California Regional Water Quality Control Board
North Coast Region

Cleanup and Abatement Order No. R1-2005-0106

For

Redwood Oil Company
Robert Barbieri
Peter Van Alyea
Peggy Van Alyea

455 Yolanda Avenue
Santa Rosa

Sonoma County

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board) finds that:

1. Robert Barbieri, Peter Van Alyea and Peggy Van Alyea own property at 455 Yolanda Avenue in Santa Rosa, California (hereinafter site). Redwood Oil Company operates a bulk petroleum facility at the site.

2. Historical plant capacity includes 140,000 gallons of underground storage and 60,000 gallons of above ground storage. Site activities include past and current storage and distribution of gasoline, diesel, kerosene, ethanol, solvent, racing fuel, motor oil, hydraulic oil, gear oil, antifreeze, waste antifreeze, and waste oil, and storage, service and repair of product pumps and transport equipment.

3. Known discharges at the site have included:

    - Oil and wastewater discharges from a wash/pad rack to surface drainages on the west edge of the property into a drainage ditch in 1983.
    - Solvent spillage to the ground surface in 1984.
    - An approximate 1000-gallon kerosene discharge from an above ground tank in 1985.
    - Gasoline, diesel and motor oil range hydrocarbon discharges to soil beneath the former 550-gallon motor oil and 1,000-gallon waste oil tanks discovered in 1990.
    - Gasoline discharges from a leaking fuel line at the underground storage tank dispenser area in 1995.
    - A 55-gallon motor oil discharge to an offsite drainage ditch west of the site in 1997.
    - Gasoline, diesel and motor oil discharges to soil and groundwater beneath the former underground fuel storage tanks discovered in 1999.

- Separate phase hydrocarbon discharges measured in the on site water supply well at 0.48 feet in thickness discovered in 1999.

4. Redwood Oil Company, Robert Barbieri, Peter Van Alyea and Peggy Van Alyea are hereinafter referred to as the Dischargers.

5. Enforcement began in November 1990 with the issuance of Cleanup and Abatement Order (Order) No. 90-184. The Order required the Dischargers to provide a status report and a schedule for the implementation of a revised monitoring well installation work plan, implementation of the plan and submittal of a report of findings.

6. From 1990 to 2000, investigative work included the drilling of additional soil borings and installation of groundwater monitoring wells. The results revealed significant groundwater impacts including the presence of separate phase hydrocarbons in groundwater with deeper water bearing zone impacts from Methyl tert Butyl Ether (MtBE). Two water supply wells, one on site and another at property adjacent to the site, were tested. The results revealed the presence of petroleum hydrocarbons in both. During this ten-year period, ongoing and lengthy delays to site remediation investigation occurred.

7. In August 1998, a Corrective Action Plan (CAP) was submitted recommending limited over excavation at the time of tank removal combined with groundwater extraction, soil vapor extraction and air sparging. Two CAP addenda were submitted. A remedial action plan was submitted in July 1999, and amended in September 1999.

8. In December 1999, corrective action work was conducted including the removal of ten underground storage tanks. Groundwater samples collected beneath the tanks revealed the presence of total petroleum hydrocarbons as gasoline at 1,300,000 ug/l, total petroleum hydrocarbons as diesel at 150,000 ug/l, benzene at 4,700 ug/l and MtBE at 32,000 ug/l. Elevated levels of petroleum hydrocarbons were detected in soil.

9. In May 2000, Cleanup and Abatement Order No. R1-2000-34 was issued requiring the Dischargers to define the lateral and vertical extent of groundwater contamination, remove the remaining underground storage tanks, lines and dispensers, install a plume migration control system, and begin operation of the soil and groundwater treatment and plume migration control systems and submit reports. The Dischargers proposed the compliance dates, which were incorporated into the Order. The Order required the treatment system to begin operation by October 1, 2000.

10. During 2000, additional subsurface investigative work was conducted and the remaining underground storage tanks, lines and dispensers were removed. The treatment system was partially installed by October 1, 2000, but was not operating. By February 7, 2001, Regional Water Board staff found that the system was being installed contrary to design, the installation of the system was incomplete, the system

was not operating, and significant changes to the system's design had been made without notification to Regional Water Board staff.

11. In May 2001, the Executive Officer of the Regional Water Board issued Administrative Civil Liability Complaint No. R1-2001-39 for violations of Cleanup and Abatement Order No. R1-2000-34 for failing to begin treatment system operation by an extended compliance date of January 20, 2001. The Dischargers satisfied the $50,000.00 civil penalty with a $25,000.00 payment and completion of a Supplemental Environmental Project.

12. During 2001, repairs and modifications were made to the treatment system, allowing the system to begin operating and addressing impacts to the shallow water-bearing zone. Subsurface work continued to define the vertical extent of groundwater impacts including the installation of ten multi-level groundwater-monitoring wells with sampling ports ranging between 25 and 230 feet bgs. Sampling results from these wells revealed the presence of MtBE in groundwater up to 180 feet bgs.

13. During 2002 and 2003, the system continued operation. On August 26, 2003, Regional Water Board staff concurred with the Dischargers assertion that operation of the soil vapor extraction system was no longer cost effective due to low to zero vapor recovery rates. Regional Water Board staff requested a revised CAP to restore and protect groundwater. The revised CAP was due by October 26, 2003.

14. On November 12, 2003, the Dischargers submitted the Revised CAP to address groundwater impacts at the 75-foot depth. Groundwater extraction was not proposed in the Revised CAP because pumping at that depth might result in the draw down of contaminants. Enhanced bioremediation was also not proposed because the costs and zone of influence would likely be similar to zones of influence for ozone injection, and enhanced passive remediation would proceed much more slowly than active remediation. Ozone sparging was selected as the most technical and cost effective approach and a pilot test was proposed.

15. In a letter dated March 9, 2004, Regional Water Board staff concurred with the proposed pilot test. The Dischargers did not complete the ozone sparge pilot test.

16. On October 6, 2004, the Dischargers submitted the *Targeted Corrective Action Work Plan* and proposed to introduce compressed air in one well at a depth of 75-feet to enhance aerobic degradation of MtBE.

17. On January 27, 2005, Regional Water Board staff informed the Dischargers in writing that a revised CAP was due by March 13, 2005 and the *Targeted Corrective Action Work Plan* was not acceptable because:

    - Significant impacts exist including shallow and deeper water bearing zones. As of January 2005, TPHg, TPHd and benzene was detected in shallow groundwater at up to 24,000, 15,000 and 3,800 ug/l, respectively. MtBE was detected at up to

51,000 ug/l. MtBE was also detected as high as 1900 ug/l at 49-59 feet bgs, 2,300 ug/l at 75-feet bgs, at 970 ug/l at 143 feet bgs and 920 at 165 feet bgs.

- The Targeted CAP was not prepared according to Title 23, Section 2725.
- Air injection in one well at one depth will not restore and protect water quality on and off site at multiple depths.

18. On March 14, 2005, the Dischargers requested an extension for the revised CAP submittal to May 15, 2005. In a letter dated April 12, 2005, Regional Water Board staff granted the extension.

19. On May 19, 2005 the Feasibility Study Workplan – Corrective Action Plan was submitted. The Dischargers propose to collect groundwater samples to measure biodegradation parameters to determine whether passive and/or enhanced biodegradation are potential viable remedial options for ground water in the deeper zones. On July 22, 2005 in a letter, the Executive Officer informed the Dischargers that evidence does not exist to show that passive remediation or enhanced remediation has been effective and is not an acceptable cleanup alternative at this site.

20. The Dischargers have caused or permitted, cause or permit, or threaten to cause or permit waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance. Continuing discharges are in violation of the Porter-Cologne Water Quality Control Act and provision of the Water Quality control Plan for the North Coast Region (Basin Plan).

21. Beneficial uses of area groundwater include domestic, irrigation and industrial supply. Numerous water supply wells are located in close proximity to the Site.

22. The California Water Code, and regulations and policies developed there under require cleanup and abatement of discharges and threatened discharges of waste to the extent feasible. Cleanup and abatement activities are to provide attainment of background levels of water quality, or the highest water quality that is reasonable if background levels of water quality cannot be restored. Alternative cleanup levels greater than background concentrations shall be permitted only if the discharger demonstrates that: it is not feasible to attain background levels; the alternative cleanup levels are consistent with the maximum benefit to the people of the State; alternative cleanups levels will not unreasonably affect present and anticipate beneficial uses of such water; and they will not result in water quality less than prescribed in the Basin Plan and Polices adopted by the State and Regional water Board.

23. 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 protective water quality criteria levels. Exhibit 1, attached and made part of this Order, sets out the water quality objectives for ground and surface water.

24. Discharge prohibitions contained in the Basin Plan apply to this site. State Water Resources Control Board Resolution 68-16 (*Statement of Policy With Respect To Maintaining High Quality of Waters in California*) applies to this site. State Water Resources Control Board Resolution 92-49 applies to this site and sets out the *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Section 13304 of the California Water Code*.

25. The Water Quality Control Plan for the North Coast Region (Basin Plan) Resolution 93-59 applies to this site, which states "With respect to all underground petroleum tank cases in this Region, the Regional Water Board's highest priority will be to eliminate pollutant sources through tank removal, free product removal, and removal of contaminated soil to the extent practicable."

26. Pursuant to California Water Code Section 13304, the Dischargers are 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 Cleanup and Abatement Order.

27. The Regional Water Board will ensure adequate public participation at key steps in the remedial action process, and shall ensure that concurrence with a remedy for cleanup and abatement of the discharges at the site shall comply with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) ("CEQA").

28. The issuance of this Cleanup and Abatement Order is an enforcement action being taken for the protection of the environment and, therefore, is exempt from the provisions of CEQA in accordance with Sections 15308 and 15321, Chapter 3, Title 14 of the California Code of Regulations.

29. Any person affected by this action of the Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The petition must be received by the State Water Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request. In addition to filing a petition with the State Water Board, any person affected by this Order may request the Regional Water Board to reconsider this Order. To be timely, such request must be made within 30 days of the date of this Order. Note that even if reconsideration by the Regional Water Board is sought, filing a petition with the State Water Board within the 30-day period is necessary to preserve the petitioner's legal rights. If the

Dischargers choose to appeal the Order, the Dischargers are advised that they must comply with the Order while the appeal is being considered.

30. 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 at the facility consistent with the California Water Code. This Order may be revised by the Regional Water Board Executive Officer as additional information becomes available.

THEREFORE, IT IS HEREBY ORDERED that CAO Order Nos. R1-2000-34 and R1-2002-0115 are hereby rescinded and, pursuant to California Water Code Sections 13267(b) and 13304, the Dischargers shall cleanup and abate the discharge and threatened discharges forthwith according to the following directives of this Order:

General Directives

A. Conduct all investigative work under the direction of a California professional civil engineer or registered geologist experienced in soil and groundwater assessment and remediation. All work plans and reports must be stamped and signed by the licensed professional in responsible charge of the project.

B. Conduct all engineering work including treatment system design and installation under the direction of a California professional civil engineer.

Corrective Action

C. Complete all necessary analytical and pilot tests within 60 days of issuance of this Order necessary to prepare an acceptable feasibility study to evaluate alternatives for remedying or mitigating the actual or potential adverse effects of the unauthorized release. An acceptable feasibility study must include consideration of cleanup technologies as described in Finding No. 23 of this Order. The feasibility study must identify the length of time until project completion for the various technically feasible alternatives or combination of alternatives and a comparison of costs.

D. Submit the feasibility study within 90 days of issuance of this Order.

E. Submit an acceptable Corrective Action Plan prepared according the requirements of Title 23, Section 2725 within 45 days of the Regional Water Board Executive Officer's acceptance of the Feasibility Study. The Corrective Action Plan must include design plans needed for the modification or installation of a treatment system.

F. Complete system installation and begin operation within 90 days of the Regional Water Board Executive Officer's concurrence with the Corrective Action Plan.

G. Continue with corrective action until the Regional Water Board Executive Officer determines that corrective active is no longer necessary.

H. Comply with all local agency regulatory requirements.

I. Complete any additional work deemed reasonably necessary by the Regional Water Board Executive Officer to abate and cleanup the discharge of waste.

J. If for any reason, the Dischargers are unable to perform any activity or submit any documentation in compliance with the work schedule contained in this Order or submitted pursuant to this Order and approved by the Executive Officer, the request must be submitted 5 days in advance of the due date and shall include justification of this delay including the good faith effort performed to achieve compliance with the due date. The extension request shall also include a proposed time schedule with new performance dates for the due date in question and all subsequent dates dependent on the extension. A written extension may be granted for good cause, in which case the Order will be revised accordingly.

Ordered by _____

Catherine E. Kuhlman
Executive Officer

October 27, 2005

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