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January 26, 2012

Mr. Walter Sprague
Director of Retail Sales
Pacific Convenience & Fuels, LLC
7180 Koll Center Parkway, Suite 100
Pleasanton, California 94566

Project No. 611

Fourth Quarter 2011 Groundwater Monitoring Report
Site 01-056
500 George Washington Way
Richland, Washington

Dear Mr. Sprague:

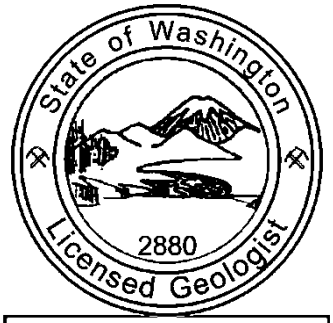
Environ Strategy Consultants, Inc. is pleased to provide the *Fourth Quarter 2011 Groundwater Monitoring Report* (Report) for the above-referenced site. The site location is shown on Figure 1. This Report presents a summary of the groundwater field activities, findings and analytical results conducted on November 9 and 10, 2011.

Groundwater monitoring results indicate that two monitoring wells (identified as MW-01 and MW-04) contain residual concentrations of benzene exceeding the Model Toxics Control Act (MTCA) Method A Cleanup Level for benzene. Consequently, it is recommended that quarterly groundwater monitoring be conducted to provide consistent groundwater analytical data in order to develop an appropriate remedial strategy for site closure.

For reference, a listing of report contents is on the following page. Should you have questions regarding this report, please contact the undersigned at (714) 919-6500.

Sincerely,
ENVIRON STRATEGY

Becky L. Hawkins
Project Geologist



BECKY L. HAWKINS

Laura Skow
Project Manager

LAURA B. SKOW

REPORT CONTENTS:

ATTACHMENTS:

GROUNDWATER MONITORING REPORT – SITE 01-056

SITE INFORMATION

Sampling Date:	November 9 and 10, 2011
Site Location:	Site 01-156 500 George Washington Way Richland, Washington
Pacific Convenience & Fuels Contact:	Mr. Walter Sprague
Environ Strategy Contact:	Ms. Laura Skow

WORK PERFORMED – FOURTH QUARTER 2011

- On November 9 and 10, 2011, performed groundwater monitoring activities consisting of well gauging and collection of groundwater samples from fourteen (14) site wells, identified as Monitoring Wells MW-1 through MW-7, MW-13, MW-17, MW-23, MW-25, MW-27, MW-31 and MW-32. There are a total of thirty-six (36) site wells including groundwater monitoring wells (19), air sparging wells (11), vapor extraction wells (5) and one recovery well. The wells selected for monitoring were chosen based on historical analytical data and location. The monitoring well network is shown on the Site Plan (Figure 2). Site background information is contained in Appendix A.

- Each monitoring well was sampled in accordance with Department Of Ecology-approved low-flow, minimal drawdown sampling techniques. Groundwater monitoring and sampling techniques are summarized in Appendix B. Groundwater samples were transported to a State certified environmental laboratory and analyzed for the presence of gasoline range organics and the full scan of volatile organic compounds (VOCs). Select samples were also analyzed for dissolved lead. In addition, field redox parameters consisting of dissolved oxygen (DO), oxidation reduction potential (ORP) and ferrous iron (Fe^{+2}) along with standard water quality parameters were collected from each well. Laboratory sample results, recorded field redox parameters, measured groundwater levels and well construction details are summarized on Table 1. In addition, Figure 3 contains measured groundwater elevation data. Laboratory analytical results are contained in Appendix C. Historical groundwater sampling data, collected by others, is provided in Table 2 and Appendix D. Groundwater monitoring field data sheets are provided in Appendix E.

- Two (2), partially full, 55-gallon, Department of Transportation-approved drums were generated to contain purge water. The drums were appropriately labeled, marked and stored

in a secure location pending waste classification for offsite disposal. A waste manifest will be prepared to track the transportation and disposal of purge water. Upon receipt, the manifest will be forwarded accordingly and shall be placed in Appendix F of this report.

SUMMARY DATA

Monitoring Details

Monitoring and Sampling Frequency:	To be determined
Monitoring Wells:	8 (onsite), 11 (offsite) Wells gauged: 14 Wells sampled: 14 (1)
Purging Method:	Grundfos pump
Sampling Method:	Low-flow, minimal drawdown
Purge Water Disposal:	≈22 gallons
Wells with LPH:	None
LPH Thickness:	None
Current Remediation Method:	None

Hydrological Parameters

Depth to Groundwater (below TOC):	11.72 feet to 33.15 feet (topography varies)
Groundwater Elevation:	≈ 340.38 feet amsl
Groundwater Gradient:	0.0012 ft/ft
Groundwater Flow Direction:	Variable
Average Water Level Change	-0.97 feet (2)

Groundwater Analytical Results (See Table 1)

Wells with TPH-Gx: 5	Maximum: 692 µg/L (MW-05 and MW-32)
Wells with Benzene: 3	Maximum: 28 µg/L (MW-04)
Wells with MTBE: 0	Maximum: ND
Wells with Lead: 0	Maximum: ND

(1): Sampled six onsite and eight offsite wells
(2): Change since last monitoring event (Third Quarter 2010)

GROUNDWATER SAMPLING RESULTS – FOURTH QUARTER 2011

The results for the Fourth Quarter 2011 groundwater monitoring event are summarized below:

- Static water levels measured in site monitoring wells ranged from 11.72 feet to 33.15 feet below top of casing (btoc).

- fGroundwater elevation data indicates that groundwater flow is variable across the site due to an extremely flat gradient. A flow gradient of 0.0012 feet per foot (ft/ft) or 0.12 percent was calculated between Wells MW-2 and MW-23. Groundwater elevation data are shown on Figure 3; however due to the variability in groundwater flow direction, groundwater flow contours are not shown.

- Dissolved-phase TPH-Gx was detected in five well samples at concentrations of 619 micrograms per Liter [µg/L (MW-04)], 692 µg/L (MW-05), 197 µg/L (MW-06), 162 µg/L (MW-07), and 692 µg/L (MW-32), which are below the Model Toxics Control Act (MTCA) Method A Cleanup Level for TPH-Gx. The remaining wells sampled did not contain TPH-Gx levels at or above the laboratory detection limit.

- Benzene was detected in Wells MW-01 (6.09 µg/L), MW-04 (28 µg/L) and MW-32 (1.05 µg/L). Ethylbenzene was detected in Wells MW-07 and MW-32 at concentrations of 0.61 J µg/L and 1.3 µg/L, respectively. The remaining wells sampled did not contain benzene or ethylbenzene levels at or above the laboratory detection limit. Benzene concentrations in Wells MW-01 and MW-04 exceed the MTCA Method A Cleanup Level of 5 µg/L for benzene. Note that a J qualifier indicates an estimated value between the laboratory method detection limit and reporting limit.

- Toluene was detected in Wells MW-05 (0.51 J µg/L), MW-06 (2.44 µg/L), MW-07 (0.66 J µg/L), MW-13 (0.73 J µg/L), and MW-31 (0.73 J µg/L). Total xylenes were detected in Well MW-06 (0.57 J µg/L). Methyl tert-butyl ether (MTBE) was not detected at or above the laboratory detection limit in the wells sampled.

- Dissolved lead was not detected at or above the laboratory detection limit in the wells sampled.

- Detectable levels of "other" VOCs were reported in all fourteen wells. Details regarding the concentrations of the other VOCs can be found in Table 1 and the laboratory report contained in Appendix C. The MTCA Cleanup regulation Table 720-1, "Method A Ground Water Cleanup Levels" does not designate cleanup levels for the additional VOCs detected except for tetrachloroethene (PCE) and trichloroethene (TCE). Concentrations of PCE exceeding the MTCA Method A Ground Water Cleanup Level of 5 µg/L were detected in Wells MW-2 (11 µg/L), MW-3 (9.51 µg/L), MW-13 (7.55 µg/L), MW-17 (7.64 µg/L), MW-23 (9.04 µg/L), MW-25 (7.82 µg/L) and MW-27 (12 µg/L). TCE was detected in six site wells at concentrations ranging from 0.54 J µg/L (MW-13) to 1.58 µg/L (MW-6) which are below the MTCA Method A Ground Water Cleanup Level of 5 µg/L.

- Dissolved oxygen was measured in site wells at levels ranging from 0.57 milligrams per Liter [(mg/L), MW-04] to 2.14 mg/L (MW-03). ORP levels ranged from minus -116.9 millivolts [(mV), MW-32] to -27.3 mV (MW-23). Fe^{+2} levels were measured up to 2.4 mg/L (Well MW-07).

HYDROCARBON TREND AND DISTRIBUTION ANALYSIS

A summary of current and historical groundwater sample results dating back to the Third Quarter 2005 is shown in Table 1 and Table 2, respectively. Additional historical groundwater monitoring results as tabulated by others is provided in Appendix D. As shown in Table 2, dissolved-phase hydrocarbons, specifically TPH-Gx and benzene, generally appear stable. This observation is more clearly shown in Chart 1 and Chart 2 where TPH-Gx and benzene concentration trends are displayed, respectively. All available groundwater data from 1996 to 2011 was utilized for each chart.

A review of historical documents indicates that three air sparge/soil vapor extraction (AS/SVE) systems intermittently operated at the site from 1998 to 2006; and in 2004, a hydrogen peroxide (H_2O_2) injection pilot test was conducted. These remedial actions were partially effective at reducing dissolved-phase fuel hydrocarbons.

As shown in Chart 1 and Chart 2, dissolved-phase TPH-Gx and benzene levels in site wells exhibit a generally stable contaminant trend from 1995 to 2011. For example, the reported level of TPH-Gx in Well MW-7 on October 11, 1995 was 67,000 µg/L and on November 11, 2011 was 162 µg/L. Similarly, as shown on Chart 2, benzene was detected in Well MW-7 at 190 µg/L on October 11, 1995 and was below the detection limit of 0.5 µg/L on November 11, 2011. The benzene concentration in Well MW-04 (28 µg/L) has increased since the July 13, 2010 groundwater sampling event. The benzene concentration has also increased in Well MW-01 (6.09 µg/L), located in the former tank area, since it was last sampled in 2008. Both concentrations exceed the MTCA Method A Cleanup Level for benzene.

According to a Time Oil site summary, the concentrations of PCE and TCE found in site wells is likely part of a well documented regional impact by a local dry cleaner.

Based on current and historical groundwater analytical results, it appears that residual dissolved-phase hydrocarbons are localized to Wells MW-01, MW-04, MW-05, MW-06, MW-07, MW-32 and MW-33 and that the plume is adequately defined.

CONCLUSIONS & RECOMMENDATIONS

The Fourth Quarter 2011 monitoring results indicate that levels of dissolved-phase hydrocarbons exceeding MTCA Method A Cleanup Criteria are present in the groundwater beneath the site. However, hydrocarbon trend analysis for TPH-Gx and benzene show generally stable to decreasing concentrations in a majority of the site wells. Benzene concentrations have increased in several wells near the former tank cavity since their respective last sampling events (2008 and 2010) but levels are considered low.

Based on the Fourth Quarter 2011 groundwater monitoring results, the following recommendations are provided:

- Conduct four consecutive quarters of monitoring to provide consistent groundwater analytical data to help develop an appropriate remedial strategy for site closure.

- Re-evaluate closure strategy and develop a plan to address residual fuel hydrocarbons in groundwater.

CLOSURE

Environ Strategy is pleased to be of service to Pacific Convenience & Fuels, LLC. If there are questions regarding this report or if additional site information is required, please do not hesitate to contact Environ Strategy at (714) 919-6500.

ACRONYMS:

amsl:	above mean sea level
AS/VE:	air sparge/vapor extraction
bgs:	below ground surface
BTEX:	benzene, toluene, ethylbenzene and total xylenes
btoc:	below top of casing
°C:	degree Celsius
DIA:	casing diameter
DO:	dissolved oxygen
DOE:	Washington State Department of Ecology
DOT:	Department of Transportation
DTB:	depth to bottom
DTP:	depth to product
DTW:	depth to water
EDB:	1,2-dibromoethane
EDC:	1,2-dichloroethane
Fe^{+2}:	ferrous iron
ft:	feet
ft/ft:	feet per foot
GW:	groundwater
H_2O_2:	hydrogen peroxide
µg/L:	micrograms per Liter
µs/cm:	microsiemens per centimeter
mg/kg:	milligrams per kilogram
mg/L:	milligrams per Liter
MTBE:	methyl tert-butyl ether
MTCA:	Model Toxics Control Act
mV:	millivolts
na:	not applicable
NTU:	Nephelometric turbidity unit
ORP:	oxidation reduction potential
ppm:	parts per million
PT:	product thickness
TPH-Dx:	total diesel-range petroleum hydrocarbons
TPH-Gx:	total gasoline-range petroleum hydrocarbons
TPH-Ox:	total oil-range petroleum hydrocarbons
UST:	underground storage tank
VCP:	voluntary cleanup program
VOCs:	volatile organic compounds

FIGURES

TABLES

CHARTS

APPENDIX A

Site Background Information

SITE DESCRIPTION, HISTORICAL SITE ASSESSMENT AND REMEDIAL ACTIONS

Site 01-056
500 George Washington Way
Richland, Washington

The following historical summary is based on a review of available documents and summaries including a draft letter report of results of a *Soil Vapor Survey* dated April 30, 1993 by Environmental Science and Engineering, Inc. (ESE), *Subsurface Petroleum Hydrocarbon Assessment and Remedial Investigation* dated June 19, 1995 by AGRA Earth and Environmental, Inc. (ARGA), *Pilot Study Report* dated April 30, 1997 by AGRA, *Remedial Pilot Testing – Howard Amon Park* dated May 7, 1998 by GeoEngineers, Inc. (GeoEngineers), *Report Remedial Activities – April 1997 through July 1998* dated September 3, 1998 by GeoEngineers, various groundwater monitoring reports completed by Sound Environmental Strategies (SES) from 2003 to 2008, *Remedial Action Alternatives Analyses* dated May 19, 2006 by SES and other various transmittal letters and agency correspondence from 2003 to 2006.

Site Description

The site is located at 500 George Washington Way in Richland, Washington. The site is an approximate 1.42-acre parcel located on the east side of George Washington Way approximately 800 feet west of the Columbia River. The site is currently an active retail fueling station with a convenience store, two pump islands with one dispenser each and three 10,000-gallon underground storage tanks (USTs). The site is located in a commercial and residential land-use area with a large public park located to the east.

Historical Site Assessment and Remedial Actions

In 1990, three steel underground storage tanks (USTs), associated piping and dispensers were removed from the site. New dispensers were installed in the same location as the previous dispensers and the new USTs were installed to the northwest. A fourth UST, known to have existed adjacent to the former USTs, was not found and is believed to have been removed prior to 1990. In addition, a 750-gallon heating oil tank is believed to have been located along the western wall of the property. No removal records for these tanks exist. Soil samples collected during the UST removal contained concentrations of TPH-Gx exceeding MTCA Mehtod A Cleanup Levels.

In February 1993, a soil vapor survey was conducted but was mostly unsuccessful due to a high percentage of cobbles in the soil. VOCs were detected using field instrumentation. Also in 1993, a soil and groundwater site assessment was completed. During this investigation, five groundwater monitoring wells (MW-1 through MW-5) and one vapor extraction well (VW-1) were installed. Soil and groundwater contamination were identified in area of former UST cavity.

In 1995, an additional subsurface assessment was completed including the installation of six additional groundwater monitoring wells (MW-6 through MW-7), one vapor recovery well (RW-1), one air sparging well (SW-1) and the collection of soil and groundwater samples. Several rounds of groundwater elevation data were collected during this study. It was reported that the fluctuations in groundwater elevation and flow direction were likely the direct result of water level changes in nearby Lake Wallula (Columbia River) and the Yakima River. Heavy rainfall and extensive snowmelt from the nearby mountains occurred during the extent of the investigation. Additionally, the Wellsian Well Field operated by the City of Richland and located nearby, potentially affected groundwater flow. Two groundwater sampling events were completed in association with the investigation; one on February 1, 1995 (including six existing wells) and one on April 4, 1995 (including the seven wells installed during this investigation). Laboratory analysis indicated that dissolved-phase hydrocarbons above MTCA Method A Cleanup Levels were contained in a number of site wells. During the February event, the maximum concentrations of dissolved-phase hydrocarbons were identified in Well MW-1 as follows: TPH-Gx (30,000 parts per billion [ppb]); benzene (39 ppb); toluene (890 ppb); ethylbenzene (430 ppb); total xylenes (3,700 ppb); and TPH-Dx (1,800 micrograms per Liter [µg/L]). TCE and PCE were detected in two wells (MW-2 and MW-5); however, levels did not exceed the MTCA Method A Cleanup Levels. During the April event, maximum concentrations of toluene (850 µg/L) were detected in Well MW-1. Maximum concentrations of benzene (72 µg/L), ethylbenzene (1,400 µg/L) and total xylenes (6,400 µg/L) were identified in Well MW-7. Maximum concentrations of TPH-Gx (44,000 µg/L) and TPH-Dx (2,700 µg/L) were detected in Well RW-1. PCE and TCE were detected in several wells at levels below the MTCA Method A Cleanup Levels.

During March 1995, seven borings were advanced at offsite locations to the east and west of the site. Of the soil samples collected from these borings, only one (RW-1 S-2) contained detectable concentrations of fuel hydrocarbons. However, a submerged smear zone was identified that extended from Well MW-10 located to the northeast to Well MW-11 located to the southwest across George Washington Way. The smear zone was uniformly identified from approximately five to ten feet below ground surface (bgs).

On April 19 and 20, 1995 a 24-hour in-situ air sparge (AS) pilot test and two one-hour soil vapor extraction (SVE) pilot tests were conducted. Results indicated that AS/SVE was a viable method to remediate subsurface soils.

In August 1995 soil sampling activities were conducted along the west bank of the Columbia River located to the east and downgradient of the site. Soil samples were collected along an approximate 500 foot long section of the river bank. Analytical results indicated that the soil along the river had not been impacted.

In October 1995, a limited risk assessment was conducted to evaluate the risk to users of the park, baseball field and river shoreline located east of the site. The potential risk was from petroleum hydrocarbons volatilizing from subsurface soil and groundwater into the ambient air and breathing zone for park users. Based on the results of the risk assessment, exposure risk was minimal.

In November 1995, an additional twelve groundwater monitoring wells were installed. Nine wells were installed in the park, one well was installed onsite, and two wells were installed approximately 300 feet west of the site. In addition, six soil borings were advanced in the park. Onsite, five dedicated AS wells and four dedicated VE wells were installed as part of an AS/SVE pilot remedial system which also included using a number of existing wells.

In 1996/1997 a six-month SVE/AS pilot study was conducted using two separate operating systems, a constantly operating SVE system (4 wells) and a pulsed SVE/AS system (12 wells). The SVE/AS wells were aligned to form a subsurface "sparge fence" oriented perpendicular to groundwater flow and extending the width of the dissolved-phase plume. Approximately 771 pounds of TPHg and 50 pounds of BTEX were recovered from the subsurface; however, asymptotic conditions were reached in 90 days.

During December 1997, two remedial pilot tests were conducted at Howard Amon Park, located east of the site, to evaluate design parameters for an expansion of the remediation system operating at the site. As part of the pilot test design, two additional monitoring wells and two additional air sparge test wells were installed. The pilot tests were conducted in two areas referred to as the West Park Pilot Test and East Park Pilot Test. Results of the pilot tests indicated that AS/SVE was successful in terms of the distribution of dissolved oxygen and in reducing the concentrations of petroleum hydrocarbons. The West Park Pilot Test determined that SVE should be used in conjunction with AS in that part of the system; however, SVE was not necessary in the East Park part of the system. Based on the results of the remedial pilot tests, four additional AS wells, five additional SVE wells and a vapor extraction trench were installed in the areas of the West Park and East Park pilot test systems.

Operation and maintenance (O&M) of the remedial systems and groundwater monitoring and sampling conducted during 1997 and 1998 indicated that the onsite and the East Park remedial systems were effective in reducing petroleum hydrocarbon concentrations the from groundwater. In May 1998, the West Park remedial system was completed and brought online. This included installing four more air sparge wells and a vapor extraction trench. Operation of the three remedial systems from start-up (1996 through 1998) through 2003 was effective in significantly lowering the concentrations of petroleum hydrocarbons at the site.

During the October 2003 groundwater monitoring event, groundwater flow direction had changed from easterly to southerly presumably due to pumping at the nearby Wellsian Well Field resulting in the migration of contaminants beyond the existing well network. Previously non-impacted wells had concentrations of dissolved-phase hydrocarbons exceeding Method A Cleanup Levels.

A peroxide injection pilot test was conducted in January 2004; however, details from that test are not available. In July 2004, four wells were installed to the south in order to delineate the dissolved-phase plume in that direction.

In 2005, approximately 9000 gallons of a 17% perioxide solution was injected into two site wells and the East Park remediation system was shut down.

In 2006, six remedial technologies were evaluated to address residual soil and groundwater contamination that persists despite implementation of the existing AS/SVE systems. Those remedial technologies evaluated were: monitored natural attenuation, dual-phase extraction and treatment, AS/SVE, enhanced bioremediation techniques and bioventing. AS/SVE was determined to be the preferred option.

Groundwater monitoring has been ongoing at the site since 1995. Results indicate that active remediation and natural attenuation have affected a decrease in the concentrations of petroleum hydrocarbons at the site. Based on current (November 2011) and historical groundwater analytical results, it appears that residual dissolved-phase hydrocarbons are localized to Wells MW-01, MW-04, MW-05, MW-06, MW-07, MW-32 and MW-33 and that the plume is adequately defined.

APPENDIX B

Groundwater Monitoring Sampling Protocols

APPENDIX C

Laboratory Analytical Report

APPENDIX D

Historical Groundwater Monitoring Data Tables

APPENDIX E

Groundwater Monitoring Field Forms

APPENDIX F

Non-hazardous Waste Manifest

~Pending~