PROPOSED

DATE

CERTIFIED MAIL 08-E CAB
RETURN RECEIPT REQUESTED File No. 0212-24/0212-25/0212-26
(XXX)

Mr. Frank D. Clouse
Vice President, Refinery Operations
Tesoro Hawaii Corporation
91-325 Komohana Street
Kapolei, Hawaii 96707-1713

Dear Mr. Clouse:

Subject: Amendment of Covered Source Permit (CSP) No. 0212-01-C
Minor Modification Applications Nos. 0212-24, 0212-25, and 0212-26
Visbreaker Unit and Catalytic Reformer Unit
Tesoro Hawaii Corporation
Petroleum Refinery
Located at 91-325 Komohana Street, Kapolei, Oahu
Date of Expiration: November 5, 2012

In accordance with Hawaii Administrative Rules, Chapter11-60.1, and pursuant to your applications for Minor Modifications dated January 21, 2008, February 1, 2008 and February 4, 2008, the Department of Health hereby amends Covered Source Permit (CSP) No. 0212-01-C issued to Tesoro Hawaii Corporation. The amendment revises the Visbreaker Unit section and Naphtha Hydrotreater and Catalytic Reformer section of the permit. The amendment consists of the following:

1. The enclosed Attachment II(F) shall supersede in its entirety the corresponding Attachment II(F) issued with CSP No. 0212-01-C.

2. Add to Attachment II(B), Special Condition No. A.1.g.

   Methanol Storage Tote
   i. Vertical Fixed Roof Storage Tote
   ii. 350 gallons capacity

All other permit conditions issued with CSP No. 0212-01-C on July 6, 2000 and amended on October 8, 2001; April 15, 2003; October 13, 2003; August 4, 2004, November 6, 2007 and February 1, 2008 shall not be affected and shall remain valid.

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Receipts for the application filing fees of $200.00 each are enclosed.

If there are any questions regarding these matters, please contact Mr. Darin Lum of the Clean Air Branch at (808) 586-4200.

Sincerely,

THOMAS E. ARIZUMI, P.E., CHIEF
Environmental Management Division

DL:nn
Enclosures

c: CAB Monitoring Section

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ATTACHMENT II(F): SPECIAL CONDITIONS
COVERED SOURCE PERMIT NO. 0212-01-C

Visbreaker Unit

Amended Date: **Expiration Date: November 5, 2012**

In addition to the standard conditions of the Covered Source Permit, the following special conditions shall appy to the permitted facility:

Section A. Equipment Description

1. This portion of the Covered Source Permit encompasses the following equipment and associated appurtenances of the Visbreaker Unit (VBK):

    a. Visbreaker Heater, ID no. H901

        i. 75 MMBtu/hr heat input

    b. Visbreaker Offgas Treater

    c. Sulfix Storage Tank, TK 913

        i. Vertical Fixed Roof
        ii. 6000 gallons capacity

    (Auth.: HAR §11-60.1-3)

2. The permittee shall permanently attach an identification tag or nameplate on each piece of equipment which identifies the model number, serial or I.D. number and manufacturer. The identification tag or nameplate shall be attached to the equipment in a conspicuous location.

    (Auth.: HAR §11-60.1-5, §11-60.1-90)

Section B. Applicable Federal Regulations

1. The visbreaker heater H901 is subject to the provisions of the following federal regulations:

    a. 40 CFR Part 60, New Source Performance Standards (NSPS)

        i. Subpart A, General Provisions; and
        ii. Subpart J, Standards of Performance for Petroleum Refineries.

    The permittee shall comply with all applicable requirements of these standards, including all emission limits, notification, reporting, monitoring, testing and recordkeeping requirements. The major requirements of these standards are detailed in the special conditions of this permit.

(Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.1, §60.100) [1]

Section C. Operational and Emission Limitations

1. The visbreaker heater shall be fired only on refinery fuel gas (RFG) with a hydrogen sulfide (H_2S) content not to exceed 230 mg/dscm (0.10 gr/dscf).

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.104) [1]

2. At all times the permittee shall operate and maintain a visbreaker offgas treater to treat mercaptans, carbonyl sulfide and other reduced sulfur compounds generated by the visbreaker. The total of all sulfur compounds in the refinery fuel gas (RFG) burned in the refinery shall not exceed the total sulfur equivalent of 258 ppm.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161, 40 CFR §60.104)[1]

3. Maximum Emission Limits

   a. The visbreaker heater shall not discharge or cause the discharge into the atmosphere emissions of nitrogen oxides (as NO_2) in excess of 0.12 lb/MMBtu.

   b. The visbreaker heater shall not discharge or cause the discharge into the atmosphere emissions of sulfur dioxides (SO_2) in excess of 20 ppm (dry basis, zero percent excess air).

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

4. The visbreaker heater is exempt from a Prevention of Significant Deterioration (PSD) review due to the emissions restrictions listed above. Any relaxation in these limits that results in an emissions increase above the significant PSD threshold will require a full PSD review of the source.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

5. Visible Emissions (V.E.)

   For any six (6) minute averaging period, the visbreaker heater shall not exhibit visible emissions of twenty (20) percent opacity or greater, except as follows: during startup, shutdown, or equipment breakdown, the visbreaker heater may exhibit visible emissions greater than twenty (20) percent opacity but not exceeding sixty (60) percent opacity for a period aggregating not more than six (6) minutes in any sixty (60) minutes.

   (Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90; SIP §11-60-24) [2]

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Section D. Monitoring and Recordkeeping Requirements

1. Compliance, on a continuous basis, with the sulfur limits imposed in Special Condition No. C.2. of this Attachment shall be determined by total sulfur analysis in the fuel gas using ASTM methods D5504-94, D5453-93 or other methods approved by the Department of Health. The fuel gas shall be analyzed a minimum of twice a month to ensure continuing compliance.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

2. Continuous Emissions Monitoring System (CEMS)

   a. The permittee shall operate and maintain a continuous emission monitoring system (CEMS) for continuously monitoring and recording the concentration (dry basis) of H_2S in the RFG before being burned in the visbreaker heater.

   b. The CEMS shall meet the following requirements:

      i. The span value for the CEMS is 425 mg/dscm (300 ppmv) H_2S.

      ii. All fuel gas combustion devices, including the visbreaker heater, having a common source of fuel gas may be monitored at one location, if monitoring at this location accurately represents the concentration of H_2S in the RFG being burned.

      iii. Performance evaluations for the H_2S CEMS shall be in accordance with 40 CFR §60.13. The H_2S CEMS shall meet 40 CFR Part 60, Appendix B, Performance Specification 7, Specifications and Test Procedures for Hydrogen Sulfide Continuous Emissions Monitoring Systems in Stationary Sources; and Appendix F, Quality Assurance Procedures. 40 CFR Part 60, Appendix A, Method 11 shall be used in conducting any relative accuracy test audit (RATA).

      iv. Cylinder Gas Audits (CGA) shall be conducted on a quarterly basis in accordance with 40 CFR Part 60, Appendix F, Section 5.1.2. Since performance specification test procedures are only intended for the initial test of the H_2S CEMS, RATAs need not be performed on an annual basis, unless requested by the Department of Health; or there is a significant change or performance deficiency of the CEMS.

      v. Calibration Drift (CD) assessments shall be performed on a daily basis pursuant to 40 CFR Part 60, Appendix F, Section 4.1.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161; 40 CFR §60.105) [1]

3. Visible Emissions (V.E.)

   a. The permittee shall conduct **monthly** *(calendar month)* V.E. observations for each equipment subject to opacity limitations in accordance with 40 CFR Part 60, Appendix A, Method 9 or by use of a Ringelmann's chart as provided. For each period, two (2) observations shall be taken at fifteen (15) second intervals for six (6) consecutive minutes for each equipment. Records shall be completed and maintained in accordance with the *Visible Emissions Form Requirements*.

   b. The permittee shall conduct **annually** *(calendar year)* V.E. observations for each equipment subject to opacity limits by a certified reader in accordance with 40 CFR Part 60, Appendix A, Method 9. For each period, two (2) observations shall be taken at fifteen (15) second intervals for six (6) consecutive minutes for each equipment. Records shall be completed and maintained in accordance with the *Visible Emissions Form Requirements*.

   c. Upon written request and justification, the Department of Health may waive the requirements for the **annual** V.E. observations. The waiver request is to be submitted prior to the required test and must include documentation justifying such action. Documentation should include, but is not limited to, the results of the prior tests indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous **annual** V.E. observations. The annual V.E. observations shall not be waived for more than two consecutive years.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-32, §11-60.1-90; SIP §11-60-15, §11-60-24)[2]

4. The permittee shall report any period in which the visbreaker offgas treater is not operating while the visbreaker is in operation, in accordance with Standard Condition No. 17 of Attachment I.

   (Auth.: HAR §11-60.1-3, §11-60.1-90)

5. The permittee shall maintain a file containing records of the concentration of hydrogen sulfide in RFG, as measured by the continuous emission monitoring system.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.7) [1]

6. The permittee shall maintain a file of all measurements and monitoring data, including the continuous monitoring system performance evaluations; continuous monitoring system calibration checks; adjustments and maintenance performed on the monitoring system or devices; and all other information required to be recorded by 40 CFR §60.13 in a permanent form suitable for inspection.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.7) [1]

7. All records, including supporting information, shall be maintained at the facility for at least five (5) years from the date of the monitoring sample, measurements, tests, reports, or application. Support information includes all calibration and maintenance records and copies of all reports required by the permit. These records shall be in a permanent form suitable for inspection and made available to the Department of Health or their representatives upon request.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

Section E. Notification and Reporting Requirements

1. Excess Emissions

   a. The permittee shall submit an excess emissions and monitoring systems performance report pursuant to 40 CFR §60.7(c) to the Department of Health for **every semi-annual calendar period**. The report shall include the following:

      i. The magnitude of excess emissions computed in accordance with 40 CFR §60.13(h), any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions;
      ii. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the visbreaker heater. The nature and cause of any malfunction (if known), and the corrective action taken or preventive measures adopted, shall also be reported;
      iii. The date and time identifying each period during which the continuous emissions monitoring system was inoperative except for zero and span checks. The nature of each system repair or adjustment shall be described; and
      iv. The report shall so state if no excess emissions have occurred. Also, the report shall so state if the continuous emissions monitoring system operated properly during the period and was not subject to any repairs or adjustments except zero and span checks.

   b. All reports shall be postmarked by the **30th day following the end of each semi-annual calendar period**. The enclosed **Excess Emissions and Monitoring System Performance Summary Report** form or an equivalent form shall also be submitted in addition to the excess emissions and monitoring systems performance report.

   c. Excess emissions shall be defined as any rolling 3-hour period during which the average concentration of H_2S in RFG, as measured by the continuous emissions monitoring system, exceeds 230 mg/dscm (0.10 gr/dscf).

d. Excess emissions indicated by the continuous emissions monitoring system shall be considered violations of the applicable emission and concentration limits for the purposes of the permit.

(Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR §60.7, §60.105) [1]

2. The permittee shall submit **semi-annually** written reports to the Department of Health for monitoring purposes. The reports shall be submitted **within sixty (60) days** *after the end of each semi-annual calendar period (January 1 to June 30 and July 1 to December 31)* and shall include the following:

a. The average 1-hour H_2S concentration on a daily, monthly and annual basis. All total sulfur lab results along with a semi-annual average thereof.

b. Any opacity exceedances as determined by the required V.E. monitoring. Each exceedance reported shall include the date, six (6) minute average opacity reading, possible reason for exceedance, duration of exceedance, and corrective actions taken. If there were no exceedances, the permittee shall submit in writing a statement indicating that for each equipment there were no exceedances for that semi-annual period.

The enclosed **Monitoring Report Form: Visible Emissions** or an equivalent form shall be used.

c. Any deviations from permit requirements shall be clearly identified.

(Auth.: HAR §11-60.1-3, §11-60.1-32, §11-60.1-90, SIP §11-60-24)[2]

3. Annual Emissions

As required by Attachment IV and in conjunction with the requirements of Attachment III, Annual Fee Requirements, the permittee shall submit **on an annual basis** the total tons per year emitted of each regulated air pollutant, including hazardous air pollutants. The reporting of annual emissions is due within **sixty (60) days** *following the end of each calendar year*. The enclosed **Annual Emissions Report Form: Refinery Equipment - Fuel Consumption** or an equivalent form, shall be used in reporting fuel usage.

Upon written request of the permittee, the deadline for reporting annual emissions may be extended if the Department of Health determined that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-90, §11-60.1-114)

4. Additional notification and reporting requirements shall be conducted in accordance with the standard conditions found in Attachment I, Standard Conditions 16, 17 and 25, respectively. These notifications shall include, but not be limited to:

   a. Intent to shutdown air pollution control equipment for necessary scheduled maintenance;

   b. Emissions of air pollutants in violation of HAR, Chapter 11-60.1 or this permit (excluding technology-based emission exceedances due to emergencies); and

   c. Permanent discontinuance of construction, modification, relocation or operation of the facility covered by this permit.

   (Auth.: HAR §11-60.1-8, §11-60.1-15, §11-60.1-16, §11-60.1-90)

5. The permittee shall report in writing **within five (5) working days** *any deviations from permit requirements*, including those attributable to upset conditions, the probable cause of such deviations and any corrective actions or preventative measures taken. Corrective actions may include a requirements for more frequent monitoring, or could trigger implementation of a corrective action plan.

   (Auth.: HAR §11-60.1-3, §11-60.1-15, §11-60.1-16, §11-60.1-90)

6. Compliance Certification

   During the permit term, the permittee shall submit at least **annually** to the Department of Health and U.S. EPA Region 9, a compliance certification pursuant to HAR §11-60.1-86. The permittee shall indicate whether or not compliance is being met with each term or condition of this permit. The compliance certification shall be submitted within **ninety (90) days** *after the end of each calendar year*, and shall be signed and dated by a responsible official. The compliance certification shall include at a minimum the following information:

   a. The identification of each term or condition of the permit that is the basis of the certification;

   b. The compliance status;

   c. Whether compliance was continuous or intermittent;

   d. The methods used for determining the compliance status of the source currently and over the reporting period;

   e. Any additional information indicating the source's compliance status with any applicable enhanced monitoring and compliance certification including the

requirements of Section 114 (a)(3) of the Clean Air Act or any applicable monitoring and analysis provisions of Section 504(b) of the Clean Air Act; and

f. Any additional information as required by the Department of Health including information to determine compliance.

Upon written request of the permittee, the deadline for submitting the compliance certification may be extended, if the Department of Health determines that reasonable justification exists for the extension.

(Auth.: HAR §11-60.1-4, §11-60.1-86, §11-60.1-90)

7. **At least thirty (30) calendar days prior** to the following events, the permittee shall notify the Department of Health in writing of:

   a. Conducting a performance specification test on the CEMS. The testing date shall be in accordance with the performance test date identified in 40 CFR §60.13.

   b. Conducting a source performance test as required by this Attachment, Section F, Testing Requirements.

   (Auth.: HAR §11-60.1-3, §11-60.1-90, §11-60.1-161)

Section F. Testing Requirements

1. The permittee shall conduct or cause to be conducted performance tests on the visbreaker heater. Performance tests shall be conducted for nitrogen oxides (NO_x as NO_2) and sulfur dioxides (SO_2) while fired on refinery fuel gas (RFG). All performance test shall be conducted at the maximum expected operating capacity of the visbreaker heater, or at other operating loads as may be specified by the Department of Health. Performance test shall be conducted on an annual basis or at such times as may be specified by the Department of Health.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

2. Performance tests for the emissions of NO_x and SO_2 shall be conducted using EPA Method 1 to 4, 6 and 7, or EPA-approved equivalent methods with prior written approval from the Department of Health. Performance tests for SO_2 may be conducted at any fuel gas combustion device having a common source of fuel gas.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, 40 CFR §0.105(a)(3))

3. For each run, the emissions of nitrogen oxides (as NO_2) expressed in lbs/MMBtu shall be determined by the following procedure:

   $E = (C_d F_d)(46.01)(K_1)[(20.9)/(20.9 - \% O_{2d})]$

   Where:
   (a) E = pollutant emission (lb/MMBtu)
   (b) C_d = pollutant concentration, dry basis (ppmv)
   (c) $\% O_{2d}$ = oxygen content by volume (expressed as percent), dry basis, as determined by Method 3.
   (d) F_d = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted. For the refinery fuel gas, the factor is F_d = 8740 dscf/MMBtu at standard conditions of 68 °F and 29.92 in. Hg. or the actual value of the F_d factor may be used as determined by laboratory methods by the permittee.
   (e) K_1 = 2.59 E-09 Conversion Factor (lb-mole/dscf * MM)

   For each run, the emission of sulfur dioxide (SO_2) expressed in ppm at zero percent excess oxygen shall be determined by the following procedure:

   Where:
   C_{adj} = pollutant concentration adjusted zero percent oxygen, ppm or g/dscm
   C_{meas} = pollutant concentration measured dry basis, ppm or g/dscm
   20.9 = oxygen concentration in air, percent
   $\%O_2$ = oxygen concentration measured dry basis, percent

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90, §11-60.1-161; 40 CFR 60.106) [1]

4. For each run, the refinery fuel gas feed rate in dry standard cubic feet per hour (dscf/hr) shall be provided. The permittee shall document the methodology by which each refinery gas feed rate was determined. The refinery gas shall be sampled and analyzed for the heating value per dscf on the day of the test. The heater fuel gas firing rate on the basis of HHV in the terms of MMBtu/hr shall be determined and included in the source test report.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

5. The performance test shall consist of three (3) separate runs using the applicable test method. For the purpose of determining compliance with an applicable regulation, the arithmetic mean of the results from the three (3) runs shall apply. For Method 7, each run shall consist of four (4) separate samples collected at approximately 15 minute intervals.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

6. The permittee shall provide sampling and testing facilities at its own expense. The tests shall be conducted at the operating capacities identified in Special Condition No. F.1. of this Attachment, and the Department may monitor the tests.

(Auth.: HAR §11-60.1-3, §11-60.1-5, §11-60.1-11, §11-60.1-90)

7. **At least thirty (30) calendar days prior** *to performing a test*, the permittee shall submit a written *performance test plan* to the Department of Health that describes the test duration, test locations, test methods, source operation and other parameters that may affect test results. Such a plan shall conform to U.S. EPA guidelines including quality assurance procedures. A test plan or quality assurance plan that does not have the approval of the Department of Health may be grounds to invalidate any test and require a retest.

   (Auth.: HAR §11-60.1-3, §11-60.1-11, §11-60.1-90)

8. Any deviations from these conditions, test methods, or procedures may be cause for rejection of the test results unless such deviations receive written approval by the Department of Health before the tests.

   (Auth.: HAR §11-60.1-11, §11-60.1-90)

9. **Within sixty (60) days after** *completion of the performance test*, the permittee shall submit to the Department of Health and U.S. EPA Region 9 (Attention: AIR-3), the test report which shall include the operating conditions of the visbreaker heater at the time of the test, the analysis of the fuel, the summarized test results, comparative results with the permit emission limits, and other pertinent field and laboratory data.

   (Auth.: HAR §11-60.1-11, §11-60.1-90)

10. Upon written request and justification, the Department of Health may waive the requirement for a specific annual source test. The waiver request is to be submitted prior to the required test and must include documentation justifying such action. Documentation should include, but is not limited to, the results of the prior tests indicating compliance by a wide margin, documentation of continuing compliance, and further that operations of the source have not changed since the previous source test. The source performance test shall not be waived for more than two consecutive years.

    (Auth.: HAR §11-60.1-11, §11-60.1-90)

11. Upon the Department of Health's request, or if a significant change or performance deficiency occurs with the CEMS, performance tests for the H_2S levels in the RFG shall be conducted and results reported in accordance with the instructions and test methods set forth in 40 CFR §60.106, and Appendix A, Method 11.

    (Auth.: HAR §11-60.1-11, §11-60.1-90)

Section G. Agency Notification

1. Any document (including reports) required to be submitted by this Covered Source Permit shall be in accordance with Attachment I, Standard Conditions, Condition 29.

   (Auth.: HAR §11-60.1-4, §11-60.1-90)

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[1] The citations to the Code of Federal Regulations (CFR) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the CFR. Due to the integration of the preconstruction and operating permit requirements, permit conditions may incorporate more stringent requirements than those set forth in the CFR.

[2] The citations to the State Implementation Plan (SIP) identified under a particular condition, indicate that the permit condition complies with the specified provision(s) of the SIP.