.22	15	52	12	--	--	--	--	--	--	--	--	--
S85-S-5	06/28/16	5-7	14	--	--	--	--	--	<0.0005	<0.0009	0.26	0.51	0.33	--	--	--	--	--	--	--	--	--
S86-S-3	06/23/16	3-5	2.7	--	--	--	--	--	<0.0005	<0.001	0.001	0.001	0.97	--	--	--	--	--	--	--	--	--
S86-S-5	06/23/16	5-7	140	--	--	--	--	--	<0.025	<0.049	3.6	16	4.8	--	--	--	--	--	--	--	--	--
S86-S-7	06/23/16	7-9	5.0	--	--	--	--	--	<0.0005	<0.001	0.18	0.68	0.18	--	--	--	--	--	--	--	--	--
S87-S-5	06/28/16	5-7	1.4	--	--	--	--	--	<0.0005	<0.001	0.075	0.11	0.026	--	--	--	--	--	--	--	--	--
S89-S-5	06/28/16	5-7	350	--	--	--	--	--	<0.023	<0.047	1.1	0.57	7.1	--	--	--	--	--	--	--	--	--
SWRCB LTCP Direct Contact and Outdoor Air Exposure Criteria for Commercial Soil*		**0 - 5 ft bgs**	**--**	**--**	**--**	**--**	**--**	**--**	**8.2**	**--**	**89**	**--**	**45**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
SWRCB LTCP Direct Contact and Outdoor Air Exposure Criteria for Commercial Soil*		**5 - 10 ft bgs**	**--**	**--**	**--**	**--**	**--**	**--**	**12**	**--**	**134**	**--**	**45**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**

Table 1
Current and Historical Soil Analytical Results - Petroleum Hydrocarbon Constituents
Chevron Site No. 306574 (Former Unocal #3642)
7455 Redwood Boulevard
Novato, California

Sample Name	Sample Date	Sample Depth (feet)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-DRO (Silica Gel) (mg/kg)	TPH-Motor Oil (mg/kg)	Total TPH (mg/kg)	Total Oil and Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	PCE (mg/kg)	TCE (mg/kg)

Notes:
TPH-GRO = Total Petroleum in the Gasoline Range - Analysis by USEPA Method 8015M
TPH-DRO = Total Petroleum in the Diesel Range - Analysis by USEPA Method 8015M
MTBE = Methyl tert-butyl ether - Analysis by USEPA Method 8260B
DIPE = Di-isopropyl ether - Analysis by USEPA Method 8260B
ETBE = Ethyl tert-butyl ether - Analysis by USEPA Method 8260B
TAME = tert-Amyl methyl ether - Analysis by USEPA Method 8260B
TBA = t-Butyl Alcohol - Analysis by USEPA Method 8260B
BTEX Compounds - Analysis by USEPA Method 8260B
1,2-DCA = 1,2-Dichloroethane - Analysis by USEPA Method 8260B
PCE = Tetrachloroethene
TCE = Trichloroethene
mg/kg = milligrams per kilogram
<n = Below the Laboratory Method Reporting Limit
-- = Value not established/not applicable
NA = not analyzed
Historical Data
* State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP) - Table 1. August 2012.
BOLD Result exceeds SWRCB LTCP Direct Contact and Outdoor Air Exposure for Commercial Soils.
Some reporting limits are elevated due to high concentrations of target analytes.

TABLE 2
PAHs Detected In Soil Collected from S17 - Location of MW-10 and Former Waste Oil Tank
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Sample ID	Date Collected	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Other PAHs (Total)
		mg/kg							
S17/MW-10	06/29/16	0.072	0.04	0.068	0.028	0.076	0.0025	0.0053	0.49

TABLE 3
Metals Detected In Soil Collected from Vicinity of Former Waste Oil Tank
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

Sample ID	Sample Date	Sample Depth (ft bgs)	Cadmium	Chromium	Lead	Nickel	Zinc
				mg/kg			
WO1	1/3/1992	6.0	1.0	90	33	76	74
WO(SW1)	2/24/1992	4.5	1.5	65	9.5	81	36
WO(SW2)	2/24/1992	4.5	1.5	80	7.2	65	32
WO(SW3)	2/24/1992	4.5	1.7	79	8.9	100	47
WO(SW4)	2/24/1992	4.5	1.0	46	4.7	30	18
S17/MW-10	06/29/16	7-9	**0.35**	93	7.7	97	40
Background Concentrations in California Soils*	--	--	0.21	397	40.5	212	119

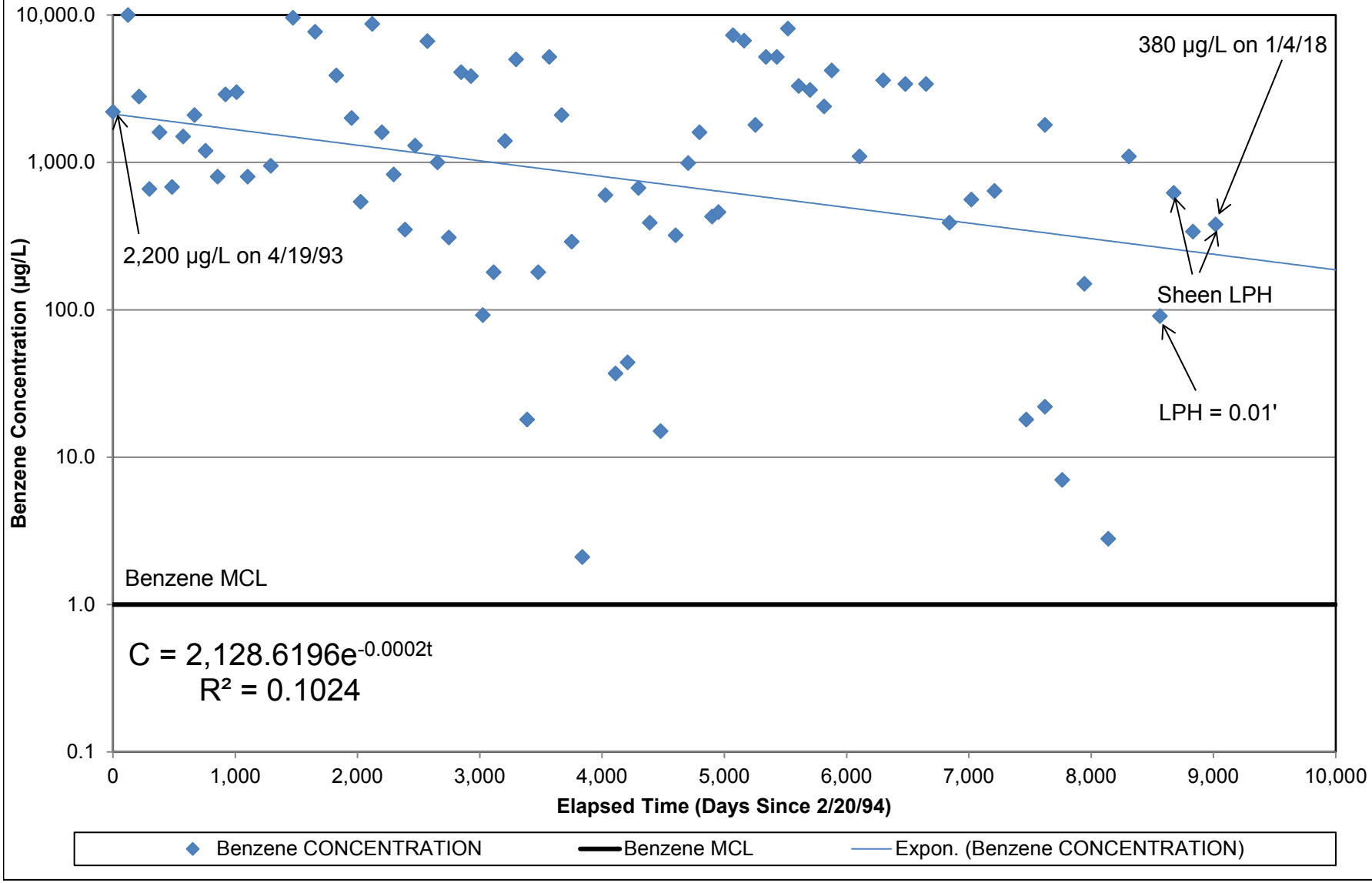
Notes:

Bold value indicates exceedance in 2016 soil data of corresponding background concentration.

*From: Background Concentrations of Trace and Major Elements in California Soils, Kearney Foundation of Soil Science Division of Agriculture and Natural Resources, University of California, March 1996 – Solano County, Yolo cl (Soil Number 46 from Table 2).

Indicates current 2016 Assessment soil data.

Figure 1
Benzene Concentration Trend Evaluation - MW-2
Chevron Facility No. 306574 (Former Unocal No. 3642
7455 Redwood Boulevard, Novato, California



P:\E Hicks\306574\20180622_tbl_306574_rna eval, trendline.xlsx

Figure 2
MTBE Concentration Trend Evaluation - MW-2
Chevron Facility No. 306574 (Former Unocal No. 3642
7455 Redwood Boulevard, Novato, California

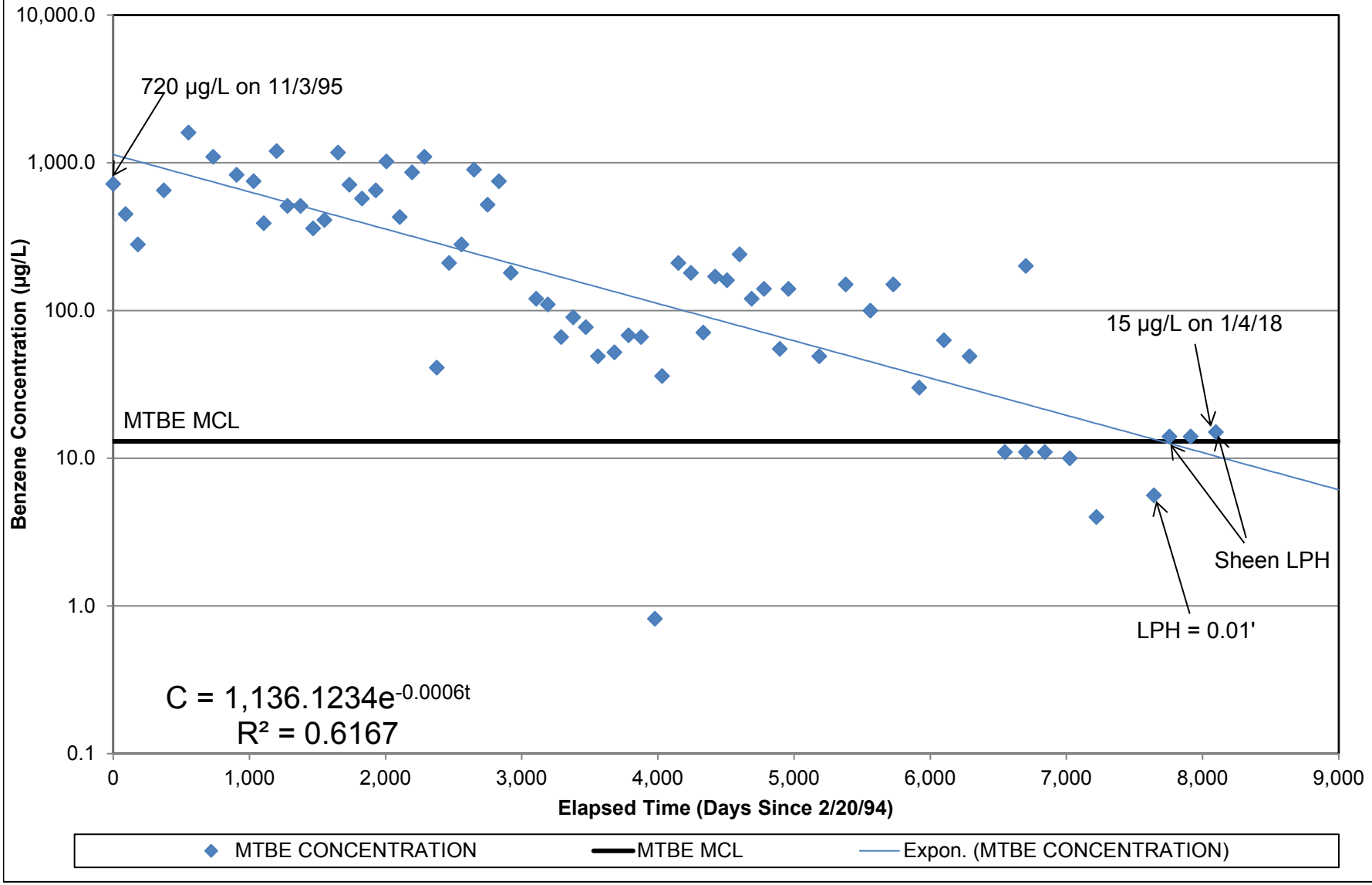


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Figure 3
Benzene Concentration Trend Evaluation - MW-3
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California

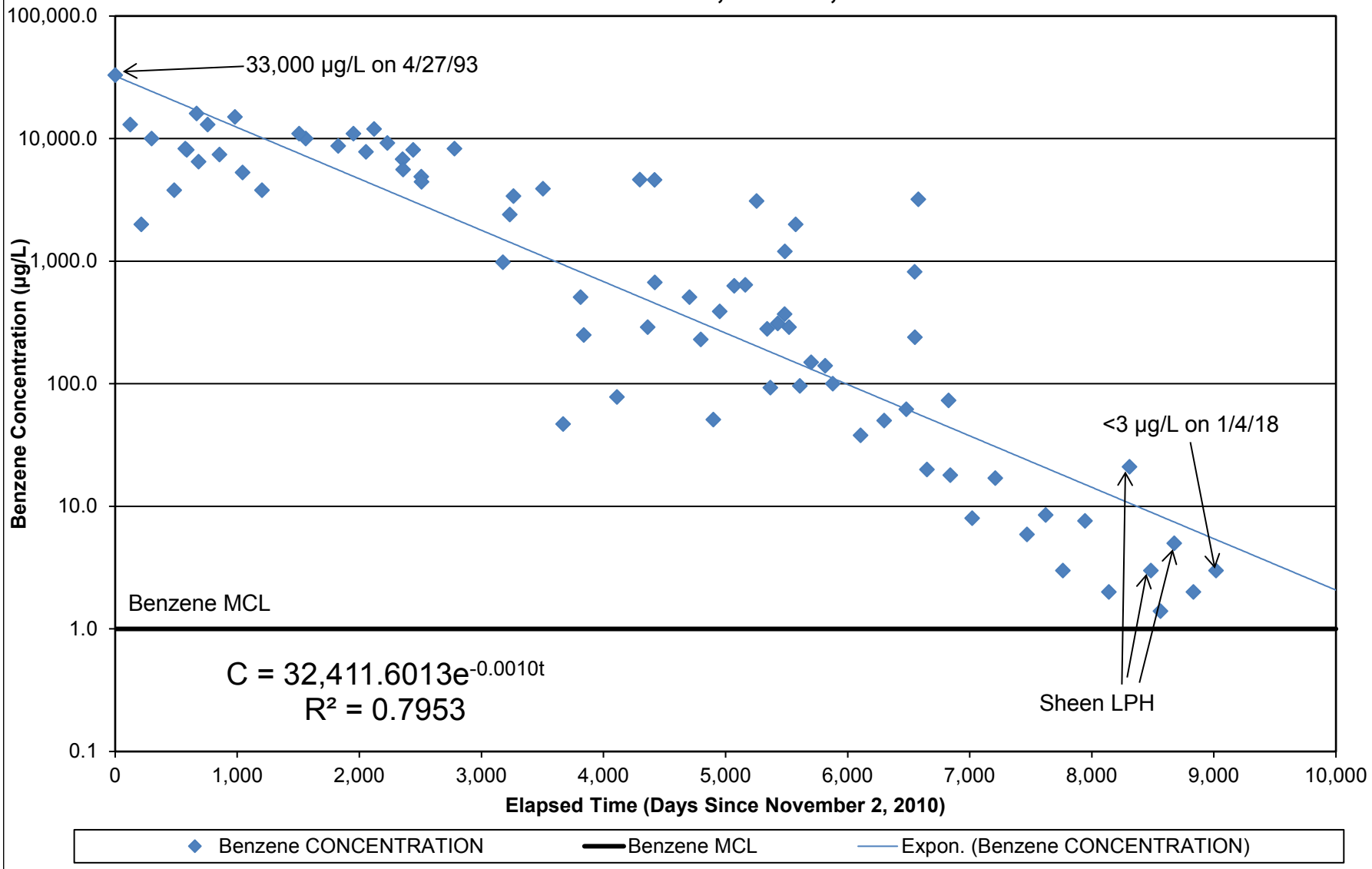

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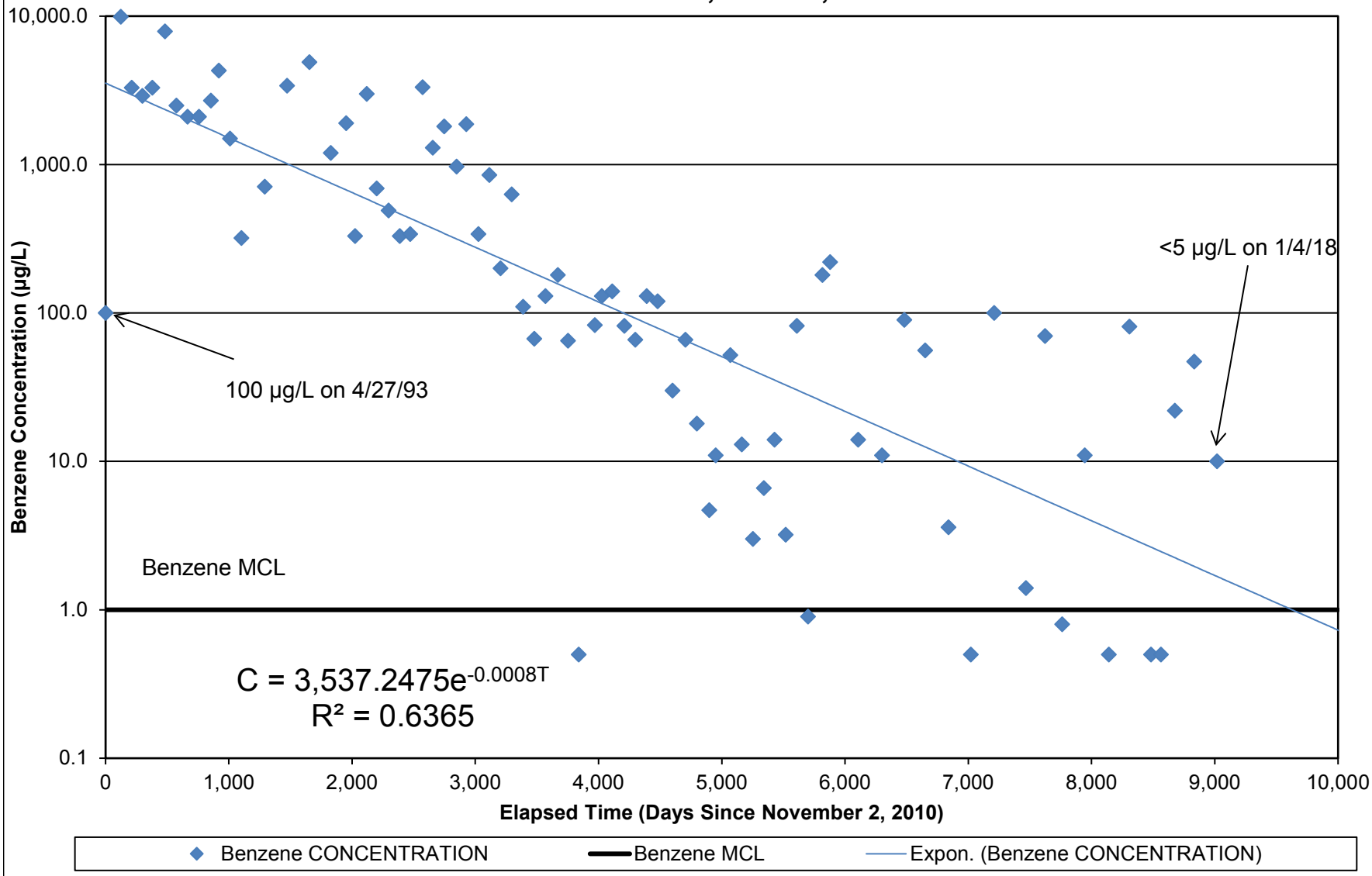
Figure 4
Benzene Concentration Trend Evaluation - MW-5
Chevron Facility No. 306574 (Former Unocal No. 3642)
7455 Redwood Boulevard, Novato, California



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Novato Properties LLC
90 Culloden Park Road
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415/717-7664
redcapllc@gmail.com

December 22, 2015

Mr. John Jang
Regional Water Quality Control Board

Dear Mr. Jang,

I would like to share with you that I continue to be frustrated with Chevron's progress of the remediation at my property at 7455 Redwood Blvd, Novato, CA.

In the request for extension of December 18th, 2015, Chevron indicates that the hurdle to filing the FS/CAP by the deadline set by the RWQCB was that they didn't know my development plans for the site.

I met with Chevron on February 3rd, 2014 and shared the architect's rendering for the site including a footprint schematic. My environmental consultant, Scott Bourne of Weiss Associates, participated in a technical conference on April 1st, 2014 call to discuss the schematic and site remediation. In fact, Chevron even used the development plan that I provided to them as the base map in shown in Figure 3 from their May 21st, 2014 Additional Soil Vapor Investigation Work Plan. Therefore, it is evident that I have shared my development vision with Chevron and their consultants and that this should not be a barrier to them meeting the deadlines that you set out.

Secondly, the city of Novato is currently in a development freeze for the area including my property. Novato is studying all the zoning and has a hearing to "upzone" my property from commercial to mixed use of residential and retail. Please see the Novato PC Staff report 9-21-15. My development scheme that I've shared with Chevron is mixed use and feel that remediation to this standard is needed. I understand that a deed restriction may be required to require long term operation for any protection systems that Chevron installs to meet this standard and therefore my concurrence with a deed restriction is not a reason to delay the remediation.

The remediation can and must proceed without being tied to a project start. The subsurface excavation/groundwater removal are in no way tied to the ultimate timing of the development and in fact if not done now would only serve to delay the project further if postponed. It is due to the uncertainty of the remediation timeline and nature of the contamination, that I have been unable to retain a broker to solicit tenants or obtain construction financing that allows me to begin development. I need to have a closed and signed-off site before I can start the development. It is a real financial burden to me with these continuing delays. You should be aware that I removed the main building at the site in April 2014 because it was a nuisance and because I hoped that it remove an obstacle for Chevron to move forward quickly with finishing their sampling and remediation. I am just a single person trying to make this a productive piece of property and it is a financial hardship to have Chevron not clean up this site.

Lastly, I feel that Chevron is not working in good faith as Scott Bourne of Weiss Associates has called their new consultant (as a side note - the third on this project so far which causes additional delay

due to transfer issues and loss of institutional knowledge) twice in the last three weeks and he has not yet received a return call. We have responded to all correspondence and contacts within 2 business days. Chevron is not showing me the same courtesy. They send the request for extension 4 days before the deadline instead of looking to what needs to be done when they receive your letter and planning ahead.

I sincerely appreciate that you continue to keep the project moving forward by setting project deadlines that Chevron must meet. Thank you for your support.

Cordially,

Carla Ravipati
Managing Partner

Cc: Steve Marshall, Carryl MacLeod, Alexis Coulter, John Taylor, Scott Bourne

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TO: John Jang, San Francisco Bay Regional Water Quality Control Board

CC: Carla Ravipati, Red Capricorn, LP
John Taylor, Union Property Capital

FROM: Scott Bourne, PE, 415-498-0535, CDIM Engineering

RE: Comments to the June 15, 2017 Revised Corrective Action Plan Implementation Plan, Chevron Site No. 306574, 7455 Redwood Boulevard, Novato, California

DATE: July 14, 2017

On behalf of Red Capricorn, LP (Red Capricorn), CDIM Engineering (CDIM) submits the following comments on the June 15, 2017 Revised Corrective Action Plan Implementation Plan (Revised CAP Implementation Plan; Stantec, 2017), prepared by Chevron and its consultant, Stantec Consulting Services, Inc., for Chevron Site No. 306574 located at 7455 Redwood Boulevard (the Site). Chevron prepared the Revised CAP Implementation Plan in response to the May 9, 2017 directive from the San Francisco Regional Water Quality Control Board (SFRWQCB).

We respectfully submit the following comments.

1. The property owner again requests that implementation of the excavation shown in Figure 4 not be conditioned on a final development plan. The site is vacant and the property owner removed a structure from the site in April 2014 to facilitate excavation. The work can therefore proceed at any time.

2. Installation of a vapor mitigation system must include excavation to a minimum of five feet below the bottom of the foundation slab, and placement of clean fill.

3. In the absence of providing vapor barrier and vent design criteria, the Revised CAP Implementation Plan must state in Section 4.7.3 that vapor mitigation will follow the Department of Toxic Substances Control Vapor Intrusion Mitigation Advisory (DTSC, 2011).

4. To comply with the Low Threat Underground Storage Tank Closure Policy (LTUCP; SWRCB, 2012), the text in Section 4.6.2 must be updated to state that free product will be "*removed*" instead of "*controlled*". Depending on the amount of free product observed, absorbent mats may be insufficient and a vacuum truck may be required.

5. The property owner appreciates revision to the CAP Implementation Plan to include placement of solid-phase oxygen releasing compound in excavation backfill. However, the language in Section 4.4.8 is ambiguous and should be updated to state that the material "*will be placed*" instead of "*is recommended*".

6. The Revised CAP Implementation Plan does not include confirmation sampling, and instead relies on soil sampling performed in 2008 and 2016 for site characterization. The property owner

appreciates the value of the soil sampling performed by Chevron. However, the pre-excavation sampling will not show that the excavation was effective in removing soil above LTUCP criteria. For this reason, we reiterate comment #4 in the property owner's most recent comments (CDIM, 2017) and comment #4 in SFRWQCB's rejection of the CAP Implementation Plan (SFRWQCB, 2017).

REFERENCES

CDIM, 2017. *Comments to the March 15, 2017 Corrective Action Plan Implementation Plan*, Chevron Site No. 306574, 7455 Redwood Boulevard, Novato, California. April 14.

Department of Toxic Substances Control, 2011. *Vapor Intrusion Mitigation Advisory*, October.

SFRWQCB, 2017. *Rejection of the Corrective Action Plan Implementation Plan*, Former Unocal Facility No. 3642/Chevron Site No. 306574, 7455 Redwood Blvd., Novato, Marin County. May 9, 2017

Stantec, 2017. *Revised Corrective Action Plan Implementation Plan*, Chevron Site No. 306574, 7455 Redwood Boulevard, Novato, California. June 15.

State Water Resources Control Board, 2012. *Low Threat Underground Storage Tank Policy*.

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June 29, 2018

VIA U.S. MAIL AND E-MAIL

Stephen Hill
John Jang
San Francisco Bay Regional Water Quality Control Board
1515 Clay St., Suite 1400
Oakland, CA 94512
Stephen.Hill@waterboards.ca.gov
John.Jang@waterboards.ca.gov

Re: Chevron Environmental Management Company's
Response to Draft Cleanup Order
7455 Redwood Blvd., Novato, CA
Regional Board Case No. 21-0203

Dear Mr. Hill and Mr. Jang:

As you are aware, we represent Chevron Environmental Management Company ("EMC") and Union Oil Company of California ("Union Oil") in connection with the above-referenced site, 7455 Redwood Blvd., Novato, CA (the "Site").[1] We are writing to provide comments on the draft Tentative Order for Adoption Of Site Cleanup Requirements ("Tentative Order") in connection with the Site that you sent by letter dated May 10, 2018. You requested comments by June 29, 2018, and stated that the matter would be heard by the Regional Water Quality Control Board ("RWQCB") at its September 12, 2018 meeting. EMC and Union Oil's specific comments on the Tentative Order are set forth below and in the attached memorandum *Technical Comments on San Francisco Bay Regional Water Quality Control Board's Tentative Order For Chevron Service Station 306574, 7455 Redwood Boulevard, Novato, California*, prepared by EMC's consultant, Stantec. EMC and Union Oil reserve their right to supplement these comments up to and including at the time of the RWQCB's hearing on the Tentative Order.

In general, the Tentative Order is without legal foundation as it calls for active remediation at property that qualifies for closure under the State Water Resources Control Board's Low-Threat Underground Storage Case Closure Policy ("Low-Threat Closure

[1] EMC manages the environmental aspects of this Site for its affiliate, Union Oil.

Policy"). The Tentative Order rests on a series of unsupported assumptions regarding rezoning and redevelopment of the Site, currently a vacant lot, when no such rezoning has occurred and there are no final design plans for redevelopment. The requirements identified in the Tentative Order are substantially similar to the work required under the Regional Board's prior Water Code § 13267 directive dated February 2, 2017. The February 2, 2017 directive was the subject of EMC's Petition to the State Water Board and subsequent litigation that resulted in the Regional Board withdrawing its directive. Accordingly, the Tentative Order puts the parties at risk of re-litigating the exact same issues.

I. NAMED DISCHARGERS

The named discharger in this matter should be "Chevron Environmental Management Company, a California corporation, as Attorney-in-Fact For Union Oil Company of California, a California corporation." Any order should also clarify that EMC never owned or operated the Site or the gasoline service station but manages certain environmental liabilities on behalf of Union Oil.

Additionally, because of the operational history at the Site, EMC requests that the Regional Board revise references to "Chevron" throughout the Tentative Order to reflect the correct legal entity. For example, the Tentative Order at page 2 of 17 states "**5. Remedial Investigations:** Starting in 1992, Chevron conducted..." This is incorrect. Work has been undertaken on behalf of Union Oil or EMC as attorney-in-fact for Union Oil. This information is contained in the reports submitted to the Regional Board.

II. REZONING REFERENCES ARE SPECULATIVE/CLEANUP STANDARDS BASED ON POSSIBLE REZONING FOR MIXED USE IS INAPPROPRIATE

The Tentative Order makes multiple references to an ongoing effort by the City of Novato to update its General Plan and a subsequent rezoning for the area of the City that includes the Site. As stated in the Tentative Order, rezoning would modify the current commercial designation to a mixed commercial/residential designation. However, the implementation of the General Plan, including revisions to zoning, is not imminent and in fact is uncertain. Indeed, the revision to the General Plan is subject to review under the California Environmental Quality Act ("CEQA"). As stated on the City of Novato's website, the Draft Environmental Impact Report (DEIR) is scheduled for publication and review mid-2018. However, as of this writing, the DEIR has not been published.

Based on recent discussions between Stantec and Novato's City Planner, Vivek Damodaran, the City will not be adopting a new General Plan (including any

rezoning) by the end of July as stated in the Tentative Order. And it is unknown when, if ever, the City will revise the General Plan. Accordingly, all references regarding a future adoption date for the City's new General Plan (including references to future rezoning) should be removed from the Tentative Order as such representations are unsupported.

Any cleanup standard based on potential or possible rezoning should be deleted because any rezoning is speculative and an improper basis for establishing cleanup levels. Further, under the Low-Threat Closure Policy, where a site currently meets all requirements, it is incorrect to reject a request for closure based upon future uses—future requirements are the responsibility of the future developer. (*See* Order No. WQ 2014-0052 UST, 2014 Cal. Env. Lexis 70.) Accordingly, there is no legal basis for the Tentative Order to base cleanup standards on speculative future zoning changes, and should the Tentative Order be adopted, it will be subject to legal challenge to the State Board and, if necessary, the California Superior Court.

EMC acknowledges that the City is undertaking efforts to prepare a new General Plan that, as currently drafted, may allow for a mixed-use development at the Site. It is our understanding that the mixed-use development would allow second and third-story residential units above ground floor commercial space. It is unknown when the new General Plan will be adopted or when the Site might be rezoned, but even assuming these two events occur, the City of Novato's Municipal Code requires that a property be permitted for multi-family residential use. Novato Municipal Code §§ 19.06.030; 19.12.030. Even if the rezoning occurs, the developer would have to obtain a permit from the City before the Site could be used as a mixed-use property adding another layer of uncertainty to the Site's potential future overall classification. Understandably, a use permit has not been obtained.

Based on the foregoing, all cleanup levels designated in Section B. of the Tentative Order based on a residential land use (soil vapor cleanup and soil cleanup) should be stricken as the Site cannot currently or in the reasonably foreseeable future be used for residential purposes. Moreover, as discussed below, a cleanup level based on speculation regarding a future residential use precludes the responsible parties from addressing asserted hazards through engineering and design. It also prevents responsible parties from meeting cleanup criteria established through a human health risk assessment ("HHRA") that aligns in-fact property use with present conditions. All of the cleanup levels in the Tentative Order should be revised to reflect the Site's current commercial use or provide for an option wherein cleanup levels are set through a HHRA.

III. REGIONAL BOARD'S ASSESSMENT OF SUITABILITY UNDER LOW THREAT CLOSURE POLICY IS INCORRECT

EMC disagrees with the Regional Board's evaluation of the Site's suitability for closure under the Low-Threat Closure Policy. The attached technical memo identifies the data and technical arguments missed or seemingly ignored by the Regional Board and supports a case for closure under the Low-Threat Closure Policy.

IV. THE TENTATIVE ORDER IMPROPERLY SETS FORTH THE SPECIFIC MANNER FOR COMPLIANCE

The Tentative Order improperly mandates "active cleanup" at the Site and rejects engineering, institutional, and mitigation measures as a part of a remedial action plan. Tentative Order, pp. 6-7. The Regional Board is without authority to demand response work that eschews engineering, institutional, and mitigation as part of measures designed to address impacts to groundwater, soil and soil vapor. Tentative Order, p. 6.

Water Code § 13360 prohibits a water quality order from specifying "the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree." Water Code § 13360 continues, stating that a person subject to a water quality order may comply with the order in *any* lawful manner. Under § 13360, an order may "tell the discharger what to do, but not how to do it. (*See* California State Water Resources Board, Order No. WQ 83-3, 1983 Cal. ENV LEXIS 31, *4 (discussing compliance under a waste discharge permit).) Put differently, an order must respect the "difference between being told what to do and how to do it." *Id.* at p. 11.

The prohibitions contained in Water Code § 13360, taken in conjunction with Water Code § 13304 which allows a discharger to "abate the effects of waste," and the history of source and secondary source removal at the Site, require that the Tentative Order be amended to remove any reference to active remediation as a required remedy. As detailed above, the Regional Board's purported "justification" for active remediation is premised on baseless assumptions regarding the Site's potential future development. The requirement for active remediation, therefore, is rooted in a presumption that residential receptors will appear at the Site some day in the future. This presumption and associated cleanup requirement stand in stark contrast to a principles embodied in the Low-Threat Closure Policy, which unquestionably recognizes that residual contaminant mass often remains after the investment of reasonable efforts to protect human health and the environment. Importantly, the Low-Threat Closure Policy acknowledges the often limited returns on extended efforts to address any residual mass should give way to monitored attenuation where a site presents as a low-

threat to human health or the environment. Low-Threat Closure Policy, p. 1. Stated another way, the Regional Board's requirement for active remediation is not supported by the record.

V. THE CLEANUP STANDARDS ESTABLISHED IN THE TENTATIVE ORDER ARE INAPPROPRIATE IN LIGHT OF THE SITE'S CURRENT USE AND SUITABILITY FOR CLOSURE UNDER THE LOW-THREAT CLOSURE POLICY

The Tentative Order sets groundwater cleanup levels in relations to drinking water standards established by Cal/EPA or U.S. EPA. Such cleanup levels are inapplicable, unnecessary and unfounded as the Site is otherwise a candidate for closure under the Low-Threat Closure Policy. Accordingly, water quality objectives under an order or directive for the Site should follow those set out under the Low-Threat Closure Policy. Alternatively, based on the Site's historical use and current zoning, any demand for further remediation should reference commercial Environmental Screening Levels (ESLs) as the applicable cleanup requirement. Finally, as with any site, the Tentative Order should reflect that cleanup levels can be established by a site-specific HHRA.

Similar to the above, any cleanup criteria for vapor intrusion to indoor air, direct contact or outdoor air exposure should be set by commercial ESLs, a site-specific HHRA (as allowed under the Low-Threat Closure Policy), or any other criteria identified under the Low-Threat Closure Policy. Again, the Tentative Order should reflect that these cleanup levels can be established by a site-specific HHRA. The Tentative Order should be revised accordingly.

Finally, the Tentative Order ignores that the Site is vacant and paved over, and thus, all discussion of applicable cleanup levels based on exposure to possible receptors is steeped in speculation and assumption. Any discussion of possible risks or hazards and required mitigation, if any, is incomplete without consideration of appropriate engineering controls, mitigation design and deed restrictions. Moreover, without actual plans for redevelopment, it is unknown what impact construction activities may have. For example, additional excavation may be required due to building or associated infrastructure construction. As such, any heightened cleanup level may be redundant, if not moot, on account of the design and construction of any future building and associated infrastructure at the Site[2].

[2] On March 15, 2017, a Corrective Action Plan Implementation Plan was submitted by Stantec on behalf of EMC, which proposed additional work at the Site – including limited excavation –in conjunction with its redevelopment. The appropriate time to evaluate and

VI. CONCLUSION

For the foregoing reasons, EMC and Union Oil object to and request that the Regional Board withdraw the Tentative Order in its entirety.

Very truly yours,

ROBERT C. GOODMAN
JON-ERIK W. MAGNUS

RCG:jm
Attachment

cc: Julia Barnes (jbarnes@marincounty.org)
David McMullen (dmcmullen@marincounty.org)
Sunil Ramdass (sramdass@waterboards.ca.gov)
Tiffany Yee (tiffany.yee@oag.ca.gov)
John Gregory (jgregory@fbm.com)
Carla Ravipati (Carla_Ravipati@yahoo.com)

---

select a remedy for the Site is after the Site is rezoned, permitted for an intended use, and final design plans for redevelopment (including the design of a proposed structure) are approved by the local planning department.

FARELLA
BRAUN + MARTEL LLP

JON L. BENJAMIN
jbenjamin@fbm.com
D 415.954.4971

June 28, 2018

Via Federal Express

Bruce H. Wolfe, Executive Director
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Attention: Stephen Hill

Re: Tentative Order – Site Cleanup Requirements
Former Unocal Facility No. 3642 and Chevron Site No. 306574
7455 Redwood Blvd., Novato, Marin County

Dear Mr. Wolfe and Mr. Hill:

This law firm represents Novato Properties, LLC, the current owner of the real property located at 7455 Redwood Boulevard, Novato, California (the "Property"). The majority owner of the Property is Ms. Carla Ravipati, the daughter of the husband and wife who owned the Property before her, and the granddaughter of her mother's father, who first leased the Property to Unocal for use as a gasoline service station in approximately 1953.

I submit these comments to both of you, along with the attached technical comments prepared by Scott Bourne, PE, of CDIM Engineering, who is Ms. Ravipati's environmental consultant, on behalf of Novato Properties, LLC, and Ms. Ravipati, regarding the Regional Board's issuance on May 10, 2018 of a Tentative Order – Site Cleanup Requirements for the Property, also referred to in the caption above as "Former Unocal Facility No. 3642 and Chevron Site No. 306574."

At the outset, the Property owner supports the issuance of the Tentative Order, thanks the Regional Board Staff for their leadership on these matters, and hopes that this action to be taken by the Regional Board members will finally end Chevron's historical and ongoing recalcitrance with respect to the proper environmental cleanup of the Property. Chevron's recalcitrance flies in the face of numerous attempts by the Regional Board Staff and the Property owner to get Chevron, as the indisputable successor-in-interest to Unocal, to expeditiously implement and complete those Regional Board-required remediation activities at the Property. The remediation activities are necessary to (1) abate the long-standing environmental pollution and ongoing nuisance created by Unocal, which are now the responsibility of Chevron, (2) eliminate the ongoing threat to public health and the environment at and around the Property, and (3) enable the Property owner's planned mixed-use redevelopment of the Property. Such redevelopment is

consistent with in-process changes to the City of Novato's Master Plan, the soon to be revised rezoning of the Property consistent with the changes to the Master Plan, as well as the Novato's desire to encourage the development of more housing.

The Property owner's concern is the naming of it, along with Chevron, as a discharger in the Tentative Order. Chevron is the successor-in-interest to Unocal, which operated a gas station from approximately 1953 to 1992 at the Property, and caused the environmental damage to soils, soil gas and groundwater at the Property which the Tentative Order seeks to have remediated. Neither the current landowner, nor the family members before her, had anything to do with Unocal's environmental operations at the Property and, other than as proposed next, the current Property owner should have only minimal responsibility for compliance with the Tentative Order. Moreover, unlike Chevron, which is a massive company with massive annual profits, the current Property owner does not have the resources to bear the costs of complying with the Order. Finally, any future delays by Chevron in expeditiously implementing the Order in the manner outlined in the Order's timeframe will cause the Property owner significant economic harm and damages. For these reasons, the Property owner supports the replacement of the 13267 Letter with a Section 13304 Cleanup and Abatement Order containing Site Cleanup Requirements ("SCRs"), because a 13304 Order gives the Regional Board, and if necessary, the Attorney General, greater and enhanced enforcement tools which we hope will be used if necessary to force Chevron to comply expeditiously with the Order and remediate the Property, thereby restoring the Property to productive use.

The current property owner proposes the that Tentative Order be revised to make clear that Chevron is the primarily-responsible party for complying with each of the specific requirements of the Tentative Order as it will be issued, and that the Property owner's only obligations pursuant to the Tentative Order are: (1) to negotiate a reasonable license agreement with Chevron[1] that will allow Chevron the access it will need to carry out the substantive requirements of the Tentative Order in a timely and expeditious manner, including coordination of the footprint requirements of the proposed redevelopment at the Property with any post-remediation and post-construction monitoring or other work that may be required of Chevron under the Tentative Order or subsequent requirements issued by the Regional Board, and (2) to record reasonable and appropriate deed restrictions as may be required in the future by Regional Board Staff.

[1] I note for the record that Ms. Ravipati has previously provided Chevron and its contractors with various access agreements for the Property, to facilitate site monitoring or other actions requested by Chevron. I also note that the Property is bare land now, with no structures remaining, which means that Chevron now has the opportunity to do the work required by the Order unimpaired.

Thank you in advance on behalf of the current Property owner for the opportunity to submit these comments regarding the Tentative Order to be issued for the Property. As noted above, the Property owner's technical comments are attached to this letter and supplement other technical comments submitted earlier with regard to the Property, just as my comments in this letter are in addition to other comments submitted by the current and past owners of the Property to Regional Board Staff at earlier times.

Very truly yours,

Jon L. Benjamin

JLB:af
Enclosure: Technical Comments of Scott Bourne, CDIM Engineering, dated June 21, 2018

cc: (See Next Page)

Via Email

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TO: John Jang, SFRWQCB
Carla Ravipati, Red Capricorn, LP

CC: Jon Benjamin, Esq., Farella-Braun + Martel LLP
John Taylor, Union Property Capital

FROM: Scott Bourne, PE, 415-498-0535, CDIM Engineering

RE: Technical Comments on the May 10, 2018 Tentative Order - Site Cleanup Requirements for the Former Unocal Facility No. 3642 and Chevron Site No. 306574, 7455 Redwood Boulevard, Novato, Marin County

DATE: June 21, 2018

On behalf of the property owner, CDIM Engineering (CDIM) has reviewed the May 10, 2018 Tentative Order – Site Cleanup Requirements (Order), prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (SFRWQCB) for the Former Unocal Facility No. 3642 and Chevron Site No. 306574 located at 7455 Redwood Boulevard, Novato, California (the Site).

On behalf of the property owner, CDIM respectfully submits the following comments:

1. The property owner supports issuance of the Order with Chevron as the responsible party for meeting the technical and other requirements of the Tentative Order. Active cleanup is necessary to fully comply with State Regional Water Control Board (SWRCB) Low Threat Underground Storage Tank Closure Policy (LTUCP) criteria (SWRCB, 2012). Contamination at the Site impairs the ability of the property owner to utilize the property for allowable unrestricted residential and commercial land use.

2. The implementation schedule outlined in the Order is fair and appropriate. The Site is vacant and the property owner removed a structure from the site in April 2014 to facilitate remediation. Chevron's work pursuant to the Order can proceed at any time.

3. We hope SFRQWB will require a post-remediation Human Health Risk Assessment as part of Item C.4 (Cleanup Completion and Annual Status Reports), in addition to the "summary" noted in Item 4.C.a. As described in the Order, pre-remediation soil vapor concentrations at the Site indicate a substantial vapor intrusion indoor air threat, if not properly mitigated, to future site Building occupants under both residential and commercial land use scenarios. The proposed Human Health Risk Assessment is necessary to confirm that residual post-remediation concentrations in groundwater, soil, or soil vapor do not pose an unacceptable hazard to human health and the environment, especially in areas where commercial and residential development is proposed. Assuming remediation is effective, this Human Health Risk Assessment should be a straightforward and achievable addition to the proposed Cleanup Completion and Annual Status Reports.

4. The Self-Monitoring Program in the Order requires post-remediation monitoring for five groundwater wells and eight soil vapor monitoring points at the following frequency: monthly for three months and quarterly thereafter. In addition to the requirements proposed by the Order, we recommend:

   a. Groundwater at monitoring wells MW-2, MW-3, MW-5, MW-8A and IW-1 should be analyzed for MBTE, in addition to the other constituents listed in the Order. This recommendation is necessary since MTBE was recently detected in groundwater above the proposed cleanup level of 5 ug/L e.g., 15 ug/L of MTBE was detected in monitoring well MW-2 on 1/4/18 (Stantec, 2018).

   b. Some of the eight soil vapor monitoring points will be destroyed or otherwise rendered unusable if soil excavation is performed. Therefore, we recommend that these soil vapor points be re-installed post construction by Chevron in locations that represent the entire site area (i.e., evenly distributed throughout the Site) as well as the southern area of the Site where residential structures are proposed. We can coordinate this "footprint" exercise, as well as necessary access for Chevron to do the work proposed pursuant to the Order, on behalf of the property owner.

REFERENCES

Stantec, 2018. *First Semi-Annual 2018 Groundwater Monitoring Report*, Chevron Site No. 306574, 7455 Redwood Boulevard, Novato, California. April 18.

State Water Resources Control Board, 2012. *Low Threat Underground Storage Tank Policy.*

APPENDIX C

CLEANUP TEAM RESPONSE TO COMMENTS

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESPONSE TO COMMENTS

TO:	Bruce Wolfe Executive Officer	November 2, 2018 File No. 21-0203 (JMJ)
FROM:	John Jang Water Resource Control Engineer Toxics Cleanup Division	
CONCUR:	Laurent Meillier Section Leader Toxics Cleanup Division	Stephen Hill Division Chief Toxics Cleanup Division

SUBJECT: Response to Comments on the Tentative Order (Site Cleanup Requirements) for the Former Unocal Facility No. 3642/Chevron Site No. 306574, 7455 Redwood Blvd., Novato, Marin County

This memo provides the Water Board's Cleanup Team response to comments on the Tentative Order (TO). The TO was circulated for public comment starting on May 10 and closing on June 29, 2018. By the close of the comment period, the Cleanup Team received comments from the following:

A. Comments from Stantec Consulting Services, consultant for Chevron Environmental Management Company (CEMC).

B. Comments from Robert Goodman with Rogers Joseph O'Donnell, law firm representing CEMC and Union Oil of California (Unocal).

C. Comments from Jon Benjamin with Farella Braun + Martel LLP and CDIM Engineering representing Carla Ravipati (current landowner representative)

Below, the Cleanup Team summarizes the comments and provides associated responses. These comments were renumbered from the comment letters to follow the below sequencing.

A. COMMENTS FROM STANTEC CONSULTING SERVICES

A.1. ***Comment:*** According to Stantec's conversation with the City of Novato, the General Plan will not likely be adopted until the end of 2018. The City's General Plan indicated the Site, currently zoned commercial, is located within the proposed Mixed Use re-zoning area allowing second and third story residential units above ground floor commercial.

Response: Comment noted (see also response to Comment B.4.).

Petroleum Free Product

A.2. ***Comment:*** In July 2016, light non-aqueous phase liquid (LNAPL) were reported in soil borings S14 and S24 in June 2016 and in well MW-2, following the record drought period that lowered water levels in MW-2 to their lowest levels since 1993. By January

2017, the LNAPL declined to a sheen in MW-2 and the benzene concentration was 620 micrograms per liter (µg/L), indicating the free product has undergone significant biodegradation since the Unocal station was removed in 1992.

Response: We disagree that the lowered water levels is the reason for the recent detection of free product.

- The greatest reported depth to groundwater (DTW) historically from MW-2 along with corresponding LNAPL measurements are shown in the following table:

Date	DTW (feet)	LNAPL thickness (feet)
8/28/93	5.71	0.00
10/26/93	5.92	0.00
12/21/93	5.65	0.00
8/10/15	5.25	0.00
7/18/16	5.26	0.14
7/28/16	5.32	0.11
10/6/16	5.61	0.01

  The water table is not the main factor in the detection of LNAPL in 2016. The lowest recorded water levels were in 1993, but there were no detected LNAPL. If water levels were the main driving force for LNAPL distribution, then it should have been detected in 1993.
- The majority of the DTW measurements historically from MW-2 are between 4.00 to 4.99 feet below ground surface. If water levels were the main driving force as to whether LNAPL is present, then such small changes (0.5 to 1.5 feet in elevations), in water levels cannot account for the presence of LNAPLs in 2016.
- Prior to 2016, there were no measurable LNAPL and no sheen reported in MW-2 and the northeastern downgradient portion of the Site. Starting in 2016, a subsurface process, such as transport from a secondary source, mobilized LNAPL in MW-2, S-14, and S-24 (approximately six inches of free product detected).
- We agree that there are significant decreases in concentrations of benzene in MW-2. Benzene is the most volatile and most biodegradable component of gasoline. However, there has been no significant decline in MW-2 concentrations of other constituents of gasoline including volatile organic compounds (VOCs) such as toluene, ethylbenzene, and xylenes.

A.3. ***Comment:*** In June 2016, a grab groundwater sample from S-24 contained Total Petroleum Hydrocarbon – Gasoline Range Organics (TPH-GRO) at 390,000 µg/L, benzene at 17,000 µg/L, and ethylbenzene at 5,400 µg/L. This grab groundwater sample was observed to contain silt during collection and likely contained non-dissolved petroleum components (e.g., petroleum-affected soil particles), that likely biased the sample results high.

Response: Regardless of the possible positive bias, free product was detected at S24 and high dissolved concentrations of TPH-GRO, benzene, and ethylbenzene are expected. Due to analytical equipment interferences, the presence of silt during collection could bias the dissolved sample concentrations high. It is unknown if the sample was filtered in the lab which would minimize the silt positive bias. Regardless of the silt in this

groundwater sample, free product was measured in S24. Based on the presence of free product, we expect the dissolved concentrations to be high in petroleum related compounds. The Discharger's consultant could have elected to take an additional grab groundwater samples to address this siltation problem.

A.4 ***Comment:*** The State Water Board's *Technical Justification for Groundwater Media-Specific Criteria (final 04-24-2012), Section 2.2 Free Product* discussed various conditions in which LNAPL can exist in the subsurface. The following condition; *"residual or immobile LNAPL (LNAPL that is trapped in the soil pore spaces by capillary forces and is not mobile)"* exists at this Site.

Response: Regional Water Board staff disagrees that LNAPL is not mobile. Measurable LNAPL in MW-2 only occurred in 2016 with sheens noted in 2017 and 2018. Prior to 2016, there were no measurable LNAPL and no sheen reported in MW-2 including in 1993 when water tables were lower than in 2016. The occurrence of LNAPL and sheens in 2016 and afterward imply that something mobilized the LNAPL in MW-2.

A.5. ***Comment:*** In MW-2, the petroleum free product appears to be held in the formation pore space and is only moving into the void space of the well after groundwater levels were at historic lows. The product is immobile and will not move laterally or vertically without a void space (i.e., an open bore hole or well and, only when groundwater is at historic lows).

Response: See our response to Comment A.2.

A.6 ***Comment:*** The State Water Board's *Technical Justification for Groundwater Plume Lengths, Indicator Constituents, Concentrations, and Buffer Distances to Receptors* states that "*The maximum concentrations of benzene (3,000 µg/l) and MTBE (1,000 µg/l) are conservative indicators that a free product source is not present. These concentrations are approximately 10% and 0.02%, respectively, of the typical effective solubility of benzene and MTBE in unweathered gasoline. These concentrations are expected to biodegrade/naturally attenuate to WQOs within a reasonable time frame."* The water sample from MW-2 in January 2018 with visible sheen contained benzene at 380 µg/L and MtBE at 15 µg/L, which are below the State Water Board's Low Threat Closure Policy (LTCP) numeric concentrations. During the January 2018 event, benzene was detected in only two out of the ten monitoring wells, and MtBE was detected in 3 out of 10 monitoring wells. Benzene and MtBE concentrations at the Site are at historic low concentrations.

Response: The former Unocal station was demolished in 1992, more than 25 years ago. The residual pollution has been "weathering" for more than 25 years and can no longer be considered unweathered. Free product is still present at the Site 25 years after the gasoline release(s). Because benzene is the most volatile and most biodegradable component of gasoline, the concentration of benzene has shown substantial decreases. Most of the other components of gasoline including volatile compounds such as toluene, ethylbenzene, and total xylenes have shown minimal or no decreases in concentrations. Historic MtBE concentrations at the Site were never that high, probably because the Unocal station was demolished before MtBE was widely used as a fuel oxygenate. Because MtBE is completely soluble in water, with no ongoing sources of MtBE, most

MtBE will migrate with the groundwater offsite, leading to lowered MtBE concentrations onsite.

A.7. ***Comment:*** The State Water Board's *Technical Justification for Groundwater Media-Specific Criteria* notes: "*Free product shall be removed in a manner that minimizes the spread of contamination into previously uncontaminated zones. For most sites, stable or declining concentrations of dissolved constituents in groundwater indicate that petroleum is no longer acting as a significant source.*" The dissolved benzene and MtBE concentrations are declining in MW-2, MW-3, and MW-5, documenting "*petroleum is no longer acting as a significant source.*"

Response: We disagree. This petroleum free product is acting as a significant source of highly elevated dissolved concentrations of petroleum compounds causing a threat to human health and the environment. See our response to Comment A.6. regarding concentration trends of benzene, MtBE, and other components of gasoline.

A.8. ***Comment:*** The State Water Board's *Technical Justification for Vapor Intrusion Media-Specific Criteria* Section 3.1, Low Concentration Sources (weathered residual in soil and/or dissolved concentrations in groundwater) provides the following clarification *"…Note: weathered LNAPL is analogous to low concentration sources in cases where the LNAPL is depleted of VOCs"*. This is supported by the BTEX concentrations reported in MW-2.

Response: The LNAPL detected in MW-2 is not depleted of VOCs. While the concentration of very volatile and readily biodegradable benzene has shown significant decreases, TPH-GRO, toluene, ethylbenzene, and xylenes have not shown any significant decreases in concentrations since the former station was demolished in 1992. The residual concentrations in MW-2, S-14, and S-24 still represent a threat to human health via vapor intrusion (See additional information in our response to comments A.24. thru A.28. below).

A.9. ***Comment:*** Based on the above facts, the LTCP general criterion d, removal of free product to the maximum extent practicable, has been met and therefore no further remedial action is warranted to address free product.

Response: We disagree. Based upon our earlier responses, free product has not been removed to the maximum extent practicable. No free product removal has been previously attempted in the areas of soil borings S-14 and S-24 and well MW-2. Approximately six inches of free product was detected from S-24 in 2016. A grab groundwater sample from S-24 contained TPH-GRO at 390,000 µg/L, benzene at 17,000 µg/L, and ethylbenzene at 5,400 µg/L. Therefore, additional remedial action is needed to remove the free product. This free product is a significant source of contamination to soil, groundwater, and soil vapor and must be cleaned up.

Secondary Source Removal

A.10. ***Comment:*** The State Water Board *Technical Justification for Groundwater Media-Specific Criteria* defines secondary source as *"petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source."*

Secondary source removal has been completed previously at the Site by over-excavation following the UST system and dispenser island removal in 1992.

Response: Secondary source removal was not completed to the extent practicable. Soil confirmation samples following the 1992 excavations detected up to 3,300 mg/kg of TOG, 1,500 mg/kg of TPH-d, 3,400 mg/kg of TPH-g, 54 mg/kg of benzene and 110 mg/kg of ethylbenzene.

The 2016 recent comprehensive soil sampling program indicates that soil samples taken within the footprints of the 1992 excavation still contain high concentrations of petroleum related compounds. Because the Site is currently vacant with no onsite buildings, there are no impediments to completing secondary source removal to the extent practicable.

Boring Number	Sample Depth (feet)	TPH-GRO (mg/kg)	Ethylbenzene (mg/kg)	Naphthalene (mg/kg)
S-28	5 – 7	2,000	20	13
S-30	3 – 5	1,100	24	11
S-60	5 – 7	1,700	31	21
S-61	5 – 7	2,100	25	19

A.11. ***Comment:*** In 2016, only 2 of 157 soil samples exceeded the commercial land use LTCP direct contact/outdoor air exposure criteria. This information indicates that the residual source at the Site is limited in extent and further active cleanup is not warranted.

Response: We disagree. Using the LTCP commercial criteria for direct contact/outdoor air exposure to assess whether secondary source removal is necessary is not appropriate for the following reasons:

- The City of Novato is in the process of re-zoning the Site to Mixed Use which will require development(s) to have ground floor commercial with residential allowed on the second and third floors (see also our response to Comment B.4.).
- In assessing whether secondary source removal is necessary, the LTCP criteria for direct contact/outdoor air exposure is only one of several criteria we evaluate. Another criterion is vapor intrusion. At the subject Site, highly elevated soil vapor concentrations are present representing a significant threat to human health via vapor intrusion that must be eliminated (see our responses to comments. A.24. thru A.28.).

A.12. ***Comment:*** The elevated 2016 soil concentrations were collected from the saturated smear zone and are likely biased by groundwater. Soil samples collected in the unsaturated zone and below the smear zone are significantly lower than the samples taken in the saturated smear zone**.**

Response: Whether groundwater is the cause of the soil pollution is irrelevant. Soil and groundwater contamination are the sources of highly elevated soil vapor concentrations that presents a significant threat to human health via vapor intrusion. Active cleanup is needed to abate this threat (see our responses to comments A.34 thru A.38).

A.13. ***Comment:*** Monitored natural attenuation (MNA) processes led to the reduction of the benzene and MtBE plumes at the Site and MNA parameter analyses indicate that

biodegradation is occurring. Also, the dissolved groundwater plume downgradient of the site is stable and decreasing.

Response: Most of the other components of petroleum hydrocarbons have not shown significant decreases. Significant biodegradation appears to be occurring only for benzene, the most volatile and most biodegradable component of gasoline (see our response to Comment A.6. for a more detailed explanation). Oxygen content in soil vapor at much of the Site is less than 4%, not high enough to support significant biodegradation. Significant residual soil and groundwater contamination at the Site are the sources of highly elevated soil vapor concentrations representing a significant threat to human health via vapor intrusion that must be cleaned up.

A.14. ***Comment:*** Based on the above, general criterion f of the LTCP, secondary source removal to the extent practicable, has been met.

Response: Based upon our responses above, Regional Water Board staff concludes that secondary source was not removed to the extent practicable.

The LTCP also allows regulatory agencies to require additional removal or active cleanup if it is necessary to abate a demonstrated threat to human health. A demonstrated threat to human health exists due to the high concentrations in soil vapor of ethylbenzene, naphthalene, and possibly benzene (due to the high detection limits). To address this LTCP impediment, Regional Water Board staff requires additional soil removal.

Nuisance

A.15. ***Comment:*** The conditions of "nuisance" as defined by Water Code section 13050 do not exist at the Site. The State Water Board *Technical Justification for Groundwater Media-Specific Criteria* states that nuisance applies only to groundwater.

Response: We disagree. Nuisance conditions as defined by Water Code section 13050 exist at the Site. The State Water Board *Technical Justification for Groundwater Media-Specific Criteria (final 04-24-2012)* does not state that nuisance applies only to groundwater. It only presents groundwater examples where nuisance is exceeded. Water Code section 13050 defines nuisance as "*indecent or offensive to the senses"* independent of the media of concern. These include the senses of taste and smell. The concentrations detected in Site soil vapor for TPH-GRO (up to 74,000,000 ug/m^3) are significantly above our soil vapor odor nuisance residential ESL of 50,000 ug/m^3. Groundwater at the Site is shallow, mostly between 3 to 7 feet below ground surface. Soil pollution is also primarily between 3 to 7 feet below. Nuisance conditions arising from soil, groundwater, and soil vapor could exist for future subsurface construction workers, for future occupants of buildings built at the Site, and for the future public use of the outdoor space at the Site.

Water Code section 13050 also define nuisance as "*injurious to health."* Current soil and groundwater contamination at the Site pose a threat to future sites users via future vapor intrusion. This condition is injurious to the health of future site users during and after Site redevelopment. Active cleanup is needed to abate this threat (see our responses to comments A.34. thru A.38.).

Section 13050 also defines nuisance as "*an obstruction to the free use of property.*" Current conditions of subsurface contamination at the property render it unsuitable for residential use (as noted earlier in this response). Given the impending zoning change and the property owner's intention and existing plans to use the site as mixed use-residential, leaving the existing contamination in place would obstruct such a use of the property.

The second criteria of nuisance in Section 13050 is that the conditions affect "an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal." Future construction workers, Site building occupants, and public outdoor on the property qualify as a *considerable number of persons* as cited in Water Code section 13050. In this case, Ms. Ravipati has indicated her intent to build 36 units (commercial and residential) at and adjacent to the Site. Typical occupancy for a redevelopment project on a lot of this size is in the range of 72 to 108 occupants based on an estimated number of 36 units. That is a considerable number of persons who will be impacted by the presence of the contamination.

The third criteria of nuisance is that it occurs during the treatment or disposal of waste. In this case, the nuisance condition resulted from the disposal of waste from the former Unocal station and there is an ongoing discharge of waste, as defined in the Matter of Zoecon (State Water Resources Control Board Order No. WQ 86-2.)

A.16. ***Comment:*** As discussed below in our comments. A.18. thru A.23., groundwater conditions at the Site meet Class 3 of the LTCP Groundwater-Specific Criteria. Groundwater meeting this criterion cannot be deemed a nuisance, as it is permitted by the LTCP.

Response: We disagree. As discussed later in our responses to Comment Nos. A.18. thru A.23., Regional Water Board staff does not concur that groundwater conditions at the Site meet Class 3 of the LTCP Groundwater-Specific Criteria. The LTCP also does not state that groundwater meeting this criterion cannot be deemed a nuisance. Instead, the State Water Board *Technical Justification for Groundwater Media-Specific Criteria* states that "*there can be a scenario where remaining contamination in groundwater is not a risk to human health or the environment but is a nuisance.*" See also response to A.15.

A.17. ***Comment:*** Site conditions do not meet the nuisance criteria *"affect at the same time an entire community or neighborhood, or any considerable number of persons"*, nor are they occurring *"during, or because of, the treatment or disposal of wastes."*
Response: We disagree. See our response to Comment A.15.

Media-Specific Criteria - Groundwater

A.18. ***Comment:*** Contaminant plume less than 250 feet in length.

Response: We agree.

A.19. ***Comment:*** Free product removed to the maximum extent practicable.

Response: We disagree (see our response to comments A.2. thru A.9.).

A.20. ***Comment:*** Groundwater plume stable or decreasing for greater than five years

Response: We agree.

A.21. ***Comment:*** Nearest Supply Well and Surface Water Body (From Plume Boundary) greater than 1,000 Feet: Using the Groundwater Ambient Monitoring and Assessment (GAMA) Program on Geotracker, there were no supply wells within 1,000 feet of the Site. There is a small creek located 900 feet east (cross-gradient) of the groundwater plume. However, based on the defined plume extent and cross-gradient location, it is highly unlikely that the creek would be impacted by the Site's groundwater plume.

Response: The Site does not meet the LTCP criteria that surface water bodies must be greater than 1,000 feet from the plume boundary because there is a creek 900 feet away. This is one of several low-threat criteria that are not met at this Site.

A.22. ***Comment:*** The current dissolved concentration of benzene in MW-2, MW-3, and MW-5 are all below 1,000 µg /L. The First Quarter 2018 groundwater sample from MW-2 indicates that VOCs are depleted. Benzene in groundwater from MW-2 has been less than 1,000 µg /L since 2012 with one exception of Benzene at 1,100 µg /L in January 2016.

Response: We disagree. The groundwater sample from MW-2 during the First Quarter 2018 is not depleted of VOCs. This sample contained the following VOCs: benzene at 380 µg/L, toluene at 930 µg/L, ethylbenzene at 2,900 µg/L, and xylenes at 13,000 µg/L.

Dissolved benzene at the Site was above 1,000 µg /L in 2016. MW-2 contained benzene at 1,100 µg/L in January 2016. A grab groundwater sample from S24 on June 28, 2016, contained free product and 17,000 µg/L of benzene. Additionally, boring S14 contained free product in 2016. While no groundwater was collected from boring S14 for laboratory analysis, benzene is likely to exceed 1,000 µg/L. Benzene does not meet the groundwater media specific criteria of the LTCP.

A.23. ***Comment:*** The property owner has indicated their acceptance of a deed restriction and installation of a protective vapor intrusion system in letters dated December 22, 2015, and July 14, 2017.

Response: While the Board is receptive to agreements among private parties governing cleanup, the fundamental mission of the Water Board is to protect water quality, human health and the environment. In this case, conditions persist that require additional cleanup, regardless of the property owner's willingness to be accommodating. Moreover, the property owner's acceptance of a deed restriction and installation of a protective vapor intrusion system is not unconditional. In both of the December 22, 2015, letter, and July 14, 2017, letter, the property owner stated that she wants active cleanup in return for her acceptance of a deed restriction and installation of a protective vapor intrusion system. In a July 26, 2018, conference call, the property owner again stated that she wants the remedial excavation to take place. She stated that she does not want a vapor

intrusion system to be the primary method of addressing the residual pollution and associated vapor intrusion threat. See also our response to Comment A.26.

Media-Specific Criteria – Vapor Intrusion

A.24. ***Comment:*** There is no risk to human health associated with Site soil vapor concentrations, because there are no buildings at the Site, and nearby buildings are not at risk based on the limited extent of soil and groundwater contamination. Therefore, the Site currently satisfies the LTCP petroleum vapor intrusion to indoor air criteria.

Response: We disagree. The soil vapor concentrations are substantially over the LTCP screening levels for sites without a bio-attenuation zone as shown in the Table below.

Chemical	**LTCP Residential Criteria** (µg/m^3)	**LTCP Commercial Criteria** (µg/m^3)	**Maximum concentration** of soil vapor at the Site (µg/m^3)
Benzene	85	280	< 6,900
Ethylbenzene	1,100	3,600	430,000
Naphthalene	93	310	>11,000

The LTCP does not allow for an exception to the vapor intrusion criteria based on the absence of an exposure pathway (i.e., vacant property/unoccupied buildings). Rather, the LTCP requires meeting the petroleum vapor intrusion media specific criteria for existing occupied and reasonably expected future occupied buildings. The property owner has plans to redevelop the Site for mixed use in the near future (see response to Comment A.11).

Vapor intrusion mitigation cannot be relied on to prevent exposure over the life of a building, especially if the soil vapor concentrations are substantially over the LTCP screening levels for the contaminants of concern. This Site does not have a bio-attenuation zone because the oxygen content in soil vapor at much of the Site is below 4%. To remain effective and to avoid unintended breaches, vapor mitigation measures require regular, ongoing activities including inspections, maintenance/repairs, and possibly indoor air sampling. See also our response to Comment A.26.

A.25. ***Comment:*** If or when the onsite land use changes through property redevelopment, the LTCP allows for sites that do not meet the site- specific conditions to use category c. "*As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health*".

Response: We disagree. Regional Water Board staff determined that petroleum vapors migrating from soil and groundwater will have a significant risk of adversely affecting human health without the implementation of active cleanup. Therefore, category c of the petroleum vapor intrusion media specific criteria does not apply in this case. See also our responses to comments A.24. and A.26.

A.26. ***Comment:*** The potential mitigation measure (vapor barrier) and engineering control (passive venting) would be an appropriate plan and protective of human health from vapor intrusion regardless of the any future zoning or land use change.

Response: We disagree. Active cleanup implemented in a reasonable timeframe is necessary for the following reasons:

- The soil vapor concentrations at the Site indicate a substantial vapor intrusion to indoor air risk for future Site building occupants under both residential and commercial land use scenarios (see the Table from our response to comment A.24. and A.25.). Significant vadose-zone cleanup is needed to meet soil vapor screening levels in the LTCP for both residential and commercial land use scenarios.
- The LTCP emphasizes protection of human health and the environment (see below). While much of the LTCP focuses on low-threat closure criteria, the clear inference is that sites not meeting these criteria should be cleaned up so that they can be closed. At the time of the LTCP's adoption, the State Water Board was concerned about the large number of fuel UST cases that were in stalled, being monitored but not being closed *or* cleaned up. The LTCP was intended to solve that problem, and active cleanup is a necessary step when the criteria aren't met.

  > "The State Water Board believes it is in the best interest of the people of the State that unauthorized releases be prevented and cleaned up to the extent practicable in a manner that protects human health, safety and the environment. The State Water Board also recognizes that the technical and economic resources available for environmental restoration are limited, and that *the highest priority for these resources must be the protection of human health and environmental receptors*." (from preamble, emphasis added)

- *State Water Board Resolution 92-49* states that the Regional Water Board shall concur with any investigation and cleanup and abatement proposal which has a "*substantial likelihood to achieve compliance, within a reasonable time frame*." Without additional cleanup, compliance with the cleanup levels for soil, groundwater, and soil vapor would not occur in a reasonable time due to the presence of free product and the high concentrations of chemicals of concern is soil, groundwater, and soil vapor. These conditions of free product and high concentrations in soil, groundwater, and soil vapor still exist 26 years after the Unocal station were demolished. Resolution 92-49 "*authorizes Regional Water Boards to require complete cleanup of all waste discharged and restoration of affected water to background conditions (i.e., the water quality that existed before the discharge).*"
- State Water Board Resolution 92-49 expressly states the Board's preference for *"permanent cleanup and abatement solutions which do not require ongoing maintenance, wherever feasible."* Engineering and institution controls are not a substitute for cleanup work. Cleanup permanently removes the source of contamination of vapor intrusion to indoor air at commercial or residential buildings. To remain effective and to avoid unintended breaches, vapor mitigation measures require onerous ongoing attention such as: inspections,

maintenance/repairs, and indoor air sampling. The Site is currently vacant and there are no impediments to permanent cleanup and abatement solutions.

- Guidance documents from the Department of Toxic Substances Control (DTSC)[1] and the U.S. EPA[2] recommend cleanup action to address vapor intrusion, rather than solely relying on vapor mitigation measures.
- Engineering and institutional controls do not address the LTCP criteria for removal of free product and adequate source removal.
- Vapor intrusion mitigation systems require require ongoing maintenance to remain effective and it's not clear how long they remain effective even if properly maintained.
- While risk management measures are not a substitute for active cleanup, the TO has been revised to include a deed restriction task, in the event that risk management measures are needed prior to completing cleanup work – or in the event that it is technically impractical to completely eliminate the vapor intrusion (VI) threat with active cleanup. In such an event, risk management measures, including vapor intrusion mitigation and a deed restriction, are needed to eliminate or lessen the VI threat or can be used as an extra level of safety.

A.27. ***Comment:*** The TO stipulates Chevron must meet LTCP residential vapor intrusion concentrations and does not acknowledge Chevron's proposed remedy of soil removal during redevelopment in conjunction with the above proposed vapor barrier. To address vapor intrusion, soil excavation would target the vadose zone. The proposed soil removal is based on the residential LTCP direct exposure numeric values and may be adjusted based on final design drawings, as needed.

Response: This comment refers to a Chevron cleanup proposal that the company withdrew over a year ago and never implemented. Chevron, in a letter dated February 27, 2017, removed this proposal from consideration.

Regional Water Board staff will accept a comprehensive soil removal proposal addressing soil vapor contamination and implemented in a reasonable timeframe. That timeframe may occur as part of redevelopment of the site, but staff are unwilling to leave the site unaddressed indefinitely. See our response to Comment A.38. for what we consider to be the reasonable cleanup timeframe for this Site. Based upon recent conversation with representatives of CEMC, Regional Water Board staff has revised the soil vapor cleanup levels to ensure that soil vapor cleanup levels shall be met in all onsite vadose-zone soils beneath proposed building(s) and in a buffer area within 30 feet of the proposed building(s), rather than being met beneath the entire Site.

[1] See October 2011 Vapor Intrusion Guidance: http://dtsc.ca.gov/SiteCleanup/Vapor_Intrusion.cfm.
[2] See June 2015 OSWER Technical Guidance: https://www.epa.gov/vaporintrusion/technical-guide-assessing-and-mitigating-vapor-intrusion-pathway-subsurface-vapor.

A.28. ***Comment*:** Based on DTSC's 2012 guidance[3], when evaluating potential methane hazards, concentration, pressure, and volume should be considered. The methane observed on Site is associated with methanogenic (methane producing) biodegradation of petroleum hydrocarbons. This typically occurs because of depletion of dissolved oxygen (DO), nitrate, ferric iron, manganese, and sulfate in groundwater leading to biodegradation of petroleum hydrocarbon to produce methane. This is not likely to result in accumulation of methane in any confined spaces at the ground surface for the following reasons: (1) The rate of methane production due to methanogenic biodegradation of hydrocarbons is sufficient to build pressure in the subsurface and (2) methane biodegrades rapidly in presence of oxygen (near the ground surface). During an excavation methane will be exposed to open air. The vapor density of methane is 0.55 (air = 1), so when shallow soil is excavated, the vadose zone soil will be exposed to open air, and the methane in soil vapor will diffuse and degrade.

Response: Methane in soil vapor is a potential human health and safety hazard. Methane, a chemical not covered in the LTCP, was detected at up to 40% by volume in the 3-foot bgs samples. The methane concentrations exceed the upper explosive limit (15% by volume). Methane is a known asphyxiant and has explosive characteristics. Regional Water Board staff requires that methane production is monitored during subsurface work and after development including appropriate testing for soil vapor concentrations and soil vapor pressures.

Media-Specific Criteria – Direct Contact and Outdoor Air Exposure

A.29 ***Comment*:** Current site conditions satisfy the commercial LTCP direct contact and outdoor air exposure criteria, except for two discreet naphthalene detections.

Response: We agree. However, Regional Water Board staff will use criteria protective of future residential occupants when evaluating this Site for cleanup and closure (See our response above to comment number A.11.). The June 2016 investigation involved analyzing soil samples from 67 locations. 29 of these locations contained concentrations of benzene, ethylbenzene, and/or naphthalene that exceeded the LTCP residential criteria for direct contact/outdoor air exposure. As shown in the Table below, maximum concentrations of benzene, ethylbenzene, and naphthalene all exceeded the LTCP residential criteria for direct contact/outdoor air exposure for both shallow and deeper soil:

Chemical	**Shallow Soil (0-5 ft bgs)**		**Deeper Soil (5-10 ft bgs)**	
	Residential Direct Contact Criteria (mg/kg)	**2016 Maximum Concentrations** (mg/kg)	**Outdoor Air Exposure Criteria** (mg/kg)	**2016 Maximum Concentrations** (mg/kg)
Benzene	1.9	2.4	2.8	9.3
Ethylbenzene	21	47	32	89
Naphthalene	9.7	48	9.7	54

[3] See Department of Toxic Substances Control webpage: https://www.dtsc.ca.gov/PublicationsForms/upload/BF_Schools_Eval_of_Biogenic_Methane_March_2012.pdf

A.30. ***Comment*:** The LTCP volatilization to outdoor air exposure criteria do not apply to saturated soil. There is no exposure pathway as soil samples collected in the saturated zone are unlikely to volatilize into the dry vadose zone. In addition, soil samples are biased by groundwater as they were collected in saturated soil conditions.

Response: The outdoor air exposure pathway is viable. Much of the contaminated soil is within the "smear zone" (about 3 – 7 feet bgs) where free product occurred in the soil and was then smeared across the soil when the water table fluctuated between historic high and low water table elevations. Most of the contaminated soil will not be saturated all the time. Soil and groundwater contamination are the sources of highly elevated soil vapor concentrations representing a threat to human health via volatilization to outdoor air. The contribution of groundwater to soil contamination is an important process which must be taken into account during cleanup.

A.31. ***Comment*:** The Site is a currently a vacant lot, covered by asphalt. Therefore, the direct contact exposure pathways with soil are incomplete and are expected to remain incomplete in the future if the Site is redeveloped.

Response: Direct exposure to contaminated soil occurs through excavation such as when utilities are maintained or via inhalation of soil vapor in areas of exposed soil. The redevelopment will likely include areas where soil is exposed to the atmosphere.

A.32. ***Comment*:** The only potential receptor to have direct contact with soil would be future construction and/or utility worker. All 157 soil samples collected in 2016 are below the direct contact/outdoor air exposure LTCP soil criteria for the utility worker scenario between 0 to 10 ft bgs.

Response: See our response to comments A.29. thru A.31. above.

A.33. ***Comment*:** The average depth-to-groundwater is about 4.75 feet bgs. The LTCP volatilization to outdoor air exposure criteria do not apply to saturated soil, because the emission pathway is precluded. Excavating deeper into saturated soil is not necessary due to an incomplete exposure pathway.

Response: We disagree. Much of the contaminated soil is within the "smear zone" where it will not be saturated all the time. Leaching of contaminants in soil to groundwater is occurring at the Site. Volatilization of contaminants from soil and groundwater into soil vapor is occurring and the concentration of contaminants in soil vapor represent a significant health threat via vapor intrusion.

Requirement for Active Cleanup

A.34. ***Comment*:** The Regional Water Board's conclusion that interim remedial measures have not achieved remedial objectives is wrong. Past remedial efforts consisting of excavation, application of oxygen releasing compounds, persulfate, in-situ chemical oxidation injections, and natural attenuation were conducted at the Site. The results of the 2016 soil assessment indicate that previously elevated concentrations were reduced due to the remedial efforts previously implemented.

Response: Reductions in concentrations have occurred but substantial residual pollution remains in soil, groundwater, and soil vapor representing a threat to future residents and the environment.

A.35. ***Comment*:** Groundwater currently meets the LTCP groundwater specific criteria.

Response: See our response to Comments A.18. thru A.23.

A.36. ***Comment*:** Secondary source has been removed to the extent practicable.

Response: See our response to Comments A.10. thru A.14.

A.37. ***Comment*:** Excavation of soil (during site redevelopment) exceeding the residential LTCP direct exposure numeric values and installation of a passive vapor barrier beneath the proposed buildings at the property has been proposed.

Response: This proposal was withdrawn (see our response to Comment A.27.). Regional Water Board staff will approve a comprehensive soil removal proposal to address soil vapor contamination implemented in a reasonable timeframe in accordance with the tasks and deadlines outlined in the TO. See our response to Comment A.38. below for what we define as reasonable timeframe for this Site. Regional Water Board staff has revised the TO to require submittal of a Vapor Intrusion and Soil Mitigation Workplan and an Implementation Report if the cleanup does not result in meeting the residential cleanup levels in the TO.

A.38. ***Comment*:** Chevron recommends excavation to be completed in conjunction with redevelopment activities so a separate remedial excavation is not needed. There are benefits to this approach, including coordination with the City, and minimizing impacts to the community. And depending upon future design plans, it may be beneficial to for the developer to access portions of the excavation while they are exposed. Chevron will coordinate these logistical details with the property owner directly.

Response: We have revised the TO's compliance dates to address Chevron's preference for conducting a remedial excavation concurrent with Site redevelopment (see our response to Comment A.26. for why active cleanup is necessary for this Site). Regional Water Board staff defines reasonable timeframe in the Order as "*90 days after Novato Properties LLC notifies the Water Board and Unocal of the City of Novato's final approval of the site redevelopment project or December 31, 2019, whichever is earlier.*"

Requiring soil removal within 90 days after Novato Properties LLC notifies Regional Water Board staff of final project approval would allow remedial excavation to be completed in conjunction with redevelopment activities. Requiring soil removal by December 31, 2019, would ensure that the excavation is completed within a reasonable timeframe if redevelopment has not started. There are reasons why a concurrent cleanup/redevelopment might not work:

- This is a very small site and it may be logistically difficult to do both at the same time; and

- Depending on cleanup method selected, it may be necessary to check cleanup effectiveness and, depending on the results, go back a second time to finish the cleanup.

Our reasonable timeframe is based on the following rationale:

- *State Water Board Resolution 92-49* states that the Regional Water Board shall concur with any investigation and cleanup and abatement proposal which has a "*substantial likelihood to achieve compliance, within a reasonable time frame*."
- The LTCP requires the removal of secondary source to the extent practicable within a year. We consider the 1992 removal of secondary source to be incomplete and not conducted to the extent practicable. The LTCP also states that even if the secondary source is removed, additional cleanup may be required by the regulatory agency if it is necessary to abate a demonstrated threat to human health such as petroleum vapor intrusion to indoor air. In addition, the LTCP requires meeting the petroleum vapor intrusion media specific criteria for existing occupied and reasonably expected future occupied buildings.
- The property owner plans to redevelop the property into mixed use once the rezoning allows residential use. Conducting active cleanup within 90 days after the Site redevelopment have been permitted by the City of Novato or by December 31, 2019, to meet residential criteria during or prior to redevelopment will protect future occupants of the Site from significant exposure to contaminants via vapor intrusion and direct contact/outdoor exposure.
- The Site is currently vacant. There are no impediments to implementation of cleanup. The LTCP requires vapor intrusion cleanup actions even in the absence of a current exposure pathway such as a vacant property or unoccupied buildings.

Basis for Proposed Cleanup Levels

A.39. ***Comment*:** Since groundwater is shallow at the Site and is not used for drinking water, stipulating a short cleanup time frame to meet groundwater maximum contaminant levels (MCLs) is unnecessary. Also, groundwater samples from several wells at the adjacent Shell property had laboratory detections of total iron above the secondary MCL for drinking water in California. Therefore, the shallow groundwater near the Site is currently unsuitable for drinking water.

Response: The Regional Water Board's Basin Plan[4] designates all groundwater (including shallow groundwater) within its region as a potential source of drinking water. This means that MCLs apply to shallow groundwater beneath the Site. It would take a Basin Plan amendment to de-designate the drinking water beneficial use. It should be noted that a shallow (less than 40 feet bgs) drinking water well was previously located less than 1,000 feet from the Site. This drinking water well serviced 42 connections at the Redwood Homes trailer park (7530 Redwood Blvd.) and was taken out of service in October 2000. The point is that shallow groundwater near the Site was used recently for drinking water purpose.

[4] See Water Board webpage: https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html

Consistency of Cleanup Levels with LTCP and Use of Engineering Controls

A.40. ***Comment*:** The Regional Water Board has specified numeric cleanup standards for groundwater, soil, and soil vapor. The Regional Water Board is specifying cleanup to MCLs for groundwater when the groundwater on Site currently meets the LTCP groundwater media specific criteria. Cleanup Levels for onsite groundwater should be consistent with LTCP criteria.

***Response*:** The TO's cleanup levels are consistent with the LTCP. Groundwater cleanup levels are based on water quality objectives for beneficial uses of groundwater (i.e., MCLs). According to the LTCP, MCLs are used to delineate the groundwater plume to water quality objectives. Soil and soil vapor cleanup levels are from LTCP or from the Environmental Screening Levels (ESLs) (for constituents that (i) pose a health threat at current concentrations and (ii) have no screening levels in the LTCP).

Currently, the Site does not meet the LTCP Groundwater Media-Specific Criteria (see our response to comments A.18. thru A.23.).

A.41. ***Comment*:** Soil vapor cleanup levels will be met using mitigation measures and engineered controls.

***Response*:** Active cleanup is needed to meet the soil vapor cleanup levels (see our response to comments A.24 thru A.27.).

A.42. ***Comment*:** LTCP volatilization to outdoor air exposure criteria do not apply to saturated soil.

***Response*:** See our response to Comment A.30.

A.43. ***Comment*:** The proposed Soil cleanup levels by the Regional Water Board use residential criteria. However, the correct soil cleanup level should be for commercial as the future rezoning will be mixed use which is commercial at ground level.

***Response*:** See our response to Comment A.1.

Achievability of Proposed Cleanup Schedule

A.44. ***Comment*:** The Regional Water Board's proposed schedule for implementation of the tasks is aggressive and not likely achievable, given the complexities associated with completing remedial activities at a third-party site.

***Response*:** Regional Water Board staff considers the proposed schedule to be achievable. The property owner has indicated her strong desire to have Chevron implement active cleanup at the Site as soon as possible and is not expected to provide any impediments to active cleanup.

A.45. ***Comment*:** Conceptual drawings received from the property owner on February 3, 2014, do not comply with City of Novato's current commercial zoning designation for the property.

***Response*:** See our response to Comment B.4.

A.46. ***Comment*:** Until the property owner has applied for and received appropriate entitlements, and the finalized redevelopment plans are approved by the City and/or County, only assumptions as to the placement of any building on the property can be made. A specific design for the vapor barrier and passive venting system cannot be appropriately designed without approved building design plans.

***Response*:** Active cleanup at the Site is necessary to meet the LTCP vapor intrusion to indoor air criteria (see our earlier response to comment numbers A.24. thru A.27.). The Regional Board's reasonable timeframe for cleanup (see earlier response to comment number A.38.) provides sufficient time between finalization of redevelopment plans and remedial excavation. If the LTCP vapor intrusion to indoor air criteria are met after active cleanup, the proposed vapor barrier and passive venting system will not be necessary. Chevron and/or the property owner can choose to install the proposed vapor barrier and passive venting system as an extra measure of safety. The timing of a specific design for the vapor barrier and passive venting system can be decided by Chevron and/or the property owner at a time of their choosing.

B. COMMENTS FROM ROBERT GOODMAN

B.1. ***Comment*:** The TO is without legal foundation as it calls for active cleanup at a Site that qualifies for closure under the LTCP.

***Response*:** We disagree. The Site does not qualify for closure under the LTCP (See items 6 and 7 of the TO and our earlier responses to comments A.2. thru A.38.).

B.2. ***Comment*:** The requirements in the TO are substantially similar to the work required under the Regional Water Board's prior 13267 directive dated February 2, 2017. CEMC's Petition to the State Water Board and subsequent litigation resulted in the Regional Water Board withdrawing its 13267 directive. Accordingly, the TO puts Chevron at risk of re-litigating the exact same issues.

***Response*:** We disagree. There are key differences between the prior section 13267 directive and the TO. Most significantly, the two documents rely on different Water Code authority. The prior directive relies on section 13267 of the Water Code, which allows the Water Board to require technical reports pertaining to water quality. The TO relies on section 13304 of the Water Code, which allows the Water Board to require cleanup and abatement of contamination.

In addition, the two documents have somewhat different requirements. We have revised the TO in response to some of Unocal's comments (see our responses to comments A.27, A.37, A.38, B.3, and B.8). These revisions provide the dischargers with more flexibility in how they accomplish the necessary cleanup.

B.3. **Comment:** The named discharger in this matter should be "*Chevron Environmental Management Company, a California corporation, as Attorney-in-Fact for Union Oil Company of California, a California corporation.*" Any order should also clarify that CEMC never owned or operated the Site or the gasoline service station but manages certain environmental liabilities on behalf of Union Oil. References to Chevron in the TO should be revised to reflect the correct legal entity.

***Response*:** We have revised the TO to name only one past owner/operator, Union Oil Company of California, Inc. (Unocal). Chevron has previously asked staff *not* to name CEMC at other sites, arguing that it is only the agent for Chevron (see UST case 07-0479). The comment similarly indicates that CEMC is only the manager of environmental liabilities on behalf of Unocal. We have confirmed with Unocal's attorney that it was the former owner of the Site and is therefore the appropriate named discharger on this order. To the extent that Unocal and CEMC have a side agreement that binds CEMC to perform certain actions on behalf of Unocal, the TO does not seek to interfere with such arrangements, but the Regional Water Board is also not bound by dischargers' private agreements. [See In the Matter of Aluminum Company of America, et al., Order WQ 93-9.]

B.4. **Comment:** The implementation of the General Plan, including revisions to zoning, is not imminent and in fact is uncertain. All references regarding a future adoption date for the City's General Plan (including references to future rezoning) should be removed from the TO as such representations are unsupported. All cleanup levels in the TO based on a residential land use (soil vapor cleanup and soil cleanup) -should be stricken as the Site cannot currently or in the reasonably foreseeable future be used for residential purposes. There is no legal standing for the TO to base cleanup standards on speculative future zoning changes. (See Order No. WQ 2014-0052 UST" 2014 Cal. Env. Lexis 70.)

***Response*:** We disagree. The order Mr. Goodman cites as authority for this proposition is WQ 2014-0052 UST. In that order, the UST Case Closure Review Summary Report stated that, *"The property is located at a major intersection in a commercial district, and is not likely to be rezoned as residential in the near-term future."* (https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2014/wqo2014_0052_ust.pdf)

In contrast, in this case, the City confirmed that a zoning change is underway and that residential use will be allowed on the second floor and above once the zoning change occurs:

- According to Mr. Brown (City of Novato) on October 9, 2018, the adoption of the General Plan is delayed to May 2019. Mr. Brown also stated that there has been no opposition to the adoption of the General Plan since this process started 3.5 years ago.
- Adoption of the General Plan will lead to re-zoning of the Site and its immediate area from commercial to mixed residential/commercial.
- The mixed-use re-zoning allows ground-floor commercial use with residential use allowed on the second and third floors. In the absence of the implementation of cleanup at the Site, the commercial and residential occupants' health will be negatively impacted due to petroleum vapor intrusion.
- Ms. Carla Ravipati (the Site's owner) plans to develop the vacant Site with ground floor commercial and residential on the second and third floors.
- Regional Water Board staff will use criteria protective of both future commercial and residential occupants when evaluating this Site for cleanup and closure.

The LTCP states that the low-threat vapor intrusion criteria apply to sites where (1) existing buildings are occupied or may be reasonably expected to be occupied in the

future, or (2) buildings for human occupancy are reasonably expected to be constructed in the future. Those circumstances are present here, where there is already a proposed amendment to the General Plan and an Environmental Impact Report is under review. Moreover, Ms. Ravipati has already drafted plans for development. In this case, Ms. Ravipati has indicated her intent to build 36 units (commercial and residential) at or adjacent to the Site. It is reasonable to expect that residential units will be constructed in the future based upon the surrounding property use, conversations with City officials, and Ms. Ravipati's plans for site redevelopment.

B.5. ***Comment:*** The TO improperly mandates "active cleanup" and rejects engineering, institutional, and mitigation measures as a part of a remedial action plan. The Regional Board is without authority to demand response work that eschews engineering, institutional, and mitigation as part of measures designed to address impacts to groundwater, soil and soil vapor. Water Code Section 13360 prohibits a water quality order from specifying *"the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree."* Water Code Section 13360 continues, stating that a person subject to a water quality order may comply with the order in any lawful manner. Under Section 13360, an order may "*tell the discharger what to do, but not how to do it. (See California State Water Resources Board, Order No. WQ 83-3, 1983 Cal. ENV LEXIS 31, *4 (discussing compliance under a waste discharge permit). Put differently, an order must respect the "difference between being told what to do and how to do it."* Id. At p.11.

Response**:** We disagree. The Regional Water Board is well within its jurisdiction under Water Code 13304, the LTCP, and State Water Board Resolution 92-49 to require cleanup of a discharge which poses a threat to human health and the environment. (See our response to Comment A.38. for the "reasonable timeframe" for cleanup at this site.) In situations where mitigation measures or other institutional controls like a deed restriction will not provide necessary assurances of protecting human health, additional cleanup is appropriate, as required in the TO.

The comment suggests that section 13260 requires the Regional Water Board to accept whatever cleanup the discharger proposes – without restriction. That is not the law. The Regional Water Board may impose parameters on cleanup, like cleanup levels or timeframes, and that is what this Order contemplates. For example, if dischargers consistently proposed MNA as a cleanup methodology where the Site posed a threat to human health and the environment, then no active cleanup would ever be conducted, contrary to the intent of the authorities listed above.

B.6. ***Comment:*** The prohibitions contained in Water Code section 13360, in conjunction with Water Code section 13304 allows a discharger to abate the effects of waste, and the history of source and secondary source removal at the Site requires that the TO be amended to remove any reference to active cleanup as a required remedy. As detailed above, the Regional Water Board's purported "Justification" for active cleanup is premised on baseless assumptions regarding the Site's potential future development and that residential receptors will appear at the Site some day in the future. This presumption and associated cleanup requirement stand in stark contrast to a principle embodied in the

LTCP, which unquestionably recognizes that residual contaminant mass often remains after the investment of reasonable efforts to protect human health and the environment. Importantly, the LTCP acknowledges the often-limited returns on extended efforts to address any residual mass should give way to monitored attenuation where a site presents as a low-threat to human health or the environment.

***Response*:** See our response to Comment A.11. regarding cleanup to residential standards and our response to Comment A.26. regarding the limitations of reliance on vapor intrusion mitigation systems in lieu of active cleanup.

B.7. ***Comment:*** The water quality objectives under an order or directive should follow those set out under the LTCP. Based on the Site's historical use and current zoning, any demand for further cleanup should reference commercial ESLs as the applicable cleanup requirement.

***Response*:** See our response to Comment A.11. regarding cleanup to residential standards. ESLs are not routinely used to screen contaminants discharged from underground storage tanks unless they are not listed in the LTCP and pose a significant human or environmental threat.

B.8. ***Comment:*** As with any site, the TO should reflect that cleanup levels can be established by a site-specific human health risk assessment (HHRA).

***Response*:** We have revised Task C.1. (submit Feasibility Study / Corrective Action Plan) of the TO to allow the Dischargers to propose alternate residential soil vapor cleanup levels based on additional attenuation between ground-floor commercial use and upper-floor residential use.

The comment seems to argue that since the site is paved over and no one is currently exposed, there is no requirement to clean up. The comment provides no authority for such a proposition, and in fact that is contrary to the Water Code, State Water Board Resolution 92-49, and the LTCP. Cleanup is necessary under certain conditions, and the TO spells out which elements of the LTCP are not met and why cleanup remains necessary.

C. COMMENTS FROM JON BENJAMIN

C.1. ***Comment:*** The property owner supports the TO and considers the required cleanup to be necessary. The implementation schedule in the TO is fair and appropriate.

Response: Noted.

C.2. ***Comment:*** The property owner objects to being named as a discharger in the TO.

***Response*:** The Regional Water Board is legally justified and usually names the property owner as a discharger in the TO. State Water Board precedential orders hold that a property owner who has not contributed to an active discharge at a site may still be named as a discharger because of the discharger's unique ability to control access to cleanup, and therefore cleanup. (See, e.g., *Zoecon*, *supra*, Order No. WQ 86-2.)

C.4. ***Comment:*** Any future delays by Chevron in implementing the TO will cause the property owner significant economic harm and damages.

Response: Noted.

C.5. ***Comment:*** The TO should be revised to make clear that Chevron is the primarily-responsible party for complying with the requirements of the TO.

Response: We disagree. Under Water Code section 13304, dischargers named to cleanup orders are jointly and severally liable. Designating primarily-responsible and secondarily-responsible dischargers in a cleanup order is something the Regional Water Board does occasionally, but only if the named dischargers agree to this distinction and agree on the cleanup work needed. In this case, the dischargers don't agree on the cleanup work needed and the primary/secondary distinction is not warranted. However, if the requirements of the TO are not met, the State Water Board's Water Quality Enforcement Policy will require the Regional Water Board to take into consideration the degree of culpability of each named discharger.

C.6. ***Comment:*** The Regional Water Board should require a post-cleanup HHRA.

Response: If the cleanup is successful and future Site conditions can meet all the LTCP criteria, an HHRA will be unnecessary. If the cleanup is not entirely successful, we will rely on the post-cleanup soil vapor levels to determine what level of effort is needed to maintain the installed vapor intrusion mitigation system(s). An HHRA is not needed under either scenario.