



Linda S. Adams  
Acting Agency  
Secretary

# California Regional Water Quality Control Board

## Los Angeles Region



Arnold Schwarzenegger  
Governor

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

320 W. 4th Street, Suite 200, Los Angeles, California 90013  
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

July 14, 2006

Mr. Steve Granade, Environmental Engineer  
Naval Base Ventura County  
Environmental Division, Code N45V  
311 Main Road, Suite #1  
Point Mugu, CA 93042-5000

**GENERAL WASTE DISCHARGE REQUIREMENTS (ORDER NO. R4-2005-0030, SERIES NO. 047, CI NO. 9099) LACTATE AND SOY OIL INJECTION PILOT TEST TO EVALUATE ENHANCED NATURAL ATTENUATION OF VOLATILE ORGANIC COMPOUNDS (VOCs) IN GROUNDWATER – INSTALLATION RESTORATION PROGRAM SITE 24 (FORMER UST SITES 23 AND 55), NAVAL BASE VENTURA COUNTY, POINT MUGU, CALIFORNIA (SLIC NO. 282)**

Dear Mr. Granade:

Los Angeles Regional Water Quality Control Board (Regional Board) staff have completed our review of your application for coverage under General Waste Discharge Requirements (WDR) to inject a solution of site groundwater mixed with emulsified soy oil and lactic acid into the shallow aquifer underlying the site to enhance naturally occurring bioremediation of volatile organic compounds (VOCs). We have determined that the proposed discharge meets the conditions specified in Regional Board Order No. R4-2005-0030, "*General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites,*" adopted by this Regional Board on May 5, 2005. Refer to the attached Fact Sheet.

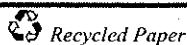
The primary contaminants in groundwater at the site are 1,2-dichloroethene, 1,1-dichloroethene, 1,1,2-trichloroethane, 1,1-dichloroethane, trichloroethene, 1,2-dichloroethane, tetrachloroethene, and vinyl chloride.

You may begin to inject a maximum of 75,000 gallons of an aqueous solution containing approximately 67,000 lbs of emulsified soy oil and 52,500 pounds of lactic acid into the shallow aquifer between 4 and 35 feet below ground surface (bgs). The injection will occur into the dissolved VOCs plume, at Naval Base Ventura County, Point Mugu Naval Air Station, Installation Restoration Site 24, Former UST Sites 23 and 55, at approximately Latitude: N34.115136", Longitude: W-119.118451".

Enclosed are your Waste Discharge Requirements, consisting of Regional Board Order No. R4-2005-0030 (Series 047) and Monitoring and Reporting Program No. CI-9099. Please note that the discharge limits in Attachment A [DWR Basin No. 4-4 (Oxnard Plain – Unconfined and Perched Aquifers)] of this Order No. R4-2005-0030 are applicable to your discharge.

The "Monitoring and Reporting Program" requires you to implement the monitoring program on the effective date of this enrollment (July 14, 2006) under Regional Board Order No. R4-2005-0030. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit.

**California Environmental Protection Agency**



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mr. Steve Granade  
Naval Base Ventura County

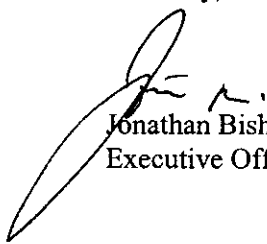
- 2 -

July 14, 2006

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to "Compliance File No. CI-9099", which will assure that the reports are directed to the appropriate file and staff. Also, please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

**If you have any questions, please contact Mr. Peter Raftery at (213) 576-6724.**

Sincerely,



Jonathan Bishop  
Executive Officer

Enclosures:

- 1) Fact Sheet
- 2) General Waste Discharge Requirements, Order No. R4-2005-0030 and Standard Provisions
- 3) Monitoring and Reporting Program, CI No. 9099

cc: Peter Chen, Department of Toxic Substances Control, Cypress  
Christine Bucklin, Department of Toxic Substances Control, Glendale  
Michael Lauffer, State Water Resources Control Board, Office of Chief Counsel  
Tim Garvey, TN & A, Ventura  
Kurt Souza, State Department of Health Services, Drinking Water Field Operations Branch,  
Carpinteria  
Jessie Altstatt, Santa Barbara Channel Keeper  
Barbara Carey, California Coastal Commission, South Central Coast Office  
Vicki Clark, Environmental Defense Center  
Allison Detmer, California Coastal Commission, Energy and Ocean Resources Division  
Mary Meyer, California Department of Fish & Game  
Heal the Bay  
Port Hueneme Water Agency  
Doug Beach, Ventura County Environmental Health  
Glen Luscomb, Ventura County Public Works

S:\SLJCP\JRP\MUGU\mugu solvent tanks IR site 24\2006 wdr\mugu site 24 general wdr cvr ltr.doc

***California Environmental Protection Agency***



Recycled Paper

*Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.*

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION  
320 West 4<sup>th</sup> Street, Suite 200, Los Angeles, California 90013**

**FACT SHEET  
WASTE DISCHARGE REQUIREMENTS  
FOR  
NAVAL BASE VENTURA COUNTY  
NAVAL AIR STATION, POINT MUGU  
INSTALLATION RESTORATION SITE 24 (BUILDING 352 & 356)**

**LACTATE AND SOY OIL INJECTION PILOT TEST**

**ORDER NO. R4-2005-0030 (SERIES NO. 047)  
CI-9099, FILE# 98-017**

**FACILITY ADDRESS**

Buildings 352 and 356  
352 and 356 11<sup>th</sup> Street  
Point Mugu, California

**FACILITY MAILING ADDRESS**

Mr. Steve Granade, Environmental Engineer  
Naval Base Ventura County  
Environmental Division, Code N45V  
311 Main Road, Suite 1  
Point Mugu, CA 93042-5000

**PROJECT DESCRIPTION**

The address for this remediation site is between 356 and 352 11<sup>th</sup> Street, Point Mugu, Latitude: N34.115136°, Longitude: W-119.118451° (figures 1, 2, and 3). Naval activities began at the Point Mugu facility in 1943. Installation Restoration (IR) Site 24 at Naval Air Station (NAS) Point Mugu consists of two former Underground Storage Tank (UST) sites, i.e., UST Sites 23 and 55. In 1970, a single 550-gallon concrete UST was installed at former UST Site 23 and was used as an oil/water separator. Former UST Site 55, located east of former UST Site 23, contained a single 500-gallon steel UST. From the late 1950s to the early 1960s this tank was used to store waste etching solution and washing fluids from circuit board etching and cleaning in Building 352. In 1989, following the UST removals, site investigation (SI) was conducted at the former UST Sites. Volatile organic compounds (VOCs) such as trichloroethene (TCE), tetrachloroethene (PCE), 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethene (1,2-DCE), vinyl chloride (VC), 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), benzene, toluene, ethylbenzene, and xylenes were detected in groundwater and soil samples collected at former UST Site 23 (OHM, 1998). A SI conducted at former UST Site 55 resulted in detection of VOCs such as PCE, TCE, 1,2-DCE, VC, 1,1-DCE, 1,1-DCA, 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2-TCA, chloroform, carbon tetrachloride, ethylbenzene, and xylenes in the groundwater and soil samples. Groundwater occurs approximately 4 feet to 8 feet below ground surface (bgs) at the site, and groundwater flows toward the northeast. A mixture of lactate and soy oil will be injected into the contaminated groundwater to enhance naturally occurring anaerobic remediation of the dissolved contaminants.

**VOLUME AND DESCRIPTION OF INJECTION**

The U.S. Navy, is planning to inject approximately 73,000 gallons of an aqueous solution containing approximately 67,000 pounds of emulsified soy oil and 52,500 pounds of lactic acid into the shallow aquifer between 4 feet and 35 feet below ground surface (bgs). There will be approximately 63 temporary injection points, eight injection wells, and one extraction well. At the UST23A and UST55B areas the temporary injection points will utilize a GeoProbe system, and will target contamination. At the UST23B area the injection wells and extraction well will be used. The depths of injection are designed to target

the contaminant plume. At some injection points, injection will occur at the 4 foot to 12 foot interval, and others will only have injection from 20 to 35 feet bgs. The solution is expected to enhance the natural degradation of the volatile organic contaminants. At the UST23B treatment area, the substrate mix will be delivered via subsurface injection into eight (8) injection wells (IW-2 through IW-9). Injection locations for the various areas are shown on figures 4, 5, and 6.

The injection rate will be determined from information obtained in the field during initial injection. The injection rates will be high enough to spread the material being injected but low enough to limit fluid mounding near the injection areas. The duration of injection will be a function of injection rate, which will not exceed 8 gallons per minute (gpm). Each injection point is expected to receive approximately 107 gallons of material within the UST23A area and 180 gallons at the UST55B area.

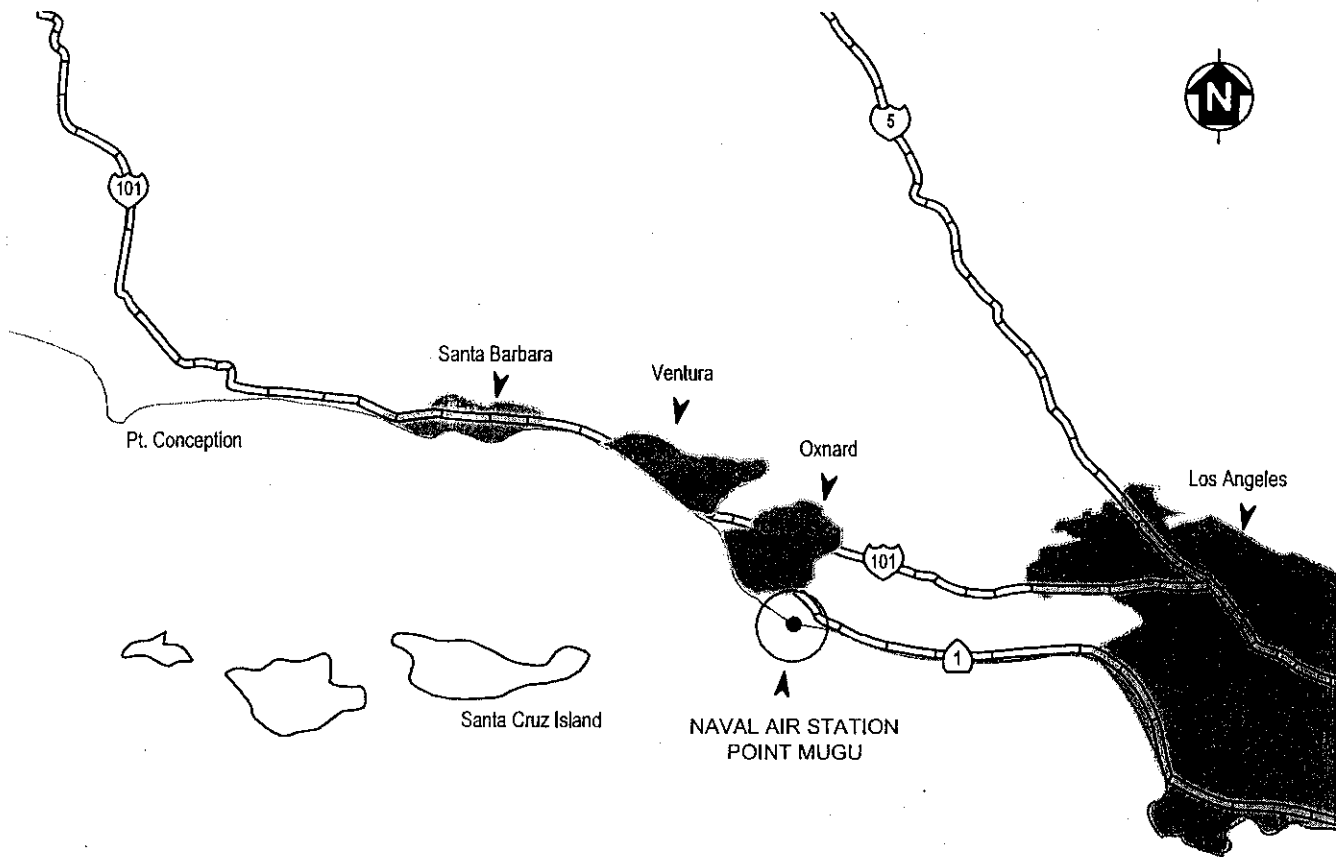
The extraction well in the UST23B area is expected to operate continuously at between 2 and 8 gallons per minute. This is intended to help distribute the amendments. The extracted groundwater will be filtered, carbon scrubbed, and discharged to the existing sanitary sewer under permit from the local treatment works.

Additional information on the procedures, methods, and evaluation plan are included in the *General Waste Discharge Requirement Permit Application Installation Restoration Site 24 (Former UST Sites 23 and 55), Naval Air Station, Point Mugu, California*, dated April 2006.

The injection of emulsified soy oil and lactic acid into the groundwater are discharges of waste as defined in Section 13260 of the California Water Code. However, the discharges are expected to result in significant reductions in contaminant concentrations in the site's polluted groundwater.

The Water Quality Control Plan for the Los Angeles Region designates the groundwater in the Oxnard Plain Basin for beneficial uses of municipal and agricultural supply, with the potential for use as industrial supply.

The permitted discharge is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16 (Anti-degradation Policy). The discharge may result in some localized exceedences of background concentrations of constituents such as sodium, sulfate, and magnesium, although these are chemicals that naturally occur at elevated concentrations in the seawater near the site. These exceedences are not anticipated to result in any long-term groundwater degradation. The Navy submitted a contingency plan as part of the work plan for this project to the Regional Board to counter any deleterious results of the pilot test. The contingency plan includes options to control dissolved materials using existing groundwater extraction wells, and/or to enhance aerobic or anaerobic degradation of contaminants using one or more types of enhanced in-situ bioremediation.



PACIFIC OCEAN

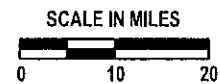

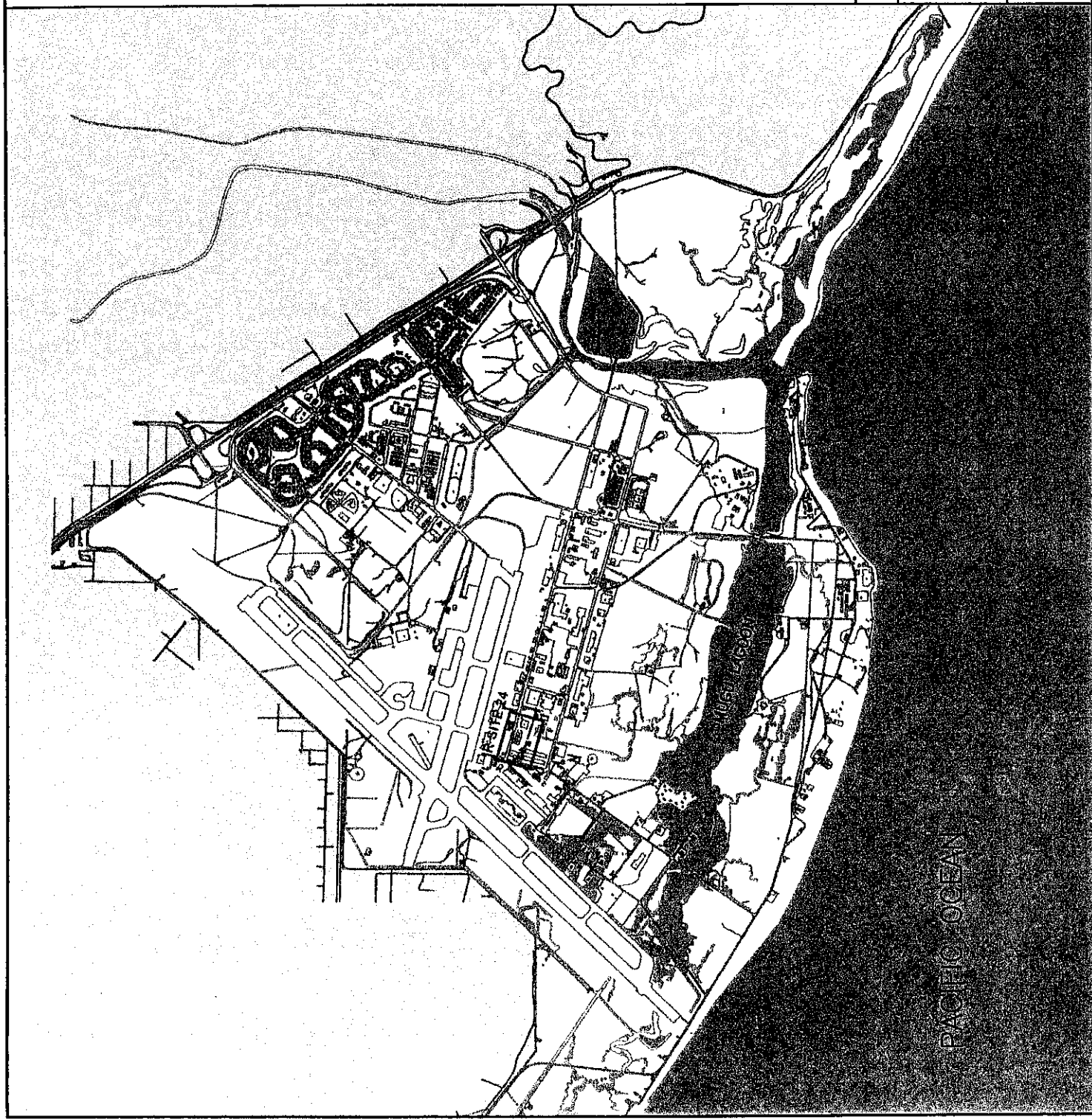


FIGURE 1






**LOCATION MAP OF  
NAVAL AIR STATION  
NAVAL BASE VENTURA COUNTY  
POINT MUGU, CALIFORNIA**

**LEGEND**


 SHADED AREA REPRESENTS  
 MAJOR POPULATION CENTERS OF  
 SANTA BARBARA, VENTURA, OXNARD,  
 AND LOS ANGELES



**LEGEND**

- 
 INSTALLATION RESTORATION SITE 24
- 
 ROAD
- 
 DIRT ROAD
- 
 STRUCTURES, BUILDINGS
- 
 WATER



0 2000 4000  
 APPROXIMATE SCALE IN FEET

DATE: 3/25/05  
 PREPARED FOR:  
 U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA

LOCATION MAP OF PROJECT SITE  
 IR SITE 24  
 (FORMER UST 23 AND 55)

NAS POINT MUGU, CALIFORNIA  
 U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA

**TNTN & Associates, Inc.**  
 Engineering and Science

FIGURE 2

**LEGEND**

- ◆ BASELINE MONITORING WELL LOCATIONS  
23W07A
- ◆ MONITORING WELL LOCATIONS, WHICH WERE NOT INCLUDED IN THE BASELINE SAMPLING EVENT  
23W09A
- APPARENT GROUNDWATER FLOW DIRECTION
- 4.29 GROUNDWATER ELEVATION (FT)
- 4.0 GROUNDWATER ELEVATION CONTOUR

**NOTES:**

- 1) GROUNDWATER DATA COLLECTED ON 8/19/2005
- 2) \* INDICATES ELEVATION NOT CONTOURED



0 80 160

APPROXIMATE SCALE IN FEET

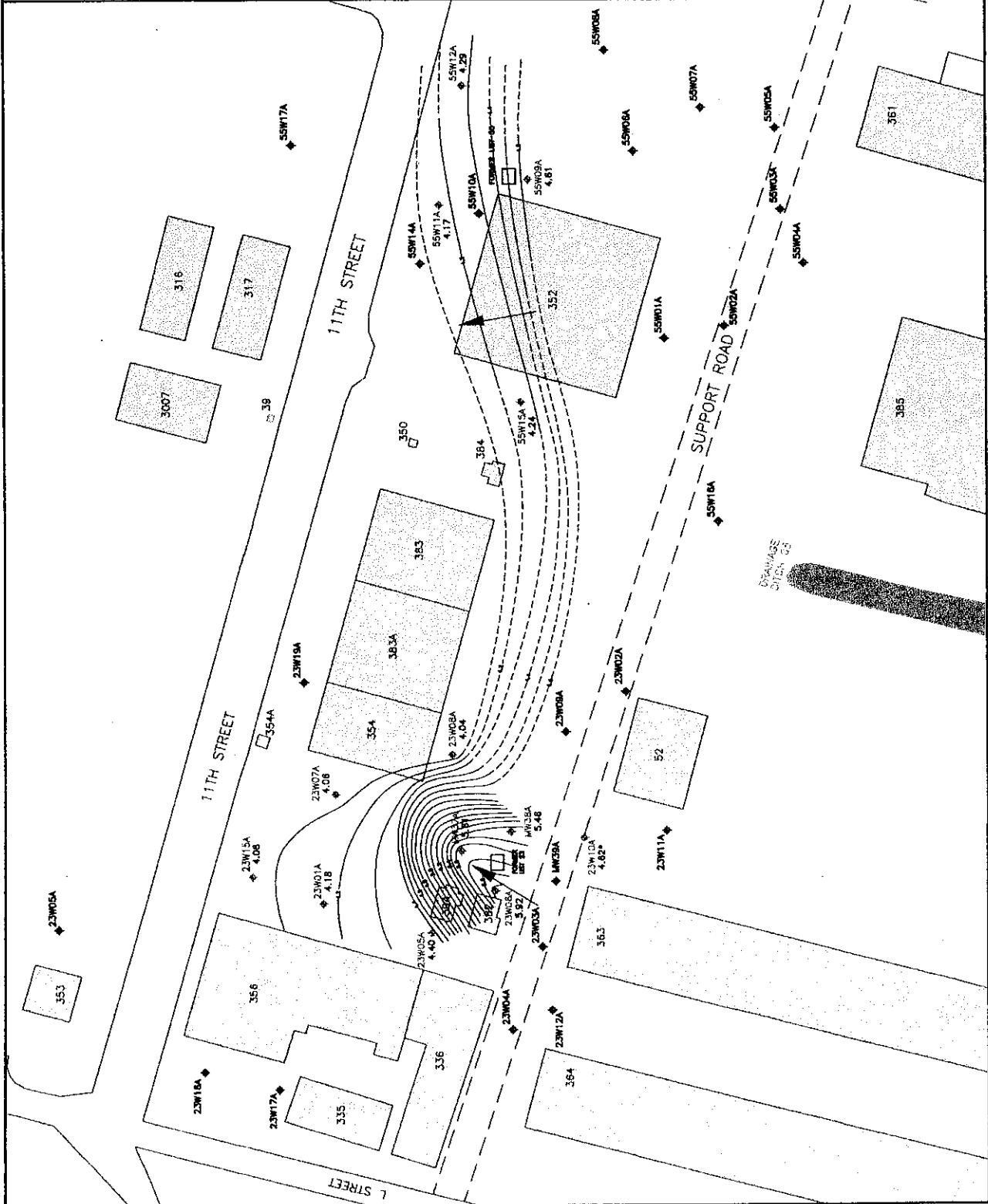
PREPARED: 9/07/2005

**GROUNDWATER GRADIENT MAP**  
IR SITE 24 (FORMER UST 23 AND 55)  
ZONE A - AUGUST 2005

NAS POINT MUGU, CALIFORNIA  
U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA

**TNTI & Associates, Inc.**  
**& A** Engineering and Science

FIGURE  
3



**LEGEND**

- ◆ 23W07A  
BASELINE MONITORING WELL LOCATIONS; PRESENTED ANALYTICAL RESULTS WERE GENERATED DURING REMEDIAL SAMPLING EVENT CONDUCTED ON 9/21/05 THROUGH 9/23/05. EXCEEDANCES OF REMEDIAL ACTION OBJECTIVES, I.E. 1,880 µg/L FOR TCE AND 3.0 µg/L FOR VC, ARE IN RED. FOR DETAILS REFER TO SECTION 2.5 OF THE DRAFT WORK PLAN (INBA, 2006).
- ◆ 23W08A  
REMEDIAL PROGRESS MONITORING WELL LOCATIONS. PRESENTED ANALYTICAL RESULTS WERE GENERATED DURING BASELINE SAMPLING EVENT CONDUCTED ON 5/31/05 THROUGH 6/3/05. EXCEEDANCES OF REMEDIAL ACTION OBJECTIVES, I.E. 1,880 µg/L FOR TCE AND 13 µg/L FOR VC, ARE IN RED. FOR DETAILS REFER TO SECTION 2.5 OF THE DRAFT WORK PLAN (INBA, 2006).
- ◆ 23W08A  
LOCATIONS OF MONITORING WELLS NOT INCLUDED IN THE GROUNDWATER MONITORING PROGRAM

53/40.5  
DECEMBER 2004 GROUNDWATER RESULTS FOR TOTAL-1,2-DICHLOROETHENE (IN BLACK) AND VINYL CHLORIDE (IN GREEN)



PROPOSED UST23A TREATMENT AREA; A TOTAL OF 12 INJECTION POINTS ARE PROPOSED.



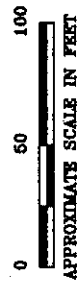
PROPOSED LOCATIONS FOR DIRECT PUSH INJECTION POINTS WITHIN UST23A AREA



RANGE OF PREVALENT GROUNDWATER GRADIENT DIRECTIONS

**NOTES:**

1. DETAILS REGARDING SUBSTRATE INJECTION PROGRAM CAN BE FOUND IN SECTION 4.0 OF THE DRAFT WORK PLAN (INBA, 2006).
2. DETAILS REGARDING SAMPLING PROGRAM FOR MONITORING REMEDIAL PROGRESS CAN BE FOUND IN SECTION 3.0 OF THE DRAFT WORK PLAN (INBA, 2006).



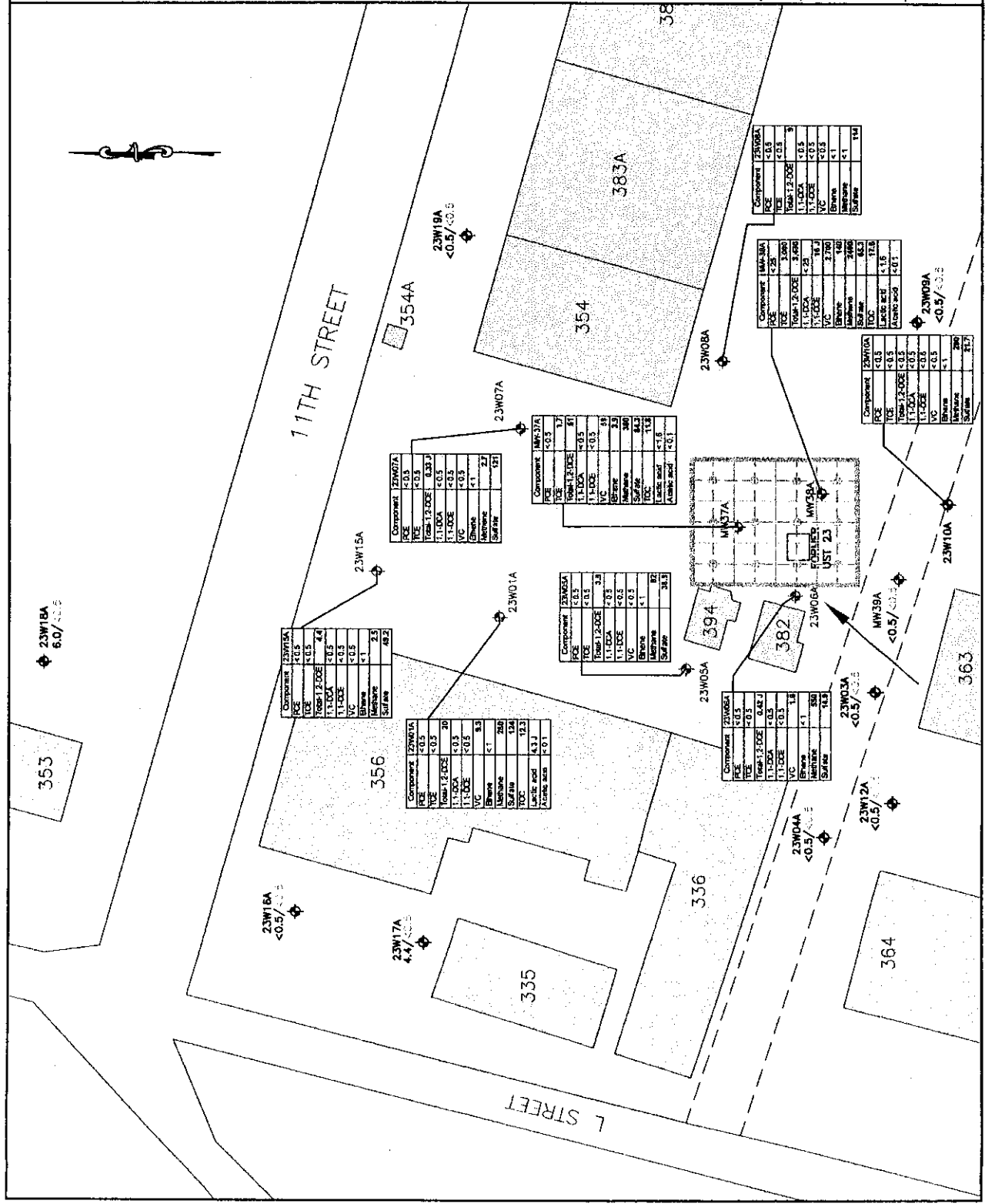
PREPARED: 9/24/2005 REVISED: ON 10/13/2005

**BASELINE GROUNDWATER MONITORING RESULTS AND RISB CONCEPTUAL DESIGN FOR UST 23 ZONE A**

M/S POINT MUJQ, CALIFORNIA  
U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA

**TNT N & Associates, Inc.**  
**& A Engineering and Science**

FIGURE 4





**LEGEND**

23W058  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

23W188  
 23W188  
 23W188  
 23W188

BASELINE MONITORING WELL LOCATIONS PRESENTED ANALYTICAL RESULTS WERE GENERATED DURING PROGRESS MONITORING EVENT CONDUCTED ON 5/31/05 THROUGH 6/3/05 EXCEEDANCES OF FEDERAL ACTION LEVELS (FAL) FOR VC, PCE, TCE, AND TOC ARE INDICATED IN RED. FOR VC, PCE, TCE, AND TOC, DETAILS REFER TO SECTION 2.5 OF THE DRAFT WORK PLAN (TNA, 2006).

REMEDIAL PROGRESS MONITORING WELL LOCATIONS PRESENTED ANALYTICAL RESULTS WERE GENERATED DURING PROGRESS MONITORING EVENT CONDUCTED ON 5/31/05 THROUGH 6/3/05 EXCEEDANCES OF FEDERAL ACTION LEVELS (FAL) FOR VC, PCE, TCE, AND TOC ARE INDICATED IN RED. FOR VC, PCE, TCE, AND TOC, DETAILS REFER TO SECTION 2.5 OF THE DRAFT WORK PLAN (TNA, 2006).

JULY 2002 DRIVING LOCATIONS THE FORMER UST 23 ZONE B; METROPOLITAN REGIONAL WATER RESULTS FOR VMTL CHLORIDE

LOCATIONS OF MONITORING WELLS FOR THE GROUNDWATER MONITORING PROGRAM

PROPOSED UST23B TREATMENT AREA

PROPOSED EXTRACTION WELL LOCATION (TO BE INSTALLED)

PROPOSED INJECTION WELL LOCATIONS (INJECTION TO BE INSTALLED)

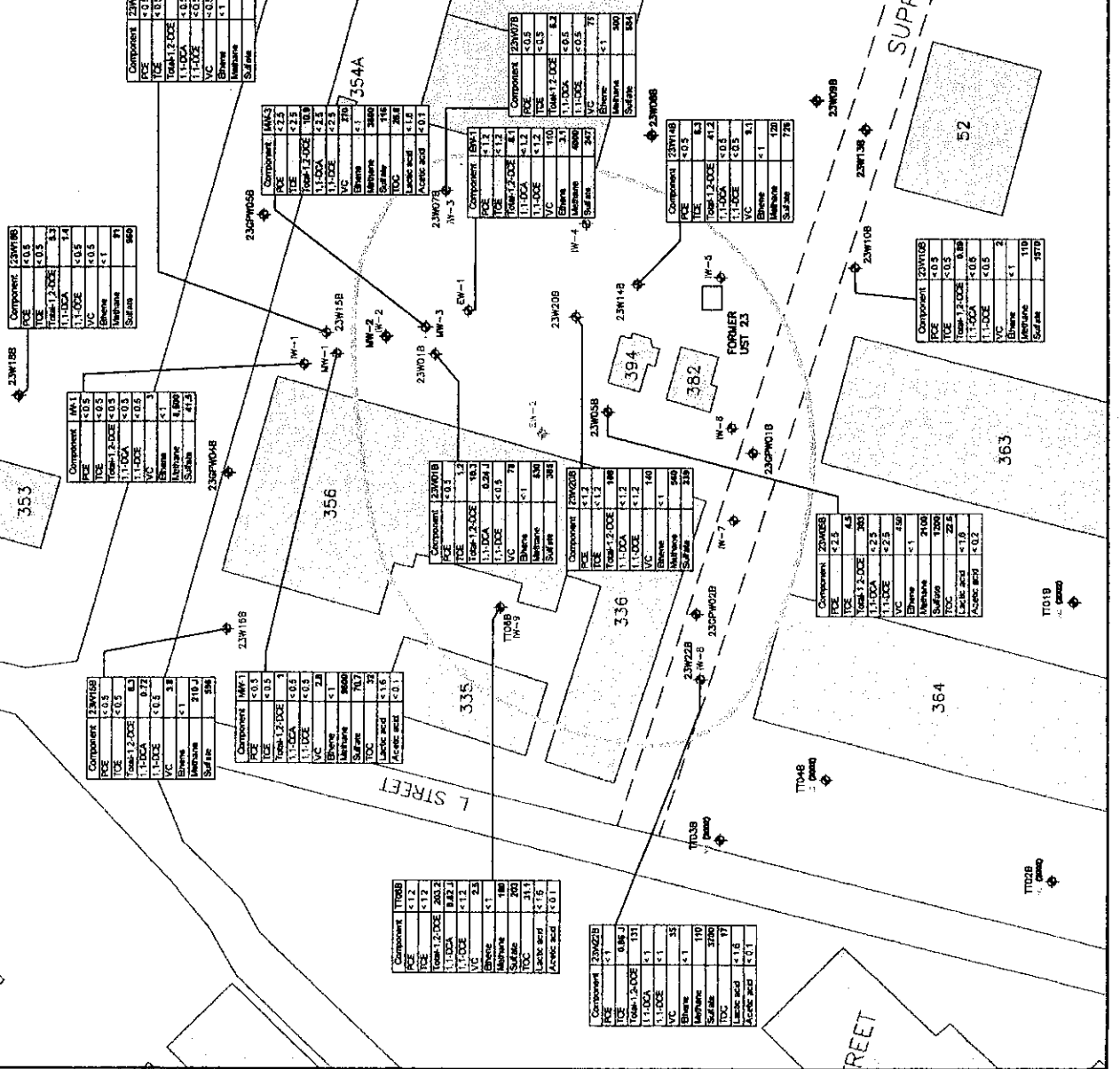
RANGE OF PREVALENT GROUNDWATER GRADIENT DIRECTIONS

NOTES:  
 1. DETAILS REGARDING SUBSTRATE INJECTION PROGRAM CAN BE FOUND IN SECTION 4.0 OF THE DRAFT WORK PLAN (TNA, 2006).  
 2. DETAILS REGARDING SAMPLING PROGRAM FOR MONITORING REMEDIAL PROGRESS CAN BE FOUND IN SECTION 5.0 OF THE DRAFT WORK PLAN (TNA, 2006).

PREPARED: 8/24/2005 REVISED: 10/13/2005

BASELINE GROUNDWATER MONITORING RESULTS AND EISB CONCEPTUAL DESIGN FORMER UST SITE 23 ZONE B

MAS POINT MUGU, CALIFORNIA  
 U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA



**LEGEND**

- ◆ BASELINE MONITORING WELL LOCATIONS PRESENTED ANALYTICAL RESULTS WERE GENERATED DURING BASELINE SAMPLING EVENT CONDUCTED ON 9/31/05 THROUGH 10/2/05 AT WELLS IDENTIFIED IN SECTION 2.5 OF THE DRAFT WORK PLAN (TINBA, 2006).
- ◆ REMEDIAL PROGRESS MONITORING WELL LOCATIONS WITHIN SUBAREA "A" PRESENTED ANALYTICAL RESULTS WERE GENERATED DURING BASELINE SAMPLING EVENT CONDUCTED ON 9/31/05 THROUGH 10/2/05 AT WELLS IDENTIFIED IN SECTION 2.5 OF THE DRAFT WORK PLAN (TINBA, 2006).
- ◆ REMEDIAL PROGRESS MONITORING WELL LOCATIONS WITHIN SUBAREA "B" PRESENTED ANALYTICAL RESULTS WERE GENERATED DURING BASELINE SAMPLING EVENT CONDUCTED ON 9/31/05 THROUGH 10/2/05 AT WELLS IDENTIFIED IN SECTION 2.5 OF THE DRAFT WORK PLAN (TINBA, 2006).
- ◆ MONITORING WELL LOCATIONS WHICH WERE NOT INCLUDED IN BASELINE SAMPLING EVENT
- ◆ 53/ <0.5 DECEMBER 2004 COLLECTED RESULTS FOR WELLS 53-1 AND 53-2 (ON BLACK) AND 53-3 (ON GREEN)
- PROPOSED LISTED TREATMENT AREA, SUBAREA "A", A TOTAL OF 15 INJECTION POINTS ARE PROPOSED ON 20 FT BY 20 FT GRID.
- PROPOSED LISTED TREATMENT AREA, SUBAREA "B", A TOTAL OF 38 INJECTION POINTS ARE PROPOSED ON 20 FT BY 20 FT GRID.
- ◆ PROPOSED LOCATIONS FOR DIRECT RUSH INJECTION POINTS WITHIN SUBAREA "A"
- ◆ PROPOSED LOCATIONS FOR DIRECT RUSH INJECTION POINTS WITHIN SUBAREA "B"
- RANGE OF PREVAILENT GROUNDWATER GRADIENT DIRECTIONS

- NOTES:**
- DETAILS REGARDING SUBSTRATE INJECTION PROGRAM CAN BE FOUND IN SECTION 4.0 OF THE DRAFT WORK PLAN (TINBA, 2006).
  - DETAILS REGARDING SAMPLING PROGRAM FOR MONITORING REMEDIAL PROGRESS CAN BE FOUND IN SECTION 3.0 OF THE DRAFT WORK PLAN (TINBA, 2006).

0 50 100  
 APPROXIMATE SCALE IN FEET

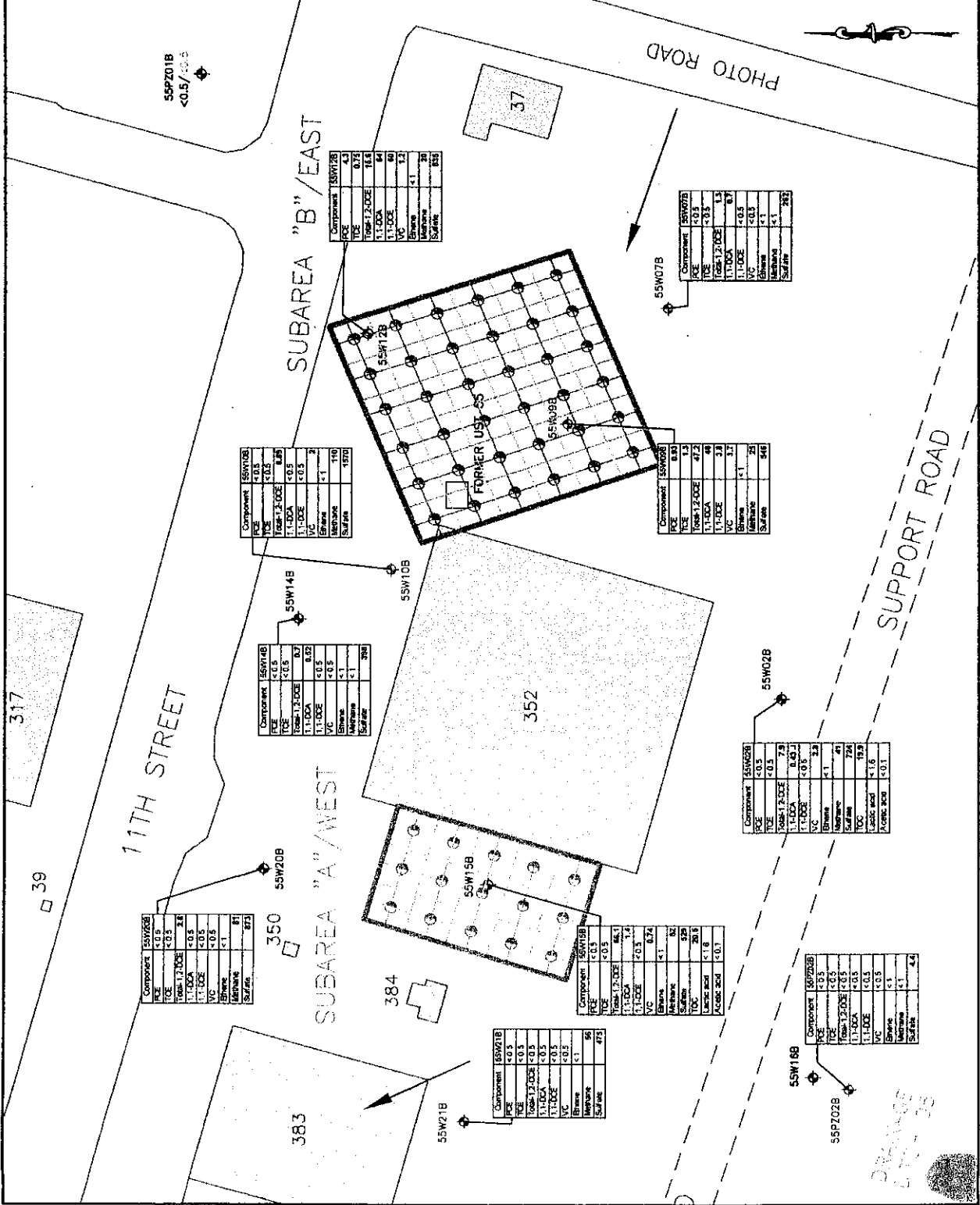
PREPARED: 8/24/2005 REVISED: 12/15/06

**BASELINE GROUNDWATER MONITORING RESULTS AND EISB CONCEPTUAL DESIGN FORMER UST 55 ZONE B**

NAS POINT MUGU, CALIFORNIA  
 U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA

**TINBA & Associates, Inc.**  
 Engineering and Science

FIGURE 6



**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION**

**ORDER NO. R4-2005-0030  
REVISED GENERAL WASTE DISCHARGE REQUIREMENTS  
FOR  
GROUNDWATER REMEDIATION AT PETROLEUM HYDROCARBON FUEL AND/OR  
VOLATILE ORGANIC COMPOUND IMPACTED SITES  
(FILE NO. 01-116)**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) finds:

1. Pursuant to Division 7 of the California Water Code, this Regional Board at a public hearing held on January 24, 2002, adopted the General Waste Discharge Requirements (WDRs) (Order No. R4-2002-0030) relative to the groundwater remediation at petroleum hydrocarbon fuel and/or volatile organic compound impacted sites.
2. Item A-2-c of the Order R4-2002-0030 includes a list of materials to be used for in-situ remediation purposes. At that time, the Regional Board had not evaluated a sufficient number of sites using ozone as a remediation material to document the effectiveness of ozone application for groundwater remediation. Therefore, ozone was not included on the list of approved materials. The application of ozone to groundwater remediation is subject to individual site-specific WDRs. Since then, the Regional Board has adopted a number of individual WDRs for ozone application throughout the Region and found that ozone can be effective in site cleanup and remediation projects. The revised WDRs are to include ozone to the list of materials for in-situ remediation zone purposes and include a brief list of tracer materials that can be utilized at sites to aid in determination of the effectiveness of clean up material application.
3. The California Water Code (CWC), section 13260, subdivision (a)(1) requires that any person discharging wastes, or proposing to discharge wastes other than into a community waste water collection system, which could affect the quality of the waters of the State, shall file a Report of Waste Discharge with the Regional Board. The Regional Board shall then prescribe requirements for the discharge or proposed discharge of wastes.
4. Section 13263, subdivision (i) of the CWC provides that a Regional Board may prescribe general waste discharge requirements (WDRs) for discharges produced by similar operations, involving similar types of wastes, and requiring similar treatment standards.
5. The adoption of general WDRs for in-situ groundwater remediation/cleanup or the extraction of polluted groundwater with above ground treatment and the return of treated groundwater to the same aquifer zone would: a) simplify the application process for dischargers, b) allow more efficient use of Regional Board staff time, c) reduce Regional Board time by enabling the Executive Officer to notify the discharger of the applicability of the general WDRs, d) enhance the protection of surface water quality by eliminating the

discharge of wastewater to surface waters, and e) provide a level of protection comparable to individual, site-specific WDRs.

6. Petroleum hydrocarbon fuel and/or volatile organic compounds contaminate groundwater at various sites throughout the Los Angeles region and cause or threaten to cause adverse impacts to existing and potential beneficial uses of the region's groundwater resources. Remediation/cleanup of groundwater at these sites includes the use and application of chemical, biological, and physical treatment processes, such as oxygen enhanced process, chemical oxidation, nutrient or chemical addition for enhanced biodegradation, or groundwater pump and treat technology with the return of treated groundwater to the same aquifer zone in some cases.
7. The application of any material to groundwater may result in unintended adverse impacts to groundwater quality. Any potential adverse water quality impacts that may result will be localized, of short-term duration, and will not impact any existing or prospective beneficial uses of groundwater. Groundwater quality will be monitored before addition of any materials, during treatment, and after treatment is completed to verify no long-term adverse impact to water quality.
8. The implementation of in-situ cleanup may require a small-scale pilot testing program or demonstration study prior to the design and implementation of a full-scale remediation project. The discharges from the pilot test programs or demonstration study are also covered under these general WDRs.
9. The Regional Board adopted a revised Water Quality Control Plan (Basin Plan) for the Los Angeles Region on June 13, 1994. The Basin Plan contains water quality objectives and lists the beneficial uses of groundwater in the Los Angeles region. Beneficial uses of groundwater in the Los Angeles region include, among others: municipal and domestic supply, industrial service and process supply, agricultural supply and groundwater recharge. Beneficial uses for individual hydrologic sub-areas are specified in the Basin Plan. See Attachment A Table 3-10 water quality objectives for selected constituents in regional groundwaters.
10. The release of petroleum hydrocarbon fuel and/or volatile organic compounds at many sites within the Los Angeles region affects only shallow perched groundwater sources. Many of the shallow perched groundwater zones contain general mineral content (total dissolved solids, chloride, and sulfate, etc.) in concentrations, which are considered to be naturally occurring and not the result of pollution, that may exceed Basin Plan Objectives for these constituents. The re-injection or infiltration of treated groundwater that exhibits general mineral content that are naturally occurring and exceeds Basin Plan Objectives may be returned to the same groundwater formations from which it is withdrawn, with concentrations not exceeding the original background concentrations for the site.

Groundwater Remediation at Petroleum  
Hydrocarbon Fuel and/or Volatile Organic  
Compound Impacted Sites  
Order No. R4-2005-0030

File No. 01-116

11. Treated groundwater that exhibits general mineral content that is naturally occurring and exceeds Surface Water Basin Plan Objectives must be treated if discharged into surface waters under a separate National Pollutant Discharge Elimination System (NPDES) Permit.
12. The general WDRs are applicable to groundwater remediation at petroleum hydrocarbon fuel and/or volatile organic compound impacted sites. Depending on the Report of Waste Discharge, the Executive Officer determines the annual fee based on the threat to water quality and complexity of the discharge. The general WDRs are to regulate groundwater discharges that have a threat to water quality of Category 3 and Complexity rating of A for a combined rating of 3-A.
13. Discharges with a rating of 3-A contain pollutants that could degrade water quality or cause a minor impairment of designated beneficial uses within the application area of the receiving groundwater. The discharges covered by these requirements will have a groundwater monitoring program to comply with requirements prescribed in this Order.
14. The requirements contained in this Order were established by considering, and are consistent with, all the water quality control policies, plans, and regulations mentioned above and, if they are met, will protect and maintain the existing beneficial uses of the receiving groundwater.
15. The permitted discharge is consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16 (Anti-degradation Policy): The impact on existing water quality will not be significant in comparison to individual WDRs, and the general WDRs will improve the quality of the affected groundwater.
16. These general WDRs are not intended to alter or supersede any existing restrictions or working arrangements relating to cleanup cases with local governmental agencies.
17. In accordance with the Governor's Executive Order requiring any proposed activity be reviewed to determine whether such activity will cause additional energy usage, this Regional Board has determined that implementation of these general WDRs will not result in a change in energy usage exceeding what would be used if site-specific WDRs were issued for cleanup at these sites.
18. The Regional Board has prepared an Initial Study and Mitigated Negative Declaration for the issuance of these general WDRs in accordance with the provisions of the California Environmental Quality Act (CEQA).
19. The Regional Board has notified interested agencies and persons of its intent to prescribe general WDR's for the discharges covered under these general WDRs, and

has provided them with an opportunity to submit their written views and recommendations for the requirements.

20. The Regional Board, in a public meeting, heard and considered all comments pertaining to the tentative general WDRs.

**IT IS HEREBY ORDERED THAT** dischargers authorized under this Order in order to meet the provisions contained in Division 7 of the California Water Code, and regulations adopted thereunder, shall comply with the following:

**A. ELIGIBILITY**

1. A discharger may seek coverage under this Order for:
  - a. existing and future discharges to groundwater of remediation compounds from the cleanup of petroleum hydrocarbon fuel and/or volatile organic compound impacted sites and similar discharges.
  - b. re-injection, percolation or infiltration of treated groundwater from a pump and treat remediation system(s).
2. To be covered under this Order, a discharge must meet the following criteria:
  - a. The Executive Officer must find, based on the Report of Waste Discharge submitted pursuant to Provision C, that the groundwater discharges for which coverage under this Order are sought have a threat to water quality of Category 3 and Complexity rating of A for a combined rating of 3-A, using the rating criteria (see on the Regional Board website at: [http://www.waterboards.ca.gov/losangeles/html/permits/fee schedule/fee%20schedules%20\(2004-005\).pdf](http://www.waterboards.ca.gov/losangeles/html/permits/fee%20schedule/fee%20schedules%20(2004-005).pdf))
  - b. The discharger must have an approved Remediation Action Plan (RAP). The discharger shall submit a copy of the approved RAP including any conditions of implementation with the Report of Waste Discharge for application of the general WDRs. At a minimum, the RAP shall include the following site-specific information:
    - The background water quality of the aquifer of the groundwater remediation site(s) including contaminant types, total dissolved solids, sulfates, chlorides, nitrogen (NH<sub>4</sub>, NO<sub>3</sub>, NO<sub>2</sub>), chemical oxygen demand, biological oxygen demand, phosphorus, pH, nutrients, dissolved oxygen, dissolved carbon dioxide, methane, temperature, iron, and oxygen reduction potential;
    - Information on any potential adverse impacts to groundwater quality, and whether the impacts will be localized and short-term;
    - The results of any pilot testing performed for the treatment technology to be used;

- Site-specific geology (lithology and physical parameters) and hydrogeologic parameters, hydrologic report;
  - Infiltration rate;
  - Characterization and extent of petroleum hydrocarbon fuel and/or volatile organic compound plume(s);
  - Description of the treatment system(s);
  - Adequate groundwater monitoring network with historical groundwater monitoring report;
  - Description of the areal extent of the application area and identification of monitoring wells to be used to determine water quality upgradient, within the application area, downgradient from the application area and identify the compliance point;
  - Material Safety Data Sheet (MSDS) information and other product technical information for any materials to be used for cleanup;
  - Application rate(s), material type(s) and applied concentrations; and
  - Evaluation of loading rates for nitrogen compounds, total dissolved solids, sulfate, and chloride compounds.
- c. The General Waste Discharge Requirements would allow the following materials to be used for in-situ remediation purposes:
1. **Oxidation/Aerobic Degradation Enhancement Compounds:**
    - Fenton's reagent (hydrogen peroxide, ferrous iron catalyst, and pH buffer)
    - Hydrogen peroxide
    - Potassium or sodium permanganate
    - Oxygen release compound (ORC) magnesium peroxide
    - Ozone
  2. **Reducing/Reductive Degradation Enhancement Compounds:**
    - Polysulfide
    - Hydrogen release compound (HRC) polyacetate ester
    - Zero-valent iron
  3. **Inorganics/Nutrients:**
    - Nitrate, ammonia, phosphate, vitamins
  4. **Carbon Sources/Electron Donors:**
    - Acetate, lactate, propionate, benzoate, oleate, ethanol, propanol, methanol, glucose, complex sugars such as molasses or corn syrup, other food process byproducts such as milk whey or yeast extract, other complex organic material such as wood chips

**5. Study tracer compounds:**

- The tracer compounds shall be highly contrast and not reactive with current contaminants to be treated. The tracers may be chloride-based and bromide-based salts, such as calcium chloride, sodium chloride, calcium bromide, sodium bromide, potassium bromide, potassium, iodide, and similar materials as approved by the Executive Officer.
3. In applying these general WDRs, the monitoring program shall address the potential occurrence of transference of chromium (III) into chromium (VI), or vice versa, during the oxidation or reduction process in the in-situ remediation under these WDRs.
  4. For the purpose of renewal of existing individual requirements with these general WDRs, provided that all the conditions of these general WDRs are met, renewal is effective upon issuance of a notification by the Executive Officer and issuance of a new monitoring and reporting program.
  5. When the individual WDRs with more specific requirements are issued to a discharger, the applicability of this Order to that discharger is automatically terminated on the effective date of the individual WDRs.

**B. AUTHORIZATION**

To be authorized to discharge under this Order, the discharger must submit a Report of Waste Discharge in accordance with the requirements of Part C of this Order. Upon receipt of the application, the Executive Officer shall determine the applicability of this Order to such a discharge and the completeness of the application package. If the discharge is eligible, the Executive Officer shall notify the discharger that the discharge is authorized under the terms and conditions of this Order and prescribe an appropriate monitoring and reporting program. For new discharges, the discharge shall not commence until receipt of the Executive Officer's written determination and the discharger receives general WDRs to include a site specific monitoring and reporting program.

**C. REPORT OF WASTE DISCHARGE**

1. Deadline for Submission
  - a. Renewal of permits of existing dischargers covered under individual WDRs that meet the eligibility criteria in Part A and have submitted Report of Waste Discharge will consist of a letter of determination from the Executive Officer of coverage under this Order.



- b. New dischargers shall file a complete application to include all information identified in Items A1, A2 and as above at least 60 days before planned commencement of any discharge.

2. Forms for Report of Waste Discharge

- a. Dischargers shall use the appropriate forms (Standard Form 200) or equivalent forms approved by the State Water Resources Control Board or the Executive Officer of the Los Angeles Regional Board.
- b. The discharger, upon request, shall submit any additional information that the Executive Officer deems necessary to determine whether the discharge meets the criteria for coverage under this Order, and/or in prescribing an appropriate monitoring and reporting program.
- c. The Report of Waste Discharge shall be accompanied by the first annual fee (if appropriate) in accordance with the current version of California Code of Regulation, Title 23, Division 7, Chapter 9, Waste Discharge Report and Requirements Article 1 fees for a discharge. The check or money order shall be made payable to the "State Water Resources Control Board."

D. DISCHARGE PROHIBITIONS

1. The discharge of wastes other than those which meet eligibility requirements in Part A of this Order is prohibited unless the discharger obtains coverage under another general permit or an individual site specific permit that regulates the discharge of such wastes.
2. The discharge of any radiological, chemical, or biological warfare agent or high level radiological waste is prohibited.
3. Creation of a pollution, contamination, or nuisance, as defined by section 13050 of the California Water Code (CWC), is prohibited.
4. The surfacing as overflow of wastes from the treatment system at any time and at any location is prohibited.
5. The disposal of wastes in geologically unstable areas or so as to cause earth movement is prohibited.

E. DISCHARGE LIMITATIONS.

1. The discharge of wastes shall not cause the pH of the receiving groundwater at the compliance point, downgradient outside the application area, beyond the range of 6.5 and 8.5.
2. The discharge of wastes shall not cause the mineral constituents of the receiving groundwater at the compliance point, downgradient outside the application area, in excess of applicable limits given in Attachment A. In the letter of determination, the Executive Officer shall indicate the groundwater limitations in Attachment A applicable to the particular discharge, and identify the compliance point(s) for the site.
3. The discharge of wastes shall not cause the concentrations of chemical constituents and radionuclides of the receiving groundwater designated for use as domestic or municipal supply at the compliance point, downgradient outside the application area, in excess of the Maximum Contaminate Levels (MCLs) specified in the following provisions of Title 22 of the California Code of Regulations which are incorporated by reference into the Basin Plan: Table 64431-A of section 64431 (inorganic chemicals), Table 64431-B of section 64431 (fluoride), Table 64444-A of section 64444 (organic chemicals), and Table 4 of section 64443 (radioactivity). This incorporation by reference is prospective including future changes to the incorporated provisions as the changes take effect.
4. Waste discharged shall not cause the concentration of coliform organisms over any seven days period greater than 1.1/100ml.
5. Waste discharged shall not contain salts, heavy metals, or organic pollutants at levels that would cause receiving groundwater at the compliance point, downgradient outside the application area, to exceed the water quality objectives for groundwater or groundwater that may be in hydraulic connection with surface waters designated for marine aquatic life or body contact recreation.
6. Waste discharged shall not cause the groundwater to contain concentrations of chemical substances or its by-products in amounts that adversely affect any designated beneficial use, outside the application area or treatment zone at the compliance point(s).
7. Waste discharged shall not cause the groundwater to contain residual taste or odor in concentrations that cause nuisance or adversely affect beneficial uses, outside the application area or treatment zone at the compliance point(s).

8. Waste discharged shall not cause the groundwater to contain in amounts that cause nitrogen as nitrate-nitrogen plus nitrite-nitrogen ( $\text{NO}_3\text{-N} + \text{NO}_2\text{-N}$ ), 45 mg/L as Nitrate ( $\text{NO}_3$ ), 10 mg/L as nitrate-nitrogen ( $\text{NO}_3\text{-N}$ ), or 1 mg/L as nitrite-nitrogen ( $\text{NO}_2\text{-N}$ ), outside the application area or treatment zone at the compliance point(s).

F. PROVISIONS

1. The Executive Officer may require any discharger authorized under this Order to apply for and obtain individual WDRs with specific requirements. The Executive Officer may require any discharger authorized to discharge under this permit to apply for individual WDRs only if the discharger has been notified in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the discharger to file the application, and a statement that on the effective date of the individual requirements, the authority to discharge under this General WDRs are no longer applicable.
2. This Order includes the attached "Standard Provisions Applicable to Waste Discharge Requirements." (Attachment B) If there is any conflict between provisions stated herein before and the attached "Standard Provisions," those provisions stated herein shall prevail.
3. Adequate facilities shall be provided to divert surface and storm water away from the application area and/or treatment system and areas where any pollutants are stored.
4. The application of materials or the re-injection of treated groundwater shall only be at a site owned or controlled by the discharger.
5. All work must be performed by or under the direction of a registered civil engineer, professional geologist, or certified engineering geologist. A statement is required in all technical reports that the registered professional in direct responsible charge actually supervised or personally conducted all the work associated with the project.
6. The discharge of wastes to or infiltration to a surface water system must be covered by separate WDRs under the National Pollution Discharge Elimination System (NPDES) permit.
7. This Order does not alleviate the responsibility of discharger to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.

8. The discharger shall notify Regional Board staff by telephone within 24 hours, followed by written notification within one week; in the event it is unable to comply with any of the conditions of this Order due to:
  - a) Breakdown of waste treatment equipment,
  - b) Accident caused by human error or negligence,
  - c) Other causes such as acts of nature, or
  - d) Site construction or development operations.
9. Any discharger authorized under this Order may request to be excluded from coverage of this Order by applying for an individual permit.
10. In accordance with section 13263(e) of the California Water Code, these requirements are subject to periodic review and revision by the Regional Board within a five (5) year cycle.
11. In accordance with Water Code section 13263(g), these requirements shall not create a vested right to continue to discharge and are subject to rescission or modification. All discharges of waste into waters of the state are privileges, not rights.
12. The discharger shall develop a contingency plan and maintain it on site. The contingency plan shall detail appropriate actions to be taken in order to protect human health and the environment in case of any spill or failure related to the operation or mis-operation of the treatment system.

**G. MONITORING AND REPORTING REQUIREMENTS**

1. The Executive Officer is hereby authorized to prescribe a Monitoring and Reporting Program for each authorized discharger. This program may include participation of the discharger in a regional monitoring program.
2. The discharger shall file with the Regional Board technical reports on self-monitoring work conducted according to the Monitoring and Reporting Program specified by the Executive Officer and submit other reports as requested by the Regional Board.
3. The discharger shall retain records of all monitoring information and data used to complete the Report of Waste Discharge and application for coverage under this Order for at least five years from the date of permit issuance. The retention period shall be extended during any unresolved litigation regarding the discharge or when requested by the Executive Officer.

Groundwater Remediation at Petroleum  
Hydrocarbon Fuel and/or Volatile Organic  
Compound Impacted Sites

File No. 01-116

Order No. R4-2005-0030

4. The discharger shall maintain all sampling, measurement and analytical results, including the date, exact place, and time of sampling or measurement; individual(s) who did the sampling or measurement; the date(s) analyses were done; analysts' names; and analytical techniques or methods used.
5. All sampling, sample preservation, and analyses must be conducted according to test procedures under title 40 Code of Federal Regulations, section 136, unless other test procedures have been specified in this Order or by the Executive Officer.
6. All chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (CDHS-ELAP) or other state agency authorized to undertake such certification.
7. The discharger shall calibrate and maintain all monitoring instruments and equipment to insure accuracy of measurements, or shall insure that both activities will be conducted.
8. In reporting the monitoring data, the discharger shall arrange the data in tabular form so that the date, constituents, and concentrations are readily discernible. The data shall be summarized to demonstrate compliance with waste discharge requirements. Laboratory analytical data from any soil testing and/or groundwater monitoring shall be reported in Electronic Deliverable Format in accordance with California Water Code section 13195 et. seq. requirements, if applicable.
9. For every item where the requirements are not met, the discharger shall submit a statement of the actions undertaken or proposed that will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.
10. The discharger shall file a report of any material change or proposed change in the character, location or volume of the discharge.
11. The discharger shall notify this Regional Board within 24 hours by telephone of any adverse condition resulting from the discharge, such notification shall be affirmed in writing within five working days.
12. Whenever wastes, associated with the discharge under this Order, are transported to a different disposal site, the following shall be reported in the monitoring report: type and quantity of wastes; name and address of the hauler (or method of transport if other than by hauling); and location of the final point(s) of disposal.

13. Each monitoring report must contain an affirmation in writing that:

"All analyses were conducted at a laboratory certified for such analyses by \_\_\_\_\_ and in accordance with current USEPA procedures or as specified in this Monitoring and Reporting Program."

14. Each report shall contain the following completed declaration:

"I declare 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 managed the system or those 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.

Executed on the \_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_.

\_\_\_\_\_  
\_\_\_\_\_  
(Signature)  
(Title)"

H. EXPIRATION DATE AND CONTINUATION OF THIS ORDER

This Order expires on May 4, 2010; however, for those dischargers authorized to discharge under this Order, it shall continue in full force and effect until a new order is adopted.

I. REAUTHORIZATION

Upon re-issuance of a new general permit Order, dischargers authorized under this Order shall file a new Report of Waste Discharge within 45 days of notification by the Executive Officer.

I, Jonathan S. Bishop, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on May 5, 2005.


  
Jonathan S. Bishop  
Executive Officer

Table 3-10. Water Quality Objectives for Selected Constituents in Regional Ground Waters<sup>a</sup>.

DWR Basin No. <sup>b</sup>	BASIN	OBJECTIVES (mg/L)			
		TDS	Sulfate	Chloride	Boron
	Pitas Point Area <sup>c</sup>	None specified			
4-1	Ojai Valley				
	Upper Ojai Valley				
	West of Sulfur Mountain Road	1,000	300	200	1.0
	Central area	700	50	100	1.0
	Sisar area	700	250	100	0.5
4-2	Lower Ojai Valley				0.5
	West of San Antonio—Senior Canyon Creeks	1,000	300	200	0.5
	East of San Antonio—Senior Canyon Creeks	700	200	50	
4-3	Ventura River Valley				
	Upper Ventura	800	300	100	0.5
	San Antonio Creek area	1,000	300	100	1.0
	Lower Ventura	1,500	500	300	1.5
4-4	Ventura Central <sup>d</sup>				
	Santa Clara—Piru Creek area				
	Upper area (above Lake Piru)	1,100	400	200	2.0
	Lower area east of Piru Creek	2,500	1,200	200	1.5
	Lower area west of Piru Creek	1,200	600	100	1.5
	Santa Clara—Sespe Creek area				
	Topa Topa (upper Sespe) area	900	350	30	2.0
	Fillmore area				
	Pole Creek Fan area	2,000	800	100	1.0
	South side of Santa Clara River	1,500	800	100	1.1
	Remaining Fillmore area	1,000	400	50	0.7
	Santa Clara—Santa Paula area				
	East of Peck Road	1,200	600	100	1.0
	West of Peck Road	2,000	800	110	1.0
	Oxnard Plain				
	Oxnard Forebay	1,200	600	150	1.0
	Confined aquifers	1,200	600	150	1.0
Unconfined and perched aquifers	3,000	1,000	500	—	
4-6	Pleasant Valley				
	Confined aquifers	700	300	150	1.0
	Unconfined and perched aquifers	—	—	—	—
4-7	Arroyo Santa Rosa	900	300	150	1.0
4-8	Las Posas Valley				
	South Las Posas area				
	NW of Grimes Cyn Rd & LA Ave & Somis Rd	700	300	100	0.5
	E of Grimes Cyn Rd and Hitch Blvd	2,500	1,200	400	3.0
	S of LA Ave between Somis Rd & Hitch Blvd	1,500	700	250	1.0
	Grimes Canyon Rd & Broadway area	250	30	30	0.2
North Las Posas area	500	250	150	1.0	
4-5	Upper Santa Clara				
	Acton Valley	550	150	100	1.0
	Sierra Pelona Valley (Agua Dulce)	600	100	100	0.5
	Upper Mint Canyon	700	150	100	0.5
	Upper Bouquet Canyon	400	50	30	0.5
	Green Valley	400	50	25	—
Lake Elizabeth—Lake Hughes area	500	100	50	0.5	

Table 3-10. Water Quality Objectives for Selected Constituents in Regional Ground Waters<sup>a</sup> (cont.)

DWR Basin No. <sup>b</sup>	BASIN	OBJECTIVES (mg/L)			
		TDS	Sulfate	Chloride	Boron
4-4.07	Eastern Santa Clara				
	Santa Clara-Mint Canyon	800	150	150	1.0
	South Fork	700	200	100	0.5
	Placerita Canyon	700	150	100	0.5
	Santa Clara-Bouquet & San Francisquito Canyons	700	250	100	1.0
	Castaic Valley	1,000	350	150	1.0
	Saugus Aquifer	-	-	-	-
4-9	Simi Valley				
	Simi Valley Basin				
	Confined aquifers	1,200	600	150	1.0
	Unconfined aquifers	-	-	-	-
	Gilbrand Basin	900	350	50	1.0
4-10	Conejo Valley	800	250	150	1.0
4-11	Los Angeles Coastal Plain				
	Central Basin	700	250	150	1.0
	West Coast Basin	800	250	250	1.5
	Hollywood Basin	750	100	100	1.0
	Santa Monica Basin	1,000	250	200	0.5
4-12	San Fernando Valley				
	Sylmar Basin	600	150	100	0.5
	Verdugo Basin	600	150	100	0.5
	San Fernando Basin				
	West of Highway 405	800	300	100	1.5
	East of Highway 405 (overall)	700	300	100	1.5
	Sunland-Tujunga area *	400	50	50	0.5
	Foothill area *	400	100	50	1.0
	Area encompassing RT-Tujunga-Erwin- N. Hollywood-Whithall-LA/Verdugo-Crystal Springs- Headworks-Glendale/Burbank Well Fields	600	250	100	1.5
	Narrows area (below confluence of Verdugo Wash with the LA River)	900	300	150	1.5
	Eagle Rock Basin	800	150	100	0.5
4-13	San Gabriel Valley				
	Raymond Basin				
	Monk Hill sub-basin	450	100	100	0.5
	Santa Anita area	450	100	100	0.5
	Pasadena area	450	100	100	0.5
	Main San Gabriel Basin				
	Western area †	450	100	100	0.5
	Eastern area †	600	100	100	0.5
	Puente Basin	1,000	300	150	1.0
4-14 8-2 <sup>c</sup>	Upper Santa Ana Valley				
	Live Oak area	450	150	100	0.5
	Claremont Heights area	450	100	50	-
	Pomona area	300	100	50	0.5
	Chino area	450	20	15	-
	Spadra area	550	200	120	1.0
4-15	Tierra Rejada	700	250	100	0.5
4-16	Hidden Valley	1,000	250	250	1.0
4-17	Lockwood Valley	1,000	300	20	2.0
4-18	Hungry Valley and Peace Valley	500	150	50	1.0



**Table 3-10. Water Quality Objectives for Selected Constituents in Regional Ground Waters<sup>a</sup> (cont.)**

DWR Basin No. <sup>b</sup>	BASIN	OBJECTIVES (mg/L)			
		TDS	Sulfate	Chloride	Boron
4-19	Thousand Oaks area	1,400	700	150	1.0
4-20	Russell Valley	1,500	500	250	1.0
	Russell Valley	2,000	500	500	2.0
	Triunfo Canyon area	2,000	500	500	2.0
	Lindero Canyon area	2,000	500	500	2.0
	Las Virgenes Canyon area	2,000	500	500	2.0
4-21	Conejo-Tierra Rejada Volcanic area <sup>b</sup>	--	--	--	--
4-22	Santa Monica Mountains--southern slopes <sup>c</sup>	1,000	250	250	1.0
	Camarillo area	1,000	250	250	1.0
	Point Dume area	2,000	500	500	2.0
	Malibu Valley	2,000	500	500	2.0
	Topanga Canyon area	2,000	500	500	2.0
	San Pedro Channel Islands <sup>d</sup>	--	--	--	--
	Anacapa Island	1,100	150	350	--
	San Nicolas Island	1,000	100	250	1.0
	Santa Catalina Island	--	--	--	--
	San Clemente Island	--	--	--	--
	Santa Barbara Island	--	--	--	--

- a. Objectives for ground waters outside of the major basins listed on this table and outlined in Figure 1-9 have not been specifically listed. However, ground waters outside of the major basins are, in many cases, significant sources of water. Furthermore, ground waters outside of the major basins are either potential or existing sources of water for downgradient basins and, as such, objectives in the downgradient basins shall apply to these areas.
- b. Basins are numbered according to Bulletin 118-80 (Department of Water Resources, 1980).
- c. Ground waters in the Pitas Point area (between the lower Ventura River and Rincon Point) are not considered to comprise a major basin, and accordingly have not been designated a basin number by the California Department of Water Resources (DWR) or outlined on Figure 1-9.
- d. The Santa Clara River Valley (4-4), Pleasant Valley (4-6), Arroyo Santa Rosa Valley (4-7) and Las Posas Valley (4-8) Ground Water Basins have been combined and designated as the Ventura Central Basin (DWR, 1980).
- e. The category for the Foothill Wells area in previous Basin Plan incorrectly groups ground water in the Foothill area with ground water in the Sunland-Tujunga area. Accordingly, the new categories, Foothill area and Sunland-Tujunga area, replace the old Foothill Wells area.
- f. All of the ground water in the Main San Gabriel Basin is covered by the objectives listed under Main San Gabriel Basin -- Eastern area and Western area. Walnut Creek, Big Dalton Wash, and Little Dalton Wash separate the Eastern area from the Western area (see dashed line on Figure 2-17). Any ground water upgradient of these areas is subject to downgradient beneficial uses and objectives, as explained in Footnote a.
- g. The border between Regions 4 and 8 crosses the Upper Santa Ana Valley Ground Water Basin.
- h. Ground water in the Conejo-Tierra Rejada Volcanic Area occurs primarily in fractured volcanic rocks in the western Santa Monica Mountains and Conejo Mountain areas. These areas have not been delineated on Figure 1-9.
- i. With the exception of ground water in Malibu Valley (DWR Basin No. 4-22), ground waters along the southern slopes of the Santa Monica Mountains are not considered to comprise a major basin and accordingly have not been designated a basin number by the California Department of Water Resources (DWR) or outlined on Figure 1-9.
- j. DWR has not designated basins for ground waters on the San Pedro Channel Islands.

STANDARD PROVISIONS  
APPLICABLE TO WASTE DISCHARGE REQUIREMENTS

1. DUTY TO COMPLY

The discharger must comply with all conditions of these waste discharge requirements. A responsible party has been designated in the Order for this project, and is legally bound to maintain the monitoring program and permit. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350]

2. GENERAL PROHIBITION

Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). [H&SC Section 5411, CWC Section 13263]

3. AVAILABILITY

A copy of these waste discharge requirements shall be maintained at the discharge facility and be available at all times to operating personnel. [CWC Section 13263]

4. CHANGE IN OWNERSHIP

The discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on. [CWC Sections 13267 and 13263]

5. CHANGE IN DISCHARGE

In the event of a material change in the character, location, or volume of a discharge, the discharger shall file with this Regional Board a new Report of Waste Discharge. [CWC Section 13260(c)]. A material change includes, but is not limited to, the following:

- (a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the Waste.

November 7, 1990  
WDR

Standard Provisions Applicable to  
Waste Discharge Requirements

- (b) Significant change in disposal method, e.g., change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
- (c) Significant change in the disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.
- (d) Increase in flow beyond that specified in the waste discharge requirements.
- (e) Increase in the area or depth to be used for solid waste disposal beyond that specified in the waste discharge requirements. [CCR Title 23 Section 2210]

6. REVISION

These waste discharge requirements are subject to review and revision by the Regional Board. [CCR Section 13263]

7. TERMINATION

Where the discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information. [CWC Sections 13260 and 13267]

8. VESTED RIGHTS

This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from his liability under Federal, State or local laws, nor do they create a vested right for the discharger to continue the waste discharge. [CWC Section 13263(g)]

9. SEVERABILITY

Provisions of these waste discharge requirements are severable. If any provision of these requirements are found invalid, the remainder of the requirements shall not be affected. [CWC Section 921]

Standard Provisions Applicable to  
Waste Discharge Requirements

10. OPERATION AND MAINTENANCE

The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order. [CWC Section 13263(f)]

11. HAZARDOUS RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Regional Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the discharger is in violation of a prohibition in the applicable Water Quality Control plan. [CWC Section 1327(a)]

12. PETROLEUM RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Article 3.5 (commencing with Section 8574.1) of Chapter 7 of Division 1 of Title 2 of the Government Code. This provision does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Section 311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan. [CWC Section 13272]

Standard Provisions Applicable to  
Waste Discharge Requirements

13. ENTRY AND INSPECTION

The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
- (d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location. [CWC Section 13267]

14. MONITORING PROGRAM AND DEVICES

The discharger shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted. [CWC Section 13267]

All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Office a written statement, signed by a registered professional engineer, certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

Unless otherwise permitted by the Regional Board Executive officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Regional Board Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" [40CFR Part 136] promulgated by the U.S. Environmental Protection Agency. [CCR Title 23, Section 2230]

Standard Provisions Applicable to  
Waste Discharge Requirements

15. TREATMENT FAILURE

In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost. [CWC Section 13263(f)]

16. DISCHARGE TO NAVIGABLE WATERS

Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act and discharge subject to a general NPDES permit) must file an NPDES permit application with the Regional Board. [CCR Title 2 Section 22357]

17. ENDANGERMENT TO HEALTH AND ENVIRONMENT

The discharger shall report any noncompliance which may endanger health or the environment. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) must be reported to the Executive Office within 24 hours:

- (a) Any bypass from any portion of the treatment facility.
- (b) Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances.
- (c) Any treatment plan upset which causes the effluent limitation of this Order to be exceeded. [CWC Sections 13263 and 13267]

18. MAINTENANCE OF RECORDS

The discharger shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies off all reports required by this Order, and record of all data used

Standard Provisions Applicable to  
Waste Discharge Requirements

to complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Records of monitoring information shall include:

- (a) The date, exact place, and time of sampling or measurement;
  - (b) The individual(s) who performed the sampling or measurement;
  - (c) The date(s) analyses were performed;
  - (d) The individual(s) who performed the analyses;
  - (e) The analytical techniques or method used; and
  - (f) The results of such analyses.
19. (a) All application reports or information to be submitted to the Executive Office shall be signed and certified as follows:
- (1) For a corporation – by a principal executive officer or at least the level of vice president.
  - (2) For a partnership or sole proprietorship – by a general partner or the proprietor, respectively.
  - (3) For a municipality, state, federal, or other public agency – by either a principal executive officer or ranking elected official.
- (b) A duly authorized representative of a person designated in paragraph (a) of this provision may sign documents if:
- (1) The authorization is made in writing by a person described in paragraph (a) of this provision.
  - (2) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
  - (3) The written authorization is submitted to the Executive Officer.

Any person signing a document under this Section shall make the following certification:

Standard Provisions Applicable to  
Waste Discharge Requirements

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. [CWC Sections 13263, 13267, and 13268]"

20. OPERATOR CERTIFICATION

Supervisors and operators of municipal wastewater treatment plants and privately owned facilities regulated by the PUC, used in the treatment or reclamation of sewage and industrial waste shall possess a certificate of appropriate grade in accordance with Title 23, California Code of Regulations Section 3680. State Boards may accept experience in lieu of qualification training. In lieu of a properly certified wastewater treatment plant operator, the State Board may approve use of a water treatment plant operator of appropriate grade certified by the State Department of Health Services where reclamation is involved.

Each plan shall be operated and maintained in accordance with the operation and maintenance manual prepared by the municipality through the Clean Water Grant Program [CWC Title 23, Section 2233(d)]

ADDITIONAL PROVISIONS APPLICABLE TO  
PUBLICLY OWNED TREATMENT WORKS' ADEQUATE CAPACITY

21. Whenever a publicly owned wastewater treatment plant will reach capacity within four years the discharger shall notify the Regional Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies and the press. The discharger must demonstrate that adequate steps are being taken to address the capacity problem. The discharger shall submit a technical report to the Regional Board showing flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Board, or within 120 days after receipt of notification from the Regional Board, of a finding that the treatment plant will reach capacity within four years. The time for filing the required technical report may be extended by the Regional Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Board itself. [CCR Title 23, Section 2232]



STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI-9099  
UNITED STATES NAVY, NAVAL BASE VENTURA COUNTY  
INSTALLATION RESTORATION SITE 24 (Former UST Sites 23 and 55)  
POINT MUGU, CALIFORNIA

ORDER NO. R4-2005-0030 (SERIES NO. 047)  
(FILE NO. 98-017)

I. Discharge Monitoring

For this Monitoring and Reporting Program the Discharger shall sample selected wells from the four following treatment areas:

1. Treatment Area UST23A; monitoring wells include:
  - a. MW39A (upgradient),
  - b. 23W08A (downgradient), and
  - c. MW37A (within treatment area)
2. Treatment Area UST23B; monitoring wells include:
  - a. 23W10B (upgradient),
  - b. 23W18B (downgradient),
  - c. 23W05B (within the treatment area), and
3. Treatment Area UST55B "A"; monitoring wells include:
  - a. 55W02B (upgradient),
  - b. 55W20B (downgradient), and
  - c. 55W15B (within the treatment area).
4. Treatment Area UST55B "B"; monitoring wells include:
  - a. 55W07B (upgradient),
  - b. 55W10B (downgradient), and
  - c. 55W09B (within the treatment area).

Maps of the area and site are provided as Figures 1 through 6. Monitoring of the results of injection shall consist of sampling and analyzing groundwater samples from these groundwater-monitoring wells. Groundwater shall be monitored for the duration of the evaluation in accordance with the following discharge monitoring program:

Twelve wells will be used to collect groundwater samples for analyses to monitor the migration of injected materials and to monitor the groundwater gradient (MW39A, 23W08A, MW37A, 23W10B, 23W18B, 23W05B, 55W02B, 55W20B, 55W15B, 55W09B, 55W07B, and 55W10B). These wells, and additional wells (MW38A, 23W01A, 23W03A, 23W05A, 23W08B, 23W09A, TT03B, 55W12B, and 55W21B.) will be gauged, and the groundwater elevation information used to determine the groundwater gradient.

<u>CONSTITUENT</u>	<u>UNITS</u>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
Total daily injection waste flow	Liters/day, or other units as appropriate	Not Applicable	Daily during injection

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Volatile organic compounds (EPA 8260B)	μ/l	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Quarterly thereafter</li> </ul>
Cations (barium, calcium, magnesium, manganese, potassium and sodium) (EPA 6010B)	mg/l	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Quarterly thereafter</li> </ul>
Anions (bromide, iodide, chloride, sulfate, nitrate, nitrite, O-phosphate, and sulfide) (EPA 300/365.3/376.2)	mg/l	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Quarterly thereafter</li> </ul>
Total dissolved solids and total suspended solids (EPA 160)	mg/l	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Quarterly thereafter</li> </ul>

<u>CONSTITUENT</u>	<u>UNITS</u>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
Redox Potential (field parameter)	mV	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• - 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Every 3 months thereafter</li> </ul>
Dissolved Oxygen (field parameter)	mg/l	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Quarterly thereafter</li> </ul>
Methane, Ethene, Ethane, Carbon Dioxide (RSK 175)	µg/l	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Every 3 months thereafter</li> </ul>
pH (field parameter)	pH units	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Quarterly thereafter</li> </ul>

<u>CONSTITUENT</u>	<u>UNITS</u>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
Temperature (field parameter)	<sup>o</sup> F/ <sup>o</sup> C	Grab, from the following wells: - Area <u>UST23A</u> (MW39A, 23W08A and MW-37A) - Area <u>UST23B</u> (23W10B, 23W18B, and 23W05B) - Area <u>UST55B "A"</u> (55W02B, 55W20B, and 55W15B), and - Area <u>UST55B "B"</u> (55W07B, 55W09B, and 55W10B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Quarterly thereafter</li> </ul>
Groundwater Elevation (field parameter)	Feet below ground surface, and feet above (or below) mean sea level	Grab, from the following wells: - Area <u>UST23A</u> (MW37A, MW38A, MW39A, 23W01A, 23W03A, 23W05A, 23W08A, and 23W09A) - Area <u>UST23B</u> (23W08B, 23W10B, 23W18B, 23W05B, and TT03B) - Area <u>UST55B "A"</u> (55W02B, 55W15B, 55W20B, and 55W21B) and - Area <u>UST55B "B"</u> (55W07B, 55W09B, 55W10B, and 55W12B).	<ul style="list-style-type: none"> <li>• Prior to injection</li> <li>• 1 week after injection</li> <li>• 4 weeks after injection</li> <li>• Monthly for the next 2 months</li> <li>• Quarterly thereafter</li> </ul>

## II. Reporting and Laboratory Analyses

### A. REPORTING REQUIREMENTS

1. In accordance with Section 13267 of the California Water Code, the Discharger shall furnish, under penalty of perjury, technical monitoring report to the Regional Board during the evaluation and any post-test monitoring period. Such reports shall be submitted in accordance with specifications prepared by the Executive Officer.
2. The monitoring reports shall be submitted quarterly by the 15<sup>th</sup> of the following month, with the first report due October 15, 2006. Subsequent quarterly reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring Period</u>	<u>Report Due</u>
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 15
Annual Summary Report	March 1 of each year

3. If there is no discharge or injection, during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.
4. All monitoring reports shall include discharge limitations in the Order (Waste Discharge Requirements and Discharge Prohibitions), tabulated analytical data, the chain of custody, laboratory report (including but not limited to date and time of sampling, date of analyses, method of analysis and detection limits). If there is no discharge, the report shall so state it.
5. Within six (6) months following the end of the evaluation the Discharger shall submit a final summary report to the Regional Board to report the findings.

The report shall contain both tabular and graphical summaries of the monitoring data obtained prior to and proceeding the pilot test. In addition, US Naval Base Ventura County, Port Hueneme shall discuss the compliance record and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the site's waste discharge requirements, if any.

B. CERTIFICATION STATEMENT

Each report shall contain the following completed declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated 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 a fine and imprisonment.

Executed on the \_\_\_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)

C. LABORATORY ANALYSIS REQUIREMENTS

1. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services Environmental Laboratory Accreditation Program (ELAP) or approved by the Executive Officer.
2. Samples shall be analyzed within allowable holding time limits as specified in 40 CFR Part 136.3. All quality assurance/quality control (QA/QC) items should be run on the same dates when samples were actually analyzed and documentation shall accompany the laboratory reports.
3. The detection limits employed for sample analyses shall be lower than the permit limits established for a given parameter, unless the discharger can demonstrate that a particular detection limit is not attainable and obtains approval for a higher detection limit from the Executive Officer.

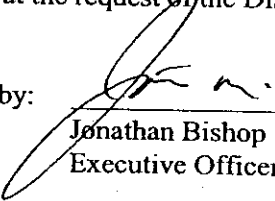
III. Notification

1. The Discharger shall inform this Regional Board 24 hours before the start of the discharge.
2. The Discharger shall inform this Regional Board within 24 hours in the event that any discharge exceeds the discharge limit. Written confirmation shall follow within one week and shall include date and time, estimated volume and/or concentration, duration, cause, and all corrective actions taken.
3. The Discharger shall inform this Regional Board of the termination of the evaluation project.

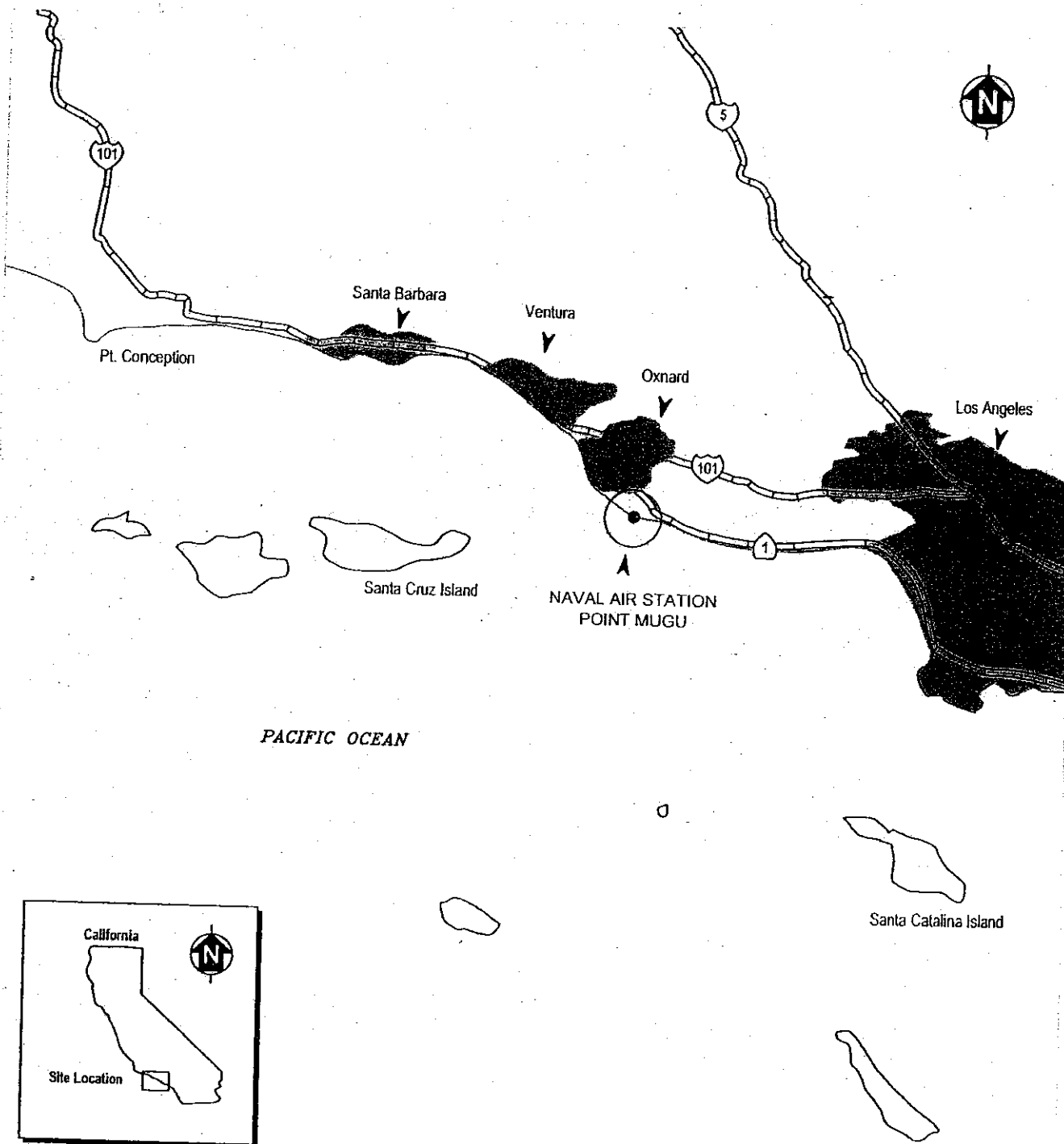
IV. Monitoring Frequency

1. Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations dropped by the Executive Officer if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.
2. All records and reports submitted in compliance with this Order are public documents and will be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region, upon request by interested parties. Only proprietary information, and only at the request of the Discharger, will be treated as confidential.


Ordered by:

  
Jonathan Bishop  
Executive Officer

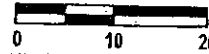
Date: July 14, 2006



**LEGEND**

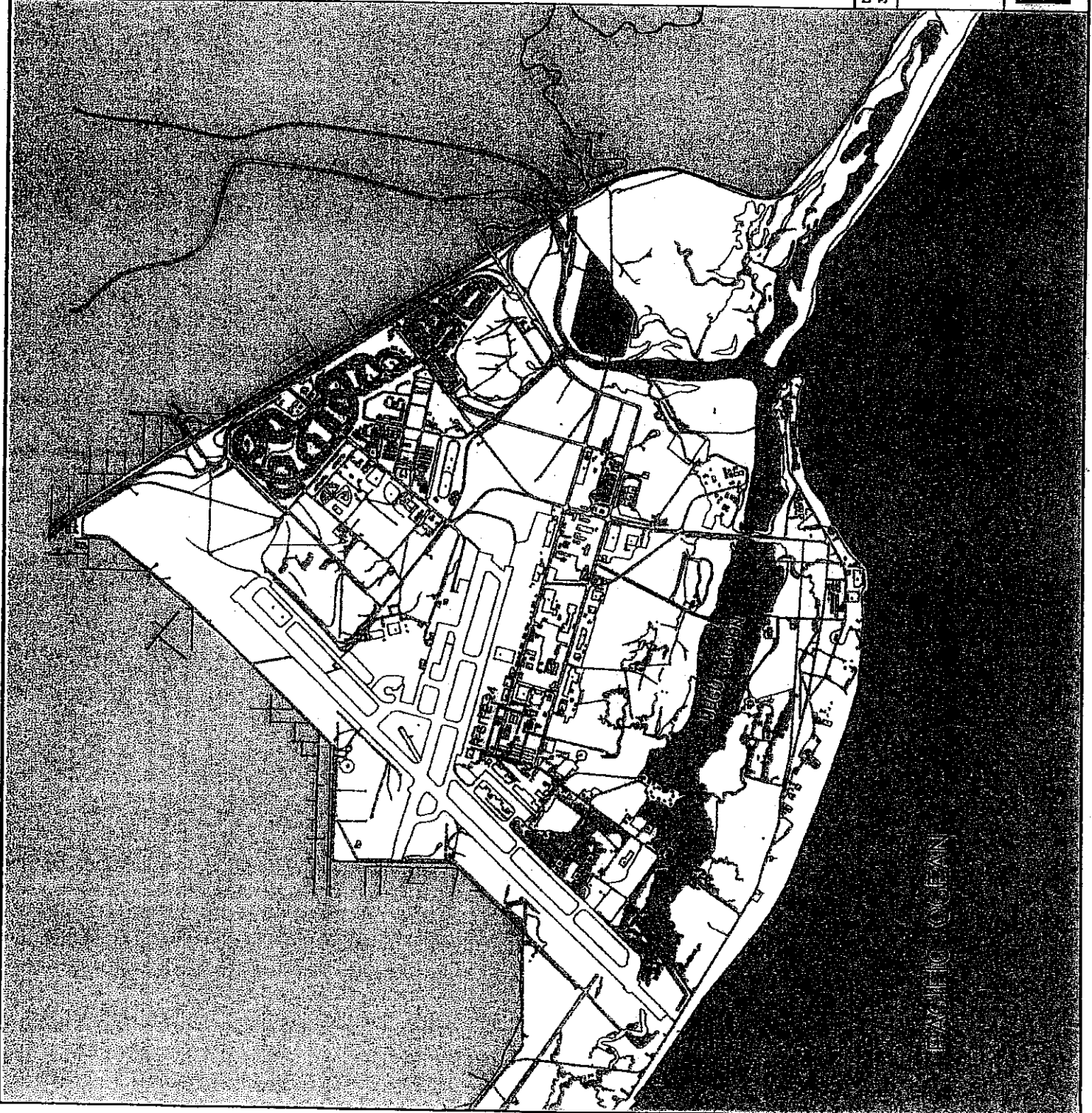

 SHADED AREA REPRESENTS  
 MAJOR POPULATION CENTERS OF  
 SANTA BARBARA, VENTURA, OXNARD,  
 AND LOS ANGELES

SCALE IN MILES



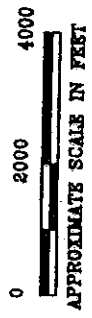
**FIGURE 1**

**LOCATION MAP OF  
 NAVAL AIR STATION  
 NAVAL BASE VENTURA COUNTY  
 POINT MUGU, CALIFORNIA**



**LEGEND**

- INSTALLATION RESTORATION SITE 24
- ROAD
- DIRT ROAD
- STRUCTURES, BUILDINGS
- WATER



DATE 3/25/05	PREPARED FOR U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA
LOCATION MAP OF PROJECT SITE IR SITE 24 (FORMER UST 23 AND 55)	
NAS POINT MUGU, CALIFORNIA U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA	
<b>T N &amp; Associates, Inc.</b> <b>&amp; A</b> Engineering and Science	
FIGURE 2	

PACIFIC OCEAN



**LEGEND**

- ◆ BASELINE MONITORING WELL LOCATIONS  
23W07A
- ◆ MONITORING WELL LOCATIONS, WHICH WERE NOT INCLUDED IN THE BASELINE SAMPLING EVENT  
23W09A
- APPARENT GROUNDWATER FLOW DIRECTION
- 4.25 GROUNDWATER ELEVATION (FT)
- 4.0 GROUNDWATER ELEVATION CONTOUR

**NOTES:**

- 1) GROUNDWATER DATA COLLECTED ON 8/19/2005
- 2) \* INDICATES ELEVATION NOT CONTOURED



0 80 160

APPROXIMATE SCALE IN FEET

PREPARED: 9/07/2003

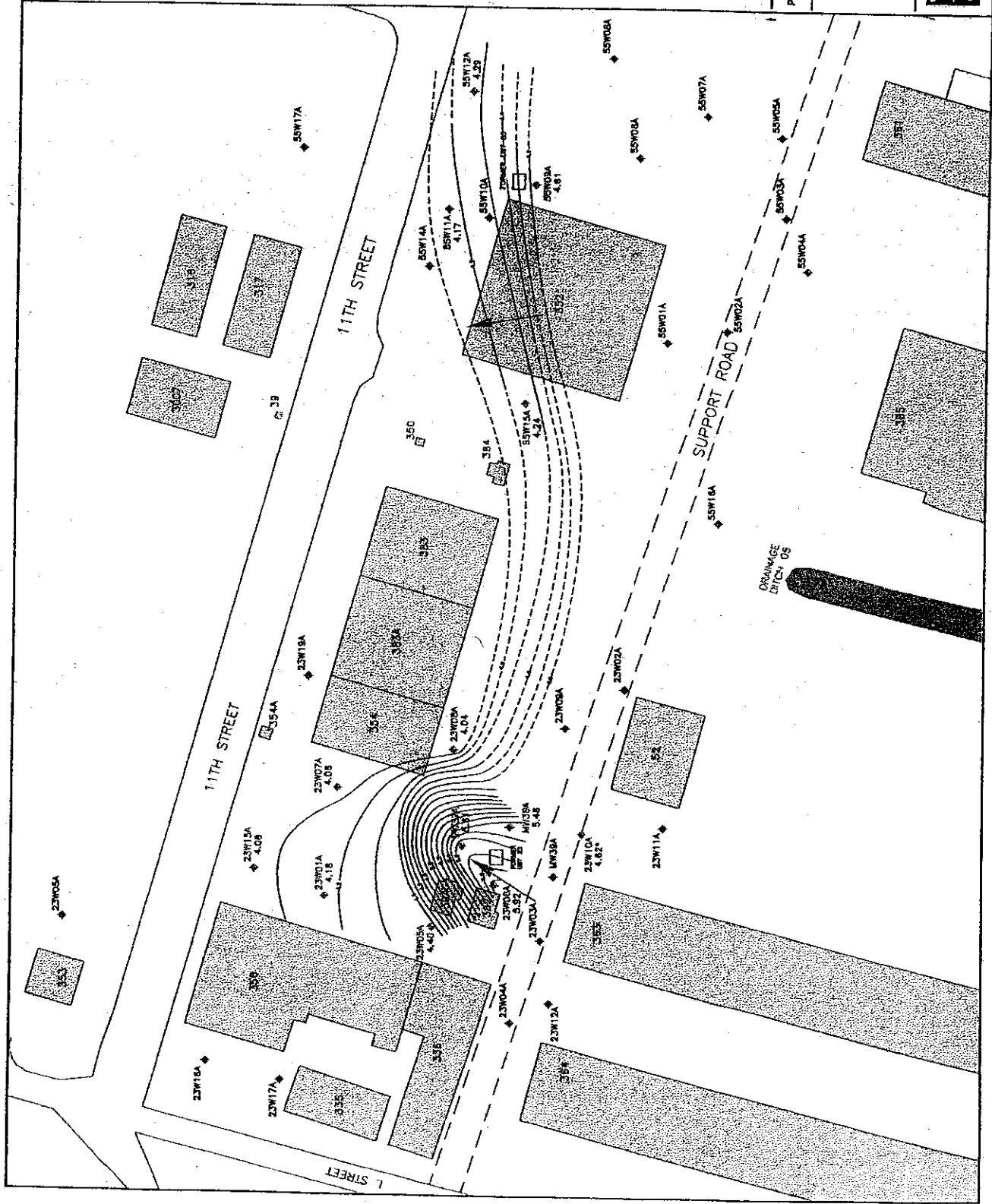
**GROUNDWATER GRADIENT MAP**  
IR SITE 24 (FORMER UST 23 AND 56)  
ZONE A - AUGUST 2005

NAS POINT MCGUIRE, CALIFORNIA  
U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA

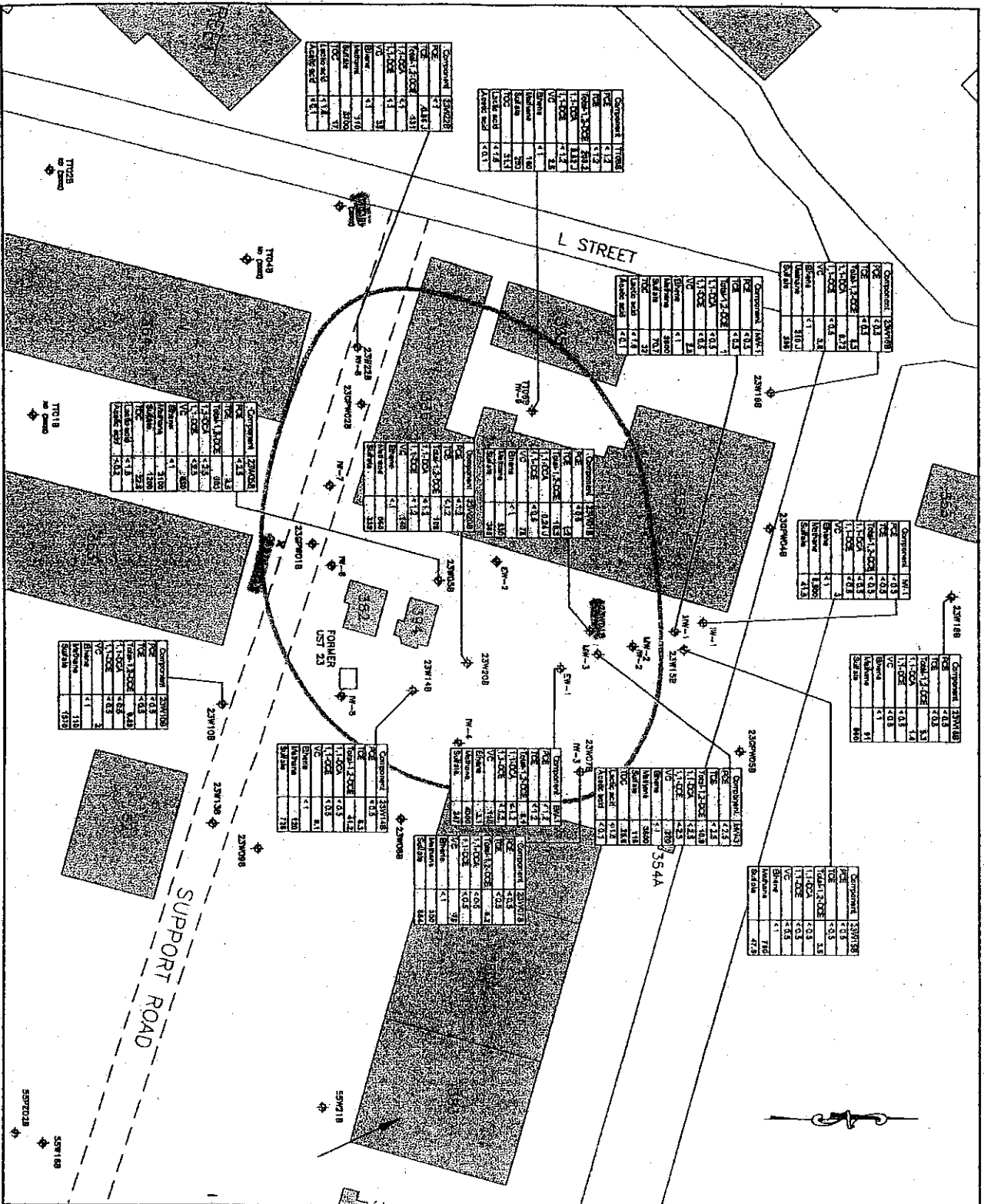
**TNTN & Associates, Inc.**  
**&A** Engineering and Science

FIGURE

3







**LEGEND**

- 239W02B BASILINE MONITORING WELL LOCATIONS PRESENTED ANALYTICAL RESULTS WERE OBTAINED DURING BRUSHING SAMPLING EVENT CONDUCTED ON 8/21/02 THROUGH 8/23/02. EXTENT OF MONITORING ZONE FOR THIS WELL IS NOT SHOWN IN THIS PLAN. SEE SECTION 2.5 OF THE DRAFT WORK PLAN (TNAK, 2006).
- 239W18B REMEDIAL PROGRESS MONITORING WELL LOCATIONS PRESENTED ANALYTICAL RESULTS WERE OBTAINED DURING BRUSHING SAMPLING EVENT CONDUCTED ON 8/21/02 THROUGH 8/23/02. EXTENT OF MONITORING ZONE FOR THIS WELL IS NOT SHOWN IN THIS PLAN. SEE SECTION 2.5 OF THE DRAFT WORK PLAN (TNAK, 2006).
- 239W01B JULY 2002 BORING LOCATION THE FORMER UST 23 ZONE B.
- 249(2002) HISTORICAL GROUNDWATER RESULTS FOR VANT, ONDOROK.
- 239W14B LOCATIONS OF MONITORING WELL NOT INCLUDED IN THE GROUNDWATER MONITORING PROGRAM.
- PROPOSED UST23 TREATMENT AREA
- ⊕ PROPOSED EXTRACTION WELL LOCATION (TO BE INSTALLED)
- ⊕-2 PROPOSED EXTRACTION WELL LOCATION (TO BE INSTALLED)
- ⊕-3 PROPOSED EXTRACTION WELL LOCATION (TO BE INSTALLED)
- NAME OF PREVALENT GROUNDWATER FLOW DIRECTION

**NOTES:**

1. DETAILS REGARDING SUBSTRATE INJECTION PROGRAM CAN BE FOUND IN SECTION 4.0 OF THE DRAFT WORK PLAN (TNAK, 2006).
2. DETAILS REGARDING SAMPLING PROGRAM FOR MONITORING REMEDIAL PROGRESS CAN BE FOUND IN SECTION 6.0 OF THE DRAFT WORK PLAN (TNAK, 2006).

0 60 120  
APPROXIMATE SCALE IN FEET

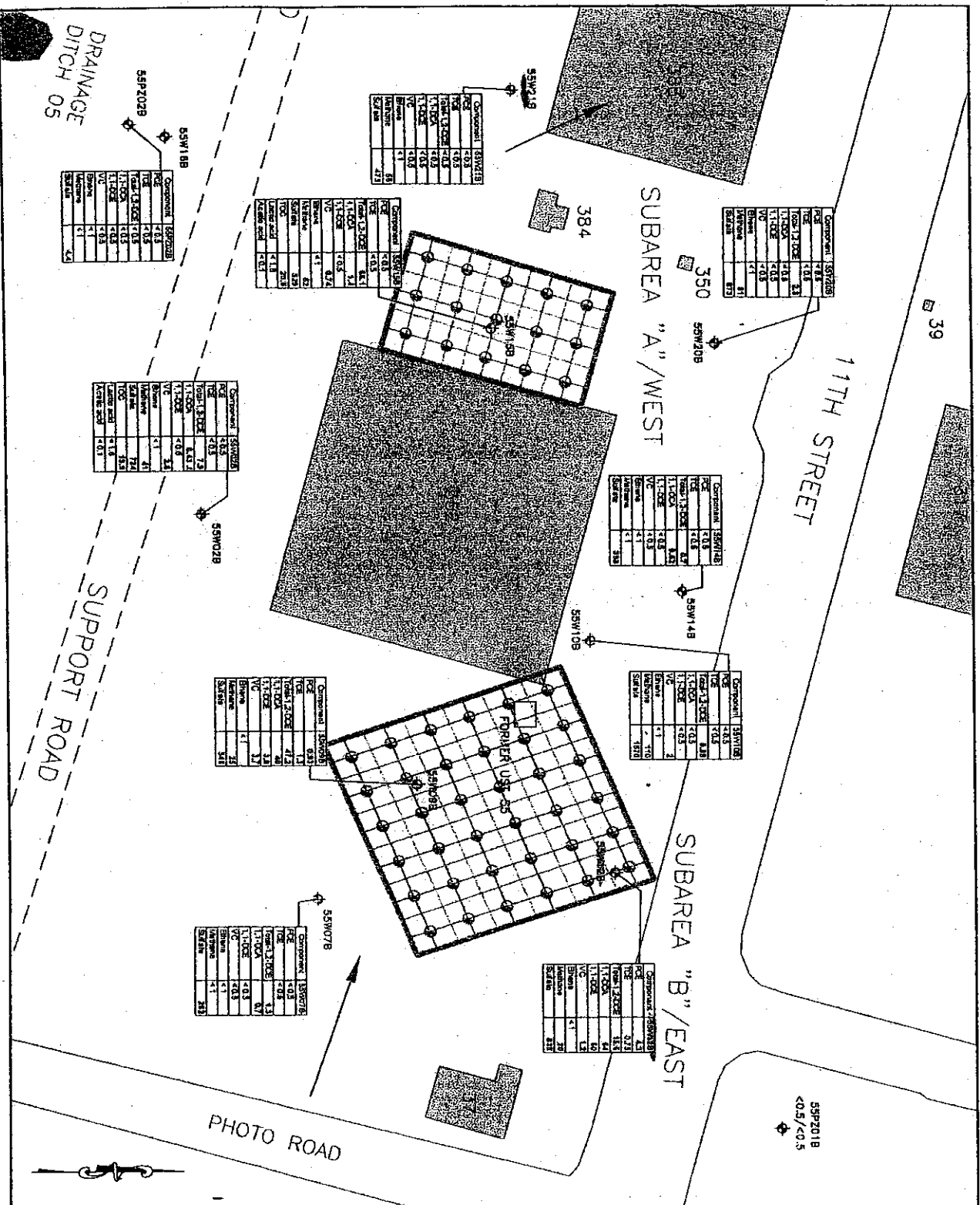
PREPARED: 8/24/2005 REVISED: 10/13/2005

**BASELINE GROUNDWATER MONITORING RESULTS AND EISB CONCEPTUAL DESIGN FORMER UST SITE 23 ZONE B**

VAS POINT MUGU, CALIFORNIA  
U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA

**TNT & Associates, Inc.**  
Engineering and Science

FIGURE 5



**LEGEND**

- ◆ BASELINE MONITORING WELL LOCATIONS; PRESERVED ANALYTICAL RESULTS WERE OBTAINED THROUGH AN S111 OF THROUGH 8/2/05 FOR DETAILS REFER TO SECTION 2.5 OF THE DRAFT WORK PLAN (TNA, 2005).
- ◆ REMEDIAL PROGRESS MONITORING WELL LOCATIONS WITHIN SUBAREA "A" WEST; PRESERVED ANALYTICAL RESULTS WERE OBTAINED THROUGH AN S111 OF THROUGH 8/2/05 FOR DETAILS REFER TO SECTION 2.5 OF THE DRAFT WORK PLAN (TNA, 2005).
- ◆ REMEDIAL PROGRESS MONITORING WELL LOCATIONS WITHIN SUBAREA "B" EAST; PRESERVED ANALYTICAL RESULTS WERE OBTAINED THROUGH AN S111 OF THROUGH 8/2/05 FOR DETAILS REFER TO SECTION 2.5 OF THE DRAFT WORK PLAN (TNA, 2005).
- ◆ MONITORING WELL LOCATIONS WHICH WERE NOT INCLUDED IN BASELINE SAMPLING EVENT
- ◆ 23W14B DECEMBER 2004 REMEDIATION RESULTS AND VENT OUTSIDE (IN GREEN)
- ◆ PROPOSED LITRAB TREATMENT AREA, SUBAREA "A" A TOTAL OF 13 INJECTION POINTS ARE PROPOSED ON 20 FT BY 20 FT GRID.
- PROPOSED LOCATIONS FOR DIRECT PUMP INJECTION POINTS WITHIN SUBAREA "A"
- PROPOSED LOCATIONS FOR DIRECT PUMP INJECTION POINTS WITHIN SUBAREA "B"
- RANGE OF PREVALENT GROUNDWATER GRADIENT DIRECTIONS

**NOTES:**

1. DETAILS REGARDING SUBSTRATE INJECTION PROGRAM CAN BE FOUND IN SECTION 4.10 OF THE DRAFT WORK PLAN (TNA, 2005).
2. DETAILS REGARDING SAMPLING PROGRAM FOR MONITORING REMEDIAL PROGRESS CAN BE FOUND IN SECTION 5.10 OF THE DRAFT WORK PLAN (TNA, 2005).

**APPROXIMATE SCALE IN FEET**

0 50 100

PREPARED: 8/24/2005 REVISION: 12/15/06

**BASELINE GROUNDWATER MONITORING RESULTS AND FISH CONCEPTUAL DESIGN FORMER UST 55 ZONE B**

NAS POINT NAUJ, CALIFORNIA  
U.S. NAVY SOUTHWEST DIVISION, SAN DIEGO, CA

**TN & Associates, Inc.**  
**BA** Engineering and Sciences

FIGURE 6