

**SOUTH COAST AIR QUALITY MANAGEMENT  
DISTRICT**

**SHELL WILMINGTON REFINERY  
RULE 1105.1 COMPLIANCE PROJECT**

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**ATTACHMENT 1 – MITIGATION, MONITORING AND  
REPORTING PLAN**

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## INTRODUCTION

Shell Oil Products US (Shell) is proposing modifications to its Wilmington Refinery solely to comply with the South Coast Air Quality Management District (SCAQMD) Rule 1105.1 – Reduction of PM10 and Ammonia Emissions from Fluid Catalytic Cracking Units (FCCUs). Specifically, Shell operators are proposing to demolish their three existing electrostatic precipitators (ESPs) and replace them with three new ESPs to further control PM10 and ammonia emissions from their FCCU. These modifications are collectively known as the Shell Wilmington Refinery Rule 1105.1 Compliance Project and constitute a “project” as defined by CEQA (California Public Resources Code [PRC] §21000 et seq.). Since the SCAQMD has primary approval authority over the proposed project, SCAQMD is the appropriate lead agency under CEQA.

In accordance with CEQA Guidelines §15189, the SCAQMD prepared a Draft Negative Declaration (ND) and distributed a Notice of Intent to adopt the Draft ND (CEQA Guidelines §15072) to responsible public agencies and interested parties for review and comment. The Draft ND was distributed for a 30-day public review and comment period beginning on February 28, 2006, and ending on March 30, 2006. No comment letters were received from the public relative to the Draft ND. After the close of the public comment period, a Final ND was prepared for certification by the SCAQMD’s decision-making body.

The Final ND has been prepared in accordance with CEQA Guidelines §15189 – Compliance with Performance Standard or Treatment Requirement Rule or Regulation, which applies to projects consisting solely of compliance with a performance standard or treatment requirement which was the subject of a previous environmental analysis. When preparing a ND on a compliance project the lead agency shall, to the greatest extent feasible, use the previous environmental analysis (CEQA Guidelines §15189(a)). In this case, the previous environmental analysis regarding the potential adverse impacts associated with complying with Rule 1105.1 refers to the analysis contained in the 2003 Final Environmental Assessment for Proposed Rule 1105.1 - Reduction of PM10 and Ammonia Emissions from Fluid Catalytic Cracking Units (2003 Final EA, SCAQMD No. 012403BAR, certified November 7, 2003), prepared pursuant to the SCAQMD’s certified regulatory program (Public Resources Code §21080.5 and SCAQMD Rule 110). Therefore, the SCAQMD relied on the analysis in the 2003 Final EA in the preparation of the Final ND for the Shell Wilmington Refinery Rule 1105.1 Compliance Project.

To comply with Rule 1105.1, the 2003 Final EA assumed that all of the existing ESPs at five of the six refineries would either be replaced with new models or rebuilt by December 31, 2006, or by December 31, 2008, if a requested extension was approved. The assumptions in the analysis for the Shell Wilmington Refinery Rule 1105.1 Compliance Project are nearly identical to the assumptions used in 2003 Final EA, though there are some minor differences between the two. The following outlines these differences:

The 2003 Final EA assumed that only one ESP would be demolished and/or constructed or rebuilt at a time. Shell operators are proposing to build two new ESPs and then demolish the two existing ESPs immediately after the two new ESPs are brought online.

- The 2003 Final EA assumed that the demolition of an existing ESP and the construction activities to rebuild a new ESP would occur as Phases Ia and IIa, respectively, and plate cleaning preparation of an existing ESP and construction activities to rebuild the existing ESP would occur as Phases Ib and IIb, respectively. Operations of the new and/or modified ESPs would occur as Phase 3. Instead, for the Shell Wilmington Refinery Rule 1105.1 Compliance Project, Phase 1 entails the construction of two new ESPs, Phase 2 is the demolition of the existing ESPs, and Phase 3 is the construction of a third new ESP and demolition of the third existing ESP.
- The use of specific types of construction equipment was assumed in the analysis of the 2003 Final EA for demolition and construction activities. Shell operators propose to use slightly different equipment than what was analyzed in the 2003 Final EA.
- The 2003 Final EA assumed demolition and construction activities would occur for a maximum of 16 hours per day. For the Shell Wilmington Refinery Rule 1105.1 Compliance Project, peak construction activities are expected to occur a maximum of 10 hours per day throughout the entire project except during January 2007 (i.e., during the scheduled turnaround of the FCCU) when the peak construction activities are expected to occur 24 hours per day.
- The 2003 Final EA assumed no or limited construction emissions from grading activities because the refinery operators were assumed to demolish the old ESPs and install new ESPs on the same foundations as the old ESPs. Because Shell operators propose to first construct two new ESPs, prior to demolishing the existing ESPs, the proposed site for the new ESPs will be graded and new foundations will be poured.

Once the proposed project is constructed and fully operational, compliance with the PM10 and ammonia emission limits in Rule 1105.1 are expected to be achieved. However, because the proposed project contains similar, but slightly different construction scenarios, the SCAQMD conducted a further analysis of the air quality impacts during the proposed construction activities. The environmental analysis in the Final ND demonstrates that the demolition of the three existing ESPs and the installation and operation of three new ESPs will not cause a new significant adverse environmental impact or make substantially worse (i.e., beyond what was analyzed in the 2003 Final EA) an existing environmental impact that would otherwise require an EIR. An analysis of the environmental topics in the CEQA Guidelines indicates that the Shell Wilmington Refinery Rule 1105.1 Compliance Project will not result in any new significant adverse

environmental impacts; therefore, a Final ND is the appropriate CEQA document for the proposed project.

The Final ND for the proposed project did not identify any new significant adverse environmental impacts beyond those previously identified in the 2003 Final EA prepared in accordance with CEQA Guidelines §15187, so mitigation measures were not required. Since adoption of a mitigation, monitoring and reporting program was made a condition of project approval for the 2003 Final EA, the document on which the Final ND is based, in order to ensure that effects on the environment from the proposed project remain less than significant, the SCAQMD has prepared a Mitigation, Monitoring and Reporting Plan pursuant to PRC §21081.6 and CEQA Guidelines §15097 for the proposed project that is consistent with the mitigation monitoring and reporting plan prepared for the 2003 Final EA.

The following sections of this document describe the proposed project and the Mitigation, Monitoring and Reporting Plan which includes mitigation measures and identifies monitoring requirements. Since no new significant adverse effects have been identified in the Final ND beyond those previously identified in the 2003 Final EA, a Statement of Findings and a Statement of Overriding Considerations are not required for this project and, therefore, were not prepared.

## **SUMMARY OF THE PROPOSED PROJECT**

The purpose of the proposed modifications to the Shell Wilmington Refinery is to comply with SCAQMD Rule 1105.1. Operators of the Shell Wilmington Refinery have reviewed various options for complying with Rule 1105.1. Currently, Shell operates a series of cyclones followed by three dry ESPs to control particulates from its FCCU. The ESPs were installed over 30 years ago. Because of their age, the existing ESPs are no longer as efficient in capturing particulates as the new models currently available. For this reason, Shell operators have decided to remove the three existing ESPs and install three new ESPs as control equipment for the FCCU.

Specifically, the Shell Wilmington Refinery Rule 1105.1 Compliance Project consists of the following components which will involve construction activities occurring over three phases:

- Phase 1: Construct two new ESPs during a nine-month period. The existing ESPs will continue to operate during this time.
- Phase 2: Demolish two existing ESPs during a three-month period. Note that Phase 1 and Phase 2 will overlap during the turnaround (shutdown period) of the FCCU.
- Phase 3: Construct a third ESP and demolish the third existing ESP during a three-month period.

Construction of the Shell Wilmington Refinery Rule 1105.1 Compliance project is scheduled to begin in May 2006 and to be complete by June 2007. Phases 1 and 2 are expected to overlap with each other during January 2007, to coincide with the scheduled turnaround of the FCCU.

## **MITIGATION, MONITORING AND REPORTING PLAN**

When a public agency conducts an environmental review of adopting a new rule pursuant to CEQA Guidelines §15187, in conjunction with approving a project, the lead agency shall adopt a program for monitoring or reporting on the measures it has imposed to mitigate or avoid significant adverse environmental effects. PRC §21081.6 states in part:

When making the findings required by §21081(a) or when adopting a ND pursuant to §21080(c)(2), the public agency shall adopt a reporting or monitoring program for the changes to the project that it has adopted or made a condition of approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of an agency having jurisdiction by law over natural resources affected by this project, that agency shall, if so requested by the lead or responsible agency, prepare and submit a proposed reporting or monitoring program.

Pursuant to the requirement of PRC §21081.6, the SCAQMD established a plan to monitor compliance with mitigation measures adopted as conditions of approval of Rule 1105.1 and the corresponding environmental analysis in the 2003 Final EA. Although the Final ND prepared for the proposed project did not identify any new significant adverse environmental impacts beyond those previously identified in the 2003 Final EA prepared in accordance with CEQA Guidelines §15187, since adoption of a mitigation, monitoring and reporting program was made a condition of project approval for the 2003 Final EA, in order to ensure that the proposed project does not generate significant effects on the environment, pursuant to PRC §21081.6 and CEQA Guidelines §15097, the SCAQMD has modified the Final ND to include a Mitigation, Monitoring and Reporting Plan for the Shell Wilmington Refinery Rule 1105.1 Compliance Project. The following subsections identify the specific mitigation measures identified in the Final ND and the public agency responsible for monitoring implementation of each mitigation measure.

Enforcement of the mitigation, monitoring and reporting requirements described in this plan is primarily the responsibility of the SCAQMD as the lead agency under CEQA. The mitigation measures discussed herein are primarily the responsibility of the operators of the Shell Wilmington Refinery to implement. To certify compliance, documentation that mitigation measures have been implemented will be maintained by the Shell operators to ensure potential environmental impacts are mitigated to the greatest extent feasible.

The only environmental resource that was identified in the 2003 Final EA as having significant or potentially significant adverse impacts is air quality impacts during the construction phase. The Final ND for the Shell Wilmington Refinery Rule 1105.1 Compliance Project concluded that no new significant adverse impacts to air quality were expected and no significant adverse impacts on aesthetics, agriculture resources, biological resources, cultural resources, energy, geology/soils, hazards/hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, solid/hazardous waste, and transportation/circulation.

## **Air Quality Impacts**

### **IMPACT SUMMARY OF MITIGATION MEASURES AQ-1 TO AQ-9:**

In the 2003 Final EA for Rule 1105.1, construction-related emissions of nitrogen oxides (NO<sub>x</sub>) would exceed the applicable SCAQMD significance threshold for daily construction emissions. Emission sources include worker vehicles, heavy construction equipment and grading activities. The mitigation measures listed below are intended to minimize the emissions associated with these sources during implementation of all Rule 1105.1 compliance projects, including the Shell Wilmington Refinery Rule 1105.1 Compliance Project.

### **MITIGATION MEASURES:**

- AQ-1 Develop a “Construction Emission Management Plan” for the proposed project. The plan shall include measures to minimize exhaust emissions from vehicles, including but not limited to: scheduling truck deliveries to avoid peak hour traffic conditions, consolidating truck deliveries, and prohibiting truck idling in excess of five minutes<sup>1</sup>.
- AQ-2 Prohibit trucks from idling longer than five minutes<sup>1</sup> at the Shell Wilmington Refinery.
- AQ-3 Use electricity or alternate fuels for on-site mobile equipment instead of diesel equipment to the extent feasible.
- AQ-4 Maintain construction equipment by conducting regular tune-ups and retard diesel engine timing.
- AQ-5 Use electric welders to avoid emissions from gas or diesel welders in portions of the Refinery where electricity is available.
- AQ-6 Use on-site electricity rather than temporary power generators in portions of the Refinery where electricity is available.

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<sup>1</sup> Mitigation Measures AQ-1 and AQ-2 originally prohibited idling for longer than 10 minutes. Since that time, state legislation has been adopted that prohibits heavy-duty truck idling for five minutes or more.

- AQ-7 Prior to use in construction, the project applicant will evaluate the feasibility of retrofitting the large off-road construction equipment that will be operating for significant periods. Retrofit technologies such as particulate traps, selective catalytic reduction, oxidation catalysts, air enhancement technologies, etc., will be evaluated. These technologies will be required if they are certified by CARB and/or EPA and are commercially available and can feasibly be retrofitted onto construction equipment.
- AQ-8 Diesel-powered construction equipment will be fueled with emulsified diesel fuel throughout construction of the proposed modifications, as long as the fuel is commercially available and can be purchased. Otherwise, diesel-powered construction equipment shall use low sulfur diesel, as defined in SCAQMD Rule 431.2<sup>2</sup>.
- AQ-9 Suspend the use of all construction equipment during first-stage smog alerts.

**Implementing Party:** The SCAQMD finds that air quality mitigation measures AQ-1 to AQ-9 during construction will be implemented by Shell.

**Monitoring Agency:** The SCAQMD through its discretionary authority to issue and enforce permits for the proposed project will ensure compliance with these mitigation measures. Monitoring will be accomplished as follows:

**MMAQ-1: CONSTRUCTION EMISSION MANAGEMENT PLAN**

Shell shall develop and submit a Construction Emission Management Plan to the SCAQMD for approval prior to starting construction activities. Upon approval, Ultramar shall certify that all personnel subject to the requirements set forth in the Construction Emission Management Plan will comply with the requirements in the plan. The SCAQMD may conduct routine inspections of the site to verify compliance.

The Construction Emission Management Plan shall include all of the following: description of construction traffic control methods such as flag persons, contractor entry/exit gates, et cetera; construction schedule including hours of operation; description of truck routing; and, description of deliveries including hours of delivery.

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<sup>2</sup> Since the completion of the 2003 Final EA, all diesel-powered construction equipment will be required to use ultra-low sulfur diesel fuel beginning June 2006.

### Traffic Control

Traffic requiring entrance onto the refinery property will be directed toward any one of the multiple entry gates at the refinery, so that congestion, as well as associated air pollution, will be minimized.

Points of entry will be selected to maximize refinery security and reduce traffic-associated emissions. The Receiving Department will consider delivery items, time of delivery, in-plant congested areas, surrounding area traffic, and gate security issues when assigning a gate entry location.

On-site parking will be used to the maximum extent available. In the event that off-site parking is required, construction workers may be requested to park at the adjacent Equilon Lubrication Plant or the Equilon Sulfur Recovery Plant located on Alameda Street in the City of Carson. Buses would shuttle workers to and from the project site. No on-street parking (i.e., off the refinery site) will be allowed.

### Construction Schedule

In an effort to reduce traffic by construction workers, operators of the Shell Wilmington Refinery have requested its contractors to follow a compressed workweek. The work schedule will consist of a five-day work week and a 10-hour work day. Most work will be scheduled to begin at 7:00 a.m. and end at 5:30 p.m., to further minimize traffic congestion and related emissions. In addition, some work will be scheduled during the night shift, which will begin after 6:00 p.m. and end around 4:30 a.m. Critical path work may require a deviation from the aforementioned workweek and start- and stop-times; however, deviations will be minimized.

During process unit shutdowns, extended work shifts and night shifts, scheduled six to seven days per week, are anticipated. This work schedule will continue to minimize the travel time during peak travel periods.

### Trip Reduction Plan

Operators of the Shell Wilmington Refinery will voluntarily assist construction contractors in implementing awareness and incentive programs to promote carpooling. Shell operators will provide a copy of Shell's Commuter Reduction Incentive Program and a copy of the project engineering firm's Commuter Incentive Program to the construction contractors.

Shell operators will require the construction contractors to have the construction workers take a bus from the construction trailer to the job sites, thus reducing the number of vehicles on-site. On-site lunch and break facilities will be provided to construction personnel.

Delivery of Equipment and Materials

Shell operators will coordinate the delivery of equipment and materials to avoid peak hour traffic, whenever possible. That is, delivery of construction materials to the site will be scheduled to occur during off-peak periods (i.e., from 8:30 a.m. until 4:00 p.m.). Shell operators will request that equipment and material deliveries be limited between the hours of 4:00 p.m. and 5:00 p.m. to reduce traffic in and out of the facility during high traffic peak times. Exceptions will be made for trucks carrying time-critical materials, e.g., concrete delivery trucks. Delivery routes and schedules will be developed pursuant to the California Department of Transportation regulations.

A limited number of pieces of equipment will be required to be handled as wide or special loads. These deliveries are subject to California Department of Transportation regulations and will be coordinated with local police departments. These trips will be scheduled to avoid peak hour traffic.

**MMAQ-2: PROHIBIT TRUCKS FROM IDLING LONGER THAN FIVE MINUTES**

Shell operators will notify all vendors that during deliveries, truck idling time will be limited to less than five minutes. For any delivery that is expected to take longer than five minutes, Shell will require the truck's operator to shut off the engine. Additionally, Shell personnel receiving shipments for the proposed project will discuss this requirement with the truck drivers to assure compliance. Shell operators will notify the vendors of these delivery requirements at the time that the purchase order is issued.

**MMAQ-3: USE ELECTRICITY OR ALTERNATE FUELS FOR ON-SITE MOBILE EQUIPMENT INSTEAD OF DIESEL EQUIPMENT TO THE EXTENT FEASIBLE**

Shell operators shall evaluate the use of electricity and alternate fuels for on-site mobile construction equipment prior to the commencement of construction activities provided that there is suitable equipment available for the proposed project. Equipment vendors will be contacted to determine the commercial availability of electric or alternate fueled construction equipment. Equipment that will use electricity or alternate fuels will be included in the Construction Emission Management Plan.

The potential equipment that may be considered includes:

- Electric scissor lifts
- Electric golf carts
- Bicycles
- Boom lifts

Shell operators limit the number of personal and company vehicles allowed to enter the Wilmington Refinery beyond the parking lots. This restriction helps minimize on-site emissions and promotes the use of ride sharing and alternate fueled transportation such as bicycles and electric golf carts.

In addition to the other alternative fueled equipment, Shell operators and the construction contractors will use electric boom lifts or bi-powered boom lifts when available.

**MMAQ-4: MAINTAIN CONSTRUCTION EQUIPMENT, CONDUCT REGULAR TUNE-UPS AND RETARD DIESEL ENGINE TIMING**

Shell operators, in cooperation with the construction contractors, will maintain vehicle and equipment maintenance records for the construction portion of the proposed project (i.e., from May 2006 through March 2007). All construction vehicles must be maintained in compliance with the manufacturer's recommended maintenance schedule. Shell operators will maintain their construction equipment and the construction contractor will be responsible for maintaining their equipment and maintenance records. All maintenance records for the Wilmington Refinery and the construction contractor will remain on-site for a period of at least two years from completion of construction.

Shell operators, the construction contractor, and the equipment vendor will evaluate the practicality of retarding diesel engine timing on off-road construction equipment for the purpose of reducing emissions.

**MMAQ-5: USE ELECTRIC WELDERS TO AVOID EMISSIONS FROM GAS OR DIESEL WELDERS IN PORTIONS OF THE REFINERY WHERE ELECTRICITY IS AVAILABLE.**

Shell operators and the construction contractor will conduct a survey of the proposed project area to assess where electricity is available within the Refinery. Construction areas within the Refinery where electricity is not available will be identified on a site plan as part of the Construction Emission Management Plan. The use of gas or diesel welders shall be prohibited in areas of the Refinery that are shown to have access to electricity. Shell operators will assess the number of electrical welding receptacles available, and will indicate whether diesel generators or welders are required for the proposed project. Shell shall include in all construction contracts the requirement that diesel welders are only allowed to operate in the portions of the Refinery as identified on the site plan. If gas or diesel welders are actually used, Shell operators shall maintain welder records for a period of at least two years from completion of construction.

**MMAQ-6: USE ON-SITE ELECTRICITY RATHER THAN TEMPORARY POWER GENERATORS IN PORTIONS OF THE PROJECT SITES WHERE ELECTRICITY IS AVAILABLE.**

The use of temporary power generators shall be prohibited in areas of the Refinery that have access to electricity. Construction areas within the Refinery where electricity is not available will be identified on a site plan as part of the Construction Emission Management Plan. The use of temporary power generators within these identified areas of the Refinery will be allowed. The use of temporary power generators outside of these identified areas shall be prohibited. Shell shall include in all construction contracts the requirement that the use of temporary power generators is prohibited in certain portions of the Refinery as identified on the site plan. Shell shall maintain records that indicate the location where the generators are operated, if at all, for a period of at least two years from completion of construction.

**MMAQ-7: PRIOR TO USE IN CONSTRUCTION, SHELL OPERATORS WILL EVALUATE THE FEASIBILITY OF RETROFITTING THE LARGE OFF-ROAD CONSTRUCTION EQUIPMENT THAT WILL BE OPERATING FOR SIGNIFICANT PERIODS.**

Prior to the start of construction, Shell operators shall supply the SCAQMD with a report that documents Shell's evaluation of the availability of retrofit technologies, such as particulate traps, selective catalytic reduction, oxidation catalysts, air enhancement technologies et cetera, for large off-road construction equipment. These technologies will be required if they are certified by CARB and/or EPA and are commercially available and can feasibly be retrofitted onto construction equipment. A copy of this report shall be maintained on-site for a period of at least two years from the completion of construction.

Shell operators will contact the larger local rental equipment vendors that supply equipment to the Wilmington Refinery regarding the availability of retrofit technologies. Large off-road (e.g. cannot be licensed by California Department of Transportation) construction equipment, such as equipment rated with 100 horsepower (hp) motors or greater, will be identified by Shell operators and the construction contractors. Shell operators will have all equipment rated at 100 hp or greater and with a rental period greater or equal to one month, retrofitted with exhaust scrubbers. Shell operators will have the construction contractor provide a schedule that identifies the equipment that will require exhaust scrubbers so rental schedules can be accommodated. Shell operators will maintain a report on-site for a period of at least two years from the completion of construction that itemizes each piece of construction equipment that was retrofitted with exhaust controls.

**MMAQ-8: DIESEL POWERED CONSTRUCTION EQUIPMENT SHALL USE EMULSIFIED DIESEL OR ALTERNATIVE DIESEL FUEL TO THE MAXIMUM EXTENT FEASIBLE. IF NEITHER OF THESE FUELS IS AVAILABLE, LOW SULFUR DIESEL, AS DEFINED IN SCAQMD RULE 431.2, SHALL BE USED INSTEAD.**

Diesel-powered construction equipment will be fueled with emulsified diesel fuel or other alternative diesel fuel throughout construction of the proposed project, as long as the fuel supplies are commercially available for purchase. The fuel must also meet the low sulfur diesel criteria as defined by SCAQMD Rule 431.2. Contractors will be informed that emulsified diesel or other alternative diesel fuel will be used to fuel the on-site construction equipment as long as it is available for purchase and that the fuel must also qualify as low sulfur diesel. Shell operators will work with vendors of the emulsified diesel fuel and alternative diesel fuel to assure that they also qualify as low sulfur diesels.

CARB has established an interim procedure for verifying emission reductions attributable to alternative diesel fuels and has verified the following four alternative diesel fuels: 1) PuriNOx diesel fuel developed by Lubrizol Corporation; 2) Aquazole fuel developed by Total FinaElf; 3) emulsified diesel developed by Clean Fuels Technology; and, 4) O<sub>2</sub>Diesel fuel developed by O<sub>2</sub>Diesel Inc. PuriNOx fuel has been verified to reduce NOx emissions by 14 percent and particulate emissions by 62.9 percent. Aquazole has been verified to reduce NOx emissions by 16 percent and particulate emissions by 60 percent. Clean Fuels water emulsified diesel fuel has been verified to reduce NOx emissions by 15 percent and particulate emissions by 58 percent. O<sub>2</sub>Diesel fuel has been verified to reduce NOx emissions by 1.6 percent and particulate emissions by 20 percent.

The use of alternative diesel fuels is considered to be a feasible mitigation measure, provided that the fuels are commercially available for purchase. PuriNOx has been commercially available in southern California and has been used on a previous construction project at the Shell Wilmington Refinery. Lubrizol has indicated that it will no longer manufacture PuriNOx after January 2007; however, PuriNOx could continue to be sold for use in Southern California if another company purchases the license. The other manufacturers of emulsified diesel fuels (Clean Fuels and Aquazole) have indicated that these materials are not commercially available in southern California. The manufacturers of Clean Fuels Technology emulsified diesel fuel (Ecoenergy Solutions) indicated that they have plans to make their fuel commercially available by summer 2006. Currently Aquazole, which is distributed by Total, has no plans to make its fuel available in southern California. O<sub>2</sub>Diesel is commercially available as it is distributed by PetroDiamond in the Port of Long Beach. However, for any construction equipment that is fueled with O<sub>2</sub>Diesel,

the fuel caps must be replaced because the Reid Vapor Pressure (RVP) of O<sub>2</sub>Diesel fuel is higher than typical diesel fuel.

Construction for the Shell Wilmington Refinery Rule 1105.1 Compliance Project is expected to begin in May 2006. Therefore, PuriNOx will be available for the first eight months of the construction schedule. In the fourth quarter of 2006, Shell operators will determine the availability of PuriNOx or another alternative diesel fuel for the construction period from January 2007 through June 2007. To consider an alternative to PuriNOx for the first half of 2007, several possibilities could occur which include: 1) the purchase and use of another similar emulsified diesel fuel; 2) the purchase and use of another alternative, but not emulsified, diesel fuel; 3) the purchase and storage of sufficient quantities of PuriNOx to last through the remainder of the construction period in 2007; or, 4) the use of another technology or fuel that may become available. Shell operators will coordinate with the vendors of alternative diesel fuel to confirm that the fuel qualifies as low sulfur (i.e., 15 ppm sulfur) diesel pursuant to Rule 431.2.

There are several options available to Shell for storage and dispensing of emulsified diesel fuel. Shell could use an existing fuel storage tank, located at the Wilmington Refinery to store and refuel mobile construction equipment for the proposed project. Shell also may use temporary storage tanks supplied by a contractor who has a “various locations permit” to store emulsified diesel fuel. Shell may also use small exempt tanks to store fuel. Finally, Shell may have the distributor of the emulsified diesel fuel directly refuel most or all of the construction equipment, especially large equipment such as cranes.

Prior to the start of construction for the proposed project, Shell operators will verify the availability of alternative diesel fuels and determine that the construction equipment operates properly when fueled with an alternative diesel fuel. Minor modifications to the construction equipment will be made, if necessary. Shell operators will establish a contractual arrangement with a supplier to provide sufficient quantities for use during construction of the proposed project of PuriNOx diesel fuel or another alternative diesel fuel, provided that the fuel has received interim verification by the California Air Resources Board. Shell operators expect that an alternative diesel fuel will be used on most, if not all, major construction equipment throughout the proposed project.

**MMAQ-9: SUSPEND THE USE OF CONSTRUCTION EQUIPMENT DURING FIRST STAGE SMOG ALERTS**

If and when any first stage smog alert or greater occurs, Shell operators will record the date and time of each alert, and will note the date and time when the use of construction equipment and construction activities are suspended.

## **CONCLUSION**

During construction of the proposed project and for two years following completion of construction, Shell operators will maintain records on-site of applicable compliance activities to demonstrate the steps taken to assure compliance with Mitigation Measures AQ-1 to AQ-9 as specified in Table 1. Shell operators will be required to submit quarterly reports to the SCAQMD during the construction phase that identifies the construction progress, includes all required logs, inspection reports, and monitoring reports, identifies any problems, and provides solutions to problems, as necessary. SCAQMD staff and Shell operators will evaluate the effectiveness of this monitoring program during the construction period. If either the monitoring program or the mitigation measures as set forth above are deemed inadequate, the SCAQMD or another responsible agency may require Shell operators to employ additional or modified monitoring measures and/or measures to effectively mitigate identified significant adverse impacts to the levels identified in the Final ND.

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**Table 1**  
**Mitigation, Monitoring and Reporting Plan for Shell Wilmington Refinery Rule 1105.1 Compliance Project**

<b>Mitigation Measure/Implementation Requirement</b>	<b>Party Responsible for Implementing Mitigation</b>	<b>Monitoring Action</b>	<b>1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase</b>
AQ-1/ Schedule truck deliveries of over-sized equipment and materials for non-peak a.m. and p.m. periods (i.e., avoid deliveries between 7:00 a.m. – 8:30 a.m. and 4:00 p.m. – 5 p.m. periods), except for time-sensitive materials	Shell	Maintain records of the date and time of each delivery of over-sized equipment and materials.	1. SCAQMD 2. SCAQMD 3. Daily
AQ-1/Limit access to and from the construction site.	Shell	Submit plot plan to SCAQMD that indicates access points to and from the construction site. Maintain records documenting that all construction contractors and subcontractors have been directed to use only specified access points.	1. SCAQMD 2. SCAQMD 3. Prior to the start of construction
AQ-1/Provide sufficient parking on the refinery site or other local site to accommodate all the construction employees, and do not permit on-street parking	Shell	Submit plot plan to SCAQMD that indicates location(s) of construction employee parking and number of parking spaces available. Maintain records that all construction contractors and subcontractors have been directed to park only in designated areas and are not permitted to use on-street parking.	1. SCAQMD 2. SCAQMD 3. Prior to the start of construction

**Table 1 (continued)**  
**Mitigation, Monitoring and Reporting Plan for Shell Wilmington Refinery Rule 1105.1 Compliance Project**

<b>Mitigation Measure/Implementation Requirement</b>	<b>Party Responsible for Implementing Mitigation</b>	<b>Monitoring Action</b>	<b>1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase</b>
AQ-1/Schedule delivery of construction materials to the site to occur during off-peak periods (i.e. from 8:30 a.m. until 4:00 p.m.) and/or after 5:00 p.m. and before 7:00 a.m., except for time-sensitive materials.	Shell	Maintain records of the date and time of each construction material delivery.	1. SCAQMD 2. SCAQMD 3. Daily
AQ-1/Record number of construction personnel on-site.	Shell	Maintain records of number of construction personnel on-site.	1. SCAQMD 2. SCAQMD 3. Daily
AQ-1/Record number of delivery trucks and haul trucks	Shell	Maintain records of number of delivery trucks and haul trucks entering the refinery.	1. SCAQMD 2. SCAQMD 3. Daily
AQ-2/Notify vendors that truck operators are prohibited from idling longer than five minutes.	Shell	Prepare standard notification letter that explains idling limitation during deliveries and provide copy to all vendors.	1. SCAQMD 2. SCAQMD 3. At time purchase order is issued.
AQ-3/Identify on-site mobile construction equipment that will use electricity or alternate fuels.	Shell	Maintain records of on-site mobile construction equipment as follows: 1. Equipment ID; 2. Equipment type; 3. Equipment manufacturer and model; 4. Engine horsepower rating 5. Power source/Fuel type.	1. SCAQMD 2. SCAQMD 3. Prior to start of construction

**Table 1 (continued)**  
**Mitigation, Monitoring and Reporting Plan for Shell Wilmington Refinery Rule 1105.1 Compliance Project**

<b>Mitigation Measure/Implementation Requirement</b>	<b>Party Responsible for Implementing Mitigation</b>	<b>Monitoring Action</b>	<b>1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase</b>
AQ-3/Restrict the number of personal and company vehicles entering the Refinery beyond the parking lots.	Shell	Maintain records of number of personal and company vehicles entering the refinery.	1. SCAQMD 2. SCAQMD 3. Daily
AQ-4/Identify construction equipment that will undergo retarding of diesel engine timing for the purpose of reducing emissions.	Shell	Submit to SCAQMD a letter that identifies the construction equipment that will undergo retarding of diesel engine timing as follows: 1. Equipment ID; 2. Equipment type; 3. Equipment manufacturer and model; 4. Engine horsepower rating 5. Power source/Fuel type.	1. SCAQMD 2. SCAQMD 3. Prior to start of construction
AQ-4/Schedule periodic maintenance activities for all vehicle and construction equipment, including regular tune-ups and retard diesel engine timing.	Shell	Maintain records of maintenance activities for all vehicle and construction equipment.	1. SCAQMD 2. SCAQMD 3. Daily

**Table 1 (continued)**  
**Mitigation, Monitoring and Reporting Plan for Shell Wilmington Refinery Rule 1105.1 Compliance Project**

<b>Mitigation Measure/Implementation Requirement</b>	<b>Party Responsible for Implementing Mitigation</b>	<b>Monitoring Action</b>	<b>1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase</b>
AQ-5/Use electric welders where electricity is available.	Shell	Submit to SCAQMD a site plan that identifies the construction areas within the refinery where electricity is not available.	1. SCAQMD 2. SCAQMD 3. Prior to start of construction
AQ-5/Identify both electric and diesel welders used during construction.	Shell	Maintain records of electric and diesel welders used during construction that specify the following: 1. Equipment ID; 2. Welder type; 3. Manufacturer and model number 4. Date, time and duration of operation 5. Location within the refinery where operated 6. Amount of fuel used (applies to non-electric welders)	1. SCAQMD 2. SCAQMD 3. Daily
AQ-6/Use on-site electricity instead of temporary power generators where electricity is available.	Shell	Submit to SCAQMD a site plan that identifies the construction areas within the refinery where electricity is not available.	1. SCAQMD 2. SCAQMD 3. Prior to start of construction

**Table 1 (continued)**  
**Mitigation, Monitoring and Reporting Plan for Shell Wilmington Refinery Rule 1105.1 Compliance Project**

<b>Mitigation Measure/Implementation Requirement</b>	<b>Party Responsible for Implementing Mitigation</b>	<b>Monitoring Action</b>	<b>1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase</b>
AQ-6/Identify temporary power generators used, the equipment rating, the date, time and duration of operation, and the location within the refinery where operated.	Shell	Maintain records of temporary power generators used during construction by identifying each unit as follows: 1. Equipment ID; 2. Generator type; 3. Equipment manufacturer and model; 4. Engine horsepower rating 5. Date, time and duration of operation 6. Type and amount of fuel used 7. Equipment location	1. SCAQMD 2. SCAQMD 3. Daily
AQ-7/Evaluate feasibility of retrofitting large off-road construction equipment.	Shell	Submit to SCAQMD a report that identifies all large off-road construction equipment considered for retrofitting that includes: 1. Equipment ID; 2. Equipment description/ type; 3. Manufacturer and model number; 4. Engine horsepower rating 5. Expected operating schedule 6. CARB or EPA certification status 7. Retrofit method or reason why the equipment will not be retrofitted.	1. SCAQMD 2. SCAQMD 3. Prior to start of construction

**Table 1 (continued)**  
**Mitigation, Monitoring and Reporting Plan for Shell Wilmington Refinery Rule 1105.1 Compliance Project**

<b>Mitigation Measure/Implementation Requirement</b>	<b>Party Responsible for Implementing Mitigation</b>	<b>Monitoring Action</b>	<b>1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase</b>
AQ-7/ Retrofit all equipment rated at 100 hp or greater scheduled to operate one month or greater with exhaust scrubbers.	Shell	Submit to SCAQMD a rental schedule that identifies these equipment as follows: 1. Equipment ID; 2. Equipment description/type; 3. Manufacturer and model; 4. Engine horsepower rating 5. Expected operating schedule 6. Verify that exhaust scrubber is installed 7. CARB/EPA certification status	1. SCAQMD 2. SCAQMD 3. Prior to start of construction
AQ-8/Establish contractual arrangement for supply of emulsified diesel fuel during construction	Shell	Submit letter to SCAQMD verifying contractual arrangement.	1. SCAQMD 2. SCAQMD 3. Prior to start of construction
AQ-8/Purchase emulsified diesel fuel, if commercially available.	Shell	Maintain records of emulsified diesel fuel deliveries including date of each delivery, day of the week, and quantity delivered in accordance with Table 3.	1. SCAQMD 2. SCAQMD 3. Prior to start of construction for initial delivery and for each delivery thereafter

**Table 1 (concluded)**  
**Mitigation, Monitoring and Reporting Plan for Shell Wilmington Refinery Rule 1105.1 Compliance Project**

<b>Mitigation Measure/Implementation Requirement</b>	<b>Party Responsible for Implementing Mitigation</b>	<b>Monitoring Action</b>	<b>1. Enforcement Agency 2. Monitoring Agency 3. Monitoring Phase</b>
AQ-8/Fuel construction equipment with emulsified diesel fuel, if commercially available.	Shell	Maintain records of refueling for each piece of equipment in accordance with Table 4: 1. Equipment ID; 2. Equipment type; 3. Date refueled; and, 4. Quantity of fuel.	1. SCAQMD 2. SCAQMD 3. Daily
AQ-8/Equip all diesel-fueled construction equipment with a meter to record hourly usage	Shell	Maintain records that verify that each piece of construction equipment is equipped with a meter in accordance with Table 5.	1. SCAQMD 2. SCAQMD 3. Prior to start of construction and prior to use of a new piece of equipment
AQ-8/Record operating time for each piece of construction equipment	Shell	Maintain records of hour meter readings for each piece of construction equipment in accordance with Table 5.	1. SCAQMD 2. SCAQMD 3. Daily
AQ-9/Suspend use of construction equipment during first stage smog alert or greater.	Shell	Maintain records of date and time of each first stage smog alert or greater.	1. SCAQMD 2. SCAQMD 3. Per first stage smog alert or greater.







