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September 28, 2009

In reply refer to:
T0605902379:bpulver

CERTIFIED MAIL – RETURN RECEIPT REQUESTED
7009 1410 0002 2347 6040

Ms. Natasha Molla
Chevron Environmental Management Company
145 S. State College Boulevard
P.O. Box 2292
Brea, California 92822

CERTIFIED MAIL – RETURN RECEIPT REQUESTED
7009 1410 0002 2347 6057

Mayor Mark Nielsen
City of Capistrano
32400 Paseo Adelanto
San Juan Capistrano, California 92675

Dear Ms. Molla and Honorable Mayor Nielsen,

SUBJECT: REVISED CLEANUP AND ABATEMENT ORDER NO. R9-2009-0124 FOR CHEVRON SERVICE STATION No. 9-3417, 32009 CAMINO CAPISTRANO, SAN JUAN CAPISTRANO, CALIFORNIA

Enclosed is a copy of Revised Cleanup and Abatement Order No. R9-2009-0124 (Order). The following revisions were made to correct non-substantive typographic errors.

Section	Revision
Finding 3	Changed comma to period at end of fourth paragraph
Directive B	Inserted "light nonaqueous phase liquid" in second sentence
Directive C	Capitalized "C"
Directive C	Changed "Directive D" to "Directive E"
Directive E.1.a	Changed "has" to "is"
Directive E.2	Replaced paragraph to clarify and correct well designations

Section	Revision
Directive E.3.b	Changed "Directives D.1 and D.2" to "Directives E.1 and E.2"
Directive E.3.d	Changed "Directive D.1" to "E.1"
Directive E.4.c.vi	Changed "monitor" to "monitoring"
Directive F.11	Changed "GWP" to "GMP"
Directive G	Changed "underground storage tanks" to "USTs"
Directive G	Changed "2600" to "2610"
Directive G.3	Changed "Finding 7" to "Finding 9"
Directive L	Corrected Directive designations
Directive M.1	Inserted "and"
Directive N.5	Changed "monitor" to "monitoring"
Directive P	Changed "an underground tank" to "USTs"
Provision C	Inserted "to" in last sentence
Provision I	Changed "44-49" to "92-49"
Notification B	Changed "to" to "for" in last sentence
Notification C.4	Removed the first "the"

If you have any questions, or require additional assistance, please contact Mr. Barry Pulver of my staff at (858) 467-2733 or bpulver@waterboards.ca.gov.

Sincerely,

MICHAEL P. McCANN
Assistant Executive Officer

MPM:jac:clc:bsp

Attachment: Revised Cleanup and Abatement Order No. R9-2009-0124

cc: Mr. Juan M. Garcia, Chevron U.S.A., Inc., *JuanGarcia@chevron.com*

Mr. Steven H. Edelman, PhD, Holguin, Fahan & Associates, Inc., *Steve_Edelman@hfa.com*

Mr. Jack Fraim, Principal Hydrogeologist, Cedar Creek Consulting, *cedarcreek@directioncon.net*

Mr. Joseph E. Tait, Interim City Manager, City of San Juan Capistrano, *jtait@sanjuancapistrano.org*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

REVISED CLEANUP AND ABATEMENT ORDER NO. R9-2009-0124
(Revised September 28, 2009)

AN ORDER DIRECTING CHEVRON USA, INC. AND THE CITY OF SAN JUAN CAPISTRANO TO CLEANUP AND ABATE THE EFFECTS OF POLLUTION AND NUISANCE AND SUBMIT TECHNICAL REPORTS PERTAINING TO SITE ASSESSMENT AND CORRECTIVE ACTION

AT

CHEVRON SERVICE STATION NO. 9-3417
32009 CAMINO CAPISTRANO
SAN JUAN CAPISTRANO, CALIFORNIA

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

1. **Legal and Regulatory Authority:** This Order conforms to and implements policies and requirements of the Porter-Cologne Water Quality Control Act (Division 7, commencing with Water Code section 13000) including (1) sections 13267 and 13304: (2) applicable State and federal regulations; (3) all applicable provisions of Statewide Water Quality Control Plans adopted by the State Water Resources Control Board (State Board) and the *Water Quality Control Plan, San Diego Basin* (Basin Plan) adopted by the Regional Board including beneficial uses, water quality objectives, and implementation plans; (4) State Board policies and regulations, including State Board Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*), Resolution No. 88-63 (*Sources of Drinking Water*), and Resolution No. 92-49 (*Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under California Water Code Section 13304*); California Code of Regulations (CCR) Title 23, Division 3, Chapter 16, Article 11; CCR Title 23, section 3890 et. seq., and (5) relevant standards, criteria, and advisories adopted by other State and federal agencies.

2. **Unauthorized Discharge of Petroleum Hydrocarbon Wastes:** Chevron Service Station No. 9-3417, located at 32009 Camino Capistrano, San Juan Capistrano, California began operation in 1972 and has undergone several upgrades. Discharges of gasoline from the USTs have resulted in a methyl tertiary butyl ether (MTBE) plume in groundwater that extends approximately 2,400 feet south of the facility. The MTBE plume extends to the south (downgradient) to the Dance Hall Well, a municipal water supply well owned and operated by the City of San Juan Capistrano (City).

In early 2008 the City discontinued use of the Dance Hall Well due to the presence of MTBE in the extracted groundwater. A groundwater sample collected from the Dance Hall Well was reported by the City to have a MTBE concentration of 1.3 micrograms per liter (µg/l). The health-based primary maximum contaminant level (MCL) for MTBE is 13 µg/l. The secondary MCL, which is a taste and odor threshold, is 5 µg/l. Although the reported groundwater MTBE concentration is below the secondary MCL, the City elected to shut down the well to eliminate the potential of distributing groundwater with MTBE to its residents.

The following table presents the highest concentration of selected compounds detected within the plume during the most recent groundwater sampling.

Compound	***Maximum Groundwater Concentration (µg/L)***
Benzene	2.8
MTBE	46

3. **Persons Named as Responsible Parties:** Chevron USA, Inc. (Chevron) is named as a Responsible Party because it owns and operates the retail gasoline station known as Chevron Service Station No. 9-3417 (hereinafter the Facility) where discharges of gasoline occurred from the underground storage tank system (UST).[1] These petroleum hydrocarbons are not naturally occurring and are wastes, as defined in Water Code section 13050(d).

As an interim cleanup action, Chevron proposes pumping the City's Dance Hall Well to capture and contain the MTBE plume, and further proposes treating the pumped groundwater to remove petroleum hydrocarbon wastes.

The City operates a series of municipal water supply wells, including the Dance Hall Well, which are located in a geographic line approximately parallel to the flow of the MTBE plume. The City's municipal supply wells are downgradient from the identified petroleum hydrocarbon discharge source(s). A discharge of waste includes passive migration of waste after the initial discharge.[2] By not pumping, or by not allowing the Dance Hall well to be pumped to capture and contain the MTBE plume, the City is contributing to the discharge of waste, and contributing to the migration of the MTBE plume beyond the Dance Hall Well, threatening other water supply wells.

[1] The UST system included the tanks, piping, and dispensers.
[2] In the Matter of Zoecon Corporation, Order No. 86-2 (State Board, 1986)

As the owner and operator of the Dance Hall Well, the City has the ability to arrest the spread of the plume and to obviate the condition of waste that exists in groundwater. Nevertheless, the City and Chevron have failed to enter into an agreement to pump the Dance Hall Well for these purposes.

Pursuant to the California Water Code, the California Health and Safety Code, and applicable law, the City is named a Responsibly Party because it has contributed to the condition of nuisance and pollution by failing to pump the Dance Hall Well to control the MTBE plume, and because the City has the ability to obviate the condition.

4. **Water Quality Standards:** The Site is located within the Lower San Juan Hydrologic Subarea (HSA) (901.27) of the San Juan Hydrologic Unit (901.00). Groundwater in the San Juan HSA is designated in the Basin Plan as having existing beneficial uses for municipal and domestic water supply (MUN),[3] agricultural supply water (AGR), and industrial service supply (IND). The Basin Plan contains numeric water quality objectives[4] for chemical constituents to protect groundwater designated for MUN use. The numeric objectives are derived from primary MCLs[5] established by the Department of Health Services (Department) in Title 22 of the California Code of Regulations.[6] Groundwater concentrations of benzene and MTBE are not in conformance with the water quality objectives needed to support MUN uses of the groundwater, creating a condition of pollution and nuisance in water of the State.

   Groundwater is currently used for municipal and domestic supply. The San Juan Capistrano Groundwater Recovery Plant (GWRP), which began operation in 2005, consists of six groundwater production wells, and a greensand filter

[3] See Water Quality Control Plan for the San Diego Basin (Basin Plan), Page 2-3. The Basin Plan defines MUN as "uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply."

[4] "Water quality objectives" are defined in Water Code section 13050(h) as "the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area."

[5] MCLs, maximum contaminant levels, are public health-protective drinking water standards to be met by public water systems. MCLs take into account not only chemicals' health risks but also factors such as their delectability and treatability, as well as the costs of treatment. Primary MCLs can be found in Title 22 California Code of Regulations (CCR) sections 64431 - 64444. Secondary MCLS address the taste, odor, or appearance of drinking water, and are found in 22 CCR section 64449.

[6] Basin Plan, footnote 1, supra. Page 3-24 and Table 3-5 at 3-25. The Basin Plan provides that "Water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in California Code of Regulations, Title 22, Table 64444-A of section 64444 (Organic Chemicals) which is incorporated by reference into this plan. This incorporation by reference is prospective including future changes to the incorporated provisions as the changes take effect. (See Table 3-5.)"

and reverse osmosis treatment system. The GWRP, which includes the Dance Hall Well, can extract and treat up to 5.1 million gallons per day of highly mineralized groundwater. The GWRP was designed to supply virtually all of San Juan Capistrano's winter needs and half of its summer needs.

5. **Basis of Cleanup and Abatement Order:** Water Code section 13304 contains the cleanup and abatement authority of the Regional Board. Water Code section 13304 requires a person to clean up waste and/or abate the effects of the waste discharge if so ordered by a regional board in the event there has been a discharge in violation of waste discharge requirements, or if a person has caused or permitted 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. Therefore, based on the previous findings the Regional Board is authorized to order the Responsible Parties to cleanup and abate the effects of the waste discharge(s).

6. **Basis for Requiring Reports:** Water Code section 13267 provides that the Regional Water Board may require dischargers, past dischargers, or suspected dischargers to furnish those technical or monitoring reports as the Regional Water Board may specify, provided that the burden, including costs, of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring the reports, the Regional Board must provide the person with a written explanation with regard to the need for the reports, and identify the evidence that supports requiring that person to provide the reports.

7. **Need for Technical and Monitoring Reports:** Technical reports and Monitoring reports required by this Order are needed to provide information to the Regional Board regarding (a) the nature and extent of the discharge, (b) the nature and extent of pollution conditions in State waters created by the discharge, (c) the threat to public health posed by the discharge, and (d) appropriate cleanup and abatement measures. The reports will enable the Regional Board to determine the vertical and lateral extent of the discharge, ascertain if the condition of pollution poses a threat to human health in the vicinity of the Site, and provide technical information to determine what cleanup and abatement measures are necessary to bring the Site into compliance with applicable water quality standards. Based on the nature and possible consequences of the discharges (as described in Findings No. 1 through 6, above) the burden of providing the required reports bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

8. **Cost Recovery:** Pursuant to California Water Code section 13304, the Regional Board is entitled to, and will seek reimbursement for, all reasonable costs actually incurred by the Regional Board to investigate unauthorized

discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order.

9. **State Board Policies:** The State Board adopted Resolution No. 92-49, the *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304*. This Resolution sets forth the policies and procedures to be used during an investigation or cleanup of a nuisance site and requires that cleanup levels be consistent with State Board Resolution No. 68-16, the *Statement of Policy with Respect to Maintaining High Quality of Waters in California*. Resolution No. 92-49 and the Basin Plan establish the cleanup levels to be achieved. Resolution No. 92-49 requires the waste to be cleaned up to background, or if that is not reasonable, to an alternative level that is the most stringent level that is economically and technologically feasible in accordance with Title 23, CCR section 2550.4. Any alternative cleanup level greater than background must (1) be consistent with the maximum benefit for 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 Board.

10. **California Environmental Quality Act (CEQA) Compliance:** The issuance of this Order is an enforcement action taken by a regulatory agency and is categorically exempt from the provisions of CEQA pursuant to section 15321(a)(2), Chapter 3, Title 14 of the California Code of Regulations. This Order requires submittal of detailed work plans that address cleanup activities. The proposed activities under the work plans are not yet known, but implementation of the work plans may result in significant physical impacts to the environment that must be evaluated under CEQA. The appropriate lead agency will address the CEQA requirements prior to implementing any work plan that may have a significant impact on the environment.

11. **Qualified Professionals:** The Responsible Parties' reliance on qualified professionals promotes proper planning, implementation, and long-term cost-effectiveness of investigation, and cleanup and abatement activities. Professionals should be qualified, licensed where applicable, and competent and proficient in the fields pertinent to the required activities. California Business and Professions Code sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under the direction of registered professionals.

IT IS HEREBY ORDERED that, pursuant to sections 13267 and 13304 of the Water Code, that Chevron and the City (hereinafter the Responsible Parties) must comply with the following Directives:

A. CLEANUP AND ABATE DISCHARGES: The Responsible Parties shall take all corrective action necessary to cleanup and abate the effects of the discharge.

B. INTERIM REMEDIAL ACTION: The Responsible Parties shall immediately implement interim remedial actions to abate or correct the actual or potential effects of the unauthorized release pursuant to CCR Title 23, Chapter 16, section 2722 (b) as necessary. Interim remedial actions may include but are not limited to activities that remove all free product (light nonaqueous phase liquid or LNAPL), remove petroleum hydrocarbon sources (e.g. soil saturated with petroleum hydrocarbons) and/or mitigate nuisance of all surface and groundwater affected by the waste discharge.

1. Interim remedial actions can occur concurrently with any phase of the site investigation or remedial action. On or before **November 30, 2009** the Responsible Parties must begin implementation (i.e. construction) of the Interim Remedial Action described in the March 26, 2008 Interim Remedial Action Plan (IRAP)[7] which was approved by the Orange County Local Oversight Program, provided that the water provided to the GWRP has no detectable concentrations (using the lowest available method detection level) of fuel hydrocarbons including oxygenates such as MTBE.

2. On or before **November 30, 2009** Chevron shall submit an operations and maintenance plan (OM Plan) to the Regional Board. The OM Plan must include:

   a. A description of how the well head treatment system described in the IRAP will be operated and maintained.

   b. A sampling plan to demonstrate that the water provided to the GWRP has no detectable concentrations of fuel hydrocarbons including oxygenates such as MTBE.

   c. A monitoring plan to demonstrate the effectiveness of the IRAP.

   d. A contingency plan in the event of "breakthrough" of fuel hydrocarbons including oxygenates such as MTBE.

[7] *Interim Remedial Action Plan, Chevron Station 9-3417, 32001 Camino Capistrano, San Juan Capistrano, California*, prepared by Conestoga-Rovers & Associates, dated March 26, 2008.

3. On or before **January 29, 2010** a technical report shall be submitted to the Regional Board certifying that the Interim Remedial Action is fully operational.

4. During operation of the IRAP Chevron shall submit monthly updates reports to the Regional Board. The monthly IRAP reports shall at a minimum include:

   a. Monthly and cumulative volumes of water extracted, treated, and delivered to the GWRP.

   b. Monthly and cumulative hours of operation of the IRAP.

   c. Laboratory test results of samples collected as part of the IRAP OM Plan.

   d. Effectiveness of the IRAP in containing the MTBE plume.

   e. Any repairs and/or modifications made to the system.

   f. Records of carbon change outs.

   g. Any other information needed to demonstrate compliance with Directive B.

C. MUNICIPAL WATER SUPPLY WELL MONITORING PROGRAM: The City shall design and implement a municipal water supply well monitoring program. The City shall prepare and submit to the Regional Board by **October 30, 2009** a workplan to monitor the Dance Hall, Kinoshita, CVWD1, SJBA2, and SJBA4 municipal water supply wells in compliance with the appropriate provisions of Directive E. The workplan shall include historical data of samples collected and analyzed and a description of the methods used to sample the wells. At a minimum groundwater samples must be collected monthly and analyzed for total petroleum hydrocarbons by the United States Environmental Protection Agency (USEPA) Test Method 8015, and for volatile organic compounds, including oxygenates, by USEPA Test Method 8260b. The results of the production well monitoring shall be submitted to the Regional Board no later than the end of the month after the samples were collected. The municipal water supply well monitoring program shall begin no later than **January 4, 2010.**

D. REPLACEMENT WATER: Chevron shall provide replacement water if requested by the City. Any additional costs for replacement water beyond the City's ordinary production costs for water extracted from the Dance Hall Well will be borne solely by Chevron. Pursuant to Water Code section 13304(f) replacement water shall meet all applicable federal, state, and local drinking water standards and shall have comparable quality to that pumped by the public water system prior to the discharge. Groundwater pumped from the Dance Hall Well and treated as required by Directive B and delivered to the GWRP shall be considered replacement water.

E. GROUNDWATER MONITORING PROGRAM: Chevron shall submit the technical reports required in this Groundwater Monitoring Program (GMP) pursuant to Water Code sections 13267 and 13304.

1. Purpose: The purpose of the GMP is to provide data to answer the following questions.

   a. To what extent is the MTBE plume migrating towards the Kinoshita, CVWD1, SJBA2, and SJBA4 municipal water supply wells?

   b. Are interim remedial actions effective?

   c. Has the lateral and vertical extent of each waste constituent in soil, groundwater, and soil vapor been delineated?

   d. Is the size of the plume of each waste constituent decreasing in size and/or mass?

   e. Has the source of each waste constituent been effectively cleaned up?

   f. Is the selected remedial action alternative effectively removing waste constituents from the soil, groundwater, and soil vapor, and is the implemented corrective action capable of achieving the cleanup levels in the CAP?

   g. Have the beneficial uses of the groundwater been restored, and are human health and the environment protected?

2. Monitoring: With the exception of well clusters MW-15, MW-16, and MW-17, Chevron shall monitor and sample all groundwater monitor wells on a quarterly basis. Well clusters MW-15, MW-16 and MW-17 shall be monitored and sampled monthly. Well clusters MW-15 and MW-16 shall be monitored and sampled weekly when the Dance Hall Well resumes operation. Groundwater samples shall be analyzed for total petroleum hydrocarbons quantified as gasoline and diesel using USEPA method 8015 and for **full scan of volatile organic compounds** including benzene, toluene, ethylbenzene, xylenes, MTBE, tertiary butyl alcohol (TBA) using USEPA method 8260b. **Additional groundwater monitoring wells may be required to meet the objectives of the groundwater monitoring program.**

3. Groundwater Monitoring Program Workplan: Chevron shall prepare and submit to the Regional Board by **November 30, 2009** a workplan to implement the groundwater monitoring program. At a minimum the Groundwater Monitoring Program Workplan must include:

a. Methods to be used to monitor, purge, and sample the wells.

b. Request and justification for changes to the groundwater monitoring requirements specified in Directives E.1 and E.2.

c. A map showing the location of groundwater monitoring wells to be part of the groundwater monitoring program.

d. A brief workplan for the installation of additional groundwater monitoring wells needed to comply with Directive E.1.

4. Quarterly Groundwater Monitoring Reports: Chevron shall submit quarterly groundwater monitoring reports to the Regional Board according to the following schedule:

Quarter	Monitoring Period	Report Due Date
First Quarter	January, February, March	April 30
Second Quarter	April, May, June	July 30
Third Quarter	July, August, September	October 30
Fourth Quarter	October, November, December	January 30

The quarterly groundwater monitoring reports shall include:

a. Transmittal Letter with Penalty of Perjury Statement. The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the Responsible Party's principal executive officer or their duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Groundwater Elevations. Groundwater elevation data shall be presented in tabular format with depth to groundwater (in feet below ground surface), top of casing elevations, depths to the top of well screens, length of well screens and total depth for each well included in the monitoring program. For all wells containing floating "free petroleum product" (A.K.A. light non-aqueous phase liquid or LNAPL) include the measured thickness of LNAPL in a tabular format. A groundwater elevation map must be prepared for each monitored water-bearing zone with the groundwater flow direction and calculated hydrologic gradients(s) clearly indicated in the figures(s). A complete tabulation of historical groundwater elevations must be included in each quarterly report.

c. Reporting Groundwater Results. All monitoring reports must, at a minimum, include:

i. A map showing the location of all wells and other sampling points.

ii. Tables of current and historic groundwater sampling data (chemical data and depth to groundwater and groundwater elevation data).

iii. Results of the Production Well Monitoring Program conducted by the City pursuant to Directive C and interpretations of the results and the potential for MTBE to impact other municipal supply wells.

iv. Isoconcentration map(s) for constituents of concern (COCs) for each monitored water-bearing zone, as appropriate.

v. Time versus concentration plots that also show groundwater elevations for constituents of concern for appropriate wells.

vi. A site plot plan which clearly illustrates the locations of monitoring wells, former/current UST systems (and product piping) and buildings located on the property and immediately adjacent to the property lines of the facility.

vii. A map presenting the most recent concentrations of total petroleum hydrocarbons and volatile aromatic hydrocarbons (*e.g.* benzene, toluene, ethylbenzene, total xylenes, MTBE, TBA and other fuel oxygenates).

viii. Technical interpretations of the groundwater data, and describe any significant increases in pollutant concentrations since the last report, any measures proposed to address the increases, any changes to the site conceptual model, and any conclusions and recommendations for future action with each report.

ix. A description of the analytical methods used, detection limits obtained for each reported constituent, and a summary of quality assurance/quality control (QA/QC) data.

x. A data validation summary which evaluates the sampling methods, laboratory data, and laboratory QA/QC data to determine whether or not there were deviations in the sampling method or if there are any QA/QC items which did not meet the appropriate standards, and to what degree these noted excursions affect the monitoring data.

xi. The report must indicate sample collection protocol(s), describe how investigation derived wastes are managed at the facility, and include documentation of proper disposal of contaminated well purge water and/or soil cuttings removed from the facility.

d. Remediation. If applicable, the report must include soil vapor or groundwater extraction results in tabular form, for each extraction well and for the Site as a whole. The report must also include contaminant removal results, from all extraction wells and from other cleanup and abatement systems, expressed in units of pounds per month and quarter, and cumulative pounds since initiation of the remedial action.

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

5. Record Keeping: The Responsible Parties, or their agent, must retain data generated for the above reports, including laboratory results and QA/QC data, for a minimum of six years after origination and must make them available to the Regional Board upon request.

6. Groundwater Monitoring Program Revisions: Revisions to the GMP may be ordered by the Regional Board. Prior to making GMP revisions, the Regional Board will consider the burden, including costs, of the groundwater monitoring reports relative to the benefits to be obtained from these reports.

F. SITE ASSESSMENT REPORT: Chevron shall prepare and submit a Site Assessment Report (Report) describing the results of the site investigation. The Report is due no later than 5:00 p.m. on **April 30, 2010** and shall contain the following information:

1. Source Characterization: The report shall contain the results of an investigation of all potential sources of waste constituent discharges to soil and groundwater including, but not limited to, historical records of operations, site reconnaissance, and previous sampling studies. The information in the technical report shall provide an adequate basis for determining subsequent effective cleanup and abatement actions. All sources of waste constituent releases shall be located on a site map at a scale of 1 inch = 200 feet or larger, with an appropriate contour interval to depict site topography.

2. Geologic Characterization: The report shall contain an accurate characterization of the subsurface geology, the hydrogeologic characteristics, and all preferential pathways that may affect groundwater flow and contaminant migration.

3. Groundwater Flow Characterization: The report shall describe the rate(s) and direction(s) of local groundwater flow, in both the horizontal and vertical dimension for all water-bearing units potentially affected by the waste constituent(s) from the facility.

4. Extent of Waste Constituent Characterization: The report shall adequately characterize the extent (both laterally and vertically) of each waste constituent in soil and groundwater to the background[8] concentration for that waste constituent, and characterize any pollution that has migrated off-property.

5. Human Health and Ecological Risk Assessment: The report shall include a human health and ecological risk assessment for every complete exposure pathway identified in the Site Conceptual Model (SCM). The human health and ecological risk assessments should follow USEPA and the California Environmental Protection Agency guidance.

6. Groundwater Monitoring Wells: The report shall describe the location of existing monitoring wells, and the proposed location of additional monitoring wells, needed to characterize the types of waste constituents present, the concentrations of waste constituents, and their lateral and vertical extent in groundwater. The report shall include locations of proposed wells located between the downgradient extent of the dissolved plume and downgradient groundwater production wells to serve as an "early warning" should the plume migrate towards these wells.

7. Field Methodologies: The report shall describe the field methodologies used for drilling, soil sampling, groundwater sampling, well and peizometer construction, geophysical surveys, and other activities. Selected methods for purging and sampling monitoring wells must be capable of providing representative samples of groundwater for detecting all of the waste constituents.

8. Chemical Analyses: The report shall describe the laboratory analytical methods and protocols used for each environmental medium including soil, soil vapor, and water. The suite of chemical analyses, methods and protocols must be adequate to quantitatively identify and characterize the full range of site-specific waste constituents.

9. Sample Locations and Number: The report shall contain the locations, type, and number of samples identified and shown on a site map and cross sections. The number of samples and suite of chemical analyses must be sufficient to identify the nature of waste constituent(s) and their sources, to define the distribution of waste constituents in the subsurface, to provide data for

[8] "Background" means the concentrations or measures of constituents or indicator parameters in water or soil that have not been affected by waste constituents from the site. For volatile organic compounds, oxygenates, and gasoline constituents the background concentration is zero.

evaluation of fate and transport of pollutants, risk assessment, remedy selection, and remedial design. In addition, samples shall be collected to evaluate physical properties of soils and aquifer materials. All monitoring data shall be presented in tabular format including the sample result, sample medium, location, depth, sampling method, analyses and rationale for the method.

10. Updated Site Conceptual Model: The report shall contain an updated SCM that updates the initial SCM using all data collected at the facility. The updated SCM must include data, interpretations, and a discussion of the level of uncertainty of conclusions.

11. Groundwater Monitoring Program: The report shall contain a proposed revised GMP. The objective of the GMP is to determine the changes in the nature and extent of the dissolved petroleum hydrocarbon plume. At a minimum the GMP shall include the rationale for the proposed sampling program, a narrative of the proposed sampling locations, sampling frequency, and laboratory test methods, and a map showing the location of the proposed sampling locations.

G. CORRECTIVE ACTION PLAN (CAP): Chevron shall prepare and submit to the Regional Board by **April 30, 2010** a CAP that satisfies the provisions of section 2725 of the regulations governing USTs (CCR, Title 23, Chapter 16 section 2610, et seq.). The CAP must address cleanup of soil and groundwater at the facility as well as all groundwater impacted by the discharge(s) from the facility, and contain all the elements specified in Article 11, section 2725 including:

1. Assessment of Impacts: The CAP shall include an assessment of impacts in accordance with Article 11, section 2725 (e), which includes but is not limited to:

   a. The physical and chemical characteristics of the hazardous substance or its constituents, including their toxicity, persistence and potential for migration in water, soil and air.

   b. The hydrogeologic characteristics of the facility and the surrounding area where the unauthorized release has migrated or may migrate.

   c. The proximity and quality of nearby surface water or groundwater, and the current and potential beneficial uses of these waters.

   d. The potential effects of residual contamination on nearby surface water and groundwater.

2. Feasibility Study: The CAP shall include a feasibility study to evaluate alternatives for cleanup of soil and groundwater. The evaluation shall be

consistent with the requirements of CCR Title 23, Division 3, Chapter 16, section 2725(f) and include the following elements:

a. An evaluation of the effectiveness, feasibility, and cost of at least two alternatives to restore or protect the beneficial uses of groundwater.

b. An evaluation of methods to control the spread of the dissolved contaminant plume off the property.

c. A comprehensive description of the cleanup and abatement activities associated with each recommended alternative.

d. A proposed action schedule, including interim milestone dates, for completion of each recommended alternative.

3. Cleanup Levels: The CAP shall evaluate applicable cleanup levels in accordance with the requirements of Article 11, section 2725(g) and shall comply with the requirements found in Article 11, section 2721(b), State Board Resolution No. 92-49, and Finding 9 of this Order.

a. Groundwater Cleanup Levels. Chevron shall cleanup and abate the effects of the discharge in a manner that promotes the attainment of either background groundwater quality or the best water quality which is reasonably attainable if background levels of water quality cannot be restored, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible. Any alternative cleanup levels less stringent than background groundwater quality shall:

i. Be consistent with maximum benefit to the people of the state;

ii. Not unreasonably affect present and anticipated beneficial use of such water; and

iii. Not result in water quality less than that prescribed in the Water Quality Control Plans and Policies adopted by the State Board and Regional Board.

b. Soil Cleanup Levels. Residual concentrations of fuel constituents in soils must meet all the following criteria: 1) be low enough so that leachable contaminants will not cause the groundwater cleanup levels to be exceeded at/near the facility; and 2) be protective of human health and the environment. Chevron shall propose a range of site-specific soil cleanup levels based upon a technical evaluation of risks from residual soil contaminants and analytical results from contaminant leachability tests

performed on an adequate number of significantly contaminated soils samples collected from the facility.

4. Corrective Action Evaluation Monitoring Program: The CAP shall include a corrective action evaluation monitoring program (EMP). The objective of the EMP is to determine the effectiveness of the corrective action and shall be used to make adjustments to the implementation of the CAP. At a minimum the EMP shall include the rationale for the proposed sampling program, a narrative of the proposed sampling locations, sampling frequency, and laboratory test methods, and a map showing the location of the proposed sampling locations.

H. IMPLEMENTATION OF CAP: Chevron shall implement the CAP in accordance with the action schedule in the approved CAP. Chevron shall begin implementation of the CAP no later than **July 30, 2010**. Chevron shall propose a method(s) and schedule for the monitoring and reporting of progress of remediation at the facility. These results should be used by Chevron to evaluate the effectiveness of the approved corrective action alternative implemented by Chevron to remediate the soil and groundwater contamination from the unauthorized release at the facility. The results and the technical evaluation must be reported to the Regional Board Executive Officer for review and comment.

No later than **October 29, 2010** Chevron shall submit a technical report to the Regional Board certifying that the preferred remedial action alternative(s) is fully operational and evaluating the effectiveness of the CAP.

I. COMPLETION OF SOURCE AREA CLEANUP: The source area is defined as the facility and immediately adjacent area where petroleum hydrocarbons in soil and groundwater are the source of continued discharges of petroleum hydrocarbon wastes to groundwater. Soil and groundwater cleanup goals in the source area shall be achieved no later than **January 5, 2015**.

No later than 5:00 P.M. on **January 5, 2015** Chevron shall submit a workplan to the Regional Board to conduct confirmation sampling to demonstrate that soil and groundwater cleanup goals in the source area have been met. No later than 5:00 P.M. on **June 30, 2015** Chevron shall submit a technical report to the Regional Board presenting the results of soil and groundwater confirmation sampling and certifying that cleanup levels in the source area have been achieved.

J. COMPLETION OF NON-SOURCE AREA CLEANUP: Soil and groundwater cleanup goals outside of the source area shall be achieved no later than **January 6, 2020**.

K. VERIFICATION MONITORING: No later than **April 30, 2020** Chevron shall submit a workplan to the Regional Board to implement a verification monitoring program that

includes a schedule for submitting monitoring reports.[9] Chevron shall conduct verification monitoring in conformance with the provisions of section 2727 of CCR Title 23, Chapter 16. Chevron shall begin implementation of the verification monitoring program no later than **June 30, 2020**. No later than **July 30, 2021** Chevron shall submit a technical report presenting the results of the groundwater cleanup verification monitoring program which certifies that groundwater cleanup levels have been achieved.

L. COMPLIANCE DATES: The following is a summary of the due dates for activities presented in the preceding directives.

Directive	*Activity*	*Due Date*
B	Interim Remedial Action Implementation	November 30, 2009
	IRAP Operations and Maintenance Plan	November 30, 2009
	Interim Remedial Action Certification Report	January 29, 2010
C	Municipal Water Supply Well Monitoring Workplan	October 30, 2009
	Commencement of Municipal Water Supply Well Monitoring	January 4, 2010
E	Groundwater Monitoring Program Workplan	November 30, 2009
F	Site Assessment Report	April 30, 2010
G	Corrective Action Plan	April 30, 2010
H	Corrective Action Plan Implementation	July 30, 2010
	Corrective Action Certification Report	October 29, 2010
I	Completion of Source Area Cleanup	January 5, 2015
	Source Area Cleanup Confirmation Workplan	January 5, 2015
	Source Area Cleanup Certification Report	June 30, 2015
J	Completion of Non-Source Area Cleanup	January 6, 2020
K	Groundwater Verification Monitoring Workplan	April 30, 2020
	Groundwater Cleanup Verification Report	July 30, 2021

[9] Verification groundwater monitoring shall include both source area and non-source area.

M. DOCUMENT SUBMITTALS:

1. Transmittal Letter: A transmittal letter shall be included with all Reports submitted in compliance with this Order and shall include the following:

   a. Content. The Transmittal Letter shall include a brief discussion of the findings, conclusion(s), and recommendation(s) presented in the Report.

   b. Certification Statement. The person signing the Transmittal Letter shall make the following certification:

      "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

2. Signatory Requirements: All reports required by this Order and other information required by the Regional Board shall be signed:

   a. By a person certified as follows:

      i. For a corporation: A principal executive officer, at least a vice president of the corporation, or duly authorized representative.

      ii. For a partnership or sole proprietorship: A general manager or the proprietor, respectively, or duly authorized representative.

      iii. For a municipality, state, federal, or other public agency: Either a principle executive officer, ranking elected official, or duly authorized representative.

   b. An individual is a duly authorized representative only if:

      i. The authorization is made in writing by a person described in paragraph 2.a of this section.

      ii. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity.

iii. The written authorization is submitted to the Regional Board prior to submission of the Report.

3. The Responsible Parties shall submit both one paper and one electronic, searchable PDF copy of all documents required under this Order to:

Executive Officer
California Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, California 92123-4353
Attn: Barry Pulver, Groundwater Basins Branch

All correspondence and documents submitted to the Regional Board shall include the following Geotracker Site ID in the header or subject line:

T0605902379:bpulver

N. ELECTRONIC DATA SUBMITTALS: The State's Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & and Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site after July 1, 2005. All information submitted to the Regional Board in compliance with this Order is required to be submitted electronically via the Internet into the Geotracker database http://geotracker.waterboards.ca.gov/ (Geotracker Site ID. **T0605902379**). The electronic data shall be uploaded on or prior to the regulatory due dates set forth in the Order or addenda thereto. To comply with these requirements, the Responsible Party shall upload to the Geotracker database the following minimum information.

1. Laboratory Analytical Data: Analytical data (including geochemical data) for all soil, vapor, and water samples in Electronic Data File (EDF) format. Water, soil, and vapor data include analytical results of samples collected from: monitoring wells, boreholes, gas and vapor wells or other collection devices, surface water, groundwater, piezometers, stockpiles, and drinking water wells.

2. Locational Data: The latitude and longitude of any permanent monitor well for which data is reported in EDF format, accurate to within 1 meter and referenced to a minimum of two reference points from the California Spatial Reference System (CSRS-H), if available.

3. Monitoring Well Elevation Data: The surveyed elevation relative to a geodetic datum of any permanent monitor well. Elevation measurements to the top of groundwater well casings for all groundwater monitoring wells.

4. Depth-to-Water Data: The depth-to-water in monitoring wells even if groundwater samples are not actually collected during the sampling event.

5. Monitoring Well Screen Intervals: The depth to the top of the screened interval and the length of screened interval for any permanent monitoring well.

6. Site Map: Site map or maps which display discharge locations,[10] streets bordering the facility, and sampling locations for all soil, water, and vapor samples. The site map is a stand-alone document that may be submitted in various electronic formats.[11] A site map must also be uploaded to show the maximum extent of any waste constituent in groundwater. An updated site map may be submitted at any time.

7. Boring logs: Boring logs (in searchable PDF format) prepared by an appropriately licensed professional.

8. Electronic Report: A complete copy (in searchable PDF format) of all workplans, assessment, cleanup, and monitoring reports including the signed transmittal letters, professional certifications, and all data presented in the reports.

O. VIOLATION REPORTS: If the Responsible Parties violate any requirement of this Order, then the Responsible Parties must notify the Regional Board office by telephone as soon as practicable once the Responsible Parties have knowledge of the violation. Regional Board staff may, depending on violation severity, require the Responsible Parties to submit a separate technical report on the violation within five working days of telephone notification.

P. OTHER REPORTS: The Responsible Parties must notify the Regional Board in writing prior to any facility activities, such as construction or removal of USTs, which have the potential to cause further migration of contaminants or which would provide new opportunities for Site investigation.

PROVISIONS

A. NO POLLUTION, CONTAMINATION OR NUISANCE: The storage, handling, treatment, or disposal of soil containing petroleum hydrocarbon waste or polluted groundwater must not create conditions of nuisance as defined in Water Code section 13050(m). The Responsible Parties must properly manage, treat and dispose of wastes and polluted groundwater in accordance with applicable federal, state and local regulations.

[10] Former tank(s), product and vapor piping, dispenser locations, or sump locations, and unauthorized discharge or spill areas.

[11] Formats include .gif, .jpeg, .jpg, tiff, .tif, .pdf

B. GOOD OPERATION AND MAINTENANCE: The Responsible Parties must maintain in good working order and operate as efficiently as possible any monitoring system, Site or control system installed to achieve compliance with the requirements of this Order.

C. CONTRACTOR/CONSULTANT QUALIFICATIONS: All reports, plans and documents required under this Order shall be prepared under the direction of appropriately qualified professionals. A statement of qualifications and license numbers, if applicable, of the responsible lead professional and all professionals making significant and/or substantive contributions shall be included in the report submitted by the Responsible Parties. The lead professional performing engineering and geologic evaluations and judgments shall sign and affix their professional geologist or civil engineering registration stamp to all technical reports, plans or documents submitted to the Regional Board.

D. LABORATORY QUALIFICATIONS: Unless otherwise permitted by the Regional Board, all analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services. The Responsible Parties must use a laboratory capable of producing and providing quality assurance/quality control (QA/QC) records for Regional Board review. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports submitted to the Regional Board.

E. LABORATORY ANALYTICAL REPORTS: Any report presenting new analytical data is required to include the complete Laboratory Analytical Report(s). The Laboratory Analytical Report(s) must be signed by the laboratory director and contain:

1. A complete sample analytical report.

2. A complete laboratory quality assurance/quality control (QA/QC) report.

3. A discussion of the sample and QA/QC data.

4. A transmittal letter that shall indicate whether or not all the analytical work was supervised by the director of the laboratory, and contain the following statement, "All analyses were conducted at a laboratory certified for such analyses by the California Department of Health Services in accordance with current USEPA procedures."

F. ANALYTICAL METHODS: Specific methods of analysis must be identified in monitoring program reports. If the Responsible Parties propose to use methods or test procedures other than those included in the most current version of *"Test Methods for Evaluations Solid Waste, Physical/Chemical Methods, SW-846"* (USEPA) or 40 CFR 136, *"Guidelines Establishing Test Procedures for the*

Analysis of Pollutants; Procedures for Detection and Quantification," the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.

G. **REPORTING OF CHANGED OWNER OR OPERATOR:** The Responsible Parties must notify the Regional Board of any changes in Site occupancy or ownership associated with the property described in this Order.

H. **PENALTY OF PERJURY STATEMENT:** All reports must be signed by the Responsible Parties' principal executive officer or their duly authorized representative, and must include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

I. **REGULATIONS:** All corrective actions must be in accordance with the provisions of CCR Title 23, Chapter 16; the Cleanup and Abatement Policy in the Water Quality Control Plan for the San Diego Basin (9); and State Board Resolution No. 92-49.

NOTIFICATIONS

A. **COST RECOVERY:** Pursuant to Water Code section 13304(c), the Regional Board is entitled to, and will seek reimbursement for, all reasonable costs actually incurred by the Regional 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 the Order.

B. **ENFORCEMENT NOTIFICATION:** Failure to comply with requirements of this Order may subject the Responsible Parties to enforcement action, including but not limited to: imposition of administrative civil liability, pursuant to Water Code sections 13268 and 13350, in an amount not to exceed $5,000 for each day in which the violation occurs under Water Code sections 13304 or 13350 or referral to the Attorney General for injunctive relief or civil or criminal liability.

C. **REQUESTING EVIDENTIARY HEARING BY THE REGIONAL BOARD:** Any person affected by this action of the Regional Board may request an evidentiary hearing before the Regional Board. The Regional Board's Executive Officer may elect to hold an informal hearing or a "paper hearing" in lieu of scheduling a hearing before the Regional Board itself. If either of the Responsible Parties decides to request an evidentiary hearing, they must send their request to the Regional Board Executive Officer, Attn: Supervisor Central San Diego County Groundwater Unit, at the address provided on the Order transmittal letter. Please consider the following carefully:

1. The Regional Board must receive the request within 30 days of the date of this Order.

2. The request must include all comments, technical analysis, documents, reports, and other evidence that the Responsible Party wishes to submit for the evidentiary hearing. However, please note that the administrative record will include all materials the Regional Board has previously received regarding this facility. The Responsible Party is not required to submit documents that are already in the record.

3. The Executive Officer or Regional Board may deny the request for a hearing after reviewing the evidence.

4. If neither of the Responsible Parties requests an evidentiary hearing, the State Board may prevent them from submitting new evidence in support of a State Board petition.

5. The request for an evidentiary hearing, if one or both of the Responsible Parties submits one, does not stay the effective date of the Order, whether or not a hearing is scheduled.

6. A request for a hearing does not extend the 30-day period to file a petition with the State Board (see below). However, we suggest that the either or both of the Responsible Parties asks the State Board to hold the petition in abeyance while the request for a hearing is pending. (Refer to CCR Title 23 section 2050.5(d)) Additional information regarding the SWRCB petition process is provided below.

D. REQUESTING ADMINISTRATIVE REVIEW BY THE STATE BOARD: Any person affected by this action of the Regional Board may petition the State Board to review the action in accordance with section 13320 of the Water Code and CCR Title 23 section 2050. The petition must be received by the State Board (Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812) within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

MICHAEL P. McCANN
Assistant Executive Officer

9/28/09
DATE