CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

REVISED TENTATIVE ORDER

ADOPTION OF FINAL SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDERS NO. R2-2014-0007, R2-2014-0036, and R2-2018-0035 for:

MARINWOOD PLAZA, LLC
HOYTT ENTERPRISES INC.

For the property located at:

187 MARINWOOD AVENUE
MARINWOOD, MARIN COUNTY

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

1. **Site Location:** Prosperity Cleaners was a dry cleaner business formerly located in Marinwood Plaza at 187 Marinwood Avenue, north of the City of San Rafael (see Figure 1). Marinwood Plaza occupies commercially-zoned land at the southeast corner of the intersection of Marinwood Avenue and Miller Creek Road and between Marinwood Avenue on the west and Highway 101 on the east. Marinwood Plaza is comprised of four parcels totaling about five acres. The parcels are: 164-471-64, 164-471-65, 164-471-69, and 164-471-70. Collectively the four parcels are referred to as the Site. Parcel 164-471-69 is the location of the former dry cleaner business (Source Property) at Marinwood Plaza. The northernmost parcel (164-471-64) included a gas station but is now vacant land and has not been impacted by releases from the dry cleaner business. Single family residential homes are located north of the Site; townhomes are located to the west. An additional commercial parcel borders the Site to the south and is used for bus parking.

   Marinwood Plaza was developed in 1962 and includes two structures. The northern building is a grocery market (on Parcel 164-471-65). The southern building (on Parcel 164-471-69) included several different businesses, including the dry cleaners. The southern building is vacant.

2. **Site History:** Marinwood Plaza is owned by Marinwood Plaza, LLC, since 2003. Prior to that, Marinwood Plaza was owned by Hoytt Enterprises Inc. Hoytt Enterprises and the Taper Family Trust are currently partners in the Marinwood Plaza, LLC. Hoytt Enterprises developed the property from vacant land in 1962. Dry cleaner businesses operated at the same location since the early 1960s. There may have been at least three owners who did business as Marinwood Cleaners at the Source Property until 1990. From 1990 to 2005, Prosperity Cleaners owned and operated a dry cleaning business at the Source Property.

Prosperity Cleaners had a permit from the Bay Area Air Quality Management District to operate a dry cleaning machine utilizing the dry cleaning solvent tetratchloroethene also known as perchloroethylene (PCE). The dry cleaners at the Source Property used the dry cleaning solvent tetrachloroethene (PCE) in their daily operations since before 1974 until 2005. During a Phase II investigation in August 2007, consultants detected PCE in soil and groundwater samples. The discharge of PCE was reported to the Regional Water Board in January 2008, which then required the property owner to conduct environmental investigations and cleanup. Since then, Marinwood Plaza, LLC, has continued to work with the Regional Water Board to characterize the extent of the contaminant discharge and to implement remedial measures.

3. **Named Dischargers:** Marinwood Plaza, LLC, is named as a discharger because it is the current owner of the Source Property on which there is an ongoing discharge of waste, has knowledge of the discharge, and the ability to control it. In addition, Marinwood Plaza, LLC, and Hoytt Enterprises Inc. (hereinafter referred to as Discharger) are named as dischargers because they permitted a discharge at the Source Property as they owned the property during the time when the dry cleaners discharged PCE and should have known that the operations created a reasonable possibility of discharge of PCE into waters of the state that could create or threaten to create a condition of pollution or nuisance.

   The record indicates that the dangers of dry-cleaning solvents in general, and PCE in particular, was known during Marinwood Plaza, LLC's, and Hoytt Enterprises Inc.'s ownership of the Site (1962 to 2005). For example, as early as in 1953, the Supreme Court made reference to a statute addressing "Dry Cleaning Equipment Employing Volatile and Inflammable Solvents." (*State Bd. of Dry Cleaners v. Thrift-D-Lux Cleaners* (1953) 40 Cal.2d 436, 440.)[1] In 1965 the Legislature set a specific maximum level for PCE vapor in former Health and Safety Code section 13399.5, above which would be considered a "'dangerous toxic concentration.'" (Stats. 1965, ch. 1781, § 13, p. 3974.) In the 1960s, the San Francisco Examiner reported deaths associated with PCE and dry cleaning. In 1966, the California State Board of Dry Cleaners held safety seminars throughout the state to warn against the dangers of PCE. In 1975, the City of Santa Clara adopted an ordinance prohibiting the discharge of a variety of pollutants into the sewer system, including chlorinated hydrocarbons like PCE because they impact receiving waters and are hazardous to humans and fish. In 1977, the Director of the National Institutes of Health published in the Federal Register a summary of a study regarding the "possible carcinogenicity" of PCE. (Report on Bioassay of Tetrachloroethylene for Possible Carcinogenicity, 42

[1] Flammable solvents, used before PCE became the solvent of choice, were also of concern at dry cleaners that in 1949, the Legislature adopted laws to strictly regulate dry cleaning processes to prevent fugitive vapors and fires, which included measures to prevent solvent leaks into the environment. (Former Health & Saf. Code, § 13426, added by Stats. 1949, ch. 1051, § 18, p. 1952.)

Fed.Reg. 55270–55271 (Oct. 3, 1977).) In early 1978, the Environmental Protection Agency (EPA) published a list of toxic pollutants, including PCE.

(Publication of Toxic Pollutant List, 43 Fed.Reg. 4108–4109 (Jan. 25, 1978).) In 1980, the EPA recognized PCE as a potential human carcinogen and adopted water quality standards for PCE. (Water Quality Criteria Documents, 45 Fed.Reg. 79318, 79340 (Nov. 28, 1980).) Based on the widespread problem of PCE pollution from dry cleaners, in 2007, California adopted rules phasing out the use of PCE at dry cleaners between 2008 and 2023. (Cal. Code Regs., tit. 17, § 93109.)

The Site investigations indicate that there were discharges of PCE from the dry cleaners at the Source Property for many decades. These discharges of PCE are consistent with common industry-wide operational practices for dry cleaners that operated from the 1960s and 1990s. In 2001, 87% of dry cleaners in one Bay Area county (Santa Clara) used PCE. The prevalence of dry cleaner PCE discharges is discussed in the 2007 Santa Clara Valley Water District *Study of Potential for Groundwater Contamination from Past Dry Cleaner Operations in Santa Clara County* (Water District Study). Examples of common release mechanisms from dry cleaner operations include:

- PCE spilled onto the floor from dry cleaning equipment maintenance and operation, equipment failure, solvent transfer and storage, or drips from wet clothing with residual PCE;
- PCE spilled onto the floor then seeped through concrete or cracks and reached the soil and groundwater below;
- PCE soaked into concrete and then volatilizing into indoor air;
- Spent PCE dumped onto soil behind building;
- PCE-saturated spent cartridge filters stored behind building;
- Water containing PCE (e.g., from water/solvent separator) discharged to the floor drain with leakage from the sewer lateral to soil and groundwater; and
- PCE in soil and groundwater volatilizing and intruding into indoor air.

The concentrations and distribution of PCE in shallow soil and groundwater at the dry-cleaner facility indicate that the dry cleaning operations at the Source Property were no different than the dry cleaners discussed in the Water District Study that discharged PCE. The highest PCE concentrations in shallow soil are found only beneath and behind the former dry cleaner facility. Discharges to the surface or shallow soil then impacted the groundwater. PCE impacted groundwater extends hydraulically downgradient (easterly) from the dry-cleaner facility, but not upgradient, further identifying the dry-cleaner as the release location. Based on the groundwater plume length of about half mile, and an estimated groundwater flow rate of 50-feet per year (estimated by the consultant for Marinwood Plaza LLC), the PCE discharges associated with dry cleaner operations began decades ago.

Based on all of the foregoing, Hoytt Enterprises Inc. and Marinwood, LLC, should have known that the dry cleaner operations on its property created a reasonable possibility of PCE discharge into waters of the state that could create or threaten to create a condition of pollution or nuisance.

There is insufficient information on the former dry cleaner operators to include them as named dischargers. If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the Source Property where it entered or could have entered waters of the state, the Regional Water Board will consider adding those parties to this order.

4. **Regulatory Status:** Site Cleanup Requirements (Order No. R2-2014-0007) was adopted February 12, 2014, and later amended by Order Nos. R2-2014-0036 (September 26, 2014), and R2-2018-0035 (July 16, 2018). The original order set tasks for investigation and remediation of the Site. The 2014 amendment clarified some reporting requirements and a date and separated the onsite from the offsite interim remediation workplan and reports. The 2018 amendment established separate due dates for onsite soil vapor investigation reports, a due date for groundwater cleanup, and added new tasks for investigating Caltrans property and evaluating the effects of new or updated health-risk criteria if and when that occurs.

5. **Purpose of Order:** The purpose of this Order is to consolidate the Site's original cleanup order and its amendments into a single final order. The original cleanup order, as amended, required a completion report for groundwater remediation by 2027, but did not include a date as to when the remediation had to commence. Thus, this Order adds a deadline to start implementing the previously approved groundwater remedial action plan. This Order also requires remediation effectiveness evaluations every three years, a risk management plan, a public participation plan, and, if necessary, a soil vapor evaluation. It also updates cleanup levels, which do not affect the approved remedial action plans, and updates the self-monitoring plan. This Order also adds Hoytt Enterprises as a named party since it owned the Site for many years during which dry cleaners operated and discharged PCE.

6. **Site Hydrogeology:** The Site is within the Miller Creek watershed, and the modern channel of Miller Creek is approximately 200 feet from the southern boundary of the Site. The Site is located near the center of an eastward-sloping stream valley that drains to San Pablo Bay via Miller Creek and surface runoff. The stream valley is constrained in places by hills both to the south and northeast. The Site is underlain by about 40 to 60 feet of interbedded clay, silt, and sand deposited by a meandering ancestral Miller Creek over fractured bedrock of the Franciscan Complex. Site data indicates that these stream deposits are variable in texture both laterally and vertically. The stream deposits tend to thin offsite to the east and by the hills to the north east and south east from the Site.

Unconfined groundwater is first encountered at approximately 7 to 12 feet below ground surface and exhibits seasonal variation with the rainfall. Groundwater in deeper permeable strata appears to be semi-confined to confined by overlying finer-grained strata. Groundwater recharge in this area occurs by surface infiltration in unpaved areas, and to some degree and seasons from the channel of Miller Creek. At other times groundwater may discharge to portions of Miller Creek. The groundwater flows generally east to southeast towards wetlands and eventually to San Pablo Bay. San Pablo Bay is approximately two miles east of the Source Property. There are several domestic wells in the vicinity of the Source Property, but most are upgradient to the west. The nearest downgradient active domestic or agricultural well is approximately 1,000 feet east of the Source Property and on the south side of Miller Creek (see Finding 11 b).

7. **Remedial Investigation:** Multiple investigations have occurred since PCE was first detected in August 2007. These investigations identified PCE and its breakdown products trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2DCE), trans-1,2-dichloroethylene (trans-1,2-DCE), and vinyl chloride in groundwater, soil, and soil vapor samples above the Regional Water Board's Environmental Screening Levels (ESLs). Collectively these contaminants may be referred to as chlorinated volatile organic compounds or CVOCs. PCE is the most common contaminant.

   On the Source Property, investigations found two contaminant release areas: 1) beneath the former Prosperity Cleaners building where the dry cleaning machinery was previously located and 2) east of the dry cleaner building and along the eastern property boundary adjacent to the southbound onramp to Highway 101, called the "eastern hot spot".

   Groundwater Findings

   The lateral and vertical extent of groundwater contaminated with PCE and its breakdown products both onsite and offsite is delineated. Contaminated groundwater extends from the Source Property, offsite to nearby properties, which include the Silveira ranch and land owned by Catholic Charities for the St. Vincent School for Boys. The plume of groundwater containing PCE and breakdown products exceeding drinking water standards (also defined as the Maximum Contaminant Levels or MCLs) extends about one-half mile eastward from the Source Property and under Miller Creek.

   Samples collected from Miller Creek from multiple locations have no detectable contamination. The Silveira Ranch, located east of the Site, uses two wells for domestic and agricultural purposes. One of the shallow water supply wells is located just south of Miller Creek and groundwater samples have had occasional detections of PCE up to a maximum of 0.62 µg/L. While this concentration is less than the MCL of 5 µg/L for PCE, Marinwood Plaza, LLC, has nonetheless installed a treatment system on this well as a cautionary measure. None of the post-treatment samples from the water supply well have detectable

concentrations of PCE or other contaminants related to the dry cleaner discharge. The other water supply well is located up a slope and beyond the contaminant-affected area.

The following table lists the maximum detected concentrations in May 2020 for groundwater located both on and offsite based on data from 24 monitoring and pilot test wells.

Analyte	**Maximum onsite concentration in 2020 (µg/L)**	**Maximum offsite concentration in 2020 (µg/L)**	**Drinking water standard (µg/L)**
PCE	58	52	5
TCE	27	12	5
cis-1,2-DCE	71	67	6
trans-1,2-DCE	3.1	2.7	10
Vinyl chloride	8.9	5.0	0.5

Soil Vapor and Indoor Air Findings

Soil vapor samples were collected from the Source Property, from the adjoining Caltrans property, and from the upgradient residential neighborhood. PCE and occasional breakdown products were detected at concentrations exceeding the 2019 Environmental Screening Levels (ESLs) for soil vapor in some onsite areas and along both sides of a portion of Marinwood Avenue. In 2015, 22 soil vapor samples were collected from locations in the residential neighborhood. None of these neighborhood locations had any detections of the chemicals of concern. Three vapor probes were installed between Marinwood Avenue and adjacent to housing units. The PCE concentration ranges (May 2020 data) from 16 to 41 µg/m^3 at these locations compared with a residential ESL value of 15 µg/m^3. Based on the data, no occupied onsite structure currently overlies a vapor plume exceeding the ESLs.

Indoor air samples were previously collected from the currently unoccupied Source Property and adjacent stores that exceeded ESLs. An indoor air sample collected in 2011 from the grocery market (a separate building) had no detectable contaminants from the Source Property. Several soil vapor samples collected adjacent to the grocery market are below the 2019 residential ESLs.

Shallow soil and vapor samples were collected from Highway 101 onramp area on property controlled by Caltrans because it is adjacent to the *eastern hot spot* and a storm drain runs from the source property and discharges to Caltrans property.

No evidence of any substantial release or runoff was found on Caltrans property according to the samples results.

8. **Interim Remedial Measures:** Several interim remedial measures have taken place to address the two source areas and mitigate potential exposure concerns.

Source Remediation

Both hotspot areas on the Source Property were remediated. The *eastern hot spot* was treated with three applications of an oxidizing liquid injected into the top 20-feet of soil in 2010. This was followed by a bioremediation injection program to promote the breakdown of contaminants. In 2013, 40 soil samples were collected from this treated zone from depths of 1 to 20 feet. All 40 soil samples met the cleanup levels for soil in the 2014 Order. The soil cleanup levels are based on the potential of leaching of chemicals from the soil to groundwater where groundwater may be expected to then exceed the MCLs. Groundwater at the eastern hot spot (represented by well MW-5), while much lower than prior to treatment, still exceeds the MCL. Further groundwater treatment is planned in this area as part of the groundwater remediation.

To treat the source area under the former dry-cleaner impacted soil was excavated to a depth of about 16 feet. Marinwood Plaza, LLC, removed 510 tons of soil and 5,105 gallons of groundwater. A total of 49 confirmation soil samples were collected from the bottom and sides of the excavation and all soil samples met the cleanup levels. After excavation and soil sampling, and prior to backfilling, treatment material was added to the base of the excavation to enhance biodegradation of contamination in the groundwater and the residual contamination in soil in the vadose zone. Groundwater under the dry cleaner (represented by well MW-16) meets the MCLs. Cis-1,2-DCE exceeds the MCL at nearby well MW-3 and may represent degradation of the PCE.

At the former gas station located on the north end of the property 60 tons of soil were excavated in 2010. This excavation was conducted after acetone and xylene, unrelated to dry cleaning operations, were detected in a soil sample. Confirmation soil samples completed after the excavation found no remaining chemicals at concentrations above applicable screening criteria.

Soil cleanup for protecting drinking water has achieved the cleanup levels. However, PCE and vinyl chloride in soil may still present a potential vapor intrusion concern. For example, the 2019 ESLs for PCE and vinyl chloride in soil where leaching to groundwater and groundwater off-gassing could cause a vapor intrusion concern are still exceeded is some samples.

Vapor Mitigation

Mitigation measures included using a sealant on the concrete floor and two ventilation fans in the liquor store when it was operating to lower contaminant

concentrations in indoor air. The liquor store has been vacant for several years now and was located immediately adjacent to the dry cleaner. To minimize vapor travel along potential preferential pathways trenches were dug in 2016 across sewer, natural gas, and storm drain utility lines and backfilled with clay.

Water Supply Well Treatment

At the Silveira Ranch water supply well granular activated carbon canisters were installed to treat potentially impacted groundwater at the well head as a protective measure. See Finding 6 for additional details.

8. **Risk Assessment**

a. **Screening Level Risk Assessment:** A screening level risk evaluation evaluated environmental concerns for soil, soil vapor, and groundwater impacts. Chemicals evaluated in the risk assessment include PCE, TCE, cis and trans-1,2-DCE, and vinyl chloride, the primary chemicals of concern identified.

As part of the assessment, site data were compared to the 2019 ESLs. 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 habitats. Screening levels for soil address: 1) direct exposure, 2) leaching to groundwater in excess of drinking water impacts, and 3) nuisance issues. Screening levels for soil vapor 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 $1x10^{-6}$ for carcinogens and a target Hazard Quotient of 0.2 for noncarcinogens. Groundwater screening levels for the protection of aquatic habitats are based on promulgated surface water standards (or equivalent). Soil screening levels for nuisance concerns are intended to address potential odor and other aesthetic issues.

Assessment Results: As noted in the table below, PCE, TCE, and cis1,2-DCE in some soil vapor samples exceed the soil vapor to indoor air ESLs. PCE, TCE, cis-1,2-DCE, and vinyl chloride exceed both the groundwater to indoor air and the drinking water screening levels. Result of Screening Assessment using 2020 sample data and current (2019) Water Board ESLs.

	Human health - direct contact	Leaching to ground water > MCLs	Indoor air	Aquatic life	Drinking water	Nuisance
Soil:						
PCE			NA	NA	NA	
TCE			NA	NA	NA	
cis-1,2-DCE			NA	NA	NA	
trans-1,2-DCE			NA	NA	NA	
Vinyl chloride			NA	NA	NA	
Soil vapor:						
PCE	NA	NA	X	NA	NA	
TCE	NA	NA	X	NA	NA	
cis-1,2-DCE	NA	NA	X	NA	NA	
trans-1,2-DCE	NA	NA	*	NA	NA	
Vinyl chloride	NA	NA	*	NA	NA	
Groundwater:						
PCE		NA	X		X	
TCE		NA	X		X	
cis-1,2-DCE		NA	X		X	
trans-1,2-DCE		NA				
Vinyl chloride		NA	X		X	

Notes: an "X" indicates that ESL for that particular concern was exceeded, if it is shaded there is no exceedance.

NA = Not applicable. There are no ESLs for these pathways.

A “*” indicates not detected but detection limits are greater than the ESLs. Data based on the most recent vapor data and 2019 ESLs. See this webpage for additional information: https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html

Conclusions: Marinwood Plaza, LLC, has opted to forego a site-specific risk assessment at this time and instead will address these screening level exceedances using a combination of remediation and risk management. The results of the screening level risk evaluation indicate that concentrations of dry cleaner contaminants exceed MCLs in groundwater in some onsite and offsite locations. Therefore, there is a potential threat to beneficial uses of groundwater and a potential risk to people if they use the groundwater as a source of drinking water. Results also indicate that concentrations of dry cleaner contaminants in

groundwater and soil vapor exceed screening levels protective of occupants in overlying buildings via vapor intrusion.

10. **Adjacent Sites:** There are two closed Underground Storage Tank (UST) cases in the vicinity of the Site. UST case No. 21-0148 a former Unocal gas station at 101 Marinwood Avenue, on the northern parcel of the Site, no longer exists. The contamination from the former gas station was remediated and the case closed in 1995. The Chevron gas station located across the street from the Source Property, at 100 Marinwood Avenue (case No. 21-0295), is an operating facility and the case was closed in 1997. There is no data suggesting that these two gas stations impacted the dry cleaner businesses or vice versa.

11. **Feasibility Study/ Remedial Action Plan:** The onsite soil excavation and vapor mitigation measures proposed in the FS/RAP dated December 29, 2015, was approved on April 19, 2016. However, the RAP elements dealing with groundwater cleanup, was rejected due to the absence of any groundwater feasibility study in the December 2015. Four addenda were subsequently submitted to complete the FS/RAP. Following is a summary of remedial alternatives considered in the FS/RAP and addenda for each medium of concern:

    a. **Soil Vapor/Indoor Air:** For soil vapor remediation no action, Monitored Natural Attenuation, utility corridor barriers, soil vapor extraction, and excavation to treat soil vapor source were considered. To address potential indoor air concerns, sub-slab vapor barriers and passive venting systems were considered for new construction. The approved selected remedies included utility corridor barriers, additional excavation under the former dry-cleaner, and vented vapor barriers, if needed at the time of construction.

    Addendum #1, dated May 26, 2016, proposed additional soil vapor probes along Marinwood Avenue to better define and monitor the vapor plume. Subsequently the probes were installed and sampled.

    Addendum #4, submitted January 3, 2019, proposed additional soil excavation to remove suspected remaining soil in the former dry cleaner area to address elevated soil vapor concentrations. This was subsequently approved on April 3, 2019. The completion report for this work was due on March 27, 2020. As of the adoption date of this Order, the additional excavation and treatment has not been implemented.

    b. **Soil Remediation:** For additional soil remediation the FS/RAP evaluated excavation with offsite disposal or onsite treatment, in-situ injections, soil vapor extraction, a cap, and institutional or engineered controls. Soil excavation was selected to treat the remaining soil under the dry cleaner that exceeded cleanup levels. A risk or soil management plan was also proposed, if needed.

RAP Addendum #2, dated August 23, 2016, clarified some details of the proposed soil excavation under the dry cleaner and proposed adding amendments to the excavation backfill to better treat groundwater and residuals in soil. Addendum #2 was approved September 19, 2019. This excavation was approved on April 13, 2017.

c. **Groundwater Cleanup:** On November 21, 2016, a revised RAP Addendum #3 was submitted. The revised Addendum #3 proposed offsite groundwater remediation via the injection of a mixture of organic substrate, finely ground zero valent iron (ZVI), and dechlorinating bacterial cultures in six lines crossing the plume. The injection lines would create permeable treatment zones to treat the groundwater as it flows through them. These zones are referred to as permeable reactive barriers or PRBs. The organic substrate would support microbial growth to break down PCE and its daughter products to non-toxic by-products. ZVI reductively dechlorinates the PCE without production of daughter products. The revised Addendum #3 proposed a conceptual plan of installing six PRB lines across the higher concentration areas of the groundwater plume in the offsite area with the goal of achieving groundwater cleanup in 7 to 10 years. The revised addendum #3 and recommendation for a pilot test were approved on February 15, 2017.

Based on the results of the pilot study, the April 23, 2018 *Pilot Test Implementation and Off-Site Groundwater Remediation Repor*t, proposed some modifications and expansion to the groundwater treatment. A total of twelve treatment PRBs were proposed to treat areas of the plume containing PCE over 30 µg/L. Lower concentration areas of the plume (below 30 µg/L) would be treated by monitored natural attenuation. The Pilot Test report was approved on August 23, 2018 with the requirement that additional wells be installed to monitor the low concentration fringe areas of the plume. Additional monitoring wells were installed to monitor these fringe areas. However, as of the adoption date of this Order, treatment of the full groundwater plume has not been implemented.

d. **Risk Management Plan**: The RAP proposes a risk management plan be developed prior to redevelopment activities at the Site for safely managing contaminated soil and groundwater that could be encountered during underground utility or construction activities.

12. **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 high quality waters unless a lesser water quality is consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses,

and will not result in exceedance of applicable water quality objectives. This order and its requirements are consistent with Resolution No. 68-16.

State Water Board Resolution No. 92-49, *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304,* applies to this discharge. It directs the Regional Water Boards to set cleanup levels equal to background water quality or the best water quality which is reasonable, if background levels cannot be restored. The cleanup levels established in this order are consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of such water, and will not result in exceedance of applicable water quality objectives. While the MCLs, or drinking water standards, are greater than background concentrations, cleaning up to MCLs will be protective of all beneficial uses for groundwater. Cleanup of groundwater to background may be infeasible due to back diffusion of contaminants from the fine grained zones. 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 Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board, Office of Administrative Law and the U.S. EPA (United States Environmental Protection Agency or USEPA), 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 Source Property and surrounding area is part of the Novato Valley groundwater basin. The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Source Property:

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

- ✓ Agricultural water supply
- ✓ Freshwater replenishment to surface waters

Groundwater is not currently used at the Site. However, there are several domestic wells in the vicinity of the Site, including two private wells located eastward (and downgradient) from the Site that are used for domestic and agricultural purposes. The nearest of these wells is approximately 1,000 feet east of the Site and on the south side of Miller Creek. Samples from both wells have not exceeded drinking water standards for the contaminants of concern from the Source Property.

The existing and potential beneficial uses of water from Miller Creek include the following:

- ✓ Wildlife habitat
- ✓ Preservation of rare and endangered species
- ✓ Cold freshwater and warm freshwater habitat
- ✓ Fish migration and spawning
- ✓ Navigation
- ✓ Water contact recreation
- ✓ Noncontact recreation

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

d. **Basis for Soil Cleanup Levels:** The soil cleanup levels are the more stringent of the 2019 ESLs for direct contact, leaching to groundwater that could lead to indoor air vapor intrusion, and nuisance concerns considering the applicable land use scenario (residential or commercia/industrial). Cleanup to this level will protect beneficial uses of groundwater and will result in acceptable residual risk to human health.

e. **Basis for Soil vapor Cleanup Levels:** The soil vapor cleanup levels are the 2019 ESLs for vapor intrusion into overlying occupied buildings considering the applicable building use (residential or commercial/industrial). Cleanup to these levels will result in acceptable residual risk to human health.

f. **Basis for Indoor Air Cleanup Levels:** The indoor air cleanup levels are the 2019 ESLs for indoor air of overlying occupied buildings considering the applicable building use prevent unhealthy levels of CVOCs in indoor air (residential or commercial/industrial). Cleanup to these levels will result in acceptable residual risk to human health.

g. **Other:** The Discharger may propose revised cleanup levels for Regional Water Board consideration supported by a new or updated risk assessment, feasibility study, and remedial action plan.

1. **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 these cleanup levels.

2. **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} for carcinogens. The screening level evaluation for this Source Property found contamination-related risks exceeding these acceptable levels. Active remediation will reduce these risks over time. However, risk management measures may be needed at this Site during and after active remediation to assure protection of human health. Risk management measures include engineering controls (such as vapor barriers, engineered caps or wellhead treatment) and institutional controls (such as deed restrictions that prohibit certain groundwater uses land uses). Risk management measures shall also include how to handle unexpected soil or groundwater contamination if they are encountered during site activities.

3. **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.

4. **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.

5. **Cost Recovery:** Pursuant to 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.

6. **Human Right to Water**: Under Water Code § 106.3, the State of California's policy is that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. (Wat. Code, § 106.3; see also State Water Board Resolution No. 2016-0010.) The human right to water extends to all Californians, including disadvantaged individuals and groups and communities in rural and urban areas. This order promotes the human right to water by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

7. CEQA: Adoption of this Order will have no potential for significant environmental effects (see Finding 5) and is intended to support site cleanup. The project is therefore exempt from the provisions of the California Environmental Quality Act

8. (CEQA) under the general rule that "CEQA applies only to projects that have the potential for causing a significant effect on the environment." (Cal. Code Regs., tit. 14 § 15061, subd. (b) (3).).

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

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

11. IT IS HEREBY ORDERED, pursuant to section 13304 of the Water Code, that the Discharger (or its agents, successors, or assigns) shall clean up 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. REMEDIAL ACTION PLAN AND CLEANUP LEVELS

1. **Implement Remedial Action Plan:** The Discharger shall implement the remedial action plan described in finding 9.

2. **Groundwater Cleanup Levels**: The following groundwater cleanup levels apply to groundwater beneath the Source Property and all properties affected by pollution from the Source Property.

Constituent	**Concentration µg/L)**	**Basis**
PCE	5	Drinking water MCL
TCE	5	Drinking water MCL

cis-1,2-DCE	6	Drinking water MCL
trans-1,2-DCE	10	Drinking water MCL
Vinyl chloride	0.5	Drinking water MCL

3. **Soil Cleanup Levels:** In the absence of soil vapor concentration data, the following soil cleanup levels apply to Source Property vadose-zone soils. If adequate soil vapor concentration data exist, they will supersede soil concentrations as an indicator of vapor intrusion potential.

Constituent	**Concentration (mg/kg)**	**Basis**
PCE	0.08	Leaching to groundwater and vapor intrusion ESL
TCE	0.085	Leaching to groundwater and vapor intrusion ESL
cis-1,2-DCE	0.19	Leaching to groundwater and vapor intrusion ESL
trans-1,2-DCE	0.65	Leaching to groundwater and vapor intrusion ESL
Vinyl chloride	0.0015	Leaching to groundwater and vapor intrusion ESL

4. **Soil Vapor Cleanup Levels:** The following soil vapor cleanup levels apply to the Source Property and all properties affected by pollution from the Source Property where a vapor intrusion threat exists to occupants of existing buildings.

Constituent	Concentration ($\mu g/m^3$) residential use	Concentration ($\mu g/m^3$) commercial use	Basis
PCE	15	67	Human health – vapor intrusion ESL
TCE	16	100	Human health – vapor intrusion ESL
cis-1,2-DCE	280	1200	Human health – vapor intrusion ESL
trans-1,2-DCE	2800	12000	Human health – vapor intrusion ESL
Vinyl chloride	0.32	5.2	Human health – vapor intrusion ESL

5. **Indoor Air Cleanup Levels:** The following indoor air cleanup levels shall be met in occupied buildings to the extent the concentrations are due to vapor intrusion of subsurface contaminants from the Source Property.

Constituent	Concentration ($\mu g/m^3$) residential use	Concentration ($\mu g/m^3$) commercial use	Basis
PCE	0.46	2	Human health inhalation ESL
TCE	0.48	3	Human health inhalation ESL
cis-1,2-DCE	8.3	35	Human health inhalation ESL
trans-1,2-DCE	83	350	Human health inhalation ESL
Vinyl chloride	0.01	0.16	Human health inhalation ESL

C. TASKS

1. OFFSITE GROUNDWATER REMEDIATION IMPLEMENTATION REPORT

COMPLIANCE DATE: June 30, 2021; and 90 days following implementation of each subsequent phase of injection

Submit a technical report, acceptable to the Executive Officer, describing the implementation of the offsite groundwater remediation proposed in the FS/RAP revised Addendum #3, submitted November 21, 2016 and approved February 15, 2017, as modified by the April 23, 2018 pilot test report, which was approved August 23, 2018. At a minimum, this report shall document the implementation of initial treatment injections as further described in Finding 10c. If additional treatment phases are planned and/or necessary, then an additional report shall be submitted following implementation.

2. REMEDIAL ACTION PLAN COMPLETION REPORT – OFFSITE GROUNDWATER

COMPLIANCE DATE: February 15, 2027

Submit a technical report, acceptable to the Executive Officer, documenting completion of offsite groundwater remediation. Specifically, offsite groundwater is to reach drinking water standards as specified in Section B, Groundwater Cleanup Levels. Proposals for further system expansion or modification may be included in annual reports (see attached Self-Monitoring Program).

3. PUBLIC PARTICIPATION PLAN

COMPLIANCE DATE: 30 days following Executive Officer requirement

Submit a Public Participation Plan (PPP), acceptable to the Executive Officer, responding to the community's interest in the environmental cleanup. The PPP shall include plans to timely circulate fact sheets for key cleanup and investigation documents to interested persons and provide an opportunity for comment on these documents. Interested persons include other agencies, local officials, non-profit organizations, and interested landowners and residents/occupants in the Source Property's vicinity. This task is to ensure that the local community is provided with timely and accurate information related to investigation and cleanup. It should encourage representatives from the local community to share their concerns and identify issues with the cleanup activities. This task may include the preparation of posters and figures for presentation to the public.

4. **PROPOSED DEED RESTRICTION**

COMPLIANCE DATE: 60 days following requirement by Executive Officer

Submit a proposed deed restriction acceptable to the Executive Officer whose goal is to limit onsite occupants' exposure to Site contaminants to acceptable levels. The proposed deed restriction shall prohibit the use of shallow groundwater beneath the Site as a source of drinking water until cleanup levels are met and prohibit sensitive uses of the Site such as schools or daycare centers. The proposed deed restriction shall incorporate by reference the risk management plan (Task 6*).* 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. Marinwood Plaza LLC, or any subsequent owner, shall be responsible for this task. The Executive Officer will require this task once active cleanup is completed, if needed to restrict use.

5. **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 Marin County Recorder. The report shall include a copy of the recorded deed restriction. The Discharger or any subsequent owner, shall be responsible for this task.

6. **RISK MANAGEMENT PLAN**

COMPLIANCE DATE: 60 days after required by Executive Officer

Submit a Risk Management Plan (RMP) according to Finding #11. The following risk management measures are needed at this Site:

a. During remediation: notifying future owners of sub-surface contamination, prohibiting the use of shallow groundwater beneath the Site as a source of drinking water until cleanup levels are met, and prohibiting sensitive uses of the Site such as residences and daycare centers without other mitigation measures being used.

b. Post remediation: a deed restriction notifying future owners of sub-surface contamination and prohibiting sensitive uses of the Site such as daycare centers.

c. Procedures to follow on how to deal with unexpected soil or groundwater contamination that may be encountered during construction or development activities that may take place at the Site.

d. Documentation of use of the RMP may be combined with a self-monitoring report, provided that the report title clearly indicates what work was performed for risk management.

7. **REMEDIATION EFFECTIVENESS EVALUATION REPORTS**

COMPLIANCE DATE: June 30, 2023 and every three 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 (see the July 30, 2009, *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites* for further information).

c. Comparison of anticipated versus actual costs of cleanup activities

d. Performance data (e.g., vapor volume extracted using SVE, 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 (if applicable) including time schedule

If the trends and performance data suggest that cleanup levels will not be met in a reasonable timeframe considering risk reduction, threat abatement, and beneficial use restoration goals, have not been met and are not projected to be met within a reasonable time, the report shall reassess the technical practicability of meeting cleanup levels and may propose an alternative timeframe and/or cleanup strategy.

8. **PROPOSED CURTAILMENT**

COMPLIANCE DATE: 60 days prior to proposed curtailment

Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes system closure (e.g., well closure), system suspension (e.g., cease vapor 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.

9. **IMPLEMENTATION OF CURTAILMENT**

COMPLIANCE DATE: 60 days after Executive Officer approval of proposed curtailment

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. Separate curtailment reports may be required for soil vapor and groundwater remediation.

10. **EVALUATION OF NEW HEALTH CRITERIA**

COMPLIANCE DATE: 90 days after evaluation report required by 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.

11. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: 90 days after evaluation report required by 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.

12. **SOIL VAPOR EVALUATION FOR FUTURE REDEVLOPMENT**

COMPLIANCE DATE: 60 days after evaluation report required by Executive Officer

Submit a report that proposes methods to assess risks and threats from contaminated soil vapor to occupants of buildings planned for construction or use. Conduct a vapor intrusion evaluation and recommend cleanup and/or mitigation measures as needed to protect occupants of planned redevelopment at on or offsite properties. This task will be required by the Executive Officer if there are credible plans for new buildings overlying any portion of the groundwater plume beneath the Source Property or properties affected by pollution from the Source Property.

13. **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 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 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 and paper version of all correspondence, technical reports, and other documents pertaining to compliance with this order shall be provided to the Regional Water Board, and electronic copies shall be provided to the following agencies:

   a. City of San Rafael

   b. County of Marin

   The Executive Officer may modify this distribution list as needed.

   Electronic copies of all correspondence, technical reports, and other documents pertaining to compliance with this order shall be uploaded to the State Water Board's GeoTracker database within five business days after submittal to the Regional Water Board. Guidance for electronic information submittal is available at: http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal

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, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

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

11. **Rescission of Existing Order:** This order supersedes and rescinds Orders No. R2-2014-0007, R2-2014-0036, and R2-2018-0035 except for enforcement purposes.

12. The Regional Water Board will review this order periodically and may revise it when necessary.

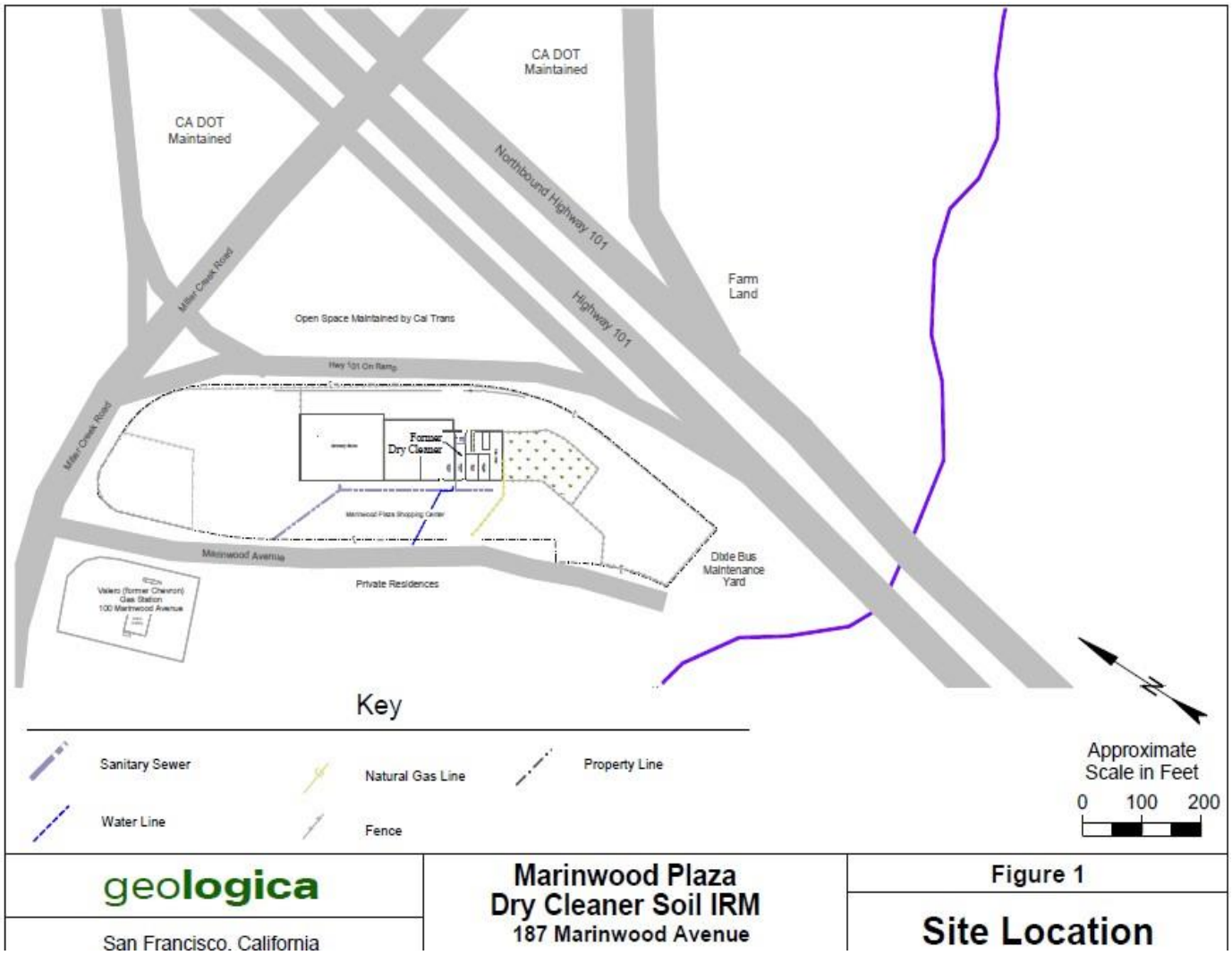
I, Michael Montgomery, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____.

_____
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:

Site Location Map
Self-Monitoring Program


CA DOT Maintained
CA DOT Maintained
Northbound Highway 101
Highway 101
Miller Creek Road
Miller Creek Road
Farm Land
Open Space Maintained by Cal Trans
Hwy 101 On Ramp
Former Dry Cleaner
Marinwood Plaza Shopping Center
Marinwood Avenue
Private Residences
Dixie Bus Maintenance Yard
Valero (former Chevron) Gas Station 100 Marinwood Avenue
Key
Sanitary Sewer
Water Line
Natural Gas Line
Fence
Property Line
Approximate Scale in Feet
0 100 200
geologica
San Francisco, California
Marinwood Plaza
Dry Cleaner Soil IRM
187 Marinwood Avenue
Figure 1
Site Location

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM for:

Marinwood Plaza, LLC
Hoytt Enterprises Inc.

for the property located at
187 MARINWOOD AVENUE
MARINWOOD, MARIN COUNTY

1. **Authority and Purpose:** The Regional Water Board requires the technical reports identified in this Self-Monitoring Program pursuant to Water Code sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Regional Water Board Order No. R2-2020-XYZ (Site Cleanup Requirements).

2. **Monitoring:** The Discharger shall measure groundwater elevations and shall collect and analyze representative samples of groundwater and soil vapor according to the below table 1.

   The Discharger shall sample any new monitoring or vapor wells quarterly, or as approved in the associated work plan, and analyze samples for the same constituents as shown in the attached table 1. The Discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Quarterly Monitoring Reports:** The Discharger shall submit quarterly monitoring reports to the Regional Water Board no later than 30 days following the end of the calendar quarter (e.g., report for first quarter of the year due April 30). The first quarterly monitoring report shall be due on October 30, 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 fourth quarterly report each year.

c. Groundwater and Vapor Analyses: Groundwater and vapor sampling data shall be presented in tabular form, and an iso-concentration map(s) shall be prepared for one or more key contaminants for each monitored water bearing 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 and vapor sampling results shall be included in the fourth quarterly report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included with hard copies of the reports, but shall be included with reports uploaded to GeoTracker (see record keeping - below).

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

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

f. Remediation Progress Status: Each report shall include a discussion on the remediation status (e.g., what remedial work has been conducted over the last quarter). The annual report shall include a section that presents a brief evaluation of remedial effectiveness and any changes that are recommended.

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. For example, groundwater monitoring frequency for selected wells may change to be more frequent after groundwater remediation is implemented. 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.

Table 1

Groundwater Monitoring

Well	Sampling Frequency
Marinwood Plaza Property	
MW-1	Annually
MW-2	Annually
MW-3	2/yr
MW-4	Well destroyed
MW-5	2/yr
MW-16	Annually
Offsite Wells	
MW-6	Annually
MW-7	Annually
MW-8	Annually
MW-9	Annually

MW-11	2/yr
MW-12	2/yr
MW-13	2/yr
MW-14	2/yr
MW-15	Annually
MW-17	Annually
MW-18	Annually
MW-19	Annually
Offsite Pilot Test Wells	
MW-10	2/yr
PT-1	Cease sampling
PT-2	2/yr
PT-3	2/yr
PT-4	Cease sampling
PT-5	2/yr
PT-6	2/yr
Silveira Water Supply Well	
Influent	2/yr if in use, annually in not in use
Miller Creek	
Downstream	Annually

Vapor Monitoring Program

Soil Vapor Probe	**Sampling Frequency**

Marinwood Plaza Property	
SVM-1	2/yr
SVM-2	Well destroyed
SVM-3	2/yr
SVM-4	2/yr
SVM-5	2/yr
SVM-6	2/yr
SVM-7	2/yr
SVM-9	Qtr
SVM-10	Qtr
Offsite Soil Vapor Monitoring	
SVM-8	Qtr
SVM-9	Qtr
SVM-10	Qtr
SVM-11	Qtr

Notes:
2/yr = Sample twice per year
Annually = Sample once a year
Qtr = Sample quarterly
Analyze soil vapors for VOCs by USEPA Method TO-15
Analyze groundwater for VOCs by USEPA Method 8260