

N00217.000485
HUNTERS POINT
SSIC NO. 5090.3

**CONTRACTOR QUALITY CONTROL PLAN/
SAMPLING AND ANALYSIS PLAN
SITE IR 1/21: INDUSTRIAL LANDFILL GROUNDWATER PLUME
AT HUNTERS POINT SHIPYARD**

**CONTRACT NO. N62474-93-D-2151
DELIVERY ORDER NUMBER 0060**

Submitted to:

Department of the Navy
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 95814-2922

Submitted by:

IT Corporation
4585 Pacheco Boulevard
Martinez, California 94553

Revision 0

August 1996

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Approved by: Thomas A Davis Date: 8/29/96
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Program Contractor Quality
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John Baur
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Valerie Crooks, P.E.
Program Manager

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WORK PLAN
CONTRACTOR QUALITY CONTROL PLAN
SITE HEALTH AND SAFETY PLAN
SITE IR-1/21 INDUSTRIAL LANDFILL
GROUNDWATER PLUME

DATED 28 OCTOBER 1997

IS ENTERED IN THE DATABASE AND FILED AT
ADMINISTRATIVE RECORD NO. **N00217.000486**

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1.0 Introduction

This Contractor Quality Control Plan (CQCP) has been prepared to describe those QC actions that will be implemented during the design and construction of a groundwater containment and extraction system at Site IR-1/21, Hunters Point Shipyard. This plan is currently written through the design phase and will require an addendum when the construction design is approved. Once the design for Phase II (construction) is complete, IT Corporation (IT) will revise the OCP/SAP for approval prior to the start of any Phase II construction work.

The CQCP will be used in conjunction with the Program Contractor Quality Control Plan (PCQCP), Revision 1, and Standard Quality Procedures (SQP)/Standard Operating Procedures (SOP), as applicable and described below:

2.0 Program Contractor Quality Control Plan

Section 0.0 - Policy Statement; Applicable in its entirety

Section 1.0 - Introduction; Applicable in its entirety

Section 2.0 - Organization and Responsibilities; Applicable with the following modifications:

As applicable to QC Organization on Figure 1 (Quality Control Organization Chart).

Section 3.0 - Quality Control Management; Applicable with the following modifications:

add to 3.4: Change the work “biweekly” on the first sentence of Paragraph 3.4, to read “weekly.”

Section 4.0 - Personnel Training and Qualification; Applicable in its entirety

Section 5.0 - Instructions, Procedures and Drawings; Applicable with the following modifications:

add to 5.5: Two sets of As-Built drawings will be maintained by the delivery order Project Manager for this delivery order to reflect the actual conditions of the environmental restoration activities. These drawings will be marked up (redlined) to show all changes to the original design. Supporting documentation such as FWVs will

be included as an attachment to the drawing or by reference to indicate approval of the changes. The completed marked up sets of drawings will be returned to the original design organization to be incorporated into the final drawing of the record to be turned over to the client.

Section 6.0 - Document Control; Applicable with the following modifications:

add to 6.3: Prior to issuance or use, Program/Delivery Order Planning Documents will be formally reviewed by IT in accordance with SQP 5.1, then submitted to the contracting officer for review and/or approval as identified on the Submittal Register, ENG Form 4288, Figure 6-3. Upon receipt of comments from EFA-West, they will be reviewed, addressed, or incorporated into the document. Approval will be denoted by a signed signature and date page in each document, which will include the Project Manager, CQCSM, and Program Manager as a minimum.

add to 6.6: Submittals will be prepared by the Project Manager. Submittals to IT from subcontractors and vendors will be reviewed and accepted prior to transmitting the submittals to the client. All applicable information on administrative submittals will be reviewed and approved by the Project Manager and CQCM, and technical submittal will be approved by the CQC Manager prior to transmittal of the submittals.

add to Paragraph 4: The CQCM is responsible for review and approval of technical submittals, and only reviewing administrative, prior to transmittal to the client (the rest of the paragraph is the same).

Section 7.0 - Procurement; Applicable in its entirety

Section 8.0 - Data Quality Objectives; Applicable in its entirety

Section 9.0 - Field Activities; Applicable with the following modifications:

add to 9.4.1: Samples collected and delivered to a laboratory within four hours of collection will be exempt from the temperature requirement providing all other collection and handling procedures were implemented.

Section 10.0 - Analytical Activities; Applicable in its entirety

Section 11.0 - Report Preparation; Applicable in its entirety

Section 12.0 - Review of Work Activities; Applicable in its entirety

Section 13.0 - Inspections; Applicable in its entirety

Section 14.0 - Calibration and Maintenance of Measuring and Test Equipment; Applicable in its entirety

Section 15.0 - Test Control; Applicable in its entirety

Section 16.0 - Nonconformance Control and Corrective Actions; Applicable in its entirety

Section 17.0 - Change Control; Applicable in its entirety

Section 18.0 - Audits and Surveillance; Applicable with the following modification:

Delete subsections 18.1 through 18.8

Section 19.0 - Records Management; Applicable in its entirety

3.0 Procedures

3.1 Standard Quality Procedures

The following Standard Quality Procedures (SQP) have been determined to be applicable:

SQP 1.1 Contractor Quality Control Program

SQP 3.2 Indoctrination and Training

SQP 4.1 Document Control

SQP 4.2 Records Management

SQP 5.1 Preparation, Revision and Approval of Plans and Procedures

SQP 7.1 Quality Inspections and Inspection Records

SQP 8.2 Calibration and Maintenance of Measuring and Test Equipment

SQP 10.1 Nonconformance Control

SQP 10.2 Corrective Action

SQP 10.3 Stop Work Order

SQP 11.1 Field Work Variance/Request For Information

SQP 12.1 Quality Audits

SQP 12.2 Management Assessment

SQP 12.3 Quality Surveillances

SQP 13.1 Coordination of Subcontracted Analytical Laboratories

3.2 Standard Operating Procedures

The following Standard Operating Procedures (SOP) have been determined to be applicable:

SOP 1.1 Chain of Custody

SOP 2.1 Sample Handling, Packaging and Shipping

SOP 3.1 Surface and Shallow Subsurface Soil Sampling

SOP 3.2 Subsurface Soil Sampling While Drilling

SOP 6.1 Sampling Equipment and Well Material Decontamination

SOP 6.2 Drilling and Heavy Equipment Decontamination

SOP 7.1 Surface and Subsurface Geophysics

SOP 8.1 Monitoring Well Installation

SOP 8.2 Monitoring Well Development

SOP 9.1 Ground Water Sampling

SOP 10.2 Cone Penetration Testing and Hydropunch Testing

SOP 11.1 Aquifer Testing

SOP 12.1 Soil Stockpiling

SOP 14.1 Hollow Stem Auger Drilling

SOP 17.1 Sample Labeling

SOP 17.2 Sample Numbering

SOP 18.1 Field QC Sampling

SOP 19.1 On-Site Sample Storage

SOP 23.1 Land Surveying

3.3 Attachments

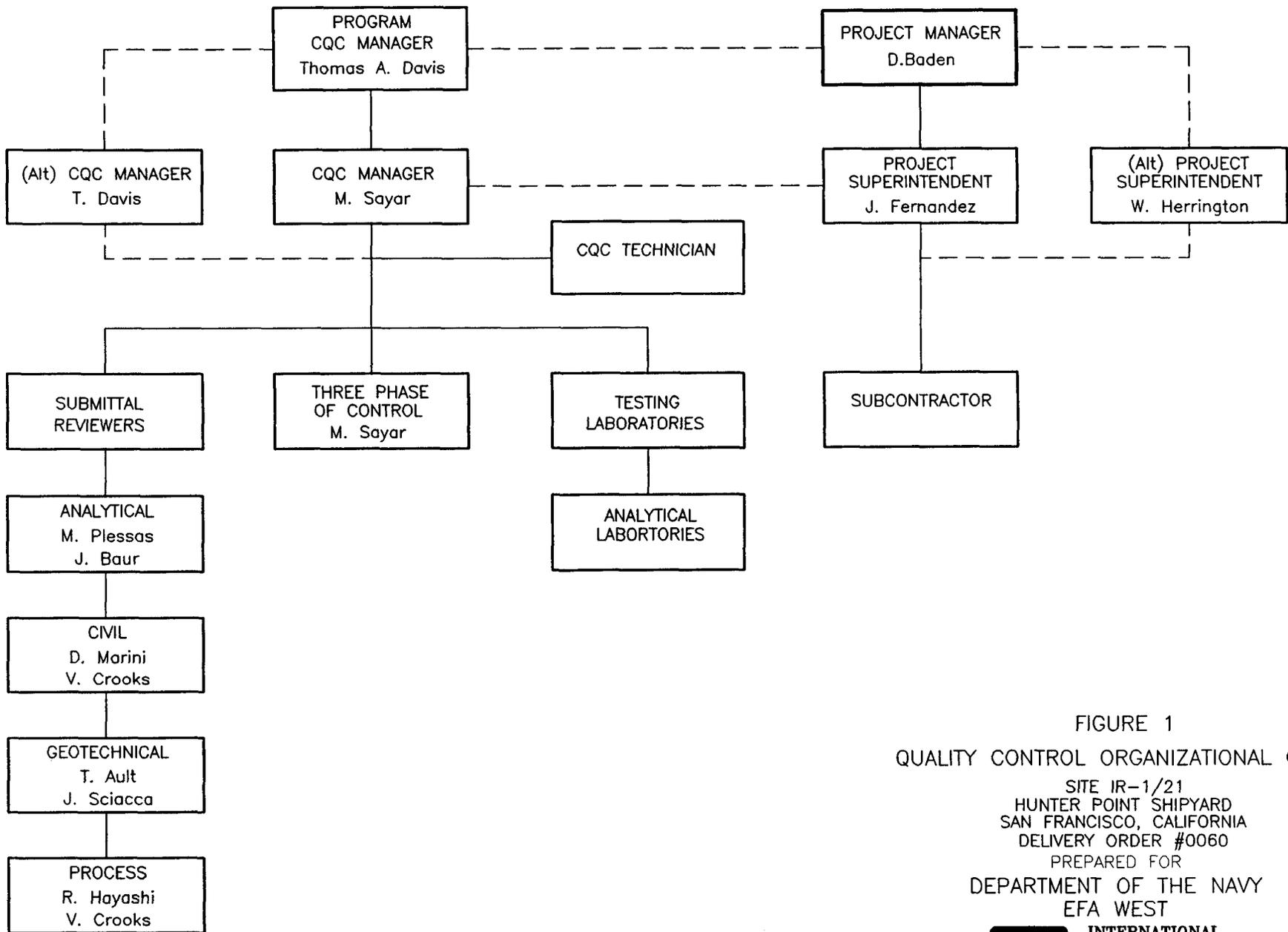
Letters of Designation

Organizational Chart

Definable Features of Work Matrix

Testing Plan and Log

Submittal Register



(Alt) - ALTERNATE

FIGURE 1
QUALITY CONTROL ORGANIZATIONAL CHART

SITE IR-1/21
HUNTER POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
DELIVERY ORDER #0060
PREPARED FOR
DEPARTMENT OF THE NAVY
EFA WEST



**CONTRACTOR QUALITY CONTROL PLAN
SITE IR 1/21: INDUSTRIAL LANDFILL GROUNDWATER PLUME
AT HUNTERS POINT SHIPYARD
DELIVERY ORDER 0060**

**CQC MANAGER
LETTER OF DESIGNATION**

August 29, 1996

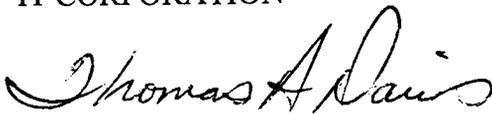
Mr. Mike Sayar:

This letter will serve to assign you as IT Corporation's site CQC Manager for the above captioned delivery order. In the case where you are not able to perform the CQC Manager's duties, I will serve as your alternate CQC Manager. In the role of CQC Manager you have the responsibilities and authorities designated in Section 2.1.3 of the Program Contractor Quality Control Plan, Revision 1. Additionally, you are also granted Stop Work authority and will exercise this authority consistent with the Program CQC Plan, Section 16.4 and SQP 10.3. You are granted the authority to approve submittals which have been certified by qualified submittal reviewers as identified in the CQC Organization Chart for this delivery order and as necessary to ensure the quality of the work, direct the removal and/or replacement of nonconforming materials or work. In this capacity you will report directly to me for QC guidance and will administer the established requirements of the delivery order CQC Plan.

If you have any questions or require additional information, please contact me at (510) 372-9100.

Sincerely,

IT CORPORATION



Thomas A. Davis
Program CQC Manager

**CONTRACTOR QUALITY CONTROL PLAN
SITE IR 1/21: INDUSTRIAL LANDFILL GROUNDWATER PLUME
AT HUNTERS POINT SHIPYARD
DELIVERY ORDER 0060**

**ALTERNATE CQC MANAGER
LETTER OF DESIGNATION**

August 29, 1996

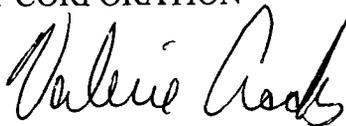
Mr. Tom Davis:

This letter will serve to assign you as IT Corporation's alternate site CQC Manager for the above captioned delivery order. In the case where the designated CQC Manager, Mr. Mike Sayar, is unable to perform the CQC Manager's duties, you will serve in that capacity. In this role, you will have the responsibilities and authorities designated in Section 2.1.3 of the Program Contractor Quality Control Plan, Revision 1. Additionally, you will also have Stop Work authority and will exercise this authority consistent with the Program CQC Plan, Section 16.4 and SQP-10.3. You are granted the authority to approve submittals which have been certified by qualified submittal reviewers as identified on the CQC Organization Chart for this delivery order and as necessary to ensure the quality of the work, and direct the removal and/or replacement of nonconforming materials or work. You will be authorized to act as an alternate for 14 consecutive working days or 30 nonconsecutive working days at a maximum. In the case where it is believed that these time periods will be exceeded you must notify me so that I may arrange with EFA-West and the ROICC to have this position replaced. You will report directly to me for QC guidance and will administer the established requirements of the delivery order CQC Plan.

If you have any questions or require additional information, please contact me (510) 372-9100.

Sincerely,

IT CORPORATION



Valerie Crooks, P.E.
Program Manager

**CONTRACTOR QUALITY CONTROL PLAN
SITE IR 1/21: INDUSTRIAL LANDFILL GROUNDWATER PLUME
AT HUNTERS POINT SHIPYARD**

DELIVERY ORDER No. 0060

DEFINABLE FEATURES OF WORK MATRIX

Reference Plan	Para. No.	Feature of Work	Prep		Initial		Followup	Remarks
			Req	Date	Req	Date	Req	
Work Plan	2.4	Underground Utility Location	X		X		X	
Work Plan	2.3	Land Survey (Site Layout)	X		X		X	
Work Plan	3.1	Cone Penetration Testing/Hydro Punch/Sampling	X		X		X	
CQC Plan	2.0	Sample and Analysis	X		X		X	
Work Plan	5.8	Transportation and Disposal	X		X		X	
Work Plan	2.5	Equipment Decontamination PAD Construction	X		X		X	
Work Plan	3.2	Video Survey	X		X		X	
Work Plan	5.4	Installation Groundwater Extraction Wells	X		X		X	

TESTING PLAN AND LOG

CONTRACT NO. N62474-93-D-2151 DELIVERY ORDER NO. 0060			PROJECT TITLE AND LOCATION SITE IR 1/21: INDUSTRIAL LANDFILL GROUNDWATER PLUME AT HUNTERS POINT SHIPYARD					CONTRACTOR IT Corporation			
SPECIFICATION SECTION AND PARAGRAPH NUMBER	TEST PROCEDURE	TEST NAME	ACCREDITED/ APPROVED LAB		SAMPLED BY	LOCATION OF TEST		FREQUENCY	DATE COMPLETE	DATE FORWARDED TO CONTR. OFF	REMARKS
			YES	NO		ON SITE	OFF SITE				
SAP 3.0 Hydropunch	EPA 8080	PCBs	TBD		TBD	Off		1 per Site			10 Hydropunch Locations
TDS	EPA 160.1	TDS	TBD		TBD	Off		1 per Site			
	EPA 8270	SVOCs	TBD		TBD	Off		1 per Site			See QC Samples
	EPA 6010/7000	Dissolved Metals (Camm List)	TBD		TBD	Off		1 per Site			
SAP 3.0 Solid Waste	EPA 418.1	TRPH	TBD		TBD	Off		1 per 50 CY			4 Point Lab composi
	EPA 8240	VOCs including BTEX	TBD		TBD	Off		1 per 50 CY			
	EPA 8270	SVOCs	TBD		TBD	Off		1 per 50 CY			
	EPA 8080	Or Pesticides/PCBs	TBD		TBD	Off		1 per 50 CY			
	EPA 6010/7000	CAM 17 Metals	TBD		TBD	Off		1 per 50 CY			Wet or TCLP may be Required
	EPA CH&, SW-846	ERCI	TBD		TBD	Off		1 per 50 CY			
SAP 3.0 System Effluent	As per Appendix A		TBD		TBD	Off		1			After 24 hour Operation
SAP 3.0 Waste Water	As per Appendix A		TBD		TBD	Off		1 per Baker Tank			All Contaminants in Appendix A
SAP 3.0 QC Samples											
Source Blank (Field Blank)	EPA 8080	PCBs	TBD		TBD	Off		1			Per Hydropunch Series of Tests
	EPA 8270	SVOCs	TBD		TBD	Off		1			
	EPA 6010/7000	CAM 17 Metals	TBD		TBD	Off		1			

TESTING PLAN AND LOG
Continued

SPECIFICATION SECTION AND PARAGRAPH NUMBER	TEST PROCEDURE	TEST NAME	ACCREDITED/ APPROVED LAB		SAMPLED BY	LOCATION OF TEST		FREQUENCY	DATE COMPLETE	DATE FORWARDED TO CONTR. OFF	REMARKS
			YES	NO		ON SITE	OFF SITE				
Equipment Rinsate	EPA 8080	PCBs	TBD		TBD	Off		1			Per Hydropunch Series of Tests
	EPA 8270	SVOCs	TBD		TBD	Off		1			
	EPA 6010/7000	CAM 17 Metals	TBD		TBD	Off		1			
Field Duplicate	EPA 8080	PCBs	TBD		TBD	Off		1			Per Hydropunch Series of Tests
	EPA 8270	SVOCs	TBD		TBD	Off		1			
	EPA 6010/7000	CAM 17 Metals	TBD		TBD	Off		1			
Matrix Spike/ Matrix Spike Duplicate	EPA 8080	PCBs	TBD		TBD	Off		1			Per Hydropunch Series of Tests
	EPA 8270	SVOCs	TBD		TBD	Off					
	EPA 6010/7000	CAM 17 Metals	TBD		TBD	Off					
Trip Blank	EPA 8240	VOCs	TBD		TBD	Off		1 per Cooler w/VOCs			
	Hydrostatic Pressure Test on the Discharge Piping	Hydrostatic Test	NA		IT	On		2 hour Test			1-1/2 x Operating Pressure to Determine Pressure Performance & Detect Leaks

TBD = To Be Determined Upon Completion of the Procurement Process

* = Vendor/Subcontractor will provide testing as required.

4.0 Sampling and Analysis Plan

4.1 Site Background

Hunters Point Shipyard (HPA) is a former naval shipyard in southeastern San Francisco encompassing some 936 acres, including a 36 acre industrial landfill known as Site IR 1/21 (Figure 1 of the Work Plan). HPA operated as a shipyard since 1869, serving to produce, modify, maintain, and repair various Navy and commercial vessels. During the period of 1942 to 1974, the area now comprising Site IR 1/21 was filled with a variety of undocumented construction and industrial wastes. From 1958 to 1974, shipyard wastes that included sandblast waste, domestic refuse, paints, solvents, and various industrial debris were all deposited at the landfill site. Subsequent groundwater investigations have identified a contaminated groundwater plume emanating from the landfill, possibly migrating in the direction of San Francisco Bay. Specific contaminants that have been detected in groundwater include low concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), Total Petroleum Hydrocarbons (TPH), and polychlorinated biphenyls (PCBs).

4.2 Sampling Objectives

Hydropunch samples will confirm the presence and distribution of the bayward edge of the groundwater plume. Analytical data gathered from these samples will confirm the distribution and concentrations of contaminants in the groundwater.

Solid wastes (soil, rock, and pavement debris) resulting from CPT, hydropunch and well installation activities will be characterized for disposal at an appropriate landfill.

A sample of recovered groundwater from the hydraulic control system will be analyzed to determine compliance with the publicly owned treatment works (POTW) acceptance requirements prior to discharge.

A sample of wastewater resulting from well development and decontamination activities will be analyzed to determine compliance with the POTW acceptance requirements or to determine proper disposal.

The analytical data will be reviewed by the project manager or designated technical personnel to evaluate the chemical constituents in the groundwater plume and proper disposal of contaminated materials. This data will be available to the Navy, operations personnel at the POTW, regulatory agencies and offsite landfill personnel.

Since results of the sampling and analysis will be used to evaluate the distribution of contaminants and ultimately the disposition of potentially contaminated materials, definitive (as opposed to screening) data will be collected. Only a Navy and IT approved analytical laboratory will be subcontracted to perform the required analyses. Analytical results will be submitted to IT in a standard laboratory report and also in an electronic data deliverable as described in Section C.1, Tasks 8.0 and 9.0 of IT's Statement of Work, Navy RAC Analytical Services subcontract, Feb. 1995.

4.3 Sample Location and Frequency

4.3.1 Hydropunch samples

Ten Hydropunch locations will be selected by the IT geologist on site. One sample will be collected at each location. These samples will be analyzed for polychlorinated biphenyls (PCBs) by 8080, semivolatile organic compounds (SVOCs) by 8270, total dissolved solids (TDS) by 160.1, and dissolved metals (CAM 17 list) by 6010/7000. Filtration at laboratory must be specified on the analysis request and chain of custody form (AR/COC) for dissolved metals analysis. Two week turnaround time for analytical results is required.

4.3.2 Solid waste samples

Representative samples are required for wastes intended for landfills. A four point composite (four individual grab samples composited at the laboratory into one sample) per fifty cubic yards (50 cy) generally satisfies the requirements for representativeness. Containerized solid waste (approximately 40 cy total) will be analyzed for total recoverable petroleum hydrocarbons (TRPH) by 418.1, volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene and xylenes (BTEX) by 8240, SVOCs by 8270, organochlorine pesticides and PCBs by 8080, California regulated metals (CAM 17 metals) by 6010/7000, and reactivity, corrosivity (as pH) and ignitability (RCI) according to Chapter 7, SW-846.

The California waste extraction test (WET) or toxicity characteristic leaching procedure (TCLP) may be required to determine metals concentrations for comparison to acceptance criteria. Standard two week turnaround time for analytical results is adequate.

4.3.3 Hydraulic control system effluent samples

Groundwater recovered during the initial startup of the hydraulic control system will be stored in portable water storage tanks (Baker tanks). One sample will be collected at the hydraulic control system effluent twenty-four hours after initial system startup and analyzed for all contaminants listed in Attachment 1.0. Standard two week turnaround time is adequate.

4.3.4 Wastewater samples

Wastewater from well development and decontamination activities will be stored in portable water storage tanks (Baker tanks). One sample will be collected from the Baker tank and analyzed for all contaminants listed in Attachment 1.0. Standard two week turnaround time is adequate.

4.3.5 Quality control (QC) samples

One source blank, one equipment rinsate, and one field duplicate will be collected during the Hydropunch sampling event and analyzed for PCBs, SVOCs, and CAM 17 metals. Sufficient additional volume must be collected at one Hydropunch location for laboratory matrix spike/matrix spike duplicate sample analyses.

Source blank, equipment rinsate, field duplicate and matrix spike samples will not be collected for solid waste, hydraulic control system effluent, or wastewater samples.

A trip blank should be included in each cooler that contains samples for VOC analysis. The trip blank will be analyzed for VOCs by 8240 only.

4.4 Sample Designation

Samples will be uniquely designated using the following numbering system:

Hydropunch samples:	60HP001, 60HP002, etc.
solid waste samples:	60SW001, 60SW002, etc.
hydraulic control system effluent:	60EFF001, 60EFF002, etc.
wastewater samples:	60WW001, 60WW002, etc.

Sample containers will be appropriately labeled in accordance with IT SOPs 17.1 and 17.2. The following information at a minimum must be included: project number, sample number, collection date and time, samplers initials, and sample preservative.

4.5 Sampling Equipment and Procedures

Sampling equipment and procedures employed in support of the field activities for this project shall comply with the project work plan and appropriate SOPs as identified below.

4.5.1 Hydropunch samples

Hydropunch groundwater samples will be collected using either a bailer or a peristaltic pump as described in IT SOP 10.2

4.5.2 Solid waste samples

Soil samples will be collected using a stainless steel hand auger, shovel or trowel as described in IT SOP 3.1. The soil is transferred from the collection device into certified pre-cleaned sample containers provided by the laboratory (8oz glass jars). The sample container should be completely filled so that little or no headspace exists.

4.5.3 Hydraulic control system effluent samples

Groundwater samples will be collected directly into appropriate sample containers at the hydraulic control system effluent. Effluent flow should be controlled to minimize aeration. The effluent may be collected in a large beaker or bailer and then transferred into sample containers. Sample containers for volatile and semivolatile compounds should be filled first.

4.5.4 Wastewater samples

Water samples will be collected from the storage tank using disposable bailers as described in IT SOP 9.1. The sample collection bailer is lowered into the storage tank and slowly retrieved. A bottom emptying device is inserted into the bailer so that the water will flow smoothly and without agitation into the sample bottles. The sample water is transferred directly from the bailer into the appropriate sample containers. Sample containers for volatile and semivolatile compounds should be filled first.

4.5.5 Decontamination of sampling equipment

Decontamination of all reusable sampling equipment used during the project will be performed before initial use on site and between each use at distinct sample locations. Sample equipment decontamination procedures are described in IT SOP 6.1. Equipment will be washed using laboratory-grade detergent. Equipment will be rinsed first with potable water then with deionized water and followed by methanol. Hexane will be used for decontamination only if absolutely necessary to remove oily residues from sampling equipment.

4.6 Sample Handling and Analysis

Sample containers, preservatives and holding times will be observed as indicated in Tables 1 and 2. The sample chain of custody will be implemented in accordance with IT SOP 1.1. Samples will be packaged and placed in coolers with ice for shipment to the laboratory according to IT SOP 2.1.

Analytical method requirements for each sample type and analyte of interest are outlined in Tables 3A, 3B and 3C. These methods shall be performed in accordance with IT's Statement of Work, Navy RAC Analytical Services subcontract, Feb. 1995.

**TABLE 1
SAMPLE CONTAINERS AND PRESERVATIVES**

Analysis	Soil Containers per Sample¹	Water Containers per Sample²
VOC	8-oz. jar ³	3 x 40 mL vials ^{4,5}
SVOC	8-oz. jar ³	2 x 1 L ambers ⁶
Pesticides/PCBs	8-oz. jar ³	2 x 1 L ambers ⁶
Metals (dissolved)	8-oz. jar ³	1 x 1 L polyethylene ⁷
Metals (total)	8-oz. jar ³	1 x 1 L polyethylene ⁷
Cyanide	8-oz. jar ³	1 x 500 mL polyethylene ⁸
PCBs	8-oz. jar ³	2 x 1 L ambers ⁶
Organophosphorus Pesticides	8-oz. jar ³	2 x 1 L ambers ⁶
Chlorinated Herbicides	8-oz. jar ³	2 x 1 L ambers ⁶
Oil and Grease	8-oz. jar ³	2 x 1 L ambers ^{5,6}
TRPH	8-oz. jar ³	2 x 1 L ambers ^{6,9}
Organic Lead	8-oz. jar ³	1 x 500 mL polyethylene
Hexavalent Chromium	8-oz. jar ³	1 x 500 mL polyethylene
Dissolved Sulfide	NA	1 x 500 mL polyethylene
Major Anions	NA	1 x 500 mL polyethylene ¹⁰
TDS		1 x 1 L polyethylene ¹³
TSS	NA	1 x 1 L polyethylene ¹¹
Phenols	8-oz. jar ³	1 x 1 L ambers ⁹
Percent Moisture	8-oz. jar ³	NA
Flashpoint	8-oz. jar ³	1 x 1 L polyethylene ¹²
pH	8-oz. jar ³	1 x 1 L polyethylene ¹²
COD	NA	1 x 250 mL amber ⁶
Reactivity	8-oz. jar ³	1 x 1 L polyethylene ¹²
Corrosivity	8-oz. jar ³	1 x 1 L polyethylene ¹²
Asbestos	8-oz. jar	1 x 1 L polyethylene
Dioxin	8-oz. jar	2 x 1 L ambers ⁶
TCLP	8-oz. jar ³	NA
WET	8-oz. jar ³	NA

TABLE 1
SAMPLE CONTAINERS AND PRESERVATIVES
(Continued)

Notes:

oz. = Ounce
mL = Milliliter
L = Liter
NA = Not applicable

- 1 = Total soil sample containers shall be provided with a 15 percent additional allotment for field duplicates and matrix spikes
- 2 = Total water sample containers shall be provided with a 20 percent additional allotment for field duplicates and matrix spikes
- 3 = All glass jars shall have Teflon-lined lids; a maximum of two 8-ounce jars per sample shall be required; for certain projects, glass jars of different sizes may be requested
- 4 = All vials shall have caps with Teflon-lined septa
- 5 = Preserved with HCL
- 6 = All ambers shall have Teflon-lined caps
- 7 = Preserved with HNO₃
- 8 = Preserved with NaOH
- 9 = Preserved with H₂SO₄
- 10 = May share sample containers within marked group
- 11 = May share sample containers within marked group
- 12 = May share sample containers within marked group

**TABLE 2
REQUIRED HOLDING TIMES¹**

Analysis	Soil	Water
VOC	14 days	14 days
SVOC	14 days/40 days ²	7 days/40 days ²
Pesticides/PCBs	14 days/40 days ²	7 days/40 days ²
Metals	Hg-28 days, Others-6 months	Hg-28 days, Others-6 months
Cyanide	14 days	14 days
PCBs	14 days/40 days ²	7 days/40 days ²
Organophosphorus Pesticides	14 days/40 days ²	7 days/40 days ²
Chlorinated Herbicides	14 days/40 days ²	7 days/40 days ²
Oil & Grease	28 days	28 days
TRPH	28 days	28 days
Organic Lead	14 days/40 days ²	7 days/40 days ²
Hexavalent Chromium	3 days/24 hours ²	24 hours
Sulfide	NA	7 days
Major Anions (chloride, fluoride, sulfate)	NA	28 days
TDS	NA	7 days
TSS	NA	7 days
Phenols	NA	28 days
Percent Moisture	14 days	NA
Flashpoint/Ignitability	NA	48 hours
pH	2 days	2 hours
COD	NA	28 days
Reactivity	14 days	14 days
Corrosivity	2 days	2 hours
Asbestos	NA	NA
Dioxin	28 days/40 days ²	28 days/40 days ²
TCLP-Volatile	14/14 ²	NA
TCLP-Nonvolatile (Organic)	14/14/40 ³	NA
TCLP-Nonvolatile (Inorganic)	PHT/PHT/AHT ³	NA
WET	PHT/PHT/AHT ³	NA

TABLE 2
(Continued)

Notes:

- NA = Not applicable
- PHT = Preparation holding time from appropriate analytical method
- AHT = Analytical holding time from appropriate analytical method

- 1 = From the date of sample collection
- 2 = x days/y days = x days for sample extraction (or leaching)/y days for analysis of extracts (or leachate)
- 3 = a days/b days/c days = a days for leaching/b days for leachate/c days for analysis of extracts

TABLE 3A
ANALYTICAL METHOD REQUIREMENTS
for Hydropunch Groundwater Samples

Analysis	Method Reference
SVOC	8270
CAM 17 Metals (dissolved) ¹	6010/7000
TDS	160.1
PCBs	8080

Notes:

¹ = Filtration for dissolved metals to be performed at laboratory

TABLE 3B
ANALYTICAL METHOD REQUIREMENTS
for Solid Waste Characterization

Analysis	Method Reference
VOC	8240 ¹
SVOC	8270
Pesticides/PCBs	8080
CAM 17 Metals ²	6010/7000
TRPH	418.1
Percent Moisture	CLP SOW
Flashpoint/Ignitability	1010
Reactivity	Chapter 7, SW-846
Corrosivity (as pH)	9040/9045
TCLP	1311
WET	CCR T22

Notes:

- ¹ = Must include benzene, toluene, ethylbenzene and xylenes
- ² = STLC or TCLP metals may be required

TABLE 3C
ANALYTICAL METHOD REQUIREMENTS
for POTW Discharge
(Hydraulic control system effluent and wastewater samples)

Analysis	Method Reference
VOC	8240
SVOC	8270 ¹
Pesticides/PCBs	8080
CAM 17 Metals (total)	6010/7000
Cyanide (total)	9010
Chlorinated Herbicides	8150
Total Oil and Grease	5520B/9070
Hydrocarbon Oil and Grease	5520BF
Organic Lead	Appendix XI,CCR T22
Hexavalent Chromium	7196
Dissolved Sulfide	9030
Fluoride	300.0
TSS	160.2
Phenols	5530D
Flashpoint	1010
pH	9040/9045
COD	5220
Asbestos	40 CFR Part 763
Dioxin (2,3,7,8-TCDD)	8280

Notes:

¹ = Must include Kepone and Mirex

Attachment 1

Sanitary Sewer Discharge Requirements



City and County of San Francisco Department of Public Works

Division of Environmental Regulation and Management

Bayview Plaza
3801 Third St. Suite 600
San Francisco, CA 94124

April 11, 1994

REQUIREMENTS FOR BATCH WASTEWATER DISCHARGES

The information that must be included in applications for permits to carry out batch discharges of wastewater into the City and County of San Francisco's (City's) sewerage system is outlined below.

Such batch discharges may result from de-watering of construction sites, wells drilled to investigate/mitigate a suspected contaminated site, water used for cleaning/hydrostatic testing of pipes or tanks, or any other activity which generates wastewater, other than from routine commercial/industrial processes.

The discharges shall be subject to payment of sewer service charges in accordance with the provisions of applicable City laws.

The application for discharge shall be submitted no later than 45 days prior to the proposed commencement of the discharge and must include the following information:

- (1) The source (i.e. the activity and location at which the wastewater is generated);
- (2) The total estimated volume of proposed discharge;
- (3) The proposed discharge location (including location of side sewer, street manhole(s) or storm drain(s) proposed for disposal use); and,
- (4) A copy of applicable analytical results (see below) from a representative sample (i.e. a sample portion of the wastewater that is as nearly identical in content and consistency as possible to that in the larger body of wastewater being sampled).

NOTE: All sampling and analysis shall be performed in accordance with techniques and procedures approved by the U.S. Environmental Protection Agency (EPA) and amendments thereto, or otherwise approved by the ELA.

These procedures must be performed by a laboratory approved to do so by the Environmental Laboratory Accreditation Program (ELAP), State of California, Department of Health Services, Berkeley, California. ELAP can be reached at (510) 540-2800.]

The following applicable analytical results, as indicated in Table 1A below, are required from all wastewaters from all sources.

**Table 1A. General Analytical Requirements For Batch Wastewater Discharges
- ALL Sources**

<u>Pollutant/Pollutant Property</u>	<u>Analytical Methodology¹ / Test Methods²</u>	<u>Limit³</u> (mg/L)
pH (pH units)	4500-H ⁺ / 9040	6.0 min.; 9.5 max.
Dissolved sulfides	4500-S ²⁻ / 9030A	0.5
Hydrocarbon Oil and Grease	5520F / ----	100
Total Recoverable Oil and Grease	5520B / 9070	300
Total suspended solids	2540D / ----	---
Chemical oxygen demand	5220 / ----	---

¹ Standards Methods For The Examination Of Water And Wastewater, Greenberg, Arnold E., et al., American Public Health Association, et al., Washington, D.C., 1992, 18th ed., as amended;

² Test Methods For Evaluating Solid Waste, U.S. Environmental Protection Agency, November 1986 (Rev. July 1992), 3rd ed., SW-846, as amended.

³ Chapter X (Public Works Code) of Part II of the San Francisco Municipal Code, Article 4.1, Section 123.

Table 1A. (Cont'd)

<u>Pollutant/Pollutant Property</u>	<u>Analytical Methodology / Test Methods</u>	<u>Limit⁴ (mg/L)</u>
Arsenic (Total)	3113, 3114, 3120 / 7060, 7061A	4.0
Cadmium (Total)	3500-Cd A,B,C / 6010A, 7130, 7131	0.5
Chromium (Total)	3500-Cr A,B,C / 6010A, 7190, 7191	5.0
Copper (Total)	3500-Cu A,B,C / 6010A, 7210, 7211	4.0
Lead (Total)	3500-Pb A,B,C / 6010A, 7420, 7421	1.5
Mercury (Total)	3500-Hg A,B / 7470	0.05
Nickel (Total)	3500-Ni A,B,C / 6010A, 7520	2.0
Silver (Total)	3500-Ag A,B,C / 6010A, 7760A, 7761	0.6
Zinc (Total)	3500-Zn A,B,C / 6010A, 7950, 7951	7.0
Phenols	5530D / —	23.0
Cyanide (Total)	4500-CN ⁻ D,E / 9010A, 9012	1.0

⁴ City and County of San Francisco, Department of Public Works, Order No. 158170.

In addition to the analyses listed in Table 1A, above, wastewaters that are suspected of petroleum contamination because of location and site history (e.g. service stations, garages, automotive repair/wrecking areas, fuel oil storage areas, etc.) OR wastewaters that are suspected of contamination from hazardous waste sites are also subject to the specified analyses, as delineated in Table 1B.

[NOTE: All fill areas of the City and County of San Francisco are suspected of hazardous waste contamination. Therefore permit applications for wastewater discharges from such locations also require the submittal of the specified analyses, as delineated in Table 1B.

For each "Pollutant/Pollutant Parameter" or "Contaminant" or "Substance" listed in the tables, the most stringent "Limit" or "Regulatory Level" or "Soluble/Total Threshold Limit Concentration" must be satisfied.

Applications for permits to perform batch wastewater discharges should be addressed as follows:

Mr. Tommy Lee
Section Engineer
City and County of San Francisco
Department of Public Works
Bureau of Environmental Regulation
and Management
Bayview Plaza
3801 - 3rd Street, Suite 600
San Francisco, CA 94124

If you have any questions or wish further explanation, you may call Tommy Lee at (415) 695-7321.

**Table 1B. Additional Analytical Requirements For Batch Wastewater Discharges
- Sources Suspected of Petroleum or Hazardous Waste Contamination**

<u>Contaminant</u>	<u>Analytical Test Methods¹</u>	<u>Regulatory Level⁶ (mg/L)</u>
Flashpoint (°C, °F)	1010	≥ 60°C (140°F)
Benzene	8020, 8240	0.5
Carbon Tetrachloride	8010, 8240	0.5
Chlordane	8250 or 8270	0.03
Chlorobenzene	8020, 8240	100.0
Chloroform	8010, 8240	6.0
o-Cresol	8250 or 8270	200.0
m-Cresol	8250 or 8270	200.0
p-Cresol	8250 or 8270	200.0
Cresol	8250 or 8270	200.0

¹ Test Methods For Evaluating Solid Waste, U.S. Environmental Protection Agency, November 1986 (Rev. July 1992), 3rd ed., SW-846, as amended.

⁶ Title 22, California Code of Regulations, Section 66261.24(a)(1)(B).

Table 1B. (Cont'd)

<u>Contaminant</u>	<u>Analytical Test Methods</u>	<u>Regulatory Level (mg/L)</u>
2,4-D	8250 or 8270	10.0
1,4-Dichlorobenzene	8010, 8250 or 8270	7.5
1,2-Dichloroethane	8010, 8240	0.5
1,1-Dichloroethylene	8010, 8240	0.7
2,4-Dinitrotoluene	8250 or 8270	0.13
Endrin	8250 or 8270	0.02
Heptachlor (and its epoxide)	8250 or 8270	0.008
Hexachlorobenzene	8250 or 8270	0.13
Hexachlorobutadiene	8250 or 8270	0.5
Hexachloroethane	8010, 8240	3.0
Lindane	8250 or 8270	0.4
Methoxychlor	8250 or 8270	10.0
Methyl ethyl ketone	8240	200.0

Table 1B. (Cont'd)

<u>Contaminant</u>	<u>Analytical Test Methods</u>	<u>Regulatory Level (mg/L)</u>
Nitrobenzene	8250 or 8270	2.0
Pentachlorophenol	8250 or 8270	100.0
Pyridine	8250 or 8270	5.0
Selenium	6010A, 7740, 7741	1.0
Tetrachloroethylene	8010, 8240	0.7
Toxaphene	8250 or 8270	0.5
Trichloroethylene	8010, 8240	0.5
2,4,5-Trichlorophenol	8250 or 8270	400.0
2,4,6-Trichlorophenol	8250 or 8270	2.0
2,4,5-TP (Silvex)	8250 or 8270	1.0
Vinyl chloride	8010, 8240	0.2

Table 1B. (Cont'd)

<u>Substance</u>	<u>Analytical Test Methods</u>	<u>STLC⁷</u> (mg/L)	<u>TTLC⁸</u> Wet-Weight (mg/kg)
Antimony and/or antimony compounds	6010A, 7040, 7041	15	500
Arsenic and/or arsenic compounds	6010A, 7060, 7061	5.0	500
Asbestos	40 CFR Part 763 ⁹	---	1.0 (as percent)
Barium and/or barium compounds (excluding barite)	6010A, 7080, 7081	100	10,000 ¹⁰
Beryllium and/or beryllium compounds	6010A, 7090, 7091	0.75	75
Cadmium and/or cadmium compounds	6010A, 7130, 7131	1.0	100
Chromium (VI) compounds	7198, 7195, 7196, 7197	5	500
Chromium and/or chromium (III) compounds	6010A, 7190, 7191	5	2,500

⁷ Soluble Threshold Limit Concentration. Title 22, California Code of Regulations, Section 66261.24(a)(2)(A).

⁸ Total Threshold Limit Concentration. Title 22, California Code of Regulations, Section 66261.24(a)(2)(A).

⁹ Interim Method for the Determination of Asbestos in Bulk Insulation Samples, 40 CFR Part 763, Subpart F, Appendix A.

¹⁰ Excluding barium sulfate.

Table 1B. (Cont'd)

<u>Substance</u>	<u>Analytical Test Methods</u>	<u>STLC</u> (mg/L)	<u>TTC</u> Wet-Weight (mg/kg)
Cobalt and/or cobalt compounds	6010A	80	8,000
Copper and/or copper compounds	6010A, 7210, 7211	25	2,500
Fluoride salts	300.0, 340.1, 340.2, 340.3 ¹¹	180	18,000
Lead and/or lead compounds	6010A, 7420, 7471	5.0	1,000
Mercury and/or mercury compounds	7470, 7471	0.2	20
Molybdenum and/or molybdenum compounds	6010A	350	3,500
Nickel and/or nickel compounds	6010A, 7520, 7521	20	2,000
Selenium and/or selenium compounds	6010A, 7740, 7741	1.0	100
Silver and/or silver compounds	6010A, 7760, 7761	5	500
Thallium and/or thallium compounds	6010A, 7840, 7841	7.0	700
Vanadium and/or vanadium compounds	6010A, 7910, 7911	24	2,400
Zinc and/or zinc compounds	6010A, 7950, 7951	250	5,000

¹¹ Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, U.S. Environmental Protection Agency, 1979.

Table 1B. (Cont'd)

<u>Substance</u>	<u>Analytical Test Methods</u>	<u>STLC¹²</u> (mg/L)	<u>TTL¹³</u> Wet-Weight (mg/kg)
Aldrin	8080, 8250 or 8270	0.14	1.4
Chlordane	8080, 8250 or 8270	0.25	2.5
DDT, DDE, DDD	8080, 8250 or 8270	0.1	1.0
2,4-Dichlorophenoxyacetic acid	8150	10	100
Dieldrin	8080, 8250 or 8270	0.8	8.0
Dioxin (2,3,7,8-TCDD)	8280	0.001	0.01
Endrin	8080, 8250 or 8270	0.02	0.2
Heptachlor	8080, 8250 or 8270	0.47	4.7
Keponc	Section 5, A, (5), (a) ¹³	2.1	21

¹² Title 22, California Code of Regulations, Section 66261.24(a)(2)(B).

¹³ Manual of Analytical Methods for the Analysis of Pesticides in Humans and Environmental Samples, EPA-600/8-80-038, U.S. Environmental Protection Agency, 1980.

Table 1B. (Cont'd)

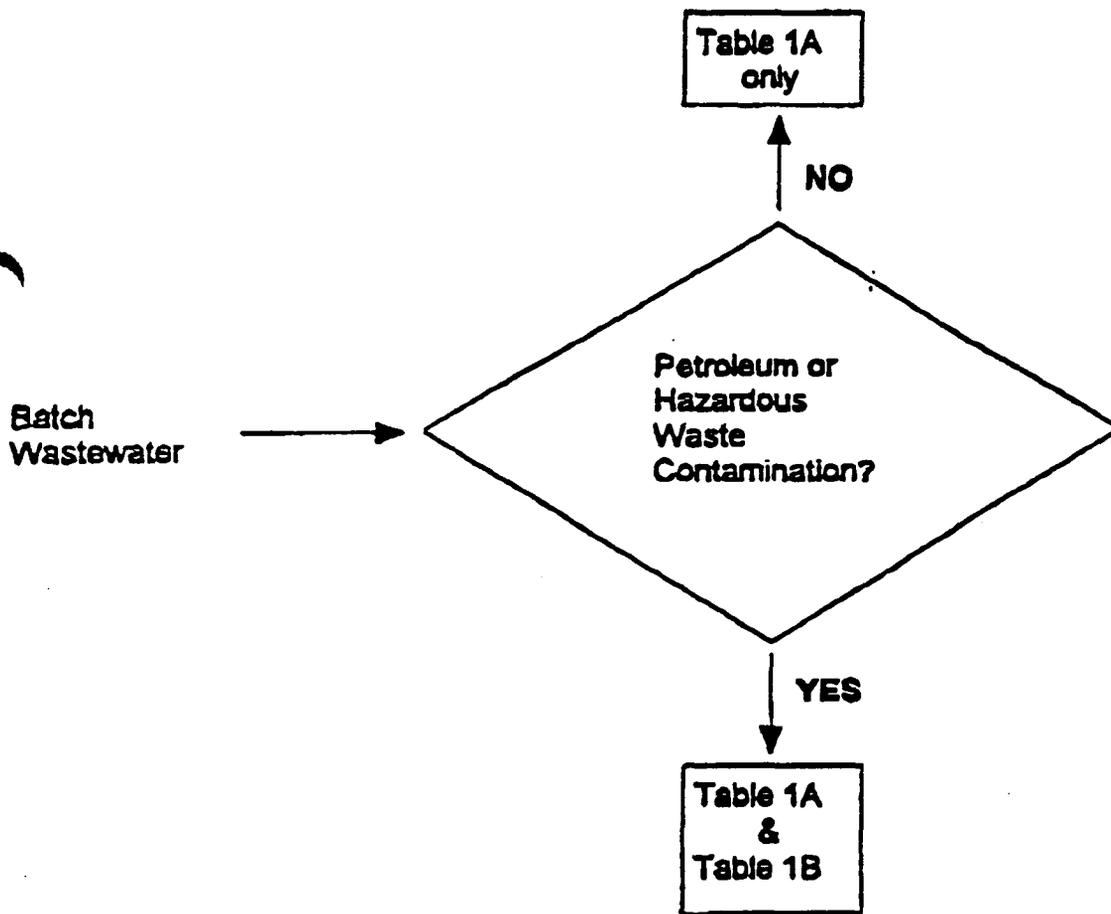
<u>Substance</u>	<u>Analytical Test Methods</u>	<u>STLC</u> (mg/L)	<u>TTLIC</u> Wet-Weight (mg/kg)
Lead compounds, organic	Appendix XI ¹⁴	---	13
Lindane	8080, 8250 or 8270	0.4	4.0
Methoxychlor	8080, 8250 or 8270	10	100
Mirex	8080, 8250 or 8270	2.1	21
Pentachlorophenol	8040, 8250 or 8270	1.7	17
Polychlorinated biphenyls (PCBs)	8080, 8250 or 8270	5.0	50
Toxaphene	8080, 8250 or 8270	0.5	5
Trichloroethylene	8010, 8240	204	2,040
2,4,5-Trichlorophenoxypropionic acid	8150	1.0	10

¹⁴ Title 22, California Code of Regulations, Section 66261.126, Appendix XI.

11 0494

BATCH WASTEWATER DISCHARGES

Required Analytical Results





**City and County of San Francisco
Department of Public Works
Bureau of Environmental Regulation and Management**

BATCH WASTEWATER PERMIT APPLICATION

1. Name of business generating wastewater :

2. Mailing address of business generating wastewater :

3. Activity resulting in wastewater generation :

4. Location of wastewater generation :

5. Total estimated volume (or volume flow rate) of wastewater discharge :

6. Estimated duration of wastewater discharge :

7. Proposed sewer opening for discharge :

Side Sewer; Street Sewer; Catch Basin; Manhole

8. Location of sewer opening :

9. Will the wastewater be subjected to any treatment before discharge ?

YES; NO

10. If so, describe the method(s) of treatment :

11. Attach a copy of applicable analytical results from a representative sample of the wastewater. (See Tables 1A & 1B in "Requirements For Batch Wastewater Discharges")

12. Certification Statement :

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature¹: _____ Date: _____

*Analysis when 20y jms 1LA 04.0
1st arch
full date prep on 3 day, full prep in 7 days*

¹ To be signed by an authorized representative of the discharger. An authorized representative may be (a) a principal executive officer or official; (b) a general partner or proprietor; or (c) a duly authorized representative of the individual designated in (a) or (b).