DEPARTMENT OF ECOLOGY
THE STATE OF WASHINGTON

IN THE MATTER OF AN AGREED ORDER BETWEEN THE DEPARTMENT OF ECOLOGY AND TESORO REFINING & MARKETING COMPANY LLC	))))	Agreed Order No. 10299

I. INTRODUCTION

The Tesoro Anacortes Refinery (Tesoro) and the State of Washington, Department of Ecology (Ecology), enter into the following Agreed Order (Order) for the completion of herring chronic bioassay testing as set out below. The basic goal of the testing conducted under this Order is to determine if existing WET testing methods are adequate to determine if discharges have unacceptable toxicity to the state's Pacific herring.

II. JURISDICTION

Ecology's Industrial Section, Waste 2 Resources Program, has the authority to enter into this Order under the following state statutes:

RCW 90.48.030 directs Ecology to control and prevent the pollution of waters of the state of Washington.

RCW 90.48.260 designates Ecology as the state water pollution control agency for all purposes of the federal Clean Water Act.

RCW 90.48.520 directs Ecology to control toxicants in wastewater.

RCW 90.48.250 authorizes Ecology to make agreements and enter into such contracts as are appropriate to carry out a program of monitoring the condition of the waters of the state and the effluent discharged therein.

III. PARTIES BOUND

This Order shall apply to and be binding upon the parties to this Order, their successors, and assigns. The undersigned representatives of each party hereby certify that he or she is fully authorized to enter into this Order and to execute and legally bind such Party to comply with the Order. Tesoro agrees to undertake all actions required by the terms and conditions of this Order and to not contest the conditions of this Order or Ecology's authority to issue and administer this Order. No changes in ownership or corporate status shall alter Tesoro's responsibilities under this order. On Tesoro's execution of this Order, Ecology agrees to remove Condition S9. from the final NPDES permit issued to Tesoro for the permit cycle beginning in 2013.

IV. EFFECTIVE DATE

This Agreement shall become effective on the date of the final signature.

V. EXECUTION

This document may be executed in counterparts and may be executed by facsimile and/or electronically, and each executed counterpart shall have the same force and effect as the original instrument.

VI. TERMS AND CONDITIONS

It is hereby ordered that:

Tesoro shall conduct herring embryo survival and normal development testing and herring larval survival and growth testing on final effluent from their process water outfall (001) using the methods specified in the table below. Tesoro shall conduct the standard EPA toxicity tests in the table below on the final effluent concurrent with the herring embryo and larval toxicity testing. Sea urchin/sand dollar embryo-larval tests

must be conducted on the same samples as herring embryo tests. Topsmelt/silverside minnow/Atlantic mysid larval survival and growth tests must be conducted on the same samples as herring larval survival and growth tests. The concurrent testing with the standard EPA test will be used to determine the degree to which the standard EPA test is protective of herring.

Herring Test Species	**Method**	**EPA Test Species**	**Method**
Pacific herring, *Clupea pallasi*	Embryo Normal Survival Test, Dinnel (2008 and 2011)	sea urchin *Strongylocentrotus Purpuratus* or sand dollar *Dendraster excentricus*	Embryo-larval development test, EPA/600/R-95/136
Pacific herring, *Clupea pallasi*	Larval Survival and Growth Test, Dinnel (2008 and 2011)	topsmelt, *Atherinops affinis;* silverside minnow, *Menidia beryllina*; and Atlantic mysid, *Americamysis bahia*	Larval survival and growth tests - EPA/600/R-95/136 (topsmelt) and EPA-821-R-02-014 (silverside and mysid)

Test results shall be submitted to Ecology. Ecology will conduct a QA review of the test results, including analysis to determine if a test meets the anomalous test criteria in Appendix D of Ecology publication WQ-R-95-80.

Natural herring spawn may be used for the larval test. Running ripe herring are required to provide gametes for the embryo test. Tesoro shall be responsible for and shall use their best efforts to supply herring test animals. Tesoro shall pay the necessary expenses incurred by third parties directly related to the collection and shipment of herring. Tesoro will remit payment to third parties directly, or by way of the laboratory selected by Tesoro, at Tesoro's option. Ecology will facilitate and coordinate as

necessary to obtain herring. Ecology will notify Tesoro of timing and costs for available herring, and Tesoro will arrange for sampling to coincide with herring availability. Upon approval of this agreement, Tesoro should seek Ecology's assistance for planning and preparing to obtain herring as soon as possible to ensure test animals are available.

Tesoro shall arrange for and fund the testing described herein. Tests must be performed at a laboratory validated for chronic herring test procedures (see Ecology Publication No. 11-10-086).

The test period shall begin January 1, 2014. Each individual comparison test shall be run on effluent samples collected from no less than six sampling events over the term of the permit (through March 1, 2017). Sampling events shall be conducted at least two weeks apart.

With the assistance available from Ecology, Tesoro should be able to acquire sufficient herring for testing. However, should compliance with the requirements of this agreed order become impracticable despite Tesoro's best efforts the parties agree to negotiate amendments to this order as necessary.

Sampling and Reporting Requirements

1. Tesoro must submit all reports for toxicity testing in accordance with the most recent version of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* Reports must contain bench sheets and reference toxicant results for test methods. Tesoro must submit toxicity test data in electronic format (CETIS export file preferred).

2. The reference toxicant for all herring tests must be copper chloride. Tesoro has the option to include up to 2 additional reference toxicants.

3. Tesoro must collect 24-hour composite effluent samples or grab samples for toxicity testing. Composite samples are preferred but grab samples are acceptable if needed to provide effluent for testing when test organisms are in the lab. Tesoro must cool the samples to 0-6° C during collection and send them to the lab immediately upon completion. The lab must begin the toxicity testing as soon as possible but no later than 36 hours after sampling was completed.

4. The laboratory must conduct water quality measurements on all samples and test solutions for toxicity testing, as specified in the most recent version of Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.*

5. All toxicity tests must meet quality assurance criteria and test conditions in the most recent versions of the appropriate EPA method listed above and in Ecology Publication #WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria.* If Ecology determines any test results to be invalid or anomalous, Tesoro must repeat the testing as soon as possible.

6. Herring toxicity tests must meet quality assurance criteria and test conditions in:

> Dinnel, Paul. October 2008. Pacific Herring, *Clupea pallasi*, Embryo and Larval Bioassay Protocols. Shannon Point Marine Center, Western Washington University
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> Dinnel, P.A., D.P. Middaugh, N.T. Schwarck, H.M. Farren, R.K. Haley, R.A. Hoover, J. Elphick, K. Tobiason, R.R. Marshall. 2011. Methods for Conducting Bioassays Using Embryos and Larvae of Pacific Herring, *Clupea pallasi*. Arch Environ Contam Toxicol 60:290–308.

7. Except for salinity adjustments, Tesoro must conduct whole effluent toxicity tests on an unmodified sample of final effluent. Samples used for whole effluent toxicity

testing under this Agreed Order shall be representative of the volume and nature of the process water discharge from the facility during normal operation.

8. Tests shall be conducted using a 0.5 standard dilution series (100 , 50 , 25 , 12.5 and 6.25) and a dilution water control. A minimum of four replicates is needed for effluent tests.

9. Reports of individual test results must be submitted to Ecology within 60 days after completion of the test.

Failure to comply with this Order may result in the issuance of civil penalties or other actions.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Garin Schrieve, P.E.
Industrial Section Manager
Waste 2 Resources Program

Dated: 10/28/13

TESORO REFINING & MARKETING
COMPANY LLC
PUGET SOUND REFINERY

Danial S. Cameron
Vice President

Dated: 10/28/13