



**FACILITY PERMIT TO OPERATE  
TESORO REFINING AND MARKETING CO.**

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE  
The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions And Requirements	Conditions
<b>Process 17: ELECTRIC GENERATION</b>					
<b>System 4: COGENERATION UNIT C</b>					S11.3, S31.3
TURBINE, C, STEAM INJECTION, COMBINED CYCLE, REFINERY FUEL GAS/NATURAL GAS, GENERAL ELECTRIC, MODEL NO. PG6581B, 534 MMBTU/HR WITH A/N 484368	D1619	C1625 C1626	NOX: MAJOR SOURCE**; SOX: MAJOR SOURCE**	<p><b>CO: 2000 PPMV (5) [RULE 407, 4-2-1982]</b>  <b>CO: 2 PPMV (4) [RULE 1703(a)(2)-PSD BACT,10-7-1988]</b></p> <p><b>NOX (Refinery Gas) : 2.5 PPMV(4) [Rule 2005 BACT, 4-20-2001]</b>  <b>NOX (Nat Gas): 2.0 PPMV(4) [Rule 2005 BACT, 4-20-2001]</b>  <b>NOX: 74 PPMV (8) [40CFR 60 Subpart KKKK, 7-6-2006];</b>  <b>NOX (INTERIM): 8.5 lb/MMSCF (1) [RULE 2012, 12-5-2003, RULE 2012, 1-7-2005];</b>  <b>NOX (COMMIS): 43.6 lb/MMSCF (1) [Rule 2012, 12-5-2003, RULE 2012, 1-7-20055];</b></p> <p><b>SOX: 0.06 lb/MMBTU (8) [40CFR 60 Subpart KKKK, 7-6-2006];</b>  <b>SOX: 0.90 lb/MW-hr (8) [40CFR 60 Subpart KKKK, 7-6-2006];</b>  <b>SOX (INTERIM): 34.0 lb/MMSCF (1) [RULE 2011, 12-5-2003, RULE 2011, 1-7-2005]</b>  <b>SOX (COMMIS): 6.65lb/MMSCF (1) [RULE 2011, 12-5-2003, RULE 2011, 1-7-2005]</b></p> <p><b>VOC: 2.0 PPMV (4) [RULE 1303 (a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-</b></p>	A63.8, A99.6, A99.7, A99.8, A99.9, A99.10, A99.11,A99.12, A195.9, A195.10, A195.17, A195.18, A195.19, A327.2, B59.7, B61.8, B61.10, D29.9, D29.11, D82.3, D82.4, D90.20, D90.21, E73.4, H23.37, I296.2, K40.3, K67.14



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<p>GENERATOR, 42.62 MW</p>	<p>D1624</p>			<p>BACT, 12-6-2002]</p> <p><b>PM:</b> Rule 475(a)(4) exemption (5) [RULE 475, 10-8-1976; RULE 475, 8-7-1978];</p> <p><b>PM:</b> 0.01 GRAINS/SCF (5) [RULE 476, 10-8-1976]</p> <p><b>PM:</b> 11 LBS/HR (5A) [RULE 476, 10-8-1976]</p> <p><b>PM10:</b> 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981];</p>	
<p>INJECTOR, STEAM INJECTION</p>	<p>D1620</p>				
<p>BURNER, DUCT, REFINERY GAS/NATURAL GAS, 95 MMBTU/HR</p>	<p>D1621</p>	<p>C1625 C1626</p>	<p>NOX: MAJOR SOURCE**; SOX: MAJOR SOURCE**</p>		<p>A63.8, A99.6, A99.7, A99.8, A99.9, A99.10, A99.11, A99.12, A99.17, A195.9, A195.10, A195.17, A195.18, A195.19,</p>



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					A327.2, B59.7, B61.8, B61.10, D29.9, D29.11, D82.3, D82.4, D90.20, D90.21, E73.4, H23.37, I296.2, K40.3, K67.14
BOILER, WASTE HEAT RECOVERY STEAM GENERATOR, UNFIRED	D1622				
TURBINE, STEAM 18.4 MW	D1623				
CO OXIDATION CATALYST, SERVING TURBINE C, WITH 130 CUBIC FEET CATALYST VOLUME, BASF OR EQUIVALENT, HEIGHT: 55.75 FT; WIDTH 10.5 FT; DEPTH: 0.3 FT; WITH A/N 484369	C1625	D1619 D1621			D12.16, D12.17, E193.6
SELECTIVE CATALYTIC REDUCTION, SERVING TURBINE C, WITH 472.5 CUBIC FEET CATALYST VOLUME, CORMETECH OR EQUIVALENT, VANADIUM-TITANIUM-TUNGSTEN, HEIGHT: 55.75 FT; WIDTH 10.5 FT; DEPTH: 2 FT; WITH AMMONIA INJECTION	C1626	D1619 D1621 S1627		NH3: 5 PPMV (4) [RULE 1303 (a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]	A195.11, D12.10, D12.11, D12.12, D29.10, E179.3, E179.4, E193.6
STACK, DIAMETER: 10.5 FT (ID); HEIGHT: 120 FT, WITH A/N 484369	S1627	C1626			
COMPRESSORS, C-127, C128, and C-129, FUEL GAS, 3 TOTAL (Existing)	D973				
KNOCKOUT POT, V-1000, FEED GAS COMPRESSION SUCTION A/N 484369	D1640				
KNOCKOUT POT, V-1008, FUEL GAS COMPRESSION DISCHARGE A/N 484369	D1641				



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KNOCKOUT POT, V-1012, RECYCLE GAS COMPRESSION SUCTION A/N 484369	D1642				
KNOCKOUT POT, V-1461, FUEL GAS COMPRESSION SUCTION A/N 484369	D1643				
KNOCKOUT POT, V-2409, FUEL GAS A/N 484369	D1644				

- \* (1) Denotes RECLAIM emission factor (2) Denotes RECLAIM emission rate
- (3) Denotes RECLAIM concentration limit (4) Denotes BACT emission limit
- (5)(5A)(5B) Denotes command and control emission limit (6) Denotes air toxic control rule limit
- (7) Denotes NSR applicability limit (8)(8A)(8B) Denotes 40 CFR limit (e.g. NSPS, NESHAPS, etc.)
- (9) See App B for Emission Limits (10) See Section J for NESHAP/MACT requirements

\*\* Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

**CONDITIONS**

**SYSTEM CONDITIONS**

**S11.3** The operator shall comply with all applicable mitigation measures stipulated in the "Statement of Findings, Statement of Overriding Considerations, and Mitigation Monitoring Plan" document which is part of the AQMD Certified Final Environmental Impact Report dated 4-10-2009 for this facility.

This condition shall only apply to equipment listed in Section H of this facility permit.

[CA PRC CEQA, 11-23-1970]

[Systems subject to this condition : Process 8, System 1, Process 17, System 4 ]

**S31.3** The following BACT requirements shall apply to VOC service fugitive components associated with the devices that are covered by application number(s), 484368 & 484369

All new valves and major components in VOC service as defined by Rule 1173, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in Rule 1173, shall be distinctly identified from other components through their tag numbers (e.g., numbers ending in the letter "N"), and shall be noted in the records.

All open-ended valves shall be equipped with cap, blind flange, plug, or a second valve.

All pressure relief valves shall be connected to closed vent system or equipped with rupture disc.

All process drains shall be equipped with water seal, or a closed vent system and control device.



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The operator shall comply with the terms and conditions set forth below:

All sampling connections shall be closed-purge, closed-loop, or closed-vent system.

All components are subject to District Rule 1173.

All new components in VOC service as defined in Rule 1173, except valves and flanges, shall be inspected quarterly using EPA reference Method 21. All new valves and flanges in VOC service except those specifically exempted by Rule 1173 shall be inspected monthly using EPA Method 21.

All new components in VOC service, a leak greater than 500 ppm but less than 1,000 ppm measured as methane above background as measured using EPA Method 21, shall be repaired within 14 days of detection.

All new valves in VOC service shall be of leakless type, except those specifically exempted by Rule 1173 or approved by the District in the following applications: heavy liquid service, control valves, instrument piping/tubing, applications requiring torsional valve stem motion, applications where failures could pose safety hazards (e.g. drain valves with valve stems in horizontal position), retrofits with space limitations, and valves not commercially available.

If 98.0 percent or greater of the new valve and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppm for two consecutive months, then the operator may revert to a quarterly inspection program with the approval of the executive officer. This condition does not apply to leakless valves.

The operator shall keep records of the monthly inspection (and quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District.

The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The operator shall also submit a complete, as built, piping and instrumentation diagram(s) and copies of requisition data sheets for all non-leakless type valves with a listing of tag numbers and reasons why leakless valves were not used.

For the purpose of this condition, leakless valve shall be defined as any valve equipped with sealed bellow or equivalent as approved in writing by the District prior to installation.

Components shall be defined as any valve, fitting, pump, compressor, pressure relief device, diaphragm, hatch, sight-glass, and meter, which are not exempt by Rule 1173.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Systems subject to this condition : Process 17, System 4]



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The operator shall comply with the terms and conditions set forth below:

**Gas Turbine/HRSG and Related APC Equipment**

**A. Emission Limits**

**A63.8** The operator shall limit emissions from this equipment as follows

CONTAMINANT	EMISSIONS LIMIT
VOC	Less than or equal to 1,978 LBS IN ANY ONE MONTH
PM10	Less than or equal to 4,910 LBS IN ANY ONE MONTH

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from equipment D1619 (Gas turbine) and D1621 (Duct Burner). The operator shall calculate VOC emissions by using monthly fuel use data and emissions factors, in units of lbs VOC/MMscf:  $2.94E-7 \times F_d\text{-Factor} \times HV$  for the fuel gas; where the  $F_d\text{-Factor}$  is the ratio of the volume of products of combustion to the fuel heat content, in units of dscf/MMBtu, and HV is fuel heating value, in units of Btu/scf. Monthly averages of  $F_d\text{-Factor}$  and HV for the gas shall be used in this calculation.

The operator shall calculate the monthly emissions for PM10 using the equation below and the following emission  $PM10 = .0105 \text{ lb/MMBTU}$ .

Monthly Emissions, lb/month = X \* (EF). Where X = monthly heat input, MMBTU/month; and EF = emission factor indicated above.

**[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]**

[Devices subject to this condition: D1619, D1620]

*(1) See page 19 of this evaluation for the emission factors*

**A99.6** The 2.0 PPM and 2.5 PPM NOX emission limit(s) shall not apply during turbine commissioning, startup, and shutdown periods. The commissioning period shall not exceed 514 operating hours. The turbine shall limited to a maximum of 48 startups per year. The time for cold startup shall not exceed 2 hours for each startup. The time for warm startup shall not exceed 1.5 hours. The time for hot startup shall not exceed 1 hour. The time for shutdown shall not exceed 1/2 hour. The turbine shall be limited to 8 cold startups per year, 10 warm startups per year, 30 hot startups per year and 48 shutdowns per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer or his designee.

For the purposes of this condition, start-up and shutdown shall be defined as the period when the exhaust temperature of this equipment is below 500 degree F.

**[RULE 1703(a)(2) - PSD-BACT, 10-7-1988; RULE 2005,4-20-2001; RULE 2005, 5-6-2005]**

[Devices subject to this condition : D1619, D1621]

**A99.7** The 2.0 PPM CO emission limit(s) shall not apply during turbine commissioning, startup, and shutdown periods. The commissioning period shall not exceed 514 operating hours. The turbine shall limited to a maximum of 48 startups per year. The time for cold startup shall not exceed 2 hours for each startup. The time for warm startup shall not exceed 1.5 hours. The time for hot startup shall not exceed 1 hour. The time for shutdown shall not exceed 1/2 hour. The turbine shall be limited to 8



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cold startups per year, 10 warm startups per year, 30 hot startups per year and 48 shutdowns per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer or his designee.

For the purposes of this condition, start-up and shutdown shall be defined as the period when the exhaust temperature of this equipment is below 500 degree F.

**[RULE 1703(a)(2) - PSD-BACT, 10-7-1988]**

[Devices subject to this condition : D1619, D1621]

**A99.8** The 2.0 PPM VOC emission limit(s) shall not apply during turbine commissioning, startup, and shutdown periods. The commissioning period shall not exceed 514 operating hours. The turbine shall be limited to a maximum of 48 startups per year. The time for cold startup shall not exceed 2 hours for each startup. The time for warm startup shall not exceed 1.5 hours. The time for hot startup shall not exceed 1 hour. The time for shutdown shall not exceed 1/2 hour. The turbine shall be limited to 8 cold startups per year, 10 warm startups per year, 30 hot startups per year and 48 shutdowns per year. Written records of commissioning, start-ups and shutdowns shall be maintained and made available upon request from the Executive Officer or his designee.

For the purposes of this condition, start-up and shutdown shall be defined as the period when the exhaust temperature of this equipment is below 500 degree F.

**[RULE 1303(a)(1)-BACT, 5-10-1996]**

[Devices subject to this condition : D1619, D1621]

**A99.9** The 43.6 LBS/MMSCF NOX emission limit(s) shall only apply during the interim reporting period during initial turbine commissioning to report RECLAIM emissions. The interim reporting period shall not exceed 12 months from entry into RECLAIM.

**[RULE 2012, 5-6-2005]**

[Devices subject to this condition : D1619, D1621]

**A99.10** The 8.5 LBS/MMSCF NOX emission limit(s) shall only apply during the interim reporting period after initial turbine commissioning when the turbine is operating with or without duct firing to report RECLAIM emissions.

The interim reporting shall not exceed 12 months from entry into RECLAIM.

**[RULE 2012, 5-6-2005]**

[Devices subject to this condition : D1619, D1621]

**A99.11** The 6.65 LBS/MMSCF SOX emission limit(s) shall only apply during the interim reporting period during initial turbine commissioning to report RECLAIM emissions. The interim reporting period shall not exceed 12 months from entry into RECLAIM.

**[RULE 2011, 5-6-2005]**



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[Devices subject to this condition : D1619, D1621, D1629, D1634]

**A99.12** The 34 LBS/MMSCF SOX emission limit(s) shall only apply during the interim reporting period after initial turbine commissioning when the turbine is operating with or without duct firing to report RECLAIM emissions.

The interim reporting shall not exceed 12 months from entry into RECLAIM.

**[RULE 2011, 5-6-2005]**

[Devices subject to this condition : D1619, D1621, D1629, D1634]

**A195.9** The 2.5 PPMV NOX emission limit(s) is averaged over 1 hour at 15 percent O2 dry.

For the purpose of this condition, this limit shall apply only when the cogeneration unit is burning Refinery gas. Refinery gas is defined as a mixture of refinery fuel gas, produced within the refinery, and natural gas obtained from a utility regulated by the Public Utilities Commission (PUC), for which the natural gas component of the mixture does not exceed 50% of the total, by Higher Heating Value (HHV) content.

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2005, 5-6-2005]**

[Devices subject to this condition : D1619, D1621]

**A195.10** The 2.0 PPMV CO emission limit(s) is averaged over 1 hour at 15 percent O2 dry.

**[RULE 1703(a)(2) - PSD-BACT, 10-7-1988]**

[Devices subject to this condition : D1619, D1621]



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The operator shall comply with the terms and conditions set forth below:

A195.11 The 5 PPMV NH<sub>3</sub> emission limit(s) is averaged over 1 hour at 15 percent O<sub>2</sub> dry.

The operator shall calculate and continuously record the NH<sub>3</sub> slip concentration using the following:  $NH_3(ppmv) = [a \cdot b \cdot c / 1E6] \cdot 1E6 / b$ , where a = NH<sub>3</sub> injection rate (lb/hr) / 17 (lb/lbmole), b = dry exhaust gas flow rate (scf/hr) / 385.3 scf/lbmole, and c = change in measured NO<sub>x</sub> across the SCR (ppmv at 15 percent O<sub>2</sub>). The operator shall install and maintain a NO<sub>x</sub> analyzer to measure the SCR inlet NO<sub>x</sub> ppm accurate to within plus or minus 5 percent calibrated at least once every 12 months.

The NO<sub>x</sub> analyzer shall be installed and operated within 90 days of initial start up.

The operator shall use the method described above or another alternative method approved by the Executive Officer.

The ammonia slip calculation procedures described above shall not be used for compliance determination for emission information determination without corroborative data using an approved reference test method for the determination of ammonia.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C1626]

A195.17 The 2.0 PPMV VOC emission limit(s) is averaged over 1 hour at 15 percent O<sub>2</sub> dry.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : D1619, D1621]

A195.18 The 2.0 PPMV NO<sub>x</sub> emission limit(s) is averaged over 3 hour at 15 percent O<sub>2</sub> dry. For the purpose of this condition, this limit shall apply only when the cogeneration unit is burning Refinery gas. Refinery gas is defined as a mixture of refinery fuel gas, produced within the refinery, and natural gas obtained from a utility regulated by the Public Utilities Commission (PUC), for which the natural gas component of the mixture does not exceed 50% of the total, by Higher Heating Value (HHV) content.

[ RULE 2005, 5-6-2005]

[Devices subject to this condition : D1619, D1621]

A195.19 The 2.0 PPMV NO<sub>x</sub> emission limit(s) is averaged over 1 hour at 15 percent O<sub>2</sub> dry. For the purpose of this condition, this limit shall apply only when the cogeneration unit is burning Natural gas. Natural gas is defined as a mixture of refinery fuel gas, produced within the refinery, and natural gas obtained from a utility regulated by the Public Utilities Commission (PUC), for which the natural gas component of the mixture exceeds 50% of the total, by Higher Heating Value (HHV) content.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D1619, D1621]



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The operator shall comply with the terms and conditions set forth below:

**A327.2** For the purpose of determining compliance with District Rule 476, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[RULE 476, 10-8-1976]

[Devices subject to this condition : D1619, D1621, D1629, D1634]

**B. Material/Fuel Type Limits**

**B59.7** The operator shall only use the following material(s) in this device :

Refinery fuel gas meeting sulfur limit specified by condition B61.8, natural gas, or mixture of refinery fuel gas and natural gas

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D1619, D1621 D1629, D1634]

**B61.8** The operator shall not use fuel gas containing the following specified compounds:

Compound		ppm by volume
total sulfur compounds calculated as H2S	greater than	40

The total reduced sulfur concentration limit shall apply to refinery fuel gas and be based on one-hour averaging period and measured before blending with natural gas

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : D1619, D1621, D1629, D1634]

**B61.10** The operator shall not use fuel gas containing the following specified compounds:

Compound		ppm by volume
H2S	greater than	162
H2S	greater than	60

The 162 ppm limit shall be based on a rolling 3-hour averaging period  
The 60 ppm limit shall be based on a rolling 365 successive calendar day rolling average



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[40CFR 60 Subpart Ja, 6-24-2008]

[Devices subject to this condition : D1619, D1621 D1629, D1634]

#### **D. Monitoring/Testing Requirements**

D12.10 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the the total hourly throughput recorded of injected ammonia.

The operator shall also install and maintain a device to continuously record the parameter being measured

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C1626, C1631, C1636]

D12.11 The operator shall install and maintain a(n) temperature reading device to accurately indicate the temperature of the exhaust at the inlet to the SCR reactor.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C1626, C1631, C1636]

**D12.12** The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches water column.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 5-6-2005]

[Devices subject to this condition : C1631, C1636]

**D12.16** The operator shall install and maintain a(n) differential pressure gauge to accurately indicate the differential pressure across the CO catalyst bed.

The operator shall also install and maintain a device to continuously record the parameter being measured.



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The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

For the purpose of this condition, continuously record shall be defined as recording at least once every week and shall be calculated based upon the average of the continuous monitoring for that week

**[RULE 1703(a)(2) - PSD-BACT, 10-7-1988]**

[Devices subject to this condition : C1625]

**D12.17** The operator shall install and maintain a(n) temperature reading device to accurately indicate the temperature at the inlet of the CO catalyst bed. CO catalyst bed.

The operator shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

For the purpose of this condition, continuously record shall be defined as recording at least once every hour and shall be based upon the average of the continuous monitoring for that hour

**[RULE 1703(a)(2) - PSD-BACT, 10-7-1988]**

[Devices subject to this condition : C1625]

**D29.9** The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test	Averaging Time	Test Location
NOx emissions	Approved District Method	District-approved averaging time	Stack Outlet
SOx emissions	Approved District Method	District-approved averaging time	Stack Outlet
CO emissions	Approved District Method	District-approved averaging time	Stack Outlet
ROG emissions	Approved District Method	District-approved averaging time	Stack Outlet
PM10 emissions	Approved District Method	District-approved averaging time	Stack Outlet
NH3 emissions	Approved District Method	District-approved averaging time	Stack Outlet



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The operator shall comply with the terms and conditions set forth below:

The test shall be conducted after AQMD approval of the source test protocol, but no later than 180 days after initial start-up. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall record the fuel flow rate(CFH), the flue gas flowrate, and the turbine and steam turbine generating output in MW.

The test shall be conducted in accordance with AQMD approved source test protocol. The protocol shall be submitted to the AQMD no later than 45 days before the proposed test date and shall be approved by the AQMD before test commences. The test protocol shall include the proposed operating conditions of the turbine during the test, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted with and without duct firing when this equipment is operating at maximum , average, and minimum load.

VOC compliance shall be demonstrated as follows a) Stack gas samples are extracted into summa canisters maintaining a final canister pressure between 400-500 mm Hg absolute, b) Pressurization of canisters are done with zero gas analyzer/certified to contain less than 0.05 ppmv total hydrocarbon as carbon, and c) Analysis of canisters are per EPA Method TO-12 (with pre concentration) and temperature of canisters when extracting samples for analysis is not below 70°F

The use of this alternative method for VOC compliance determination does not mean that it is more accurate than AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD Method 25.3 without prior approval except for the determination of compliance with the VOC BACT level of 2.0 ppmv calculated as carbon for gas fired turbine

Because the VOC BACT level was set using derived from various source test results, this alternative VOC compliance method provides a fair comparison and represents the best sampling and analysis technique for this purpose at this time.

The test results shall be reported with two significant digits

For the purpose of this condition, alternative test methods may be allowed for each of the above pollutants upon concurrence AQMD and EPA

[**RULE 1303(a)(1)-BACT, 5-10-1996**; **RULE 1303(a)(1)-BACT, 12-6-2002**; **RULE1303(b)(2)-Offset, 5-10-1996**; **RULE 1303(b)(2)-Offset, 12-6-2002**; **RULE 1703(a)(2) PSD-BACT, 10-7-1988**; **RULE 2005, 4-20-2001**; **RULE 2005, 5-6-2005**]



## FACILITY PERMIT TO OPERATE TESORO REFINING AND MARKETING CO.

**SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE**  
The operator shall comply with the terms and conditions set forth below:

[Devices subject to this condition : D1619, D1621]

**D29.10** The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	Approved District Method	District-approved averaging time	Stack Outlet

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable or not yet certified, the test shall be conducted to determine the NOx emissions using District Method 100.1 measured over 60 minutes averaging time period.

The test shall be conducted no later than 180 days after initial start up

The test results shall be submitted to the District within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test

The test shall be conducted to demonstrate compliance with Rule 1303 concentration limit. If the equipment is not operated in any given quarter, the operator may elect to defer the required testing to a quarter in which the equipment is operated.

[**RULE 1303(a)(1)-BACT, 5-10-1996**; **RULE 1303(a)(1)-BACT, 12-6-2002**]  
[Devices subject to this condition : C1626, C1631, C1636]

**D29.11** The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test	Averaging Time	Test Location
VOC emissions	Approved District Method	District-approved averaging time	Stack Outlet
PM10 emissions	Approved District Method	District-approved averaging time	Stack Outlet

The test shall be conducted at least once every three years.

The test shall be conducted and the results submitted to the AQMD within 60 days after the test date. The AQMD shall be notified of the date and time of the test at



## FACILITY PERMIT TO OPERATE TESORO REFINING AND MARKETING CO.

### SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

least 7 days prior to the test.

The test shall be conducted with and without duct firing when this equipment is operating at least at 80 percent of maximum load.

The test shall be conducted to demonstrate compliance with the monthly emission limit.

[**RULE 1303(a)(1)-BACT, 5-10-1996**; **RULE 1303(a)(1)-BACT, 12-6-2002**; **RULE 1303(b)(2)-Offset, 5-10-1996**; **RULE 1303(b)(2)-Offset, 12-6-2002**]

[Devices subject to this condition : D1619, D1621]

**D82.3** The operator shall install and maintain a CEMS to measure the following parameters:

CO concentration in ppmv at the outlet of the SCR serving the equipment

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS shall be installed and operated no later than 90 days after initial start up of the turbine and in accordance with an approved AQMD Rule 218 CEMS plan application. The operator shall not install the CEMS prior to receiving initial approval. Within two weeks of the turbine start-up, the operator shall provide written notification to the AQMD of the exact date of start-up

The CEMS shall be installed and operated to measure the CO concentration over a 15 minute averaging time period. The CO mass emission shall be calculated monthly based on monthly fuel gas usage multiply by monthly average CO concentration

[**RULE 1703(a)(2) - PSD-BACT, 10-7-1988**]

Devices subject to this condition : D1619, D1621]

**D82.4** The operator shall install and maintain a CEMS to measure the following parameters:

NOx concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis

The CEMS shall be installed and operating no later than 90 days after initial start up of the turbine and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the operator shall comply with the monitoring requirements of Rule 2012(h)(2) and 2012(h)(3). Within two weeks of turbine start-up date, the operator shall provide written notification to the District of the exact date of start-up

The CEMS shall be installed and operating (for BACT purposes only) no later than 90 days after initial start up of the turbine.



## FACILITY PERMIT TO OPERATE TESORO REFINING AND MARKETING CO.

### SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

**[Rule 2005, 5-6-2005; RULE 2012, 5-6-2005]**

Devices subject to this condition : D1619, D1621]

**D90.20** The operator shall continuously monitor the H<sub>2</sub>S concentration in the fuel gases before being burned in this device according to the following specifications:

The operator shall use Gas Chromatograph meeting the requirements of 40CFR60 Subpart Ja to monitor the parameter.

The operator shall also install and maintain a device to continuously record the parameter being monitored.

The operator may monitor the H<sub>2</sub>S concentration at a single location for fuel combustion devices, if monitoring at this location accurately represents the concentration of H<sub>2</sub>S in the fuel gas being burned in this device.

[40CFR 60 Subpart Ja, 6-24-2008]

[Devices subject to this condition : D1619, D1621, D1629, D1634]

**D90.21** The operator shall continuously monitor the total sulfur compounds calculated as H<sub>2</sub>S concentration in the fuel gases before being burned in this device and before blending with natural gas according to the following specifications:

The CEMS shall be approved by the District before the initial start-up

The operator shall also install and maintain a device to continuously record the parameter being monitored.

The operator may monitor the total sulfur compounds calculated as H<sub>2</sub>S concentration at a single location for fuel combustion devices, if monitoring at this location accurately represents the concentration of total sulfur compounds calculated as H<sub>2</sub>S in the fuel gas being burned in this device.

**[RULE 2005, 5-6-2005]**

[Devices subject to this condition : D1619, D1621, D1629, D1634]

### E. Equipment Operation/Construction Requirements

**E73.4** Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if any of the following requirement(s) are met:

The inlet exhaust temperature to the SCR reactor is below 500 degrees F

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 2005, 5-6-2005]**

[Devices subject to this condition : D1619, D1621]



## FACILITY PERMIT TO OPERATE TESORO REFINING AND MARKETING CO.

### SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

E179.3 For the purpose of the following condition number(s), continuously record shall be defined as once every hour and shall be calculated upon average of the continuous monitoring for that hour.

Condition Number D 12-10

Condition Number D 12-11

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-5-2003; RULE 2012, 1-7-2005]

[Devices subject to this condition : C1626, C1631, C1636]

E179.4 For the purpose of the following condition number(s), continuously record shall be defined as once every month and shall be calculated upon average of the continuous monitoring for that month.

Condition Number D 12-12

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-5-2003; RULE 2012, 1-7-2005]

[Devices subject to this condition : C1626, C1631, C1636]

**E193.6** The operator shall construct, operate, and maintain this equipment according to the following specifications:

To establish equivalency of a catalyst, the operator shall submit the following information for the catalyst to the district permitting engineer: manufacturer, description (type), configuration, dimensions( per block), number of blocks, total volume, space velocity, life, vendor performance guarantee, performance curve(versus temperature), minimum operating temperature, estimated SO<sub>2</sub> to SO<sub>3</sub> conversion, estimated NO to NO<sub>2</sub> conversion, and concentration of Rule 1401 TACs

The operator shall not install and use an "equivalent" catalyst until approval is received in writing from the District

[RULE 1303(a)(1)-BACT, 5-10-1996]

[Devices subject to this condition : C1625, C1626]



## FACILITY PERMIT TO OPERATE TESORO REFINING AND MARKETING CO.

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE  
The operator shall comply with the terms and conditions set forth below:

### H. Applicable Rules

H23.37 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
NOX	40CFR60, SUBPART	KKKK
SOX	40CFR60, SUBPART	KKKK

**[40CFR 60 Subpart KKKK, 7-6-2006]**

[Devices subject to this condition : D1619, D1621]

I296.2 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

To comply with this condition, the operator shall prior to the first compliance year hold a minimum 60,503 lbs/yr of NOx RTCs and 22,468 lbs/yr of SOx RTCs. This condition shall apply to the first year of operation, commencing with the initial operation of the gas turbine

To comply with this condition, the operator shall, prior to the beginning of all years subsequent to the first compliance year, hold a minimum 56,574 lbs/yr of NOx RTCs and 23,039 lbs/yr of SOx RTCs for operation of the gas turbine. In accordance with Rule 2005(f), unused RTCs may be sold only during the reconciliation period for the fourth quarter of the applicable compliance year inclusive of the first year

For the purpose of this condition, unused RTCs is the difference between (1) the amount of NOx RTCs required to be held at the beginning of a compliance year as specified in this condition and the amount of NOx emissions during each applicable compliance year and (2) the amount of SOx RTCs required to be held at the beginning of a compliance year as specified in this condition and amount of SOx emissions during each applicable compliance year

**[RULE 2005, 5-6-2005]**

[Devices subject to this condition : D1619, D1621]



## FACILITY PERMIT TO OPERATE TESORO REFINING AND MARKETING CO.

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE  
The operator shall comply with the terms and conditions set forth below:

K40.2 The operator shall provide to the District a source test report in accordance with the following specifications:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv), corrected to 15 percent oxygen, dry basis.

Emission data shall be expressed in terms of mass rate (lbs/hr). In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

Emission data shall be expressed in terms of lbs/MM cubic feet.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Source test results shall also include oxygen levels in the exhaust, the fuel flow rate (CFH), the fuel gas temperature, and the generator power output (MW) under which the test conducted under which the test was conducted.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

K67.14 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Fuel use during the commissioning period

fuel use after the commissioning period and prior to CEMS certification

fuel use after CEMS certification

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D1619, D1629, D1634]

