CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION

CLEANUP AND ABATEMENT ORDER NO. R1-2025-0056

FOR

THE REMEDIATION OF VOLATILE ORGANIC COMPOUNDS AND/OR HEAVY METALS IN SOIL AND/OR GROUNDWATER USING REDUCING AGENTS VIA AN IN-SITU INJECTION PROCESS

FOR

LMC Associates
(Leila Robinson, Michael Nelson, & Randall Wardlaw)

Hirsch, Phil-Former Drycleaner

230 South A Street
Santa Rosa, CA 95401

CASE NUMBER 1NSR255

This Order is issued to Hirsch, Phil Former Drycleaner (hereafter referred to as the Discharger) based on provisions of California Water Code (Water Code) section 13304, which authorizes the North Coast Regional Water Quality Control Board (Regional Water Board) to issue an order to clean up a waste, or abate the effects of a waste to a person who has discharged or threatens to discharge waste to waters of the state, and Water Code section 13267 , which authorizes the Regional Water Board to require the preparation and submittal of technical and monitoring reports to a person suspected of discharging, or threatening to discharge waste to waters of the state. The purpose of the Order is to address the need for immediate action to clean up and abate the impacts and threats to water quality and human health caused by the discharge of waste to the subsurface.

The Executive Officer finds, with respect to the Discharger's acts, or failure to act, the following:

1. Site Conditions

Results from prior investigations and ongoing groundwater monitoring conducted at the Phil Hirsch property site (Property) indicate that groundwater beneath the Site is contaminated with tetrachloroethene (PCE) from leakage or improper disposal of PCE from when the site operated as a drycleaner. PCE is currently detected in all nine monitoring wells installed at the site at concentrations that exceed the Regional Water Board's water quality objective (WQO) for PCE. Off gassing of PCE from groundwater is likely also contributing to detected PCE concentrations in soil vapor beneath the Site building.

2. Purpose of the Order

This Order requires the Discharger to clean up and abate the discharge of drycleaning chemicals in groundwater and soil and eliminate the threat of future discharges. Investigation and cleanup actions required under this Order shall be conducted to comply with the Porter-Cologne Water Quality Control Act (Wat. Code § 13000 *et seq.)*, the *Water Quality Control Plan for the North Coast Region* (Basin Plan), State Water Resources Control Board (State Water Board) Resolution 92-49, *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304* (Resolution 92-49), and other applicable State and Regional Water Board plans, policies, and regulations.

3. Site Description

The Property is centrally located in the City of Santa Rosa and consists of a 0.62-acre parcel of land designated as Sonoma County Assessor's Parcel Number (APN) 010-212-055. The Property is currently developed with an unoccupied single story commercial structure with the assigned address of 228 South A Street, and a two-story residential dwelling known as 230 South A Street. Drycleaning operations were active at the site from the 1930s until 1987. Additional investigations established that vapors from the PCE release had impacted buildings at 230 South A street.

4. Responsible Parties

The Discharger (230 South A Street LLC) is the Responsible Party for purposes of this Order as they are the current owner of the Property. The Regional Water Board reserves the right to amend this Order to add responsible parties when and if those parties are identified

5. Factual Basis of Order

Past activities at the Site, as detailed below, created and threatens to create a condition of pollution in waters of the state, including groundwater by unreasonably impacting water quality and beneficial uses.

a. A 1,000-gallon UST was reportedly used at the site to first store Stoddard solvent, PCE and later, waste oil. The UST was removed in 1987, and a separate petroleum hydrocarbon case (1TSR255) was opened. Soil samples collected during the removal indicated that soil near the UST was impacted by PCE and petroleum hydrocarbons.

b. Since 1990, extensive investigations at the Hirsch site have focused primarily on releases of PCE associated with the historical dry-cleaning operations. The earliest groundwater sampling detected PCE at concentrations up to 20 micrograms per liter (µg/L) downgradient of the former UST. Subsequent investigations in 2002 and 2006 revealed that PCE impacts were far more significant and widespread than initially understood, with groundwater concentrations as high as 13,000 µg/L and soil concentrations up to 22 milligrams per kilogram (mg/kg). These studies also showed that PCE had migrated beyond the site boundaries, both laterally and vertically, prompting recommendations for continued delineation and evaluation of potential preferential migration pathways

c. From 2013 through 2020 several phases of groundwater, soil vapor, and indoor air investigations have confirmed PCE as the primary contaminant of concern at the site. PCE was detected in groundwater samples up to 9,820 µg/L and in sub-slab vapor samples up to 247,000 micrograms per cubic meter (µg/m³) beneath on-site structures, indicating strong vapor intrusion potential. Indoor air samples also showed PCE detections well above background, while other volatile organic compounds were found at comparatively minor levels. Although the petroleum hydrocarbon portion of the site contamination met Low-Threat UST Closure Policy (LTCP) criteria and was closed in 2021, the PCE plume associated with former dry-cleaning operations remains an active concern due to its persistence and vapor-phase migration potential.

d. In 2023–2024 a passive soil gas (PSG) survey provided further evidence that PCE contamination remains centered beneath and adjacent to the former dry-cleaning building. The highest concentrations were found in the northeastern portion of the structure near the historical dry-cleaning equipment, with elevated soil gas readings extending south and west under paved areas and along potential utility corridors. Many PSG results exceeded both residential (15 µg/m³) and commercial/industrial (67 µg/m³) Environmental Screening Levels, confirming that PCE vapor migration continues to pose potential human health risks.

6. Beneficial Uses

The Regional Water Board Basin Plan designates beneficial uses, establishes water quality objectives, contains implementation programs for achieving objectives, and incorporates by reference the plans and policies adopted by the Regional Water Board.

a. The beneficial uses of areal groundwater include Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), Industrial Process Supply (PRO), and Freshwater Replenishment (FRSH).

b. The Site is located approximately 850 feet south of Santa Rosa Creek, which is a tributary to the Russian River in the Russian River - Middle Russian River - Santa Rosa Hydrological Subarea. Existing and potential beneficial uses for this Hydrological Subarea include Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), Industrial Process

Supply (PRO), Groundwater Recharge (GWR), Freshwater Replenishment (FRSH), Navigation (NAV), Water Contact Recreation (REC1), Non-contact Water Recreation (REC2), Commercial and Sport Fishing (COMM), Cold Freshwater Habitat (COLD), Wildlife Habitat (WILD), Rare Threatened or Endangered Species (RARE), Migration of Aquatic Organisms (MIGR), Spawning, reproduction, and/or Early Development (SPWN), Shellfish Harvesting (SHELL), and Aquaculture (AQUA). Beneficial uses of any specifically identified water body generally apply to all its tributaries.

7. State Water Board Resolutions 92-49

State Water Board Resolution 92-49 sets forth the policies and procedures to be used during an investigation and cleanup of a polluted site and requires that cleanup levels be consistent with State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality Waters in California ("Resolution 68-16"). Resolution 92-49 requires the waste to be cleaned up in a manner that promotes attainment of either background water quality, or the best water quality that is reasonable if background levels of water quality cannot be restored. Any alternative cleanup level to background must: (1) be consistent with the maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of such water; and (3) not result in water quality less than that prescribed in the Basin Plan and applicable Water Quality Control Plans and Policies of the State Water Board. Resolution 92-49 directs that investigations and cleanup and abatement proceed in a progressive sequence. To the practical extent, it directs the Regional Water Board to require and review for adequacy written work plans for each element and phase, and the written reports that describe the results of each phase of the investigation and cleanup.

8. Water Quality Objectives

Water quality objectives in the Basin Plan are adopted to ensure protection of the beneficial uses of water. The most stringent water quality objectives for protection of all beneficial uses are selected as the protective water quality criteria. Alternative cleanup and abatement actions must evaluate the feasibility of, at a minimum: (1) cleanup to background levels; (2) cleanup to levels attainable through application of best practicable technology; and (3) cleanup to the level of water quality objectives for protection of beneficial uses.

9. Legal Authority to Require Cleanup and Abatement

Water Code section 13304, subdivision (a) states, in relevant part:

"A person who has discharged or discharges waste into waters of this state in violation of any waste discharge requirements or other order or prohibition issued by a regional board or the state board, or 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 causes, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts….Upon failure of any

person to comply with the cleanup or abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant."

a. "Pollution" is defined by Water Code section 13050, subdivision (l)(1) as an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either the waters for beneficial uses or the facilities which serve these beneficial uses.
b. "Nuisance" is defined by Water Code section 13050, subdivision (m) to mean anything which meets all the following requirements:
    i. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
    ii. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
    iii. Occurs during, or as a result of, the treatment or disposal of wastes.

10. Cleanup and Abatement Action Necessary

Cleanup and abatement are necessary to ensure that the existing condition of pollution is cleaned up; that threatened unauthorized discharges to waters of the state from the Site are prevented; that background water quality, or the best water quality that can be attained is restored; and that any impacts to beneficial uses are mitigated. The current condition of pollution is a priority violation and the issuance of a cleanup and abatement order pursuant to Water Code section 13304 is appropriate and consistent with the policies of the Regional Water Board.

11. Technical Reports Required

Water Code section 13267, subdivision (a) provides that the Regional Water Board may investigate the quality of any water of the state within its region in connection with any action relating to the Basin Plan. Water Code section 13267, subdivision (b) provides that the Regional Water Board, in conducting an investigation, may require a discharger to furnish, under penalty of perjury, technical or monitoring program reports. The burden of preparing the reports required by this Order bears a direct relationship between the need for the reports and the benefits to be obtained from the reports. The technical reports required by this Order are necessary to assure compliance with this Order and to protect the waters of the state. The technical reports are further necessary to demonstrate that appropriate methods will be used to clean up waste discharged to soil and groundwater and to ensure that the urgent cleanup actions required will comply with Basin Plan requirements. In accordance with Water Code section 13267(b), the findings in this Order provide the Discharger with a written explanation with regard to the need for investigation and reports and identifies the evidence that supports the requirement to implement clean up and abatement activities and submit the reports.

The reports and work required under this Order are necessary for the Regional Water Board to ensure that the quality of waters of the state is adequately protected. The burden, including the costs of the reports, bears a reasonable relationship to the need for the reports and the benefits to be obtained from them. The reports and work required in this Order are reasonable and would be required by any person who discharged petroleum hydrocarbons or chlorinated hydrocarbons in a manner that impaired the quality of the waters of the state.

The costs associated with the project are estimated by the Regional Water Board. The Discharger and not the Water Board will select contractors and other professionals to complete the required work, and costs may differ from the estimate provided. The total estimated cost to perform In-Situ Chemical Reduction (ISCR) injection work (ISCR) at the site, including permitting, pre- and post- injection monitoring activities is approximately $200,000. The burdens, including costs, of this work and the associated reports bear a reasonable relationship between the need and benefits obtained from the work and the reports.

12. Interim Remedial Measures Work Plan and Notice of Intent Specifications

The Discharger provided an April 14, 2025, Interim Remedial Measures Work Plan (Remedial Work Plan) and a May 23, 2025, Notice of Intent (NOI) for In-Situ Chemical Reduction (ISCR) injection work that specified intended means and methods of performing the required remedial work. These documents were intended to establish waste discharge requirements (WDR) that would be used to regulate the intended injection activities under the North Coast Regional Water Quality Control Board's WDR Program. Since the injection activities are of limited scope and duration and are not intended to be an ongoing or perpetual discharge to the waters of the State, the WDR program application was abandoned in favor of this Cleanup and Abatement Order. The documents submitted fulfill the requirements for these injection activities and include:

a. A discussion regarding the compatibility of multiple treatments, amendment interactions, and potential by-products if more than one treatment method and multiple amendment types were used.
b. The characterization of the nature and extent of the groundwater plume, hydraulic conductivity, groundwater gradient direction, description of the hydrogeology, complete definition of all preferential pathways and buried utilities.
c. A description of the engineered delivery system, injection points and well spacing to ensure adequate coverage; injection well construction details; concentrations and rate of injections; description of safety features, a description of chemical storage facilities, including sealed containers and closed piping for chemicals and amendments stored and injected at the site, and provisions for proper operation and maintenance of equipment.
d. A description of the amendments to be used in the injection activities, which include Collodial Zero-Valent Iron (iZVI) and colloidal carbon (CollodialChem) as reagents to be mixed with anaerobic water and combined with dehalococcoides (DHC) bioaugmentation culture prior to injection into the subsurface.

e. Information on the possibility of any adverse impacts to groundwater quality, and whether the impacts will be localized and short-term, and potential adverse effects of any current or projected uses of the water during the time that impacts are being realized.

f. Information on the possibility of any adverse impacts to human health or safety, and the environment from the proposed *in situ* treatment.

g. Identification of all land uses within 1,500 feet of the treatment area including a map depicting the land uses surrounding the site and plume, along with all water supply wells, utilities, surface water bodies, and other sensitive receptors including, but not limited to, schools, hospitals, day care centers, or other areas where the protection of human health and the environment needs to be addressed

h. A baseline (pre-remediation) geochemical groundwater monitoring program with assessed background water quality conditions, including concentrations of contaminant types. Contaminant types consist of halogenated volatile organic compounds (HVOCs), PCE and its breakdown compounds (trichloroethene [TCE], cis-1,2-dichlorethene [cis-1,2-DCE], and vinyl chloride [VC]).

i. A sampling plan to monitor the treatment area, the area down-gradient of the treatment area and the treatment process. The sampling plan will demonstrate the effectiveness of the treatment method, the protection of human health and the environment, and groundwater quality both upgradient and downgradient of the site.

j. An evaluation regarding potential air quality impacts (ambient air and vapor intrusion), human health and safety impacts and nuisance conditions during amendment mixing, injection, treatment, and post-treatment. The evaluation includes an air monitoring plan and a contingency plan if potential air quality standards, adverse impacts to human health and safety and/or nuisance conditions have the potential to occur. A human health risk assessment was previously prepared for indoor air intrusion risk that can cause an excess cancer risk of 1×10^{-6} or a health hazard index of greater than 1.

k. A Contingency Plan to correct any potential adverse water quality impacts, or adverse impacts to human health or the environment. The contingency plan will prevent migration of chemicals beyond the treatment area and prevent in-door air intrusion and adverse exposures.

l. An investigation and discussion of cultural, historical, archaeological, and paleontological resources that potentially exist on site, which included reference to Julliard Park's preservation of redwood trees adjacent to the site.

m. The identification of all state and local agency permit requirements associated with the proposed *in situ* treatment method, and acknowledgement that any permits required by these agencies will be obtained prior to commencement of the work.

n. An acknowledgement signed by a licensed professional engineer or geologist that the following discharges are prohibited and will not occur as a result of the

in-situ remediation work: The discharge of any amendments other than those identified and concurred with in the work plan is prohibited.

i. Creation of a pollution, contamination, or nuisance, as defined by Water Code section 13050, subdivision (m), is prohibited (Health and Safety Code, section 5411).

ii. The discharge of amendments that may result in an adverse impact to any sensitive receptor identified in the workplan is prohibited.

iii. The discharge of amendments to land or groundwater in areas other than that approved for remediation is prohibited.

iv. The injection of amendments to soil and/or groundwater beneath property that is not owned by the Discharger is prohibited unless access agreements have been secured.

v. The migration of any byproducts produced as part of the treatment process beyond the boundaries of the treatment zone identified in the workplan is prohibited.

13. California Environmental Quality Act

Issuance of this Order is being taken for the protection of the environment and to enforce the laws and regulations administered by the Regional Water Board and, as such, is exempt from provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.) in accordance with California Code of Regulations, title 14 sections 15301, 15304, 15306, 15307, 15308, and 15321, 15330. If the Regional Water Board determines that implementation of any action or plan required by this Order will have a significant effect on the environment that is not otherwise exempt from CEQA, the Regional Water Board will conduct the necessary and appropriate environmental review prior to implementation of the applicable plan or action. The Discharger will bear the costs, including the Regional Water Board's costs, of determining whether implementation of any plan or action required by this Order will have a significant effect on the environment and, if so, in preparing and handling any documents necessary for environmental review. If necessary, the Discharger and a consultant acceptable to the Regional Water Board, shall enter into a memorandum of understanding with the Regional Water Board regarding such costs prior to undertaking any environmental review.

REQUIRED ACTIONS

IT IS HEREBY ORDERED that, pursuant to Water Code sections 13267 and 13304, the Discharger shall clean up the wastes and abate the impacts to water quality in accordance with the scope and schedule set forth in the Remedial Work Plan and ISCR NOI. The Discharger shall obtain all necessary permits for the activities required in this Order.

1. Within 90 days of the completion of the in-situ remediation work but no later than November 30, 2026, the Discharger shall submit a technical report documenting the in-situ remediation activities including:
   a. all field injection activities
   b. a map of all injection points
   c. injection zones targeted and depths, substrate selection and volume injected at each point
   d. pre-and -post injection groundwater monitoring results
   e. waste management handling and disposal summary
   f. any deviations from the approved Remedial Work Plan.

2. **Additional injection events**
   Additional injection events using the same material will be covered under this Order for up to 10 years from the date of issue, provided they do not pose any additional threats to water quality, the environment, or sensitive receptors. These events must be proposed in a new workplan including injection locations, depths, volumes of material injected, and any changes in methodology. The details of the injection work must be reported in a technical report after each injection event, including a description of activities as outlined in Section 1.

GENERAL REQUIREMENTS AND NOTICES

1. **Duty to Use Qualified Professionals**
   The Discharger shall provide documentation that plans and reports required under this Order are prepared under the direction of appropriately qualified professionals. Conduct all work under the direction of a California professional civil engineer or professional geologist experienced in surface water, soil, and groundwater investigation and remediation. All workplans and reports submitted to the Executive Officer of the Regional Water Board shall be signed and stamped by a licensed professional. As required by the California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. The Discharger shall include a statement of qualification and registration numbers of the responsible lead professionals in all plans and reports required under this Order. The lead professional shall sign and affix their registration stamp to the report, plan, or document. The required activities must be implemented by the appropriately qualified/licensed professional as otherwise required by law.

2. **Signatory Requirements**
   All technical reports submitted by the Discharger shall include a cover letter signed by the Discharger, or a duly authorized representative, certifying under penalty of law that the signer has examined and is familiar with the report and that to his/her knowledge, the report is true, complete, and accurate. The Discharger, or a duly

authorized representative, shall also state in the cover letter whether he/she will implement the recommendations/proposals provided in the report and the schedule for implementation. Any person signing a document submitted under this Order shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. **Notice of Onsite Work**
   The Discharger, or a duly authorized agent, shall notify Regional Water Board staff at least 48 hours prior to any onsite work, testing, or sampling that pertains to environmental remediation and investigation and is not routine monitoring, maintenance, or inspection. The Discharger may contact the Regional Water Board using the general phone line at (707) 576-2220.

4. **Agency Coordination**
   Investigation and cleanup activities associated with soils, surface waters, and/or groundwater shall be coordinated with Regional Water Board staff, Sonoma County Environmental Health staff, California Department of Fish and Wildlife, and other regulatory agencies involved in the cleanup as necessary.

5. **Other Regulatory Requirements**
   The Discharger shall obtain all applicable local, state, and federal permits necessary to fulfill the requirements of this Order prior to beginning the work.

6. **Delayed Compliance**
   If for any reason, the Discharger is unable to perform any activity or submit any document in compliance with the schedule set forth herein, or in compliance with any work schedule submitted pursuant to this Order and approved by the Executive Officer, the Discharger may request, in writing, an extension of the time specified. The extension request shall include justification for the delay. Any extension request shall be submitted as soon as a delay is recognized and no later than 5 days prior to the compliance date. An extension may be granted by revision of this Order or by a letter from the Executive Officer.

7. **Potential Liability**
   If the Discharger fails to comply with the requirements of this Order, this matter may be referred to the Attorney General for judicial enforcement or a complaint for administrative civil liability may be issued by the Regional Water Board. Failure to comply with this Order may result in the assessment of an administrative civil liability of up to $10,000 per violation per day and $10 per gallon of waste discharged in excess of the initial 1,000 gallons, when the violation results in the discharge of waste, pursuant to California Water Code sections 13350, and/or 13385. Failure to

provide workplans and investigative reports as required by this Order may result in the assessment of administrative civil liability of up to $1,000 per day for each violation pursuant to Water Code section 13268. The Regional Water Board reserves its right to take any enforcement actions authorized by law, including, but not limited to, violation of the terms and conditions of this Order.

8. **No Limitation of Water Board Authority**
   This Order in no way limits the authority of the Regional Water Board to institute additional enforcement actions or to require additional investigation and cleanup of the Property consistent with the Water Code. This Order may be revised as additional information becomes available.

9. **Modifications**
   Any modification to this Order shall be in writing and approved by the Regional Water Board or its delegated officer including any potential extension requests.

10. **Reasonable Access**
    The Discharger shall allow the Regional Water Board, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to enter at reasonable times to inspect the Property and any records that must be kept under the conditions of this Order for the purposes of assuring compliance with this Order or as otherwise authorized by the Water Code.

11. **Requesting Review by the State Water Board**
    Any person aggrieved by this or any final action of the Regional Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 et al. The State Water Board must receive the petition no later than 5:00 p.m., 30 days following the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at

    https://www.waterboards.ca.gov/public_notices/petitions/water_quality/

    or will be provided upon request.

12. **Order Termination**
    The Regional Water Board will consider termination of the Order after all injection events associated with this Order have been performed and the appropriate and complete reports documenting the work are submitted to the Regional Water Board.

Ordered by: Digitally signed by Claudia E Villacorta
Date: 2025.11.13 11:41:36 -08'00'

Valerie Quinto
Executive Officer

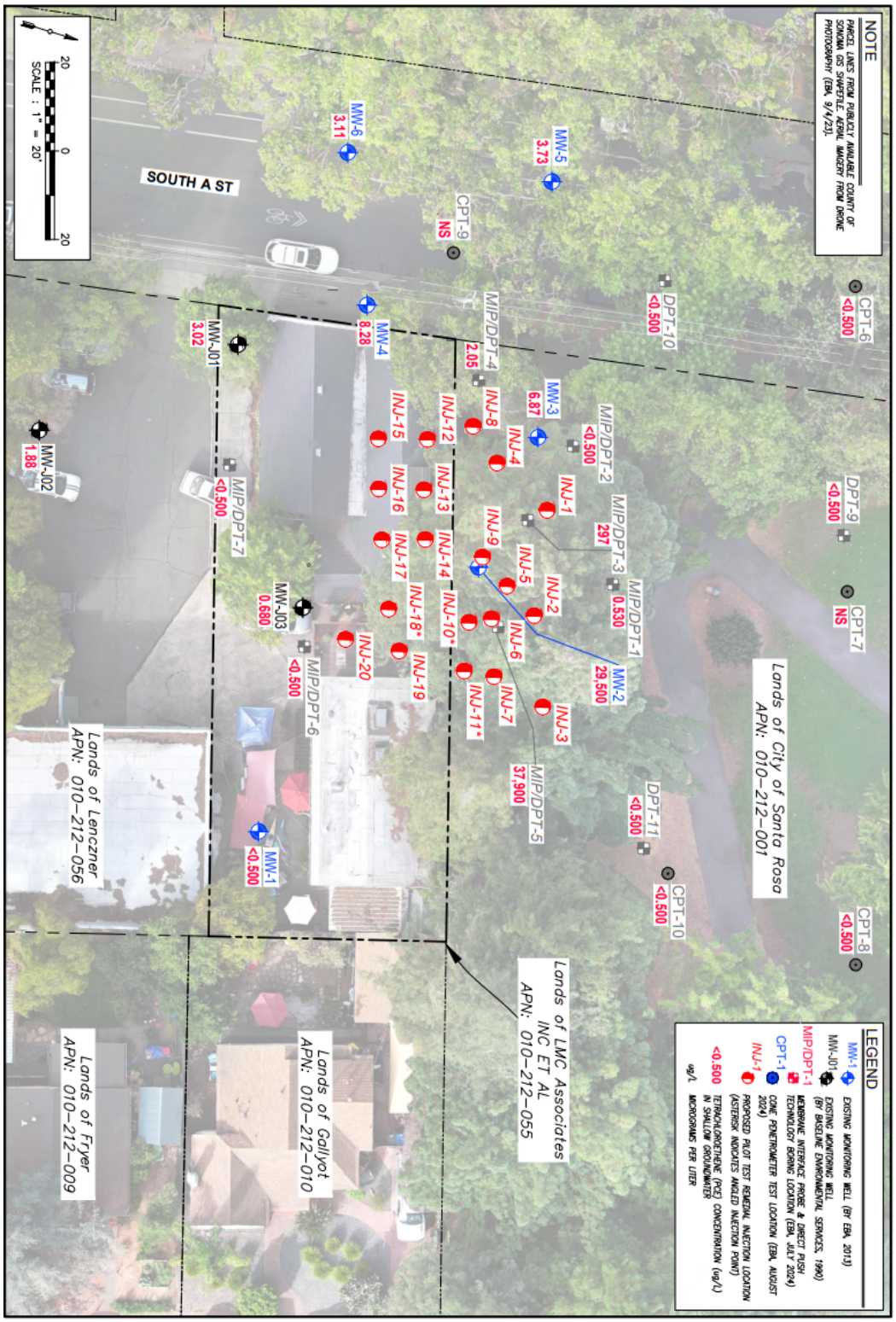

Figure 1: Site Layout, showing proposed injection locations, building layout and former cleaner facilities (excerpted from EBA Engineering's April 14, 2025 "Interim Remedial Measures Work Plan")