



**ENCROACHMENT PERMIT**  
**Ground Water Monitoring Well**  
 City of Riverside - Public Works Dept.  
 951-826-5341

Issuance of this permit shall not be construed as a waiver of any other applicable permit or requirement, and is only revocable permission to use the land for the purpose described.

**Owner:** 4975 VAN BUREN BOULEVARD TRUST  
**Location:** 4975 VAN BUREN BL RIVE  
 5381 HAROLD ST RIVE - WELL LOCATION  
**A.P.N.:** 191-050-022

**Encroachment:** Ground water monitoring well in Harold Street

The above-described encroachment being shown on Exhibit A attached hereto.

Upon issuance of this permit, I agree to comply with the attached terms and conditions.

Date: 6/7/13 By: [Signature]  
 Date: \_\_\_\_\_ By: \_\_\_\_\_

**Applicant**  
 ADVANCED GEO ENVIRONMENTAL  
 837 SHAW AVE  
 STOCKTON, CA 95215  
 714-529-0200

**Contractor/Developer**

ENCROACHMENT PERMIT APPROVAL

This permit has been reviewed and approved by the Departments listed below provided the attached terms and conditions are adhered to:

- P/W ENGINEERING
- P/W TRAFFIC
- P/U WATER
- P/U ELECTRIC

FINAL APPROVAL

Date: 6/5/2013

[Signature]  
 City Engineer

THIS PERMIT IS NOT VALID UNTIL ISSUED AND POSTED IN CITY RECORDS

Issued by: Nicole Clark

Dated by: 6/7/13



# City of Riverside

The following are requirements that need to be met for your permit #PW13-0279 .

- 1: Permittee acknowledges that the area of encroachment is owned or controlled by the City of Riverside.
- 2: Permittee acknowledges that the described property could be needed for a proposed or planned public improvement and the City may revoke this permit. Upon written notice of revocation, the permittee shall, within the time prescribed by the City, remove all improvements placed, constructed or maintained. If the permittee fails to abide by the removal order of the City, the City shall have the right to remove and destroy the improvements without reimbursement to the permittee. The cost of such removal shall be paid by the permittee to the City and shall constitute a debt owed to the City.
- 3: Permittee waives the right of claim, loss, damage or action against the City resulting from revocation, termination, removal of improvements or any action of the City, its officers, agents or employees taken in accordance with the terms herein.
- 4: If the Public Works Director of the City of Riverside finds that the permittee is in default of the terms of this permit, that shall be cause for revocation.
- 5: Permittee herewith agrees to hold the City of Riverside harmless from and against all claims demands, costs, losses, damages, injuries, actions for damages and/or injuries, and liability in connection with the construction, encroachment, and/or maintenance to be done by permittee within the described property.
- 6: Prior to any construction taking place on City controlled property, permittee shall obtain a Construction Permit or Street Opening Permit from the City Public Works Department.
- 7: The permittee agrees to insure that construction of their improvements will not interfere in any way with any existing City or utility facilities.
- 8: Permittee acknowledges that existing city or utility facilities will require future maintenance, reconstruction, and revisions and that facilities may be added, any of which may result in removal or alteration of the permittee's improvements without reimbursement to the permittee.
- 9: Prior to construction, permittee shall contact Underground Service Alert to field locate existing utility lines. Any conflicts discovered will void the permit until acceptable revisions are made. It shall be Permittee's responsibility to determine the location and required clearances from all public and private utility, sewer and drainage facilities prior to drilling and shall only drill in compliance with such clearance requirements.
- 10: Permittee is required to obtain all necessary permits and approvals from all City Departments and/or Agencies, City or otherwise, prior to constructing the improvements specified in this Encroachment Permit and to comply with all codes, laws, ordinances and regulations.
- 11: Permittee agrees to remove, close and abandon the well or wells in a timely manner, in accordance with the procedures specified under Condition 10m below. This permit may then be revised to apply to a new approved site.
10. Permittee shall obtain a well permit from the County of Riverside, Health Services Agency,

*E13-0279*

Department of Environmental Health. A copy of the County permit shall be incorporated into this permit. County approval is required prior to issuance of this encroachment permit.

10a. Permittee shall use and occupy the described encroachment only in the manner and for the purposes as follows: To drill, maintain, monitor, remove and close test well(s) for the purpose of Ground Water Monitoring.

10b. Permittee agrees to make the results of sampling available to the City.

10c. Permittee shall have the right of reasonable access across the City's adjacent right-of-way to drill, monitor, maintain, remove and close the well(s).

10d. Permittee shall inspect each well site at least once each month to insure that the lock is locked and not broken.

#### Well Construction

10e. The test well(s) shall be constructed as shown on the attached exhibits.

10f. Permittee's contractor shall obtain a Street Opening Permit from the City Public Works Department prior to doing any work in the public right-of-way.

10g. Permittee's contractor shall review required traffic control and safety measures for each site with the City's Traffic Engineering Division prior to doing any work in the public right-of-way. Permittee's contractor shall be responsible for implementing the required traffic control and safety measures as approved by the City Traffic Engineer.

10h. It shall be Permittee's responsibility to determine the location and required clearances from all public and private utility, sewer and drainage facilities prior to drilling and shall only drill in compliance with such clearance requirements.

10i. Permittee shall notify the City of Riverside, California, Public Works Department of the exact drilling date. In residential neighborhoods drilling will not commence prior to 8:30 am and will continue no later than one hour prior to sunset. In all other areas drilling will not commence prior to : m and continue no later than : m.

10j. During the period of well installation, Permittee's contractor shall keep the site supervised continuously from the beginning of drilling operations until installation of the locked traffic grade "Christy Box" cap marked "Monitor Well". Under no circumstances is the well or borehole to be left unattended when it is unlocked or incapable of being locked. Supervision after dusk includes appropriated lights to make the well visible to the attendants who shall remain awake and observant of the well or borehole.

10k. Upon completion of installation, Permittee shall provide to the City an as-built plan showing the exact location of the well(s).

#### Well Closure

10l. In the event the City needs the site prior to completion of monitoring, upon receipt of written notice to this effect from the City, the Permittee agrees to remove, close and abandon the well or wells in a timely manner, in accordance with the procedures specified under Condition 10m below. This permit may then be revised to apply to a new approved site.

10m. When the well(s) are no longer needed, the Permittee shall provide written notice to this effect to the City, and the well(s) shall be removed, closed and abandoned to the specifications of the Riverside Public Works Department and the State of California regulations regarding the closure of wells. Upon closure, Permittee shall provide to the City an as-built plan of the closed well(s).

10n. To insure that the removal and closure of the well(s) takes place in a timely manner, the Permittee shall post a cash deposit of \$1,000.00 per well. This cash deposit may be used by the

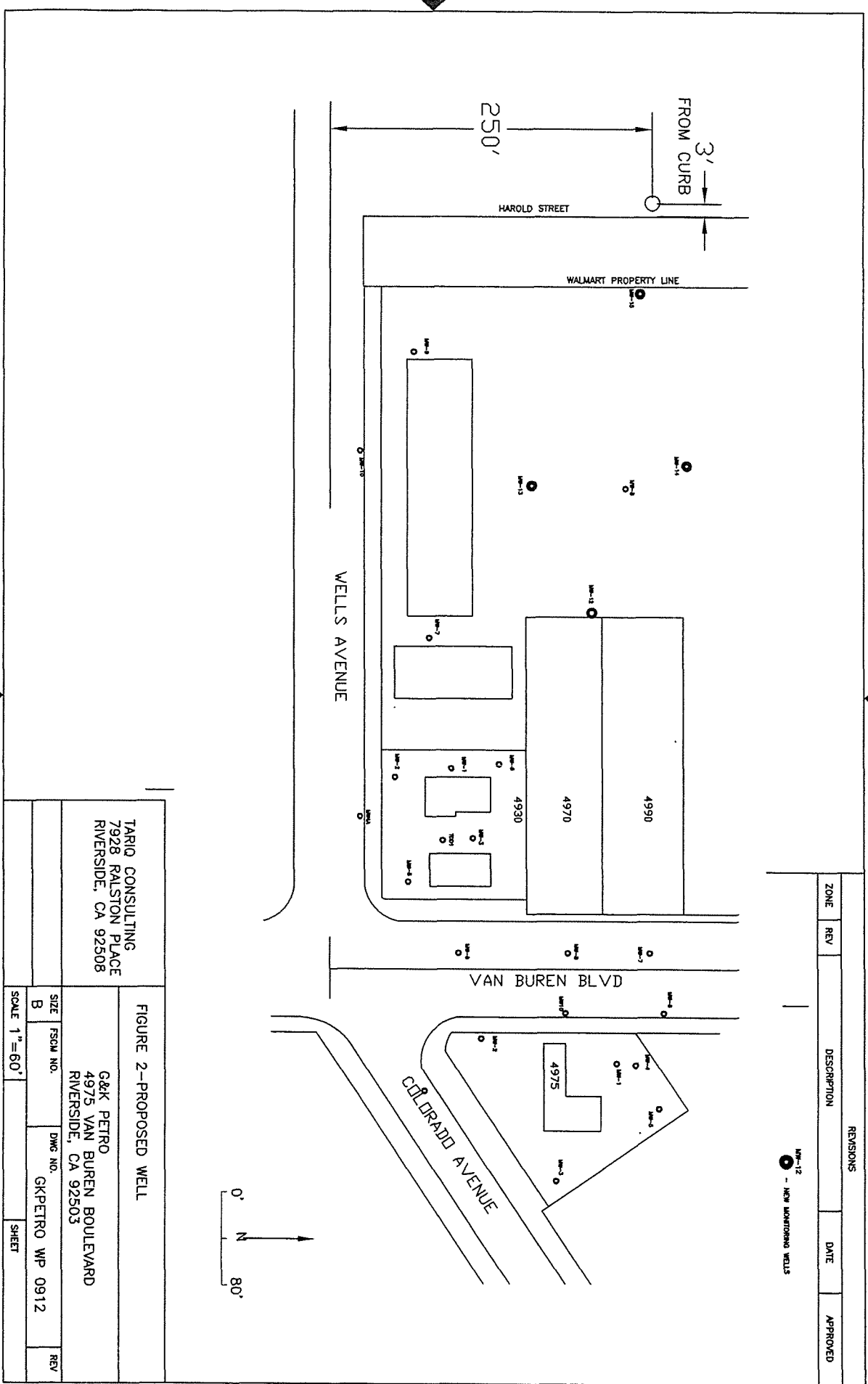
E13-0279

City to remove and close the well(s) when not done by permittee. Any cost of closure in excess of the cash deposit shall be paid by Permittee to the City of Riverside and shall constitute a debt owed to the City of Riverside.

#### Well Monitoring

10o. Prior to periodic monitoring and ground water sampling Permittee must contact TRAFFIC ENGINEERING for review and approval of traffic control or lane closures. Traffic Engineering (951) 826-5366.

10p. Permittee must notify PUBLIC WORKS INSPECTION 48 hours in advance of the anticipated date and time of all ground water sampling requiring traffic control or lane closures. Refer to Street Opening Permit No. Public Works Inspection (951) 826-5341.



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

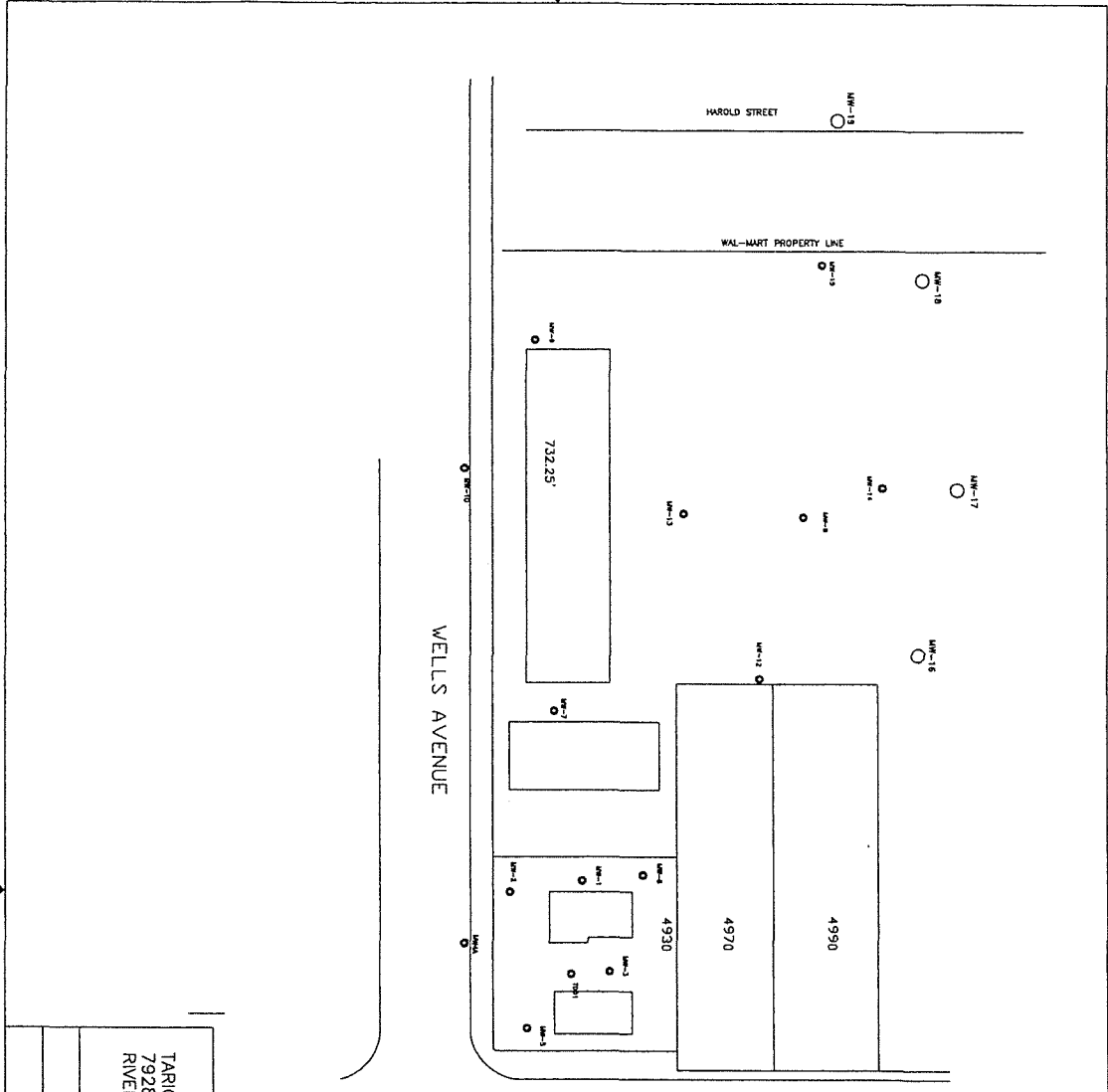
W-12  
 ○ - NEW MONITORING WELLS

TARIQ CONSULTING  
 7928 RALSTON PLACE  
 RIVERSIDE, CA 92508

FIGURE 2--PROPOSED WELL

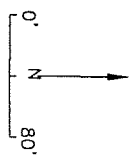
G&K PETRO  
 4975 VAN BUREN BOULEVARD  
 RIVERSIDE, CA 92503

SCALE 1" = 60'	SHEET
SIZE B	REV
FSOM NO.	DWG NO.
GKPETRO WP 0912	



REVISIONS			DATE	APPROVED
ZONE	REV	DESCRIPTION		

MW-3 ● - EXISTING GROUNDWATER WELLS  
 MW-16 ○ - PROPOSED GROUNDWATER WELLS



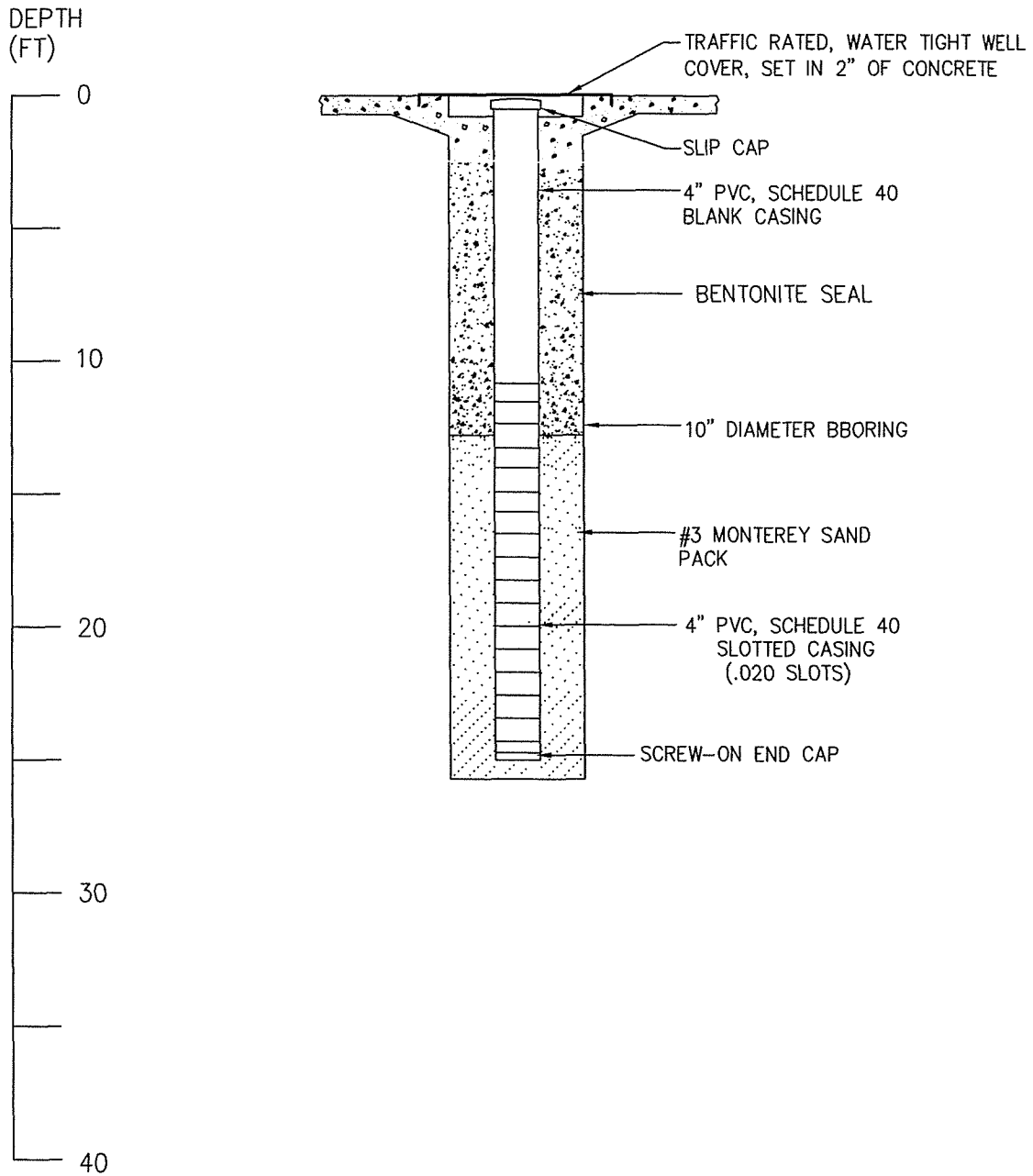
TARIO CONSULTING 7928 RALSTON PLACE RIVERSIDE, CA 92508		FIGURE 2-PROPOSED GROUNDWATER WELLS	
SIZE   FSOM NO.   DWG NO.   REV		G&K PETRO 4975 VAN BUREN BOULEVARD RIVERSIDE, CA 92503	
SCALE 1" = 60'		GK/PETRO W/P 0912	
B		SHEET	



1 inch = 60 feet  
May 21, 2013

Aerial photos taken February 2012. The City of Riverside files to warranty of the accuracy or completeness of the information on this map shall not be reproduced or distributed. © Copyright 2013, City of Riverside, California. Priority: SRN

E13-0279



## MONITORING WELL

MONITORING WELL CONSTRUCTION

G & K Petro  
4975 VAN BUREN BLVD.  
RIVERSIDE, CALIFORNIA

FIGURE

DATE: 05/21/13

SCALE: NONE

JN:

FIGURE:

E13-0279





EDMUND G. BROWN JR.  
GOVERNOR

MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

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**Santa Ana Regional Water Quality Control Board**

August 30, 2012

Mr. Balwart Jhawar  
G & K Petro, Inc  
ARCO Service Station  
4975 Van Buren Boulevard  
Riverside, CA 92503

**Subject: Results of Bench Scale Ozone Injection Test and Work Plan for  
Ozone Injection Pilot Test  
ARCO Service Station  
4975 Van Buren Blvd., Riverside  
Regional Board Case Number: 083302504T**

Dear Mr. Jhawar:

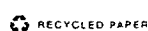
This letter is a follow-up to the "Ozone Injection – Bench Scale Pilot Test" submitted by your consultant, Tariq Wadood of Tariq Consulting. The ozone injection bench scale test was conducted in response to a request by the State Water Resources Control Board UST Cleanup Fund staff to have the cost effectiveness of alternative remedial actions, such as ozone sparging, be investigated. Board staff previously concurred, in an August 6, 2007 letter, with the Revised Remedial Action Plan proposed by Tariq Consulting to remediate the affected soil and groundwater using soil vapor extraction and groundwater extraction. The bench scale pilot test report included the "*In situ Ozone Injection Pilot Test Work Plan*" as part of Appendix B.

In the bench-scale pilot test, one boring, MW-14 was drilled and soil samples were collected at 10 and 12 feet below ground surface (bgs). A grab groundwater sample was collected. The soil and groundwater samples were put in a sealed container and ozone was injected into the same for seven days. A parallel experiment substituting O<sub>2</sub> was conducted on a second sample. According to McCampbell Analytical, oxygen purging alone resulted in a 75 percent reduction of hydrocarbons in the soil and 96 percent reduction in groundwater, whereas hydrocarbons were not detected after ozonation. However, the concentration of chromium increased from 2.3 to 420 ug/l, which mostly corresponds to an increase in the concentration of hexavalent chromium. The detected concentration of chromium did not decrease after a seven day post reaction decay study.

The results of the bench scale study are summarized below:

CAROLE H. BESWICK, CHAIR | KURT V. BERCHTOLD, EXECUTIVE OFFICER

3737 Main St., Suite 500, Riverside, CA 92501 | [www.waterboards.ca.gov/santaana](http://www.waterboards.ca.gov/santaana)



*E13-0279*

Sample	TPH (ug/l)	MTBE (ug/l)	Cr (ug/l)
Pre Mix Water	130	2400	<10
Initial Water	77	1800	2.3
Day 7 - Ozone	ND	ND	420
Day 7 -O2 Sparge	ND	ND	NA
Day 19 - Ozone	ND	ND	440

Based on these results, Tariq Consulting submitted a work plan to conduct an on-site ozone pilot test and recommended that future injection wells at the Wal-Mart property be connected to the ozone generator currently operating at the Thrifty site across Van Buren Avenue.

In the ozone injection work plan, Tariq Consultant is proposing the following:

- Install three ozone injection sparge wells to a depth of 20 feet bgs.
- Conduct an 8-week ozone sparge pilot test.
- Monitoring groundwater quality weekly in 5 wells near the injection points for depth to water, conductivity, dissolved oxygen, pH, oxygen reduction potential and water temperature.
- Collect groundwater samples from four observation wells monthly and analyze the water samples for TPH-g, BTEX compounds and fuel oxygenates.
- Proposed additional injection points based on the results of the pilot study to remediate the on-site plume.

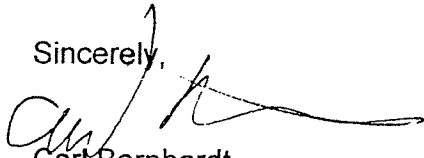
We concur with the proposed pilot scale test. However, since the results of the lab bench tests indicated generation of elevated concentrations of hexavalent chromium, the groundwater sampling should include analysis for total and hexavalent chromium. The work plan does not specify which groundwater monitoring wells will be sampled for the water quality and chemical analysis. Please submit a list of proposed monitoring wells to be included in the monitoring program prior to commencing field work. A baseline groundwater sampling event should be conducted prior to implementing the ozone sparing.

Since operation of the ozone sparing system has the potential of oxidizing trivalent chromium into hexavalent chromium in the groundwater and potential impact downgradient properties, a chromium contingency plan should be developed to address the potential hexavalent chromium impacts off-site and, if necessary, implement appropriate mitigation.

The United States Environmental Protection Agency document "*How to Evaluate Alternative Cleanup Technologies for Underground Storage Tanks Sites*" indicates that vapors may be generated as a result of ozone sparging and that vapor control equipment is often needed to operate in conjunction with the ozone system to capture the vapors to prevent the migration and intrusion of the vapor into nearby structures. The use of soil vapor extraction technology may be warranted to control fugitive soil vapor ozone and control migration and soil vapor concentrations in the unsaturated zone.

If you have any questions, please contact me at 951-782-4495 or by electronic mail at [cbernhardt@waterboards.ca.gov](mailto:cbernhardt@waterboards.ca.gov).

Sincerely,



Carl Bernhardt  
Engineering Geologist  
Underground Storage Tank Section

cc: Mr. Tariq Wadood, Tariq Consulting: [tariq.wadood@haydenindustrial.com](mailto:tariq.wadood@haydenindustrial.com)  
Mr. Robert Loeffler, Advanced GeoEnvironmental: [rloeffler@advgeoenv.com](mailto:rloeffler@advgeoenv.com)  
Mr. Chris Panaitescu, Thrifty Oil Company: [panaitescu@thriftyoil.com](mailto:panaitescu@thriftyoil.com)  
Ms. Diana Conkle, SWRCB UST Cleanup Fund: [dconkle@waterboards.ca.gov](mailto:dconkle@waterboards.ca.gov)

CAB/arcovb07 30 /2012



RIVERSIDE COUNTY COMMUNITY HEALTH AGENCY  
DEPARTMENT OF ENVIRONMENTAL HEALTH

**WELL DRILLING PERMIT**

WP#: WP0023244

ALL ELECTRICAL, PLUMBING, MECHANICAL, AND STRUCTURAL  
REPAIRS AND INSTALLATIONS SHALL BE DONE UNDER PERMIT  
FROM RIVERSIDE COUNTY DEPT. OF BUILDING AND SAFETY.

Approved Date : 05/30/2013

Expiration Date : 11/30/2013

Fee : \$ 136.00  
(Non-refundable)

This permit is granted on condition that the person named in the permit will comply with the laws, ordinances and regulations that are now or may hereafter be in force. (This is not a permit to operate a water system.)

APN: 151-290-020-8 Sec. 1 ; T 35 ; R 6W

PERMIT DESCRIPTION : Well Permit - Monitoring - Initial

PHYSICAL ADDRESS/LOCATION OF WELL : Harold St Riverside, CA  
MW-19

OWNER : Balwant Jhawar  
16273 Krameria Ave  
Riverside Ca 92504-

DRILLER : JDK Drilling  
COUNTY REGISTRATION # : P10000013  
PHONE # : (714) 279-0131

**Note: It is the owner's responsibility to verify that a Driller's C-57 license is current with the California Contractors State Licensing Board.**

Rpt. 5556, ver: 02/12

**Distribution: Environmental Health ; Owner: Well Driller; Consultant**

E13-0279



RIVERSIDE COUNTY COMMUNITY HEALTH AGENCY  
DEPARTMENT OF ENVIRONMENTAL HEALTH

WELL PERMIT APPLICATION

4080 Lemon Street • 2<sup>nd</sup> Floor • P.O. Box 1280 • Riverside • CA • 92502 – (951) 955-8980  
 47-950 Arabia Street • Suite A • Indio • CA 92201 – (760) 863-7570

PLEASE REPLY TO ADDRESS CHECKED ABOVE

MW-19

DEH USE ONLY	
Permit No.	WP 23244
Expiration	November 30, 2013
EHW No.	13053

OWNER

Name BALWANT JHAWAR  
Mailing Address 16273 KRAMERIA AVE  
City RIVERSIDE State CA  
Zip 92504 Phone No. (951) 313-3620  
E-mail \_\_\_\_\_  N/A

SITE ADDRESS

HAROLD ST.  
City RIVERSIDE  RCDEH-LOP Site  
APN 151-290-020-8  
Township 35 Range 6W Section 1  
Wellhead GPS Coordinates (WGS-84 Decimal Degrees):  
1  
Provide Plot Plan & Vicinity Map on Attachment #2

WELL DRILLER

Name IDK DRILLING  
Phone (714) 279-0131  
E-mail idkinlock@idkdrilling.com  N/A  
Riv. Co. Registration No. PI 0000013  
C-57 License No. 887038

CONSULTANT

Name TARIQ CONSULTING  
Address 7928 RALSTON PL City RIVERSIDE  
State CA Zip 92502 Phone (714) 267-4219  
E-mail \_\_\_\_\_  N/A

DATE OF WORK

Start 6-14-13 Complete 6-15-13

TYPE OF WORK (check)

New  Reconstruction  Destruction  
Describe reconstruction or destruction method on Attachment 1

WELL TYPE (check)

Agricultural  Individual  Cathodic  
 Industrial  Horizontal  Sparge  
 Other \_\_\_\_\_  
Type of rig \_\_\_\_\_

UPPER ANNULAR SPACE SEAL

Depth \_\_\_\_\_ ft.  
Borehole Diam. \_\_\_\_\_ in.  
Conductor Diam. \_\_\_\_\_ in.  
Annular Thickness \_\_\_\_\_ in.  
Sealing Material \_\_\_\_\_

DEPTH OF WELL (feet)

Proposed \_\_\_\_\_ Existing \_\_\_\_\_  
Diameter of Bore (in.) \_\_\_\_\_

WELL CASING

Steel  PVC  Other

From (ft.)	To (ft.)	Dia. (in.)	Wall (Gage)

GRAVEL PACK  Yes  No  
From \_\_\_\_\_ to \_\_\_\_\_ ft.

PERFORATIONS (if applicable)

From \_\_\_\_\_ to \_\_\_\_\_ ft.

SEALED ZONES (if applicable)

From \_\_\_\_\_ to \_\_\_\_\_ ft.

I have read this application and agree to comply with all laws regulating the type of work being performed.

Driller's Signature [Signature] Date 5/17/13

I declare under penalty of perjury under the laws of the State of California that the information furnished as part of this application is true and correct. I also understand that I am legally obligated to obey all requirements of state law and Riverside County Ordinances in connection with the approval of this application.

Property Owner's Signature [Signature] Date 5-18-13

DISPOSITION OF PERMIT DEH USE ONLY	
<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Denied
Notify the Department 48 hours in advance to make an inspection of the Following operations:	Submit to the Department within thirty (30) days after completion of work, a copy of <b>Water Well Driller's Report (DWR 188)</b>
<input checked="" type="checkbox"/> Prior to sealing of the annular space or filling of the conductor casing.	NOTE: Properties located within an Adjudicated Basin or within Water District boundaries may be subject to restriction or usage as determined by the Water Master or District agreements.
<input type="checkbox"/> After installation of the surface protective slab and pumping equipment.	
<input type="checkbox"/> During destruction of wells, prior to pouring the sealing material.	
Other: <u>Street encroachment permit required PRIOR to start of work</u>	Date: <u>30 May 2013</u>
Specialist: <u>[Signature]</u>	

E13-0279

06/07/13

CITY OF RIVERSIDE  
PUBLIC WORKS DEPT

SUBJECT: ENCROACHMENT PERMIT APP. PW13-0279

This letter is to authorize the release of deposit back to the current owner/lessee of the site that required the installation of monitoring well since the monitoring well has been abandoned.



BALWANT JHALWAR  
CURRENT OWNER  
4975 VAN BUREN BLVD  
RIVERSIDE, CA 92503

E13-0279