

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

STAFF SUMMARY REPORT (Bill Cook)  
MEETING DATE: October 9, 2019

**ITEM:** 5

**SUBJECT:** **Champion Laboratories, Inc., Maxion Wheels, a Division of lochpe Maxion, Cranbrook Realty Investment Fund, L. P., and EOP – Industrial Portfolio, LLC, for the property located at 4186 Park Road, Benicia, Solano County – Adoption of Site Cleanup Requirements**

**CHRONOLOGY:** The Board has not previously considered this item, which was initially on the September 2019 Board agenda, but got pulled at the request of Champion Laboratories, Inc.

**DISCUSSION:** The Revised Tentative Order (RTO, Appendix A) would set cleanup levels and require the dischargers to complete site investigations, submit a revised cleanup plan, and implement the plan.

The site is located in Benicia northeast of the Benicia-Martinez Bridge. An automobile wheel manufacturer operated at the site and used trichloroethene (TCE) as a degreaser solvent. The TCE leaked and caused significant groundwater and soil vapor contamination.

Investigations at the site began in 1999. The TCE groundwater plume extends about 2,000 feet offsite towards the east into wetlands near the edge of Suisun Bay. In 2019, the maximum onsite TCE groundwater concentrations is 13,000 µg/l and the maximum TCE groundwater concentration in wetlands near the distal edge of the plume is 4,800 µg/l. For comparison, the drinking water standard for TCE is 5 µg/l and the aquatic habit screening level is 200 µg/l. The RTO contains investigation tasks to refine the definition of the extent of the plume.

The dischargers have been cleaning up the site since 2004. Several cleanup technologies have been used including vapor extraction and chemical oxidation. Over 7,000 pounds of chlorinated volatile organic compounds have been removed from the site. To mitigate potential vapor intrusion, a sub-slab depressurization system was installed beneath the onsite building.

In 2014 and 2015, staff approved cleanup plans that provided for additional remediation for the onsite unconsolidated sediment area and long-term monitoring for the onsite bedrock area and the offsite area, with a contingency plan for reconsideration if groundwater concentrations increased offsite.

A cleanup order requiring a revised cleanup plan is needed at this time because the plume remains at high concentrations, offsite vapor intrusion issues are a concern in light of recent information on the toxicity of TCE, and our regulatory approach to the protection of wetlands has evolved. The RTO contains tasks for a revised cleanup plan to address the high concentrations of TCE.

The dischargers submitted comments on the tentative order that was circulated for public comment (Appendix B). The Response to Comments is contained in Appendix C. We met with dischargers several times to discuss their comments and concerns. Some of the dischargers' comments were incorporated into the RTO released in September. Since then and based on further discussions with the dischargers, we made several additional minor revisions to the RTO's findings as follows:

- Finding 5 was revised to remove an assumption that a stream channel was filled.
- Finding 7 was revised to clarify the description of the previous risk assessments and how screening levels were used.
- Finding 8 was revised to clarify that the 2014 and 2015 onsite and an offsite Feasibility Study/Remedial Action Plan was approved without a condition and to clarify recent indoor air sampling results.
- Finding 11 was revised to clarify the description of the previous risk assessments.

As of this writing, we expect the RTO to remain on the uncontested calendar; however, one of the dischargers, EOP-Industrial Portfolio, LLC, may petition adoption of the RTO because it objects to being named, as set forth in its comments.

**RECOMMEN-  
DATION:**

**Adopt the Revised Tentative Order.**

File No.

48S0046 (BAC)

Appendices

A: Tentative Order  
B: Comments Received  
C: Response to Comments  
D: Location Map



# Appendix A

## Tentative Order

## Appendix B

### **COMMENTS RECEIVED FROM EOP INDUSTRIAL PORTFOLIO, LLC ARE FOUND HERE:**

**[https://geotracker.waterboards.ca.gov/regulators/deliverable\\_documents/9854051887/2019-05-16%20EOP%20Benicia%20Ind.%20Park%20Comment%20Letter%20to%20RWQCB.PDF](https://geotracker.waterboards.ca.gov/regulators/deliverable_documents/9854051887/2019-05-16%20EOP%20Benicia%20Ind.%20Park%20Comment%20Letter%20to%20RWQCB.PDF)**

### **COMMENTS RECEIVED FROM THE PARK ROAD GROUP ARE FOUND HERE**

**[https://geotracker.waterboards.ca.gov/regulators/deliverable\\_documents/8552471339/48S0046%205-17-19%20PRG%20TO%20response.pdf](https://geotracker.waterboards.ca.gov/regulators/deliverable_documents/8552471339/48S0046%205-17-19%20PRG%20TO%20response.pdf)**

# Appendix C

## Response to Comments

# Appendix D

## Location Map

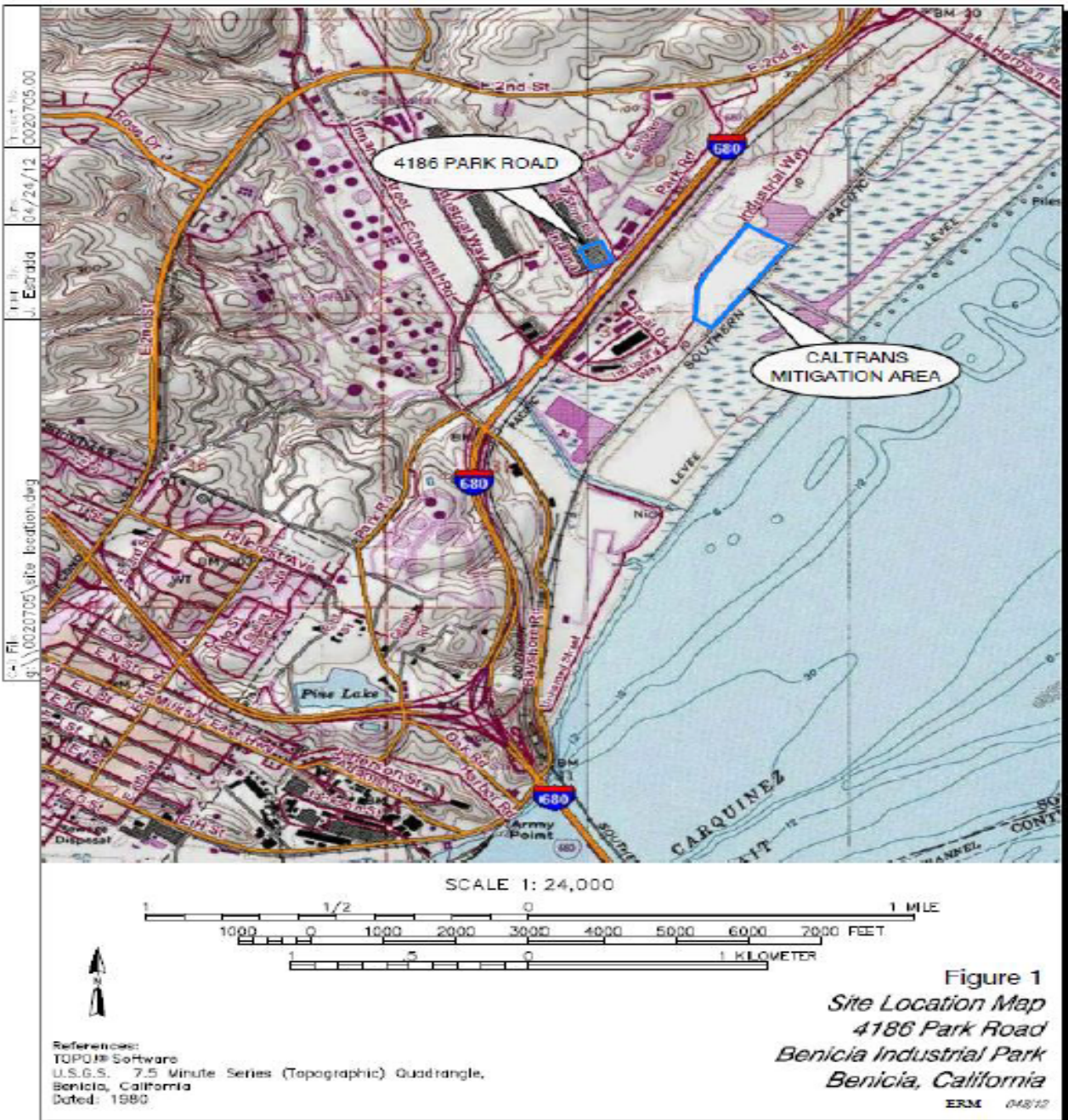


Figure 1  
Site Location Map  
4186 Park Road  
Benicia Industrial Park  
Benicia, California

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**TENTATIVE ORDER**

**ADOPTION OF SITE CLEANUP REQUIREMENTS for:**

**CHAMPION LABORATORIES, INC.  
MAXION WHEELS, A DIVISION OF IOCHPE-MAXION  
CRANBROOK REALTY INVESTMENT FUND, LP  
EOP-INDUSTRIAL PORTFOLIO, LLC**

For the property located at:

**4186 Park Road  
Benicia, Solano County**

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

1. **Site Location:** The site is located at 4186 Park Road (Figure 1) in Benicia (Site). The Site is northeast of the Carquinez Strait, approximately 250 feet northwest of interstate freeway 680, and approximately 1,400 feet from tidal marshland and the Southern Pacific railroad tracks. A ditch in these tidal marshlands flows to Goodyear Slough and then to Suisun Bay. The Site is approximately 4,000 feet from Suisun Bay.
2. **Site History:** The Site is located on a portion of the former U. S. Army Benicia Arsenal. The Site was converted to private commercial and industrial use after the Arsenal was closed in approximately 1964. The Arsenal was sold and sub-divided through four transactions between 1975 and 1979. The Site is also referred to as Assessor’s Parcel Number (APN) 080-070-050. The parcel is bounded to the north by Iowa Street, to the east by Stone Road, to the west by a railroad spur, and to the south by Park Road.

The Site was transferred to the Surplus Property Authority of the City of Benicia (a public corporation) during 1965 then to Benicia Industries in 1975. The property was transferred to Shareholder Properties, LTD, then to Benicia Properties in 1979. The Site was transferred to Spieker Properties, LP, in 1996. In connection with Spieker Properties, LP’s merger with EOP Operating Limited Partnership in 2001, the Site was transferred to SPK-Industrial Portfolio, LLC, and then to EOP-Industrial Portfolio, LLC, (EOP) shortly after trichloroethene (TCE) contamination was identified on the property. In 2017, EOP transferred the Site to the current owner, Cranbrook Realty Investment Fund, LP.

Between 1970 and 1983 the Site was occupied by E-T Industries (E-T). E-T manufactured aftermarket “mag” automobile wheels. E-T’s operations included a large conveyORIZED vapor degreaser, which utilized TCE as the degreaser solvent. The



degreaser had a capacity of approximately 300 gallons of TCE, or more. Records show that E-T had a TCE recycling system, a drum storage area, a boiler, a storage tank, and an oil-water separator, and that E-T implemented poor waste handling practices, including open containers of TCE and other solvents on the premises and releases of oily wastewater to the Benicia Wastewater Treatment Plant.

According to court documents, Filter Dynamics Incorporated (FDI) purchased E-T in approximately 1970 and in 1975 E-T merged into FDI and operated at the Site as a division of FDI. In 1980 the Kelsey Hayes Company acquired certain assets from FDI, including the Benicia E-T/FDI operations and the E-T trade name. E-T as a division of Kelsey-Hayes operated the manufacturing operations until 1983, which included the continued use of TCE and, later 1,1,1 trichloroethane (1,1, 1 TCA) as a degreaser.

FDI continued to exist as a corporation separate from the Benicia operations. FDI was acquired and merged with Champion Laboratories. In federal court filings, Champion Laboratories admitted that it is the successor corporation to FDI and E-T Industries in a product liability lawsuit for a mag wheel manufactured by E-T Industries in 1973.

Bryon Neal, of Maxion Wheels, verbally provided the following details of corporate successorship: Kelsey-Hayes was split from Fruehauf Corporation in 1989. In 1996, Kelsey-Hayes acquired Lemmerz and changed its name to Hayes-Lemmerz International, Inc. Hayes-Lemmerz International, Inc. was acquired by Maxion Wheels in 2012, which is now a division of Iochpe-Maxion.

3. **Named Dischargers:** Champion Laboratories is named as a discharger because it is a corporate successor to E-T and FDI and there is substantial evidence that they discharged waste to soil and groundwater at the Site.

Maxion Wheels, a division of IOCHPE-Maxion, is named as a discharger because it is a corporate successor to Kelsey-Hayes Company. E-T as a division of Kelsey-Hayes Company operated at the Site and there is substantial evidence that E-T discharged waste to soil and groundwater at the Site.

The Cranbrook Realty Investment Fund, LP, is named as a discharger because it is the current owner of the Site on which there is an ongoing discharge of waste, it has knowledge of the ongoing discharge, and has the legal ability to control the discharge.

EOP is named as a discharger because it owned the Site for more than fifteen years during which there was an ongoing discharge of waste, had knowledge of the discharge, and had the legal ability to prevent the discharge. During EOP's ownership, the contamination at the Site continued to migrate and discharge. EOP knew about the discharge from Site investigations. As the owner of contaminated property, EOP had the ability to prevent and control the discharge and did so in part by undertaking remedial measures. Since the primarily responsible parties are carrying out the cleanup and EOP did not in any way initiate or contribute to the initial discharge of waste, EOP is secondarily liable. It will be responsible for compliance with this Order only if the

Regional Water Board or Executive Officer finds that other named dischargers have failed to comply.

The dischargers named above are collectively referred to as the Dischargers. Previous property owners are not named because there is insufficient evidence that they qualify as dischargers and most are either defunct or lacking contact information.

4. **Regulatory Status:** This Site is not currently subject to a Regional Water Board site cleanup order. The Regional Water Board has issued several Water Code section 13267 directives for past site investigation and interim cleanup work.
5. **Site Hydrogeology and Hydrology:** Site geology is primarily controlled by an unnamed fault running directly below the warehouse. The fault was interpreted to exist when exploratory borings encountered fractured bedrock, southwest of the warehouse and more than 100 feet of unconsolidated fine to coarse grained sediments to the northeast of the building. The fault has been interpreted to be oriented toward the northwest and dipping steeply to the northeast.

The unconsolidated sediments were interpreted to be stream channel deposits. The stream would have flowed toward the southeast toward Suisun Bay. The stream channel acts as a preferential pathway for groundwater and contaminant migration toward the southeast in the unconsolidated sediments. Hydrology in the fractured bedrock area is different. In the bedrock area contaminant distribution in groundwater is toward the southwest (Figure 2). Previous investigations indicated that there is an upward gradient in the unconsolidated sediments and a downward gradient in the bedrock area. Bay mud overlies the stream deposits 2,000 feet to the southwest in the general direction of the offsite groundwater plume. The stream deposits extend below and into the marsh portion of the Caltrans Mitigation Area (CMA). Previous investigations have shown that there is a downward gradient in the CMA. Groundwater beneath the Site and the offsite area flows eastward towards the wetlands and Suisun Bay. Depth to groundwater is about 20 feet beneath the Site and decreases to about 5 feet where the groundwater approaches the CMA. At the CMA, the depth to groundwater converges towards, and likely connects with, the bottom of wetlands.

6. **Remedial Investigations:** Remedial investigations were conducted at onsite and offsite locations. The April 1999 Kleinfelder report indicated that there was an onsite TCE groundwater plume. Subsequent investigations reported that the TCE plume extends into the CMA and within 1,700 feet of the Suisun Bay. Investigations completed between 2001 and 2002 indicated that groundwater southwest of the Site was contaminated with TCE, gasoline, diesel, toluene, ethylbenzene, xylenes, cis-1,2 dichloroethene, 1,1 dichloroethane, and 1,1,2 trichloroethane. The source of petroleum hydrocarbons is onsite. Since 2003, soil, soil vapor, groundwater and indoor air samples have not been analyzed for petroleum constituents.

The *Offsite Characterization Summary Report*, dated August 2008, included soil vapor characterization near offsite buildings. The soil vapor sample analysis results indicated

that vinyl chloride concentrations were either below or slightly above screening levels. Soil vapor sampling was conducted onsite and offsite during 2018 indicated that the soil vapor plume including TCE and vinyl chloride has continued to persist. Soil vapor concentrations have rebounded onsite. The groundwater and soil vapor monitoring well network has inadequate sampling locations to verify that the plume is not migrating below additional commercial buildings or to surface water. In some areas, estimates of the plume lateral extent are based on multiple one-time sampling events. The groundwater monitoring well network needs to be expanded at the following locations: between the Union Pacific Railroad (UPRR) tracks and Teal Court, between the UPRR tracks and the Tulloch property, in the southern portion of the CMA, and east of the railroad tracks in the wetland area at the distal edge of the plume. The soil vapor monitoring well network needs to be expanded to offsite areas where commercial buildings are located above the groundwater plume.

7. **Risk Assessment:** The Dischargers' human health and ecological health assessments dated July 2011 separately addressed both onsite and offsite conditions. These assessments indicated that risk and hazard indices were within the acceptable range for commercial buildings using guidelines established at that time.

These documents were approved prior to three recent regulatory developments. First, the U.S. EPA Integrated Risk Information System (IRIS) published new toxicity criteria for TCE in 2011 which included a new short-term exposure non-cancer toxicity endpoint. Second, U.S. EPA issued the 2015 Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air. The more stringent "safe exposure" levels and default attenuation factor indicate that the previous risk assessments underestimate the human health risk and hazard. Third, the current regulatory practice for the protection of a surface water or wetlands from discharges of contaminated groundwater is that the point of compliance is upgradient of the surface water or wetlands before the groundwater discharges to the surface water or wetlands. This change was instituted to better protect ecological receptors from contaminated groundwater.

In the following table, Water Board staff conducted a screening level evaluation of potential environmental concerns related to identified soil, soil gas, and groundwater impacts. TCE data were compared to Environmental Screening Levels (ESLs) compiled by Regional Water Board staff. The presence of chemicals at concentrations above the screening levels indicates that additional evaluation of potential threats to human health and the environment is warranted. Screening levels for groundwater address the following environmental concerns: 1) drinking water impacts (toxicity and taste and odor), 2) impacts to indoor air, and 3) migration and impacts to aquatic habitat. Screening levels for soil address: 1) direct exposure, 2) leaching to groundwater and 3) nuisance issues. Screening levels for soil gas address impacts to indoor air. Chemical-specific screening levels for other human health concerns (i.e., indoor air and direct exposure) are based on a target excess cancer risk of  $1 \times 10^{-6}$  for carcinogens and a target Hazard Quotient of 1 for noncarcinogens. Groundwater screening levels for the protection of aquatic habitats are based on promulgated surface water standards (or equivalent). Soil screening levels for

potential leaching concerns are intended to prevent impacts to groundwater above target groundwater goals (e.g., drinking water standards). Soil screening levels for nuisance concerns are intended to address potential odor and other aesthetic issues.

#### Results of Screening Evaluation

Media / Constituent	Human health direct	Leaching to ground water	Indoor air	Aquatic life	Drinking water	Nuisance
Soil TCE:	blank	X	NA	NA	NA	blank
Soil Vapor TCE:	NA	NA	X	NA	NA	NA
Groundwater TCE:	NA	NA	X	X	X	blank

\* Note: An "X" indicates that the ESL for that concern was exceeded. A blank cell indicates that the ESL for that concern is not exceeded. An "NA" indicates the concern is not affected by that media.

In 2019, the maximum onsite TCE groundwater concentrations is 13,000 µg/l and the maximum TCE groundwater concentration in wetlands near the distal edge of the plume is 4,800 µg/l. For comparison, the drinking water standard for TCE is 5 µg/l and the aquatic habit screening level is 200 µg/l. Benthic organisms in the wetlands need to be protected so they are not exposed to the high concentrations of TCE in groundwater. This screening level evaluation shows that additional remediation is needed to address environmental concerns.

8. **Remedial Measures:** Beginning in 2004, remedial measures were implemented onsite. These measures included soil vapor extraction (SVE) with air sparging in the unconsolidated sediment source area, high vacuum extraction (total fluids) in the bedrock source area, and in-situ chemical oxidation in both unconsolidated and bedrock source areas. To mitigate the potential vapor intrusion, the Dischargers sealed cracks in the onsite warehouse office floor and installed a sub-slab depressurization (SSD) system around the warehouse office area in 2009.

The remedial measures removed more than 7,340 pounds of chlorinated volatile organic compounds (CVOCs). The high vacuum extraction system operated between 2004 and 2006 and removed approximately 440 pounds of CVOCs. Seven chemical oxidation injection events occurred onsite between 2006 and 2012 that destroyed an estimated 900 pounds of CVOCs. The SVE system was operated between 2004 and 2013 removing an estimated 6,000 pounds of CVOCs.

In 2014 and 2015, respectively, the Discharger Group submitted an onsite and an offsite *Feasibility Study/Remedial Action Plan* (FS/RAP) which were approved by the Regional Water Board. The Onsite FS/RAP proposed the use of SVE followed by in-situ chemical oxidation in the unconsolidated soils and proposed discontinuing remediation to perform a rebound test. Monitored natural attenuation was the selected remedial method in the onsite fractured bedrock area and the offsite areas. The Onsite FS/RAP proposed that the sub-slab depressurization system would not be operated unless soil vapor concentrations of TCE exceeded 42,646 micrograms per cubic meter (µg/m<sup>3</sup>). For comparison, the

current TCE screening level for soil vapor intrusion at a commercial site is 100  $\mu\text{g}/\text{m}^3$ . The Onsite FS/RAP also proposed that no additional injections of sodium permanganate would be completed unless groundwater concentrations of TCE exceeded 10,285  $\mu\text{g}/\text{l}$ . For comparison, the current TCE screening level for groundwater CVOCs vaporization to indoor air at a commercial site is 7.5  $\mu\text{g}/\text{l}$ . To date, the current indoor air sampling events at the Site have not found TCE at concentrations above the commercial ESL. The Offsite FS/RAP proposed monitored natural attenuation with the provision for reconsideration if groundwater concentrations of CVOCs increased.

In 2018 and 2019, the Dischargers implemented additional injections of sodium permanganate near the warehouse. The Dischargers also restarted the sub-slab depressurization system, despite the lack of detection of TCE concentrations in indoor air above the commercial ESL.

The remedial measures described above significantly reduced groundwater concentrations. However, in 2019, the maximum onsite TCE groundwater concentrations is 13,000  $\mu\text{g}/\text{l}$  and the maximum TCE groundwater concentration in wetlands near the distal edge of the plume is 4,800  $\mu\text{g}/\text{l}$ .

Additional active remedial measures need to be implemented to reduce the threat to water quality, public health, and the environment posed by the discharge of waste. A revised feasibility study and remedial action plan is needed.

## 9. 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 water quality 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. 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 adopted by the Regional Water Board and approved by the State Water Resources Control Board, Office of Administrative Law and the U.S. EPA, where required.

Regional Water Board Resolution No. 89-39, "*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 bedrock area is reported to be a low yield area. The CMA is likely to have elevated salinity and electrical conductivity due to the proximity to Suisun Bay.

The Basin Plan designates the following potential beneficial uses of groundwater in the Suisun-Fairfield Valley Basin underlying and adjacent to the Site include:

- o Municipal and Domestic Supply (MUN)
- o Industrial Process Supply (PRO)
- o Industrial Service Supply (IND)
- o Agricultural Supply (AGR)

The existing and potential beneficial uses of surface water in the Goodyear Slough watershed include:

- o Commercial and Sport Fishing (COMM)
- o Estuarine Habitat (EST)
- o Fish Migration (MIGR)
- o Preservation of Rare and Endangered Species (RARE)
- o Wildlife habitat (WILD)
- o Water Contact Recreation (REC1)
- o Noncontact Water Recreation (REC2)

The existing and potential beneficial uses of water in the Suisun Marsh include:

- o Estuarine Habitat (EST)
- o Fish Migration (MIGR)
- o Preservation of Rare and Endangered Species (RARE)
- o Wildlife habitat (WILD)
- o Fish Spawning (SPWN)
- o Water Contact Recreation (REC1)
- o Noncontact Water Recreation (REC2)

- c. **Basis for Groundwater and Surface Water Cleanup Levels:** The groundwater and surface water cleanup levels for the Site and offsite areas are based on applicable water quality objectives that are protective of beneficial uses. Groundwater and surface water cleanup levels in the CMA are protective of aquatic ecological

- receptors (in freshwater and saltwater habitat). Groundwater cleanup levels for the area outside the CMA are the more stringent of the U.S. EPA and California drinking water maximum contaminant levels (MCLs) protective of human health (primary MCLs).
- d. **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 and ecological receptors. The soil to groundwater leaching levels are based on the groundwater cleanup levels set for areas outside the CMA.
  - e. **Basis for Soil Vapor Cleanup Levels:** The soil vapor cleanup levels for the Site are intended to protect commercial building occupants from health risks and odor nuisances caused by Site related vapor intrusion.
  - f. **Basis for Indoor Air Cleanup Levels:** The indoor air cleanup levels for the Site are intended to protect commercial building occupants from health risks and odor nuisances caused by Site related vapor intrusion
10. **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.
  11. **Risk Management:** The Regional Water Board considers the following human health risks to be acceptable at remediation sites: a cumulative hazard index of 1.0 or less for non-carcinogens and a cumulative excess cancer risk of  $10^{-6}$  to  $10^{-4}$  or less for carcinogens. The previous risk assessments for this Site indicated that contamination-related risks were near these acceptable levels. Finding 7 describes the changes that have occurred, suggesting that the previous risk assessments underestimate the human health risk and hazard. Active remediation will reduce these risks over time. However, risk management measures are needed at this Site during active remediation to assure protection of human health. Risk management measures include engineering controls (such as engineered caps or wellhead treatment) and institutional controls (such as deed restrictions that prohibit certain land uses). The following risk management measure is needed at this Site: a post-remediation deed restriction that notifies future owners of sub-surface contamination and prohibits sensitive uses of the Site such as residences and daycare centers.
  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 13304 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.

14. **Cost Recovery:** Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Regional Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.
15. **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 be remediated such that maximum contaminant levels (designed to protect human health and ensure that water is safe for domestic use) are met in existing and future supply wells.
16. **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 the California Environmental Quality Act (CEQA) pursuant to California Code of Regulations, Title 13, section 15321 of the Resources Agency Guidelines.
17. **Notification:** The Regional Water Board has notified the dischargers and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with an opportunity to submit their written comments. This Order also requires technical reports under Water Code section 13267 in order to monitor the cleanup and its effectiveness.
18. **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:

#### 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 outside of the Caltrans Mitigation Area:** The following groundwater cleanup levels shall be met in all groundwater monitoring wells identified in the attached Self-Monitoring Program (not including CMA groundwater monitoring wells):

Constituent	Concentration (µg/l)	Basis*
Cis-1,2-Dichloroethene	6	Primary MCL
Trans-1,2-Dichloroethene	10	Primary MCL
Tetrachloroethene	5	Primary MCL
Trichloroethene	5	Primary MCL
Vinyl Chloride	0.5	Primary MCL

\* Primary MCL: Lower of the primary maximum contaminant levels from U.S. EPA or California.

- 2. Groundwater and Surface Water Cleanup Levels in the Caltrans Mitigation Area:** The following groundwater cleanup levels shall be met in all CMA groundwater monitoring wells identified in the attached Self-Monitoring Program:

Constituent	Concentration (µg/l)	Basis*
Cis-1,2-Dichloroethene	590	US DOE FW Chronic PRG
Trans-1,2-Dichloroethene	590	US DOE FW Chronic PRG
Tetrachloroethene	230	US EPA SW Chronic LOEL
Trichloroethene	200	US EPA SW Acute LOEL
Vinyl Chloride	780	US EPA CMC

\*

US EPA DOE FW Chronic PRG: US EPA Department of Energy Freshwater Chronic Preliminary Remediation Goals for Ecological Endpoints

US EPA SW Chronic LOEL: US EPA Salt Water Chronic Lowest Observed Effect Level

US EPA SW Acute LOEL: US EPA Salt Water Acute Lowest Observed Effect Level

US EPA CMC: US EPA Criteria Maximum Concentration

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

Constituent	Concentration (mg/kg)	Basis*
Cis-1,2-Dichloroethene	0.19	Leaching to Groundwater
Trans-1,2-Dichloroethene	0.65	Leaching to Groundwater
Tetrachloroethene	0.62	Leaching to Groundwater
Trichloroethene	0.35	Leaching to Groundwater
Vinyl Chloride	0.088	Leaching to Groundwater

\* Leaching to Groundwater: Calculated using methodology from *Background Documentation for the Development of the MCP Numerical Standards (Massachusetts Department of Environmental Protection, April 1994)* and using groundwater target concentrations based on the above referenced Groundwater Cleanup Levels for areas outside the Caltrans Mitigation Area.

4. **Soil Vapor Cleanup Levels:** The following soil vapor cleanup levels shall be met in all onsite and offsite vadose-zone soils.

Constituent	Concentration ( $\mu\text{g}/\text{m}^3$ )	Basis*
Cis-1,2-Dichloroethene	1,200	Vapor Intrusion
Trans-1,2-Dichloroethene	12,000	Vapor Intrusion
Tetrachloroethene	67	Vapor Intrusion
Trichloroethene	100	Vapor Intrusion
Vinyl Chloride	5.2	Vapor Intrusion

\* Vapor Intrusion: Screening levels for the protection of building occupants from nuisance odors and health concerns caused by vapor intrusion of contamination into indoor air. Calculated using a USEPA default soil gas to indoor air attenuation factor of 0.03 and the Indoor Air Cleanup Levels shown below.

5. **Indoor Air Cleanup Levels:** The following indoor air cleanup levels shall be met in all onsite and offsite existing buildings.

Constituent	Concentration ( $\mu\text{g}/\text{m}^3$ )	Basis*
Cis-1,2-Dichloroethene	35	Human Health
Trans-1,2-Dichloroethene	350	Human Health
Tetrachloroethene	2.0	Human Health
Trichloroethene	3.0	Human Health
Vinyl Chloride	0.16	Human Health

\* Human Health: Indoor air risk based levels calculated using the USEPA Regional Screening Level risk equations for commercial worker exposure. The lower of the cancer and non-cancer indoor air risk was used.

## C. TASKS

### 1a. **ADDITIONAL OFFSITE VAPOR INTRUSION WORK PLAN**

COMPLIANCE DATE: November 29, 2019

Submit a work plan acceptable to the Executive Officer to define the vertical and lateral extent of vapor intrusion concerns. The work plan shall consider all relevant contaminants, media (groundwater, soil vapor, and indoor air), exposure pathways, and receptors. The work plan shall also include a building survey and indoor air investigation, if the soil vapor cleanup levels near the building are exceeded. It shall be designed so that its implementation shall produce site data needed to assess contamination threat to human health and the environment. The work plan shall specify investigation methods and a proposed time schedule.

### 1b. **ADDITIONAL OFFSITE VAPOR INTRUSION REPORT**

COMPLIANCE DATE: According to schedule in Task 1a work plan approved by the Executive Officer

Complete work in the Task 1a work plan and submit a technical report acceptable to the Executive Officer documenting their completion. The technical report shall define the vertical and lateral extent of vapor intrusion concerns down to cleanup levels.

### 2a. **ADDITIONAL VAPOR INTRUSION MITIGATION WORK PLAN**

COMPLIANCE DATE: If necessary, as determined and on a schedule approved by the Executive Officer

Submit a work plan acceptable to the Executive Officer to implement vapor intrusion mitigation at the Site and at offsite properties. It shall be designed so that its implementation shall reduce the threat to human health and the environment. The work plan shall specify methods and a proposed time schedule.

### 2b. **ADDITIONAL VAPOR INTRUSION MITIGATION REPORT**

COMPLIANCE DATE: According to schedule in Task 2a work plan approved by the Executive Officer

Complete work in the Task 2a work plan and submit a technical report acceptable to the Executive Officer documenting their completion. The technical report shall document the reduction of pollution down to cleanup levels.

3a. **GROUNDWATER MONITORING WELL NETWORK WORK PLAN**

COMPLIANCE DATE: March 30, 2020

Submit a work plan acceptable to the Executive Officer to define the lateral extent of groundwater pollution. It shall be designed so that its implementation shall produce site data to assess contamination threat to human health and the environment. The work plan shall specify investigation methods and a proposed time schedule.

3b. **GROUNDWATER MONITORING WELL NETWORK COMPLETION REPORT**

COMPLIANCE DATE: 90 days after Executive Officer approval of Task 3a

Complete work in the Task 3a work plan and submit a technical report acceptable to the Executive Officer documenting their completion. The technical report shall define the vertical and lateral extent of pollution down to cleanup goals

4a. **REVISED FEASIBILITY STUDY/ REMEDIAL ACTION PLAN (REVISED FS/RAP)**

COMPLIANCE DATE: July 30, 2020

Submit a technical report acceptable to the Executive Officer containing:

- a. Summary of remedial investigation
- b. Evaluation of the installed interim remedial actions
- c. Feasibility study evaluating alternative final remedial actions
- d. Recommended final remedial actions
- e. Implementation tasks and time schedule

The remedial action plan must propose remedial work that has a high probability of eliminating unacceptable threats to human health and restoring beneficial uses of groundwater in a reasonable time, with “reasonable time” based on the severity of impact to the beneficial use (for current impacts) or the time before the beneficial use will occur (for potential future impacts). The remedial action plan must address the full extent of contamination originating at the Site, including any contamination that extends beyond the source-property boundary such as at the CMA.

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 c 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*").

Item e shall consider the cleanup levels for soil, soil vapor, indoor air, and groundwater identified in Section B Cleanup Levels above and shall address the attainability of background levels of water quality.

4b. **REVISED FS/RAP IMPLEMENTATION WORK PLAN**

COMPLIANCE DATE: 90 days after Executive Officer approval of Task 4a

Submit a technical report acceptable to the Executive Officer that includes a detailed design for implementing the chosen remedial action alternative in the Revised FS/RAP. The implementation plan shall include an implementation schedule.

4c. **IMPLEMENTATION OF REVISED REMEDIAL ACTION PLAN**

COMPLIANCE DATE: 90 days after Executive Officer approval of Task 4b

Complete work in the Task 4b implementation work 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).

5. **FIVE-YEAR STATUS REPORTS**

COMPLIANCE DATE: October 31, 2025, and every five years thereafter

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.

6a. **REMEDIAL INVESTIGATION WORK PLAN (ADDITIONAL PHASE)**

COMPLIANCE DATE:           If necessary, as determined and on a schedule approved by the Executive Officer

Submit a work plan acceptable to the Executive Officer to complete the definition of the vertical and lateral extent of subsurface pollution. The work plan shall consider all relevant contaminants, media (soil, groundwater, soil vapor, and indoor air), exposure pathways, and receptors. The work plan shall also include a building survey and indoor air investigation. It shall be designed so that its implementation shall produce site data needed to assess contamination threat to human health and the environment. The work plan shall specify investigation methods and a proposed time schedule. The Executive Officer will require this work plan if the previous phase of the remedial investigation complied with the approved work plan but did not adequately define the vertical and lateral extent of soil, soil vapor, groundwater, and surface water pollution (e.g., cleanup levels were exceeded at the most distant groundwater sampling points).

6b. **COMPLETION OF REMEDIAL INVESTIGATION (ADDITIONAL PHASE)**

COMPLIANCE DATE:           90 days after Executive Officer approval of Task 6a

Complete tasks in the Task 6a work plan and submit a technical report acceptable to the Executive Officer documenting their completion. The technical report shall define the vertical and lateral extent of pollution down to cleanup levels.

7a. **RISK MANAGEMENT PLAN**

COMPLIANCE DATE:           If necessary, as determined and on a schedule approved by the Executive Officer

Submit a proposed risk management plan acceptable to the Executive Officer whose goal is to limit onsite occupants' exposure to Site contaminants to acceptable levels. The proposed risk management plan 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 Executive Officer will require this task once active cleanup is completed if the cleanup does not result in meeting the cleanup levels in this Order.

**7b. PROPOSED DEED RESTRICTION**

COMPLIANCE DATE: If necessary, as determined and on a schedule approved by the Executive Officer

If the cleanup does not result in meeting the 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 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. The Executive Officer will require this task once active cleanup is completed. The current land owner shall be responsible for this task.

**7c. 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. The current landowner shall be responsible for this task.

**8a. PROPOSED CURTAILMENT**

COMPLIANCE DATE: 60 days after Executive Officer requirement letter

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.

8b. **IMPLEMENTATION OF CURTAILMENT**

COMPLIANCE DATE: 60 days after Executive Officer approval of Task 8a

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.

9. **EVALUATION OF NEW HEALTH CRITERIA**

COMPLIANCE DATE: If necessary, as determined and on a schedule approved by the Executive Officer

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.

10. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: If necessary, as determined by and on a schedule approved by the Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information that 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.

11. **Delayed Compliance:** If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer, 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 discharger 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. **Cost Recovery:** The discharger shall be liable, pursuant to Water Code section 13304, to the Regional Water Board for all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the Site addressed by this Order is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.
4. **Access to Site and Records:** In accordance with Water Code section 13267(c), the discharger 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 discharger.
5. **Self-Monitoring Program:** The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.
6. **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.

7. **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).
8. **Document Distribution:** An electronic copy of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the Regional Water Board.

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](http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal)

9. **Reporting of Changed Owner or Operator:** The discharger shall file a technical report on any changes in contact information, Site occupancy or ownership associated with the property described in this Order.
10. **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 discharger shall report such discharge to the Regional Water Board by calling (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, remedial actions taken or planned, schedule of remedial 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.

11. **Secondarily-Responsible Discharger:** Within 60 days after being notified by the Executive Officer that other named dischargers have failed to comply with this order, EOP shall then be responsible for complying with this order.
12. **Periodic SCR Review:** The Regional Water Board will review this Order periodically and may revise it when necessary. The discharger may request revisions and upon review the Executive Officer may recommend that the Regional Water Board revise these requirements.

I, Michael Montgomery, 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 \_\_\_\_\_.

\_\_\_\_\_  
Michael Montgomery  
Executive Officer

**Compliance Notice:** 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: Figure 1 - Benicia Map with Site shown  
Figure 2 – TCE Distribution in Groundwater from 2018 ERM Report  
Self-Monitoring Program

Figure 1 – Benicia Map with Site shown

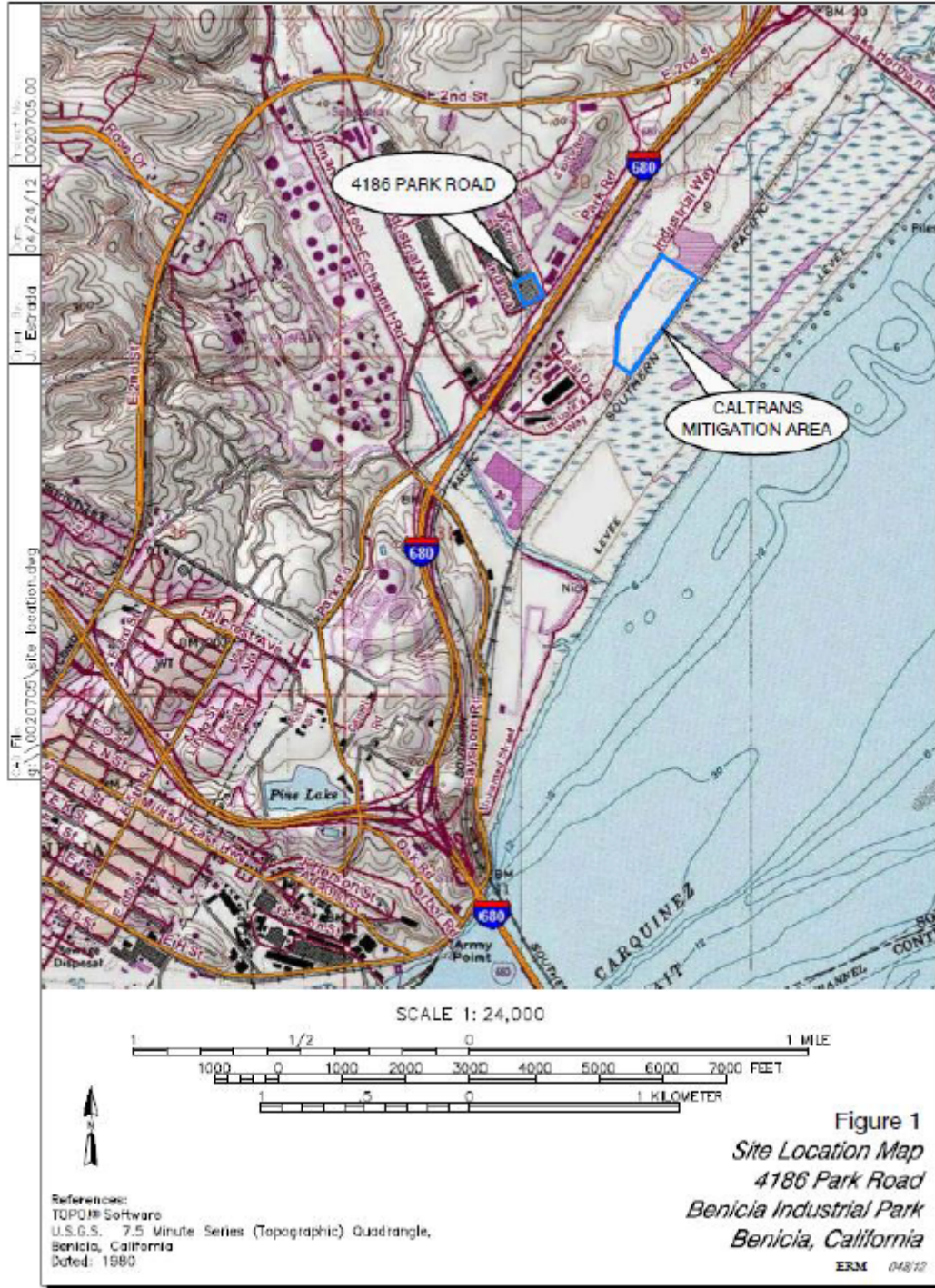
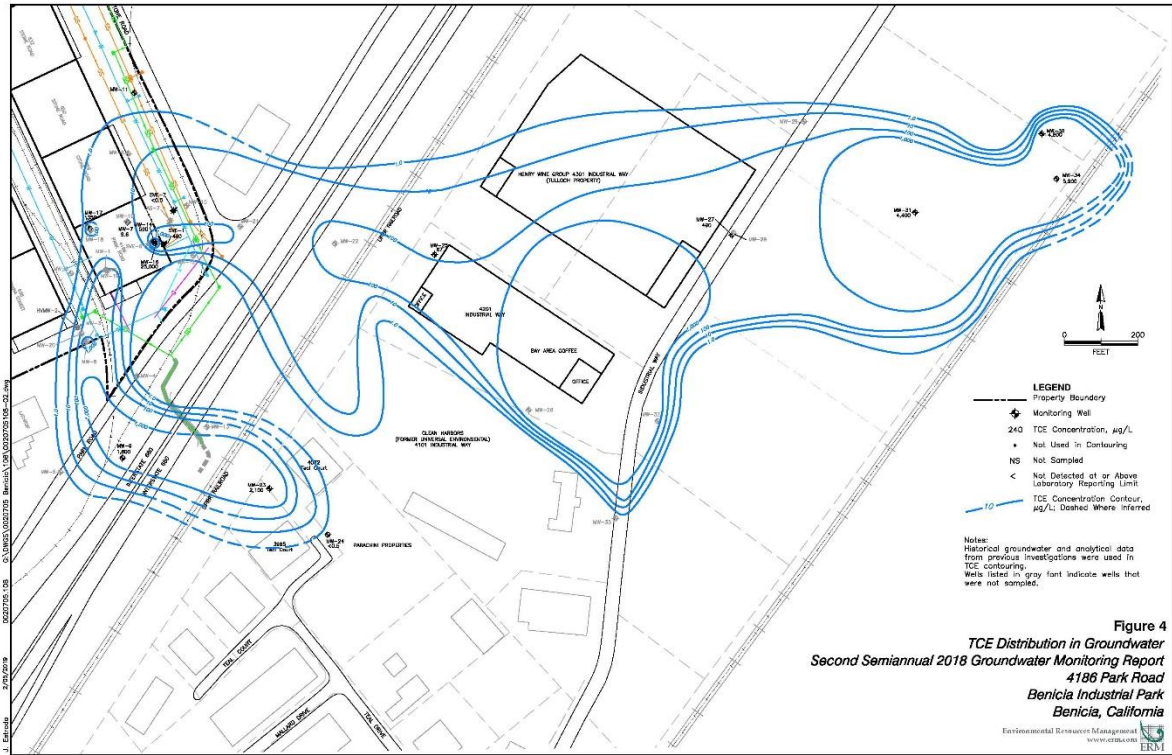


Figure 2 – TCE Distribution in Groundwater from 2018 ERM Report



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM for:

**CHAMPION LABORATORIES, INC.**  
**MAXION WHEELS, A DIVISION OF IOCHE-MAXION**  
**CRANBROOK REALTY INVESTMENT FUND, LP**  
EOP-INDUSTRIAL PORTFOLIO, LLC  
for the property located at

4186 Park Road  
Benicia  
Solano 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. *XX-XXX* (Site Cleanup Requirements).
2. **Monitoring:** The discharger shall measure groundwater elevations quarterly in all groundwater monitoring wells, and shall collect and analyze representative samples of groundwater, soil vapor, and indoor air according to the following schedule:

<b>Well ID</b>	<b>Sampling Frequency</b>	<b>Analysis</b>
MW-1	Annual	EPA Methods 8260B and 8015M
MW-2	Annual	EPA Methods 8260B and 8015M
MW-3	Annual	EPA Methods 8260B and 8015M
MW-4	Annual	EPA Methods 8260B and 8015M
MW-5	Annual	EPA Methods 8260B and 8015M
MW-6	Annual	EPA Methods 8260B
MW-7	Semiannual	EPA Methods 8260B
MW-8	Annual	EPA Methods 8260B
MW-9	Semiannual	EPA Methods 8260B and 8015M
MW-10	Annual	EPA Methods 8260B
MW-11	Annual	EPA Methods 8260B
MW-12	Annual	EPA Methods 8260B
MW-13	Annual	EPA Methods 8260B
MW-14	Semiannual	EPA Methods 8260B
MW-15	Annual	EPA Methods 8260B
MW-16	Semiannual	EPA Methods 8260B
MW-17	Semiannual	EPA Methods 8260B and 8015M
MW-18	Annual	EPA Methods 8260B
MW-19	Annual	EPA Methods 8260B
MW-20	Annual	EPA Methods 8260B
MW-21	Annual	EPA Methods 8260B and 8015M
MW-22	Annual	EPA Methods 8260B
MW-23	Semiannual	EPA Methods 8260B
MW-24	Semiannual	EPA Methods 8260B
MW-25	Semiannual	EPA Methods 8260B
MW-26	Annual	EPA Methods 8260B
MW-27	Annual	EPA Methods 8260B
MW-28	Annual	EPA Methods 8260B
MW-29	Annual	EPA Methods 8260B
MW-30	Quarterly	EPA Methods 8260B
MW-31	Annual	EPA Methods 8260B
MW-32	Annual	EPA Methods 8260B
MW-33	Annual	EPA Methods 8260B
MW-34	Quarterly	EPA Methods 8260B
SVE-1	Semiannual	EPA Methods 8260B
SVE-2	Not Sampled	EPA Methods 8260B
SVE-3	Not Sampled	EPA Methods 8260B
SVE-4	Not Sampled	EPA Methods 8260B
SVE-5	Not Sampled	EPA Methods 8260B
SVE-6	Not Sampled	EPA Methods 8260B
SVE-7	Semiannual	EPA Methods 8260B
AS-1	Not Sampled	EPA Methods 8260B

AS-2	Not Sampled	EPA Methods 8260B
AS-3	Not Sampled	EPA Methods 8260B
AS-4	Not Sampled	EPA Methods 8260B
AS-5	Not Sampled	EPA Methods 8260B
AS-6	Not Sampled	EPA Methods 8260B
AS-7	Annual	EPA Methods 8260B
SVP-1	Semiannual	EPA Method TO-15
IA-1	Semiannual	EPA Method TO-15
SVP-2	Semiannual	EPA Method TO-15
IA-2	Semiannual	EPA Method TO-15
SVP-3	Semiannual	EPA Method TO-15
IA-3	Semiannual	EPA Method TO-15
AA-1	Semiannual	EPA Method TO-15
IA-Restroom M	Semiannual	EPA Method TO-15
IA-Restroom W	Semiannual	EPA Method TO-15
IA-Office	Semiannual	EPA Method TO-15
SVP-4	Semiannual	EPA Method TO-15

MW=groundwater monitoring well, SVE=soil vapor extraction well, AS=air sparge well, SVP=soil vapor sampling probe, IA=indoor air sample, AA=ambient air sample

The Discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The discharger may propose changes in the above table. Any proposed changes are subject to Executive Officer approval.

3. **Semiannual Monitoring Reports:** The discharger shall submit semiannual monitoring reports to the Regional Water Board no later than 60 days following the end of the monitoring period (e.g., report for first half of the year is due August 31). The first semiannual monitoring report shall be due on March 1, 2020. 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 discharger's principal executive officer or his/her duly authorized representative, 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 second semiannual monitoring report each year.
  - c. **Soil, Groundwater, Soil Vapor, and Indoor Air Analyses:** Sampling data shall be presented in tabular form, and an iso-concentration map shall be prepared for one or more key contaminants for each monitored zone, as appropriate. The report



shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the second semiannual report each year. Supporting data, such as lab data sheets, need not be included (see record keeping below).

- e. **Mass Removal Results:** If applicable, the report shall include remediation results in tabular form, for each injection well and for the Site as a whole, expressed in mass of reagent injected and total groundwater volume remediated semiannually . The report shall also include contaminant removal results from other remediation systems (e.g., soil vapor extraction, groundwater extraction), expressed in units of chemical mass removed semiannually for the A and B aquifers. Historical mass removal results shall be included in the semiannual report.
  - f. **Status Report:** The semiannual reports shall describe relevant work completed during the reporting period (e.g., site investigation, interim remedial measures) and work planned for the following quarter.
4. **Violation Reports:** If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Regional Water Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.
  5. **Other Reports:** The discharger 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 discharger or his/her agent 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. **SMP Revisions:** Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. 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.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**Response to Comments on Tentative Order  
for Site Cleanup Requirements 4186 Park  
Road, Benicia, Solano County**

This document provides the response to comments received on the Tentative Order (TO) for Site Cleanup Requirements for the subject site (Site).

On May 17, 2019, we received comments on the TO from:

- Farella, Braun, and Martel, L.L.P., Robert L. Hines, on behalf of EOP-Industrial Portfolio, L.L.C. (EOP)
- Environmental Resources Management (ERM), John Lucio, on behalf of Champion Laboratories, Inc., Maxison Wheels, a division of Iochpe-Maxison, and the Cranbrook Realty Investment Fund, L. P., referred to collectively as the Park Road Group (PRG).

EOP and the PRG are collectively referred to as the Dischargers. This document summarizes and paraphrases significant comments and provides Regional Water Board staff's response. To view the comment letters in their entirety and other case documents referred to herein, please see the GeoTracker website.

**A. Farella, Braun, and Martel, LLC, on Naming EOP as a Discharger**

**A-1 Comment:** EOP objects to being included as a named discharger in the TO. EOP sold the property to the Cranbrook Realty Investment Fund L. P. on July 6, 2017. Since that time, Cranbrook, Champion Laboratories, and Maxison Wheels have undertaken the required remediation activities.

The TO incorrectly names Equity Office Properties Trust (EOPT) as the former owner. EOPT never owned the subject property and EOPT no longer exists.

EOP no longer has a present interest in the property and should not be named as a discharger. Absent a present interest in the property and where the entity in question did not own the property during the period where site operations caused the contamination at issue, there is no basis to include that entity. This case is similar to *In the Matter of the Petitions of Wenwest, Inc., et al.* (State Water Resources Control Board Order No. WQ-92) (Wenwest), where the State Water Board found it inappropriate to name Wendy's International as a discharger based on factors including: (i) the entity that bought the property from Wendy's was named in the order (here, Cranbrook is named in the TO and has been cooperating with the Regional Water Board in prior and ongoing orders and directives); (ii) Wendy's had "nothing to do with the activity that caused the leaks" (EOP had no connection with the activities that caused the subsurface impacts and has worked in good faith to identify the true dischargers and engaged in related investigation and substantial cleanup); and (iii) Wendy's did not engage in activity that may have exacerbated the problem (upon taking ownership of the property, EOP immediately and actively continued and expanded the remedial activities).

There is no factual or legal basis for the Regional Water Board to assert that EOP had the “legal ability to prevent the discharge.” EOP immediately upon taking ownership of the Benicia property, in 2001, cooperated and coordinated with [Board] staff to conduct investigation and remediation activities. Millions of dollars were spent on investigation and active remediation. EOP spent its entire period of ownership investigating and remediating the historical contamination. To the extent that it was able to prevent the discharge, it did so, aggressively and effectively.

EOP has ensured that there exist responsible parties and they are continuing with cleanup activities. See *In the Matter of the Petitions of County of San Diego, et al.* (Order No. WQ 96-2), 1996 WL 34481302, where the State Water Board found it significant that “several other responsible parties were available to address the environmental concerns” (1996 WL 34481302, at 5). In addition to the legal and technical justifications for removing EOP as a named discharger, it is certainly within the Regional Water Board’s discretion to decide under the circumstances there is no compelling or rational need to include EOP as a named discharger in the TO.

**A-1 Response:** We agree that EOPT is not the correct EOP-related entity to name as a discharger on the TO. Rather, EOP owned the property and is thus the correct entity to name to the TO. The TO was revised to name EOP, not EOPT.

We disagree that EOP should not be a named discharger. Under Water Code section 13304, a cleanup order may be issued to, among others, a person:

*who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance.*

Water Code, § 13304, subd. (a). The State Water Board has broadly interpreted whether a person has “caused or permitted” a waste discharge to include not only persons who have directly discharged waste, but also to landowners who have purchased previously contaminated land. (See, e.g., *In the Matter of Arthur Spitzer et al.*, Order No. WQ 89-8.) This is consistent with the Legislature’s intent in Civil Code section 3483, which provides that “[e]very successive owner of property who neglects to abate a continuing nuisance upon, or in the use of, such property, created by a former owner, is liable therefor in the same manner as the one who first created it.” In numerous decisions, the State Water Board has held that prior landowners and lessees should be named if they owned or were in possession of the site at the time of the discharge, had knowledge of the activities which resulted in the discharge, and had the legal ability to prevent the discharge. (See, e.g., *Wenwest, supra*, at p. 4, and *In the Matter of John Stuart*, Order WQ. 86-15.)

Here, EOP owned the Site for more than fifteen years during which there was an ongoing discharge of waste, had knowledge of the discharge, and the legal ability to prevent the continuing discharges. EOP owned the property after the activities that led to the initial discharge of waste, but during EOP’s ownership, the contamination at the Site, including the TCE plume, continued to migrate (i.e., discharge). The State Water Board has interpreted the term “discharge” to include not only an active, initial release, but also a passive migration of waste. The discharge continues as long as the waste

remains in the soil and groundwater. (See, e.g., *In the Matter of Zoecon Corporation, Order WQ 86-2.*) EOP had knowledge of the discharge from Site investigations and, as the property owner, was in a position to prevent and control the discharge and did so in part by undertaking remedial measures. In short, EOP is a discharger because it had knowledge of the ongoing discharge and the ability to control it.

EOP's status as a discharger does not change because it no longer owns the property. (See, e.g., *In the matter of Aluminum Company of America et al., Order No. WQ 93-9, p. 9* [A former intervening owner who did not contribute to an active release is properly named in a cleanup order even if it no longer owns the property, as section 13304 authorizes the board to require cleanup by both past and present dischargers].) To the extent EOP is arguing it is relieved of responsibility because the current owner assumed environmental liabilities at the Site, the Regional Water Board does not determine who is a discharger based on private agreements.

EOP cites to the State Water Board's *Wenwest* decision to state that it should not be a named discharger. In that case, Wendy's International (Wendy's) purchased property with a leaking underground storage tank (UST) for the purpose of selling the property to a franchisee in that same year. The State Water Board found that Wendy's, as a former landowner, was not a discharger, basing its decision on the particular facts of that case, including: (i) Wendy's no longer owned the property and had not owned the property when the activities that caused the discharge occurred; (ii) the USTs had already been closed prior to Wendy's ownership; (iii) Wendy's did not take steps to remedy the pollution but did nothing to make the situation worse; (iv) Wendy's purchased the property only to convey it to a franchisee; (v) Wendy's owned for a very brief time (fourth months); (vi) the franchisee (also a former owner) and several other parties were named in the cleanup order; (vii) Wendy's did not know of an ongoing leak; (viii) Wendy's purchased the site in 1984 at a time when leaking USTs were just being recognized as a general problem and before most of the UST legislation was enacted; and (ix) cleanup at the site was proceeding.

The unique facts in *Wenwest* are not present here. Unlike in *Wenwest*, EOP (1) owned the property for more than fifteen years compared to four months; (2) knew of the ongoing contamination at the property during its ownership; and (3) purchased the property when environmental contamination from industrial activities was widely known. Moreover, EOP undertook remedial activities during its ownership based on the Regional Water Board's directives. In *Wenwest*, the State Water Board stated had cleanup been ordered while Wendy's owned the site, it would have been proper to name it as a discharger.

Finally, we disagree there is no need to name EOP. The State Water Board has held in precedential decisions that the regional water boards should name all parties for which there is reasonable evidence of responsibility. (See, *In the Matter of Exxon Company, et al. Order No. WQ 85-7.*) Based on public policy considerations, "fewer parties named in an order may well mean no one is able to cleanup a demonstrated water quality problem." (*In the Matter of Stinnes-Western Chemical Corporation, Order no. WQ 86-16.*)

EOP continues to be named on the TO and the TO's finding naming EOP as a discharger has been revised to clarify why it is named. In addition, the TO has been revised to provide that EOP is secondarily responsible and that it is responsible for

complying with the TO only if the other parties fail to comply. Since the primarily responsible parties are carrying out the cleanup and it is clear EOP did not cause or permit the activity that led to the initial discharge into the environment, the Regional Water Board has discretion to name EOP as secondarily responsible.

## **B. Environmental Resources Management for Park Road Group**

Responses to comments made by ERM for the PRG in its Introduction and Executive summary are captured in these responses to comments but were not separately addressed to avoid duplication. Comments were responded to thematically instead of sequentially to avoid duplication. Comments are identified by the section of the comment letter in which they appear and preceded by our Response to Comments document number.

### **Named Dischargers**

#### **B-1. Other Potential Dischargers (from Sections 2(a), 5, and 11(h)):**

**B-1 Comment:** The TO fails to take into account evidence for a separate TCE source to groundwater in the Caltrans Mitigation Area (CMA). One soil vapor sampling location was reported in 1999 to have a concentration of TCE at 751,778 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), which is 100 to 1,000 times greater than other samples and the 2019 environmental screening level of  $100 \mu\text{g}/\text{m}^3$ . The August 2008 Off-Site Characterization Summary Report noted elevated concentrations of TCE in groundwater in the CMA. This indicates that TCE was released within the CMA. A May 2019 *Compound Specific Isotope Analysis* (CSIA) of groundwater samples indicated that TCE in the CMA has a different isotopic signature than those samples collected from 4186 Park Road. The CSIA finds that a separate source exists based on the spatial distribution of TCE and that two sources have mixed. The CSIA also discussed other factors that could cause the spatial distribution including past remedial efforts and hydrology in the historic stream channel. Soil vapor sampling that was scheduled to be completed in September 2019 may provide more information. PRG requests that the current property owner of the CMA, the State of California/Caltrans, be named as a discharger.

**B-1 Response:** We disagree that there is sufficient data to conclude there is a separate source in the CMA based on the distribution of contamination and the CSIA.

#### *Distribution of Contamination*

The distribution of TCE in the CMA does not indicate a separate source. Investigations at the Site started in 2000. In 2004, TCE was detected in groundwater in the onsite area at concentrations up to 130,000  $\mu\text{g}/\text{L}$ . For comparison, the groundwater cleanup level in the TO is 5  $\mu\text{g}/\text{L}$  and the surface water cleanup level in the TO is 200  $\mu\text{g}/\text{L}$ . By 2007, the investigation had progressed about 1,500 feet downgradient towards the east to Industrial Road, which is just upgradient of the CMA. In 2007, both a mid-plume monitoring well (M-22) and a monitoring well at Industrial Road (M-27) contained over 8,000  $\mu\text{g}/\text{L}$  TCE. The 2007 groundwater plume map shows these high concentrations of TCE (1,600 times greater than the groundwater cleanup level and 40 times greater than the surface water cleanup level) migrating from the onsite area to the CMA. By 2013,

the investigation had progressed an additional 800 feet east into the CMA. In 2013, both a monitoring well in the middle of the CMA (M-31) and a monitoring well at the eastern edge of the CMA (M-34) contained over 9,000 ug/L TCE. The 2013 groundwater plume map again shows these high concentrations of TCE (45 times greater than the surface water cleanup level) migrating from the onsite area into the CMA. These high concentrations of TCE are not indicative of a separate source, but rather are indicative of the source from the onsite area flowing into the CMA.

Using the Henry's Law constant for TCE of 0.4, the TCE concentration estimated in soil gas from 9,000 ug/L TCE in groundwater would be 3,600 ug/L or 3,600,000 ug/m<sup>3</sup> (the Henry's Law constant is a constant that quantifies the equilibrium of a chemical between a liquid and a vapor). Therefore, the concentration noted by the dischargers of 750,000 ug/m<sup>3</sup> as potentially indicating a separate source could reasonably be expected to be created by the TCE that migrated from the onsite area and not indicate a separate source.

We disagree with the Dischargers' comment that a separate source is indicated because there is only one high soil gas sample in the CMA. We note that the high soil gas sample was detected in the axis of the Dischargers' plume and it is not uncommon for soil gas concentrations to be variable due to differences in soil type. Further, the detection of soil vapor TCE at a higher concentration at one time and location, KSG-6, in the CMA has not been replicated with confirmation sampling.

#### *Compound Specific Isotope Analysis (CSIA)*

The CSIA does not indicate a separate TCE source in the CMA. Most elements have several types of atoms, differing in the number of neutrons that accompany the protons, whose number is fixed for each element. Such varieties in the number of an element's neutrons are called isotopes. For example, carbon has three isotopes and chlorine has 25 isotopes. The isotopic composition of TCE is determined by mass spectrometry and may be expressed in per mil deviation from a standard. In this case, the ratio of <sup>13</sup>C/<sup>12</sup>C and <sup>37</sup>Cl/<sup>35</sup>Cl compares the less abundant against its more abundant isotope. These ratios are written  $\delta^{13}\text{C} \text{ ‰}$  and  $\delta^{37}\text{Cl} \text{ ‰}$ . The isotopic composition of TCE or other solvents is established when the compound is manufactured. The isotopic composition may change significantly depending on the manufacturing process. The isotopic composition also changes as the compound is degraded into daughter products such as TCE into 1,2-dichloroethene. These changes tend to increase the ratio of heavier isotopes in the parent product in a process called isotopic fractionation.

The CSIA did not conclude that TCE in groundwater samples in the onsite area and the CMA have a different isotopic signature. According to the CSIA, the range of  $\delta^{13}\text{C}$  for TCE was only 0.96 parts per thousand and the range of  $\delta^{37}\text{Cl}$  was only 1.43 parts per thousand, with a total uncertainty of 1.0 parts per thousand. The CSIA concluded that the difference in isotopic signature was statistically within the margin of error. Therefore, the potential difference between the two areas is not statistically significant.

State Board Resolution 92-49 outlines policies and procedures for investigating, cleanup and abatement of discharges regulated under a California Water Code 13304 Order. Resolution 92-49 Section B states that it is not necessary to identify all dischargers for the Regional Water Board to proceed with requiring a discharger to

investigate and cleanup a site. If there are additional data collected in the future that support a separate source in the CMA, Regional Water Board staff will evaluate preparing a separate cleanup order for the separate source.

### **B-2. Naming Cranbrook (from Section 5):**

**B-2 Comment:** Cranbrook takes issue with being a named discharger on the basis that it “*has the legal ability to control the discharge.*” It states that the original release occurred many years before Cranbrook acquired the property and, therefore, it could not have caused or controlled the discharge.

**B-2 Response:** We disagree. We understand that Cranbrook did not own the property when E-T Industries conducted automobile wheel manufacturing activities between 1970 and 1983 that led to the discharge of chlorinated volatile organic compounds (CVOCs). Under Water Code section 13304, the Regional Water Board may require cleanup of any person who permits a discharge which causes water pollution, including current owners who have purchased previously contaminated land where there is an ongoing discharge. (See *In the Matter of Arthur Spitzer et al.*, Order No. WQ 89-8 [“A long line of State Board orders have upheld Regional Board orders holding landowners responsible for cleanup of pollution on their property regardless of their involvement in the activities that initially caused the pollution.”].) Cranbrook owns the Site with the source of CVOCs. The discharge of CVOCs did not cease onsite and offsite when the automobile wheel manufacturing activities stopped. The discharge continues as long as CVOCs remain in soil and groundwater. Cranbrook knows about the contamination and has the ability to control it. Thus, it is permitting the discharge of waste under Water Code section 13304 and is a named discharger. We have revised the TO’s finding to be clearer on this point. The TO has also been revised to correctly name the Cranbrook entity that owns the site, which is Cranbrook Realty Investment Fund, L.P.

### **B-3. Adjacent Sites (from Sections 11a-g):**

**B-3 Comment:** The TO arbitrarily and capriciously implies that the Site is impacting ten other properties. There is no evidentiary support that adjacent properties were impacted by contamination from 4186 Park Road except for the CMA Site.

B-3 Response: Comment noted. The finding on adjacent sites was removed.

## **Chemicals of Concern and Matrix of Concern**

### **B-4. Location and Potential Impacts (from Section 3):**

**B-4 Comment:** The wetland in the CMA is fed from a network of wetland channels south of the railroad tracks and may or may not connect to Goodyear Slough. The ditches are tidally influenced. There is no alleged, let alone actual, connectivity between the Park Road Site and Goodyear Slough.

**B-4 Response:** We disagree. TCE discharged at the Site created a large groundwater plume that migrated offsite ultimately reaching the CMA 2,000 feet from the discharge source area. The southeast boundary of the CMA is approximately 1,800 feet from the San Francisco Bay margin. PRG investigated offsite locations and concluded that groundwater flows downhill under the freeway, under commercial buildings, and into the CMA. The CMA was an undeveloped wetland area. In about 1970, it was improved,

then used as an automotive storage area (Kleinfelder 1999, pg. 4). In approximately 1995, Caltrans purchased the property to restore the braided channels to compensate for the wetlands lost during the construction of the new Benicia Bridge two miles away. In 1999, during an investigation conducted by Geocon for Caltrans to determine if the property was suitable for wetland development, TCE was discovered in groundwater in the CMA. CMA surface water sampling results dating from the fourth quarter 2005 to 2008 indicated that TCE was occasionally present at concentration up to 110 µg/l in the ditchwater that runs parallel and northwest of the railroad tracks in the tidal marshlands. Maps show Goodyear Slough extending into the CMA. The ditch drains to Goodyear Slough and then to Suisun Bay according to a Department of Water Resources database, *California Wetlands Information System San Francisco Estuary Institute-EcoAtlas*. According to the same database, the following wetland plants are found in the CMA: *Schoenoplectus americanus*, *Typha angustifolia*, *Typha latifolia*, *Typha domingensis*, *Phragmites australis*, *Phragmites australis*. Fauna that may be present in the CMA include burrowing owl, salt-marsh harvest mouse, western meadowlark, California vole, and black-tailed hare. Nearby aquatic habitat may support species such as the Sacramento splittail and longfin smelt. Therefore, interaction of contaminated groundwater with surface water is a concern at the CMA and immediately south and east of the railroad tracks.

#### **B-5. Petroleum Hydrocarbons (from Sections 4 and 7a):**

**B-5 Comment:** Total petroleum hydrocarbons as gasoline were misidentified due to the presence of elevated concentrations of chlorinated volatile organic compounds. Benzene, toluene, ethylbenzene, xylene (collectively, BTEX) are typical constituents of gasoline but they were not detected in any of the groundwater samples.

**B-5 Response:** We disagree. Petroleum constituents including benzene, toluene, ethylbenzene, xylenes, naphthalene, and others were detected without any discussion of misidentification on page 21 of the September 24, 2003, *Subsurface Investigation Report*. The Report did not include laboratory chromatographs to support the purported misidentification mentioned in the comment. In their letter dated April 9, 2002, EOP acknowledged that TCE, 1,1,1-trichloroethane, and hydrocarbon related substances were released at the Site. The 2002 letter did not confirm the presence of an above or underground storage tank or release mechanism for these hydrocarbons. Unauthorized and unpermitted discharges of oily water through sanitary sewer pipes to the local wastewater treatment facility is documented. The Montgomery Watson *Revised Work Plan for Subsurface Investigation*, dated December 6, 2002, proposed discontinued analysis for gasoline and diesel because toxicity values had not been developed for those compounds, at that time. Methyl tertiary butyl ether (MTBE) was also detected in sample ERM-B4 that was collected on June 18, 2003, in groundwater (*Subsurface Investigation Report*, dated September 24, 2003). MTBE was also detected in other samples during the 2003 investigation. Since 2004, petroleum hydrocarbons were not analyzed in groundwater, soil and soil vapor at the Site. This sampling needs to be restarted. References to petroleum hydrocarbons are included in the TO for comprehensive future use. The Self-Monitoring Program attached to the Tentative Order includes analysis for petroleum hydrocarbons in a limited number of higher-concern monitoring wells. Cleanup levels for petroleum hydrocarbons were removed from the TO because we don't have recent data to confirm if they are a concern. If the



future sampling for petroleum hydrocarbons detects significant concentrations, we will evaluate expanded sampling and cleanup levels.

**B-6. Plume Migration and Evolution (from Sections 7b, 7c, and 7d):**

**B-6 Comment:** The 2018 onsite soil vapor data indicated that concentrations of TCE in samples collected within the warehouse remained consistent with sampling results over the past two years indicating they had equilibrated with groundwater. Using the offsite detections at SVP-4, as well as the stabilized onsite soil vapor concentrations as evidence that the soil vapor plume has migrated is misleading and incorrect. Soil vapor concentrations were expected to rebound following cessation of soil vapor extraction.

**B-6 Response:** Comment noted. Finding 6 was changed to say the soil vapor plume has continued to persist. The reference to SVP-4 was deleted. We concur that soil vapor concentrations have rebounded as expected.

**B-7. Adequacy of Monitoring Network (from Sections 7e and 7f):**

**B-7a Comment:** The statement that the current monitoring well network is inadequate has no evidentiary support and is inconsistent with Regional Water Board's approval of the previous work plans. The statement that the vertical extent of the plume is based on one-time sampling events is incorrect.

**B-7a Response:** An adequate number of groundwater and soil vapor monitoring wells have not been installed at the Site and offsite to support verification of the contaminate plume stability. Decreasing contaminant concentrations at a well are needed to conclude that a plume is stable. The current monitoring well network was approved during several phases of investigation. The monitoring well network was deemed sufficient for preparation of a risk assessment by the authors of the *Offsite Characterization Report*, dated August 2008. However, the October 6, 2009, letter from the Regional Water Board clearly stated that the *Risk Assessment Work Plan* was approved but additional groundwater or soil vapor wells may be required. The groundwater monitoring well network has gaps at the following locations: between the UPRR railroad tracks and Teal Court, between the UPRR railroad tracks and the Tulloch property, in the southern portion of the CMA, and east of the railroad tracks in the wetland area at the distal edge of the plume. The soil vapor monitoring well network needs to be expanded to offsite area where commercial buildings are located above the groundwater plume.

**B-7b Comment:** The statement that the vertical extent of the plume is based on one-time sampling events is incorrect.

**B-7b Response:** Comment noted. The reference to the vertical extent in the sentence was deleted.

**Human Health and Environmental Risk Assessment**

**B-8. Regulatory Status (from Section 6):**

**B-8a Comment:** Two 13267 directives for additional investigation and monitoring were petitioned for review before the State Water Board.

The April 26, 2018, Petition for Review alleges that the *Conditional Approval of Work Plan and Requirement for a Completion Report*, dated March 28, 2018, was

inappropriate and improper. The April 26, 2018, petition stated that the petitioner was aggrieved because the conditional approval required three years of semi-annual sampling. The petitioner stated that extensive remedial work, implementation and maintenance of the existing vapor intrusion (VI) mitigation system rendered the onsite office area “low risk.” The petitioners stated that three years of indoor air sampling was not warranted.

**B-8a Response:** Indoor air sampling on a semiannual basis for three years was required in accordance with recommendations from the Department of Toxic Substances Control *Vapor Intrusion Mitigation Advisory*, dated October 2011, page 36. We consider this a higher risk due to December 20, 2017, concentrations of TCE in soil vapor at location SVP-3 at 15,000 µg/m<sup>3</sup> which exceeds the commercial Environmental Screening Level (ESL) of 100 µg/m<sup>3</sup> for vapor intrusion. Indoor air sampling is necessary to verify that mitigation measures are effective.

**B-8b Comment:** The May 3, 2018, Petition for Review alleges that the *Revised Requirement for Offsite Work*, dated April 10, 2018, incorrectly stated that “*The dischargers offered an alternative approach to address sea-level rise.*” The Order required the Petitioner to prepare an updated fate and transport model incorporating projected regional sea level rise. The Petitioner stated that the Petitioner did not agree with updating the model and that the update is technically infeasible or impracticable. Regional Water Board staff issued the Tentative Order under Water Code § 13304 to address the sea level rise issue.

**B-8b Response:** Comment noted. The TO was modified to remove the requirements to update the fate and transport model and to evaluate sea-level rise.

**B-9. Use of Site-Specific Screening Levels (from Sections 7c, 7d, 8a, 8b, 9f, 10c, 10d, 10h):**

**B-9a Comment:** Screening levels based on the results of the site-specific human health risk assessment should be used instead of the ESLs. The TO refers to the ESLs numerous times in language that suggest they are default cleanup goals. The ESLs provide screening levels, not default cleanup goals or indicators of actual human health risk

**B-9a Response:** We concur that ESLs are not default cleanup levels. However, the values within the ESL compilation are valid and reflect the best available science. The values may be used as cleanup levels in the absence of an adequately supported site-specific risk assessment or other evaluation, which the Dischargers are free to perform. The site-specific screening levels presented in the Site’s 2011 Risk Assessment were developed using vapor intrusion modeling. We no longer support the use of such models without sufficient temporal and spatial sampling to prove a model is accurate. Please see section 5 of the 2019 Environmental Screening Levels User’s Guide for more information on the sampling needed to accurately determine site-specific vapor intrusion screening levels. Finding 10 of the TO notes that 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.

**B-9b Comment:** The current ESLs are based on a default attenuation factor that is at least one to two orders of magnitude too conservative for screening in California locations with moderate climates, as suggested by several studies. The tentative order

should be revised based on a Site-specific soil vapor to indoor air attenuation factor or a California specific default attenuation factor. There is currently no indoor air data that supports the statement that “the previous risk assessments may significantly underestimate the actual human health risk and hazard.”

**B-9b Response:** In 2019, the Regional Water Board recommended the use of USEPA’s 0.03 default attenuation factor when determining screening levels. Previously, the Regional Water Board did not support the use of this default attenuation factor for many of the reasons discussed in the studies referenced in your comments. However, increased awareness of the potential prevalence of the sewer to indoor air VI pathway and the lack of California specific empirical attenuation factor data has led us to conclude that USEPA’s default VI attenuation factor is the only defensible option for setting screening levels when there is not sufficient site-specific sampling data, as is the case for this site. We acknowledge that indoor air sampling to date has not detected an indoor air concern for TCE.

We reviewed the recent conference paper *“Empirical Analysis of Vapor Intrusion Attenuation Factors for Sub-Slab and Soil Vapor – An Updated Assessment for California Sites”* (the “article”) and corresponding database (Ettinger et al. 2018). However, the database does not contain enough data to conclusively determine that those attenuation factors (AFs) that are less stringent than USEPA are sufficiently protective for use as generic AFs in California. In addition, the California database was analyzed using slightly different methods than those used in the peer-reviewed final analysis of the USEPA database. The 95th percentile attenuation factors from the California database would be significantly larger and therefore more protective if the data was analyzed similar to the USEPA database.

**B-9c Comment:** The Coder study should be used when setting cleanup levels that relate to a non-cancer endpoint for TCE exposures. The underlying study EPA used to develop a non-cancer toxicity endpoint was flawed and cannot be replicated. The Coder study is a better source of information for what constitutes a “no observable effect level” for TCE toxicity. The Board should also consider these presentations in support of the Coder Study: the “Fetal Cardiac Finding in Rats Exposed to Trichloroethylene (TCE) in Drinking Water” and “Congenital Heart Defects are not Increased in Rats Exposed In Utero to Trichlorethylene in Drinking Water.”

**B-9c Response:** The soil vapor and indoor air cleanup goals for TCE in the tentative order were based on the more conservative, and less controversial, cancer endpoint from the USEPA Integrated Risk Information System (IRIS) Toxicological Review of Trichloroethylene (USEPA 2011). So, even if the Coder Study were considered for non-cancer exposures, the cleanup goals in the TO would not change.

Regional Water Board staff is aware of the concern and debate regarding the non-cancer endpoint described in the USEPA IRIS Toxicological Review as well as USEPA Region 9’s Response Action Levels and Recommendations to Address Near-Term Inhalation Exposures to TCE in Air from Subsurface Vapor Intrusion (USEPA 2014).

Regional Water Board staff declines to set toxicity values based on the Coder Study. In selecting toxicity values, Regional Water Board staff primarily looks to regulatory agencies with greater toxicological expertise. These primarily include the California agency responsible for setting toxicity values (Office of Environmental Health Hazard

Assessment [OEHHA]), then the USEPA IRIS database, and then the USEPA Superfund Program's Provisional Peer-Reviewed Toxicity Values.

Following the USEPA IRIS Toxicological Review, CalEPA agencies involved with setting toxicity values (i.e., OEHHA) or overseeing site cleanup (e.g., DTSC and the Regional Water Board) adopted the USEPA inhalation toxicity values for TCE. During summer/fall 2014, those same CalEPA agencies issued guidance regarding TCE and in support of the USEPA Region 9 near-term inhalation response action levels: DTSC (2014), OEHHA (2014), and the Regional Water Board (2014). During fall 2014, CalEPA convened a workgroup consisting of staff from the same three CalEPA agencies (DTSC, OEHHA, and the Regional Water Board) to discuss TCE toxicity including the IRIS review and USEPA's near-term action levels. The agencies agreed that there were some issues with Johnson Study, but the study was adequate to set both inhalation toxicity values as well as the near-term response action levels. At this time, Regional Water Board staff are unaware of any efforts by OEHHA or DTSC to re-evaluate this decision. Moreover, we are unaware of any efforts by USEPA to revise the IRIS Toxicological Review or the USEPA Region 9 near-term response action levels.

#### **B-10. TCE Toxicity Values (from Sections 8a and 12d):**

**B-10 Comment:** The findings of the Jan. 31, 2019, Trichloroethylene: Occupational Exposure Level for The Department of Defense (the "Sussan Study") provide a more appropriate assessment of what constitutes an acceptable occupational exposure to TCE. The Sussan study concluded that an Occupational Exposure Level of 0.9 ppm would be generally protective of unacceptable risk from cancer as well as non-cancer effects.

**B-10 Response:** The toxicity values used to develop the human health based cleanup levels for this Site are consistent with the California Code of Regulations, Title 22, Division 4.5, sections 68400.5, 69020-69022. This regulation specifies human health risk-based remediation goals statewide, including TCE toxicity values used to determine the TCE cleanup levels.

The Sussan Study Occupational Exposure Level of 0.9 parts per million by volume TCE corresponds to an air concentration of about 4,800 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )—the commercial/industrial cancer indoor air ESL for TCE is  $3 \mu\text{g}/\text{m}^3$ . Occupational standards are not appropriate for evaluating risks to workers from involuntary exposures to chemicals from the vapor intrusion pathway. Such standards are derived for occupational settings where: (1) the chemical in question is used in the industrial process; (2) workers and others who might be exposed to the chemical have knowledge of the chemical's presence; (3) workers receive appropriate health and safety training; and, (4) workers may be provided with protective gear to minimize exposures. DTSC and USEPA have taken similar positions on the use of occupational standards for evaluating the vapor intrusion pathway (DTSC 2011; USEPA 2015).

In addition, the January 31, 2019, Sussan Study is "Draft – Predecisional: Do Not Cite or Quote." At this time, we are not aware that other regulatory agencies overseeing site cleanup (e.g., DTSC, USEPA) are considering adoption of the criterion set forth in the January 31, 2019, document.

#### **B-11. Risk Language (from Sections 8b and 9d):**

**B-11 Comment:** The TO suggests that a risk assessment estimate “actual human health risk and hazard” when in fact is only an indicator and tool to be used to support risk-based decision-making. The TO also suggests that the sites tenants are currently at risk when they are not.

**B-11 Response:** Comment noted. Risk assessments should estimate the current and future human health risks and hazards. These estimates can then be used to support risk-based decisions. The TO language was modified to delete that there is a risk to Site tenants prior to full cleanup.

#### **B-12. Groundwater Cleanup Goals (from Section 12a):**

**B-12 Comment:** The groundwater cleanup goal tables do not accurately reflect the selection hierarchy and incorrect drinking water maximum contaminant levels (MCLs) are listed. For petroleum-diesel and petroleum-gasoline, no MCLs are available and the human health-based goals (consistent with the ESL MCL based priority values) should be used instead of the nuisance/odor levels currently listed. The bedrock area and CMA fall within exception to the drinking water policy due to yield and high salinity.

**B-12 Response:** The hierarchy used to select the cleanup level is now more clearly stated in the TO. The correct values (consistent with the hierarchy) were entered in the groundwater cleanup level tables. The San Francisco Bay Basin Plan considers taste and odor concerns for drinking water when setting cleanup levels.

Groundwater yield in the fractured bedrock area from high vacuum extraction wells during an interim remedial action has been reported to be lower than the 200 gallons per day threshold for use for domestic supply, but these wells would not be representative of general use conditions. The groundwater in the CMA has been reported to have an electrical conductivity of approximately 2,500 microSiemens per centimeter at MW-31 during January 2019, but this is not greater than the 5,000 microSiemens per centimeter threshold. Neither of these reported conditions would cause the groundwater to not be suitable for domestic use as described in State Water Board Resolution 88-63. Therefore, all groundwater in the onsite and offsite areas is considered a potential source of drinking water.

#### **B-13. Soil Cleanup Levels (from Section 12b):**

**B-13 Comment:** The proposed leaching to groundwater values are based on groundwater targets that are not relevant to onsite or downgradient land use (e.g., residential vapor intrusion). Nuisance values should only be used as the basis for soil cleanup levels when the presence of an actual nuisance condition was documented.

**B-13 Response:** Comment noted. The hierarchy used to select the cleanup level is now improved in the TO and the correct values were included in the soil cleanup level tables. The leaching to groundwater cleanup levels now target the groundwater cleanup levels set for areas outside the Caltrans Mitigation Area. None of the final soil cleanup levels currently are based soil odor numbers.

#### **B-14. Soil Vapor Cleanup Levels (Section 12c):**

**B-14 Comment:** The proposed soil vapor cleanup levels are based on residential land use when the current and future anticipated land use onsite and offsite is commercial.

**B-14 Response:** Comment noted. The hierarchy used to select the cleanup level is now improved in finding 11 of the TO. The correct values (consistent with the hierarchy) were entered in the soil vapor cleanup level tables. All soil vapor cleanup levels are now based on commercial land use.

### **Sea Level Rise**

#### **B-15. Sea Level Effects (from Sections 8c(ii), 9e, 9g):**

**B-15 Comment:** Regional Water Board staff requested that the Dischargers integrate sea level rise into an updated fate and transport model that was originally included as an appendix to the February 2015 Offsite FS/RAP. The Dischargers propose monitoring of groundwater vertical gradients in the CMA to measure actual changes in groundwater hydrology if sea level rise occurs. This data could be used to make Site specific management decisions.

State Water Board Resolution 2017-0012 paragraphs 15 and 16 encourages Regional Water Board staff to refer to State of California Sea-Level Rise Guidance when there is a need to modify permits or other regulatory requirements. Regional Water Board staff is not authorized to require sea level rise modeling by private parties pursuant to State Water Board Resolution 2017-0012.

**B-15 Response:** Comment noted. The TO was modified to remove the requirements to update the fate and transport model and to evaluate sea-level rise. In 2019, the maximum TCE groundwater concentration in the CMA near the distal edge of the plume is 4,800 µg/l. For comparison, the surface water cleanup level in the tentative order is 200 ug/L. Independent of a fate and transport model or sea-level rise, the TCE needs to be fully remediated at this time. Also see B-18 response regarding impact of contaminated groundwater on wetlands.

### **Remediation and Mitigation**

#### **B-16. Past and Current Operations (from Sections 9a and 9b):**

**B-16 Comment:** Approximately 7,300 pounds of hydrocarbons were remediated. Remediation was implemented via air sparging and soil vapor extraction in the unconsolidated sediments, and approximately 440 pounds were removed using high vacuum extraction, and an additional 900 pounds were destroyed during the chemical oxidation pilot study according to the Dischargers between 2004 and 2019. In January 2019, the Dischargers restarted the sub-slab depressurization system to mitigate the potential for soil vapor intrusion to indoor air, conducted indoor air sampling, and installed and monitored an offsite soil vapor probe. The Dischargers also proposed additional in-situ chemical oxidation to destroy the residual secondary source contamination, which the Water Board has not responded to.

**B-16 Response:** Comment noted. Staff have added language on the results of prior remediations. The January 15, 2019, work plan for additional in-situ chemical oxidation was approved on May 31, 2019.

#### **B-17. Adequacy of Remediation to Date (from Section 9b, 9c, 9d):**

**B-17 Comment:** There is no evidence provided to reach the conclusion that, "interim remedial measures do not fully abate the risk to human health and the potential

discharge to the Bay within a reasonable time frame". The Dischargers implemented four methods of remediation onsite. These measures were designed to reduce the mass of chlorinated hydrocarbons onsite to abate the potential risk to human health at the Site and prevent downgradient migration. The installation and operation of the sub-slab depressurization system was intended to mitigate the potential for soil vapor intrusion to indoor air in the onsite warehouse office area. These measures were effective.

Decreasing concentrations of chlorinated hydrocarbons in groundwater at offsite groundwater monitoring wells in the unconsolidated sediment area is an indicator of effectiveness and a reduced potential for discharge to the Suisun Bay. The fate and transport model included in the February 2015 Offsite Feasibility Study/Remedial Action Plan indicated that the chlorinated hydrocarbon plume would not reach the San Francisco Bay even after 100 years under worst-case conditions.

**B-17 Response:** We acknowledge that the dischargers have completed significant remediation. However, we disagree that there is adequate evidence to indicate that interim remedial measures do fully abate the risk to human health or the environment. In 2019, the maximum onsite TCE groundwater concentration is 13,000 µg/l and the maximum TCE groundwater concentration near the distal edge of the plume is 4,800 µg/l.

We are not relying on a modeled timeframe for groundwater reaching the Bay to evaluate whether additional cleanup is needed. The references to the risk relative to the time frame for cleanup were removed. The TCE discharged from the Site has already been impacting groundwater and wetlands for many years and needs to be fully remediated at this time.

#### **B-18. Approved Remedial Action Plans (from Sections 10a-b):**

**B-18 Comment:** The Onsite Feasibility Study/Remedial Action Plan (FS/RAP) was approved by Regional Water Board staff on May 7, 2014. Monitored natural attenuation was the selected remedy for contaminated offsite groundwater due to technical difficulties of implementing alternate methods. The Regional Water Board's May 29, 2015, FS/RAP letter conditionally approved offsite monitored natural attenuation.

**B-18 Response:** We acknowledge that the dischargers have completed significant remediation and that fractured bedrock is difficult to remediate. However, after five years of monitored natural attenuation, there are still very high TCE concentrations in groundwater. In 2019, the maximum onsite TCE groundwater concentration is 13,000 µg/l, the maximum TCE concentration in the fractured bedrock area is 2,100 µg/l, and the maximum TCE groundwater concentration near the distal edge of the plume is 4,800 µg/l. After five years, a revised feasibility study and remedial action plan is needed to comprehensively reevaluate remedial actions.

The current regulatory practice for the protection of a surface water from discharges of contaminated groundwater is that the point of compliance is upgradient of the surface water body before the groundwater discharges to the surface water. We no longer consider dilution of the contaminated groundwater in the wetlands as an acceptable regulatory approach. This change was instituted so that benthic organisms or other biota in the transition zone are not exposed to full concentrations of chemicals in groundwater prior to mixing with surface water.

### **B-19. Offsite Remediation to Date (Sections 10e-g):**

**B-19 Comment:** The Offsite FS/RAP includes a contingency plan to consider if additional investigation or remediation is necessary if there are observed changed conditions in the Offsite Unconsolidated Area that increases the risk of exposure to human or ecologic receptors. The TO discusses the fate and transport model out of context. The purpose of the model was to assess the potential down-gradient extent of the TCE plume beyond the CMA. The model was run using the June 2014 TCE concentrations and hydraulic conductivity. A sensitivity analysis was run with maximum historic TCE concentrations and hydraulic conductivity. The sensitivity analysis, depicting the worst-case scenario, indicated that the plume will not reach Suisun Bay, even if concentrations and hydraulic conductivity increased to historic maximums within 100 years. The TO includes a reference to the most recent concentration of TCE in groundwater near the distal edge of the plume. This fails to account for progress made and additional response actions that are proposed in Exhibit 11. The TO finding takes the modeling results out of context.

**B-19 Response:** Comment noted. The reference to the fate and transport model was removed from the TO. We acknowledge that the dischargers have completed significant remediation. However, there are still very high TCE concentrations in groundwater. In 2019, the maximum onsite TCE groundwater concentrations is 13,000 µg/l and the maximum TCE groundwater concentration near the distal edge of the plume is 4,800 µg/l. The additional work proposed in Exhibit 11 is insufficient to comply with the requirements of the TO because any additional cleanup done by the dischargers would be contingent on another party addressing a hypothetical offsite source and on a revised risk assessment showing there is a need for cleanup.

### **B-20. Reasonable and Necessary Additional Remediation (Section 10h):**

**B-20 Comment:** The statement in the TO that completed and planned remedial measures are no longer protective of human health and the environment is vague and factually unsupported. Ongoing monitoring in the CMA continues to show a downward vertical gradient and no complete receptor pathway, indicating that the Offsite FS/RAP is protective of the environment.

**B-20 Response:** As discussed in the B-1 response, the ongoing monitoring shows the TCE plume from the Site continues to migrate offsite at concentrations greater than groundwater cleanup levels and discharge into the CMA at concentrations greater than surface water cleanup levels. The discharge pathway from the Site to the CMA is complete, therefore the current remedial action plan is not protective of the environment.

### **B-21. Land Use Restriction (Section 13):**

**B-21 Comment:** The requirement for a risk management task and deed restriction presupposes that ongoing remedial efforts will not attain cleanup goals. It is premature to require a deed restriction. Previous remedial actions sufficiently reduced TCE concentrations onsite.

**B-21 Response:** The Risk Management Plan and deed restriction tasks are conditional on the continued presence of unacceptable contaminant concentrations in groundwater



or soil vapor. We recognize that a Risk Management Plan and deed restriction might not be needed. Both documents are due 90 days after required by the Executive Officer, if so directed. In other words, they are not automatically required. We revised the TO to make this clearer.

#### **B-22. Disposal of Extracted Groundwater (Section 14):**

**B-22 Comment:** There is no practical evidence that offsite groundwater will be used. There is no practical technical solution for access to the remote wetlands south of the railroad track in the CMA. Brackish water in the CMA is not a practical candidate for pump and treat remediation.

**B-22 Response:** All potential beneficial uses listed in the *Basin Plan* and referenced in the TO must be protected. Additional remedial effort is needed to restore those uses listed in the Basin Plan. While we acknowledge the wetlands south of the railroad track in the CMA presents accessibility challenges, we disagree that there is no technical solution for accessing the wetlands south of the railroad track. Regional Water Board staff is familiar with methods such as temporary matting and manually operated tools that could be used in that area. The reference to an evaluation of pump and treat remediation has been deleted.

#### **B-23. Challenge to Cost Recovery Costs (Section 15)**

**B-23 Comment:** The Dischargers reserve the right to review and challenge Regional Water Board request for reimbursement of oversight cost.

**B-23 Response:** Comment noted. According to Provision 3 of the TO: *Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.* If a dispute regarding oversight charges cannot be resolved with the Regional Water Board, section 13320 of the Water Code provides a petition process of Regional Water Board decisions.

#### **B-24. Withdrawal of Tentative Order (Section 16, and Conclusion)**

**B-24 Comment:** The Dischargers request that the Tentative Order be withdrawn or modified. The Dischargers assert that they have been working diligently for more than fifteen years to investigate and remediate releases caused by other parties. The Dischargers are willing to continue to engage in reasonable work under Water Code 13267 orders if the requirements are reasonable and based on facts and science.

**B-24 Response:** Water Code section 13267 is used to require technical and monitoring reports to investigate water quality impacts. Water Code section 13304 is used to require cleanup. Therefore, a site cleanup requirement order under section 13304 is the proper vehicle to require cleanup.

#### **Other Staff-initiated Changes and Clarifications to the TO Based on Comments and Recent Meetings with the Dischargers**

Along with the changes referenced in the above responses, staff made additional changes to the TO based on comments and recent meetings with the Dischargers.

The TO was modified to remove the requirement to submit a revised risk assessment. A screening level risk assessment (i.e., simple table showing which pathways currently exceed screening levels) was added. Cleanup levels are included in the TO. The Dischargers can submit a revised risk assessment at any time; the Water Board does not need to require it.

For conciseness, the TO was modified to collapse findings on interim remedial measures and the feasibility study / remedial action plan into one finding on remedial measures.

The tasks for additional onsite vapor intrusion evaluation were deleted because the Self-Monitoring Program in the TO already captures that monitoring.

The tasks for additional soil vapor and soil mitigation were retitled to additional vapor intrusion mitigation to more clearly describe the intent of the task. The date-certain due date for the tasks was changed to if necessary because at this time it is not known if these tasks will be needed.

Staff also made other miscellaneous minor changes to the TO to correct errors, for clarity, and to add *pertinent* information where necessary.

## References

DTSC [Department of Toxic Substances Control]. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). California Environmental Protection Agency, DTSC. October.

DTSC [Department of Toxic Substances Control]. 2014. Human Health Risk Assessment Note 5, Issue: Health-based Indoor Air Screening Criteria for Trichloroethylene (TCE). California Environmental Protection Agency, DTSC, Office of Human and Ecological Risk (HERO). August 23.

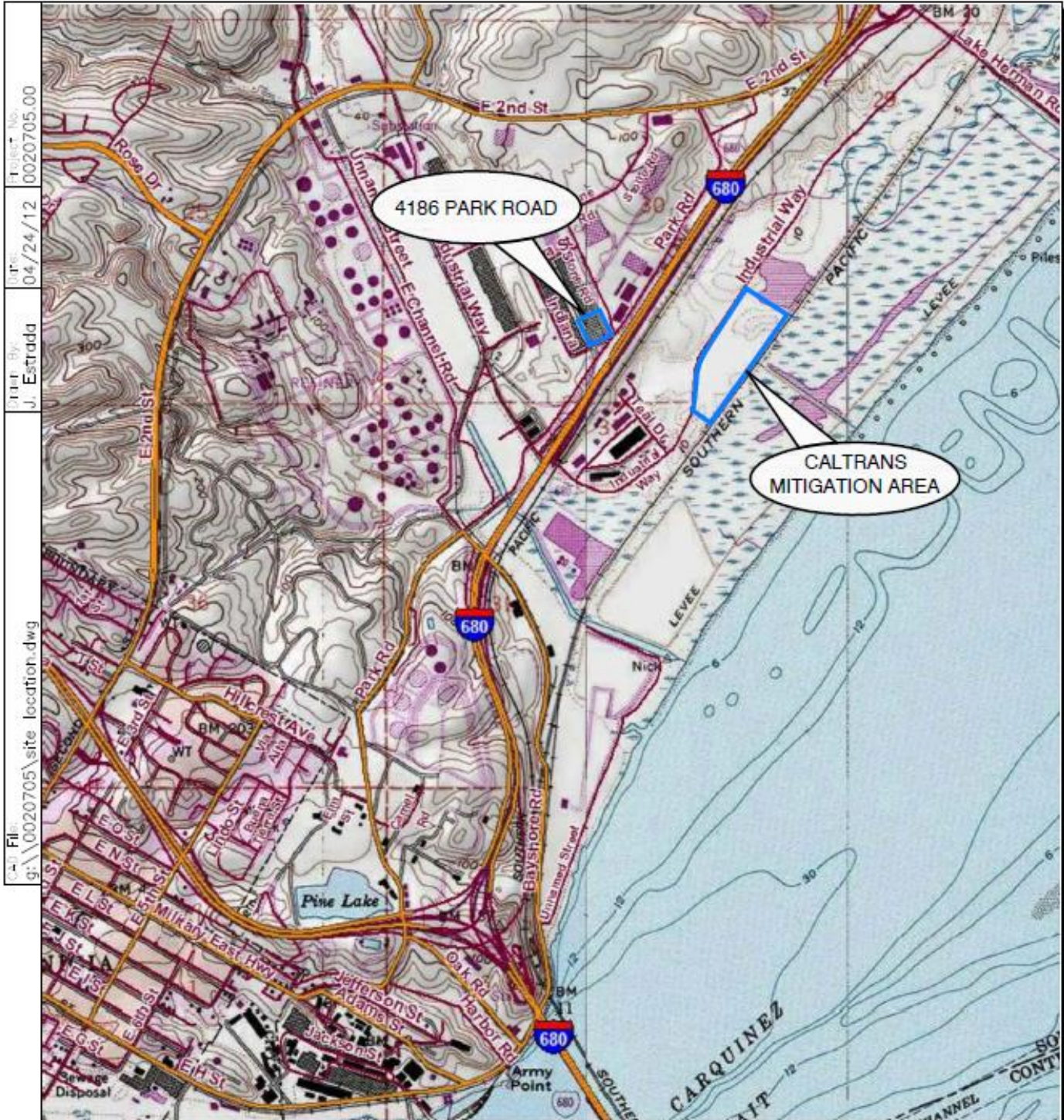
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Regional Water Board. 2014. Draft Interim Framework for Assessment of Vapor Intrusion at TCE-Contaminated Sites in the San Francisco Bay Region. California Environmental Protection Agency, Regional Water Board. October 16.

USEPA [U.S. Environmental Protection Agency]. 2015. OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Source to Indoor Air. Office of Solid Waste and Emergency Response (OSWER). Publication 9200.2-154. June

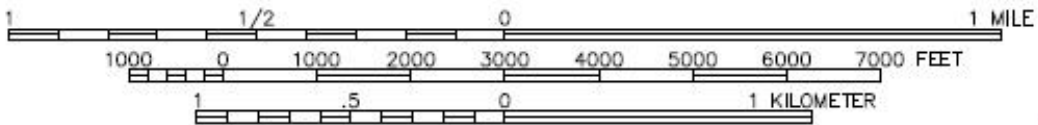
USEPA [U.S. Environmental Protection Agency]. 2011. Toxicological Review of Trichloroethylene (CAS No. 79-01-6): In Support of Summary Information on the Integrated Risk Information System (IRIS). September.

USEPA. 2014. EPA Region 9 Memorandum Response Action Levels and Recommendations to Address Near-Term Inhalation Exposures to TCE in Air from Subsurface Vapor Intrusion. July 9.



File: g:\0020705\site location.dwg  
 Date: 04/24/12  
 User: J. Estrada  
 Project No: 0020705.00

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References:  
 TOPOI® Software  
 U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle,  
 Benicia, California  
 Dated: 1980

Figure 1  
 Site Location Map  
 4186 Park Road  
 Benicia Industrial Park  
 Benicia, California

ERM 048/12