D.C. - 7361

/EPA

Los Angeles
Regional Water
Quality Control
Board

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Pete Wilson
Governor

February 2, 1998

Mr. H. P. Singh
Environmental Advisor
Mobil Oil Corporation
Torrance Refinery
3700 West 190th Street
Torrance, CA 90509-2929

MOBIL OIL CORPORATION - LAND TREATMENT OF PETROLEUM HYDROCARBON CONTAMINATED SOIL - WASTE DISCHARGE REQUIREMENTS (FILE NO. 85-7)

Reference is made to the tentative Waste Discharge Requirements mailed to you on December 18, 1997, for the land treatment of petroleum hydrocarbon contaminated soil at the Mobil Oil Torrance Refinery.

Pursuant to Division 7 of the California Water Code, this Board at a public meeting held on January 26, 1998, reviewed these tentative requirements, considered all factors in the case, and adopted Order No. 98-012 (copy attached) relative to this waste discharge.

You are required to implement the new monitoring program as stated in the Monitoring and Reporting Program on the effective date of this Order. Please reference all technical and monitoring reports to our compliance File No. 7361. We would appreciate it if you would not combine other reports, such as progress or technical reports, with your monitoring reports but would submit each type of report as a separate document.

If you have any questions, please call David Hung at 213/266-7611.

J. E. ROSS, Unit Chief
Site Cleanup Unit

cc: See Mailing List
Enclosures

cc: Jorge Leon, State Water Resources Control Board, Office of Chief Counsel
John Youngerman, State Water Resources Control Board, Division of Water Quality
Department of Toxic Substances Control, Region 4, Long Beach
Department of Fish and Game, Region 5
South Coast Air Quality Management District
Los Angeles County, Department of Public Works
Los Angeles County, Department of Health Services
Los Angeles County Fire Department, Health Hazardous Materials Division
City of Torrance

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. 98-012

WASTE DISCHARGE REQUIREMENTS
FOR
MOBIL OIL CORPORATION
(LAND TREATMENT OF PETROLEUM HYDROCARBON CONTAMINATED SOIL)
(FILE NO. 85-7)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. Mobil Oil Corporation, hereafter called discharger, located at 3700 West 190th Street, Torrance, California has filed a report of waste discharge and has applied for a revision to current waste discharge requirements which will allow land treatment of petroleum hydrocarbon contaminated soil containing methyl tertiary butyl ether (MTBE).

   Approximately, 1,000 cubic yards of soil containing gasoline and MTBE was received from an off-site Mobil facility located at 12054 Wilshire Boulevard, Santa Monica, California. The soil is placed in two piles in a land treatment cell and treated via vapor extraction.

2. Discharger has been performing land treatment of petroleum hydrocarbon contaminated soil in accordance with Waste Discharge Requirements, Order No. 94-015 adopted by this Board on February 28, 1994.

3. Discharger has routinely performed land treatment of petroleum hydrocarbon contaminated soil excavated from spills, leaks and other unauthorized discharges at the Torrance refinery. In addition, other Mobil owned facilities generate petroleum hydrocarbon contaminated soil intermittently from miscellaneous excavation for installation of new or modified equipment and cleanup of petroleum spills, leaks, and other unauthorized discharge at various off-site facilities.

4. Excavated soils meeting acceptable clean-up levels will be deposited in Reservoir 15, a former residual fuel storage impoundment located at the northeastern corner of the refinery, as backfill. This backfilling will not result in degradation of groundwater quality beneath the site. The reservoir consists of an oval-shaped surface impoundment encompassing approximately 9.2 acres with a perimeter earthen levee. Since 1985, a pump and all product piping has been

removed from the reservoir.

5. Contaminated soils containing high concentration of total petroleum hydrocarbon (TPH) will be treated at an all weather land treatment facility (approximately 90,000 square feet area) equipped with a liner and leachate collection system. High concentration is defined as: TPH above 2,000 ppm gasoline; TPH above 20,000 ppm diesel; benzene above 5 ppm; toluene, ethylbenzene, xylene (TEX) above 100 ppm. In no case will soil vapors exceed 50 ppm of volatile organic compounds (VOCs) as measured by an Organic Vapor Analyzer (OVA) per South Coast Air Quality Management District (SCAQMD) Rule 1166. These soils will be treated by bioremediation and will be used as backfill in Reservoir 15 when the cleanup levels are reached. Four lysimeters have been installed below the treatment site and moisture will be extracted every year and tested using EPA Method 624 for volatile organic compounds including MTBE, and EPA Method 8015 for gasoline and diesel.

   Contaminated soils having VOCs vapor concentrations greater than 50 ppm and/or MTBE concentrations greater than 0.1 ppm will be placed within the land treatment cell to undergo vapor extraction and then stockpiled in a staging area. Alternately contaminated soils containing MTBE concentrations greater than 0.1 ppm may be treated by other appropriate technology which is capable of attaining the soil cleanup levels for backfill in Reservoir 15. A lined staging area (approximately 40,000 square feet) is located to the north of storage tanks 2500x3 and 2500x4 and to the east of the stormwater retention basin. Soils stockpiled in the staging area will be covered during the rainy season (November through March) to prevent rainwater infiltration. When VOCs are reduced to less than 50 ppm, this soil will be bioremediated, if necessary to meet soil cleanup goals. The proposed all weather land treatment site including the vapor extraction system is also located north of the stormwater retention basin.

6. Moderately contaminated soils (TPH below 2,000 ppm gasoline and 20,000 ppm diesel and with benzene below 5 ppm, TEX below 100 ppm and vapors not exceeding 50 ppm of VOCs) which do not meet interim clean-up levels for Reservoir 15 will be treated in a dry weather land treatment site located within Reservoir 15. If bioremediation is not completed before the wet season begins, the site will be covered during rainy periods (between November and March) to avoid rainwater infiltration. Once the soil is treated and verified to be at cleanup levels, it will be covered with additional layers of contaminated soil. The

new layer will be bioremediated until the clean-up levels are met. This process will continue for incoming contaminated soils until Reservoir 15 is full. The cumulative size of the actively managed land treatment sites within the reservoir will not exceed 360,000 square feet. A groundwater monitoring well has been installed downgradient of, and adjacent to Reservoir 15.

7. Soils in any of the waste management areas that are shown to have concentrations of TPH gasoline below 100 ppm and TPH diesel below 1,000 ppm and MTBE at non-detect concentrations (with a detection limit of 50 ppb) are removed from the managed areas and stockpiled for reuse purposes within the refinery.

8. In August, 1991, EMCON conducted an environmental assessment of the Reservoir 15 area. Seventy-five exploratory soil borings were drilled to depths of up to 40 feet below grade. The upper 40 feet of soils appear to be generally interbedded silty sands, silts, and clay. The assessment identified approximately 30,000 cubic yards of residual oil-impacted soil (TRPH above 1,000 ppm) at depths generally shallower than 12 feet and primarily within the top 5 feet. Within the impacted zones, VOCs up to 20 ppm and polynuclear aromatics (PNAs) up to 37 ppm were detected. Perched water was reportedly observed at depths of 25 and 35 feet.

9. In July and August of 1993, five cone penetrometer samples (CPT) and three soil borings were performed at Reservoir 15 for collecting lithologic data. Soil samples were analyzed for a variety of chemical and geotechnical parameters. In addition, a total of five groundwater samples were collected from the perched and regional groundwater aquifer using a hydropunch groundwater sampler. Hydraulic conductivity tests were also conducted for the selected soil samples.

10. Soil was analyzed according to EPA methods 418.1 and 8015M (for diesel) and exhibited concentrations of TPH up to 13,000 and 26,000 ppm, respectively, in the near-surface soils. No benzene or toluene were detected in any of the samples analyzed, but ethylbenzene and xylenes were detected at concentrations up to 5.0 and 6.4 ppm, respectively. Five VOC and three semi-volatile organics were detected at concentrations up to 11 ppm and 12 ppm, respectively. None of the three groundwater samples from the regional aquifer nor the two perched water samples exhibited any detectable concentration of VOCs.

11. The geologic assessment of the Reservoir 15 site reveals a highly stratified lithology from ground surface to the top of the regional Gardena aquifer. Two continuous, relatively thin clay layers stratigraphically above and below a continuous silty sand layer form approximately the top 15 feet of the soil profile. Below these continuous layers, the lithology is highly varied and discontinuous containing sands, silts, and clays. Perched groundwater zones are present at various depth and in various locations beneath the reservoir. The top of a continuous layer of uniform poorly-graded dense sand is located approximately 57 feet below grade. Groundwater in this aquifer zone was encountered beneath the site between 63 and 67 feet below grade.

12. Fate and transport modeling (SESOIL) was used in the establishment of the cleanup levels. The modeling was performed using a one-dimensional vadose zone fate and transport computer model. Site-specific data was the primary source of input to the model. When site-specific data was not available, the most conservative estimate was used. Based on the results of the fate and transport modeling, BTEX, TPH gasoline, and TPH diesel can be left in Reservoir 15 backfill soils at concentrations of up to 5 ppm, 100 ppm, 100 ppm, 100 ppm, 1,000 ppm and 10,000 ppm, respectively. Additionally, soil cleanup level for MTBE is 0.1 ppm which is determined by an attenuation factor five times a health advisory limit (0.02 ppm) of U.S. Environmental Protection Agency. No measurable impact to groundwater beneath Reservoir 15 will occur if backfill soils do not exceed these proposed threshold concentrations.

13. Field observations and soil screening will be used to gather preliminary data on the soil. A sampling and analysis plan will be implemented. The collected soil samples will be analyzed by a state certified laboratory. Soils classified as hazardous waste upon excavation will not be treated in the land treatment facility.

14. This Board adopted a revised Water Quality Control Plan for the Los Angeles River Basin on June 13, 1994. The Plan contains water quality objectives for the Ground Water Basin which lies within the Coastal Plain Subunit. The requirements contained in this Order, as they are met, will be in conformance with the goals of the Water Quality Control Plan.

15. The beneficial uses of the ground water in the Coastal Plain Ground Water Basin of Los Angeles County are: municipal,

agricultural water supply, industrial service and process water supply. Lower aquifers are usually of best quality and quantity.

16. This project involves in action for protection of the environment, and as such, is exempt from the provisions of the California Environmental Quality Act (public Resources Code, Section 21000, et. seq.) in accordance with Title 14, California Code of Regulations, Chapter 3, Section 15308.

The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

The Board in a public meeting heard and considered all comments pertaining to the discharge and to the tentative requirements.

IT IS HEREBY ORDERED, that Mobil Oil Corporation shall comply with the following:

A. Requirements

1. The operation of land treatment facility shall be in conformance with Title 23, Division 3, Chapter 15, of the California Code of Regulations regarding this discharge of waste to land, including but not limited to Sections 2510; 2532(b-5); 2549; 2550; 2580; 2584 and 2590.

2. Wastes discharged at the land treatment facility for bioremediation shall be limited to petroleum hydrocarbon contaminated soil as proposed. The land treatment process, which includes water, nutrients and bacterial addition to soil along with soil aeration in the treatment zone, shall be conducted in such a way that no pollutants/contaminants are added to surface water or groundwater.

3. Soil meeting soil cleanup levels established by fate and transport modeling and the site specific MTBE cleanup level (0.1 ppm) may be suitable for backfilling at Reservoir 15. The soil cleanup levels for this project are applied under the following conditions a) the facility remains an oil refinery and; b) wastes discharged or reclaimed for reuse as soil backfill at Reservoir 15 shall not contain any substance in concentrations that threaten or impact public health or

the environment.

4. For any proposed development within Reservoir 15 or the land treatment site closure and post-closure period, as defined in Title 23, Division 3, Chapter 15 of the CCR, the discharger shall submit a written notification to this Board 30 days prior to such proposed development.

5. During the treatment operations, surface runoff from the drainage area tributary to this site shall be prevented from passing over or percolating through the treatment zone. Adequate facilities shall be provided to divert all surface runoff away from the treatment area.

6. The land treatment site shall be lined in such a way that storm water falling directly on the treatment zone will be contained. Standing water within the contained treatment zone shall be pumped out immediately after testing and removed to treatment facilities on site or disposed of at a legal disposal site. For the purpose of this requirement, a legal point of disposal is defined as one for which waste discharge requirements have been established by a California Regional Water Quality Control Board, and which is in full compliance therewith. In the event that standing water is pumped to the adjacent storm water retention basin (for discharge to the Dominguez Channel), sampling and analysis shall be performed prior to the discharge. The water shall be analyzed for VOCs including MTBE using EPA Method 624 and for oil and grease using EPA Method 413.1. Discharge concentrations of VOCs and oil and grease shall not exceed the limitations specified in the National Pollutant Discharge Elimination System (NPDES) permit (NPDES Permit No. CA0055387, Order No. 93-003) adopted by this Board on January 25, 1993.

7. No condition of pollution or nuisance shall be caused by the handling, treatment or reuse of the wastes or from any excavation operation conducted in association with this land treatment operation.

8. Odors from the handling, treatment or reuse of these wastes shall not be perceivable beyond the limits of the property owned or controlled by the discharger. The discharger shall demonstrate, to the satisfaction of the Executive Officer, a positive method for odor control, prior to beginning a full-scale land treatment operation.

9. All required state and local health department permits and/or variances and air quality permits and/or variances shall be obtained by the discharger prior to commencing the land treatment operation.

10. A sampling and analysis program shall be implemented, in accordance with a Monitoring and Reporting program prescribed by the Executive Officer, to verify that complete degradation and transformation of the petroleum hydrocarbon is occurring to levels approved by the Executive Officer.

11. Maximum land treatment zone thickness shall not exceed 18 inches or the maximum depth of penetration of the aeration equipment, whichever is less, except with prior written approval of the Executive Officer.

B. Provisions

1. The Regional Board and other authorized representative shall be allowed:

   a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;

   b. Access to copy any records that are kept under the conditions of this Order;

   c. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order, and;

   d. To photograph, sample, and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by applicable laws or regulations.

2. The discharger shall obtain all permits necessary for any on-site land treatment program from the appropriate State and local governmental agencies as required by law.

3. This Order does not exempt the discharger from compliance with any other laws, regulations, or ordinances which may be applicable, it does not legalize these waste treatment and disposal facilities and it leaves unaffected any

further restraints on those facilities which may be contained in other statues or required by other agencies.

4. This Order is not intended to stop or redirect any investigation or mitigation activities not required by this Order but ordered by this Regional Board or other agency.

5. A copy of this Order shall be maintained at the site, where it will be available at all times to operating personnel.

6. In accordance with Section 13260 of the Water Code, the discharger shall file a report of any material change or proposed change in the character, location or volume of the discharge.

7. In the event of any change in name, ownership, or control of these waste disposal facilities, the discharger shall notify this Board of such change and shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to the Board.

8. The discharger shall notify this Board immediately by telephone of any adverse condition resulting from this discharge or from operations producing this waste discharge, such notifications to be affirmed in writing with in one week from the date of such occurrence.

9. This Regional Board considers the discharger to have continuing responsibility for correcting any problems which may arise in the future as a result of the backfilled soil to the Reservoir 15 during subsequent use of the land for other purposes.

10. In accordance with Section 13267 of the Water Code, the discharger shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted.

11. Following completion of the land treatment program on site, the discharger shall implement a land treatment facility closure plan which complies with the requirements of Article 8, Chapter 15, Division 3, Title

23, of the CCR.

12. In accordance with Section 13263 of the Water Code, these waste discharge requirements are subject to periodic review and revision by this Regional Board.

13. An appropriate Health and Safety Plan for all assessment and mitigation activities at the site shall be filed with this Board prior to commencing any land treatment activities.

c. Rescission

Order No. 94-015 adopted by this Board on February 28, 1994, is hereby rescinded.

I, Dennis A. Dickerson, 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, Los Angeles Region on January 26, 1998.

_____
DENNIS A. DICKERSON
Executive Officer

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. 7361
FOR
MOBIL OIL CORPORATION
(LAND TREATMENT OF PETROLEUM HYDROCARBON CONTAMINATED SOIL)
(FILE NO. 85-7)

The discharger shall implement this Monitoring and Reporting Program on the date of issuance of the Waste Discharge Requirements. The reports detailed in Order No. 98-012 shall be submitted as required.

Monitoring reports shall be submitted by the date shown in the following schedule:

Reporting Period	Report Due
January - March	April 15
April - June	July 15
July - September	October 15
October - December	January 15

I. GROUND WATER MONITORING

The following shall constitute the ground water monitoring program for the well immediately adjacent to the Reservoir 15:

Parameter	Units	Frequency
Water elevation from datum (0.01 foot)		Semi-annually
Total dissolved solids	mg/ℓ	Semi-annually
Turbidity	NTU	Semi-annually
pH	pH units	Semi-annually
Total petroleum hydrocarbon (EPA 418.1 and Modified 8015)	µg/ℓ	Semi-annually
CAM metals	mg/l	Semi-annually
Volatile organic compounds including MTBE (EPA Method 624)	µg/ℓ	Semi-annually

II. LAND TREATMENT FACILITY SOIL MONITORING

A soil sampling grid shall be established for the land treatment site and the sampling locations shall be located where

representative soil samples can be obtained. Verification soil samples shall be collected and analyzed for the following parameters at a minimum of once per lift. A final verification sample shall be taken of the treated soil at the end of treatment and just prior to removal and reuse at a frequency of one sample per 500 cubic yards.

Parameter	Unit
Volume of material treated (Cumulative)	Cubic yards
Volume during report period	Cubic yards
Bacteria plate count[1]	Colonies/gm
Total petroleum hydrocarbons (Modified EPA Method 8015 and EPA Method 418.1[1])	mg/kg
CAM metals[1]	mg/kg
Volatile organic compounds including MTBE (EPA Methods 8010/8020)	µg/kg

1. At a minimum of one sample per 1,000 cubic yards

III. GENERAL PROVISIONS FOR SAMPLING AND ANALYSIS

A. All sampling, sample preservation, and analysis shall be performed in accordance with the latest edition of "Guidelines Establishing Test Procedure for Analysis of Pollutants," promulgated by the United States Environmental Protection Agency.

B. All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services, or approved by the Executive Officer. No changes shall be made in sampling points without prior approval of the Executive Officer.

C. This Regional Board's laboratory report forms shall be used in order to maintain an adequate quality assurance and quality control for all laboratory analytical work performed for the land treatment project.

D. The discharger shall maintain all sampling and analytical results, including date, exact location, and time of sampling,

date analysis were performed, name of analyst, analytical techniques used, and results of all analyses. Such result shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board.

E. Verification soil sampling shall be performed in Reservoir 15 annually for the first three years and bi-annually thereafter to confirm the fate and transport model prediction of the contaminant migration. Ten samples shall be taken at five locations. The samples shall be taken at 5 feet and 15 feet below 1993 grade and analyzed using EPA Method 8020 for BTEX and MTBE and EPA Method 8015 for TPH gasoline and diesel. Reporting of this data shall be submitted with the monitoring report to this Board. The first five years of monitoring is primarily to establish a baseline.

F. During operation of the vapor extraction system for contaminated soils having VOCs greater than 50 ppm and for soils containing MTBE, a sampling and analysis program for vapor and soil shall be implemented to verify that complete remediation of the VOCs is occurring to levels approved by the Executive Officer. Verification sampling shall be performed when operational vapor data shows the required clean-up levels have been attained. For verification sampling, the soil shall be tested using EPA Method 8015 for TPH gasoline and diesel and EPA Method 8240 for VOCs including MTBE at a minimum frequency of one sample per 500 cubic yards. Soils with high VOCs concentration greater than 50 ppm and MTBE concentration greater than 0.1 ppm shall not be backfilled in Reservoir 15 or reused within the refinery. Reporting of this data shall be submitted with the quarterly monitoring report to this Board.

IV. SPECIFIC REPORTING REQUIREMENTS

A. The following technical reports shall be filed with the Regional Board:

1. A "Petroleum Hydrocarbon Contamination Removal Report" shall be submitted quarterly. The report shall identify the source of contaminated soil; the level of contamination for the threshold constituents specified in the requirements, except for volumes less than five cubic yards, report all available contamination data; and

quantification of the excavated soil volume. For volumes less than five cubic yards, available contamination data is defined as data that is used to judge that the threshold constituent values are not exceeded.

2. A "Final Project Completion Report" shall be submitted within 30 days of completing all final verification sampling, summarizing the final hydrocarbon contamination levels of the land treated soils, including laboratory analysis data, and indicate the quantity and the final disposition of the land treated material. A statement, signed by a responsible official of the discharger, shall be included stating that the land treatment was completed in accordance with the requirements and provisions of this Order and all other signed statements required by this Order shall also be included.

3. In the event that hazardous, designated or other unacceptable wastes other than petroleum hydrocarbon waste are detected in the land treatment site or Reservoir 15, the type, source, quantity and disposition of those wastes shall also be reported. If no unacceptable wastes are detected during the monitoring period, the report shall so state.

B. Each of the above three technical reports submitted shall contain the following minimum information:

1. Quantity of waste material treated during the reporting period.

2. Analytical results from any of the ground water monitoring, as required, land treatment zone soil sampling and soil monitoring.

C. All technical reports prepared for submittal to the Regional Board shall be signed by either a California registered professional engineer, a registered geologist, or certified engineering geologist.

D. For every item where the requirements are not met the discharger shall submit a statement of the actions undertaken or proposed, together with a timetable, to bring the discharge back into full compliance with the requirements at the earliest time.

E. In reporting the monitoring data, the discharger shall arrange the data in tabular form so that the data, the constituents, and the concentrations are readily discernible. The data shall be summarized to determine compliance with waste discharge requirements and, where applicable, shall include receiving ground water observations.

F. Monitoring reports submitted to the Regional Board shall be signed by:

1. In the case of corporation, principal executive officer at least the level of Vice President or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which discharge originates;

2. In case of partnership, a general partner;

3. In case of sole proprietorship, the proprietor;

4. In the case of a municipal, state or public facility, either a principal executive officer, ranking elected official, or other duly authorized employee.

Each report shall contain the following completed declaration:

" I declare under penalty of perjury that the foregoing is true and correct.

Executed on the day of_____ at ___

_____ (Signature)

_____ (Title)"

Ordered by _____
DENNIS A. DICKERSON
Executive Officer

Date: January 26, 1998

B.C. 7361
OIL/CA

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. 94-015

WASTE DISCHARGE REQUIREMENTS
FOR
MOBIL OIL CORPORATION
(LAND TREATMENT OF PETROLEUM HYDROCARBON CONTAMINATED SOIL)
(FILE NO. 85-7)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. Mobil Oil Corporation (Mobil) located at 3700 West 190th Street, Torrance, California, hereafter called discharger, has filed a Report of Waste Discharge for the land treatment of petroleum hydrocarbon contaminated soil excavated from spills, leaks and other unauthorized discharges at the Torrance refinery. In addition, other Mobil owned facilities generate non-hazardous petroleum hydrocarbon contaminated soil intermittently from miscellaneous excavations incident to the installation of new or modified equipment and cleanup of petroleum spills, leaks, and other unauthorized discharge at various off-site facilities.

2. Excavated soils meeting proposed interim clean-up level will be deposited in Reservoir 15, a former residual fuel storage impoundment located at the northeastern corner of the refinery, as compacted backfill without resulting in degradation of groundwater quality beneath the site. The proposed land treatment strategy will allow the use of these excavated and/or bioremediated soils as backfill in Reservoir 15. The reservoir consists of an oval-shaped surface impoundment encompassing approximately 9.2 acres with a perimeter earthen levee. Since 1985, a pump and all product piping has been removed from the reservoir.

3. Contaminated soils containing high concentration of total petroleum hydrocarbon (TPH) will be treated at an all weather land treatment facility (approximately 90,000 square feet) equipped with a liner and leachate collection system. High concentration is defined as: TPH above 2,000 ppm gasoline; TPH above 20,000 ppm diesel; benzene above 5 ppm; toluene, ethylbenzene, xylene (TEX) above 100 ppm. However, in no case shall soil vapors exceed 50 ppm of volatile organic compounds (VOCs) as measured by an Organic Vapor Analyzer (OVA) per South Coast Air Quality Management District (SCAQMD) Rule 1166. These soils will be treated by bioremediation and will

be used as backfill in Reservoir 15 when the interim cleanup levels are reached. Four lysimeters will be installed below the treatment site and moisture will be extracted every year and tested using EPA Method 624 for volatile organic, and EPA Method 8015 for gasoline and diesel.

Non-hazardous soils having VOCs vapor concentrations greater than 50 ppm will be placed within the above-mentioned lined land treatment site to undergo a vapor extraction process or in a staging area when conditions preclude placement of the soil in Reservoir 15 or the lined land treatment site. A proposed lined staging area (approximately 40,000 square feet) will be located to the north of storage tanks 2500x3 and 2500x4 and to the east of the stormwater retention basin. It will be covered to prevent rain intrusion. When VOCs are reduced to less than 50 ppm, this soil will be bioremediated, if necessary. The proposed all weather land treatment site including the vapor extraction system is located north of the stormwater retention basin.

4. Moderately contaminated soils (TPH below 2,000 ppm gasoline, TPH below 20,000 ppm diesel, benzene below 5 ppm, TEX below 100 ppm and vapors not exceeding 50 ppm of VOCs) which do not meet interim clean-up levels for Reservoir 15 will be treated in a dry weather land treatment site located within Reservoir 15. If bioremediation is not completed before the wet season begins, the site will be covered during rainy periods (between November and March) to avoid rainfall infiltration. Once the soil is treated and verified to be at interim cleanup levels, it will be covered subsequently with another layer of moderately contaminated soil. The new layer of the contaminated soils will be bioremediated until the interim clean-up levels are met. Same process will continue and apply to the incoming moderately contaminated soils until the Reservoir 15 is full. The cumulative size of the actively managed land treatment sites within the reservoir will not exceed 360,000 square feet. A groundwater monitoring well will be installed downgradient of, and immediately adjacent to, Reservoir 15.

5. Soils in any of the managed areas that are shown to have concentrations of TPH gasoline below 100 ppm and TPH diesel below 1,000 ppm may be removed from the managed areas and stockpiled for any use within the refinery.

6. In August, 1991, EMCON conducted an environmental assessment of the Reservoir 15 area. Seventy-five exploratory soil borings were drilled to depths of up to 40 feet below grade.

The assessment identified approximately 30,000 cubic yards of residual oil-impacted soil (TRPH above 1,000 ppm) at depths generally shallower than 12 feet and primarily within the top 5 feet. Within the impacted zones, VOCs up to 20 ppm and polynuclear aromatics (PNAs) up to 37 ppm were detected. Perched water was reportedly observed at depths of 25 and 35 feet. The upper 40 feet of soils appear to be generally interbedded silty sands, silts, and clay.

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source of input to the model. When site-specific data was not available, the most conservative estimate was used. Based on the results of the fate and transport modeling, BTEX, TPH gasoline, and TPH diesel can be left in Reservoir 15 backfill soils at concentrations of up to 5 ppm, 100 ppm, 100 ppm, 100 ppm, 1,000 ppm and 10,000 ppm, respectively. No measurable impact to groundwater beneath Reservoir 15 will occur if backfill soils do not exceed these proposed threshold concentrations.

11. Field observation and soil screening will be used to gather preliminary data on the soil. A sampling and analysis plan will be implemented. The collected soil samples will be analyzed by the state certified laboratory. Soils classified as hazardous waste upon excavation will not be treated in the land treatment facility.

12. This Board adopted a revised Water Quality Control Plan for the Los Angeles River Basin on May 18, 1992. The Plan contains water quality objectives for the Ground Water Basin which lies within the Coastal Plain Subunit. The requirements contained in this Order, as they are met, will be in conformance with the goals of the Water Quality Control Plan.

13. The beneficial uses of the ground water in the Coastal Plain Ground Water Basin of Los Angeles County are: municipal, agricultural water supply, industrial service and process water supply. Lower aquifers are usually of best quality and quantity.

14. This waste discharge requirement is being taken for the protection of the environment and, as such, is exempt from the provisions of the California Environmental Quality Act (public Resources Code, Section 21000, et. seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

The Board in a public meeting heard and considered all comments pertaining to the discharge and to the tentative requirements.

IT IS HEREBY ORDERED, that Mobil Oil Corporation shall comply with the following:

A. Requirements

1. The operation of land treatment facility shall be in conformance with Title 23, Division 3, Chapter 15, of the California Code of Regulations regarding this discharge of waste to land, including but not limited to Sections 2510; 2532(b-5); 2549; 2550; 2580; 2584; 2590.

2. Wastes discharged at the land treatment facility for bioremediation shall be limited to petroleum hydrocarbon contaminated soil as proposed. The land treatment process, which includes water, nutrients and bacterial addition to soil along with soil aeration in the treatment zone, shall be conducted in such a way that no contaminants are added to surface water or groundwaters.

3. Soil meeting interim soil cleanup level established by fate and transport modeling may be suitable for backfilling at Reservoir 15. The interim soil cleanup level for this project is applied under the following conditions : a) the facility remains an oil refinery and, b) wastes discharged or reclaimed for reuse as soil backfill at Reservoir 15 shall not contain any substance in concentrations that threaten or impact public health or the environment.

4. For any proposed development within Reservoir 15 or the land treatment site, closure and post-closure period, as defined in Title 23, Division 3, Chapter 15 of the CCR, the discharger shall submit a written notification to this Board 30 days prior to such proposed development.

5. During the treatment operations, surface runoff from the drainage area tributary to this site shall be prevented from passing over or percolating through the treatment zone. Adequate facilities shall be provided to divert all surface runoff away from the treatment area.

6. The land treatment site shall be lined in such a way that storm water falling directly on the treatment zone will be contained. Standing water within the contained treatment zone shall be pumped down immediately after testing and removed to treatment facilities on site or disposed of at a legal disposal site. For the purpose of this requirement, a legal point of disposal is defined as one for which waste discharge requirements have been established by a California Regional Water Quality

Control Board, and which is in full compliance therewith. In the event that standing water is pumped to the adjacent storm water retention basin, sampling and analysis shall be performed prior to the discharge. The water shall be analyzed for VOCs using EPA Method 624 and for oil and grease using EPA Method 413.1. Discharge concentrations of VOCs and oil and grease shall not exceed the limitations specified in the National Pollutant Discharge Elimination System (NPDES) permit (NPDES Permit No. CA0055387, Order No. 93-003) adopted by this Board on January 25, 1993.

7. No condition of pollution or nuisance shall be caused by the handling, treatment or reuse of the wastes or from any excavation operation conducted in association with this land treatment operation.

8. Odors from the handling, treatment or reuse of these wastes shall not be perceivable beyond the limits of the property owned or controlled by the discharger. The discharger shall demonstrate, to the satisfaction of the Executive Officer, a positive method for odor control, prior to beginning a full-scale land treatment operation.

9. All required state and local health department permits and/or variances and air quality permits and/or variances shall be obtained by the discharger prior to commencing the land treatment operation.

10. During full-scale operation of the land treatment facility, a sampling and analysis program shall be implemented, in accordance with a Monitoring and Reporting program prescribed by the Executive Officer, to verify that complete degradation and transformation of the petroleum hydrocarbon is occurring to levels approved by the Executive Officer.

11. Maximum land treatment zone thickness shall not exceed 18 inches or the maximum depth of penetration of the aeration equipment, whichever is less, except with prior written approval of the Executive Officer.

B. Provisions

1. The Regional Board and other authorized representative shall be allowed:

   a. Entry upon premises where a regulated facility or

activity is located or conducted, or where records are kept under the conditions of this Order;

b. Access to copy any records that are kept under the conditions of this Order;

c. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order, and;

d. To photograph, sample, and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by applicable laws or regulations.

2. The discharger shall obtain all permits necessary for any on-site land treatment program from the appropriate State and local governmental agencies as required by law.

3. This Order does not exempt the discharger from compliance with any other laws, regulations, or ordinances which may be applicable, it does not legalize these waste treatment and disposal facilities and it leaves unaffected any further restraints on those facilities which may be contained in other statues or required by other agencies.

4. This Order is not intended to stop or redirect any investigation or mitigation activities not required by this Order but ordered by this Regional Board or other agency.

5. A copy of this Order shall be maintained at the site, where it will be available at all times to operating personnel.

6. In accordance with Section 13260 of the Water Code, the discharger shall file a report of any material change or proposed change in the character, location or volume of the discharge.

7. In the event of any change in name, ownership, or control of these waste disposal facilities, the discharger shall notify this Board of such change and shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to the Board.

8. The discharger shall notify this Board immediately by telephone of any adverse condition resulting from this discharge or from operations producing this waste discharge, such notifications to be affirmed in writing with in one week from the date of such occurrence.

9. This Regional Board considers the discharger to have continuing responsibility for correcting any problems which may arise in the future as a result of the backfilled soil to the Reservoir 15 during subsequent use of the land for other purposes.

10. In accordance with Section 13267 of the Water Code, the discharger shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted.

11. Following completion of the land treatment program on site, the discharger shall implement a land treatment facility closure plan which complies with the requirements of Article 8, Chapter 15, Division 3, Title 23, of the CCR.

12. In accordance with Section 13263 of the Water Code, these waste discharge requirements are subject to periodic review and revision by this Regional Board.

13. An appropriate Health and Safety Plan for all assessment and mitigation activities at the site shall be filed with this Board prior to commencing any land treatment activities.

I, Robert P. Ghirelli, 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, Los Angeles Region on February 28, 1994.

Robert P. Ghirelli

ROBERT P. GHIRELLI, D.Env.
Executive Officer

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. 7361
FOR
MOBIL OIL CORPORATION
(LAND TREATMENT OF PETROLEUM HYDROCARBON CONTAMINATED SOIL)
(FILE NO. 85-7)

The discharger shall implement this Monitoring and Reporting Program on the date of issuance of the Waste Discharge Requirements. The reports detailed in Order No. 94-015 shall be submitted as required.

The first monitoring report under this program is due on April 15, 1994. Thereafter, monitoring reports shall be submitted by the date shown in the following schedule:

Reporting Period	Report Due
January - March	April 15
April - June	July 15
July - September	October 15
October - December	January 15

I. GROUND WATER MONITORING

A proposal for the selected well shall be submitted for the Executive Officer's approval by June 15, 1994, and shall include construction details and precise location. The following shall constitute the ground water monitoring program for the well immediately adjacent to the Reservoir 15:

Parameter	Units	Frequency
Water elevation from datum (0.01 foot)		Semi-annually
Total dissolved solids	mg/ℓ	Semi-annually
Turbidity	NTU	Semi-annually
pH	pH units	Semi-annually
Total petroleum hydrocarbon (EPA 418.1 and Modified 8015)	µg/ℓ	Semi-annually
CAM metals	mg/l	Semi-annually
Volatile organic compounds (EPA Method 624)	µg/ℓ	Semi-annually

II. LAND TREATMENT FACILITY SOIL MONITORING

February 2, 1994
Revised February 11, 1994

Monitoring and Reporting Program For
Mobil Oil Corporation
Land Treatment of Petroleum Hydrocarbon
Contaminated Soil

File No. 85-7

A soil sampling grid shall be established for the land treatment site and the sampling locations shall be located where representative soil samples can be obtained. Verification soil samples shall be collected and analyzed for the following parameters at a minimum of once per lift. A final verification sample shall be taken of the treated soil at the end of treatment and just prior to removal and reuse at a frequency of one sample per 500 cubic yards.

Parameter	Unit
Volume of material treated (Cumulative)	Cubic yards
Volume during report period	Cubic yards
Bacteria plate count[1]	Colonies/gm
Total petroleum hydrocarbons (Modified EPA Method 8015 and EPA Method 418.1[1])	mg/kg
CAM metals[1]	mg/kg
Volatile organic compounds (EPA Methods 8010/8020)	µg/kg

1. At a minimum of one sample per 1,000 cubic yards

III. GENERAL PROVISIONS FOR SAMPLING AND ANALYSIS

A. All sampling, sample preservation, and analysis shall be performed in accordance with the latest edition of "Guidelines Establishing Test Procedure for Analysis of Pollutants," promulgated by the United States Environmental Protection Agency.

B. All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services, or approved by the Executive Officer. No changes shall be made in sampling points without prior approval of the Executive Officer.

C. This Regional Board's laboratory report forms shall be used in order to maintain an adequate quality assurance and quality control for all laboratory analytical work performed for the land treatment project.

D. The discharger shall maintain all sampling and analytical

results, including date, exact location, and time of sampling, date analysis were performed, name of analyst, analytical techniques used, and results of all analyses. Such result shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board.

IV. SPECIFIC REPORTING REQUIREMENTS

A. Verification soil sampling shall be performed in Reservoir 15 annually for the first three years and bi-annually thereafter to confirm the fate and transport model prediction of the contaminant migration. Ten samples shall be taken at five locations. The samples shall be taken at 5 feet and 15 feet below 1993 grade and analyzed using EPA Method 8020 for BTEX and EPA Method 8015 for TPH gasoline and diesel. Reporting of this data shall be submitted with the monitoring report to this Board. The first five years of monitoring is primarily to establish a baseline. Sampling shall commence on or before December 1994.

B. During operation of the vapor extraction system for non-hazardous soils having VOCs greater than 50 ppm, a sampling and analysis program for vapor and soil shall be implemented to verify that complete remediation of the VOCs is occurring to levels approved by the Executive Officer. Verification sampling shall be performed when operational vapor data shows interim clean-up levels have been attained. For verification sampling, the soil shall be tested using EPA Method 8015 for TPH gasoline and diesel and EPA Method 8240 for VOCs at a minimum frequency of one sample per 500 cubic yards. Soils with high VOCs concentration shall not be backfilled in Reservoir 15 or reused within the refinery. Reporting of this data shall be submitted with the quarterly monitoring report to this Board.

C. The following technical reports shall be filed with the Regional Board:

1. A "Petroleum Hydrocarbon Contamination Removal Report" shall be submitted quarterly. The report shall identify the source of contaminated soil; the level of contamination for the threshold constituents specified in the requirements, except for volumes less than five cubic

yards, report all available contamination data; and quantification of the excavated soil volume. For volumes less than five cubic yards, available contamination data is defined as data that is used to judge that the threshold constituent values are not exceeded.

2. A "Final Project Completion Report" shall be submitted within 30 days of completing all final verification sampling, summarizing the final hydrocarbon contamination levels of the land treated soils, including laboratory analysis data, and indicate the quantity and the final disposition of the land treated material. A statement, signed by a responsible official of the discharger, shall be included stating that the land treatment was completed in accordance with the requirements and provisions of this Order and all other signed statements required by this Order shall also be included.

3. In the event that hazardous, designated or other unacceptable wastes other than petroleum hydrocarbon waste are detected in the land treatment site or Reservoir 15, the type, source, quantity and disposition of those wastes shall also be reported. If no unacceptable wastes are detected during the monitoring period, the report shall so state.

D. Each of the above three technical reports submitted shall contain the following minimum information:

1. Quantity of waste material treated during the reporting period.

2. Analytical results from any of the ground water monitoring, as required, land treatment zone soil sampling and soil monitoring.

E. All technical reports prepared for submittal to the Regional Board shall be signed by either a California registered professional engineer, a registered geologist, or certified engineering geologist.

F. For every item where the requirements are not met the discharger shall submit a statement of the actions undertaken or proposed, together with a timetable, to bring the discharge back into full compliance with the requirements at the earliest time.

G. In reporting the monitoring data, the discharger shall arrange the data in tabular form so that the data, the constituents, and the concentrations are readily discernible. The data shall be summarized to determine compliance with waste discharge requirements and, where applicable, shall include receiving ground water observations.

H. Monitoring reports submitted to the Regional Board shall be signed by:

1. In the case of corporation, principal executive officer at least the level of Vice President or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which discharge originates;

2. In case of partnership, a general partner;

3. In case of sole proprietorship, the proprietor;

4. In the case of a municipal, state or public facility, either a principal executive officer, ranking elected official, or other duly authorized employee.

Each report shall contain the following completed declaration:

" I declare under penalty of perjury that the foregoing is true and correct.

Executed on the day of_____ at ___

_____ (Signature)

_____ (Title)"

Ordered by Robert P. Ghirelli
ROBERT P. GHIRELLI, D.Env.
Executive Officer

Date: February 28, 1994