

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**FINAL ENVIRONMENTAL IMPACT REPORT**

**ARCO California Air Resources Board (CARB) Phase  
3/Methyl Tertiary Butyl Ether (MTBE) Phase-out Project**

SCH NO. 2000061074

May 2001

**Prepared by ENSR**



# **Final Environmental Impact Report**

## **ARCO California Air Resources Board (CARB) Phase 3/Methyl Tertiary Butyl Ether (MTBE) Phase-out Project**

SCH NO. 2000061074

May 2001

**South Coast Air Quality Management District**

**ENSR  
1220 Avenida Acaso  
Camarillo, California 93012**



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## **PREFACE**

### **FINAL ENVIRONMENTAL IMPACT REPORT**

*This document and previous documents incorporated herein by reference constitute the Final Environmental Impact Report (EIR) for the ARCO California Air Resources Board (CARB) Phase 3/Methyl Tertiary Butyl Ether (MTBE) Phase-Out Project. The EIR for the CARB Phase 3/MTBE Phase-Out Project is a comprehensive environmental document that consists of three separate documents, including this Final EIR. The other documents include the Notice of Preparation of a Draft Environmental Impact Report (June 2000) and the Draft Environmental Impact Report (November 2000). A summary of the contents of these documents is given below. All documents comprising the Final EIR for the ARCO CARB Phase 3/MTBE Phase-Out Project were circulated for public review and were otherwise available at South Coast Air Quality Management District (SCAQMD) headquarters on the dates indicated below. These documents can be obtained by contacting the SCAQMD Public Information Center at (909) 396-2039.*

### **NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE ARCO CARB PHASE 3/MTBE PHASE-OUT PROJECT**

*The Notice of Preparation (NOP) of an Environmental Impact Report for the ARCO CARB Phase 3/MTBE Phase-Out Project was released for review on June 20, 2000. The NOP contains a project description, an environmental checklist, and a analysis preliminary of the potential environmental effects that may result from implementing the proposed project. A copy of the NOP is included in Appendix A of this Final EIR.*

### **DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE ARCO CARB PHASE 3/MTBE PHASE-OUT PROJECT (NOVEMBER 2000)**

*The Draft EIR for the ARCO CARB Phase 3/MTBE Phase-Out Project was released for public review on November 29, 2000. The Draft EIR contains a complete description of the proposed project and discussions of the environmental setting, alternatives, significant environmental effects of the proposed project, the potential irreversible environmental changes, growth-inducing impacts, cumulative impacts from the CARB Phase 3/MTBE Phase-Out Project and other related projects, and effects not found to be significant. The core of the Draft EIR is the discussion of potential environmental impacts and mitigation measures. The analysis of potential environmental impacts includes the following topics: air quality, hydrology/water quality, noise, land use and planning, hazards, transportation/traffic, energy sources, solid/hazardous wastes, public service, cultural resources, and geology and soils.*

*Seven comment letters were received during the comment period for the Draft EIR. Responses to all comments received on the Draft EIR were prepared and are included in Exhibit 1 of this Final EIR.*

## Preface

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*Any changes associated with the Draft EIR have been identified as italics for added text and strikethrough for deleted text. Changes of either type (additions and deletions) are also noted with a vertical bar in the outer margin on each page containing a change. These changes, however, do not substantially affect the conclusions of any environmental topic analysis of the Draft EIR.*

*The environmental disciplines where significant adverse environmental impacts would occur after the implementation of mitigation include air quality and hazards. Accordingly, a Statement of Findings and Overriding Considerations has been prepared for these significant impacts. The statement is included separately as Attachment 1 of the SCAQMD certification documentation.*



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## **1.0 INTRODUCTION AND EXECUTIVE SUMMARY**

Atlantic Richfield Corporation (ARCO) is proposing to modify its Los Angeles Refinery (LAR) and six pipeline and distribution terminals in southern California. This Environmental Impact Report (EIR) has been prepared to assess the impacts of the project on the environment as required under the California Environmental Quality Act (CEQA).

### **1.1 Introduction**

ARCO's proposed project was developed to comply with California Air Resources Board (CARB) regulatory requirements to remove methyl tertiary butyl ether (MTBE) from product gasoline and to produce and distribute product gasoline meeting the CARB Phase 3 Reformulated Gasoline criteria.

#### **1.1.1 Project Need**

Governor Davis signed Executive Order D-5-99 (Executive Order) on March 25, 1999, which directs that MTBE be phased-out of California's gasoline no later than December 31, 2002. The Executive Order also directs CARB to adopt gasoline regulations (CARB Phase 3) to facilitate the removal of MTBE without reducing the emission benefits of the existing program.

To comply with these new requirements, the ARCO LAR is proposing to make changes to the configuration of the refinery by modifying existing process operating units, constructing and installing new equipment, and providing additional ancillary facilities. As indicated by LAR, the primary objective of the project is to provide the means for manufacturing gasoline that complies with the MTBE phase-out mandate and CARB Phase 3 gasoline specifications.

To meet the oxygenate requirements of the CARB Phase 3 specifications for gasoline without MTBE, ethanol would be blended into the gasoline. California has requested a waiver of the oxygenate requirement. If the waiver is approved, it would not be necessary to add ethanol during the summer RVP blending season. While the Federal Government is reviewing California's oxygenate waiver request, the proposed project is being developed with the assumption that the oxygenate mandate will remain in place and that ethanol will be the only permissible oxygenate. The ethanol would not be blended at the refinery, as with MTBE, but at distribution facilities. Therefore, modifications to five distribution facilities and one marine terminal in southern California would be required. The distribution terminals are located in the cities of Carson, Long Beach, Signal Hill, South Gate, and Rialto. The marine terminal is in the Port of Long Beach.

#### **1.1.2 Purpose and Authority**

CEQA requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid, or eliminate identified significant adverse impacts of these projects be considered. To fulfill the purpose and intent of CEQA, the South Coast Air Quality Management District (SCAQMD), as the CEQA lead agency, directed the preparation of the Draft

EIR, which addresses the potential environmental impacts associated with the ARCO CARB Phase 3 MTBE Phase Out Project.

Lead Agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (Public Resources Code, Section 21067). For this project, the SCAQMD and the City of Carson, where the LAR is located, evaluated the lead agency determination. Because the SCAQMD has primary discretionary approval authority over the proposed project, it was determined that the SCAQMD would be the appropriate lead agency. Additionally, improvements are required at five distribution facilities and one marine terminal within southern California. All affected facilities are located within the South Coast Air Basin (Basin). Specifically, these facilities are located within the jurisdiction of the cities of Carson, Long Beach, Signal Hill, South Gate, Rialto, and the Port of Long Beach. As the terminal improvements are considered a part of this project, these cities may act as responsible agencies for the proposed project.

While the SCAQMD is the lead agency, the CEQA Guidelines, §§15102 and 15103, require that responsible agencies, trustee agencies, and the public to be notified of the intent and scope of the proposed project. Consistent with the above CEQA Guidelines sections, a Notice of Preparation (NOP) and Initial Study (IS) were distributed to the identified responsible agencies and parties for review and comment. The NOP/IS and comments received, and responses to these comments are included in Appendix A to this EIR.

### **1.1.3 Scope of EIR and Format**

The scope of this Draft EIR meets the requirements identified under CEQA and includes a description of the proposed project in Chapter 2. The existing environmental setting is discussed in Chapter 3. The potential adverse impacts associated with the proposed project are analyzed and presented in Chapter 4. Chapter 4 also includes mitigation measures identified to reduce or lessen potential significant impacts of the proposed project. These areas are presented in Chapters 5 and 6, respectively. Chapter 4 includes this discussion. CEQA requires that both alternatives to the proposed project and cumulative impacts be analyzed in an EIR. The organizations and persons consulted and references used in the preparation of this document are provided in Chapters 7 and 8, respectively. Supporting documentation to the impact analysis is provided as technical appendices to this Draft EIR. Six environmental areas were found in the Initial Study to have effects found not to be significant: population and housing, geophysical, biological resources, mineral resources, recreation, and cultural resources.

## **1.2 Chapter 2 Summary - Project Description**

### **1.2.1 LAR Improvements**

To comply with the new CARB Phase 3 gasoline requirements, the objectives of the refinery improvements will be to remove additional sulfur and benzene and reduce the vapor pressure to allow blending in of ethanol. To those ends, the proposed project at the LAR consists of the

construction of one new unit, and modifications to several existing processing units. There is also some new equipment associated with modifications to the existing units. Each of the proposed modifications is discussed separately and in greater detail in Chapter 2.0. Modifications would include addition of new equipment (such as heat exchangers, pumps, piping and control systems) and replacement of existing equipment with new equipment.

Under existing requirements, ethanol would need to be added to the gasoline to meet oxygenate content criteria. The ethanol would not be blended at the refinery, as with MTBE, but at the distribution facilities. Therefore, modifications to five distribution facilities and one marine terminal in southern California would be required. The distribution terminals are located in the cities of Carson, Long Beach, Signal Hill, South Gate, and Rialto. The marine terminal is in the Port of Long Beach. The proposed project locations at the LAR and the distribution and marine terminals are shown in Figure 1.2-1. The primary improvements at the distribution and marine terminals include the conversion of existing storage tanks to ethanol service, piping and other modifications for receiving and blending ethanol, and the construction of a new pentane storage tank at Marine Terminal 2.

The proposed modifications will enable the production of CARB Phase 3 compliant gasoline. The proposed project will not alter the refinery's current crude oil throughput capacity. The types of refinery products and overall volume of production are not expected to change substantially.

### **1.3 Chapter 3 Summary - Setting**

The existing refinery, the marine terminal, and the five distribution terminals are located within developed portions of the Los Angeles Basin. The elements of the proposed project will occur at existing ARCO facilities. The areas in the vicinities of each affected facility are comprised of a blend of heavy and light industrial, commercial, medium- and high-density residential, industrial/manufacturing park, and transportation-related uses. More detailed discussions of the following existing environmental settings are included as Chapter 3: air quality, hydrology/water



quality, noise, land use and planning, hazards, transportation/circulation, energy, solid and hazardous waste, public services, cultural resources, and geology and soils.

#### **1.4 Chapter 4 Summary - Potential Environmental Impacts and Mitigation Measures**

Table 1.4-1 presents a summary of the identified potential adverse environmental impacts and the significance determination for each of the environmental topics as they relate to the proposed project, the alternatives, and cumulatively with other projects. Proposed mitigation measures for significant impacts are summarized in Table 1.4-2. No significant adverse environmental impacts have been identified for the majority of the topics, including hydrology/water quality, transportation/traffic, energy, cultural resources, noise, public services, solids/hazardous waste, geology/soils, and growth-inducing impacts.

Significant potential adverse environmental impacts resulting from the proposed project after implementation of available mitigation measures have been identified for two topics: air quality and hazards. The air quality impacts are from construction activities and fugitive VOC emissions, and the hazards impacts are primarily from the operation of a new pentane storage tank at Marine Terminal 2. A detailed discussion of the environmental analysis for each environmental area and any mitigation measures, if required, is provided in Chapter 4.

Growth-inducing impacts are not expected to occur as a result of this project. The project is solely reformulating a portion of the gasoline supply; there will be no inducement for growth.

#### **1.5 Chapter 5 Summary - Project Alternatives**

Pursuant to CEQA Guidelines §15126.6, this EIR identifies and compares the relative merits of a range of reasonable alternatives to the proposed project. A detailed discussion of the alternatives is presented in Chapter 5.

In order to evaluate the environmental impacts of the proposed project, the environmental characteristics of the existing environment has been compared to the proposed project as well as the environmental impacts of two project alternatives. The project alternatives consider other possible means of feasibly attaining the objectives of the proposed project that would avoid or substantially lessen any of the significant effects of the proposed project, and provide a means for evaluating the comparative merits of each alternative.

- Alternative 1: Storage of pentane at LAR
- Alternative 2: MTBE Unit Conversion into a Selective Hydrogenation Unit

*Public Resources Code §21178(g) specifically prohibits evaluation of a “no project” alternative and an alternative site alternative in EIRs prepared for projects complying with CARB Phase 3 requirements. Therefore, in accordance with Public Resource Code §21178(g), the “no project” alternative and alternative sites outside of existing refinery boundaries are not discussed in this EIR. Therefore, the “no project” alternative is not considered in this EIR.*

**Table 1.4-1  
Summary of Potential Environmental Impacts from the Project,  
Project Alternatives or Cumulatively with Other Projects**

Issue Area	Potential Impacts from the Project	Level of Significance			
		Project	Alternative		Cumulative
			1	2	
Air Quality	Construction emissions	S	S	S	S
	Increased chronic non-cancer and cancer risk from air toxic emissions	N	N	N	N
	Acute risk from air toxic emissions	N	N	N	N
	Operation criteria emissions except VOC	N	N	N	N
	Operation emissions of volatile organic compounds (VOC)	M	N	M	M
Noise	Increase in noise from construction or operation	M	M	M	N
Water	Increased water use	N	N	N	N
	Increased wastewater discharge	N	N	N	N
	Decreased surface water quality	N	N	N	N
Land Use/Planning	Alter existing land use designations	N	N	N	N
Hazards	Increased risk from catastrophic failure of storage tanks, pipelines & barge fires at Marine Terminal 2.	S	N	N	S
	Increased risk from catastrophic failure of storage tanks & pipelines at LAR.	S	S	N	N
	Increased risk from catastrophic failure of delivery trucks at the terminals (other than Marine Terminal 2)	S	N	N	N
Transportation/ Traffic	Increased traffic during construction	N	N	N	N
	Increased traffic during operation	N	N	N	N
Energy Sources	Increased use of energy resources	N	N	N	N
Solid/Hazardous Wastes	Increased disposal of hazardous and non-hazardous wastes	N	N	N	N
	Exposure to Uncovered asbestos-containing material (ACM)	M	M	M	M
Public Services	Increased use of public services	N	N	N	N
Cultural Resources	Ground disturbing activities to structures > 50 years of age	NM	N	NM	N
	Potentially encountering cultural resources during excavation	M	M	M	N
Geology and Soils	Risk of lateral spreading or loss of subsurface soil strength from liquefaction	N	N	N	N
Growth-Inducing Impacts	Foster population growth, requiring the need for additional housing and/or infrastructure.	N	N	N	N
<p><u>Level of Significance:</u>                      N – No significant impacts from the project                      M – Significant impacts before mitigation; no significant impacts after mitigation                      S – significant impacts even after mitigation</p> <p><u>Alternatives:</u>                      1 – Provide pentane storage at LAR for shipping to Marine Terminal 2;                      2 – Convert the MTBE unit to a Selective Hydrogenation Unit.</p> <p><u>Note:</u>                      Five issue areas or subareas were eliminated in the Initial Study as having no potential for significant environmental impacts: aesthetics, agriculture resources, population/housing, biological resources, recreation, and mineral resources.</p>					

**Table 1.4-2  
Proposed Mitigation Measures for Significant Impacts**



Issue Area	Impact	Required Mitigation Measure
Air	<p>Construction emission for VOC, NO<sub>x</sub>, SO<sub>x</sub>, and PM<sub>10</sub></p> <p>VOC emissions from pentane, storage and loading and from ethanol loading.</p>	<p><b>AQ1</b> – Increase watering of active site by one time per day<sup>1</sup></p> <p><b>AQ2</b> – Wash wheels of all vehicles leaving <u>unimproved areas the facility.</u></p> <p><b>AQ3</b> – Remove all visible roadway dust tracked out into paved surfaces from unimproved areas at the end of the workday.</p> <p><b>AQ4</b> – Evaluate the feasibility of retrofitting large off-road construction equipment that will be operating for significant periods.</p> <p><b>AQ5</b> – Proper equipment maintenance</p> <p><b>AQ6</b> –Internal development or purchase of emission offsets</p>
Noise	<p>Significant noise from construction activities at the Hathaway and Colton Terminals</p>	<p><b>N1</b> – Specify that quiet equipment, including functioning muffler devices, be used</p> <p><b>N2</b> – Specify that all mufflers be properly maintained throughout the construction period</p> <p><b>N3</b> – Use rubber-tired equipment rather than track equipment where feasible</p> <p><b>N4</b> – Keep loading and staging areas away from noise-sensitive land uses to the extent feasible</p> <p><b>N5</b> – Minimize truck traffic on streets adjacent to residential uses, to the extent possible</p> <p><b>N6</b> - To the extent feasible prohibit routing of truck traffic through residential areas</p> <p><b>N7</b> – <u>Modify construction schedule if noise complaints are received</u></p>
Hazards	<p>Risk of upset from the pentane storage tank to be located at Marine Terminal 2</p>	<p><b>H1</b> – Conduct Process Safety Management Program and Risk Management Program for refrigerated tank in accordance with Federal RMP and OSHA regulations.</p> <p><b>H2</b> – Conduct a pre-start up safety review for those additions/modifications where an acutely hazardous and/or flammable material will be used.</p> <p><b>H3</b> – Prepare a Risk Management Plan for new pentane processes that contain more than 10,000 pounds of pentane.</p>

**Table 1.4-2 (Cont.)  
Proposed Mitigation Measures for Significant Impacts**

Issue Area	Impact	Required Mitigation Measure
Hazards (cont)		<p><b>H4</b> – Provide 24-hour per day, seven day per week staffing at Marine Terminal 2.</p> <p><b>H5</b> – Install fire detectors at Marine Terminal 2.</p> <p><b>H6</b> – Develop manual shutdown procedures of liquid into or out of the pentane storage tank in case of fire at Marine Terminal 2.</p> <p><b>H-7</b> – <i>Apply high-pressure fire deluge systems and protective coatings for the pentane tank to reduce the possibility of BLEVEs caused by fires in the vicinity.</i></p> <p><b>H8</b> – <i>Connect existing and modified pipelines related to the project to the existing 24-hour monitoring system.</i></p> <p><b>H-9</b> – <i>Reduce accident probability through the improvement of hiring policies, driver training, vehicle inspections, and vehicle maintenance.</i></p>
Waste	Exposure to uncovered asbestos-containing materials (ACM) in the Northeast Property	<p><b>W1</b> – <u>Any personnel working directly with soils that are hazardous wastes will be trained in accordance with 29CFR 1910.120 – Hazardous Waste Operations and Emergency Response.</u></p> <p><b>W2</b> – <u>The refinery will update its current SB14 Plan to reflect the additional hazardous wastes that will be generated with this project. As required under SB14, the reduction of waste will be made where deemed technically and economically feasible. Recycling of all wastes, including nonhazardous and municipal wastes, will also be evaluated where appropriate.</u></p> <p><b>W34</b> – Schedule employee meeting and asbestos awareness training.</p> <p><b>W42</b> – Perform personnel air sampling and area air monitoring daily at each station.</p> <p><b>W53</b> – Restrict non-project personnel from areas which contain asbestos.</p> <p><b>W64</b> – Implement soil watering program to minimize asbestos fiber release to atmosphere (as determined by area air monitoring).</p> <p><b>W7</b> – Cease work if fiber counts exceed regulatory limits.</p> <p><b>W6-W8</b> – Collect soil samples from the excavation area for analysis for disposal characterization and reuse as appropriate.</p>

<p align="center"><b>Table 1.4-2 (Cont.)</b>  <b>Proposed Mitigation Measures for Significant Impacts</b></p>		
<b>Issue Area</b>	<b>Impact</b>	<b>Required Mitigation Measure</b>
Cultural Resources	Potentially encountering cultural resources during excavation	<p><b>CR1</b> – Conduct cultural resources orientations for construction workers.</p> <p><b>CR2</b> – <a href="#">In the event that cultural deposits are exposed during project construction, s</a>Subsurface <a href="#">e</a>Earth disturbances within LAR shall be monitored by a professional archaeologist and a representative of the Gabrielino/Tongva Tribal Council.</p> <p><b>CR3</b> – If cultural deposits are exposed during construction, earth disturbing work in that area will be temporarily halted until the find is evaluated and appropriately mitigated.</p> <p><b>CR4</b> – If any human remains are unearthed, the County Coroner will be notified, and if appropriate, also the Native American Heritage Commission.</p>
Geology and Soils	Potential liquefaction hazard at northeast corner of LAR and at Marine Terminal 2	<p><b>GS-1</b> - Project design and construction practices will adhere to appropriate earthquake safety codes such as API, ASME B31.4, UBC and UFC.</p> <p><b>GS-2</b> - UBC Zone 4 requirements will be adhered to.</p>

**1.6 Chapter 6 Summary - Cumulative Impacts**

Several projects with the potential to have cumulative impacts with the proposed project were identified. These projects and associated cumulative impacts relative to the proposed project are discussed in Chapter 6. No significant cumulative impacts beyond those impacts identified with the project are anticipated to occur.

**1.7 Chapters 7 and 8 - Persons and Organizations Consulted and References**

Information on persons and organizations contacted and references cited is presented in Chapters 7 and 8, respectively.