

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-29

NPDES NO. CA0005053

WASTE DISCHARGE REQUIREMENTS FOR:

UNION OIL COMPANY OF CALIFORNIA
SAN FRANCISCO REFINERY
RODEO, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereafter called the Board) finds that:

1. Union Oil Company, San Francisco Refinery (hereafter called the discharger) submitted an NPDES Permit Application dated December 31, 1980, and a revised application dated June 23, 1981 for reissuance of NPDES Permit No. CA0005053.
2. The discharge of wastewater from the facilities is currently governed by Waste Discharge Requirements, Board Order No. 80-5 as modified by Board Order No. 83-45.
3. The discharger operates a petroleum refinery with a crude-run throughput of 50,000 barrels per day. It manufactures fuels and lubricants and is classified as a lube refinery as defined by the U.S. Environmental Protection Agency in 40 CFR 419.40. Treated process wastewater, stormwater runoff, and other wastes as described below are discharged into San Pablo Bay a water of the United States.
4. The reports of waste discharge and recent self-monitoring reports describe the discharges as follows:
 - a. Waste 001 averages 7.3 million gallons per day (mgd) of salt water used for once-through cooling which is discharged near the refinery's compound area at a point 1400-feet south of the refinery pier.
 - b. Waste 002 averages 2.4 mgd and consists of process wastes, sanitary wastes, boiler blowdown, cooling tower blowdown, ballast water, and stormwater runoff. A minor amount of sump wastes and stormwater runoff from the PG&E Oleum Power Plant is also routed to the discharger's wastewater treatment plant. The treated wastes are discharged into San Pablo Bay at a point just north of the refinery's safety basin through a shallow water outfall that does not always provide 10:1 dilution.
 - c. Waste 003 averages 27 mgd of salt water used for once-through cooling which is combined with Waste 002 prior to discharge to San Pablo Bay.

- d. Waste 004 is defined as the combined discharge of Waste 002, Waste 003, and stormwater runoff from portions of Rodeo, San Pablo Avenue, Interstate 80, and undeveloped land.
5. The Board adopted a revised Water Quality Control Plan, San Francisco Bay Basin (Basin Plan) on July 21, 1982, and the State Water Resources Control Board approved it on October 16, 1982. The provisions of this permit are consistent with the objectives of the Basin Plan.
6. Self-monitoring reports and other studies indicate process wastewaters from oil refineries recurrently exhibit acute toxicity. The effluent from the discharger's process wastewater treatment plant may therefore contain conservative toxicants which are being discharged to San Pablo Bay.
7. The beneficial uses of San Pablo Bay are:
- a. Water contact recreation
 - b. Non-contact water recreation
 - c. Navigation
 - d. Open commercial and sport fishing
 - e. Wildlife habitat
 - f. Estuarine habitat
 - g. Fish spawning and migration
 - h. Industrial uses
 - i. Preservation of rare and endangered species
 - j. Shellfishing
8. The Basin Plan includes the following prohibitions:
- "...It shall be prohibited to discharge:
- 1. Any wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof.
- "...It shall be prohibited to discharge:
- All conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Board, to waters of the Basin."
9. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21000) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Water Code.
10. Effluent limitation and toxic effluent standards established pursuant to Sections 208(b), 301, 304, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharge.

11. Effluent limitation guidelines requiring the application of best available technology economically achievable (BAT) have been promulgated by the U.S. Environmental Protection Agency for the Lube Subcategory of the Petroleum Refining Point Source Category 40 CFR Part 419D on October 18, 1982. Effluent limitations of this Order are based on these guidelines, the NRDC/EPA Settlement Agreement of April 17, 1984 (Docket # 83-1122), the Basin Plan, State Plans and Policies, current plant performance, and best engineering judgement. The limitations are considered to be those attainable by BAT in the judgement of the Board.
12. Under 40 CFR 122.44, "Establishing Limitations, Standards, and Other Permit Conditions," NPDES permits should also include toxic pollutant limitations if the discharger uses or manufactures a toxic pollutant as an intermediate or final product or byproduct. This permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as a part of this Order.
13. This Order contains effluent limits based on recent production rates at this facility. The Board is aware that production can vary and commits to expediting reissuance of a new permit upon receipt of an application with new production data.
14. The Board has notified the discharger and interested agencies and persons of its intent to reissue waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the discharger, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Water Pollution Control Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Effluent Limitations

1. The discharge of Waste 002 containing constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>30-day Average</u>	<u>Maximum Daily</u>
BOD (5-day @ 20°C)	lbs/day	966	1900
	kg/day	438	862
TSS	lbs/day	850	1330
	kg/day	385	602
TOC	lbs/day	2130	4180
	kg/day	966	1900
Oil and Grease	lbs/day	319	605
	kg/day	145	275
Phenolic Compounds	lbs/day	6.03	14.1
	kg/day	2.74	6.41
Ammonia as N	lbs/day	404	881
	kg/day	183	400
Sulfide	lbs/day	5.63	12.5
	kg/day	2.55	5.68
Total Chromium	lbs/day	7.00	20.1
	kg/day	3.18	9.11
Hexavalent Chromium	lbs/day	0.58	1.29
	kg/day	0.26	0.59
Settleable Solids	ml/l-hr	0.1	0.2
Soluble BOD (5-day @ 20°C)	mg/l	*	*

* The Board will consider inclusion of limitations for Soluble BOD (defined as non-filterable) based on 18 months of performance data to be obtained as a part of the attached self-monitoring program.

2. In addition to the 30-day average and daily maximum pollutant weight allowances shown in A.1, allocations for pollutants attributable to stormwater runoff and ballast water discharged as a part of Waste 002 are permitted in accordance with the following schedules:

STORMWATER RUNOFF

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Maximum Daily</u>
BOD (5-day @ 20°C)	mg/l	26	48
TSS	mg/l	21	33
TOC	mg/l	57	106
Oil and Grease	mg/l	8	15
Phenolic Compounds	mg/l	0.17	0.35
Total Chromium	mg/l	0.21	0.60
Hexavalent Chromium	mg/l	0.028	0.062

BALLAST WATER

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Maximum Daily</u>
BOD (5-day @ 20°C)	mg/l	26	48
TSS	mg/l	21	33
TOC	mg/l	57	106
Oil and Grease	mg/l	8	15
pH	Within the range of 6.0 to 9.0		

The total effluent limitation for the discharge is the sum of the stormwater runoff allocation, the ballast water allocation and the mass limits contained in A.1. The total effluent limitation (both maximum and average) is to be computed by the discharger on a monthly basis as shown in Part B of the Monitoring Program.

3. Neither the discharge of Waste 001 nor Waste 003 shall contain a TOC concentration above intake levels in excess of 5 mg/l.
4. Neither the discharge of Waste 001 nor Waste 004 shall have a pH of less than 6.5 nor greater than 8.5.
5. Neither the discharge of Waste 001 nor Waste 004 shall have a chlorine residual in excess of 0.0 mg/l.

6. In representative samples of the effluent, the discharge of Waste 004 shall meet the following limit of quality:

TOXICITY:

The survival of threespine stickleback (*Gasterosteus aculeatus*) test fishes in 96 hour bioassays of the effluent shall achieve a median of 90 percent survival for three consecutive samples and a 90 percentile value of not less than 70 percent survival.

7. Total coliform bacteria for a median of 5 consecutive samples shall not exceed 240 MPN/100 ml in the discharge from each of the septic tanks tributary to Waste 002 or in the combined flow from those septic tanks. Any single sample shall not exceed 10,000 MPN/100 ml when verified by a repeat sample taken within 48 hours.
8. The discharge of Waste 004 containing constituents in excess of the following limits is prohibited:

<u>Constituent</u>	<u>Units</u>	<u>30-day Average</u>	<u>Maximum Daily</u>
Oil and Grease	mg/l	10	20

B. Receiving Water Limitations

1. The discharge of wastes shall not cause the following conditions to exist in waters of the State at any place at levels that cause nuisance or adversely affect beneficial uses:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:
 - a. Dissolved oxygen: 5.0 mg/l minimum. The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation.
 - b. Dissolved sulfide: 0.1 mg/l maximum.
 - c. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH levels by more than 0.5 units.
 - d. Un-ionized ammonia (as N):

0.025 mg/l	Annual Median,
0.4 mg/l	Maximum at any time.

3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

C. Prohibitions

1. The discharge of Waste 002 at any place where it does not receive a minimum initial dilution of at least 10:1 is prohibited after July 1, 1987 unless the Board has granted the discharger an exception.

D. Provisions

1. In the event of repeated noncompliance with Effluent Limitation A.6 - Toxicity, the discharger may be required to submit to the Board a technical report, identifying the conservative and non-conservative toxicants in the process waste effluent and the extent to which each toxicant contributes to the total toxicity.
2. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act, or amendments thereto, and shall take effect at the end of ten days from date of hearing provided the Regional Administrator, U.S. Environmental Protection Agency, has no objections.

3. This permit shall be modified or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(c), and (d), 303, 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
 - (a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or,
 - (b) Controls any pollutant not limited in the permit.The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.
4. The discharger shall comply with the attached self-monitoring program as adopted by the Board and as may be amended by the Board.
5. This permit may be modified prior to the expiration date to include effluent limitations for toxic constituents determined to be present in significant amounts in the discharge through a more comprehensive monitoring program included as a part of this Order.
6. All applications, reports, or information submitted to the Board shall be signed and certified pursuant to Environmental Protection Agency regulations 40CFR122.41(k).
7. Pursuant to Environmental Protection Agency regulations [40CFR122.42(a)] the discharger must notify the Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture a pollutant not reported in the permit application, or (2) a discharge of a toxic pollutant not limited by this permit has occurred, or will occur, in concentrations that exceed the specified limits included in 40CFR122.42(a).
8. Order Nos. 80-5 and 80-45 are hereby rescinded.
9. This Order includes all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated April 1977 except A.5, A.12, B.2, and B.5.
10. This Order expires on July 1, 1987, and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.
11. The discharger shall comply with the limitations and other provisions of this Order upon its adoption by the Board, except as noted below.

12. The discharger shall comply with all Specifications and Provisions of this Order immediately upon adoption, except as noted in Prohibition C.1. The discharger shall comply with Prohibition C.1 in accordance with the following time schedule:

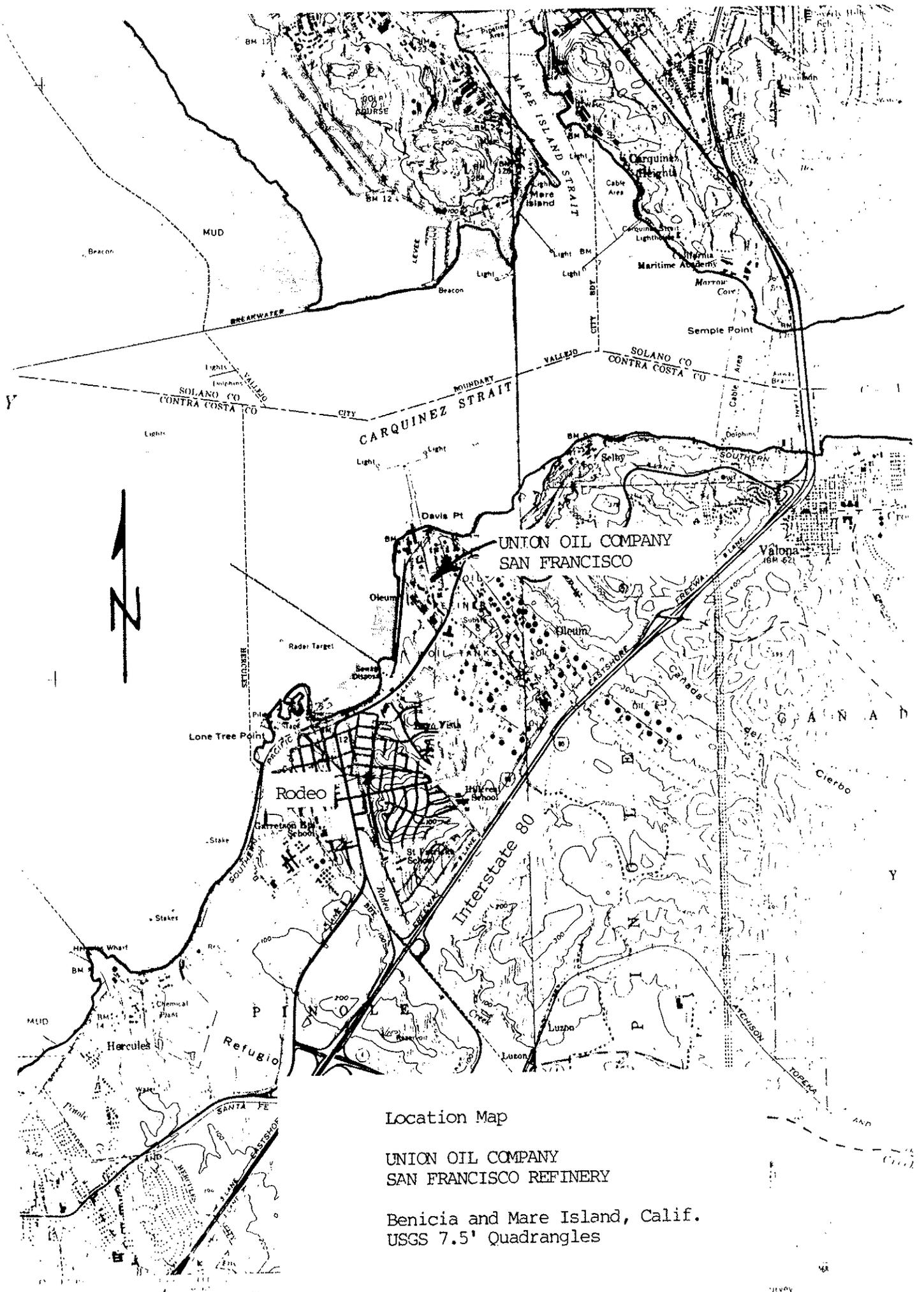
<u>Task</u>	<u>Deadline</u>
Submit a progress report on compliance with Prohibition C.1 and exception request.	June 15, 1985
Submit plans and interim time schedule for compliance with Prohibition C.1 and, if appropriate, a request for consideration of an exception to the prohibition.	October 1, 1985
Achieve full compliance with Prohibition C.1:	July 1, 1987

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 20, 1985.

ROGER B. JAMES
Executive Officer

Attachments:

Location Map
Standard Provisions, Reporting
Requirements and Definitions dated April 1977
Self-Monitoring Program



Location Map

UNION OIL COMPANY
SAN FRANCISCO REFINERY

Benicia and Mare Island, Calif.
USGS 7.5' Quadrangles

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

AMENDED
SELF MONITORING PROGRAM
FOR

UNION OIL COMPANY OF CALIFORNIA

SAN FRANCISCO REFINERY

RODEO, CONTRA COSTA COUNTY

NPDES NO. CA 0005053

ORDER NO. 85-29

CONSISTS OF

PART A, dated January 1978

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INTAKE

<u>Station</u>	<u>Description</u>
I-1	At any point in the water intake from San Pablo Bay, preceding treatment or use for cooling or processing.

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	In the buried pipeline outfall for Waste 001 at a manhole about 150 feet inland from the effluent weir.
E-002	In the Parshall flume that measures the treated process effluent flow rate prior to mixing with the once-through cooling water.
E-003	At any point in the buried pipeline for Waste 003 prior to mixing with the process waste (Waste 002).
E-004	In the outfall channel for Waste 004 at a point about 5 feet upstream from a weir such that the sample is representative of the combined Waste 002-treated process waste and Waste 003-once-through cooling water.
S-1-23	In the outlet from the chlorine contact basin at each of the discharger's 23 septic tanks as described on Table II (Also map OE 37-58-Y-6) Figure 1.

C. RECEIVING WATERS (See attached sketch)

<u>Station</u>	<u>Description</u>
C-1	In San Pablo Bay, the area enclosed between shore and an arc drawn through the loci of Stations C-2, C-3, and C-4.
C-2	At a point in San Pablo Bay, located approximately 100 feet southerly of the point of discharge of Waste 004, and approximately 20 feet offshore.

- C-3 At a point in San Pablo Bay, located approximately 100 feet directly offshore from the point of discharge of Waste 004.
- C-4 At a point in San Pablo Bay, located approximately 100 feet northerly of the point of discharge of Waste 004, and approximately 20 feet offshore.
- C-5 thru
C-9 At points in San Pablo Bay, located on an arc of 300 foot radius from the point of discharge of Waste 004. C-5 is 20 feet offshore and southerly of the radius point, C-6 is on a radial passing midway between C-2 and C-3, C-7 is on a radial passing through C-3, C-8 is on a radial passing midway between C-3 and C-4, and C-9 is 20 feet offshore and northerly of the radius point.
- C-11 At a point in San Pablo Bay, located approximately 100 feet southerly of the point of discharge of Waste 001, and approximately 20 feet offshore.
- C-12 At a point in San Pablo Bay, located approximately 100 feet directly offshore from the point of discharge of Waste 001.
- C-13 At a point in San Pablo Bay, located approximately 100 feet northerly of the point of discharge of Waste 001, and approximately 20 feet offshore.
- C-14 thru
C-18 At points in San Pablo Bay, located on an arc of 300 foot radius from the point of discharge of Waste 001. C-14 is 20 feet offshore and southerly of the radius point, C-15 is on a radial passing midway between C-11 and C-12, C-16 is on a radial passing through C-12, C-17 is on a radial passing midway between C-12 and C-13, and C-18 is 20 feet offshore and northerly of the radius point.
- C-R At a point in San Pablo Bay, located approximately 500 feet north of the discharger's Tank No. 78.

II. MISCELLANEOUS REPORTING

- A. The discharger shall record the rainfall on each day of the month.
- B. The discharger shall determine the stormwater runoff/ ballast water allocation (daily & monthly) for its discharge using the method described in attached Form A. Form A shall be submitted with the monthly self-monitoring report. The daily maximum allocation must be computed for each day Waste 002 is monitored.
- C. The discharger shall retain and submit (when required) the following information concerning the monitoring program for organic and metallic pollutants.
 - a. Description of sample stations, times, and procedures.
 - b. Description of sample containers, storage, and holding time prior to analysis.
 - c. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal and surrogate standards.
- D. The discharger shall submit in the monthly self-monitoring report the metallic & organic test results together with the detection limits (including unidentified peaks). All unidentified (non-Priority Pollutants) peaks detected in the EPA 624 and 625 test methods shall be identified and semi-quantified. Hydrocarbons detected at ≤ 10 ug/l based on the nearest internal standard may be appropriately grouped and identified together as aliphatic hydrocarbons, aromatic hydrocarbons, and unsaturated hydrocarbons. All other hydrocarbons detected at >10 ug/l based on the nearest internal standard shall be identified and semi-quantified.

Note that you may submit your metallic monitoring results in your regular self-monitoring reports or in a separate report within thirty days of the end of each month, as long as you indicate in your regular monthly monitoring report that the metals results will be reported in this separate report.

- E. Ballast water treated and discharged as part of Waste 002 shall be metered and the volume recorded in attached Form A for each calendar day. The 30-day average shall be the sum of the daily values in a calendar month divided by the number of days in that month. Ballast-water allocations shall be calculated by multiplying the volume of ballast water, determined above by the appropriate concentration listed under Effluent Limitation A.2. in the permit.
- F. The ratio of Waste 003 to Waste 002 shall be reported as a daily and a monthly value.

III. SCHEDULE OF SAMPLING AND ANALYSIS

- A. The schedule of sampling and analysis shall be that given in Table 1 (attached).
- B. Sample collection, storage, and analysis shall be performed according to the latest 40 CFR Part 136 or other methods approved and specified by the Executive Officer of this Regional Board.

IV. MODIFICATIONS TO PART A

Exclude Sections D.2.b, E.4, and F.3.g(2). The revised version of 40CFR136 dated October 26, 1984 should be used instead of the former version dated December 1, 1976 referenced in Appendix E.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No.73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No.85-29.
2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer or the Regional Board.



ROGER B. JAMES
EXECUTIVE OFFICER

Effective Date FEBRUARY 2, 1987

Attachments:

Table 1
Form A
Figure 1

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001		E-002		(12) E-003		E-004		S-1 thru S-23	All C Sta. (11)
TYPE OF SAMPLE	C-24	G	C-24	G	C-24	G	C-24	G	G	G
Flow Rate (mgd)	cont		cont				cont			
BOD, 5-day, 20 °C (mg/l & kg/day)			W							
Chlorine Residual (mg/l & kg/day)		M					M			
Settleable Matter (ml/1-hr. & cu. ft./day)				W						
Total Suspended Matter (mg/l & kg/day)			W							
Oil and Grease (mg/l & kg/day)				W ⁽¹⁾			W ⁽¹⁾			
Coliform (Total) (MPN/100 ml) per req't									(100) 2/W	
Fish Toxicity			W ⁽¹⁴⁾				W ⁽³⁾			
Ammonia Nitrogen (mg/l & kg/day)			W							
Chloride (mg/l)			M							
Soluble BOD (mg/l)			W ⁽⁹⁾							
Total Organic Nitrogen (mg/l & kg/day)										
Total Phosphate (mg/l & kg/day)										
Turbidity (Jackson Turbidity Units)										
pH (units)		W					cont ⁽²⁾			M
Dissolved Oxygen (mg/l and % Saturation)										M
Temperature (°C)	cont						cont			M
Apparent Color (color units)										
Total Sulfides (mg/l)				W						
Sulfides (if DOX5.0 mg/l) Total & Dissolved (mg/l)										(4) M
Arsenic (mg/l & kg/day)			2M							
Cadmium (mg/l & kg/day)			M							
Chromium, Total (mg/l & kg/day)			W							
Copper (mg/l & kg/day)			W							
Cyanide (mg/l & kg/day)			W							
Silver (mg/l & kg/day)			2M							
Lead (mg/l & kg/day)			W							
ALUMINUM (mg/l & kg/day)			M							
COBALT (mg/l & kg/day)			M							

LEGEND FOR TABLE 1

<u>TYPES OF SAMPLES</u>	<u>TYPES OF STATIONS</u>
G = grab sample	I = intake stations
C-24 = composite sample - 24-hour	E = waste effluent stations
Cont = continuous sampling	C = receiving water stations
O = observation	B = bottom sediment stations

FREQUENCY OF SAMPLING

E = each occurrence	M = once each month
D = once each day	2M = every 2 months
W = once each week	Y = once each year
2/W = 2 days per week	2Y = twice each year
	cont = continuous

FOOTNOTES FOR TABLE 1

- (1) Oil and grease sampling shall consist of 3 grab samples taken at 2 hour intervals during the sampling day, with each grab being collected in a glass container and the analytical results shall be averaged. Each glass container used for sample collection shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the wastewater sample for extraction and analysis.
- (2) Daily minimum and maximum shall be reported.
- (3) The discharger shall determine compliance utilizing flow-through bioassays. Immediately upon the death of over half the test fish, the LC-50 of the discharge shall be determined using at least 4 dilutions in a static bioassay.
- (4) Receiving water analysis for sulfides should be run when dissolved oxygen is less than 5.0 mg/l.

FOOTNOTES FOR TABLE 1 CONT.

- (5) Volatile Organic Toxic Pollutants shall be analyzed using EPA Method 624 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057.
- (6) Acid and Base/Neutral Extractable Organic Toxic Pollutants shall be analyzed using EPA Method 625 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, EPA-600/4-82-057.
- (7) Grab samples shall be collected coincident with samples collected for the analysis of the regulated parameters. In addition, the grab samples must be collected in glass containers.
- (8) Polynuclear Aromatic Hydrocarbons shall be analyzed using EPA Method 610 of the July, 1982, Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. Note that the samples must be collected in amber glass containers. These samples shall be collected coincident with samples collected for the analysis of the regulated parameters. An automatic sampler which incorporates glass sample containers and keeps the samples refrigerated at 4°C and protected from light during compositing may be used. Note that the 24-hour composite samples may consist of eight grab samples collected at three-hour intervals. The analytical laboratory shall remove flow-proportioned volumes from each sample vial or container for the analysis.
- (9) Soluble BOD is defined here as the 5-day, 20°C BOD of filtrate that passes through a standard glass fiber filter as described in Standard Methods for the Examination of Water and Wastewater, 15th Edition, Part 209 B., APHA, AWWA, WPCF, (1980).
- (10) Samples of the sanitary waste, following treatment in septic tanks and disinfection systems, will be collected at each of the septic tank chlorine contact basins which discharge into the process waste system. Samples will be collected in sterile containers, to which dechlorination agent has been added prior to autoclaving. Samples will be collected during a period which corresponds to anticipated high sanitary flows. A small portion of each sample will be tested immediately to assure that all chlorine residual has been removed. Samples will be iced after collection and conveyed to the laboratory following collection of the last individual sample.

In the laboratory, a composite will be prepared from the individual samples, on either an equal volume or flow proportioned basis. The composite will be prepared by transferring an appropriate volume (not less than 50 ml) of each individual sample into a sterile container. The composite will be well mixed, and an aliquot will be taken and analyzed for total coliform. The analytical results from such composite samples shall be considered to be indicative of the bacteriological quality of the aggregate of the individual disinfected sanitary flows at the Union Oil Company's San Francisco Refinery.

- (11) Sample collection at stations C-5 through C-9 is required only when waste discharge requirements are violated at stations C-2 through C-4; sample collection at stations C-14 through C-18 is required only when waste discharge requirements are violated at stations C-11 through C-13.
- (12) Flow rate at E-003 may be determined as the difference between the flow rate at E-004 and the flow rate at E-002.
- (13) The discharger shall install sampling equipment at station E-003 by August 20, 1985. In the interim TOC of Waste 003 shall be determined according to the following:
- $$\text{TOC(E-003),mg/l} = \frac{\text{TOC(E-004),kg/day} - \text{TOC(E-002),kg/day}}{3.785 \text{ l/gal} \times \text{Flow(E-003),mgd}}$$
- (14) The LC-50 shall be determined in a 96-hour static bioassay.
- (15) Selenium must be analyzed only by the atomic absorption, gaseous hydride procedure (EPA Method No. 270.3/ Standard Method No. 303 E).

TABLE I

SANITARY WASTE SAMPLE STATIONS

SAN FRANCISCO REFINERY, UNION OIL COMPANY

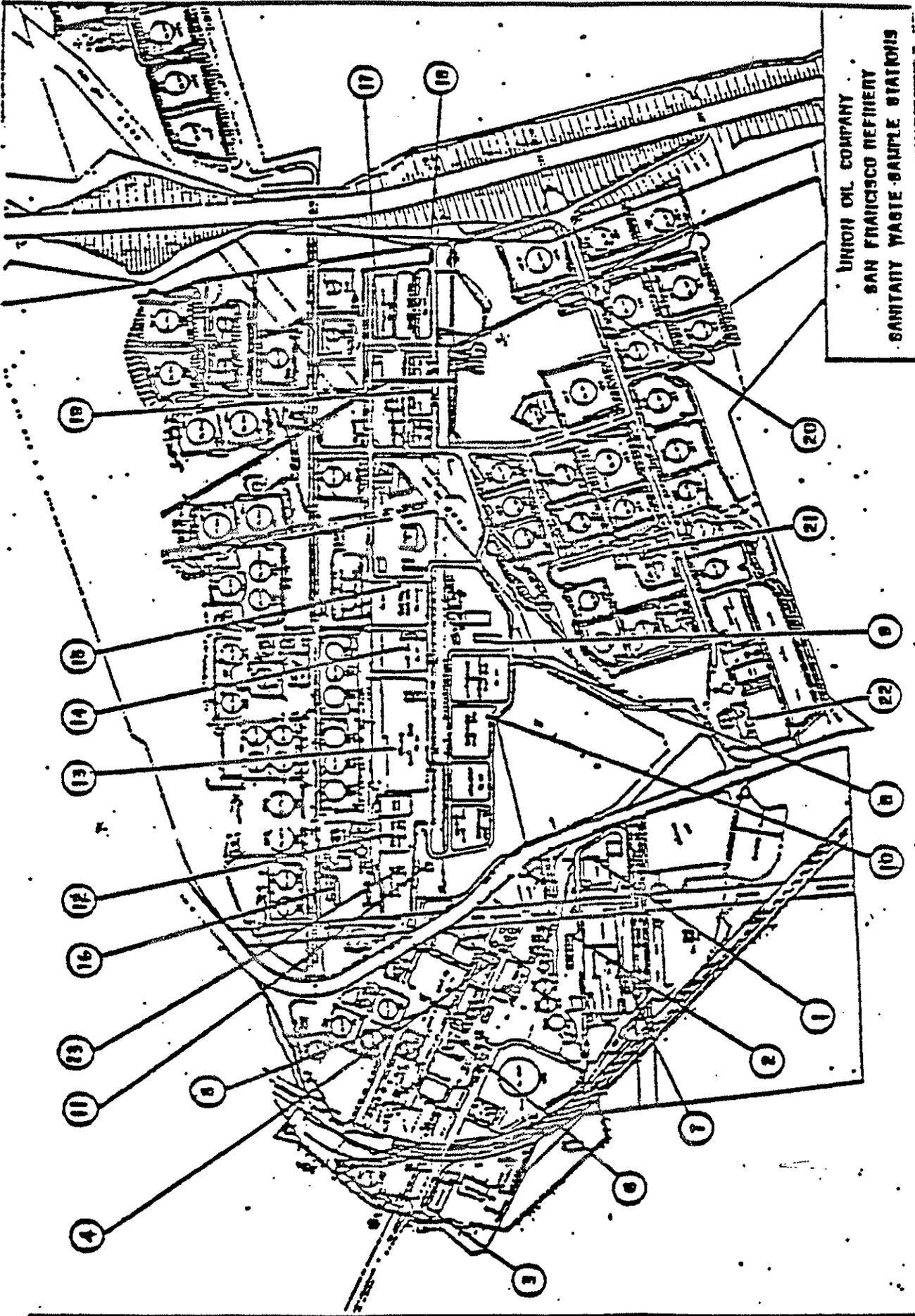
<u>Location Number</u>	<u>Service</u>	<u>Location</u>
S-1	Lab/Admin. Buildings	20' SE of east corner of Lab Building
S-2	Inst. Shop/Warehouse	1' NW of wall 10' off SE end of Inst. Shop Building
S-3	Compound	10' north of north wall of Compound Warehouse
S-4	West Refinery Change House	5' north of north wall of Change House
S-5	Unit 67	15' south of south door of Control Room
S-6	West Foremen's Office	15' west of west wall of building
S-7	Maint. Change Room	35' NW of west corner of Change House
S-8	Tormey Gate	20' SE of SE wall of Gate House
S-9	Refinery Foremen's Office	15' NW of west corner of building
S-10	Unit 240	25' SW of south corner of Control House
S-11	Tormey Hill Change House	20' SE of southeast wall of Change House.
S-12	Unit 212	20' west of west corner of Control House
S-13	Unit 200	50' SE of south corner of Control House
S-14	Unit 215	5' SE of center of SE wall of Control House
S-15	Unit 220	15' SW of south corner of Control House

TABLE I (Continued)

SANITARY WASTE SAMPLE STATIONS

SAN FRANCISCO REFINERY, UNION OIL COMPANY

<u>Location Number</u>	<u>Service</u>	<u>Location</u>
S-16	Unit 80	5' SE of south corner of Control House
S-17	East Foremen's Office	5' SW of south corner of building
S-18	Unit 231	20' north of north corner of Control House
S-19	Unit 238	15' NW of center of NW wall of Control House
S-20	Unit 40	10' NW of west corner of Control House
S-21	Unit 76	10' SE of east corner of Control House
S-22	Unit 100	10' NW of center of NW wall of Control House
S-23	Unit 210	20' NW of NW wall of Control House



UNION OIL COMPANY
 SAN FRANCISCO REFINERY
 SANITARY WASTE-SAMPLE STATIONS

STORMWATER/BALLAST WATER ALLOCATION PROCEDURE

This procedure uses a bankbook to inventory stormwater. Any stormwater in excess of the estimated processed stormwater is inventoried. Stormwater allocations are calculated using the actual processed stormwater developed in the attached table.

Definitions:

Dry Weather Season - The months of June to September exclusive of a one-week period following any rainstorm.

Estimated Dry Weather Process Wastewater Flow - The average effluent flowrate during the previous dry weather season.

Stormwater Runoff - The product of the inches of rainfall and the runoff factor.

Estimated Processed Stormwater - The difference between the actual effluent flowrate and the ballast water plus dry weather flowrate.

Stormwater Bankbook - Calculated inventoried stormwater.

Actual Process Stormwater - If the stormwater bankbook is not zero, the actual processed stormwater equals the estimated flow. If the bankbook is zero, the actual processed stormwater is equal to the stormwater runoff for that day plus the bankbook for the previous day.

STORMWATER/BALLAST WATER ALLOCATION PROCEDURE

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Rainfall (in.)	Stormwater Runoff (MGal/D)	Effluent Flow (MGal/D)	Dry Weather Effluent Flow (MGal/D)	Estimated Processed Stormwater (MGal/D)	Stormwater Bankbook (MGal)	Actual Processed Stormwater (MGal/D)	Ballast Water (MGal/D)

Previous Month's Bankbook =

1

2

3

.

.

.

30

TOTAL

AVERAGE

MAXIMUM

Column (B) = Column (A) X Runoff Factor

Column (E) = Column (C) - Column (D) - Column (H).

Column (F): Column (F) = Column (F)(Previous Day) + Column (B) - Column (E).
 Column (F) = 0 if Column (F) < 0.

Column (G): If Column (F) > 0, then Column (G) = Column (E).
 If Column (F) = 0, then Column (G) = Column (B) + Column (F) previous day.

MAXIMUM DAILY LIMITS

DATE	BOD (KG/D)	TSS (KG/D)	(KG/D)	O ₄ G (KG/D)	PHENOL (KG/D)	TOTAL CHROME (KG/D)	HEX. CHROME (KG/D)

Maximum Daily Limit = Effluent Limit A.1. + Stormwater Allocation
 (Daily Max in kg/day) (Daily Max)

Stormwater Allocation = Effluent Limit A.2. x Daily Processed Stormwater x 3.785 l/gal
 (Daily Max in mg/l) (in mgd)

Date	Rainfall (Inches)	Storm Runoff Flow (Inches x Runoff Factor) Gallons	Ballast Flow in gallons
-2			
-3			
-4			
-5			
-6			
-7			
7-8			
8-9			
9-10			
10-11			
11-12			
12-13			
13-14			
14-15			
15-16			
16-17			
17-18			
18-19			
19-20			
20-21			
21-22			
22-23			
23-24			
24-25			
25-26			
26-27			
27-28			
28-29			
29-30			
30-31			
31-1			
Total			
Monthly Average			

MONTH:
YEAR:

	Allocation	A.I.	Total Effluent
Monthly Average	Storm Runoff Ballast Water Flow Factor (expressed in thousand Gals/day)	+ Effluent Limits = (kg/day)	+ Limit (kg/day)
30-Day Average BOD ₅	x 0.098 =	+	=
Limita- TSS	x 0.079 =	+	=
Limit- TOC	0.22	+	=
(kg/day) COD	x 0.68 =	+	=
O&G	x 0.03 =	+	=
PHENOL	x 0.00064 =	+	=
TOTAL CHROME	x 0.00079 =	+	=
HEX CHROME	x 0.00011 =	+	=