



**WAYNE PERRY, INC.**  
*Environmental Remediation, Construction and Consulting*

October 21, 2011

State Water Resources Control Board  
1001 I Street, 15th floor  
PO Box 100  
Sacramento, CA 95812-2000  
(commentletters@waterboards.ca.gov)

ATTN: Ms. Jeanine Townsend, Clerk to the Board

**SUBJECT: COMMENT LETTER – PALM SPRINGS OIL #1 UST CASE CLOSURE  
SUMMARY**  
67460 EAST PALM CANYON DRIVE (AT GOLF CLUB DRIVE)  
CATHEDRAL CITY, CALIFORNIA  
WPI PROJECT NO. 00.158

Dear Ms. Townsend:

In June 2009, Mr. C. Benton Beckley submitted a petition for case closure for the former Palm Spring Oil #1 (site) service station located at 460 East Palm Canyon Boulevard in the city of Cathedral City, California. The closure petition was reviewed by the State Water Resources Control Board who concluded that based on the hydrologic and geologic conditions at the site, residual petroleum hydrocarbons beneath the site did not present a significant threat to public health, safety, and the environment. Accordingly, case closure was considered appropriate.

After review of the draft UST Case Closure Summary, the County of Riverside Department of Environmental Health, the California Regional Water Quality Control Board, Santa Ana Region, and the Desert Water District disagreed with the State Water Resources Control Board's evaluation and conclusion. In their respective correspondences, the listed agencies expressed concern or had issue with the following:

- The limited number of constituents presented in the summary of soil analysis table;
- The estimation of residual mass;
- Depth to bedrock;
- Lack of groundwater analysis for MTBE; and
- Potential downward migration of constituents of concern.

### **Summary of Soil Analytical Data**

In the September 1, 2011 response, the CRDEH stated that the summary did not address volatile compounds other than benzene, toluene, ethylbenzene, xylenes, MTBE, and TBA. This is correct. Soil samples were analyzed for volatile organic compounds using EPA Method 8260 full scan which includes results for approximately 84 different volatile compounds. The reason for including only benzene, toluene, ethylbenzene, xylenes, MTBE, and TBA was that these are the most common constituents evaluated when assessing leaking underground tank cases. This is in part because they are the most mobile of the constituents and because benzene, ethylbenzene, and MTBE are potential carcinogens. A revised summary table (Table 1), which includes all the constituents found, is currently being finalized and will be submitted under separate cover.

### **Depth to Bedrock**

In their correspondence, the California Regional Water Quality Control Board, Santa Ana Region, and the Desert Water District stated that the depth to bedrock as interpreted from the site data was not correct based data collected at a site located approximately 1,800 feet from the former Palm Spring Oil site: the assumption apparently being that subsurface conditions should be the same at both sites regardless of the location relative to nearby hills. The former Palm Spring Oil site is within approximately 200 feet of the alluvium/bedrock contact while the same contact is approximately 900 feet from The Wash, the location used for comparison by the California Regional Water Quality Control Board, Santa Ana Region. Further, The Wash is located within 700 feet of a major drainage pattern and in line with a minor drainage pattern. The former Palm Springs Oil site is located approximately 200 feet off the nose of a ridge. Based on the location of the sites from the hills and relative to drainage pattern, it would be expected that the thickness of the alluvium would be thicker beneath the The Wash than beneath the former Palm Spring Oil site.

### **Analysis of MTBE**

In the California Regional Water Quality Control Board, Santa Ana Region correspondence, it states that since a groundwater sample has not been analyzed for MTBE, the MTBE policy as stated in the California Health and Safety Code Section 25296.15 has not been satisfied. Section 25296.15 it states that no closure letter shall be issued unless soil or groundwater or both, where applicable, at the site has been tested for MTBE. Soil samples were collected during the various phases of assessment and analyzed for MTBE. MTBE was not detected in any of the soil samples at detection limits ranging from 5 to 13,000 µg/kg. It should be noted that MTBE was

not detected in vapor samples collected during the soil vapor extraction test. This data is consistent with the soil data which would indicate that a significant mass of residual MTBE was not present at the site. Since groundwater was not found during the assessments at the former Palm Springs Oil site, a groundwater sample could not be collected. Section 25296.15 does not say that both groundwater and soil must be samples, only that both need be sampled where it is applicable. Based on the data, the requirements for soil/groundwater sampling have been met.

### **Further Migration**

Migration of contaminants through the soil is a function of site lithology and the properties of the chemicals of concern. On September 18, 1996, 10 soil samples were collected from beneath the former diesel and gasoline USTs at depths of two and six feet beneath the former tank locations. The tanks were reported by the CRDEH to be in good condition with no apparent holes. Petroleum hydrocarbons were detected in three of the soil samples collected from the bottom of the former tank zone. Data from the tank removal indicate there was not a large sudden release of product, but rather impacts due to spillage and minor leakage over time.

The source of the hydrocarbons was removed in September 18, 1996, approximately 15 years ago, thus eliminating a driving force for further migration. Additional vertical migration could occur through an influx of water into the subsurface driving non-aqueous phase liquids (NAPL) or dissolved-phase constituents deeper into the formation or through migration of vapors.

The site is covered by asphaltic concrete. Annual rainfall for Cathedral City is typically less than five inches. The data indicate that an influx of water from the surface is therefore highly unlikely. The nearby hills are not considered a recharge area due to the low permeability of the rock units.

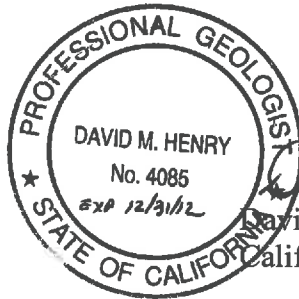
Analytical data shows that the concentrations of residual constituents are below the levels indicative of NAPL. Review of the physical properties of the chemicals found during the assessments indicate that all the constituents found have low solubility in water and low vapor pressure, thus severely limiting the amount of any of the constituents found that can be dissolved and leached out of the soil or transported in the vapor phase. The Log K<sub>oc</sub> values indicate that all the constituents will have a tendency to bind to the soil. Based on the concentrations and the chemical properties (Table 2), residual constituents would be immobile in the soil. In the Desert Water District correspondence, it was mentioned that infiltration from the septic system could mobilize the plume and drive it deeper. The area of impacted soil is approximately 250 feet away from the septic system. Soils underlying the site and consist of predominantly of sand with varying amounts of silt and gravel. As a result, water from the septic system, as well as hydrocarbons from the former tank zone, would have a tendency to move vertically rather than laterally. Based on the distance from the septic system and the limited volume of water entering the subsurface from the septic system, and the area affected by infiltration from the septic system, mobilization of residual hydrocarbons from infiltration is not considered likely.

Comment Letter – Palm Springs Oil #1 UST Case Closure Summary  
67460 East Palm Canyon Drive (at Golf Club Drive)  
Cathedral City, California  
Page 4

Thank you for your time considering this matter. Should you have any questions regarding this information, please contact Mr. Charles Beckley at (760) 774-0007 or Ms. Terri Willis at (714) 826-0352.

Sincerely,  
**WAYNE PERRY, INC.**

  
Terri G. Willis  
Senior Project Engineer




  
David M. Henry  
California Professional Geologist 4085

Table 1 – Summary of Soil Analytical Data  
Table 2 – Summary of Chemical Properties

Cc: CRDEH Interested Part List

**TABLE 2 - SUMMARY OF CHEMICAL PROPERTIES  
FORMER PALM SPRING OIL #1  
460 EAST PALM CANYON DRIVE  
CATHEDRAL CITY, CALIFORNIA**

Analyte	Henry's Law Constant @ 25°C	Log Koc	Log Kow	Solubility mg/L @ 25°C	Vapor Pressure inches of Hg @ 25°C
Sec Butylbenzene	1.14	2.95	4.24	171	1.81
Ethyl benzene	6.01, 7.84	2.74	3.13 to 3.15	187	9.9, 9.6
Isobutylbenzene	1.09	3.9	4.11	33.71	2.06
Napthalene	4.19 to 18	2.74 to 5.00	3.33 to 3.40	12.5 to 33	7.8 to 21
N Propylbenzene	10.8, 11.6	2.87	3.44 to 3.72	60.24	3.43
Toluene	6.46, 6.42, 6.51, 6.25	1.66 to 2.96	2.11 to 2.79	520	28.1, 28.4
1, 2, 3 Trimethylbenzene	3.18	2.8	3.55	7.52 mg/kg or 545 µmol/l @ 25°C	1.51 mm of Hg @25°C
1, 2, 4 Trimethylbenzene	11.202 @27°C	3.57	3.65 to 3.78	51.9, 57, 59 mg/kg @ 25°C	2.03
Xylene	5.487 to 7.44	2.03 to 2.68	2.77 to 3.28	167, 157, 204	6.6 to 8.3

September 1, 2011

**Interested Party List**

Underground Storage Tank Case Closure Petition  
Palm Springs Oil #1 Benton C. Beckley (Petitioner)  
67-460 E. Palm Canyon Drive, Cathedral City, California

Benton Charles Beckley PO Box 1000 Palm Springs, CA 92262	Tawney Beckley Address unknown
Neil Anenberg Palm Springs Oil 3410 E Foothill Blvd Pasadena, CA 91107	Wayne Perry, Inc. 8281 Commonwealth Ave Buena Park, CA 90621
Robert Perdue, Executive Officer Colorado River Basin Regional Water Quality Control Board 73-720 Fred Waring Drive, Suite 100 Palm Desert, CA 92260 <a href="mailto:rperdue@waterboards.ca.gov">rperdue@waterboards.ca.gov</a>	Thomas A. Vandenberg, Staff Counsel Office of Chief Counsel State Water Resources Control Board 1001 I Street Sacramento, CA 95814 E-mail: <a href="mailto:tvandenberg@waterboards.ca.gov">tvandenberg@waterboards.ca.gov</a>
Kai Dunn State of California Regional Water Quality Control Board 73720 Fred Waring Drive, Suite 100 Palm Desert, CA 92260 <a href="mailto:kdunn@waterboards.ca.gov">kdunn@waterboards.ca.gov</a>	Linda Shurlow County of Riverside Department of Environmental Health 47950 Arabia Street, Suite A Indio, CA 92201 <a href="mailto:lshurlow@rivcocha.org">lshurlow@rivcocha.org</a>
Sharon Boltinghouse County of Riverside Department of Environmental Health P.O. Box 1280 Riverside, CA 92502 <a href="mailto:sbolting@rivcocha.org">sbolting@rivcocha.org</a>	David K. Luker, General Manager Desert Water Agency 1200 Gene Autry Trail South P.O. Box 1710 Palm Springs, CA 92263-1710 E-mail: <a href="mailto:dluker@dwa.org">dluker@dwa.org</a>
Marcus Fuller Assistant Director of Public Works/Assistant City Engineer City of Palm Springs Public Works & Engineering 3200 E Tahquitz Canyon Way Palm Springs, CA 92262 <a href="mailto:marcus.fuller@palmspringsca.gov">marcus.fuller@palmspringsca.gov</a>	