

**State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

**MONITORING AND REPORTING PROGRAM NO. 2022
FOR
CITY OF OXNARD
(Oxnard Wastewater Treatment Plant)**

Order No. R4-2002-0129

NPDES NO. CA0054097

The Discharger shall implement this monitoring and reporting program on the effective date of this Order.

I. SUBMITTAL OF MONITORING REPORTS

- A. Effluent monitoring reports shall be received at the Regional Board monthly, by the fifteenth day of the second month following each monthly monitoring period. The first monitoring report under this program shall be received at the Regional Board by October 15, 2002, covering the monitoring period of August 2002.
- B. By March 1 of each year, the Discharger shall submit an Annual Summary Report containing a discussion of the previous year's effluent analytical results, as well as graphical and tabular summaries of the monitoring analytical data. The data shall be submitted to the Regional Board on hard copy and on 3 1/2" computer diskette. The submitted data must be IBM compatible, preferably using Microsoft Excel software. In addition, the Discharger shall discuss the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements.
- C. All monitoring and annual summary reports must be addressed to the Regional Board, Attention: Information Technology Unit. Reference the reports to Compliance File No. CI-2022 to facilitate routing to the appropriate staff and file.
- D. Database Management System: The Regional Board and the State Water Resources Control Board (State Board) are developing a database compliance monitoring management system that may require the Discharger to submit the monitoring and annual summary reports electronically when it becomes fully operational.

II. MONITORING REQUIREMENTS

- A. Quarterly effluent analyses shall be performed during the months of February, May, August, and November. Semiannual effluent analyses shall be performed during the months of February and August. Annual effluent analyses shall be performed during the month of August. Should there be instances when monitoring could not be done during these specified months, the Discharger must notify the Regional Board, state the reason why the monitoring could not be conducted, and obtain approval from the Executive

Officer for an alternate schedule. Results of quarterly, semiannual, and annual analyses shall be reported in the monthly monitoring report following the analysis.

- B. Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; or where no methods are specified for a given pollutant, by methods approved by the Regional Board or State Board. The laboratory conducting analyses shall be certified by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP) or approved by the Regional Board for that particular parameter. A copy of the laboratory certification shall be submitted with the annual summary report.
- C. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136.3. All QA/QC analyses must be run on the same dates that samples are actually analyzed. The Discharger shall retain the QA/QC documentation in its files and make available for inspection and/or submit them when requested by the Regional Board. Proper chain of custody procedures must be followed and a copy of this documentation shall be submitted with the monthly report.
- D. For all bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 160,000. The detection methods used for each analysis shall be reported with the results of the analyses.
 - 1. Detection methods used for coliforms (total and fecal) shall be those presented in Table 1A of 40 CFR Part 136 (revised May 14, 1999), unless alternate methods have been approved by the United State Environmental Protection Agency (USEPA) pursuant to 40 CFR Part 136, improved methods have been determined by the Executive Officer.
 - 2. Detection methods used for enterococcus shall be those presented in the USEPA publication EPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water By Membrane Filter Procedure* or any improved method determined by the Executive Officer to be appropriate.

III. REPORTING REQUIREMENTS

- A. The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL), and reported Minimum Level (RML) for each pollutant. The reported Minimum Level is the Minimum Level (ML) chosen by the Discharger for reporting and compliance determination from the Minimum Levels listed in Appendix II (Attachment T-1) of the 2001 Ocean Plan. MLs represent the lowest quantifiable concentration in a sample based on the proper application of method-specific analytical procedures and the absence of matrix interferences. MLs also represent the lowest standard concentration in the calibration curve for a specific analytical technique after the application of appropriate method-specific factors.
- B. The Discharger shall select the analytical method that provides a ML lower than the permit limit established for a given parameter. If the effluent limitation is lower than all the MLs in Attachment T-1, the Discharge must select the method with the lowest ML for

- compliance purposes. The Discharger shall include in the Annual Summary Report a list of the analytical methods employed for each test.
- C. The Discharger shall instruct its laboratories to establish calibration standards so that the ML (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve. In accordance with section E, below, the Discharger's laboratory may employ a calibration standard lower than the ML in Attachment T-1.
- D. For the purpose of reporting compliance with numerical effluent and receiving water limitations, analytical data shall be reported using the following reporting protocols:
1. Sample results greater than or equal to the RML must be reported "as measured" by the laboratory (i.e., the measured chemical concentration in the sample); or
 2. Sample results less than the RML, but greater than or equal to the laboratory's MDL, must be reported as "Detected, but Not Quantified", or DNQ. The laboratory must write the estimated chemical concentration of the sample next to DNQ as well as the words "Estimated Concentration" (may be shortened to Est. Conc.); or
 3. Sample results less than the laboratory's MDL must be reported as "Not-Detected", or ND.
- E. Upon request by the Discharger, the Regional Board, in consultation with the State Board Quality Assurance Program, may establish a ML that is not contained in Attachment T-1, to be included in the Discharger's permit, in any of the following situations:
1. When the pollutant under consideration is not included in Attachment T-1;
 2. When the Discharger agrees to use a test method that is more sensitive than those specified in 40 CFR Part 136 (revised May 14, 1999, or subsequent revision);
 3. When the Discharger agrees to use an ML lower than those listed in Attachment T-1;
 4. When the Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Attachment T-1 and proposes an appropriate ML for their matrix; or
 5. When the Discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the USEPA-approved method 1613 for dioxins and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the Discharger, the Regional Board, and the State Board shall agree on a lowest quantifiable limit, and that limit will substitute for the ML for reporting and compliance determination purposes.

- F. If the Discharger samples and performs analyses (other than for process/operational control, startup, research, or equipment testing) on any influent, effluent, or receiving water constituent more frequently than required by this Program using approved analytical methods, the results of those analyses shall be included in the report. These results shall be reflected in the calculation of the average used in demonstrating compliance with average effluent, receiving water, etc., limitations.
- G. The Discharger shall inform the Regional Board well in advance of any proposed construction or maintenance or modification to the treatment plant that could potentially affect compliance with applicable requirements.
- H. The Discharger shall develop and maintain a record of all spills or bypasses of raw or partially treated sewage from its collection system or treatment plant. This record shall be made available to the Regional Board upon request and a spill summary shall be included in the annual summary report.
 - 1. For spills/bypasses of 500 gallons or more that flowed to receiving waters or entered a shallow ground water aquifer or has public exposure, the Discharger shall report such spills to the Regional Board and the local health agency by telephone or electronically as soon as possible but not later than 24 hours of knowledge of the incident. The following information shall be included in the report: location; date and time of spill; volume and nature of the spill; cause(s) of the spill; mitigation measures implemented; and corrective measures implemented or proposed to be implemented to prevent/minimize future occurrences.
 - 2. For spills that reach receiving waters, the Discharger shall obtain and analyze grab samples for total and fecal coliforms, and enterococcus, upstream and downstream of the point of entry of the spill. This monitoring shall be on a daily basis from time the spill is known until the results of two consecutive sets of bacteriological monitoring indicate the return to the normal level or cessation of monitoring is authorized by the County Department of Health Services.
 - 3. Regional Board notification shall be followed by a written report five working days after verbal notification.

IV. INFLUENT MONITORING REQUIREMENTS

- A. Influent monitoring is required to:
 - 1. Determine compliance with NPDES permit conditions and water quality standards.
 - 2. Assess treatment plant performance.
 - 3. Assess the effectiveness of the pretreatment program.
- B. The influent sampling station is located at the headworks and samples are taken after the wastewater passes through the bar screens at a point located upstream of any

in-plant return flows and where representative samples of the influent can be obtained. Influent samples shall be obtained on the same day effluent samples are obtained. The date and time of sampling shall be reported with the analytical values determined. The following shall constitute the influent monitoring program:

| <u>Constituent</u> | Units | Type of Sample ^[1] | Minimum Frequency of Analysis |
|-------------------------------|----------|-------------------------------|-------------------------------|
| Flow | MGD | Recorder/totalizer | Continuous |
| pH | pH units | Grab | Daily |
| Suspended solids | mg/L | 24-hr composite | Daily |
| BOD ₅ 20°C | mg/L | 24-hr composite | Daily |
| Oil and grease | mg/L | Grab | Weekly |
| Arsenic | µg/L | 24-hr composite | Semiannually ^[2] |
| Cadmium | µg/L | 24-hr composite | Semiannually ^[2] |
| Chromium VI ^[3] | µg/L | Grab | Semiannually ^[2] |
| Copper | µg/L | 24-hr composite | Semiannually ^[2] |
| Lead | µg/L | 24-hr composite | Semiannually ^[2] |
| Mercury | µg/L | 24-hr composite | Semiannually ^[2] |
| Nickel | µg/L | 24-hr composite | Semiannually ^[2] |
| Silver | µg/L | 24-hr composite | Semiannually ^[2] |
| Zinc | µg/L | 24-hr composite | Semiannually ^[2] |
| Cyanide | µg/L | Grab | Semiannually ^[2] |
| Acrylonitrile | µg/L | Grab | Quarterly ^[4] |
| Aldrin | µg/L | 24-hr composite | Quarterly ^[4] |
| Benzidine | µg/L | 24-hr composite | Quarterly ^[4] |
| Bis(2-chloroethyl) ether | µg/L | 24-hr composite | Quarterly ^[4] |
| Chlordane & related compounds | µg/L | 24-hr composite | Quarterly ^[4] |
| DDT & derivatives | µg/L | 24-hr composite | Quarterly ^[4] |
| 3,3'-dichloro-benzidine | µg/L | 24-hr composite | Quarterly ^[4] |
| Dieldrin | µg/L | 24-hr composite | Quarterly ^[4] |
| 1,2-diphenylhydrazine | µg/L | 24-hr composite | Quarterly ^[4] |
| Heptachlor and derivative | µg/L | 24-hr composite | Quarterly ^[4] |
| Hexachlorobenzene | µg/L | 24-hr composite | Quarterly ^[4] |
| N-nitrosodi-N-propylamine | µg/L | 24-hr composite | Quarterly ^[4] |
| PAHs | µg/L | 24-hr composite | Quarterly ^[4] |
| PCBs | µg/L | 24-hr composite | Quarterly ^[4] |
| TCDD equivalents | ng/L | 24-hr composite | Quarterly ^[4] |
| Toxaphene | µg/L | 24-hr composite | Quarterly ^[4] |

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| <u>Constituent</u> | Units | Type of Sample ^[1] | Minimum Frequency of Analysis |
|--------------------------------------|-------|-------------------------------|-------------------------------|
| Phenolic Compounds (non-chlorinated) | µg/L | Grab | Semiannually |

| | | | |
|--|------|--|--------------|
| Remaining EPA priority pollutants (excluding asbestos) | µg/L | 24-hr composite, or grab, as applicable according to 40 CFR Part 136 | Semiannually |
| Pesticides ^[5] | µg/L | 24-hr composite | Semiannually |

Footnote:

- [1]. When an automatic composite sampler is not used, the composite sample shall be obtained from at least eight (8) flow-weighted samples at equal intervals during the 24-hour discharge period.
- [2]. This constituent did not show the reasonable potential. The minimum frequency of influent analysis is reduced from “quarterly” to “semiannually”.
- [3]. For Cr (VI) analysis, the appropriate sampling and analytical method must be used (i.e., grab sample fixed with nitric acid)
- [4]. This constituent showed reasonable potential. The minimum frequency of the influent analysis remains “quarterly”.
- [5]. Pesticides are, for purposes of this Order and permit, those six constituents referred to in 40 CFR Part 125.58 (m) demeton, guthion, malathion, mirex, methoxychlor, and parathion.

V. EFFLUENT MONITORING REQUIREMENTS

- A. Effluent monitoring is required to:
 - 1. Determine compliance with NPDES permit conditions.
 - 2. Identify operational problems and improve plant performance.
 - 3. Provide information on wastewater characteristics and flows for use in interpreting water quality and biological data.
- B. The effluent sampling station is located at the east end of the Chlorine Contract Chamber at a point located downstream of any in-plant return flows where representative samples of the effluent (after receiving all treatment) can be obtained. Effluent samples may be obtained at a single station provided that station is representative of the effluent quality at all discharge points. Any changes in sampling station locations shall be approved by the Executive Officer. The following shall constitute the effluent monitoring program:

| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> ^[1] | <u>Minimum Frequency of Analysis</u> |
|--------------------------------------|--------------|--------------------------------------|--------------------------------------|
| Total waste flow | MGD | Continuous ^[2] | --- |
| Total residual chlorine | mg/L | Continuous ^[2] | --- |
| Turbidity ^[3] | NTU | Continuous ^[2] | --- |
| Temperature | °C | Grab | --- |
| pH | pH unit | Grab | Daily |
| Settleable solids | mL/L | Grab | Daily |
| Suspended solids | mg/L | 24-hr composite | Daily |
| Oil and grease | mg/L | Grab | Daily |
| BOD ₅ 20°C | mg/L | 24-hr composite | Daily |
| Total coliforms ^[3] | MPN/100 mL | Grab | Daily |
| Fecal coliforms ^[3] | MPN/100 mL | Grab | 5 times/month |
| Enterococcus ^[3] | MPN/100 mL | Grab | 5 times/month |
| Ammonia nitrogen | mg/L | 24-hr composite | Weekly |
| Nitrate nitrogen | mg/L | 24-hr composite | Monthly |
| Nitrite nitrogen | mg/L | 24-hr composite | Monthly |
| Organic nitrogen | mg/L | 24-hr composite | Monthly |
| Chronic toxicity ^[5] | TUc | 24-hr composite | Monthly ^[6, 13] |
| Arsenic | µg/L | 24-hr composite | Quarterly ^[6] |
| Cadmium | µg/L | 24-hr composite | Quarterly ^[6] |
| Chromium VI ^[7] | µg/L | Grab | Quarterly ^[6] |
| Copper | µg/L | 24-hr composite | Quarterly ^[6] |
| Lead | µg/L | 24-hr composite | Quarterly ^[6] |
| Mercury | µg/L | 24-hr composite | Quarterly ^[6] |
| Nickel | µg/L | 24-hr composite | Quarterly ^[6] |
| Silver | µg/L | 24-hr composite | Quarterly ^[6] |
| Zinc | µg/L | 24-hr composite | Quarterly ^[6] |
| Cyanide | µg/L | Grab | Quarterly ^[6] |
| Phenolic Compounds (non-chlorinated) | µg/L | Grab | Quarterly ^[6] |
| Phenolic Compounds (chlorinated) | µg/L | 24-hr composite | Quarterly ^[6] |
| Aldrin | µg/L | 24-hr composite | Monthly ^[8] |
| Dieldrin | µg/L | 24-hr composite | Monthly ^[8] |
| Chlordane & related compounds | µg/L | 24-hr composite | Monthly ^[8] |
| DDT & derivatives | µg/L | 24-hr composite | Monthly ^[8] |
| Endrin | µg/L | 24-hr composite | Quarterly ^[6] |
| PCBs | µg/L | 24-hr composite | Monthly ^[8] |
| Toxaphene | µg/L | 24-hr composite | Monthly ^[8] |
| PAHs | ng/L | 24-hr composite | Quarterly ^[9] |

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| <u>Constituent</u> | <u>Units</u> | <u>Type of Sample</u> ^[1] | <u>Minimum Frequency of Analysis</u> |
|--|--------------|--|--------------------------------------|
| TCDD equivalents | pg/L | 24-hr composite | Quarterly ^[9] |
| Acrylonitrile | µg/L | Grab | Quarterly ^[9] |
| Benzidine | ng/L | 24-hr composite | Quarterly ^[9] |
| Bis (2-chloroethyl) ether | µg/L | 24-hr composite | Quarterly ^[9] |
| 3,3-Dichlorobenzidine | ng/L | 24-hr composite | Quarterly ^[9] |
| 1,2-diphenyl-hydrazine | µg/L | 24-hr composite | Quarterly ^[9] |
| Heptachlor and derivatives | ng/L | 24-hr composite | Quarterly ^[9] |
| Hexachlorobenzene | ng/L | 24-hr composite | Quarterly ^[9] |
| n-Nitrosodi-n-propylamine | µg/L | 24-hr composite | Quarterly ^[9] |
| Radioactivity ^[10] | pCi/L | 24-hr composite | Semiannually ^[11] |
| Remaining EPA priority pollutants (excluding asbestos) | µg/L | 24-hr composite, or grab, as applicable according to 40 CFR Part 136 | Semiannually ^[11] |
| Pesticides ^[12] | µg/L | 24-hr composite | Semiannually ^[11] |

Footnotes to Effluent Monitoring Program

[1]. When an automatic composite sampler is not used, the composite sample shall be obtained from at least eight (8) flow-weighted samples at equal intervals during the 24-hour discharge period.

[2]. Where continuous monitoring of a constituent is required, the following shall be reported:

Total waste flow - Total daily flow and peak daily flow (24-hour basis)

Total chlorine residual - maximum daily value (24-hour basis);

Turbidity - Maximum daily value, , the flow-proportioned average daily value and the monthly mean value.

[3]. Coliform, enterococcus, and turbidity samples shall be obtained at some point in the treatment process at a time when wastewater flow and characteristics are most demanding on the treatment facilities, filtration, and disinfection procedures. Those samples to be taken five times per month shall be taken at least once per week.

[5]. Expressed as Chronic Toxicity Units (TU_c)

$$TU_c = 100/NOEC$$

where: NOEC (No Observed Effect Concentration) is expressed as the maximum percent effluent that causes no observable effect on a test organism as determined by the result of a critical life stage toxicity test listed in Table III-1, Appendix III of the Ocean Plan adopted and effective on December 3, 2001.

NOEC shall be determined based on toxicity tests having chronic endpoints.

- [6]. This constituent did not show reasonable potential. The minimum frequency of effluent analysis is reduced from “monthly” to “quarterly”.
 - [7]. For Cr (VI) analysis, the appropriate sampling and analytical method must be used (i.e., grab sample fixed with nitric acid)
 - [8]. This constituent showed reasonable potential. The minimum frequency of effluent analysis remains “monthly”.
 - [9]. This constituent showed reasonable potential. The minimum frequency of effluent analysis is increased from “semiannually” to “quarterly”.
 - [10]. Radioactivity determinations of gross and net beta activity, in picocuries per liter, shall be made within 48 hours following preparation of composite samples. The overall efficiency of the counting system, size of sample and counting time shall be such that radioactivity can be determined to a sensitivity of ten picocuries per liter with a 95% confidence limit not to exceed 50 percent.
 - [11]. The Ocean Plan’s Appendix III, Standard Monitoring Procedures requires that Dischargers greater than 10 mgd monitor the constituents in Table B at least semiannually.
 - [12]. Pesticides are, for purposes of this Order and Permit, those six constituents referred to in 40 CFR Part 125.58 (m) (demeton, guthion, malathion, mirex, methoxychlor, and parathion)
 - [13]. This constituent did not show reasonable potential. However, the minimum frequency of effluent analysis remains at “monthly”, because the chronic toxicity tests will detect any constituent, or combination of constituents, that may be present and adversely effect marine biota, not detected by routine laboratory testing.
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C. Effluent Toxicity Testing

1. Chronic Toxicity Testing

- a. **Methods and test species.** The Discharger shall conduct critical life stage chronic toxicity tests on 24-hour composite, effluent samples using West Coast marine organisms (see Tier 1, Table III-1, Appendix III, Page 34, 2001 Ocean Plan) in accordance with USEPA’s *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, August 1995, (EPA/600/R-95/136).
- b. **Frequency**
 - i. Screening - The Discharger shall conduct chronic toxicity test screening every 24 months for three consecutive months, with first screening under this Monitoring Program to be conducted on the effective date of this Order and permit. Re-screening shall be conducted at a different time of year from the previous screening. Screening tests shall be

conducted using one vertebrate, one invertebrate, and one plant organism.

- ii. Regular toxicity tests - After the screening period, monitoring shall be conducted quarterly using the most sensitive species on a quarterly basis.
- c. **Toxicity Units.** The chronic toxicity of the effluent shall be expressed and reported in toxic units, TU_c , where,

$$TU_c = \frac{100}{NOEC}$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent concentration that causes no observable effect on test organisms, as determined by the results of a critical life stage toxicity test.

- d. **Quality Assurance**
- i. Concurrent testing with a reference toxicant shall be conducted. Reference toxicant tests shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).
 - ii. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods manual (EPA/600/R-95/136), then the Discharger must re-sample and re-test within 14 days.
 - iii. Control and dilution water should be receiving water or laboratory water, as appropriate, as described in the manual. If the dilution water used is different from the culture water, a second control using culture water shall be used.
- e. **Accelerated Monitoring**

If the effluent chronic toxicity test result exceeds the limitation, the Discharger shall immediately implement an accelerated chronic toxicity testing that consists of six additional tests, approximately every week, over a six-week period. Effluent sampling for the first test of the six additional tests shall commence about 24 hours of receipt of the test results exceeding a chronic toxicity limit.

- i. If all the results of the six additional tests are in compliance with the chronic toxicity limitation, the Discharger may resume regular quarterly testing.
- ii. If the results of any of the six accelerated tests exceeds the limitation, the Discharger shall continue to monitor weekly until six consecutive

weekly tests are in compliance. At that time, the Discharger may resume regular quarterly testing.

- iii. If the results of two of the six tests, or any two tests in a six-week period, exceed the limitation, the Discharger shall initiate a Toxicity Reduction Evaluation (TRE).
- iv. If implementation of the initial investigation TRE workplan (see item 2, below) indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger shall return to the regular testing frequency.

2. Preparation of an Initial Investigation TRE Workplan

Within 90 days of the effective date of this Order and permit, the Discharger shall submit a copy of its initial investigation TRE workplan to the Executive Officer of the Regional Board for approval. The Discharger shall use the USEPA manual, *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833B-99/002, as guidance. This workplan shall describe the steps the Discharger intends to follow if the toxicity limitation is exceeded, and should include, at a minimum, the following:

- a. Description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency;
- b. Description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and,
- c. If a Toxicity Identification Evaluation (TIE) is necessary, an indication of the person who will conduct the TIE (i.e., an in-house expert or an outside contractor).

3. Steps in Toxicity Reduction Evaluation (TRE) and Toxicity Identification Evaluation (TIE)

- a. If the results of the implementation of the facility's initial investigation TRE workplan indicate the need to continue the TRE/TIE, the Discharger shall expeditiously develop a more detailed TRE workplan for submittal to the Executive Officer within 15 days of the completion of the initial investigation TRE. The detailed workplan shall include, but not limited to:
 - i. Further actions to investigate and identify the cause of toxicity;
 - ii. Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and,
 - iii. A schedule for these actions.

- b. The following is a stepwise approach in conducting the TRE:
- i. Step 1 includes basic data collection;
 - ii. Step 2 evaluates optimization of the treatment system operation, facility housekeeping, and selection and use of in-plant process chemicals;
 - iii. If Steps 1 and 2 are unsuccessful, Step 3 implements a Toxicity Identification Evaluation (TIE) and employment of all reasonable efforts using currently available TIE methodologies. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity.
 - iv. Assuming successful identification or characterization of the toxicant(s), Step 4 evaluates final effluent treatment options.
 - v. Step 5 evaluates in-plant treatment options, and
 - vi. Step 6 consists of confirmation once a toxicity control method has been implemented.

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of compliance with those requirements may be sufficient to comply with the TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE workplan, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring indicates there is no longer toxicity violations.

- c. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the EPA acute and chronic manuals, EPA/600/6-91/005F (Phase I)/EPA/600/R-96-054 (for marine), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III) as guidance.
- d. If a TRE/TIE is initiated prior to completion of the accelerated testing required in Part C.1.e. of this program, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer.
- e. The Board recognizes that toxicity may be episodic and identification of causes of and reduction of sources of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based, in part, on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

4. Ammonia Removal

- a. Except with prior approval from the Executive Officer of the Regional Board ammonia shall not be removed from the bioassay samples. The Discharger must demonstrate the effluent toxicity is caused by ammonia because of increasing test pH when conducting the toxicity test. It is important to distinguish the potential toxic effects of ammonia from other pH sensitive chemicals, such as certain heavy metals, sulfide, and cyanide. The following may be steps to demonstrate the toxicity is caused by ammonia and not other toxicants before the Executive Officer of the Regional Board would allow for control of pH in the test.
 - i. There is consistent toxicity in the effluent/receiving water and the maximum pH in the toxicity test is in the range that causes toxicity
 - ii. Chronic ammonia concentrations in the effluent/receiving water are greater than 4 mg/L total ammonia. The level of detection for total ammonia generally need not be below 0.5 -1.0 mg/L, since concentrations < 1.0 mg/L of total ammonia have not been found to be toxic to Mysid and Larval Island Silverside (Acute ammonia LC₅₀ values of 1.70 mg/L and 1.77 mg/L for Mysid and Larval Island Silverside, respectively, at pH 8.0). Then,
 - iii. Conduct the graduated pH tests as specified in the toxicity identification evaluation methods. For example, mortality should be higher at pH 8 and lower at pH 6.
 - iv. Treat the effluent with a zeolite column to remove ammonia. Mortality in the zeolite treated effluent should be lower than the non-zeolite treated effluent. Then add ammonia back to the zeolite-treated samples to confirm toxicity due to ammonia.
- b. After it has been demonstrated that toxicity is due to ammonia, the pH may be controlled using appropriate procedures that do not significantly alter the nature of the effluent after submitting a written request to the Regional Board, and receiving written permission expressing approval from the Executive Officer of the Regional Board.

5. Reporting

- a. The Discharger shall submit a full report of the toxicity test results, including any accelerated testing conducted during the month as required by this permit. Test results shall be reported in Toxicity Units (TUa or TUC) with the discharge monitoring reports (DMR) for the month in which the test is conducted.

- b. If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, pursuant to Section C.1.e.iv, then those results also shall be submitted with the DMR for the period in which the Investigation occurred.
- i. The full report shall be submitted by the end of the month in which the DMR is submitted.
 - ii. The full report shall consist of (1) the results; (2) the dates of sample collection and initiation of each toxicity test; (3) the acute toxicity average limit or chronic toxicity limit.
 - iii. Test results for toxicity tests also shall be reported according to the appropriate manual chapter on Report Preparation and shall be attached to the DMR. Routine reporting shall include, at a minimum, as applicable, for each test:
 - sample date(s)
 - test initiation date
 - test species
 - end point values for each dilution (e.g. number of young, growth rate, percent survival)
 - NOEC value(s) in percent effluent
 - TUc values $\left(TU_c = \frac{100}{NOEC}\right)$
 - Mean percent mortality (+standard deviation) after 96 hours in 100% effluent (if applicable)
 - NOEC and LOEC (Lowest Observable Effect Concentration) values for reference toxicant test(s)
 - Available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia).
 - iv. The Discharger shall provide a compliance summary which includes a summary table of toxicity data from at least eleven of the most recent samples.
 - v. The Discharger shall notify this Regional Board immediately of any toxicity exceedance and in writing 14 days after the receipt of the results of a monitoring limit or trigger. The notification will describe

actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by the permit, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

VI. RECEIVING WATER MONITORING PROGRAM

- A. Pursuant to the Code of Federal Regulation [40 CFR §122.41(j) and §122.48(b)], the monitoring program for a Discharger receiving a National Pollutant Elimination System (NPDES) permit must demonstrate compliance with NPDES permit terms and conditions, and demonstrate that State water quality standards are met.
- B. Since compliance monitoring focuses on the effects of a point source discharge, it is not designed to assess impacts from other sources of pollution (e.g., nonpoint source runoff, aerial fallout) nor to evaluate the current status of important ecological resources on a regional basis.
- C. Several efforts are underway to develop and implement a comprehensive regional monitoring program for the Southern California Bight. These efforts have the support and participation from regulatory agencies, dischargers and environmental groups. The goal is to establish a regional program to address public health concerns, monitor trends in natural resources and nearshore habitats, and assess regional impacts from all contaminant sources. In general, the goal is a more efficient monitoring program that can be used for both compliance and regional bight-wide assessments.
- D. Two regional monitoring programs for the Southern California Bight were conducted, one in 1994, and another in 1998 (Bight '94 and Bight '98). The monitoring allowed the USEPA and the Regional Board to test an alternative sampling design that incorporates aspects of regional monitoring into current compliance programs. USEPA, the State Water Resources Control Board, and three Regional Water Quality Control Boards (Los Angeles, Santa Ana, and San Diego) designed these programs in conjunction with the Southern California Coastal Water Research Project and participating discharger agencies. The next regional monitoring survey is scheduled for 2003 (Bight '03) and subsequent regional surveys probably will be conducted approximately every five years. The City of Oxnard's participation in Bight 2003 is required by this Order.

Other revisions to the routine compliance monitoring program may be made under the direction of this Regional Board and in some circumstances by the Executive Officer as necessary to accomplish additional goals of regional monitoring. Revisions may include a reduction or increase in the number of parameters monitored, the frequency of monitoring, or the number, type, size and location of samples collected.

- E. The Regional Board is in the process of coordinating a regional Kelp Bed Monitoring program for ocean dischargers in the Los Angeles Regional Board area to monitor kelp beds in the Southern California Bight. Data collected in this regional survey will be used to assess status and trends in kelp bed health and spatial extent. The regional nature of the survey will allow the status of beds local to specific dischargers

to be compared to regional trends. [Additionally, this survey provides data to the Santa Monica Bay Restoration Project's Kelp Bed program.]

The design of this proposed regional survey has yet to be completed, however, it is expected to be an aerial survey similar in design and scope to the kelp survey conducted by ocean dischargers in the San Diego Regional Board area. Survey management structures have not been defined nor participants expressly identified. Upon finalization of survey management structures, the Discharger shall participate in the management and technical committees responsible for the final survey design and shall provide appropriate financial support to the survey.

VII. RECEIVING WATER MONITORING REQUIREMENTS (footnotes on pages T-29 to T-30)

- A. To determine compliance with water quality standards, the receiving water-monitoring program must document water quality at the outfalls, at reference stations, and at areas beyond the zone of initial dilution (ZID)^[1] where discharge impacts might reasonably be expected. In addition, the receiving water monitoring program will need to incorporate the goals of the regional monitoring program, once it is developed, to address public health concerns, monitor trends in natural resources and nearshore habitats, and assess regional impacts from all contaminant sources.
- B. Water quality monitoring (e.g., light transmittance, dissolved oxygen, pH) is conducted to document any water quality impacts that might result from the waste discharge and to assess compliance with water quality standards. In addition, the data collected by the City of Oxnard are a contribution to the Central Region Cooperative Water Quality Survey. This regionally coordinated survey provides integrated water quality surveys on a quarterly basis. These surveys cover 200 kilometers of coast in Ventura, Los Angeles and Orange Counties from the nearshore to approximately 10 Km offshore. The regional view provides context for determining the significance and causes of locally observed patterns in the wastewater outfalls.
- C. Benthic monitoring is conducted in the vicinity of the outfall to evaluate the physical and chemical quality of sediments, assess the change over time of pollutants in sediments and to monitor the status of the benthic community.
- D. Trawling is conducted to assess the health of the communities of demersal fish and benthic macroinvertebrates in the vicinity of the outfall, and to assess the change over time of pollutants in the tissues of demersal fish and benthic macroinvertebrates.
- E. Since the most recent re-issuance of the Oxnard NPDES permit in 1994, several modifications to the *Monitoring and Reporting Program* have been made. In 1998, the weekly nearshore and quarterly offshore water quality monitoring programs (13 stations total) were replaced with more extensive quarterly sampling (42 stations) in a regionally coordinated survey, the Central Bight Cooperative Water Quality Program. This cooperative program contributes to a regional understanding of seasonal patterns in the nearshore water column. The regional view provides context for determining the significance and causes of locally observed patterns in the area of the outfall. In

addition, all included shoreline microbiological sampling was rescinded in 2000.

- F. All shoreline microbiological monitoring in the Oxnard permit was rescinded in 2000, when the coast of Ventura County increased **shoreline** monitoring due to Assembly Bill 411 (AB411), and the duplication of effort by Oxnard was deemed unnecessary. Currently, the County monitors more than 50 sites along 42 miles of county beaches, weekly, year-round. Shoreline monitoring both by the County and by Oxnard, prior to the rescission, demonstrated occasional exceedances of standards.
- G. In 1998, the weekly **nearshore** and quarterly **offshore** water quality monitoring programs (13 stations total) were enlarged to a more extensive (42 stations) quarterly sampling in a regionally coordinated survey with the Central Bight Cooperative Water Quality Program. This cooperative program contributes to a regional understanding of seasonal patterns in the nearshore water column. Participants include Hyperion Wastewater Treatment Plant, Los Angeles County Sanitation District's Joint Plant and Orange County Sanitation District, in addition to Oxnard.
1. The Central Bight Cooperative Water Quality Program analyzes water samples for physical characteristics, including temperature, dissolved oxygen, light transmittance, chlorophyll and salinity at cross-shore transects at predetermined depths to capture the natural variability in water quality and to identify anthropogenic anomalies near discharges.
 2. In addition to sampling for physical characteristics, Oxnard's water quality sampling includes 12 stations (those sites closest to the outfall) at four depths for microbiological testing of total and fecal coliform bacteria and enterococcus bacteria. Since this sampling began in 1998 there have been no exceedances_of bacterial water quality standards at those sites.
 3. In the four years prior to the change in the offshore and nearshore monitoring (1995 - 1998) there were exceedances of bacterial standards in 5 out of 630 offshore samples - 2 surface total coliform in 1996 and 3 surface total coliform in 1997. During the same period, nearshore exceedances were more numerous, 85 out of 9,504 samples. All nearshore bacterial exceedances were in winter and associated with rain events.
 4. The Oxnard 1988 current meter and dye tracer study tracked the trajectory and dispersion of released dye and used that data in conjunction with three, one-month current meter studies to calculate probable areas of plume to a million-fold dilution. In this analysis, the pattern of dispersion was elongated parallel to the coastline and was slightly greater in the upcoast than the downcoast direction.
 5. The Central Bight Cooperative Water Quality Program begun in 1998 locates six sites in one transect to the north of the outfall and includes six sites in one transect to the south for both water quality and bacteriological analyses. The transect to the north of the outfall crosses over the probable area of the plume as defined by the Oxnard 1988 current meter and dye tracer study. In addition, this monitoring plan will require an additional transect, south, (six new sampling

stations) which will also cross the probable area of the plume for better plume demarcation. This transect method will be better able to capture water quality anomalies due to the discharge than the previous method of seven offshore stations located along the same depth contour as the discharge.

- H. For the proposed Order, the existing receiving water monitoring program was revised following the principles and guidance in the Model Monitoring Plan (MMP) developed by Southern California Coastal Water Research Program (SCCWRP). The MMP, in final draft form in March of 2002, was developed with the participation of the four largest POTWs in southern California, three Regional Water Quality Control Boards (Los Angeles, Santa Ana, and San Diego) and USEPA. It is intended to develop consistency among programs, improve the effectiveness of each program in meeting the needs of management, and to increase the efficiency with which monitoring is conducted. While it was developed specifically for the large POTWs, many of the principles, and designs apply equally well to smaller POTWs. The MMP is a guidance document for development of monitoring programs at the Regional Board.
- I. As a result of the revisions, there are reductions in monitoring efforts in some areas and increases in others. In sediment monitoring, there is a reduction in the frequency of sampling from semiannual to annual for sediment chemistry samples and sediment infaunal community samples and a reduction in the number of replicates required from 3 replicates to no replicates as recommended by the MMP. Additionally, past data collected by Oxnard shows that the influence of the discharge on sediments is so limited in degree and spatial extent that extensive sampling is not justified. Annual summer sediment chemistry and benthic infauna sampling is recommended by the MMP and will be used to monitor for changes in sediment conditions over time.

In fish and macroinvertebrate population monitoring by trawling, there is a reduction in frequency of sampling from semiannual to annual as recommended by the MMP and because past data does not show an influence of the discharge on the populations. Annual summer sampling will be maintained as recommended by the MMP to monitor for changes over time.

- J. The Discharger shall implement the following receiving water monitoring and reporting program on the effective date of the this Order:
1. Receiving Water Stations

Water quality monitoring shall be conducted at regular frequencies. All receiving water stations shall be located by state of the art navigational methods; other means (e.g., visual triangulation, fathometer readings) may be used to improve the accuracy of locating stations.

The permittee shall report the locations (latitude and longitude) of any relocated stations to this Regional Board and USEPA Region IX within 15 days of the effective date of this Order. All receiving water stations may be subject to redesignation by this Regional Board and/or the USEPA Region IX.
 - a. Water Quality Stations (Figure 4 and Table 1)

42 water quality stations shall be established at the following designated locations and at an additional six stations:

The additional six stations shall form a transect similar to the transects defined in the table, below, the most nearshore station at a depth of 6 to 10 meters and extending offshore. The distance from the outfall shall be 0.1 to 0.5 Km to the south of the outfall so that the new transect is roughly parallel to the transect defined by stations 4401 – 4406. The permittee shall report the locations (latitude and longitude) and designations of these stations to this Regional Board and USEPA Region IX within one month of the effective date of this Order.

| Station | 4101 | 4201 | 4301 | 4401 | 4501 | 4601 | 4701 |
|----------------------------------|----------|----------|----------|----------|----------|----------|----------|
| | 4102 | 4202 | 4302 | 4402 | 4502 | 4602 | 4702 |
| | 4102 | 4203 | 4303 | 4403 | 4503 | 4603 | 4703 |
| | 4104 | 4204 | 4304 | 4404 | 4504 | 4604 | 4704 |
| | 4105 | 4205 | 4305 | 4405 | 4505 | 4605 | 4705 |
| | 4106 | 4206 | 4306 | 4406 | 4506 | 4606 | 4706 |
| Nominal Latitude | 34035442 | 34061840 | 34093582 | 34135056 | 34156590 | 34230652 | 34271225 |
| | 34025711 | 34054382 | 34086124 | 34122253 | 34151669 | 34227318 | 34263504 |
| | 34016876 | 34047028 | 34066284 | 34108711 | 34148071 | 34221657 | 34255566 |
| | 33992222 | 34027561 | 34047188 | 34092526 | 34139923 | 34214516 | 34248531 |
| | 33971539 | 34004231 | 34030209 | 34079407 | 34128761 | 34206368 | 34240543 |
| | 33946518 | 33976669 | 34009045 | 34066868 | 34118393 | 34195313 | 34233032 |
| Nominal Longitude | 11890773 | 11900716 | 11909774 | 11919020 | 11922993 | 11926730 | 11931041 |
| | 11891235 | 11901035 | 11910060 | 11920381 | 11924178 | 11927850 | 11932909 |
| | 11891685 | 11901413 | 11911031 | 11921827 | 11925161 | 11929413 | 11935091 |
| | 11892713 | 11902273 | 11911955 | 11923643 | 11927199 | 11931483 | 11937058 |
| | 11893645 | 11903314 | 11912659 | 11925043 | 11930299 | 11933997 | 11939239 |
| | 11894706 | 11904532 | 11913779 | 11926411 | 11932968 | 11937207 | 11941257 |
| Station Depth (m) | 10 | 12 | 31 | 10 | 8 | 6 | 9 |
| | 30 | 28 | 20 | 18 | 16 | 11 | 18 |
| | 55 | 58 | 149 | 21 | 18 | 16 | 20 |
| | 95 | 88 | 97 | 38 | 20 | 18 | 23 |
| | 211 | 95 | 120 | 100 | 30 | 23 | 26 |
| | 230 | 149 | 353 | 100 | 55 | 30 | 29 |
| Dist. From Outfall Transect (km) | 24.3 | 16.0 | 8.3 | 0.1 | 4.9 | 10.0 | 15.4 |

b. Sediment Stations (Figure 3 and Table 2)

Seven sediment stations shall be established for sediment chemistry and benthic infauna along the southeast of Port Hueneme Harbor entrance channel to the southwest of Point Mugu. The stations shall be designated and located as follows:

| |
|----------------------------|
| Table 2: Sediment Stations |
|----------------------------|

| Station | OS.1 | OS.2 | OS.3 | OS.4 | OS.5 | OS.6 | OS.7 |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Nominal Latitude | 3407 65.010 | 3407 39.588 | 3407 37.208 | 3407 36.518 | 3407 34.200 | 3407 27.996 | 3405 34.146 |
| Nominal Longitude | 11902 84.866 | 11911 45.748 | 11911 42.332 | 11911 41.342 | 11911 36.243 | 11911 25.201 | 11911 32.246 |
| Depth (m) | 15.0 | 15.0 | 15.3 | 15.0 | 15.3 | 15.3 | 15.3 |
| Dist. From Outfall (m) | 1000 | 150 | 18 | 18 | 150 | 500 | 4000 |

Two offshore sediment sampling stations shall be maintained for sediment toxicity sampling as follows:

OS-3, and OS-7.

c. Trawl Stations (Figure 3 and Table 3)

Three trawl stations shall be located along the 15.6-meter (50-foot) depth contour (isobath) shall be maintained for **fish and macroinvertebrate population and tissue analyses**

| Station | T.1 | T.2 | T.3 |
|------------------------|-----------------|-----------------|-----------------|
| Nominal Latitude | 3407 56.786 | 3407 26.961 | 3405 31.731 |
| Nominal Longitude | 11911 40.416 | 11911 33.323 | 11909 35.216 |
| Depth (m) | 15.6 | 15.6 | 15.6 |
| Dist. From Outfall (m) | 380 | 380 | 4000 |

2. Type and Frequency of Sampling

a. Water Quality Monitoring

i. The following shall constitute the **Water Quality Monitoring Program** for the 42 water quality stations:

| Parameter | Units | Type of Sample | Sample Frequency |
|---------------------|-----------------|--------------------|------------------|
| Dissolved oxygen | mg/L | continuous profile | quarterly |
| Water temperature | °C | continuous profile | quarterly |
| Light transmittance | % transmittance | continuous profile | quarterly |

(Continued from the last page)

| Parameter | Units | Type of Sample | Sample Frequency |
|------------------------------------|----------|--------------------|------------------|
| Salinity | ppt | continuous profile | quarterly |
| pH | pH units | continuous profile | quarterly |
| Chlorophyll a | µg/L | continuous profile | quarterly |
| Visual observations ^[2] | --- | --- | quarterly |

Sampling techniques shall follow protocols described in the most

current edition of the Field Operations Manual for Marine Water-Column, Benthic, and Trawl Monitoring in Southern California, SCCWRP. Data shall be analyzed to approximate the typical wastewater plume movement and data from 1998 and forward shall be analyzed to determine and map out the wastewater plume movement under different seasonal and weather conditions.

- ii. The following shall constitute the **Water Quality Monitoring Program** for the 18 (4401-4106, 4301-4306, and six stations on the new transect) discrete water quality stations:

| Parameter | Units | Type of Sample | Sample Frequency |
|------------------|------------|--|------------------|
| Total coliform | MPN/100 mL | grab, surface and mid-depth and near bottom ^[3] | quarterly |
| Fecal coliform | MPN/100 mL | grab, surface and mid-depth and near bottom ^[3] | quarterly |
| Enterococcus | MPN/100 mL | grab, surface and mid-depth and near bottom ^[3] | quarterly |
| Ammonia nitrogen | µg/L | grab, surface and mid-depth and near bottom ^[3] | quarterly |

b. Sediment Monitoring

- i. The following shall constitute the **Sediment Chemistry Monitoring Program** for seven offshore benthic stations:

All **benthic sediment samples** shall be taken at each station by means of a 0.1 m² (1.1 ft²) modified Van Veen sediment grab sampler.

Sub-samples (upper two centimeters) of sediment from each sample shall be collected and analyzed separately for the following parameters at each station:

- Total organic carbon (TOC) (mg/kg dry wt)
- Dissolved sulfides (water soluble) (mg/kg dry wt)
- Total Kjeldahl nitrogen (mg/kg dry wt)
- Grain size (sufficiently detailed to calculate percent weight in relation to phi size)
- Arsenic; Cadmium; Chromium (total); Copper; Lead; Mercury;

Nickel; Silver; Zinc; Cyanide; Phenolic compounds (non-chlorinated); Phenolic compounds (chlorinated); Total halogenated organic compounds; Aldrin and Dieldrin; Endrin; HCH; Chlordane and related compounds; Total DDT; DDT derivatives; Total PCB; PCB derivatives; Toxaphene; Total PAH; PAH derivatives. The data for these parameters shall be expressed in µg/kg dry weight.

Annual testing shall be required for these parameters during late summer (August/ September).

In August/September of the third year of the permit, full priority pollutant scans shall be performed on sediment samples from all stations.

- ii. The following shall constitute the **Benthic Infaunal Monitoring Program** for the seven offshore benthic stations:

The benthic stations shall be conducted annually for **benthic infaunal sampling** ^[4]. These stations shall be sampled during late summer (August/ September). Two bottom samples (replicates) shall be taken at each benthic station prior to trawl sampling.

The following determinations shall be made at each station, where appropriate:

- Identification of all organisms to lowest possible taxon (usually species)
- Total biomass of:
 - (1) mollusks
 - (2) echinoderms
 - (3) annelids/polychaetes
 - (4) crustaceans
 - (5) all other macroinvertebrates;
- Community structure analysis ^[5] for each station and each replicate;

Mean, median, range, standard deviation, and 95% confidence limits, if appropriate, for values determined above in iii. The Discharger may be required to conduct additional “statistical analyses” to determine temporal and spatial trends in the marine environment.

- iii. The following shall constitute the **Sediment Toxicity Monitoring Program** for two offshore benthic stations:

Sediment toxicity testing shall be conducted annually (August/September) at stations 05-3 and OS-7. Three replicate samples shall be collected for testing at each station. Sub-samples (upper two centimeters) shall be taken from each sediment sample and tested with two different test organisms (amphipod Rhepoxynius abronius - survival end point; polychaete Neanthes arenaceodentata - growth and survival end points) using standard protocols approved by the Executive Officer of this Regional Board.

iv. The following shall constitute the **Regional Sediment Monitoring Program**:

A regional survey of benthic conditions within the Southern California Bight will take place in 2003 (Bight'03). The final survey design will be determined cooperatively by the participants as represented on the Regional Steering Committee. The City of Oxnard shall provide support to the Bight'03 benthic survey by participating in or performing, but not limited to, the following activities:

Participation on the Steering Committee
Participation on the relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, Benthos, and Chemistry)
Field sampling at sea
Infaunal sample analysis
Sediment chemistry analysis
Data management

The level of participation shall be consistent with that provided by the City of Oxnard to the 1998 Regional Benthic Survey.

c. Fish and Macroinvertebrate Monitoring

i. The following shall constitute the **Population Monitoring Program** for the three offshore trawling stations:

The offshore trawling stations shall be sampled annually (August/September) for **demersal fish and epibenthic macroinvertebrates**.

Trawling methods shall follow the protocols described in the most current edition of the Field Operations Manual for Marine Water-Column, Benthic, and Trawl Monitoring in Southern California, SCCWRP.

Fish and macroinvertebrates collected by trawls shall be identified to the lowest taxon possible. At all stations and for each replicate, community structure analysis^[6] shall be conducted for fish and macroinvertebrates for each station.

Mean, range, standard deviation, and 95% confidence limits, if

appropriate, shall be reported for the values determined in the community analysis. The Discharger may be required to conduct additional “statistical analyses” to determine temporal and spatial trends in the marine environment.

Abnormalities and disease symptoms shall be described and recorded (e.g., fin erosion, external lesions, tumors, ectoparasites, and color anomalies). The frequency of abnormalities and incidence of disease shall be compared between the ZID boundary and the reference station, and trends in these values shall be measured over time. The results of this inspection shall be included in the monitoring report.

- ii. The following shall constitute the **Fish and Invertebrate Tissue Monitoring Program** for the offshore trawling stations:

Fish and macroinvertebrate tissues shall be obtained from fish collected by trawls and from invertebrates collected by trawls or SCUBA at the trawling stations.

Annually, tissues of two species (one demersal fish and one macroinvertebrate) of importance to commercial and/or sport fishers or of obvious ecological significance shall be analyzed for priority pollutants (i.e., for bioaccumulation of toxic pollutants). If possible, for the duration of this permits and order, the same species shall be used at all stations.

- Fish Tissues

Tissue, as applied to the analysis of priority pollutants, signifies separate analyses for muscle and liver. All tissue samples shall be analyzed for **wet weight and percent lipid**.

Annual testing shall be required in late summer (August/September) and shall include analysis for:

Arsenic; Cadmium; Chromium (total); Copper; Lead; Mercury; Nickel; Silver; Zinc; Cyanide; Phenolic compounds (non-chlorinated); Phenolic compounds (chlorinated); Total halogenated organic compounds; Aldrin and Dieldrin; Endrin; HCH; Chlordane and related compounds; Total DDT; DDT derivatives; Total PCB; PCB derivatives; Toxaphene; Total PAH; PAH derivatives.

The data for these parameters shall be expressed in $\mu\text{g}/\text{kg}$ dry weight.

In August/September of the third year of the permit, full priority pollutant scans shall be performed on fish tissue samples from all offshore trawling stations.

For **fish tissue analysis**, individuals of the species of interest shall be combined from the trawls to form a single pooled sample at a station^[7]. Three composite samples shall be analyzed for each of the tissue types. Each composite sample shall consist of tissues^[8] taken from fish of one species and include at least six individuals. In order to obtain the required number of individuals, additional trawls may be necessary.

Reference specimens for tissue analysis may be collected at a different depth or area beyond the reference station (T-3), if necessary. If areas other than T-3 are sampled for reference material, data on the location and depth of the sampling point(s) shall be provided to this Regional Board and the USEPA Region IX.

The following fish species are recommended for the tissue analysis of priority pollutants: White Croaker (Genyonemus lineatus) and Speckled sanddab (Citharichthys sticimaeus)

- **Macroinvertebrate Tissues**

Tissue, as applied to the analysis of priority pollutants in macroinvertebrates, signifies analyses for muscle or other tissue, if muscle is impractical. All tissue samples shall be analyzed for **wet weight and percent lipid**.

Annual testing shall be required in late summer (August/September) and shall include analysis for:

Arsenic; Cadmium; Chromium (total); Copper; Lead; Mercury; Nickel; Silver; Zinc; Cyanide; Phenolic compounds (non-chlorinated); Phenolic compounds (chlorinated); Total halogenated organic compounds; Aldrin and Dieldrin; Endrin; HCH; Chlordane and related compounds; Total DDT; DDT derivatives; Total PCB; PCB derivatives; Toxaphene; Total PAH; PAH derivatives.

The data for these parameters shall be expressed in $\mu\text{g}/\text{kg}$ dry weight.

In August/September of the third year of the permit, full priority pollutant scans shall be performed on macroinvertebrate tissue samples from all offshore trawling stations.

For **macroinvertebrate tissue analysis**, individuals of the

species of interest shall be combined from the trawls to form a single pooled sample at a station^[7]. Three composite samples shall be analyzed for each of the tissue types. Each composite sample shall consist of sufficient tissue^[8] taken from at least three individual organisms of one species. In order to obtain the required number of individuals, additional trawls may be necessary. When feasible, tissues from organisms of the same species should be analyzed from year to year to facilitate comparability.

Reference specimens for tissue analysis may be collected at a different depth or area beyond the reference station (T-3), if necessary. If areas other than T-3 are sampled for reference material, data on the location and depth of the sampling point(s) shall be provided to the LA Regional Board and USEPA Region IX.

The following macroinvertebrate species are recommended for the tissue analysis of priority pollutants:

Sandstar (Astropecten spp)
Shrimp (Crangon spp)
Crab (Cancer spp)

iii. The following shall constitute the **Regional Demersal Fish and Invertebrate Monitoring Program**:

A regional survey of trawl-caught demersal fish and epibenthic invertebrates within the Southern California Bight will take place in 2003 (Bight'03). The final survey design will be determined cooperatively by the participants as represented on the Regional Steering Committee. The City of Oxnard will provide support to the Bight'03 benthic survey by participating in or performing the following activities:

Participation on the Steering Committee
Participation on the relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, Fish and Invertebrates)
Field sampling at sea
Tissue chemical analysis
Data management

The level of participation shall be consistent with that provided by the City of Oxnard to the 1998 Regional Survey.

3. Sampling, Analysis, and Reporting Notes for Receiving Water Monitoring:

- a. Receiving water monitoring shall be performed during daylight hours.
- b. Light transmittance (transmissivity) shall be measured with a transmissometer, using equipment and procedure similar to that described by L.V. Whitney [“Transmission of Solar Energy and the Scattering Produced by Suspensoids in Lake Waters,” Transactions of the Wisconsin Academy of Sciences, Arts, and Letters, Vol. 31 (1938)]. Results shall be expressed as the percent of light transmittance. Path length of transmissometer should be noted.
- c. In addition to reporting the actual concentration of bacterial organisms obtained in each sample collected from shoreline, nearshore, and offshore stations, the running median of the latest 6-month period shall also be determined and reported each month. Bacterial data obtained at shoreline stations during or within 48 hours following a major storm event shall not be used in determining medians.
- d. Reports regarding receiving water monitoring shall be transmitted with the corresponding effluent monitoring reports. Ocean water quality monitoring (shoreline, nearshore, and offshore components) reports shall be submitted with the effluent reports by the fifteenth day of the second month following the sampling period. The offshore sediment and biological monitoring data shall be submitted with the annual report.
- e. A detailed **annual assessment report** of the data collected during the previous calendar sampling year (January-December) shall be prepared and submitted to this Regional Board and USEPA Region IX by March 15 of every year. This report shall also include an in-depth analysis of the biological and geochemical data following recommendations in “Design of 301 (h) Monitoring Programs for Municipal Wastewater Discharges to Marine Water” (EPA, November 1982; 430/982-010; pages 74-91). Data shall be tabulated, summarized, and graphed where appropriate, analyzed, interpreted, and generally presented in such a way as to facilitate ready understanding of its significance. Spatial and temporal trends shall be examined and compared. The relation of physical and chemical parameters to the biological parameters shall be evaluated. See, also, Section E, General Reporting Requirements, of the Standard Provisions and Reporting Requirements of this permit. The first assessment report shall be due March 15, 2003, to cover the sampling period of January 2002-December 2002.
- f. Currently, Ventura County monitors nine shoreline stations for bacteriological indicators in the area of Oxnard’s previous shoreline monitoring program. The stations are located as follows:

| name | latitude | longitude | Ventura County ID |
|--------------------------------|----------|-----------|-------------------|
| Hollywood Beach, Los Robles St | 34 09 45 | 119 13 48 | 35000 |

| | | | |
|--------------------------------------|----------|-----------|-------|
| Channel Islands Harbor Beach | 34 09 34 | 119 13 19 | 37000 |
| Silverstrand Beach, San Nicholas Ave | 34 09 26 | 119 13 31 | 38000 |
| Silverstrand Beach, Santa Paula Ave | 34 09 09 | 119 13 11 | 39000 |
| Silverstrand Beach, Sawtell, Ave | 34 08 51 | 119 12 59 | 40000 |
| Port Hueneme Beach Park | 34 08 30 | 119 11 40 | 41000 |
| Ormand Beach, J Street Drain | 34 08 20 | 119 11 20 | 42000 |
| Ormand Beach, Industrial Drain | 34 08 09 | 119 11 03 | 43000 |
| Ormand Beach, Arnold Rd | 34 07 11 | 119 09 36 | 44000 |

- g. Ventura County shoreline bacteriological monitoring data from these stations shall be included with the bacteriological data from Oxnard’s water quality sampling in monthly reports and the annual assessment report.
- h. If Ventura County reduces the shoreline bacteriological monitoring program in frequency (less often than weekly) or seasonally, or reduces the number of stations in the area defined by these stations, then the Discharger shall initiate a weekly shoreline bacteriological monitoring program to replace the Ventura County’s effort. This program shall be submitted to this Regional Board for approval by the Executive Officer.
- i. If Ventura County restores the shoreline bacteriological monitoring program, the Discharger shall inform this Regional Board for authorization to rescind the shoreline bacteriological monitoring program conducted by the Discharger.

Footnotes for Receiving Water Monitoring Program

[1]. The “Zone of Initial Dilution” (ZID), for purposes of receiving water monitoring station designation, refers to the region within a horizontal distance equal to a specified water depth (usually depth of outfall or average depth of diffuser) from any point of the diffuser or end of the outfall and the water column above and below that region, including the underlying seabed.

[2]. Receiving Water Observations

Observations of wind (direction and speed) , weather (e.g., cloudy, sunny, or rainy) , current (e.g., direction) , and tidal conditions (e.g., high or low tide) shall be made and recorded

(every four hours during offshore sampling) at the time samples of the waters of the Pacific Ocean (shore, nearshore, and all offshore stations) are collected.

Observations of water color, discoloration, oil and grease, turbidity, odor, materials of sewage origin in the water or on the beach, and unusual or abnormal amounts of floating or suspended matter in the water or on the beach, rocks and jetties, or beach structures shall also be made and recorded at stations or while in transit. The character and extent of such matter shall be described. The dates, times and depths of sampling and these observations shall also be reported.

- [3]. Bottom sampling shall be done 2.0 m (6.6 ft) above the seabed.
 - [4]. These bottom samples shall be taken by means of a 0.1 m² (1.1 ft²) modified Van Veen sediment grab sampler. The entire contents of each sample shall be passed through a 1.0 mm (0.039 in.) mesh screen to retrieve the benthic organisms. These organisms shall be fixed in 10% buffered formalin and transferred to 70% ethanol within two to seven days for storage. Organisms can be strained with Rose Bengal to facilitate sorting. All specimens retrieved shall be archived.
 - [5]. Community structure analysis of benthic infauna shall include wet weight of each taxonomic group (mollusks, echinoderms, annelids/polychaetes, crustaceans, and all other macroinvertebrates), number of species, number of individuals per species, total numerical abundance, species abundance per grab, species richness, species diversity (e.g., Shannon-Wiener), species evenness and dominance per station and replicate, similarity analyses (e.g., Bray-Curtis, Jaccard or Sorensen), cluster analyses (using unweighted pair-group method) or other appropriate multivariate statistical techniques approved by the Executive Officer of this Regional Board and USEPA Region IX, and the Infaunal Index.
 - [6]. Community structure analysis of fish and macroinvertebrates shall include wet weight of fish and macroinvertebrate species (when combined weight of individuals of one species exceeds 0.2 kg), standard length of each individual, number of species, number of individuals per species, total numerical abundance per station, number of individuals in each 1-cm size class for each species of fish, species abundance per trawl and per station, species richness, species diversity (e.g., Shannon-Wiener), species evenness, similarity analyses (e.g., Bray-Curtis, Jaccard or Sorensen), cluster analyses (using unweighted pair-group method) or other appropriate multivariate statistical techniques approved by the Executive Officer of the LA Regional Board and USEPA Region IX.
 - [7]. Where appropriate, individuals (from trawls) comprising the smallest 10 percent by weight shall not be used as part of the composite sample. Individuals for tissue analysis shall be randomly selected from the remaining organisms.
 - [8]. Tissue samples removed from individuals shall be of uniform weight. To the extent feasible, individual fish selected for analysis should be of the same sex.
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VIII. OUTFALL AND DIFFUSER INSPECTION

An annual survey shall be made in October or November. This shall consist of:

- A. An examination of the outfall and diffuser port system for plugs, leaks, rotation, and flow distribution. A detailed structural analysis of the pipes every five years submitted with the ROWD shall be conducted using underwater television/videotape and submarine visual inspection, where appropriate, to provide a comprehensive report on the discharge pipe systems from shallow water to their respective termini. The annual visual inspection shall be conducted on the external condition of the outfall, diffuser, and ballast systems. A written report documenting conditions shall be prepared and submitted with the Annual Summary Report to this Regional Board and the USEPA Region 9.
- B. A visual inspection at and in the vicinity of the outfall and diffuser port system to determine thickness of any "cloud" of unsettled solids, bottom flora and fauna, and any other biological and physical conditions. Inspections shall include general observations and photographic records of the outfall pipe and the surrounding ocean bottom. A report (including photographs) discussing the above information shall be submitted with the Annual Summary Report to this Regional Board and the USEPA Region 9.

IX. SOLIDS HANDLING MONITORING REQUIREMENTS

A monthly report shall be provided, noting the moisture content, weight, and volume of screenings, sludges, grit, and other solids removed from the wastewater. The point(s) from which these wastes were obtained and the disposal sites to which waste solids are transported shall be specified in the monthly reports.

X. REPORTING SCHEDULE

The above monitoring program, or subsequent modification thereto, shall become effective upon the effective date of Order No. R4-2002-0129. Influent/Effluent Monitoring reports shall be submitted as indicated under Section I. of the above monitoring program. Receiving Water Monitoring reports shall be submitted as indicated under Section VII.J.3.d and VII.J.3.e of the above monitoring program.

All reports shall be signed by a responsible officer or duly authorized representative (as specified in 40 CFR §122.2) of the City of Oxnard Wastewater Treatment Plant and submitted under penalty of perjury.

Ordered by:

City of Oxnard
Oxnard Wastewater Treatment Plant
Monitoring and Reporting Program No. CI-2022

CA0054097
Order No. R4-2002-0129

Dennis A. Dickerson
Executive Officer

Date: July 11, 2002

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