Oakland
All-America City
1993

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA, SUITE 5301 • OAKLAND, CALIFORNIA 94612-2034

Public Works Agency
Environmental Services

FAX (510) 238-7286
TDD (510) 238-7644

APR 1 0 2002

April 5, 2002

Mr. Barney Chan
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: **Report of Test/Observation Well Installation Report-Oakland Municipal Service Center, 7101 Edgewater Drive Oakland, California**

Dear Mr. Chan:

Enclosed are copies of the above report prepared by our consultants, Uribe & Associates for the City of Oakland Municipal Service Center at 7101 Edgewater Drive.

Please call me at 238-6259, if you have any questions or require additional information.

Sincerely,

Joseph Cotton, R.G.
Environmental Program Specialist

cc: Diane Heinz, Port of Oakland, 530 Water St., Oakland, CA 94604
Xinggang Tong, URS Corporation, 500 12th St., Suite 200, Oakland, CA 94607

Uribe & Associates
447 29th Street
Suite Two Hundred
Oakland, California 94609-3532
☎ 510-832-2233 Fax 510-832-2237

Engineering and Environmental Services

APR 10 2002

April 2, 2002

Mr. Joseph Cotton
City of Oakland
Public Works Agency, Environmental Services Division
250 Frank Ogawa Plaza, Suite 5301
Oakland, CA 94612

Subject: **Test /Observation Well Installation Report**
U&A Project 291-03

Dear Mr. Cotton:

Uribe & Associates (U&A) is pleased to present this letter report describing the field activities during the installation of 22 test /observation wells at the Oakland Municipal Service Center (Site) located at 7101 Edgewater Drive in Oakland. Well installation was completed in eight working days between December 10, 2001, and January 7, 2002. In addition to this letter report, a table, figures, well installation permits, well logs, sieve analysis data, and well location/elevation survey data are included as attachments.

The fieldwork was divided into three primary tasks, Pre-Field Activities, Well Installation Activities, and Well Surveying. Each task was successfully completed, as described below.

Pre-Field Activities

Prior to any field activities a site Health and Safety Plan was created. This document identified potential hazards associated with well installation activities and described procedures to be taken in the event of an emergency.

Joseph Cotton, the representative from the Oakland Public Works Agency Environmental Services Division (OPWA ESD) marked the proposed sampling locations in white and red paint at the Site. Figures A-1 and A-2 (Attachment A) show the proposed locations of the 22 new test/observation wells and other existing wells at the Site. On December 6, 2001, Mark Cruickshank, U&A geologist, met with Mr. Cotton. The four drilling areas (Plume A, B, C and D) were reviewed with respect to the optimum sequence of well installation. Due to the parking of municipal vehicles and traffic flow concerns, it was decided that the least disruptive order was to begin with Plume B, followed by Plume A, Plume C, and Plume D. California Utility Locators

cleared each proposed location for underground utilities. In addition, Underground Services Alert (USA) was notified of the proposed drilling locations. U&A prepared well installation permits and received approval from the Alameda County Public Works Agency on December 3, 2001. These permits are included as Attachment B.

Well Installation Activities

U&A provided oversight of HEW Drilling Company, Inc. (HEW Drilling) during the installation of 18 4-inch diameter and 4 2-inch diameter test/observations wells to depths ranging from 13 to 17 feet below ground surface (bgs). U&A prepared detailed well logs using the Unified Soil Classification System (USCS), noting lithology, backfill material, well casing material, sample drive interval, recovered interval, sample interval, sample time, blow count, and Photo Ionization Detector (PID) readings. Well logs are included as Attachment C.

Six wells were installed during late December (Plumes A and B), and the remaining 16 wells were installed in early January (Plumes C, D and an additional well at Plume A). The wells were constructed with slotted polyvinyl chloride (PVC) screen extending to a minimum of 2 feet above the observed depth to water (to allow for tidal fluctuations). One exception was well RW-A2, in which the water level measured in the boring was 0.99 feet bgs. In order to effectively seal the well and prevent grout from entering the screen, blank PVC casing was used from the surface to 2 feet bgs. In all wells, screens were extended downward to the bottom of the permeable water-bearing zone. Borings were advanced into a low-permeability soil, typically clay (Bay mud), and 2-foot sections of blank PVC casing were placed below the screens to provide a sump for the future placement of submersible pumps.

Continuous coring was performed on borings using a 2-inch diameter, 18-inch long split-spoon sampler. Where a continuous soil lithology could be established between borings, the coring frequency was reduced. In each boring, one composite soil sample was collected from three depths spanning the coarser-grained soil that represented the water-bearing zone. Two samples were composited if the sample recovery was poor. U&A submitted six samples to the Soil Mechanics Laboratory in Oakland, CA for particle size analysis (ASTM D 422-63). For both Plumes C and D, two composite samples were selected for analysis, one from inside and the other from outside of the pre-1970 shoreline (four total samples). In addition, one composite sample was selected for analysis from each of Plumes A and B. Attachment D contains the results of the particle size analysis.

Using a sounder, U&A measured the depth to static water level and to product in each of the borings on January 8, 2002. The depth to product could only be measured in 16 of the 4-inch wells and 2 of the 2-inch wells, because the available instrument could not measure depth to product in the remaining four wells. However, product was observed on the well sounder sensor in these four wells, indicating that they also contained some thickness of floating product. Table A-1 (Attachment A) lists measurements of the

depth to static water and floating product as well as the static water elevation, which is corrected for depression of the potentiometric surface by floating product.

Hydrocarbon-contaminated soil was encountered in all of the borings, with the exception of RW-C1. The contamination was most often noted approximately 1 foot above and within the water-bearing zone. The hydrocarbons were typically bound at depth by a low-conductivity clay between 11 and 13 feet bgs. The average floating product thickness measured in the wells was 2.5 inches, with a maximum thickness of over 2 feet in RW-D4. This well is located in close proximity to the former underground fuel pipeline and an extraction well.

Rip-rap/boulders were encountered in five borings within Plume B and C. Three borings in Plume B encountered drilling refusal. Borings RW-B3 and RW-B4 encountered refusal at 16 and 15 feet, respectively. A second attempt was not made for these borings, and wells were installed with slotted PVC casing extending to the bottom of the borings, omitting the 2-foot sumps. Boring RW-B1 met refusal at 8 feet bgs. The boring was moved 4 feet in the direction of RW-B2 and was successfully completed to the desired depth of 15 feet bgs.

Investigation-derived waste (IDW) was containerized in 55-gallon drums and stored on site for later disposal. IDW characterization sampling, analysis, and disposal are not within U&A's scope of work.

Well Survey

PLS Surveys, Inc. (PLS) surveyed the locations of the 22 new wells. Casing elevations were measured for each of the wells in Plumes A, B, C, and D with the exception OB-A1, where the well cover could not be removed. However, the elevation of the vault rim was surveyed. U&A will gain access to the well, measure the depth to the casing below the vault rim elevation, and provide the information to Mr. Cotton. PLS also surveyed the location of five preexisting monitoring wells and three building corners. Attachment E contains a spreadsheet with the survey data and Figure E-1, which illustrates the surveyed well and building corner locations.

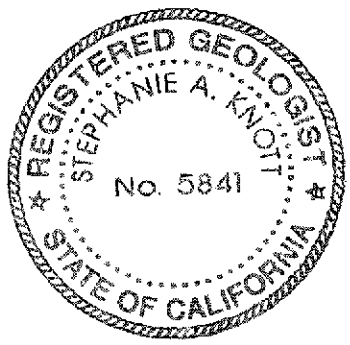
We greatly appreciate the opportunity to work on this interesting project. Please call me at (510) 587-4244 if you have any questions or need additional assistance.

Sincerely,

Stephanie Knott

Stephanie A. Knott, R.G.

Attachments



Attachment A

Table and Figures

Table A-1
Static Water Elevation and Product Thickness

Well Location	Elevation of Top of Well Casing (ft.MSL)	Depth to Water (ft./btoc)	Depth to Product (ft./btoc)	Thickness of Product (ft.)	Corrected Static Water Elevation (ft. MSL)[1]
RW-A1	10.09	2.3	2.02	0.28	8.01
RW-A2	9.67	0.99	0.66	0.33	8.49
OB-A1	NM	2.65	2.39	0.26	NM
RW-B1	11.22	7.43	7.11	0.32	4.05
RW-B2	11.23	7.46	7.19	0.27	3.99
RW-B3	11.14	9.71	9.41	0.3	1.67
RW-B4	11.29	9.89	9.6	0.29	1.63
RW-C1	10.44	12.46	NM	NM	-2.02*
RW-C2	10.58	6.2	5.91	0.29	4.61
RW-C3	10.71	5.34	5.05	0.29	5.6
RW-C4	11.32	13.63	NM	NM	-2.31*
RW-C5	10.79	6.67	6.11	0.56	4.57
RW-C6	10.31	6.02	5.66	0.36	4.58
RW-C7	10.12	6.46	6.18	0.28	3.88
OB-C1	10.39	6.01	5	1.01	5.19
RW-D1	10.18	6.22	5.91	0.31	4.21
RW-D2	10.33	6.55	6.1	0.45	4.14
RW-D3	10.07	6.52	6.1	0.42	3.89
RW-D4	10.22	7.14	5.12	2.02	4.7
RW-D5	9.99	5.41	5.21	0.2	4.74
OB-D1	9.46	4.8	NM	NM	4.66*
OB-D2	9.95	5.46	NM	NM	4.49*

Notes:
[1] = Static water elevation is corrected for floating product using an assumed product relative density of 0.80.
ft/btoc = feet below top of casing.
ft. MSL = feet above mean sea level.
NM = not measured.
* = not corrected for floating product because product thickness could not be measured.

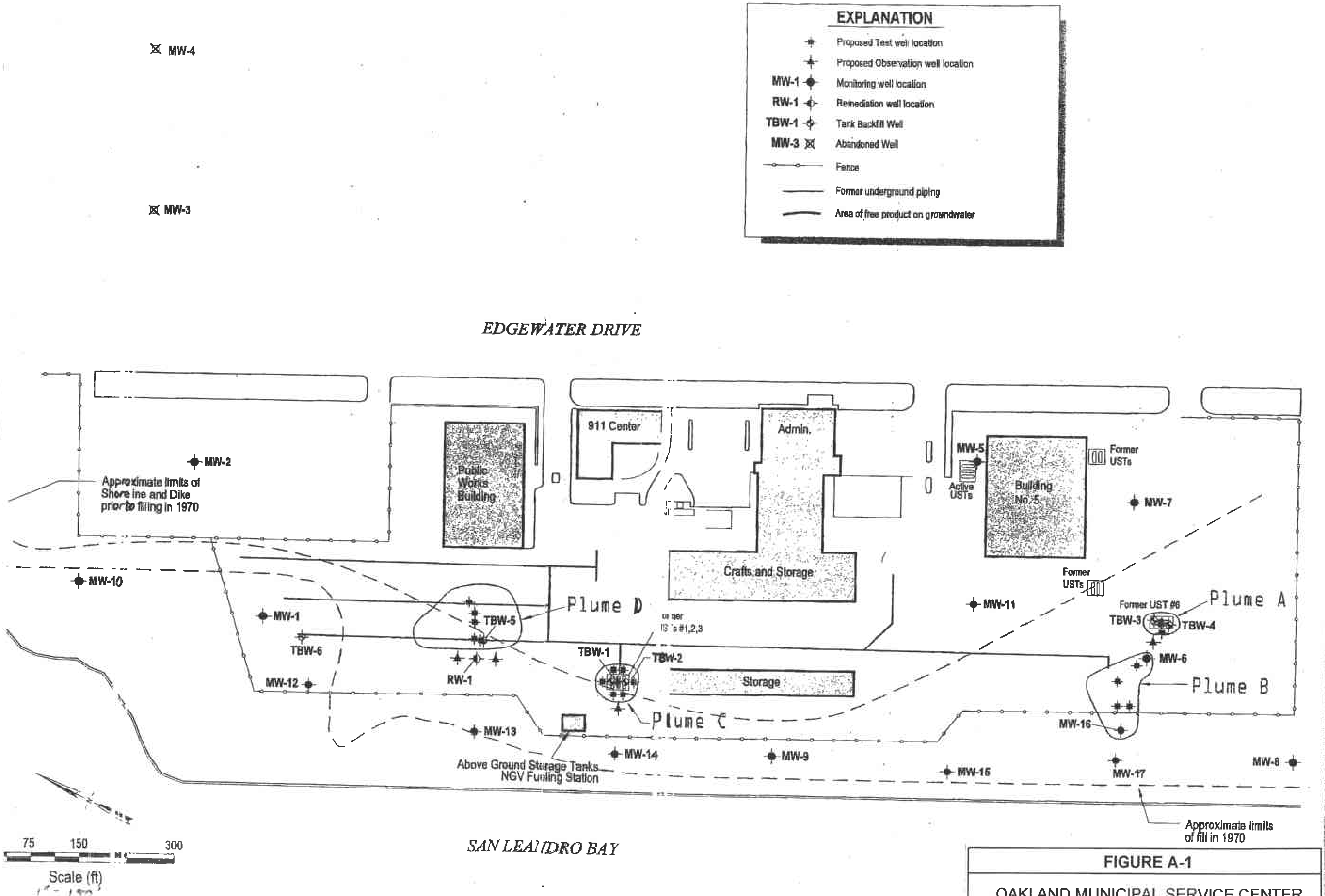
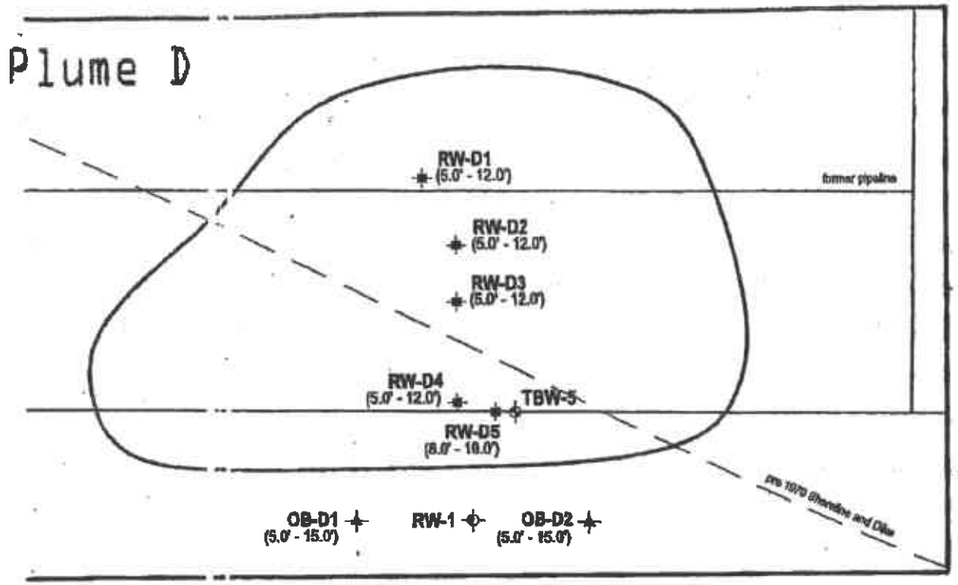
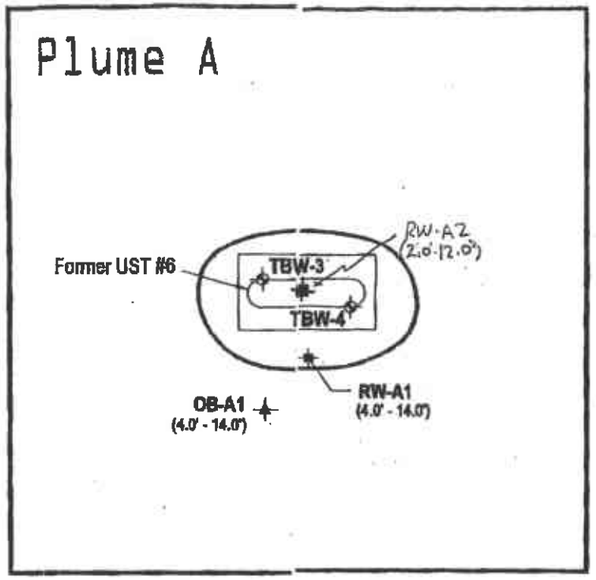
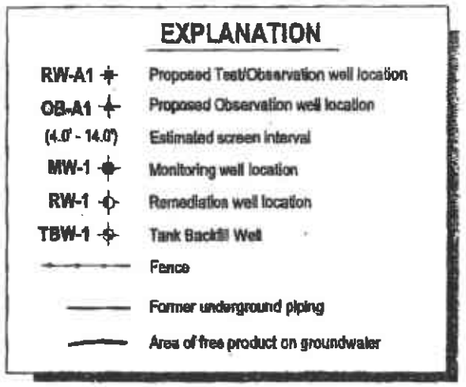


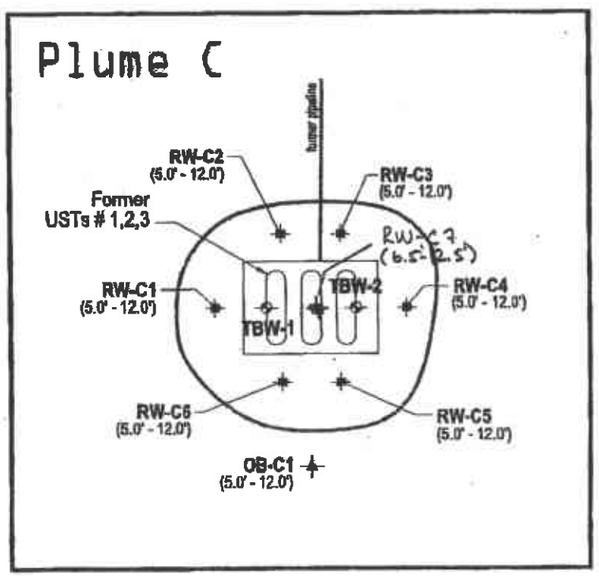
FIGURE A-1

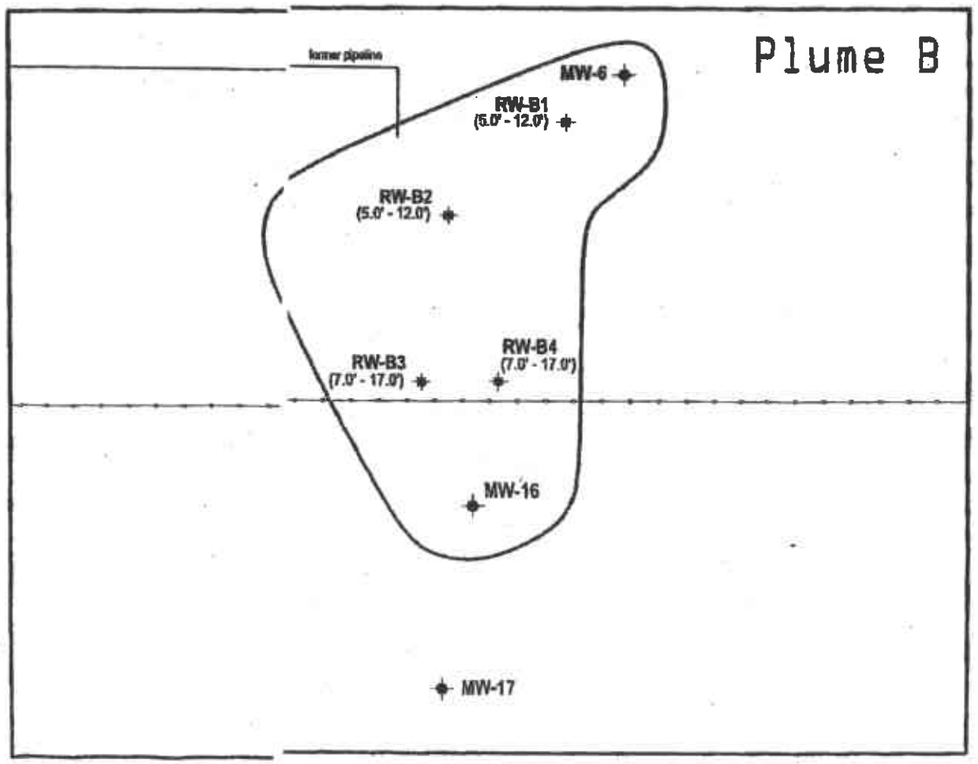
OAKLAND MUNICIPAL SERVICE CENTER WELL LOCATIONS

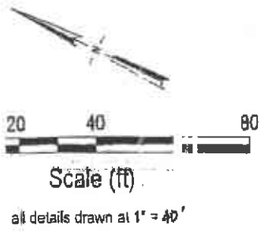












all details drawn at 1" = 40'

FIGURE A-2

OAKLAND MUNICIPAL SERVICE CENTER
HYDROCARBON PLUME AREAS

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 320 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 27th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	(X)	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other Monitoring	(X)

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	(X)
Cable	( )	Other	( )		

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-A1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev. 5-13-00

FOR OFFICE USE

PERMIT NUMBER 01-2083
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, St. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling
DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 4 in. Depth 15 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-A2

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER W01-2081
WELL NUMBER ____
APN ____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 947 29th st. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling
DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 4 ft. Owner's Well Number OB-A1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2079
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL.
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	(X)	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other Monitoring	(X)

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	(X)
Cable	( )	Other	( )		

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft
Surface Seal Depth 4 ft. Owner's Well Number RW-B1

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER W01-2084
WELL NUMBER ____
APN ____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway Ste. 330 Phone 510-238-2259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-7233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-B2

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/27/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER W01-2085
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, St. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-B3

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER W01-2086
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 300 Phone 510-238-2259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Address 447 29th St. Fax 510-832-2237
City Oakland CA Phone 510-832-2233
Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-B4

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2087
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 330 Phone 510-238-2259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Address 447 29th St. Fax 510-832-2237
City Oakland CA Phone 510-832-2233
Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-C1

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/27/01

PLEASE PRINT NAME William F. White

Rev.5-11-00

FOR OFFICE USE

PERMIT NUMBER WO1-2088
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 330 Phone 510-238-4259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	(X)	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other Monitoring	(X)

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	(X)
Cable	( )	Other	( )		

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-C2

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/13/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2089
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway St. 330 Phone 510-238-2259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 947 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other	

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-C3

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2090
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

11-28-01 8:03PM;URIBE

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	(X)	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other Monitoring	(X)

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	(X)
Cable	( )	Other	( )		

DRILLER'S NAME HEW Drilling
DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft
Surface Seal Depth 4 ft Owner's Well Number RW-C4

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/27/01

PLEASE PRINT NAME William F. White

Rev 5-13-00

FOR OFFICE USE

PERMIT NUMBER W01-2091
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

11-29-01 5:03PM;URIBE

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway St. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling
DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-C5

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WD1-2092
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway St. 330 Phone 510-238-2259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 497 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-C6

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER W01-2093
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 330 Phone 510-238-2259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling
DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 4 in. Depth 15 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-C1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2080
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, St. 300 Phone 510-238-2259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	(X)	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other Monitoring	(X)

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	(X)
Cable	( )	Other	( )		

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 4 ft. Owner's Well Number OB-C1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2080
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL.
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, St. 330 Phone 510-238-4259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 947 29th St. Phone 510-832-2233
City Oakland CA Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling
DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-D1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER W01-2094
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

11-29-01 ; 5:03PM ;

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 300 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 477 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	(X)	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other Monitoring	(X)

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	(X)
Cable	( )	Other	( )		

DRILLER'S NAME HEW Drilling
DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-02

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-80

FOR OFFICE USE

PERMIT NUMBER W01-2095
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	(X)	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other Monitoring	(X)

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	(X)
Cable	( )	Other	( )		

DRILLER'S NAME HEW Drilling
DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-D3

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F White DATE 11/27/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2096
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED [signature] DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway St. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft.
Surface Seal Depth 4 ft. Owner's Well Number RW-D4

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2097
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

11-29-01; 5:03PM; URIBE

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, St. 300 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 17 ft
Surface Seal Depth 4 ft. Owner's Well Number RW-D5

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/27/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2098
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL.
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, St. 330 Phone 510-238-2259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 947 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	( )	General	( )
Water Supply	( )	Contamination	( )
Monitoring	(X)	Well Destruction	( )

PROPOSED WATER SUPPLY WELL USE

New Domestic	( )	Replacement Domestic	( )
Municipal	( )	Irrigation	( )
Industrial	( )	Other Monitoring	(X)

DRILLING METHOD:

Mud Rotary	( )	Air Rotary	( )	Auger	(X)
Cable	( )	Other	( )		

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 4 ft. Owner's Well Number 08-01

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.5-13-00

FOR OFFICE USE

PERMIT NUMBER W01-2081
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 7101 Edgewater Drive
Oakland, CA

CLIENT
Name City of Oakland (Joseph Cotton)
Address 1333 Broadway, Ste. 330 Phone 510-238-6259
City Oakland CA Zip 94612

APPLICANT
Name Uribe & Associates
Fax 510-832-2237
Address 447 29th St. Phone 510-832-2233
City Oakland CA Zip 94609

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring	X	Well Destruction	

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other Monitoring	X

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S NAME HEW Drilling

DRILLER'S LICENSE NO. 604987

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 4 ft. Owner's Well Number OB-D2

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 12/10/2001
ESTIMATED COMPLETION DATE 12/15/2001

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE William F. White DATE 11/29/01

PLEASE PRINT NAME William F. White

Rev.3-13-00

FOR OFFICE USE

PERMIT NUMBER WO1-2082
WELL NUMBER _____
APN _____

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

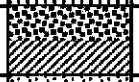
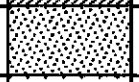
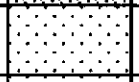
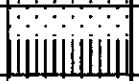
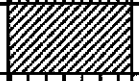
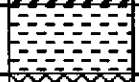
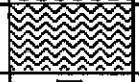
F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED _____ DATE 12-3-01

SOIL CLASSIFICATION LEGEND

MAJOR DIVISIONS		SYMBOLS		TYPICAL NAMES
GRAVELS MORE THEN 1/2 COARSE FRACTION > NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LESS THAN 15% FINES	GW		Well-graded gravels, gravel-sand mixtures, little or no fines
		GP		Poorly-graded gravels, gravel-sand mixtures, little or no fines
	GRAVELS WITH GREATER THAN 15% FINES	GM		Sitly gravels, gravel-sand mixtures
		GC		Clayey gravels, gravel-sand-clay mixtures
SAND MORE THEN 1/2 COARSE FRACTION < NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 15% FINES	SW		Well-graded sands or gravel-sands, little or no fines
		SP		Poorly graded sands or gravelly sands, little or no fines
	SANDS WITH GREATER THAN 15% FINES	SM		Silty sands, sand-silt mixtures
		SC		Clayey sands, sand-clay mixtures
SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL		Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH		Inorganic clays of high plasticity, fat clays
		OH		Organic clays of medium to high plasticity, organic silty clays, organic silts
		PT		Peat and other highly organic soils
DEPTH TO GROUNDWATER MARKERS				Depth to Static Water Level in Boring or Well
				Depth to Water Level Encountered During Drilling
OTHER SYMBOLS				Rip - Rap (Boulders)

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-A1** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 12/11/2001
Client: City of Oakland		Date Completed: 12/11/2001
Location or Site: 7101 Edgewater, Oakland CA, Plume A		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Partly Cloudy, Light Wind		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	2.30	Depth to Product (ft./casing)	2.02
Time	1418	Time	1418
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
						1				SW	Gravely Sand - light brown, dry, loose, well graded, angular gravel to 3 cm.
						2				CL	Gravely Silty Clay - Grey, moist, soft, well graded, slightly plastic.
0/0	3,5,7					3					gravel > 3 cm, jammed sampler
						4					
						5					
						6					wet at 6.5' - 3" Gravely Silty Sand layer- well graded, medium dense, hydrocarbon stained, moderate odor
	3,2,2		A			7				CH	Clay - Green, mosit, soft, homogeneous, highly plastic.
		1600				8					
						9				SW	Gravely Silty Sand - brown, moist, medium dense, well graded, gravel - 25%, silt - 25% sand - 50% (fine to medium grained), trace clay.
	1,1,0		B			10					
						11				CH	Clay - black, very moist, very soft, highly plastic, 30% organic fragments (wood).
						12					
0/0	1,0,1					13					
						14					
						15					
						16					TOTAL DEPTH = 16', SAMPLE RW-A1 COMPOSITED FROM A,B.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-A2** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/8/2002
Client: City of Oakland		Date Completed: 1/8/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume A		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Partly Cloudy		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	0.99	Depth to Product (ft./casing)	0.66
Time	1400	Time	1400
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
0/0						1				SW	Gravely Sand - dark brown, moist, loose, well graded, fill material
						2				GP	Pea Gravel - fill material for previous tank excavation
						3					
						4					
						5					
						6					
						7					
						8					
						9					
0/0						10					
						11					
	1,1,1		No Sample Collected			12				CH	Clay - greenish grey, moist, soft, highly plastic, driller reports change of lithology at 12'.
						13					
						14					
						15					TOTAL DEPTH = 14.5'

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **OB-A1** **Sheet** 1 of 1

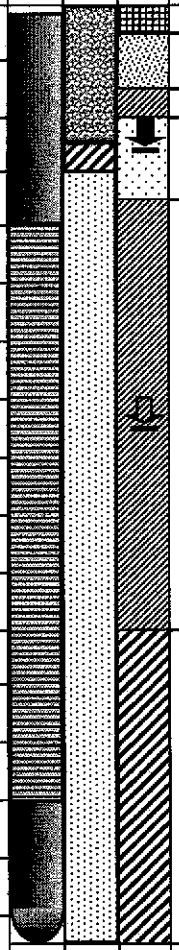
Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 12/11/2001
Client: City of Oakland		Date Completed: 12/11/2001
Location or Site: 7101 Edgewater, Oakland CA, Plume A		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 8"
Weather Conditions: Sunny, West Wind		Sampling Method: Split Spoon (18")
Casing Installation Data: 2" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	2.65	Depth to Product (ft./casing)	2.39
Time	1413	Time	1413
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Soil Group Symbols /Contacts	Description
								Asphalt
						1	SW	Gravely Sand - light brown, dry, loose, well graded, angular gravel to 3 cm.
	6,5,6						CL	Gravely Silty Clay - grey, moist, soft, well graded, non graded, slightly plastic
0/0						2	SP	Sand - grey, moist - wet at 3', very loose, homogeneous, moderately graded, fine - medium grained, moderate to strong odor.
	4,3,5					3		
						4	CL	Gravely Clay - greenish grey, moist, mottled, medium stiff, slight odor, gravel - 20% angular to 2 cm.
	4,5,3					5		approximately 2" medium grained sand layer at 5'.
	2,2,1					6		
						7		decreased gravel, decreased density, increased moisture at 7'.
	2,6,6		A			8		Silty Clay with Sand (7.5-8.5')- greenish grey, wet, soft, well graded, plastic, sand - 15%,silt - 20%, clay - 65%, slight odor.
	3,4,6	1410				9		Gravely Clay (8.5-11.0')- light brown, moist, soft, highly plastic, well graded, mottled texture.
						10		
	2,3,3		B			11		4" sand layer, hydrocarbon staining, strong odor at 10.5'.
	1,1,0					12	CH	Clay - black, moist, very soft, highly plastic, homogeneous, trace wood debris.
0/0						13		shell fragments and organics - 10% at 12.5'.
	2,2,1					14		
						15		
						16		
						17		TOTAL DEPTH = 16', SAMPLE OB-A1 COMPOSITED FROM A,B.



U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-B1** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 12/11/2001
Client: City of Oakland		Date Completed: 12/11/2001
Location or Site: 7101 Edgewater, Oakland CA, Plume B		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Mostly Sunny, Moderate West Wind		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	7.43	Depth to Product (ft./casing)	7.11
Time	1404	Time	1404
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Soil Group Symbols /Contacts	Description
								Asphalt
							GW	Sandy Gravel - brown, moist, loose,well graded, slightly rounded, gravel - 60% to 3 cm.
0/0						1		
						2	CL	Gravely Clay - greenish grey, slightly moist, stiff, poorly sorted, non graded
						3		
	8,8,12					4		
						5		2" Silty Sand layer, strong odor, slight discolorization, wet.
	18,20,19					6		
						7		Silty Clay with Sand and Gravel - grey, moist to very moist at 6.5', very well graded, medium stiff, increasing sand/silt to bottom, slight odor, clay - 50%, silt - 20%, sand - 15%, trace glass shards, increased gravel, boulders at 8'.
	39,45,50		A			8		
						9	SW	Gravely Sand - black, wet, well graded, loose, stained black with hydrocarbons, free product, strong odor, 4" silty sand at 8'.
	15,12,10	1010	B			10		increased hydrocarbons at 10', rare 2" clay sections
						11		
	4,4,4					12		decreased gravel at 12.5'
0/0	4,2,2		C			13		
						14	CH	Clay - greenish grey, moist, very soft, highly plastic, homogeneous
						15		
						16		TOTAL DEPTH = 16', SAMPLE RW-B1 COMPOSITED FROM A,B,C, ORIGINAL BORING REFUSED @ 7', SECOND ATTEMPT MOVED 4' TOWARDS RW-B2.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log #	**Well #** **RW-B2**	**Sheet** 1 of 1
Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 12/10/2001
Client: City of Oakland		Date Completed: 12/10/2001
Location or Site: 7101 Edgewater, Oakland CA, Plume B		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Partly Cloudy, West Wind		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Depth to Water (ft./casing)	7.46	Depth to Product (ft./casing)	7.19
Time	1421	Time	1421
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
										GW	Sandy Gravel - brown, moist, loose, well graded, slightly rounded, gravel - 60% to 3 cm.
0/0	7,7,6					1					
						2				CL	Gravely Clay - greenish grey, slightly moist, medium stiff, 20% well graded gravel, trace wood fragments
	5,7,10					3					
	13,20,16					4					2-4" gravel layer at 4.5', angular to 3 cm.
						5				ML	Sandy Silt - greenish grey, moist, loose, moderately graded, fine grained sand - 30%, silt, trace gravel.
	23,27,27					6					4" clay layer at 6.75'
	18,23,22		A			7				GP	Gravely Sand - black, wet, moderately sorted, strong odor, black color due to hydrocarbon staining, trace bright yellow sand, slag material, increased silt with depth to 25%, gravel locally to 30%.
						8					free product (hydrocarbons) at 9'
	14,13,14					9					
	7,7,8	1700	B			10					
0/0						11					
	4,6,9					12					
			C								
	2,1,2					13				CH	Clay - grey, moist to very moist, soft, highly plastic, gravel - 10%, slight odor.
						14					
						15					TOTAL DEPTH = 15', SAMPLE RW-B2 COMPOSITED FROM A,B,C.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-C1** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/2/2002
Client: City of Oakland		Date Completed: 1/2/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume C		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Rain		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	12.46	Depth to Product (ft./casing)	
Time	1509	Time	
Date	1/8/02	Date	

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
	8,12,44					1				SW	Gravely Sand - brown, loose, moist, well graded, fill material, gravel - angular to 2cm, sand - medim grained.
0/0	4,6,6					2				CL	Gravely Clay - brown/grey, moist, well graded, medium stiff, moderately plastic, gravel - 20% - angular, trace organic debris. color change at 3.5' - grey
	6,12,20					3					
						4					
	23,20,10		A			5					
		905				6					1" layer gravely silt, slight hydrocarbon staining at 6', wet.
	18,19,28					7				CH	Clay - grey, moist, medium stiff, trace gravel - angular, high plasticity, 5% organic debris.
			B			8					2" layer of gravely sand - wet, poorly sorted, loose, hydrocarbon free product, strong odor.
	3,3,5					9					
	2,2,1					10					very soft, decreased organics, moist.
0/0						11					
	1,1,2					12					
						13					
						14					TOTAL DEPTH = 14', SAMPLE RW-C1 COMPOSITED FROM A,B.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-C2** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/3/2002
Client: City of Oakland		Date Completed: 1/3/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume C		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Partly cloudy		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	6.20	Depth to Product (ft./casing)	5.91
Time	1514	Time	1514
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Soil Group Symbols /Contacts	Description
								Asphalt
0/0						1	SW	Gravely Sand - brown, moist, loose, well graded, fill material, gravel - angular to 3 cm - 35%, sand medium grained.
						2	CL	Gravely Clay - dark grey, moist, medium stiff, well graded, rounded-subangular well graded gravel to 1 cm, sltightly plastic.
	6,8,12					3		
						4		
						5		
	7,9,14					6		
			A			7		Gravely Sandy Clay - dark grey to black, medium stiff, very moist to wet, well graded interbedded sands, black medium grained hydrocarbon stained strong odor, loose, free product in sands 6.5'-8.5'.
	2,3,4	1200				8	CH	Clay - greenish grey, moist, soft, highly plastic, 10% organic wood debris
			B			9		2" of organics and glass at 9.5', wet, hydrocarbons stained
	2,2,2					10	CL	clay v. soft at 10', highly plastic Gravely Clay with Sand - grey to black, wet, soft, hydrocarbon stained, moderate odor.
0/0						11	CH	Clay - greenish grey, soft, wet, homogeneous, highly plastic, "bay mud".
						12		
						13		
						14		TOTAL DEPTH = 14', SAMPLE RW-C2 CPMPOSITED FROM A,B.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-C3** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/3/2002
Client: City of Oakland		Date Completed: 1/3/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume C		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Mostly Cloudy		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	5.34	Depth to Product (ft./casing)	5.05
Time	1519	Time	1519
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Soil Group Symbols /Contacts	Description
								Asphalt
						1	SW	Gravely Sand - brown, moist, loose, very well graded, 35% gravel - angular - to 2 cm, fill material.
						2	CL	Gravely Clay - greenish grey, moist, medium stiff, medium plasticity, well graded gravel - 25% angular to 1 cm, trace silt, sand.
0/0	7,7,9					3		
						4		
	5,5,4					5		
	8,16,20					6		decreased gravel at 6'. hydrocarbon smeared at 6 to 6.5', 1" sand section.
						7	SP	Sand - black, v. moist - wet, poorly graded, very loose, strongly stained w/ hydrocarbons, strong odor, trace gravel, sharp upper contact.
	8,5,4		A			8	CL	Gravely Clay w/ Sand - brown to black, very moist to wet, soft, well graded, hydrocarbon smeared, 3 - 1" sand sections, wet, black, hydrocarbon stained.
		1030						
	9,7,9		B			9		
			C					
						10	SW	Sand with gravel - black to white, wet, very loose, moderately graded, hydrocarbon stained, rare white sands, poor recovery.
	2,2,2					11	CH	Clay - greenish grey, moist, soft, highly plastic, homogeneous, "bay mud".
						12		
						13		
0/0								
						14		TOTAL DEPTH = 14', SAMPLE RW-C3 COMPOSITED FROM A, B, C.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-C4** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/3/2002
Client: City of Oakland		Date Completed: 1/3/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume C		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Foggy		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	13.63	Depth to Product (ft./casing)	
Time	1500	Time	
Date	1/8/02	Date	

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
						1				SW	Gravely Sand - brown, moist, loose, well graded, fill material, sand - medium grained, gravel - angular to 3 cm.
0/0						2				CL	Gravely Clay - brown to grey, moist, medium stiff, moderate plasticity, gravel - angular - 25% to 1 cm.
						3					
	8,8,11					4					
						5					
	4,5,5					6					
						7					
	4,3,5	830	A			8					Gravely Silty Clay - dark grey, wet, soft, moderate plasticity, 5% wood debris, trace glass shards, very poor recovery, upper contact inferred, water depth inferred, moderate hydrocarbon odor, no visual evidence of hydrocarbons.
						9					
	4,4,5					10				CH	Clay - greenish grey, moist, soft to medium stiff, high plasticity, homogeneous, inferred upper contact.
						11					
0/0						12					
						13					
						14					TOTAL DEPTH = 14', SAMPLE RW-C4.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-C5** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/2/2002
Client: City of Oakland		Date Completed: 1/2/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume C		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Rain		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	6.67	Depth to Product (ft./casing)	6.11
Time	1441	Time	1441
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
						1				SW	Gravely Sand - brown, moist, loose, well graded, fill material.
						2				CL	Gravely Clay - brown, moist, medium stiff, subrounded gravel to 1 cm, well graded, moderate plasticity, 5% wood fragments.
0/0						3					
	7,9,12					4					
						5					
	14,14,28					6					
			A			7					Gravely Clay with Sand - grey, wet, very loose, hydrocarbon stained, locally with free product, moderate odor, well graded gravel to 3 cm to 40%, wood debris - 5% at 7'.
		1345				8					
	8,5,16		B			9					
						10					
	3,1,1					11				CH	Clay - greenish grey, soft, moist, high plasticity, homogeneous.
0/0						12					
						13					
						14					TOTAL DEPTH = 14', SAMPLE RW-C5 COMPOSITED FROM A,B.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-C6** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/2/2002
Client: City of Oakland		Date Completed: 1/2/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume C		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Rain		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	6.02	Depth to Product (ft./casing)	5.66
Time	1446	Time	1446
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
						1				SW	Gravely Sand - brown, loose, moist, well graded, gravel - angular to 3 cm - 35%, fill material.
0/0						2				CL	Gravely Clay - greenish grey - light brown, moist, medium stiff, slightly plastic, well graded gravel, 3-5% wood fragments.
						3					
	8,12,14					4					
						5					
	14,17,23		A			6					
											Gravely Clay with Silt - brown to grey, wet, soft to medium stiff, well graded gravel, hydrocarbon staining with rare free product.
	9,5,4					7					
						8					
	7,11,12	1120	B			9					
											1" sections with sand/gravel, upon pulling augers, heaviest hydrocarbon contamination found at 10'.
	5,5,13					10					
0/0						11				SW	Gravely Sand with Silt and Clay - black, wet, loose, well graded, hydrocarbon stained. lower 6" no hydrocarbon staining.
	10,8,6		C			12				CH	Clay - mosit, medium stiff, highly plastic, trace organics, blow counts decreased significantly, inferred upper contact.
						13					
						14					TOTAL DEPTH = 14', SAMPLE RW-C6 COMPOSITED FROM A,B,C.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-C7** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/8/2002
Client: City of Oakland		Date Completed: 1/8/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume C		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Partly Cloudy		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	6.46	Depth to Product (ft./casing)	6.18
Time	1505	Time	1505
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
0/0						1				SW	Gravely Sand - dark brown, fill material.
						2				GP	
						3					Pea Gravel - tank excavation fill material.
						4					
						5					
						6					
						7					
						8					
						9					water level sounded through augers.
						10					
						11					Rip - Rap (Boulders).
						12					
						13				CH	Clay - black, moist, soft, high plasticity, homogeneous, 15% wood debris.
0/0						14					
	1,1,1		No Sample Collected			15					TOTAL DEPTH = 15'
						16					
						17					

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **OB-C1** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/7/2002
Client: City of Oakland		Date Completed: 1/7/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume C		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 8"
Weather Conditions: Overcast		Sampling Method: Split Spoon (18")
Casing Installation Data: 2" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	6.01	Depth to Product (ft./casing)	5.00
Time	1455	Time	1455
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
						1				SW	Gravely Sand - brown, wet, loose, fill material, gravel - 35% subangular to 3 cm.
0/0						2				CL	Gravely Silty Clay - brown to green, moist, medium stiff, slightly plastic, well graded gravel - angular to 2 cm, rare sections with 15% silt.
	13,14,13					3					
						4					
	4,7,7					5					Stiff at 5', decreased gravel to 15% to 1 cm, trace sand, slightly moist.
	7,7,12					6					
						7					Gravely Sandy Clay - green, well graded gravel, wet ,slightly firm, trace hydrocarbons staining.
	6,9,6		A								2" silty section, wet, slight odor.
		1345	B			8					2" gravely section, wet, slight odor.
	3,5,7		C			9					
						10					
	7,50										
0/0						11					Rip - Rap, rebar wrapped around augers upon removal from boring.
						12					
						13					free product noted @ 13' upon removal of augers.
										CH	Clay - greenish grey, soft, moist, highly plastic, homogeneous, 5% shell fragments.
	1,1					14					TOTAL DEPTH = 14', SAMPLE OB-C1 COMPOSITED FROM A,B,C.
						15					

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log #	Well # RW-D1	Sheet 1 of 1
Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/4/2002
Client: City of Oakland		Date Completed: 1/4/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume D		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Sunny		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Depth to Water (ft./casing)	6.22	Depth to Product (ft./casing)	5.91
Time	1528	Time	1528
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
0/0						1				SW	Gravely Sand - brown, moist, loose, well graded gravel - 35% subangular to 3 cm, fill material, trace clay.
						2				CL	Gravely Clay - brown to green, moist, medium stiff, slightly plastic, sections with serpentinite gravel, well graded gravel subangular - 30%.
						3					
	6,9,13					4					
						5					
						6					
	7,11,12					7					decreased gravel at 7' to 15', soft to medium stiff.
			A			8					
	14,10,12					9				SP	Sand with Gravel - black, very moist to wet, moderately graded, loose, strong hydrocarbon staining, strong odor, 3" gravel sections with trace clay, 3" clay section at 9.25'.
		1345	B			10					
						11				CH	Clay - greenish grey, moist, soft, high plasticity, homogeneous. 6" of glass shards with sandat 12', free product, strong odor, wet.
	5,3,3		C			12					
0/0						13					
						14					
						15					TOTAL DEPTH = 15', SAMPLE RW-D1 COMPOSITED FROM A,D,C.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** RW-D2 **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/4/2002
Client: City of Oakland		Date Completed: 1/4/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume D		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: Hew Drilling	Boring Diameter: 10"
Weather Conditions: Sunny		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	6.55	Depth to Product (ft./casing)	6.10
Time	1533	Time	1533
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
						1				SW	Gravely Sand with Clay - brown, moist, loose, well graded subangular gravel to 3 cm, fill material, gravel - 35%, clay - 5%.
						2				CL	Gravely Clay - brown, slightly moist, stiff, poorly sorted, trace silt, 25% subangular gravel to 2 cm.
						3					
	13,14,14					4					
0/0						5					
						6					
	12,21,27					7					
			A								
						8				SW	Sand with Gravel - black, very moist, loose, well graded, hydrocarbon stained, strong odor, rare boulders, 5" clay section at 8.25', wet at 8.5', increased hydrocarbons, free product, strong odor, decreased gravel.
	3,10,9	1100				9					
			B								
	4,5,4					10				CH	Clay - greenish black, moist, soft, high plasticity, upper 6" with wood debris. 1" glass shards at 11.5', stong hydrocarbon staining.
						11					
	4,2,1					12					6" glass shards at 12', wet, slight hydrocarbon staining.
0/0						13					
						14					
						15					TOTAL DEPTH = 15', SAMPLE RW-D2 COMPOSITED FROM A,B.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-D3** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/7/2002
Client: City of Oakland		Date Completed: 1/7/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume D		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Foggy		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	6.52	Depth to Product (ft./casing)	6.10
Time	1536	Time	1536
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
0/0						1				SW	Gravely Sand - brown, moist, loose, subangular gravel to 2 cm, fill material, gravel - 35%.
						2				CL	Gravely Clay - brown to light green, moist, medium stiff, slight plasticity, well graded gravel - subangular to 1.5 cm.
						3					
	10,26,21					4					
						5					silty section at 5', serpentinite-rich, loose, sightly moist.
						6					
	8,15,20					7					
			A			8				SW	Gravely Sand with Silt - black, very moist to wet, loose, well graded, sand is medium grained, gravel - subrounded to 1 cm, hydrocarbon stained with free product at 8 - 8.25', strong odor, rare gravel sized quartz, 20% clay at 3" from lower contact.
	8,10,5	1030	B			9					
	1,2,1		C			10				CH	Clay - black, moist, very soft, high plasticity, "bay mud", 15% wood debris, glass shards and copper wire at 10 to 10.5', wet, free product, loose.
						11					
	1,1,2					12					
						13					
						14					TOTAL DEPTH = 14', SAMPLE RW-D3 COMPOSITED FROM A,B,C.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** **RW-D4** **Sheet** 1 of 1

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/4/2002
Client: City of Oakland		Date Completed: 1/4/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume D		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 10"
Weather Conditions: Mostly Sunny		Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	7.14	Depth to Product (ft./casing)	5.12
Time	1540	Time	1540
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
						1				SW	Gravely Sand - brown, moist, well graded, 40% subangular gravel to 3 cm, medium grained sand, trace clay.
						2				CL	Gravely Sand - brown, moist, medium stiff, medium plasticity,well graded gravel - 30% subangular to 2 cm, trace silt.
0/0						3					
						4					
						5					1" silty section @ 5', very moist, moderate odor, no hydrocarbon staining increased moisture with depth.
						6					
			A			7					2" gravely clayey sand layer, black, wet, firm, well graded, hydrocarbon stained, strong odor.
		845									
			B			8				SW	Gravely Sand with Silt - black, wet, loose, well graded, free product, strong odor, thick hydrocarbons, gravel to 2".
						9				CL	Gravely Clay with Silt - dark grey, moist, soft, moderate plasticity, well graded gravel, upper 3" silt free with decreased moisture, 1" silty section at 9' with hydrocarbon staining.
						10					
						11				CH	Clay - greenish grey, moist, soft to very soft, high plasticity, 15 % wood debris.
0/0						12					
						13					
						14					TOTAL DEPTH = 14', SAMPLE RW-D4 COMPOSITED FROM A,B. AUGERS COATED WITH HYDROCARBONS UPON REMOVAL.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Boring Log #	**Well #** RW-D5		**Sheet** 1 of 1
Project Name: Oakland Municipal Service Yard	Project # : 291-3-02		Date Started: 1/7/2002
Client: City of Oakland			Date Completed: 1/7/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume D			Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling		Boring Diameter: 10"
Weather Conditions: Foggy			Sampling Method: Split Spoon (18")
Casing Installation Data: 4" PVC Casing			
Time/Date Backfilled:	Backfill Material:		Surface Material:
Depth to Water (ft./casing)	5.41	Depth to Product (ft./casing)	5.21
Time	1545	Time	1545
Date	1/8/02	Date	1/8/02

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Well Casing	Borehole Backfill	Soil Graphic	Soil Group Symbols /Contacts	Description
											Asphalt
						1				SW	Gravely Sand - brown, moist, loose, well graded, fill material, gravel - 35% subangular.
0/0						2				CL	Gravely Clay - brown to greenish grey, moist, medium stiff, 20 - 30% well graded serpentinite gravel to 1 cm.
	10,17,18					3					
						4					
	8,13,17					5					
						6					
	7,9,8					7					very moist at 7.5', very strong odor.
			A			8				SW	Gravely Silty Sand - dark brown, wet, loose, well graded, hydrocarbon free product, strong odor.
	9,8,11	845	B			9					
						10					Rip - Rap with gravely silty clay, wet, soft, poorly sorted, with slight hydrocarbon staining on rare sands from 9.5-10'.
0/0						11				CH	Clay - greenish grey, moist, soft, high plasticity, "bay mud", 10% wood fragments.
	3,2,1					12					
						13					TOTAL DEPTH = 13', SAMPLE RW-D5 COMPOSITED FROM A,B.

U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** OB-D1 **Sheet** 1 of 1

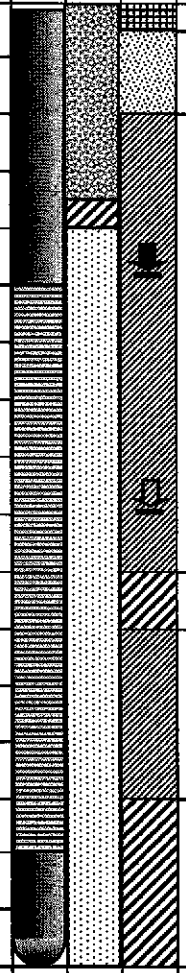
Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/4/2002
Client: City of Oakland		Date Completed: 1/4/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume D		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 8"
Weather Conditions: Sunny		Sampling Method: Split Spoon (18")
Casing Installation Data: 2" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	4.80	Depth to Product (ft./casing)	
Time	1550	Time	
Date	1/8/02	Date	

PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Soil Group Symbols /Contacts	Description
								Asphalt
						1	SW	Gravely Sand - brown, moist, loose, well graded fill material, 35% subangular gravel.
						2	CL	Gravely Clay - brown to green, moist, medium stiff, 25% well graded gravel, trace to 5% silt, slight plasticity, increase gravel @ upper contact.
	5,7,12					3		
						4		
	7,9,15					5		
0/0	11,13,17					6		
						7		
	16,17,17					8		1-2" gravely clayey sand layer - wet, loose, hydrocarbon stained, 20% clay, irregular contacts.
			A					
	10,3,4					9		
			B			10	CH	Clay - black, very moist, soft, highly plastic, 20% wood debris, slight odor, very minor hydrocarbon staining at 10'.
	3,5,7	1515				11	CL	Gravely Clay - black, very moist, soft, high plasticity, gravel - 25% subrounded
	2,2,13					12		
			C			13		Silty Sandy Clay - brown, wet, loose, poorly sorted, no visible contamination, wood block @ 13.5'
0/0	5,3,3					14	CH	Clay - black, soft, high plasticity, homogeneous, 3% shell fragments, 1" sand section at 14.5', very slight odor.
						15		
						16		
						17		TOTAL DEPTH = 17', SAMPLE OB-D1 COMPOSITED FROM A,B,C.



U & A II **Uribe & Associates Environmental and Engineering Consulting Services**

Boring Log # **Well #** OB-D2 **Sheet** 1 of 1

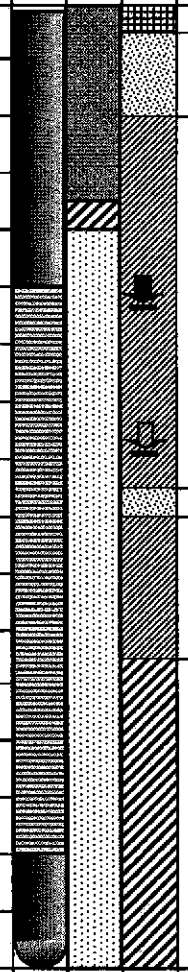
Field Location of Boring:

SEE SITE PLAN FOR WELL LOCATION

Project Name: Oakland Municipal Service Yard	Project # : 291-3-02	Date Started: 1/3/2002
Client: City of Oakland		Date Completed: 1/3/2002
Location or Site: 7101 Edgewater, Oakland CA, Plume D		Drilling Method: Hollow Stem Auger
Logged By: M. Cruickshank	Driller: HEW Drilling	Boring Diameter: 8"
Weather Conditions: Sunny		Sampling Method: Split Spoon (18")
Casing Installation Data: 2" PVC Casing		
Time/Date Backfilled:	Backfill Material:	Surface Material:

Depth to Water (ft./casing)	5.46	Depth to Product (ft./casing)	
Time	1600	Time	
Date	1/8/02	Date	

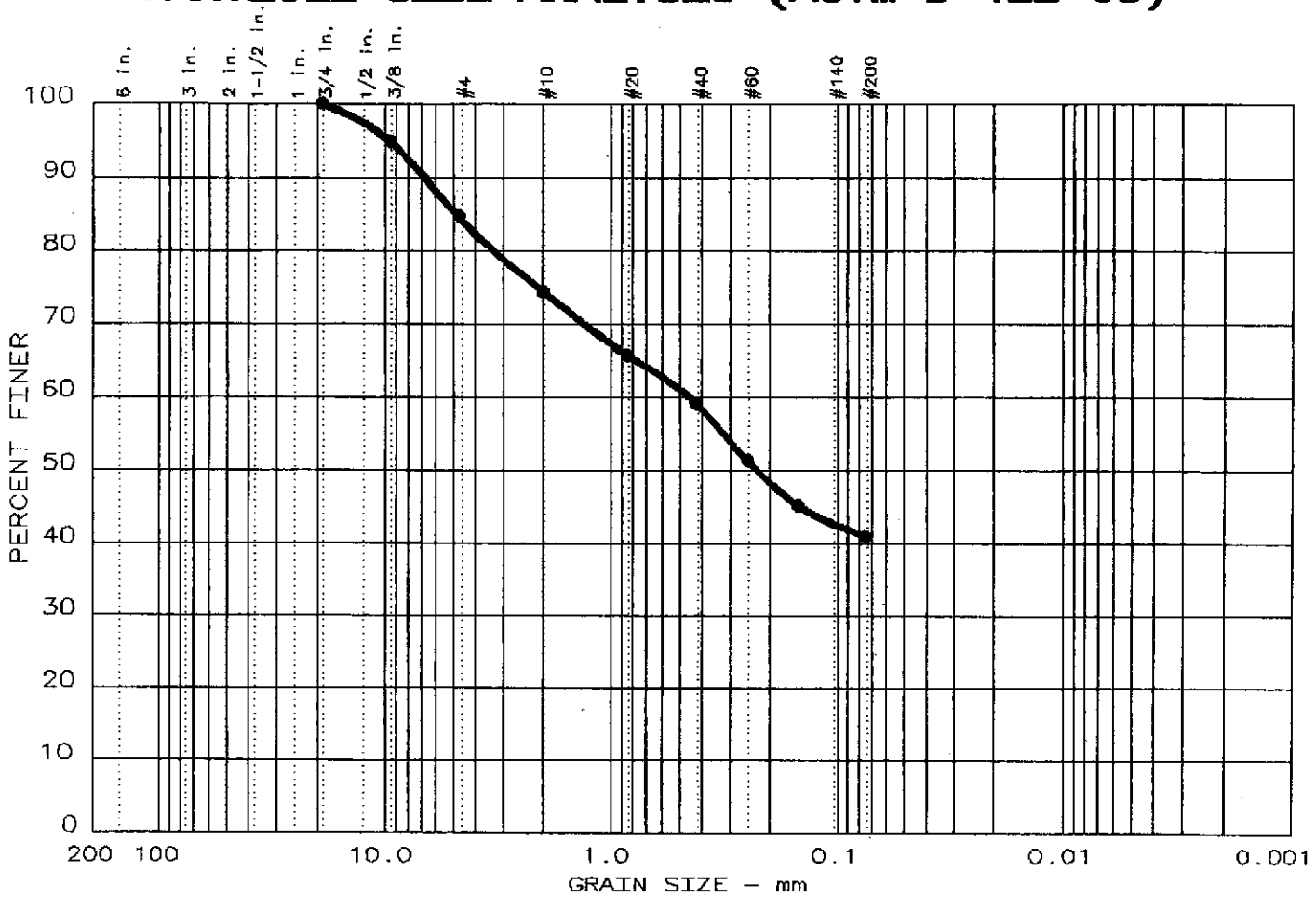
PID/OVA (PPM) /Breathing Space /Sample	Blows/6" or Pressure (PSI)	Time	Sample Depth	Drive Interval	Recovered Interval	Depth (feet)	Soil Group Symbols /Contacts	Description
								Asphalt
0/0	14,14,12					1	SW	Gravely Sand - brown, moist, loose, well graded, gravel- subangular to 3 cm, sand fine to medium grained.
						2	CL	Gravely Clay - light brown, slightly moist, medium stiff, slightly plastic, angular gravel - 40% to 4 cm, poorly sorted, 15% sand, increased moisture and decreased density from 3-4'.
	7,11,15					3		
	9,13,17					4		very moist @ 4'.
						5		
	17,17,22					6		
			A					1/2" gravel layer, hydrocarbon staining, clay m. stiff, sections with 5% sand.
	20,15,25	1500				7		
						8		1" gravely clayey sand layer, wet slight odor.
	18,16,16		B				SW	Gravely Sand - grey, moist, very loose, well graded, 25% subrounded gravel to 1 cm.
0/0			C			9	CL	Gravely Clay - grey, moist, soft, 20% subangular gravel to 1 cm.
	2,2,28					10		
						11		1" sections with sand/gravel. very moist at 11'.
	1,1,1					12	CH	Clay - black, moist, very soft, high plasticity, homogeneous, "bay mud".
	3,1,1					13		
						14		
						15		
						16		
						17		TOTAL DEPTH = 17', SAMPLE OB-D2 COMPOSITED FROM A,B,C.



Attachment D

Soil Mechanics Laboratory Data

PARTICLE SIZE ANALYSIS (ASTM D 422-63)



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	15.4	43.6	41.0		SC		

SIEVE inches size	PERCENT FINER ●		
0.75	100.0		
0.375	94.8		
	GRAIN SIZE		
D_{60}	0.45		
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ●		
4	84.6		
10	74.3		
20	65.7		
40	59.2		
60	51.4		
100	45.2		
200	41.0		

Sample information:

● RW-A1 1600 6.5-10.5'
V.dk. gray to black clayey SAND w/gravel.

Remarks:

Soil Mechanics Lab

Project No.:

Project:

Date: 1-10-02 Data Sheet No. ____

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 1

Date: 1-10-02
Project No.:
Project:

Sample Data

Location of Sample: RW-A1 1600 6.5-10.5'
Sample Description 1: V.dk. gray to black
Sample Description 2: clayey SAND w/gravel.
USCS Class: SC Liquid limit: Plasticity index:

Notes

Remarks:

Data Sheet No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	146.40
Tare =	0.00
Dry sample weight =	146.40

Tare for cumulative weight retained= 0

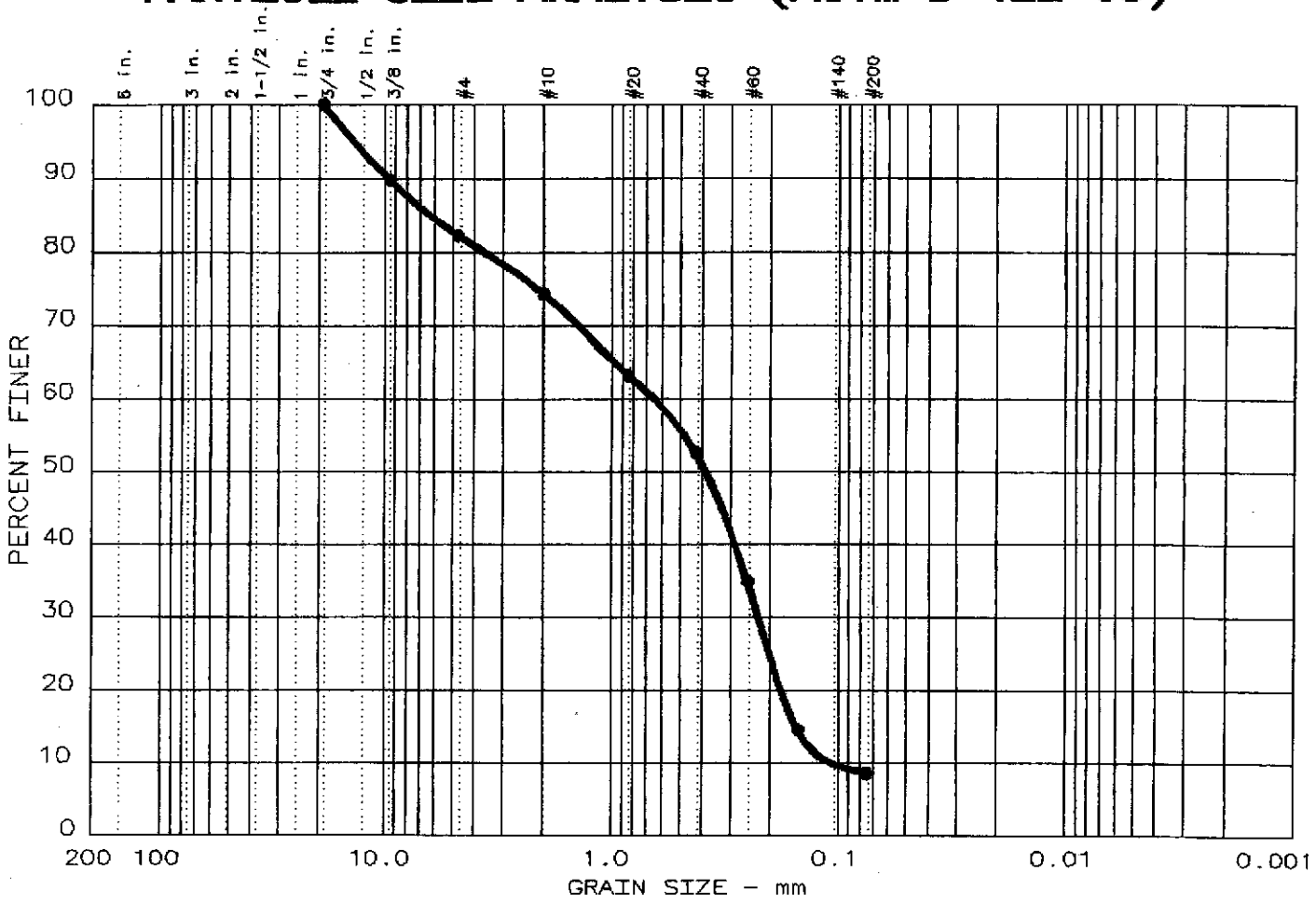
Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.375 inches	7.60	94.8
# 4	22.50	84.6
# 10	37.60	74.3
# 20	50.20	65.7
# 40	59.80	59.2
# 60	71.20	51.4
# 100	80.20	45.2
# 200	86.40	41.0

Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0 % GRAVEL = 15.4 % SAND = 43.6
% FINES = 41.0

D85= 4.84 D60= 0.452 D50= 0.226

PARTICLE SIZE ANALYSIS (ASTM D 422-63)



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	17.7	73.7	8.6		SP-SM		

SIEVE inches size	PERCENT FINER ●		
0.75	100.0		
0.375	89.7		
	GRAIN SIZE		
D_{60}	0.65		
D_{30}	0.22		
D_{10}	0.10		
	COEFFICIENTS		
C_c	0.73		
C_u	6.0		

SIEVE number size	PERCENT FINER ●		
4	82.3		
10	74.2		
20	63.2		
40	52.6		
60	34.8		
100	14.5		
200	8.6		

Sample information:

● RW-B2 1700 7-13'
Grayish black f-c SAND w/gravel.

Remarks:

Soil Mechanics Lab

Project No.:
Project:

Date: 1-10-02 Data Sheet No. ____

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 19

Date: 1-10-02
Project No.:
Project:

Sample Data

Location of Sample: RW-B2 1700 7-13'
Sample Description 1: Grayish black f-c SAND
Sample Description 2: w/gravel.
USCS Class: SP-SM Liquid limit: Plasticity index:

Notes

Remarks:

Data Sheet No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	139.80
Tare =	0.00
Dry sample weight =	139.80

Tare for cumulative weight retained= 0

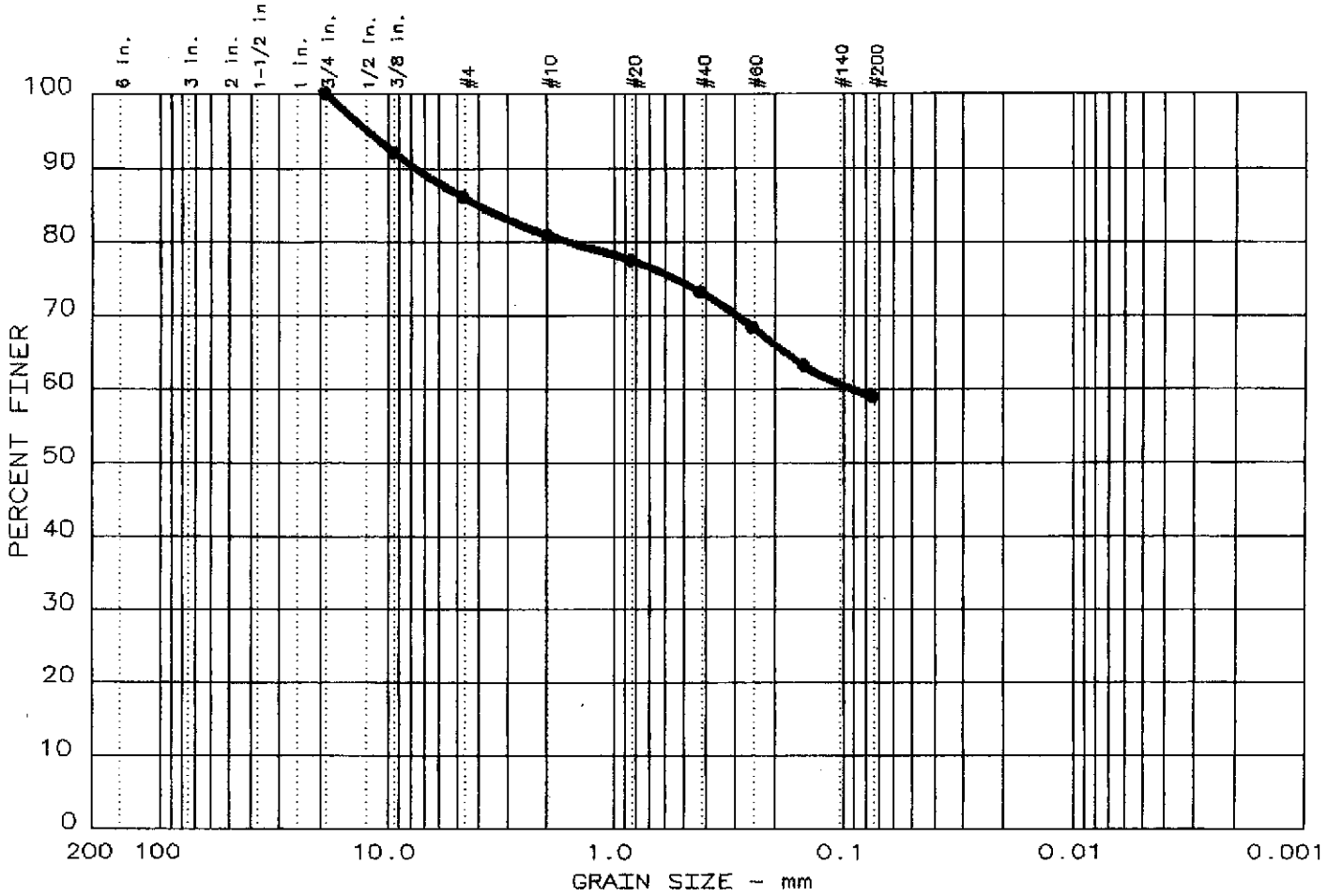
Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.375 inches	14.40	89.7
# 4	24.80	82.3
# 10	36.00	74.2
# 20	51.40	63.2
# 40	66.30	52.6
# 60	91.10	34.8
# 100	119.50	14.5
# 200	127.80	8.6

Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0 % GRAVEL = 17.7 % SAND = 73.7
% FINES = 8.6

D85= 6.31 D60= 0.646 D50= 0.384
D30= 0.2236 D15= 0.15258 D10= 0.10678
Cc = 0.7253 Cu = 6.0464

PARTICLE SIZE ANALYSIS (ASTM D 422-63)



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	14.0	27.1	58.9		CL		

SIEVE inches size	PERCENT FINER ●		
0.75	100.0		
0.375	92.1		
	GRAIN SIZE		
D_{60}	0.09		
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ●		
4	86.0		
10	80.8		
20	77.5		
40	73.1		
60	68.4		
100	63.2		
200	58.9		

Sample information:

● RW-C3 1030 7-10'
Bluish gray & black sandy CLAY w/gravel.

Remarks:

Soil Mechanics Lab

Project No.:
Project:

Date: 1-10-02 Data Sheet No. ———

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 2

Date: 1-10-02
Project No.:
Project:

Sample Data

Location of Sample: RW-C3 1030 7-10'
Sample Description 1: Bluish gray & black
Sample Description 2: sandy CLAY w/gravel.
USCS Class: CL Liquid limit: Plasticity index:

Notes

Remarks:

Data Sheet No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	417.10
Tare =	0.00
Dry sample weight =	417.10

Tare for cumulative weight retained= 0

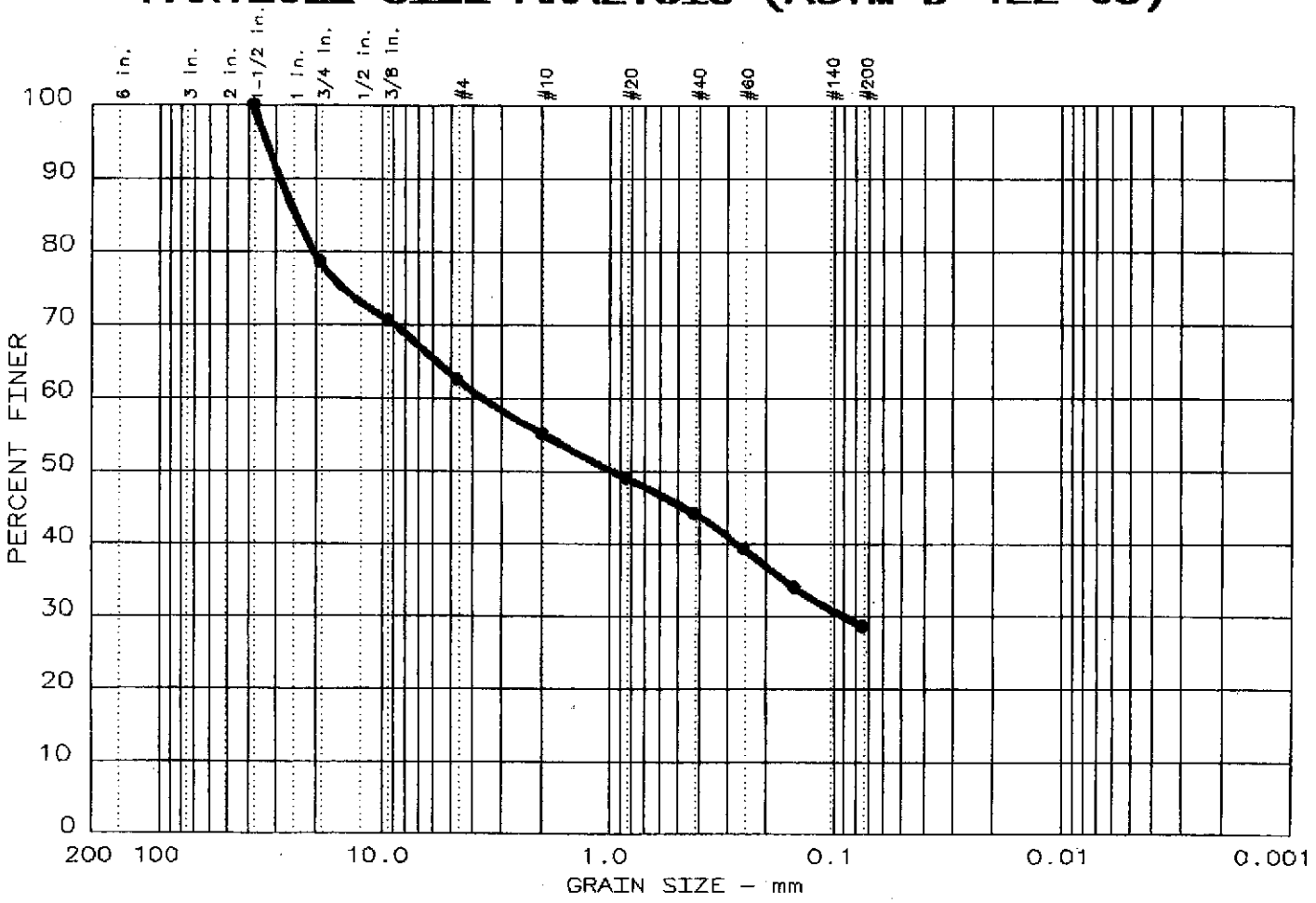
Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.375 inches	32.90	92.1
# 4	58.20	86.0
# 10	79.90	80.8
# 20	94.00	77.5
# 40	112.00	73.1
# 60	131.90	68.4
# 100	153.60	63.2
# 200	171.40	58.9

Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0 % GRAVEL = 14.0 % SAND = 27.1
% FINES = 58.9

D85= 4.07 D60= 0.092

PARTICLE SIZE ANALYSIS (ASTM D 422-63)



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	37.4	34.0	28.6		GM		

SIEVE inches size	PERCENT FINER ●		
1.5	100.0		
0.75	78.6		
0.375	70.6		
	GRAIN SIZE		
D_{60}	3.66		
D_{30}	0.09		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ●		
4	62.6		
10	55.1		
20	49.0		
40	44.2		
60	39.3		
100	34.0		
200	28.6		

Sample information:

● OB-C1 1345 7.5-9'
V.dk.gray clayey GRAVEL w/sand.

Remarks:

Soil Mechanics Lab

Project No.:
Project:

Date: 1-10-02 Data Sheet No. ____

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 18

Date: 1-10-02
Project No.:
Project:

Sample Data

Location of Sample: OB-C1 1345 7.5-9'
Sample Description 1: V.dk.gray clayey GRAVEL
Sample Description 2: w/sand.
USCS Class: GM Liquid limit: Plasticity index:

Notes

Remarks:

Data Sheet No.:

Mechanical Analysis Data

Initial

Dry sample and tare= 207.50
Tare = 0.00
Dry sample weight = 207.50
Tare for cumulative weight retained= 0

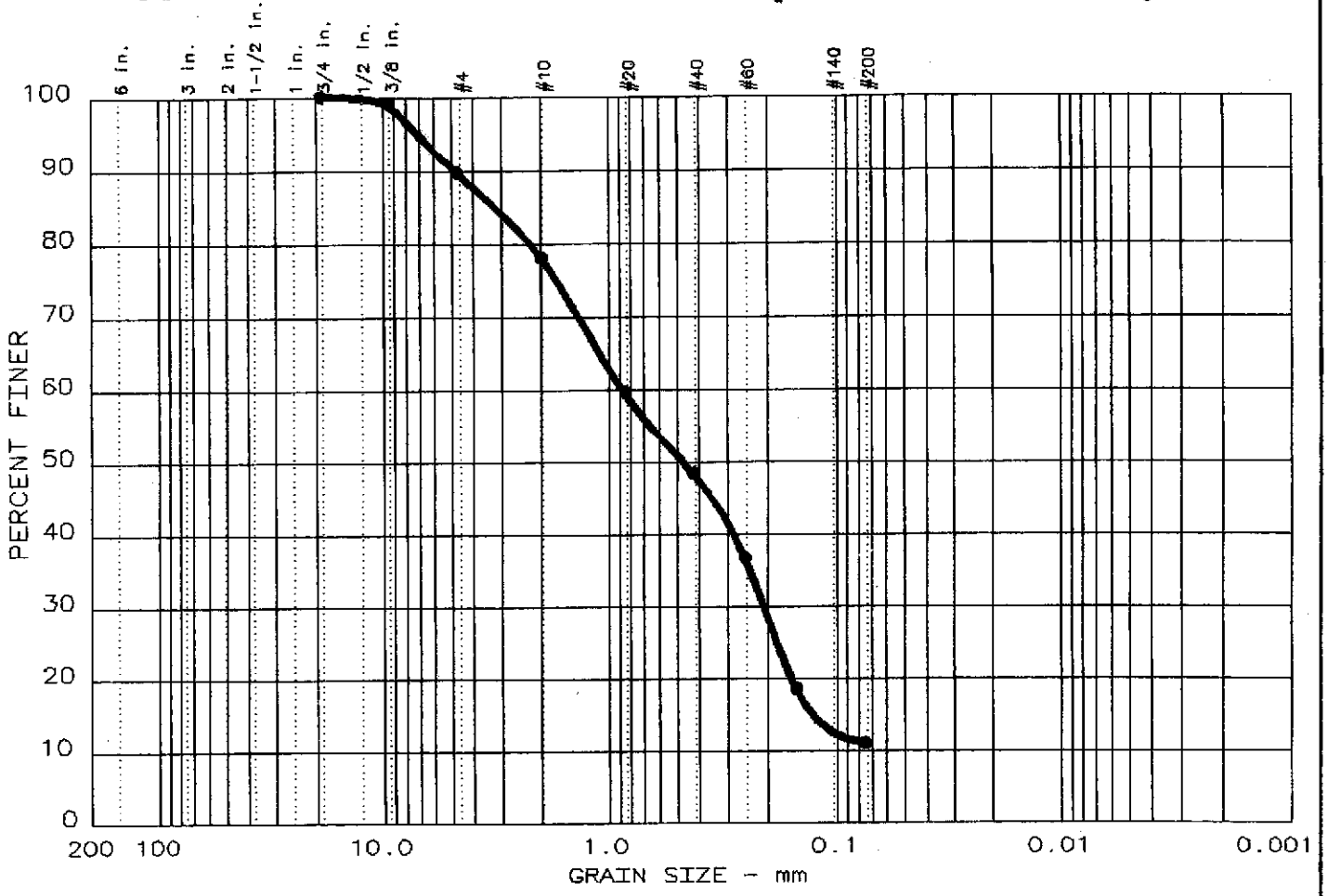
Sieve	Cumul. Wt. retained	Percent finer
1.5 inches	0.00	100.0
0.75 inches	44.40	78.6
0.375 inches	61.00	70.6
# 4	77.60	62.6
# 10	93.10	55.1
# 20	105.80	49.0
# 40	115.80	44.2
# 60	126.00	39.3
# 100	136.90	34.0
# 200	148.10	28.6

Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0 % GRAVEL = 37.4 % SAND = 34.0
% FINES = 28.6

D85= 24.49 D60= 3.664 D50= 0.975
D30= 0.0910

PARTICLE SIZE ANALYSIS (ASTM D 422-63)



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	10.3	78.7	11.0		SP-SM		

SIEVE Inches size	PERCENT FINER ●		
0.75	100.0		
0.375	99.0		
	GRAIN SIZE		
D_{60}	0.86		
D_{30}	0.21		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ●		
4	89.7		
10	78.1		
20	59.6		
40	48.4		
60	36.7		
100	18.6		
200	11.1		

Sample information:

● RW-D2 1100 7.5-10'
Grayish black f-c SAND w/gravel.

Remarks:

Soil Mechanics Lab

Project No.:

Project:

Date: 1-10-02 Data Sheet No. ——

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 20

Date: 1-10-02
Project No.:
Project:

Sample Data

Location of Sample: RW-D2 1100 7.5-10'
Sample Description 1: Grayish black f-c SAND
Sample Description 2: w/gravel.
USCS Class: SP-SM Liquid limit: Plasticity index:

Notes

Remarks:

Data Sheet No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	178.00
Tare =	0.00
Dry sample weight =	178.00

Tare for cumulative weight retained= 0

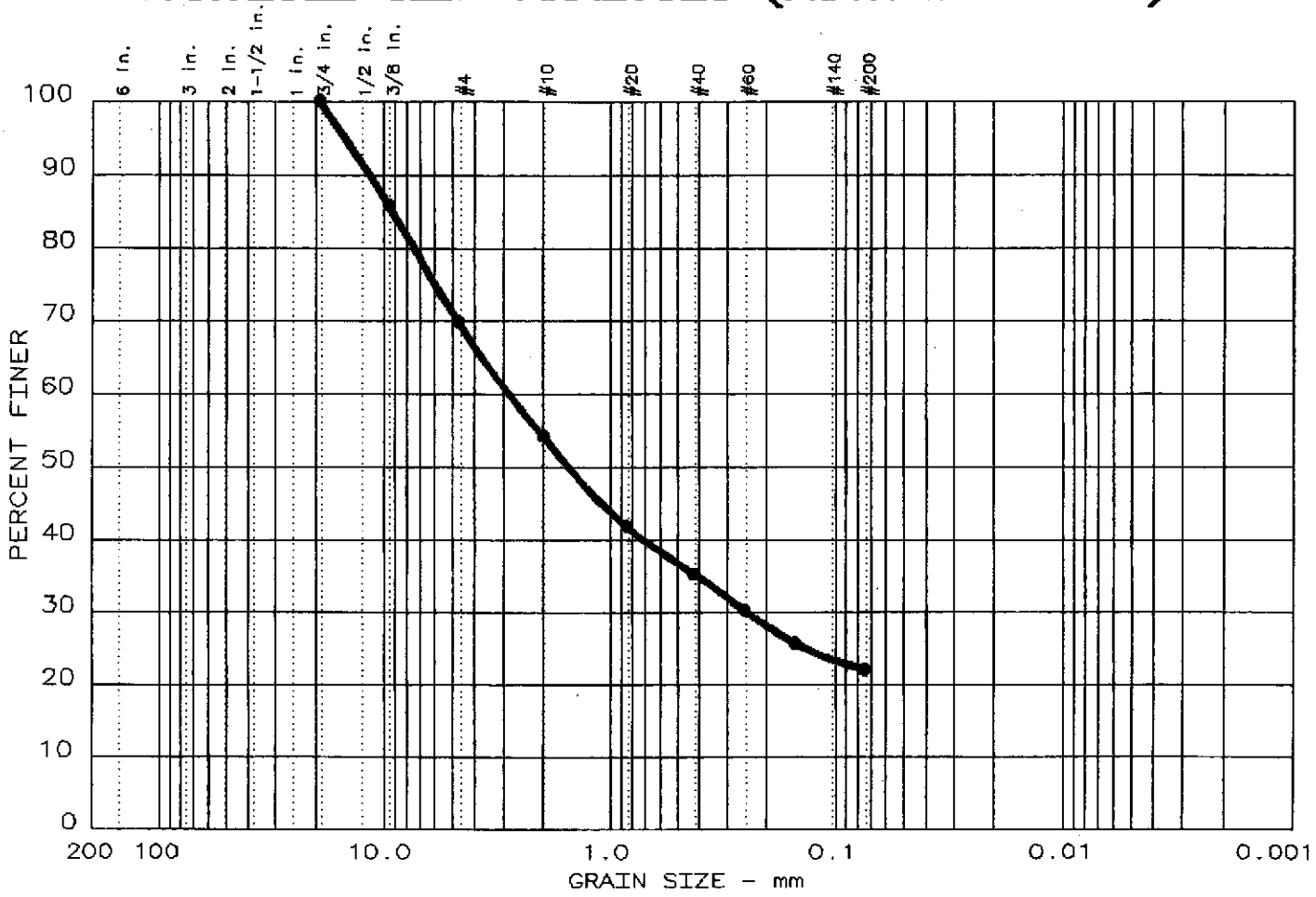
Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.375 inches	1.70	99.0
# 4	18.30	89.7
# 10	38.90	78.1
# 20	72.00	59.6
# 40	91.80	48.4
# 60	112.60	36.7
# 100	144.90	18.6
# 200	158.30	11.1

Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0 % GRAVEL = 10.3 % SAND = 78.7
% FINES = 11.0

D85= 3.24 D60= 0.861 D50= 0.468
D30= 0.2065 D15= 0.12735

PARTICLE SIZE ANALYSIS (ASTM D 422-63)



	% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS	LL	PI
●	0.0	30.1	47.9	22.0		SC		

SIEVE Inches size	PERCENT FINER ●		
0.75	100.0		
0.375	85.8		
	GRAIN SIZE		
D_{60}	2.82		
D_{30}	0.24		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ●		
4	69.9		
10	54.3		
20	41.9		
40	35.3		
60	30.3		
100	25.7		
200	22.1		

Sample information:

● OB-D1 1515 0.5-13'
V.dark gray clayey SAND w/gravel.

Remarks:

Soil Mechanics Lab

Project No.:

Project:

Date: 1-10-02 Data Sheet No. ——

GRAIN SIZE DISTRIBUTION TEST DATA — Test No.: 17

Date: 1-10-02
Project No.:
Project:

Sample Data

Location of Sample: OB-D1 1515 0.5-13'
Sample Description 1: V.dark gray clayey SAND
Sample Description 2: w/gravel.
USCS Class: SC Liquid limit: Plasticity index:

Notes

Remarks:

Data Sheet No.:

Mechanical Analysis Data

	Initial
Dry sample and tare=	200.90
Tare =	0.00
Dry sample weight =	200.90

Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.75 inches	0.00	100.0
0.375 inches	28.50	85.8
# 4	60.40	69.9
# 10	91.90	54.3
# 20	116.80	41.9
# 40	130.00	35.3
# 60	140.10	30.3
# 100	149.30	25.7
# 200	156.60	22.1

Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
% + 3 in. = 0.0 % GRAVEL = 30.1 % SAND = 47.9
% FINES = 22.0

D85= 9.12 D60= 2.818 D50= 1.531
D30= 0.2427

Table E-1
Well Survey
Oakland Municipal Service Center

Field Point No.	Plume Area	Well Name	Well Diameter	Northing	Easting	Vault Elevation	Casing Elevation
39	A	RW-A1	4"	5069.50	5877.61	10.45	10.09
40	A	RW-A2	4"	5091.99	5880.26	10.08	9.67
38	A	OB-A1	2"	5058.10	5869.66	11.03	[1]
37	B	RW-B1	4"	5020.06	5847.76	11.47	11.22
36	B	RW-B2	4"	5006.30	5829.51	11.51	11.23
35	B	RW-B3	4"	4962.42	5818.36	11.48	11.14
34	B	RW-B4	4"	4963.37	5839.92	11.62	11.29
25	C	RW-C1	4"	4975.43	5031.28	10.84	10.44
19	C	RW-C2	4"	5002.90	5046.92	10.93	10.58
20	C	RW-C3	4"	5002.35	5072.41	11.19	10.71
21	C	RW-C4	4"	4978.81	5086.07	11.72	11.32
22	C	RW-C5	4"	4955.49	5069.03	11.06	10.79
23	C	RW-C6	4"	4955.71	5046.95	10.74	10.31
26	C	RW-C7	4"	4977.99	5062.28	10.84	10.12
24	C	OB-C1	2"	4930.10	5056.42	10.84	10.39
17	D	RW-D1	4"	5079.92	4833.15	10.62	10.18
26	D	RW-D2	4"	5064.90	4837.21	10.65	10.33
14	D	RW-D3	4"	5047.16	4837.20	10.67	10.07
13	D	RW-D4	4"	5022.88	4835.15	10.52	10.22
11	D	RW-D5	4"	5014.68	4840.86	10.45	9.99
12	D	OB-D1	2"	4993.46	4819.26	9.79	9.46
18	D	OB-D2	2"	4994.60	4867.57	10.35	9.95
33	None	MW-9[2]		4865.96	5292.92	11.50	10.77
30	None	MW-10[2]		5079.94	4299.95	8.07	7.59
31	None	MW-13[2]		4856.53	4827.54	11.54	11.34
32	None	MW-14[2]		4857.31	5051.61	10.52	10.05
41	None	MW-15[2]		4886.74	5559.79	12.68	12.36
28	None	PW Building Corner		5162.48	4771.31		
43	None	Building Corner		5195.05	5631.97		
44	None	Building Corner		5200.99	5792.89		

Notes:
Elevations are based on a field survey by Chavez Land Surveying
in Feb. 2000 using MW-15 which has a vault elevation of 12.68 feet.

[1] = could not open well cover, casing elevation not surveyed.
[2] = elevations surveyed by Chavez Land Surveying in Dec 1997 and Feb 2000.

N 5500.0000
E 4500.0000

N 5500.0000
E 5000.0000

N 5500.0000
E 5500.0000

N 5500.0000
E 6000.0000

N

28
PW BUILD CORNER

43
BUILD CORNER

44
BUILD CORNER

30
MW-10

17 RW-D1
16 RW-D2
14 RW-D3
13 RW-D4
11 RW-D5
18 OB-D2
12
OB-D1

19 RW-C2
20 RW-C3
26 RW-C7
25
21 RW-C4
RW-C1
23
22 RW-C5
RW-C6
24 OB-C1

40 RW A2
39 RW A1
38 OB A1
37 RW B1
36 RW B2
35 RW B3
34 RW B4

41 MW-15

31 MW-13

32 MW-14

33 MW-9

N 5000.0000
E 4500.0000

N 5000.0000
E 5000.0000

N 5000.0000
E 5500.0000

N 5000.0000
E 6000.0000

N 4500.0000
E 4500.0000

N 4500.0000
E 5000.0000

N 4500.0000
E 5500.0000

N 4500.0000
E 6000.0000

0 30 60 120
SCALE: 1" = 120'

LEGEND

X	WELL LOCATION
33	FIELD POINT NUMBER (TABLE E-1)
MW-9	WELL NAME
N 4500.0000 E 5000.0000	SURVEY GRID COORDINATES

U&A
URIBE & ASSOCIATES
Engineering & Environmental Services

FIGURE E-1

WELL SURVEY LOCATIONS
PLS SURVEYING INC.
FEBRUARY 2002

F:/291-03/COST ESTIMATE/02004.PDF 4/1/02 SK