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**PERMIT TO OPERATE
-Change of Condition-**

COMPANY NAME: Chevron Products Company

MAILING ADDRESS: 324 W. El Segundo Blvd.
El Segundo, CA 90245

EQUIPMENT LOCATION: 324 W. El Segundo Blvd.
El Segundo, CA 90245

BACKGROUND/SUMMARY

The Cogeneration Train B (P17S2) consists of a gas-fired turbine that produces 46 MW of electricity for use in the refinery and a duct burner equipped heat recovery steam generator (HRSG) that produces low and high pressure steam for use in the refinery. The air pollution control system (APCS)(P17S4) for the cogeneration unit consists of an SCR catalyst for reduction of NOx emissions and a CO oxidation catalyst for reduction of CO and VOC emissions.

The Auxiliary Boiler (P18S1) is a water tube type boiler that produces high pressure steam. According to Chevron, the use of this boiler will likely be curtailed once the new Cogeneration Train D is brought online. The Auxiliary Boiler APCS (P18S2) consists of an SCR catalyst for reduction of NOx emissions.

Permit condition D28.13, which is tagged to the Cogeneration Train B turbine (D2207) and duct burners (D2208) and the Auxiliary Boiler (D2216), specifies that Chevron shall perform a source test for ROG every three years. Permit condition D29.5, which is also tagged to the Cogeneration Train B turbine and duct burners and the Auxiliary Boiler, specifies that Chevron shall perform a source test for PM10 annually. Both of these conditions specify that the source test shall be performed when the turbine and duct burner(s) are operating at 80% or greater of their maximum design capacity.

According to Chevron, they are currently unable to operate the Cogen Train B turbine and duct burners at 80% or greater of the maximum permitted combined capacity of 616 MMBtu/hr (HHV) due to fouling of a compressor. They are also unable to maintain the Auxiliary Boiler at 80% or greater of the maximum permitted capacity of 342 MMBtu/hr. Therefore, Chevron is requesting that conditions D28.13 and D29.5 be modified as follows:

The test shall be conducted when this equipment is operating at 80 percent or greater of the maximum design capacity. If the unit is unable to achieve 80% of the maximum design capacity, a test may be performed at lower operating load subject to the approval of the administrator.

Chevron also proposes to add the following language to continuous parameter monitoring condition D12.6, which is tagged to the Cogen Train B turbine. This language mirrors the

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failure, calibration, routine maintenance and repair period allowances specified for CEMS in District Rule 218(f)(3). This language was also recently added to the parameter monitoring conditions for the Cogeneration Train B APCS.

The operator shall install and maintain a(n) continuous monitoring system to accurately indicate the steam-to-fuel ratio in the equipment except during calibration checks, or routine maintenance and repair lasting 60 minutes or less.

The operator shall also install and maintain a device to continuously record the parameter being measured except during calibration checks, or routine maintenance and repair lasting 60 minutes or less.

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

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

In the event of a monitoring and/or recording system malfunction or failure, which exceeds 24 hours, the operator shall notify the Executive Officer within 24 hours or the next working day. During the system failure, compliance with the requirement to continuously monitor and record data is waived for a period not to exceed 96 consecutive hours. Such waiver is extended beyond 96 consecutive hours only if a petition for an interim variance is filed in accordance with Regulation V and shall terminate at the time the Hearing Board acts upon such variance petition.

The permit for the Cogen Train B and Auxiliary Boiler air pollution control systems (APCSs) are not being modified. However, it is difficult to evaluate the turbine and boiler in isolation from the APCSs. Therefore, this document includes some evaluation of the APCS compliance with applicable permit conditions. The Cogen Train B APCS consists of an SCR and CO catalyst. The Auxiliary Boiler APCS consists of an SCR.

EQUIPMENT DESCRIPTION:

The Cogeneration Train B and Auxiliary Boiler are currently operating under a permit to operate in Section D of the Chevron El Segundo Refinery RECLAIM/Title V Facility Permit. A new Permit to Operate, which includes revisions of conditions D28.13 and D29.15, is proposed for issuance in Section D. In the proposed permit pages below, new and deleted condition text is indicated by underline and strikeout, respectively. Modified conditions are indicated by parenthesis.

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Section D: Facility Description and Equipment Specific Conditions

Equipment	ID No.	Connect To	RECLAIM Source	Emissions and Requirements	
PROCESS 17: ELECTRIC GENERATION					
SYSTEM 2: COGENERATION TRAIN B					
GAS TURBINE, NO. 2, BUTANE, NAT. GAS, PROPANE, PENTANE, GE MODEL NO. PG6531B (FRAME 6), WITH STEAM OR WATER INJECTION, 560 MMBTU/HR (HHV): GENERATOR, ELECTRIC, 46 MW A/N: 474711 - <u>541582</u>	D2207	C2213 C2214	NOX: MAJOR SOURCE; SOX: MAJOR SOURCE	CO: 2,000 PPMV (5) [RULE 407]; CO: 10 PPMV (4) [RULE 1303 BACT]; NOx: 9 PPMV (4) [RULE 2005; 4-20-2001] PM: 0.1 GR/SCF (5) [RULE 409]; PM: 0.01 GR/SCF (5A) [RULE 475]; PM: 11 LBS/HR (5B) [RULE 475]	A63.10, A63.12, (A63.31), A63.33 A99.4, A99.5, A195.23, A195.24, A327.1 B61.6, B61.7, C1.82, C1.149, D12.6, D12.44, D28.13, D28.36, D29.5, D29.16 , D82.2, D82.3, D90.20, D90.23, E54.8, E73.1, E73.2, H23.27, H23.28, K40.5, K67.2
BURNER, DUCT NO. 2, NATURAL GAS, REFINERY GAS, COEN, LOW NOX TYPE, 119.7 MMBTU/HR (LHV) A/N: 474711 - <u>541582</u>	D2208	C2213 C2214	NOX: MAJOR SOURCE; SOX: MAJOR SOURCE	CO: 2,000 PPMV (5) [RULE 407]; NOx: 0.2 LBS/MMBTU (8A) [40CFR 60 SUBPART Db, 10-01-2001]; PM: 0.1 GR/SCF (5) [RULE 409]; PM: 0.01 GR/SCF (5A) [RULE 476]; PM: 11 LBS/HR (5B) [RULE 476]	A327.2, B61.6, C1.149, D28.13, D28.36, D29.5, D29.16 , D90.20, H23.26, K67.2
BOILER, WASTE HEAT RECOVERY, NO. 2, STRUTHER WELLS, UNFIRED, TUBE TYPE, 264,000 LB PER HOUR, 850 PSIG, 720 DEG F STEAM A/N: 474711 - <u>541582</u>	D2209				
COMPRESSOR, FUEL BOOSTER, K-3100, NATURAL GAS, COMMON TO COGENS A & B A/N: 474709	D2200				
COMPRESSOR, FUEL BOOSTER, K-3110, NATURAL GAS, COMMON TO COGENS A & B A/N: 474709	D2201				
KNOCK OUT POT, LPG RELIEF SYSTEM, V-3670, COMMON TO COGEN TRAINS A & B, LENGTH: 16 FT; DIAMETER: 8 FT A/N: 474709	D3479				

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Equipment	ID No.	Connect To	RECLAIM Source	Emissions and Requirements	
DRUM, LPG RECIRCULATION SURGE, V-3990, COMMON TO COGEN TRAINS A & B, LENGTH: 8 FT; DIAMETER: 4 FT A/N: 474709	D3480				
FUGITIVE EMISSIONS, MISCELLANEOUS A/N: 474711-541582	D3672				H23.3
DRUM, LPG KNOCKOUT, V-3140, COMMON TO COGEN TRAINS A & B, LENGTH: 10 FT; DIAMETER: 4 FT A/N: 474709	D3730				
HEAT EXCHANGER, E-3140, PENTANE VAPORIZER, STEAM HEATED, PENTANE, 6.95 MMBTU/HR DUTY, COMMON TO COGEN TRAINS A & B A/N: 474709	D3801				

Equipment	ID No.	Connect To	RECLAIM Source	Emissions and Requirements	Conditions
PROCESS 18: STEAM GENERATION					
SYSTEM 1: AUXILIARY BOILER					
BOILER, E-3500, AUXILIARY BOILER, NATURAL GAS, REFINERY GAS, COMBUSTION ENG, MODEL 12F-40-A16, 342 MMBTU/HR WITH BURNER, NATURAL GAS, REFINERY GAS, COEN, MODEL CPF-37-1/2, 2 LOW NOX BURNERS A/N: 474712 542304	D2216	C2217	NOx: MAJOR SOURCE; SOx: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407, 4-2-1982]; NOX: 0.2 LBS/MMBTU (8) [40CFR 60 Subpart Db, 11-16-2006]; PM: 0.01 GRAINS/SCF (5A) [RULE 476, 10-8-1976]; PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]; PM: 11 LBS/HR (5B) [RULE 476, 10-8-1976]	(A63.25), (A63.31), A327.2, B61.6, D28.13 , D28.36 , D29.5 , D29.16 , D82.4, D90.20, H23.26, K40.5

CONDITIONS

PROCESS CONDITIONS

None

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SYSTEM CONDITIONS

None

DEVICE CONDITIONS

A63.10 The operator shall limit emissions from this equipment as follows:

Contaminant	Emissions Limit
VOC	Less than or equal to 86 lbs in any one day
CO	Less than or equal to 160 lbs in any one day
PM10	Less than or equal to 174 lbs in any one day

For the purposes of this condition, the limit(s) shall be based on the total combined emissions from equipment (gas turbine and its duct burner).

[**RULE 1303(b)(2)-Offset, 5-10-1996**]

[Devices subject to this condition: D2198, **D2207**, D3053]

[**Note:** This condition will be replaced with new condition A63.33.]

A63.12 The operator shall limit emissions from this equipment as follows:

Contaminant	Emissions Limit
NOx	Less than or equal to 48.44 tons in any one year
SOx	Less than or equal to 10.87 tons in any one year

For the purpose of demonstrating the exemption from PSD requirements, the operator shall calculate the annual NOx and SOx emissions by using daily emission data reported to the AQMD pursuant to Reg. XX.

[**RULE 1703 - PSD Analysis, 10-7-1988; 40CFR 52. 21 - PSD, 6-19-1978**]

[Devices subject to this condition: **D2207**]

A63.25 The operator shall limit emissions from this equipment as follows:

Contaminant	Emissions Limit
VOC	Less than or equal to 95 lbs in any one day
CO	Less than or equal to 690 lbs in any one day
PM10	Less than or equal to 230 lbs in any one day

For compliance purposes, the operator shall calculate daily PM10 and VOC mass emissions using the daily fuel use data, the high heating value of the fuel, and PM10 and VOC emission factors, which shall be calculated as average emission rate in lb/MMBtu/hr for all valid source test runs during the most recent source test.

For compliance determination purposes, CO emissions shall be calculated based on certified continuous monitor, which shall have the capability to show cumulative daily emissions.

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[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition: **D2216**]

A63.31 The operator shall limit emissions from this equipment as follows:

Contaminant	Emissions Limit
PM10	Less than or equal to 577 lbs in any one day

For the purpose of this condition, the limit shall be based on the combined total emissions from the Cogeneration A Train (D2198 and D2199 in Process 17, System 1), Cogeneration B Train (D2207 and D2208 in Process 17, System 2), Cogeneration D Train (D4354 and D4355 in Process 17, System 5) and the Auxiliary Boiler (D2216 in Process 18, System 1).

The operator shall initially calculate the daily PM10 emissions using the daily fuel use data for each combustion unit (D2198, D2199, D2207, D2208, D2216, D4354 and D4355), the high heating value of the fuel burned in each combustion unit, and the following emissions factors: Cogeneration Train A – 0.0098 lb/MMBtu (HHV), Cogeneration Train B – 0.0083 lb/MMBtu (HHV), Cogeneration Train D - 0.0071 lb/MMBtu (HHV); Auxiliary Boiler (D2216) – 0.0086 lb/MMBtu (HHV).

The PM10 emission factor for the Cogen Trains A and B and the Auxiliary Boiler shall be revised annually based on results of individual PM10 source tests performed as specified in permit conditions D29.5 and D29.16. The PM10 emission factor shall be calculated as the average emission rate in lb/MMBtu/hr for all valid source test runs during the annual source test.

The PM10 emission factor for the Cogen Train D shall be revised initially and annually, thereafter, based on results of PM10 source tests performed as specified in permit condition D29.12. The PM10 emission factor shall be calculated as the average emission rate in lb/MMBtu for all valid source test runs during each individual source test.

[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition: D2198, **D2207**, **D2216**, D4354]

A63.33 The operator shall limit emissions from this equipment as follows:

Contaminant	Emissions Limit
VOC	Less than or equal to 86 lbs in any one day
CO	Less than or equal to 160 lbs in any one day
PM10	Less than or equal to 174 lbs in any one day

For the purpose of this condition, the limit shall be based on the combined total emissions of the turbine and duct burner(s).

For compliance purposes, the operator shall calculate daily PM10 and VOC mass emissions using the daily fuel use data for each combustion unit (D2207 and D2208), the high heating value of the fuel burned in each combustion unit, and PM10 and VOC emission factors, which shall be calculated as average emission rate in lb/MMBtu/hr for all valid source test runs during the most recent source test.

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For compliance determination purposes, CO emissions shall be calculated based on certified continuous monitor, which shall have the capability to show cumulative daily emissions.

[RULE 1303(b)(2)-Offset, 5-10-1996]

[Devices subject to this condition: [D2207](#)]

A99.4 The 10 PPM CO emission limit(s) shall not apply during startup and shutdown.

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

[Devices subject to this condition: D2198, [D2207](#), D3053]

A99.5 The 9 PPM NOX emission limit(s) shall not apply during startup and shutdown.

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

[Devices subject to this condition: D471, D472, D473, D2198, [D2207](#), D3031, D3053]

A195.23 The 10 PPMV CO emission limit(s) is averaged over 1 hour, 15 percent oxygen, dry basis.

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

[Devices subject to this condition: D2198, [D2207](#), D3053]

A195.24 The 9 PPMV NOx emission limit(s) is averaged over 1 hour, 15 percent oxygen, dry basis.

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

[Devices subject to this condition: D2198, [D2207](#), D3053]

A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[RULE 475, 10-8-1976; RULE 475, 8-7-1978]

[Devices subject to this condition: D2198, [D2207](#), D3053]

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: D2199, [D2208](#), [D2216](#), D3054]

B61.6 The operator shall not use fuel gas, except uncombined natural gas, containing the following specified compounds:

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Compound	ppm by volume
H2S greater than	160

The H2S concentration limit shall be based on a rolling 3-hour averaging period

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

[Devices subject to this condition: D84, D471, D472, D473, D641, D643, D2198, D2199, **D2207, D2208, D2216**, D3031, D3054, C3148, D3530, C3805, C3806, D3973]

B61.7 The operator shall not use any fuel containing the following specified compounds:

Compound	weight percent
Sulfur greater than	0.8

[40CFR 60SubpartGG, 7-8-2004]

[Devices subject to this condition: D2198, **D2207**, D3053]

C1.82 The operator shall limit the duration of startup or shutdown to no more than 6 hour(s).

[RULE 2012, 1-7-2005]

[Devices subject to this condition: D2198, **D2207**, D3053]

C1.149 The operator shall limit the firing rate to no more than 616 MM Btu per hour.

For the purpose of this condition, firing rate shall be defined as the combined energy or heat input to the turbine and duct burner based on the higher heating value (HHV) of the fuel used.

To comply with this condition, the operator shall install and maintain a(n) continuous monitoring system that includes a continuous fuel flow meter and continuous or semi-continuous HHV analyzer for the fuel(s) fed to the turbine and duct burner.

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

This limit shall be based on a rolling 1-hr averaging period.

[RULE 1303(b)(2)-Offset, 5-10-1996, Rule 2005, 5-6-2005]

[Devices subject to this condition: D2198, D2199, **D2207, D2208**]

D12.6 The operator shall install and maintain a(n) continuous monitoring system to accurately indicate the steam-to-fuel ratio in the equipment.

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

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

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

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

[Devices subject to this condition: D2198, [D2207](#), D3053]

[**Note:** This condition will be replaced with new condition D12.44.]

D12.44 The operator shall install and maintain a(n) continuous monitoring system to accurately indicate the steam-to-fuel ratio in the equipment except during calibration checks, or routine maintenance and repair lasting 60 minutes or less.

The operator shall also install and maintain a device to continuously record the parameter being measured except during calibration checks, or routine maintenance and repair lasting 60 minutes or less.

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

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

In the event of a monitoring and/or recording system malfunction or failure, which exceeds 24 hours, the operator shall notify the Executive Officer within 24 hours or the next working day. During the system failure, compliance with the requirement to continuously monitor and record data is waived for a period not to exceed 96 consecutive hours. Such waiver is extended beyond 96 consecutive hours only if a petition for an interim variance is filed in accordance with Regulation V and shall terminate at the time the Hearing Board acts upon such variance petition.

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

[Devices subject to this condition: [D2207](#)]

D28.13 The operator shall conduct source test(s) in accordance with the following specifications:

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

The test shall be conducted to determine the ROG emissions at the outlet.

The test shall be conducted when this equipment is operating at 80 percent or greater of their maximum design capacity. All of the fuel combusted in the Auxiliary Boiler and in the duct burner(s) of the cogeneration units during the source test shall be refinery fuel gas.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition: D2198, D2199, [D2207](#), [D2208](#), [D2216](#)]

[**Note:** This condition will be replaced with new condition D28.36.]

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D28.36 The operator shall conduct source test(s) in accordance with the following specifications:

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

The test shall be conducted to determine the ROG emissions at the outlet.

The test shall be conducted when this equipment is operating at 80 percent or greater of its maximum design capacity or at a lower operating load approved in writing by the District.

All of the fuel combusted in the Auxiliary Boiler and in the duct burner(s) of the cogeneration unit during the source test shall be refinery fuel gas.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition: [D2207](#), [D2208](#), [D2216](#)]

D29.5 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
PM10 emissions	Approved District Method	District-approved averaging time	Stack Outlet

The test shall be conducted when this equipment is operating at 80 percent or greater of the maximum design capacity. All of the fuel combusted in the Auxiliary Boiler and in the duct burner(s) of the cogeneration units during the source test shall be refinery fuel gas.

At least three sample runs shall be conducted for each source test.

The test(s) shall be conducted at least annually.

The source test shall be performed within 7 days of the annual PM10 source test of the Cogeneration Train D. If the Auxiliary Boiler is not in operation at the time of the source test of the Cogeneration Trains A, B and D, a PM10 source shall be performed within 14 days of putting the Auxiliary Boiler back in operation.

The District shall be notified of the date and time of the test at least 7 days prior to the test.

Source test results shall include the following parameters: fuel gas usage of the gas turbine and duct burner, MW output, and amount of ammonia injected for NOx control.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition: D2198, D2199, [D2207](#), [D2208](#), [D2216](#)]

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D29.16 The operator shall conduct source test(s) for the pollutant(s) identified below.

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

The test shall be conducted when this equipment is operating at 80 percent or greater of its maximum design capacity or at a lower operating load approved in writing by the District.

All of the fuel combusted in the Auxiliary Boiler and in the duct burner(s) of the cogeneration unit during the source test shall be refinery fuel gas.

At least three sample runs shall be conducted for each source test.

The test(s) shall be conducted at least annually.

The source test shall be performed within 7 days of the annual PM10 source test of the Cogeneration Train D.

The District shall be notified of the date and time of the test at least 7 days prior to the test.

Source test results shall include the following parameters: fuel gas usage of the boiler, gas turbine and duct burner, MW output, and amount of ammonia injected for NOx control.

[RULE 1303(b)(2)-Offset, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition: [D2207](#), [D2208](#), [D2216](#)]

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

NOX concentration in ppmv

O2 concentration in ppmv

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

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

[Devices subject to this condition: D2198, [D2207](#), D3053]

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

CO concentration in ppmv

O2 concentration in ppmv

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

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 407, 4-2-1982]

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[Devices subject to this condition: D2198, **D2207**, D3053]

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

CO concentration in ppmv

Concentrations shall be corrected to 3 percent oxygen on a dry basis.

Oxygen concentration in percent volume

The CEMS shall be installed to continuously record the actual stack concentration and the corrected stack concentration for CO along with the stack O2 concentration.

The monitoring system shall comply with the requirements of District Rule 218.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 407, 4-2-1982]

[Devices subject to this condition: D203, **D2216**]

D90.20 The operator shall continuously monitor the H2S concentration in 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 J 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 H2S concentration at a single location for fuel combustion devices, if monitoring at this location accurately represents the concentration of H2S in the fuel gas being burned in this device.

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

[Devices subject to this condition: D84, D471, D472, D473, D641, D643, D2198, D2199, **D2207, D2208, D2216**, D3031, D3054, D3530, D3973]

D90.23 The operator shall sample and analyze the total sulfur content of the natural gas burned in this turbine according to the following specifications:

The operator shall analyze once per calendar quarter.

[40CFR 60 Subpart GG, 2-24-2006]

[Devices subject to this condition: D2198, **D2207**, D3053]

E54.8 The operator is not required to vent this equipment to the following equipment if any of the requirements listed below are met:

Device ID: C2213 [SELECTIVE CATALYTIC REDUCTION, R-3400]

Requirement number 1: During startups and shutdowns

For the purpose of this condition, start-up and shutdown shall be defined as the time period during the startup and shutdown of the cogeneration unit when the temperature of the exhaust gas at the inlet to SCR is below 597 degree F.

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

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[Devices subject to this condition: **D2207**]

E73.1 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use or inject steam in the gas turbine if any of the following requirement(s) are met:

During startup and shutdown of the cogeneration trains.

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

[Devices subject to this condition: D2198, **D2207**, D3053]

E73.2 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use or inject ammonia in the SCR if any of the following requirement(s) are met:

During startup and shutdown of the cogeneration trains.

For the purpose of this condition, start-up and shutdown shall be defined as the time period during the startup and shutdown of the cogeneration unit when the temperature of the exhaust gas at the inlet to SCR is below 597 degree F.

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

[Devices subject to this condition: D2198, **D2207**, D3053]

H23.3 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1173

[RULE 1173, 5-13-1994; RULE 1173, 2-6-2009]

[Devices subject to this condition : D3576, D3577, D3584, D3586, D3588, D3610, D3631, D3635, D3640, D3642, D3643, D3644, D3645, D3646, D3649, D3650, D3651, D3654, D3655, D3656, D3657, D3659, D3660, D3661, D3662, D3663, D3664, D3665, D3666, D3667, D3668, D3669, D3670, D3671, **D3672**, D3673, D3678, D3679, D3680, D3681, D3682, D3684, D3685, D3687, D3691, D3692, D3693, D3694, D3760, D3802, D4086, D4087, D4088, D4351]

H23.26 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
H2S	40CFR60, Subpart	J
NOx	40CFR60, Subpart	Db

[40CFR 60 Subpart Db, 11-16-2006; 40CFR 60 Subpart J, 6-24-2008]

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[Devices subject to this condition: D2199, **D2208**, **D2216**, D3054]

H23.27 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
CO	District Rule	218

[**RULE 218, 8-7-1981**; RULE 218, 5-14-1999]

[Devices subject to this condition: D2198, **D2207**, D3053]

H23.28 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
H2S	40CFR60, Subpart	J
NOx	40CFR60, Subpart	GG

[**40CFR 60 Subpart GG, 2-24-2006**; **40CFR 60 Subpart J, 6-24-2008**]

[Devices subject to this condition: D2198, **D2207**]

K40.5 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), mass rate (lb/hr), and lb/MMSCF. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains/DSCF.

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 the oxygen levels in the exhaust, fuel flow rate (CFH), heating content of the fuel, the flue gas temperature, and the generator power output (MW) under which the test was conducted.

[**Rule 2005, 5-6-2005**; **Rule 1303(a)(1)-BACT, 5-10-1996**; **Rule 1303(b)(2)-Offset, 5-10-1996**]

[Devices subject to this condition: D2198, **D2207**, C2210, C2213, **D2216**, C2217, D3053, C3058]

K67.2 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

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Daily NOx emissions at the stack in PPMV at 15 percent oxygen on a dry basis and in pounds per day

Daily fuel gas usage

Daily ammonia usage

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

[Devices subject to this condition: D2198, D2199, **D2207**, **D2208**, D3053]

FEE ANALYSIS

As shown in the following table, Chevron has paid all applicable fees for all of the subject applications.

Summary of Fee Analysis

A/N	Equipment Description	BCAT/ CCAT	Fee Schedule	Fee Type	Fiscal Year (1)	Fee
541582	Turbine Engine (<50MW)	033018 (BCAT)	D	Change of Condition	12-13	\$ 3,189.09
541583	RECLAIM/Title V Permit	555009 (BCAT)	na.	RECLAIM/Title V Permit Revision	12-13	\$ 1,789.12
542304	Boiler (>50 MMBtu/hr) Process Gas	011605 (BCAT)	E	Change of Condition	12-13	\$ 4,682.32
542305	RECLAIM/Title V Permit	555009 (BCAT)	na.	RECLAIM/Title V Permit Revision	12-13	\$ 1,789.12
Total						\$11,449.69
Fees Paid						\$15,385.42
Outstanding Balance (2)						\$ 3,935.77

(1) Based on the date that the application was submitted.

(2) Chevron paid expedited permit processing fees of \$2,341.18 and \$1,594.55 for the Auxiliary Boiler and Cogen Train B application, respectively. These fees will be refunded since no overtime was spent on these applications

PERMIT HISTORY

The permit histories for the Cogen Train B and Auxiliary Boiler are contained in the tables below.

Permit History for Cogeneration B Train

Permit to Construct		Permit to Operate		Description of Modification
No.	Issue Date	No.	Issue Date	
127407	8/25/86	na.	na.	Original Construction
166605	6/1/89	na.	na.	Change of condition to allow the following during start-up and shutdown of the Cogen unit: exceedance of the CO and NOx concentration limits for up 4 hours; operate without steam injection in the turbine or up to 6 hours; and operate without ammonia injection in the SCR for up to 6 hours.
219805	4/12/91	na.	na.	Modification of equipment in the existing natural gas

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Permit to Construct		Permit to Operate		Description of Modification
No.	Issue Date	No.	Issue Date	
				supply system to allow use of Inglewood natural gas.
278187	8/11/95	na.	na.	Changed the fired duty rating from 563.4 MMBtu/hr (LHV) to 616 MMBtu/hr (HHV) to match their Rule 1109 plan. This rating includes the turbine and the duct burner. The duct burner rating was left at 119.7 MMBtu/hr (LHV). All mass emission limits for the Cogen remain the same.
357705	na.	na.	na.	Outstanding change of condition to be consolidated under AN 474711.
388738	3/12/02.	na.	na.	As part of CARB3 RFG Project, pentanes were removed from some blend streams to control vapor pressure. The existing LPG vaporizer was modified to accept some of the excess pentanes. The Cogens were permitted to burn these excess pentanes.
403043	4/17/03	na.	na.	Added equipment to increase steam injection to increase the power output from 40 MW to 46 MW.
405271	na.	na.	na.	Outstanding change of condition to be consolidated under AN 474711.
410839	na.	na.	na.	Outstanding change of condition to be consolidated under AN 474711.
474711	na.	G10488	10/26/10	Change of Condition to include this cogen in a New Source Review PM10 bubble with the proposed Cogen D Train. Also consolidating outstanding requests for ANs 357705, 405271 & 410839 including addition of a 60 minute averaging period for CO and NOx concentration limits and change of the monthly calibration frequency for the steam-to-fuel ratio monitor to annual.
541582	na.	na.	na.	Change of conditions D28.13 and D29.5 to allow performance of the source tests at less than 80% of the boilers maximum design capacity and addition of maintenance and repair periods to parameter monitoring conditions.

Permit History for Auxiliary Boiler

Permit to Construct		Permit to Operate		Description of Modification
No.	Issue Date	No.	Issue Date	
131331	8/20/86	na.	na.	Original construction.
213993	11/21/89	na.	na.	Increased the PM limit from 28 lb/day to 230 lb/day based on source test results. The increased PM emissions were offset through elimination of fuel oil burning in four process heaters and two boilers.
278188	8/11/95	na.	na.	Increased the permitted heat input from 286 MMBtu/hr to 342 MMBtu/hr based on approved Rule 1109 rating. NSR is not triggered for CO, PM10, and ROG since the permitted emission limits remained at 690, 230 and 95 lb/day, respectively. NOx and SOx are covered under

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Permit to Construct		Permit to Operate		Description of Modification
No.	Issue Date	No.	Issue Date	
				RECLAIM.
474712	na.	G10492	10/26/10	Change of Condition to include this boiler in a New Source Review PM10 bubble with the proposed Cogen D Train.
542304	na.	na.	na.	Change of conditions D28.13 and D29.5 to allow performance of the source tests at less than 80% of the boilers maximum design capacity.

COMPLIANCE RECORD REVIEW

There are no ongoing violations for any of the equipment covered in this evaluation.

PROCESS DESCRIPTION:

COGENERATION TRAIN B

A combustion gas turbine (CGT) is an internal combustion engine that operates with rotary motion. In electrical power generation applications, the high-pressure, high-temperature gas produced in the combustion chamber is expanded through the turbine blades to produce shaft power that is utilized to drive an electric generator and the combustion air compressor. Hot exhaust gas from the turbine flows through an insulated duct to an exhaust gas heat exchanger called a heat recovery steam generator (HRSG). The HRSG is equipped with duct burners to provide additional heat for steam production.

The Cogen Train B CGT is a General Electric (GE) Model No. PG-6531B (Frame 6). The turbine is fired on natural gas and/or LPG (butane, propane, and/or pentane). Natural gas and steam are injected into the compressed air stream prior to injection into the combustor. Steam is injected into the stream to control combustion temperature for control of NOx emissions. The duct burners in HRSG inlet are low-NOx type burners, which are fired on natural gas and/or refinery fuel gas. The air pollution control system (APCS) for Cogen Train B includes a CO catalyst for control of CO and VOC emissions and an SCR catalyst for control of NOx emissions. The CO and SCR catalysts are integrated into the HRSG.

The Cogen Train B and associated air pollution control system are subject to the following BACT stack gas emission limits (1 hr. avg., 15% O2): CO – 10 ppmv; NOx – 9 ppmv; and NH3 – 20 ppmv. The hourly average CO and NOx CEMS data for the months of June and July 2012 were reviewed. The average and maximum CO concentrations (@ 15% O2) for this period were 0.1 ppmv and 0.2 ppmv. The average and maximum NOx concentrations (@ 15% O2) were 2.9 ppmv and 4.2 ppmv.

Cogen Train B ammonia source test results for the last three years are summarized in the table below. As seen in the table, measured ammonia concentrations were well below the 20 ppmv ammonia limit.

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Ammonia Source Test Results for Cogen Train B

Source Test Date	Ammonia Concentration (ppmv @ 15% O2)
1 st Quarter 2009	3.5
2 nd Quarter 2009	0.7
3 rd Quarter 2009	0.6
4 th Quarter 2009	3.1
1 st Quarter 2010	0.3
2 nd Quarter 2010	0.2
3 rd Quarter 2010	4.1
4 th Quarter 2010	6.5
Annual 2011 (1)	0.2

(1) Source test frequency revised changed from quarterly to annual in October 2010.

The following parameter monitoring data for the months of June and July 2012 was also reviewed: ammonia flow rate, SCR inlet temperature, SCR differential pressure, CO catalyst inlet temperature and CO catalyst differential pressure. While there are no permit limits on these parameters, they were within expected operating ranges during this two month period.

AUXILIARY BOILER

The Auxiliary Boiler is a Combustion Engineering Model 12F-40-A16 water tube type boiler. The boiler, which is fired primarily on refinery fuel gas from the V-4540 Fuel Mix Drum, is equipped with two Coen Model CPF-37-1/2 low NOx burners. The APCS for the boiler is an SCR for control of NOx emissions. The boiler is subject to CO, PM10 and VOC mass emission limits (condition A63.25) but is not subject to any stack gas concentration limits. The SCR is subject to a 20 ppmv (1 hr. avg., 3% O2) ammonia limit. Annual Auxiliary Boiler ammonia source test results for the last three years are summarized in the table below. As seen in the table, measured ammonia concentrations were well below the 20 ppmv ammonia limit.

Ammonia Source Test Results for Cogen Train B

Source Test Date	Ammonia Concentration (ppmv @ 3% O2)
April 2010	4.4
April 2011	1.2
April 2012	3.1

CALCULATIONS

The Cogen Train B and Auxiliary Boiler were both subject to NSR upon original construction. The proposed permit condition changes will not impact their maximum potential emissions of CO, NOx, PM10, VOC or SOx.

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COGENERATION TRAIN B

The permit for the Cogen Train B includes limits on daily mass emissions of CO, PM10 and VOC under *Regulation XIII – New Source Review (NSR)* and on annual mass emissions of NOx and SOx under *Regulation XVII – Prevention of Serious Deterioration (PSD)*. The existing CO, PM10, VOC, NOx and SO2 mass limits are shown in the following table.

Cogen Train B: Mass Emission Limits for CO, PM10, VOC, NOx and SOx

Pollutant	Mass Emission Limit	Permit Condition
CO	160 lb/day	A63.10
PM10	174 lb/day	A63.10
VOC	86 lb/day	A63.10
NOx	48.44 ton/yr	A63.12
SO2	10.87 ton/yr	A63.12

The subject CO, PM10 and VOC mass emission limits represent the maximum potential combustion emissions for the Cogen Train B. The original permit to construct for the Cogen Train B was conditioned with NOx and SO2 emission limits of 302 lb/day and 140 lb/day, respectively. These limits were based on Regulation XIII offset requirements. These emission limits were subsequently subsumed by RECLAIM so they have been removed from the RECLAIM Facility Permit. However, these are still considered to be the maximum potential NOx and SO2 emissions for the Cogen Train B.

The previous VOC emission estimates for this permit unit did not include VOC emissions for fugitive components such as valves, flanges and connectors in VOC service. VOC emissions for these fugitive components are estimated by multiplying the total number of each fugitive component type by an appropriate emission factor. The emission factors utilized in this VOC estimate are based on correlation equations from the *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* (CARB/CAPCOA - 1999). As seen in [Appendix A](#), the estimated fugitive VOC emissions for the Cogen Train B are 4.9 lb/day (30-day average). Total estimated VOC emissions for the Cogen Train B are 90.9 lb/day [86 lb/day + 4.9 lb/day].

AUXILIARY BOILER

The permit for the Auxiliary Boiler includes limits on daily mass emissions of CO, PM10 and VOC under *Regulation XIII – New Source Review (NSR)*. The existing CO, PM10, and VOC mass limits are shown in the following table.

Auxiliary Boiler: Mass Emission Limits for CO, PM10 and VOC

Pollutant	Mass Emission Limit	Permit Condition
CO	690 lb/day	A63.25

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Pollutant	Mass Emission Limit	Permit Condition
PM10	230 lb/day	A63.25
VOC	95 lb/day	A63.25

The subject CO, PM10 and VOC mass emission limits represent the maximum potential combustion emissions for the Auxiliary Boiler. The original permit to construct for the Auxiliary Boiler was conditioned with NOx and SO2 emission limits of 131 lb/day and 152 lb/day, respectively. These limits were based on Regulation XIII offset requirements. These emission limits were subsequently subsumed by RECLAIM so they have been removed from the RECLAIM Facility Permit. However, these are still considered to be the maximum potential NOx and SO2 emissions for the Auxiliary Boiler.

The previous VOC emission estimates for this permit unit did not include VOC emissions for fugitive components such as valves, flanges and connectors in VOC service. VOC emissions for these fugitive components are estimated by multiplying the total number of each fugitive component type by an appropriate emission factor. The emission factors utilized in this VOC estimate are based on correlation equations from the *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* (CARB/CAPCOA - 1999). As seen in [Appendix B](#), the estimated fugitive VOC emissions for the Auxiliary Boiler are 4.5 lb/day (30-day average). Total estimated VOC emissions for the Auxiliary Boiler are 99.5 lb/day [95 lb/day + 4.5 lb/day].

EVALUATION OF PROPOSED CONDITION CHANGES

- 1) Chevron proposes to revise source test conditions D28.13 and D29.5 as follows:

The test shall be conducted when this equipment is operating at 80 percent or greater of the maximum design capacity. If the unit is unable to achieve 80% of the maximum design capacity, a test may be performed at lower operating load subject to the approval of the administrator.

Cogeneration Train B - Chevron has had difficulty performing the specified source tests of the Cogeneration Train B at 80% of the permitted 616 MMBtu/hr combined load of the turbine and duct burners. Due to fouling of the air compressor, recent maximum achievable loads have been as low as 76% of the maximum permitted load of the cogen unit. Two recent attempts to test the unit have not been completed because the unit could not be operated at 80% of the maximum permitted load. Chevron plans to bring the cogen unit down for a maintenance turnaround in February 2013. However, the VOC source test required by condition D28.13 must be completed in October 2012 and the PM10 source test of condition D29.5 may be required to be completed prior to the turnaround depending on when the Cogen Train D, which is currently under construction, is put into operation.

Performance of the source test at a less than 80% of the permitted maximum load upon approval of the District is acceptable. At the current load, stack gas CO and NOx concentrations are below limits and the CO catalyst and SCR are operating within their optimum range. VOC and PM10 concentrations may be higher at these lower loads. It is important to assure that VOC and PM10 are at acceptable levels at the lower operating loads.

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For consistency with some source test conditions in other refinery permits, the following language is proposed in lieu of the language proposed by Chevron.

The test shall be conducted when this equipment is operating at 80 percent or greater of its maximum design capacity or at a lower operating load approved in writing by the District.

To assure that the Cogen Train B complies with the PM10 and VOC mass limits on a daily basis, an emission factor developed from the PM10 and VOC source test results will be multiplied by the daily total heat input to estimate daily emissions.

Current Cogen Train B permit condition A63.10 will be replaced with condition A63.33, which will contain the following language:

For compliance purposes, the operator shall calculate daily PM10 and VOC mass emissions using the daily fuel use data for each combustion unit (D2207 and D2208), the high heating value of the fuel burned in each combustion unit, and PM10 and VOC emission factors, which shall be calculated as average emission rate in lb/MMBtu/hr for all valid source test runs during the most recent source test.

Auxiliary Boiler - The average and maximum hourly fired duty (heat input) for the Auxiliary Boiler over the last one-year period is 166 MMBtu/hr and 234 MMBtu/hr, respectively. The source test conditions require that the source test be performed at 274 MMBtu/hr (80% of 342 MMBtu/hr). It is advantageous to perform the source test within the normal operating range of the prior year. Therefore, inclusion of the following language in the source test condition is acceptable.

The test shall be conducted when this equipment is operating at 80 percent or greater of its maximum design capacity or at a lower operating load approved in writing by the District.

The following language will be added to current Auxiliary Boiler permit condition A63.25, which contains the PM10 and VOC mass emission limits:

For compliance purposes, the operator shall calculate daily PM10 and VOC mass emissions using the daily fuel use data, the high heating value of the fuel, and PM10 and VOC emission factors, which shall be calculated as average emission rate in lb/MMBtu/hr for all valid source test runs during the most recent source test.

- 2) Chevron proposes to add the following language to continuous parameter monitoring condition D12.6, which is tagged to the Cogen Train B turbine. This language mirrors the failure, calibration, routine maintenance and repair period allowances specified for CEMS in District Rule 218(f)(3).
 - a. The operator shall notify the Executive Officer within 24 hours or the next working day, in the event of a system failure or shutdown, which exceeds 24 hours. Zero and calibration checks and routine maintenance do not require reporting.
 - b. In the case of a CMD failure or shutdown, compliance with permit requirements to monitor and record data is waived for a period not to exceed 96 consecutive hours.

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- c. Continuous parameter monitoring and recording requirements shall not apply during calibration checks, routine maintenance and repairs lasting 60 minutes or less.

CEMS is defined in Rule 218 as the total combined equipment and systems required to continuously determine air contaminants and diluent gas concentrations and/or mass emission rate of a source effluent. Mass emission monitoring systems normally utilize fuel flow monitors or stack flow monitors, which, in turn, usually utilize temperature, pressure, and differential pressure monitoring systems for continuous measurement of fuel or stack gas properties. The CEMS also includes a data acquisition system to continuously record contaminant concentration and parameter monitoring data. All of the monitoring and recording equipment in the CEMS are subject to the failure, calibration, routine maintenance and repair period allowances specified for CEMS in District Rule 218(f)(3).

It is judged that the Rule 218(f)(3) failure, calibration, routine maintenance and repair period allowances are also appropriate for the steam-to-fuel monitoring and recording system specified in condition D12.6. The subject monitoring system is utilized for informational purposes only since the permit does not include a limit on the ratio of steam flow to fuel flow. Additionally, the Cogen Train B is equipped with a NOx CEMS to demonstrate compliance with the NOx limit.

Condition D12.6 will be replaced by new condition D12.44, which includes the Rule 218(f)(3) failure, calibration, routine maintenance and repair period allowances. Inclusion of appropriate maintenance, repair and calibration periods in these conditions is not considered to be a weakening of this BACT condition and is not expected to materially impact operation or emissions of Cogen Train B.

RULE COMPLIANCE REVIEW:

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., requires that the environmental impacts of proposed “projects” be evaluated and that feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects be identified and implemented. According to the District’s CEQA Guidelines, the net emission increase thresholds for significant effect are:

ROG: 55 lb/day
 PM10: 150 lb/day
 CO: 274 lb/day

CEQA analysis is not required for the proposed permit condition changes since there is no increase in the emissions of any of these criteria air pollutants and there are no other significant environmental impacts. On the 400-CEQA form, Chevron marked “No” to all of the additional criterion that may trigger CEQA. For these reasons, CEQA does not apply.

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REGULATION II: PERMITS

RULE 212: STANDARDS FOR APPROVING PERMITS

Rule 212: Standards for Approving Permits

212(c)(1): Public notice is required for a project if any of the modified permit units are located within 1000 feet of a school. The distance to the nearest school from the Cogen Train B and Auxiliary Boiler is greater than 2500 feet. Public notice is not required under this clause.

212(c)(2): Public notice is required for any “new or modified facility”, which has on-site emission increases exceeding any of the daily maximums specified in subdivision (g) of Rule 212. The 212(g) emission thresholds are shown in the table.

Air Contaminant	R212(g) Daily Maximum Threshold (lb/day)
CO	220
NO _x	40
PM ₁₀	30
SO ₂	60
VOC	30
Lead	3

Revision of the subject permit conditions will not cause an increase in the emission of any of the subject air contaminants. Public notice is not required under this clause.

212(c)(3): Public notice is required for any new or modified permit units that have an increase in toxic air contaminants that results in an increase of maximum individual cancer risk (MICR) of more than one in a million (1×10^{-6}) during a lifetime (70 years).

Revision of the subject permit conditions will not cause an increase in the emission of any toxic air contaminants. Therefore, there is no increase in the MICR. Public notice is not required under this clause.

212(g): 212(g) specifies that any new or modified sources subject to Regulation XIII which undergo construction or modifications resulting in an emissions increase exceeding any of the daily maximum emission thresholds (listed in the table above) will require notification. From Regulation XIII (Rule 1302), the definition of “Source” is any permitted individual unit, piece of equipment, article, machine, process, contrivance, or combination thereof, which may emit or control an air contaminant. This includes any permit unit at any non-RECLAIM facility and any device at a RECLAIM facility.

Revision of the subject permit conditions will not cause an increase in the emission of any of the air contaminants specified in Rule 212(g). Public notice is not required under this clause.

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REGULATION IV - PROHIBITIONS

Rule 401: Visible Emissions

This rule specifies that a person shall not discharge emissions from a source for a period or periods aggregating more than three minutes in any one hour which are as dark or darker in shade as that designated No. 1 on the Ringelmann Chart or emissions of such opacity that it obscures an observers view to an equal or greater level. This is equivalent to opacity of 20%.

Visible emissions are not expected from these gaseous fuel fired combustion devices. Revision of the subject permit conditions will not increase the visible emissions potential of the Auxiliary Boiler. Compliance with this regulation is expected.

Rule 402: Nuisance

This rule requires that a person not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which cause, or have a natural tendency to cause injury or damage to business or property.

Nuisance is not expected from these low-sulfur gaseous fuel fired combustion devices. Neither unit has any history of nuisance complaints. Revision of the subject permit conditions will not increase their nuisance potential. Compliance with this regulation is expected.

Rule 404: Particulate Matter – Concentration

This rule sets concentration limits for total PM (solid and condensable) emissions. The rule limit varies based on the quantity of exhaust gas (dry basis) discharged from a source. As specified at 404(c), the provisions of this rule do not apply to emissions resulting from the combustion of liquid or gaseous fuels in steam generators or gas turbines. Therefore, the Cogen Train B and Auxiliary Boiler are not subject to this regulation.

Rule 405: Solid Particulate Matter – Weight

This rule sets solid PM mass emission limits for the processing of solid materials. It is not applicable to combustion sources such as the subject cogeneration unit and boiler.

Rule 407: Liquid and Gaseous Air Contaminants

This rule contains the following emission limits:

- Carbon monoxide (CO) - 2,000 ppmv (dry; 15 minute average) [407(a)(1)]
- Sulfur Compounds - 500 ppmv (calculated as SO₂; 15 minute average) [407(a)(2)(B)]

CO Limit: The subject cogeneration unit is equipped with a CO catalyst for control of CO emissions and the permit is conditioned with a CO concentration limit of 10 ppmv (15% O₂, 1-hr avg.). During normal operation of these combustion units, CO emissions are well below the 2000 ppmv CO limit. Hourly CO CEMS data for the months of June and July 2012 was reviewed. The maximum hourly CO CEMS reading for Cogen Train B and Auxiliary Boiler during this period was 0.2 and 7.6 ppmv, respectively. Revision of the subject permit conditions is not expected to significantly impact operation of either unit. Continued compliance with the 2000 ppmv CO limit is expected.

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Sulfur Compound Limit: The 500 ppmv sulfur compound limit is subsumed by RECLAIM [Rule 2001(j)] for the Cogen Train B turbine and duct burner and the Auxiliary Boiler, which are all classified as a major sources under RECLAIM.

Rule 409: Combustion Contaminants

This rule contains limit on combustion contaminants from the combustion of fuel of 0.23 gram per cubic meter (0.1 grain per cubic foot) of flue gas (15 minute avg. at 12% CO₂).

PM/PM10 source tests were performed on the Cogen Train B and Auxiliary Boiler during April 2008. As seen on the following table, the measured PM emissions for each of these units was less than the 0.1 gr/dscf limit of this regulation.

Source	Measured PM Emissions (gr/dscf)	Rule 409 PM Emission Limit (gr/dscf)	Rule 409 Compliant
Cogeneration Train B	0.0035	0.1	Yes
Auxiliary Boiler	0.0063	0.1	Yes

Revision of the subject permit conditions is not expected to impact PM emissions. Compliance with this rule is expected.

Rule 431.1: Sulfur Content Of Gaseous Fuels

This rule is subsumed by RECLAIM [Rule 2001(j)] for SO_x RECLAIM facilities such as the Chevron Refinery.

Rule 474: Fuel Burning Equipment – Oxides of Nitrogen

This rule is subsumed by RECLAIM [Rule 2001(j)] for NO_x RECLAIM facilities such as the Chevron Refinery.

Rule 475: Electric Power Generating Equipment

This rule applies to power generating equipment rated greater than 10 MW installed after May 7, 1976. Requirements specify that the equipment must comply with a PM mass emission limit of 11 lb/hr or a PM concentration limit of 0.01 grains/dscf. Compliance is demonstrated if either the mass emission limit or the concentration limit is met.

As seen in the Rule 409 evaluation, the Cogen Train B PM emissions were measured during the most recent source test as 0.0035 gr/dscf, which is well below the 0.01 gr/dscf limit of this regulation. Revision of the subject permit conditions is not expected to significantly impact PM emissions. Compliance with the PM emission limit of this rule is expected.

Rule 476: Steam Generating Equipment

The Auxiliary Boiler is subject to this rule. The Cogen Train B duct burners/heat recovery steam generator (HRSG) are also subject to the requirements of this rule since they are used to produce steam, have a heat input rating of greater than 50 MMBtu/hr (each are ~ 120 MMBtu/hr), and were constructed after May 7, 1976. This regulation has limits on NO_x and combustion contaminants. The NO_x limits of this rule are subsumed by RECLAIM per 2001(j). The

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combustion contaminant (PM) limits are the same as the Rule 475 limits. As discussed for Rule 475, compliance of the new and existing cogeneration units with these PM limits is expected. The average PM emissions for the Auxiliary Boiler during the most recent source test were 0.0063 gr/dscf and 2.5 lb/hr. Compliance with the PM limits of this regulation is expected.

REGULATION IX - NEW SOURCE PERFORMANCE STANDARDS (NSPS)

40 CFR60 Subpart Db: Standards of Performance for Industrial-Commercial- Institutional Steam Generating Units

The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour). The Auxiliary Boiler is an affected source since it was constructed after 1984. The duct burners/HRSG on the Cogen Train B is also subject to this regulation since the duct burners fire at 120 MMBtu/hr and the Cogen Train B was were all constructed after 1984.

60.42b – Standards for Sulfur Dioxide - (c) - Affected facilities which also meet the applicability requirements under subpart J (Standards of performance for petroleum refineries; §60.104) are subject to the particulate matter and nitrogen oxides standards under this subpart and the sulfur dioxide standards under subpart J (§60.104).

The Auxiliary Boiler and the duct burners on the Cogen Train B are subject to the SO₂ standards of NSPS Subpart J so they are not subject to the SO₂ standards of this regulation.

60.43b – Standards for Particulate Matter - 60.43(a), (b), (c), and (d) contain PM standards for steam generating units that were constructed, modified, or reconstructed after June 19, 1984 and combust coal, oil, wood, or municipal waste respectively but there are no PM standards for gaseous fuel fired units constructed after 1984. 60.43b(h) contains standards for units constructed, modified, or reconstructed after February 28, 2005, which combust coal, oil, wood, or a mixture of these fuels. There are no PM standards for gaseous fuel fired units.

The Auxiliary Boiler and the duct burners on the Cogen Train B combust only gaseous fuels so they are not subject to a PM standard under this regulation.

60.44b – Standards for Nitrogen Oxides - According to 60.44b(1)(ii) and 60.44b(4)(i), respectively, the Auxiliary Boiler and the Cogen Train B duct burners are subject to a NO_x emission limit of 0.20 lb/MMBtu (expressed as NO₂) on a 30-day rolling average basis. This emission rate is comparable to 160 ppmv @ 3% O₂ or 55 ppmv @ 15% O₂. With proper operation of the SCR based NO_x control systems, NO_x emissions are well below the limits of this regulation. Each of the existing units is equipped with a NO_x CEMS to show compliance with this emission rate.

Maximum NO_x emissions for the Auxiliary Boiler and Cogen Train B during the period of June through July 2012 were 56 ppmv (@3% O₂) and 4 ppmv (@15% O₂), respectively. Compliance with this NO_x emission rate is expected.

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40CFR60 Subpart J- Standards of Performance for Petroleum Refineries

The provisions of this subpart are applicable to fuel gas combustion device which commences construction or modification after June 11, 1973. Fuel gas combustion device is defined as “any equipment, such as process heaters, boilers and flares used to combust fuel gas, except facilities in which gases are combusted to produce sulfur or sulfuric acid”. Fuel gas is defined as any gas which is generated at a petroleum refinery and which is combusted. Fuel gas also includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery.

The Cogen Train B turbine is subject to this regulation when combusting butane, propane, or pentane which meet the definition of “fuel gas”. Butane, propane, and pentane normally have H2S concentrations that are well below 160 ppmv limit of this regulation. These fuels are not routinely combusted in the turbine but compliance with this regulation is expected when they are fed to the turbine.

The Auxiliary Boiler and the Cogen Train B duct burners are subject to this regulation when combusting refinery fuel gas, which also meets the definition of “fuel gas”. During normal operation, the H2S concentration of the refinery fuel gas fed to the boiler and duct burners is well below 160 ppmv limit of this regulation. H2S monitoring data for refinery fuel gas fed to the boiler and the duct burners from the V-4540 Fuel Mix Drum during June and July 2012 was reviewed. The maximum H2S concentration measured during this period was 17 ppmv. Revision of the subject permit conditions will not impact compliance with this regulation.

40CFR60 Subpart Ja - Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007.

This NSPS is applicable to the following affected facilities in petroleum refineries which were constructed, reconstructed, or modified after May 14, 2007:

- Fluid Catalytic Cracking Unit Catalyst Regenerators,
- Fluid Coking Units,
- Delayed Coking Units,
- Fuel Gas Combustion Devices (except flares), and
- Claus Sulfur Recovery Plants (SRPs)

The Auxiliary Boiler and Cogen Train B are not subject to this regulation because they have not been modified or reconstructed after May 17, 2007. Revision of the subject permit conditions is not considered to be a modification since there is no change in maximum hourly H2S emissions.

40CFR60 Subpart GG: Standards of Performance for Stationary Gas Turbines

This NSPS is applicable to all stationary gas turbines that commenced construction, reconstruction, or modification after Oct. 3, 1977 and have a heat input at peak load of 10.7 gigajoules (10 MMBtu) per hour, based on the fuels lower heating value.

The Cogen B turbine is subject to this NSPS since it has a heat input (based on LHV) of greater than 10 MMBtu/hr and was constructed after Oct. 3, 1977. A discussion of the applicable standards for this regulation follows.

NOx limit: Turbines that are subject to the NOx Limits of this regulation are specified at 40CFR60.332(b), (c), and (d) as follows:

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- 60.332(b) – Electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired.....
- 60.332(c) - Stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hour) but less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired...
- 60.332(d) Stationary gas turbines with a manufacturer's rated base load at ISO conditions of 30 megawatts or less except as provided in §60.332(b).....

The definition of an *electric utility stationary gas turbine* at 60.331(q) is “any stationary gas turbine constructed for the purpose of supplying more than one-third of its potential electric output capacity to any utility power distribution system for sale”. The Cogen Train B was constructed to supply electricity for refinery use only. Since the Cogen B turbine is not *electric utility stationary turbine*, it is not subject to the NOx limit under 60.332(b). The turbine is also not subject to the NOx limit under 60.332(c) and 60.332(d) since the heat input at peak load is greater than 100 MMbtu/hr and the rated base load is greater than 30 MW.

SOx limit: The Cogen Train B turbine is subject to the SOx limits of 60.333(a). The turbine must comply with one of the following limits:

- Exhaust gas concentration of 150 ppmv SO₂ (at 15% O₂, dry basis)
- Fuel sulfur limit of 0.8 percent (by weight) (8000 ppmw)

Chevron has chosen to comply with the 0.8% fuel sulfur limit. This limit is contained in permit condition B61.7. The turbine is permitted to combust natural gas, butane, pentane, or propane. The sulfur concentration of each of these fuels is well below 8000 ppmw. Revision of the subject permit conditions will not impact fuel sulfur concentrations. Compliance with this fuel sulfur limit is expected.

40CFR60 Subpart GGG – Standards of Performance for Equipment Leaks of VOCs in Petroleum Refineries and 40CFR60 Subpart GGG – Standards of Performance for Equipment Leaks of VOCs in Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006.

NSPS GGG is applicable to affected facilities that begin construction, reconstruction, or modification after January 4, 1983 and NSPS GGGa is affected facilities that begin construction, reconstruction, or modification after November 7, 2006. The following are affected facilities under this subpart:

- Compressors
- The group of all the equipment within a process unit.

The definition for process unit in NSPS GGG follows: “*Process unit* means components assembled to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.” In addition to this, the definition in NSPS GGGa includes the following: “A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and

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final product storage vessels (except as specified in §60.482–1a(g)), product transfer racks, and connected ducts and piping.”

Even though the Cogen Train B and Auxiliary Boiler were constructed after January 4, 1983, they are not an “affected facility” since they are not part of a “process unit” as defined in these regulations and do not contain any compressors that are in VOC service.

40CFR60 Subpart KKKK: Standards of Performance for Stationary Combustion Turbines

This subpart establishes NO_x and SO₂ emission standards and compliance schedules for the control of emissions from stationary combustion turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value, that commenced construction, modification or reconstruction after February 18, 2005.

The Cogen Train B has not been modified or reconstructed after February 18, 2005 so it is not subject to this NSPS. Revision of the subject permit conditions is not a modification of the cogen.

REGULATION X - NATIONAL EMISSION STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)

40CFR63 Subpart CC: National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries

This Subpart applies to petroleum refining sources and related emission sources that are specified in section 63.640 (c)(5) through (c)(7) (e.g. miscellaneous process vents (except for FCCU, SRU, and CRU vents), storage vessels, wastewater stream, equipment leaks, gasoline loading racks, marine vessel loading, etc.) that are located in a major source and emit or have equipment contacting one or more of the hazardous air pollutants (HAPs) listed in Table 1 of this subpart.

The only sources in the Cogen Train B and Auxiliary Boiler that must be evaluated as potential affected sources under this NESHAP are fugitive components. The equipment leak standards as specified in 63.648 are applicable to fugitive components that are “in organic hazardous air pollutant service”. In “organic hazardous air pollutant service” is defined as a piece of equipment that either contains or contacts a fluid (liquid or gas) that is at least 5% by weight of total organic HAPs as determined according to 63.180(d).

The only fugitive components in the Cogen Train B and Auxiliary Boiler permit units that are in organic service are those components in the fuel delivery piping. The permitted fuels for the Cogen Train B are natural gas, refinery fuel gas, butane, propane and pentane. The permitted fuels for the Auxiliary Boiler are natural gas and refinery fuel gas. None of these fuels have a HAP content of 5% or more. Therefore, none of the fugitive components in these permit units are subject to this regulation.

40CFR63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants For Industrial, Commercial and Institutional Boilers and Process Heaters

This maximum achievable control technology (MACT) standard was originally promulgated by EPA on September 13, 2004 and was vacated and remanded by the US Court of Appeals for the District of Columbia Circuit on June 19, 2007. A new rule was proposed on June 4, 2010 with a

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public comment deadline of August 23, 2010. On May 18, 2011, EPA announced delay of the effective dates of the rule pending completion of their reconsideration of the rule. On January 9, 2012, the U.S. District Court for the DC Circuit vacated EPA's notice that delayed the effective dates of the Boiler MACT rule.

On December 23, 2011, EPA published the Boiler MACT reconsideration proposal with a public comment deadline of February 21, 2012. On February 7, 2012, EPA issued a No Action Assurance Letter specifying that they will exercise their enforcement discretion to not pursue enforcement action for violations of certain notification deadlines in the final Major Source Boiler rule. According to the letter, EPA intends to issue the final reconsideration rule prior to any of the compliance dates for existing sources.

In both the final rule and the proposed reconsideration rule, *boiler* is defined as an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. *Waste heat boiler* is defined as a device that recovers normally unused energy and converts it to usable heat. Waste heat recovery boilers incorporating duct or supplemental burners that are designed to supply 50 percent or more of the total rated heat input capacity of the waste heat boiler are not considered waste heat boilers, but are considered boilers. Based on these definitions, the Cogen Train B duct burners and associated HRSG would be subject to the proposed regulation as boilers.

Boilers that combust natural gas and/or refinery gas are not subject to any emission or operating limits under either the rule proposed in June 2010 or the reconsideration proposal published in Dec. 2011. It appears that the Auxiliary Boiler and the Cogen Tran B duct burners/HRSG will be subject to only a work practice standard that includes an annual tune-up. Based on past compliance with similar regulations, it is expected that Chevron will comply with this regulation as proposed.

REGULATION XI: SOURCE SPECIFIC STANDARDS

Rule 1109: Emission of Oxides of Nitrogen From Boilers and Process heaters in Petroleum Refineries

This rule is subsumed by RECLAIM [Rule 2001(j)] for NO_x RECLAIM facilities such as the Chevron Refinery.

Rule 1134: Emission of Oxides of Nitrogen From Stationary Combustion Turbines

This rule is subsumed by RECLAIM [Rule 2001(j)] for NO_x RECLAIM facilities such as the Chevron Refinery.

Rule 1135: Emission of Oxides of Nitrogen From Electric Power Generating Systems

This rule is subsumed by RECLAIM [Rule 2001(j)] for NO_x RECLAIM facilities such as the Chevron Refinery.

Rule 1146: Emission of Oxides of Nitrogen From Industrial, Institutional and Commercial Boilers, Steam Generators and Process Heaters

This regulation contains NO_x and CO emission limits for certain boilers, steam generators, and process heaters. According to 1146(b), this rule applies to boilers, steam generators, and process

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heaters of equal to or greater than 5 million Btu per hour rated heat input capacity used in all industrial, institutional, and commercial operations with the exception of:

- (1) boilers used by electric utilities to generate electricity; and
- (2) boilers and process heaters with a rated heat input capacity greater than 40 million Btu per hour that are used in petroleum refineries; and
- (3) sulfur plant reaction boilers.

The Auxiliary Boiler and Cogen Train B duct burners/HRSG are not subject to this regulation since they are used in a refinery and have a rated heat input capacity greater than 40 MMBtu/hr. Also, the NOx related requirements of this rule have been subsumed by RECLAIM per 2001(j) for NOx RECLAIM facilities such as the Chevron Refinery.

Rule 1173: Control of Volatile Organic Compound Leaks From Components of Petroleum Facilities and Chemical Plants

This rule is intended to control volatile organic compound (VOC) leaks from fugitive components at refineries, chemical plants, oil and gas production fields, natural gas processing plants, and pipeline transfer stations. It contains identification requirements, leak standards, inspection requirements, maintenance and repair requirements, and recordkeeping and reporting requirements for fugitive components.

The fugitive components in the fuel delivery systems of the Cogen Train B and Auxiliary Boiler are subject to this regulation. Chevron has an existing fugitive emission component leak detection and repair (LDAR) program for compliance with the requirements of this rule. Revision of the subject permit conditions will not impact compliance with this regulation.

REGULATION XIII - NEW SOURCE REVIEW

As specified in Rule 1301, Regulation XIII, sets forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards (NAAQS), and that future economic growth within the South Coast Air Quality Management District (District) is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors.

The South Coast Air Basin (SOCAB) is designated in attainment of the NAAQSs for CO, NOx and SOx. The following are currently considered nonattainment air contaminants that are subject to new source review (NSR): NOx, SOx, PM_{2.5}, PM₁₀, and VOC. NOx and VOC are included since they are precursors for ozone. NOx, SOx and VOC are included as PM_{2.5} and PM₁₀ precursors.

NSR requirements for these nonattainment pollutants are specified in the following rules:

- Rule 1303 – PM10 and VOC (all facilities); NOx and SOx (non-RECLAIM facilities)
- Rule 1325 – PM2.5
- Rule 2005 – NOx and SOx (RECLAIM facilities)

Since Chevron is a RECLAIM facility, it is subject to the NSR requirements for NOx and SOx specified in Rule 2005 of the RECLAIM regulation (Regulation XX). Sources that emit

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ammonia, CO, and Ozone Depleting Compounds (ODCs) are subject to only the BACT requirements of Rule 1303 for these pollutants.

Rule 1303: Requirements

This rule requires the Executive Officer to deny a permit to construct for any new, modified or relocated source which results in an emission increase of CO, PM10, VOC, any ozone depleting compound, or ammonia, unless BACT is used. This rule also requires modeling and offset (among other requirements) if there is a net increase in PM10 or VOC emissions for any new or modified source. The Cogen Train B and Auxiliary Boiler are not subject to any requirements under this regulation for the revision of the subject permit conditions since there will not be any increase in the emission of ammonia, CO, ODCs, PM10 or VOC.

Rule 1325: Federal PM2.5 New Source Review Program

This NSR rule addresses the emission of PM2.5 and its precursors, which are defined as NOx and SO2. Revision of the subject permit conditions does not trigger any requirements of this rule since it will not cause an increase in the emission of PM2.5, NOx or SO2.

Regulation XIV - TOXICS AND OTHER NON-CRITERIA POLLUTANTS

Rule 1401: New Source Review of Carcinogenic Air Contaminants

Requirements – Rule 1401 contains the following requirements:

- 1) *(d)(1) MICR and Cancer Burden* - The cumulative increase in MICR which is the sum of the calculated MICR values for all toxic air contaminants emitted from the new, relocated or modified permit unit will not result in any of the following:
 - (A) an increased MICR greater than one in one million (1.0×10^{-6}) at any receptor location, if the permit unit is constructed without T-BACT;
 - (B) an increased MICR greater than ten in one million (1.0×10^{-5}) at any receptor location, if the permit unit is constructed with T-BACT;
 - (C) a cancer burden greater than 0.5.
- 2) *(d)(2) Chronic Hazard Index* - The cumulative increase in total chronic HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location.
- 3) *(d)(3) Acute Hazard Index* - The cumulative increase in total acute HI for any target organ system due to total emissions from the new, relocated or modified permit unit will not exceed 1.0 at any receptor location.

Analysis – Revision of the subject permit conditions will not cause an increase in the emission of any toxic air contaminant. Compliance with this regulation is achieved.

REGULATION XVII - PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

The PSD program is the federal New Source Review (NSR) program for pollutants for which an area is in attainment with or unclassified with respect to a National Ambient Air Quality Standard (NAAQS) as well as greenhouse gases (GHG).

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Rule 1703: PSD Analysis (& Associated Rules 1701, 1702, 1704, 1706, 1710 & 1713)

These rules contain the PSD requirements for attainment pollutants and selected unclassified pollutants. As discussed earlier, SOCAB is currently designated as attainment with NAAQSs for SO₂, NO₂, CO, and Lead. On March 3, 2003, AQMD's PSD delegation was rescinded by EPA. AQMD and EPA signed a "Partial PSD Delegation Agreement" effective July 11, 2007. According to a memo from Mr. Mohsen Nazemi, who is the Deputy Executive Officer of the AQMD Engineering and Compliance Division, this Partial Delegation Agreement is intended to delegate the authority and responsibility to AQMD for issuance of initial PSD permits and for PSD permit modifications where the applicant seeks to use the emissions calculation methodology set forth in AQMD Regulation XVII instead of those promulgated in 40 CFR 52.21 (NSR Reform).

Revision of the subject permit conditions does not trigger any requirements under this regulation since it will not impact the emission of CO, NO_x, SO_x or Lead.

Rule 1714: Prevention of Serious Deterioration for Greenhouse Gases

This rule sets forth preconstruction review requirements for greenhouse gases (GHG), which is defined as an aggregate group of six GHGs: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Revision of the subject permit conditions does not cause an increase in the emission of any GHGs. Therefore, the subject Cogen Train B and Auxiliary Boiler are not subject to any requirements under this regulation.

REGULATION XX - REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

RECLAIM is a market incentive program designed to allow facilities flexibility in achieving emission reduction requirements for Oxides of Nitrogen (NO_x), and Oxides of Sulfur (SO_x). The Chevron Refinery (ID 800030) is a Cycle II RECLAIM facility. The Cogen Train B and Auxiliary Boiler are subject to the NO_x and SO_x requirements of this regulation.

Rule 2005: New Source Review for RECLAIM

Sources that are subject to RECLAIM must comply with the New Source Review requirements of Rule 2005 instead of Regulation XIII. Revision of the subject permit conditions does not cause an increase in the emission of NO_x or SO_x. Therefore, the Cogen Train B and Auxiliary Boiler are not subject to any requirements under this rule.

Rule 2011: Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SO_x) Emissions and Rule 2012: Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (NO_x) Emissions

These rules establish the monitoring, reporting and recordkeeping requirements (MRR) for SO_x and NO_x emissions under the RECLAIM program. The Cogen Train B and Auxiliary Boiler utilizes a SO_x SCEMS consisting of a fuel sulfur GC and flow rate monitor on the refinery fuel gas stream from the V-4540 Fuel Mix Drum to comply with the monitoring requirements of Rule 2011. The cogen unit and boiler are both equipped with a NO_x CEMS for compliance with Rule 2012 monitoring requirements. Based on Chevron's record of compliance with RECLAIM monitoring, recordkeeping and reporting requirements, compliance with the requirements of this regulation is expected. Revision of the subject permit conditions is not expected to impact compliance with these rules.

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Regulation XXX – TITLE V PERMITS

The initial Title V permit for the refinery was issued on October 12, 2009. The permits issued for this project will be issued as a revision of the Title V permit. Permit revisions are categorized into the following four types: *administrative, minor, de minimis significant and significant*. The review and distribution requirements for each revision type are summarized in the following table.

Title V Permit Revisions: Review and Distribution Requirements

Revision Type	Permit Review and Distribution Requirements		
	EPA Review (45-day)	Public Notice (30-day)	Send Final Permit to EPA
Administrative	No	No	Yes
Minor	Yes	No	Yes
De Minimis Significant	Yes	No	Yes
Significant	Yes	Yes	Yes

As defined in Rule 3000, a minor Title V permit revision is any revision that:

- (1) does not require or change a case-by-case evaluation of: reasonably available control technology (RACT) pursuant to Title I of the federal Clean Air Act; or maximum achievable control technology (MACT) pursuant to 40 CFR Part 63, Subpart B;
- (2) does not violate a regulatory requirement;
- (3) does not require any significant change in monitoring terms or conditions in the permit;
- (4) does not require relaxation of any recordkeeping, or reporting requirement, or term, or condition in the permit;
- (5) does not result in an emission increase of RECLAIM pollutants over the facility starting Allocation plus nontradeable Allocations, or higher Allocation amount which has previously undergone a significant permit revision process;
- (6) does not result in an increase in emissions of a pollutant subject to Regulation XIII - New Source Review or a hazardous air pollutant;
- (7) does not establish or change a permit condition that the facility has assumed to avoid an applicable requirement;
- (8) is not an installation of a new permit unit subject to a New Source Performance Standard (NSPS) pursuant to 40 CFR Part 60, or a National Emission Standard for Hazardous Air Pollutants (NESHAP) pursuant to 40 CFR Part 61 or 40 CFR Part 63; and,
- (9) is not a modification or reconstruction of an existing permit unit, resulting in new or additional NSPS requirements pursuant to 40 CFR Part 60, or new or additional NESHAP requirements pursuant to 40 CFR Part 61 or 40 CFR Part 63; or,
- (10) incorporates an existing general permit, as defined in subdivision (e) of Rule 3004, and its associated requirements, into another Title V permit.

This Title V permit revision, which will include the subject permit condition changes for the Cogen Train B and Auxiliary Boiler, meets all of the requirements above so it is a minor revision. Revision of the conditions (heat input) under which the subject source tests are performed and inclusion of appropriate maintenance, repair and calibration periods and

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allowances in the steam-to-fuel monitoring condition are not considered to be a significant change in monitoring terms or conditions of the title V permit nor a relaxation of any recordkeeping, or reporting requirement, or term, or condition of the permit.

This Title V permit revision, which will be processed under A/N 541583, will be sent to EPA for a 45-day review. Public notice is not required.

CONCLUSION / RECOMMENDATION:

Based on the foregoing evaluation, it is expected that the subject applications will comply with all applicable District Rules and Regulations. It is recommended that permits to operate be issued to the Cogen Train B and Auxiliary Boiler.

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Appendix A: Cogeneration Train B - Fugitive VOC Emission Estimate

Equipment Type	Service	No. of Sources (1)	VOC Emission Factors lbs/yr (2)	Annual VOC Emission lb/yr
Valves - Sealed Bellow	Gas/Vapor	19	0.00	0.0
	Light Liquid	2	0.00	0.0
Valves - SCAQMD Approved I & M Program	Gas/Vapor	56	4.55	254.8
	Light Liquid	23	4.55	104.7
	Heavy Liquid	0	4.55	0.0
Flanges	Light Liquid/Vapor	124	6.99	866.8
	Heavy Liquid	0	6.99	0.0
Connectors	Light Liquid/Vapor	187	2.86	534.8
	Heavy Liquid	0	2.86	0.0
Pumps	Light Liquid (double seal)	0	46.83	0.0
	Light Liquid (sealless type)	0	0	0.0
	Heavy Liquid (single seal)	0	17.21	0.0
Compressors	Gas/Vapor	0	9.09	0.0
PRV's	All (To Atmosphere)	0	9.09	0.0
	All (Closed Vent)	0	0	0.0
Drains (with p-trap)		0	9.09	0.0

Total Count: 411 Total (lb/yr) 1,761

Emissions (lbs/day) 4.9
(30-day Average)

(1) Fugitive component count provided by Mr. Pat Kittikul of Chevron on 8/09/12.

(2) Emission factors based on correlation equations from the *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* (CARB/CAPCOA - 1999)

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Appendix B: Auxiliary Boiler - Fugitive VOC Emission Estimate

Equipment Type	Service	No. of Sources (1)	VOC Emission Factors lbs/yr (2)	Annual VOC Emission lb/yr
Valves - Sealed Bellow	Gas/Vapor	9	0.00	0.0
	Light Liquid	0	0.00	0.0
Valves - SCAQMD Approved I & M Program	Gas/Vapor	54	4.55	245.7
	Light Liquid	0	4.55	0.0
	Heavy Liquid	0	4.55	0.0
Flanges	Light Liquid/Vapor	139	6.99	971.6
	Heavy Liquid	0	6.99	0.0
Connectors	Light Liquid/Vapor	146	2.86	417.6
	Heavy Liquid	0	2.86	0.0
Pumps	Light Liquid (double seal)	0	46.83	0.0
	Light Liquid (sealless type)	0	0	0.0
	Heavy Liquid (single seal)	0	17.21	0.0
Compressors	Gas/Vapor	0	9.09	0.0
PRV's	All (To Atmosphere)	0	9.09	0.0
	All (Closed Vent)	0	0	0.0
Drains (with p-trap)		0	9.09	0.0

Total Count: 348 Total (lb/yr) 1,635

Emissions (lbs/day) 4.5
(30-day Average)

(1) Fugitive component count provided by Mr. Pat Kittikul on 8-29-12.

(2) Emission factors based on correlation equations from the *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* (CARB/CAPCOA - 1999)