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Alameda County
Environmental Health

Transmittal Letter

To: **Donna Drogos, P.E.**
LOP Program Manager
Environmental Health Services,
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Mr. Obaid Abdullah,
Mr Eddie Fedhai
Khan Petroleum Inc.
3004 Andrade Road
Sunol, California 94586-9453

From: **Pat Hoban**

Date: **July 3, 2008**

Number of Copies	***Date of Documents***	***Description***
1	June 30, 2008	***Carbon System Test Results*** – Former Sunol Tree Station, 3004 Andrade Road, Sunol

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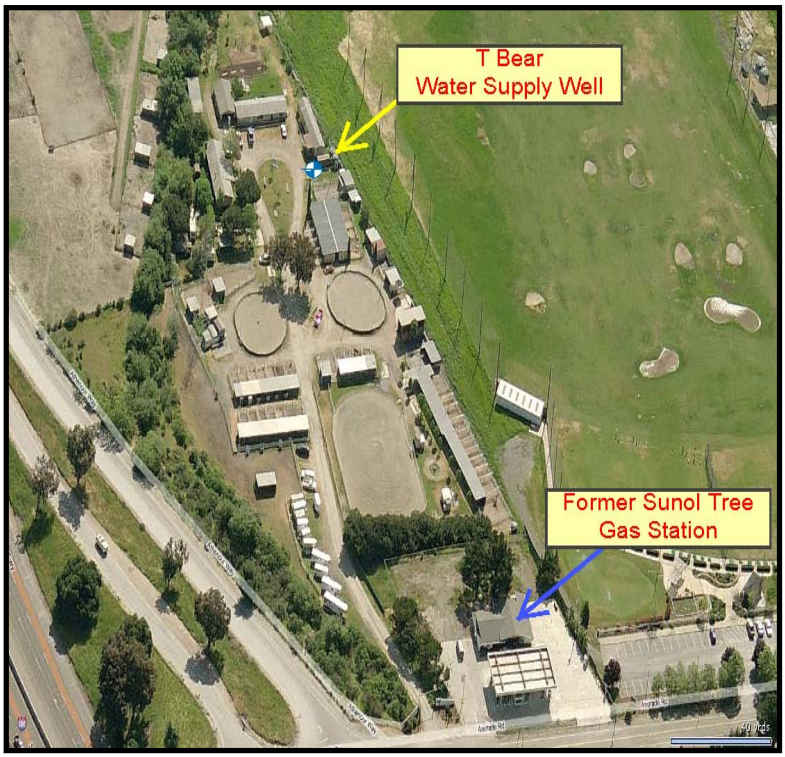
June 30, 2008

Donna Drogos, P.E,
LOP Program Manager
Environmental Health Services, Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Carbon System Test Results
Former Sunol Tree Station, 3004 Andrade Road, Sunol (Fuel Leak Site)

Location: Well head carbon treatment system at the T Bear Water Supply Well (see photo below)



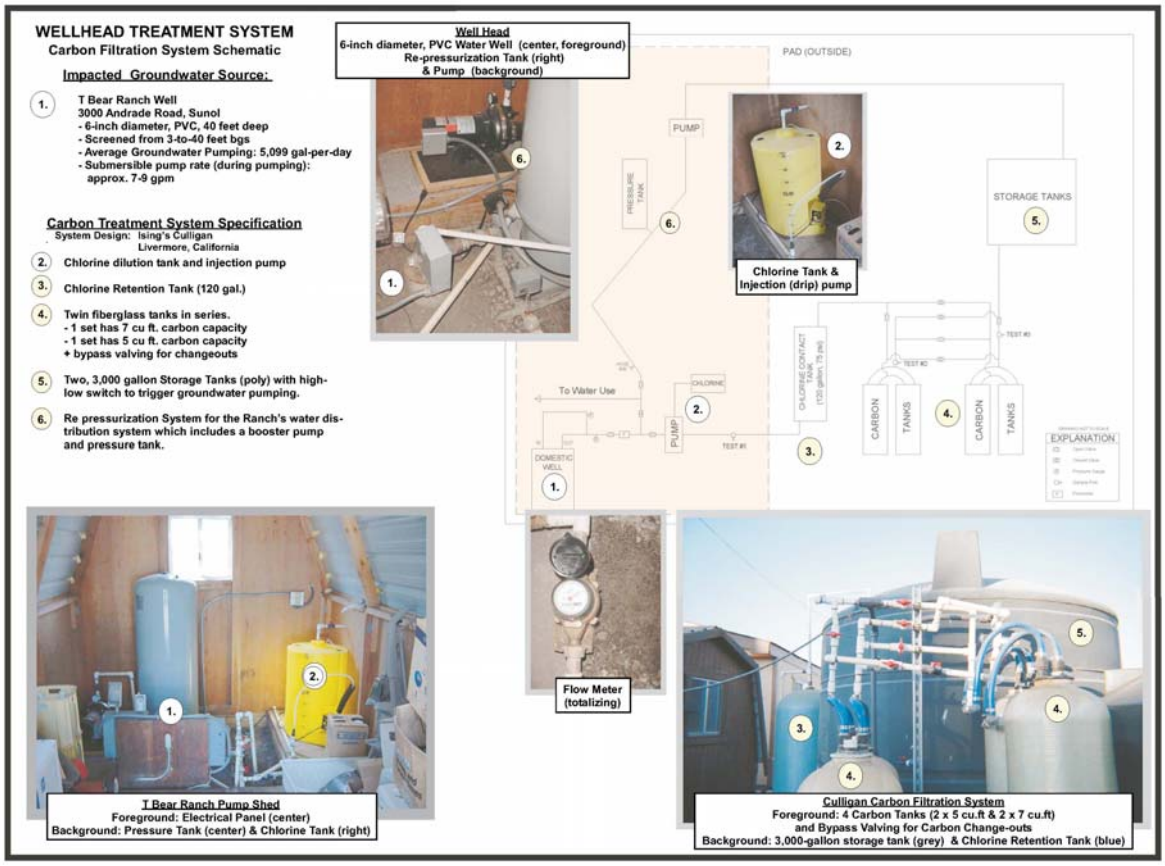
This letter report and attachments provide an update of carbon system testing, and operation and maintenance and at the T Bear Ranch well at 3000 Andrade Road, Sunol. These work tasks have been completed at the request of the primary responsible party (RP) for a fuel leak originating at the Former Sunol Tree Station. The tasks documented in this letter report are completed to satisfy requirements issued in a directive from Alameda County Health Care Services, dated December 15, 2006.

This report includes a brief overview of site conditions and a review of the carbon filtration design specifications, a compilation of laboratory-analyzed water samples obtained to gauge the efficiency of the filtrations system, a record of groundwater extraction from the T Bear well, and a chronological list of the carbon change outs and milestone events. Attachments include:

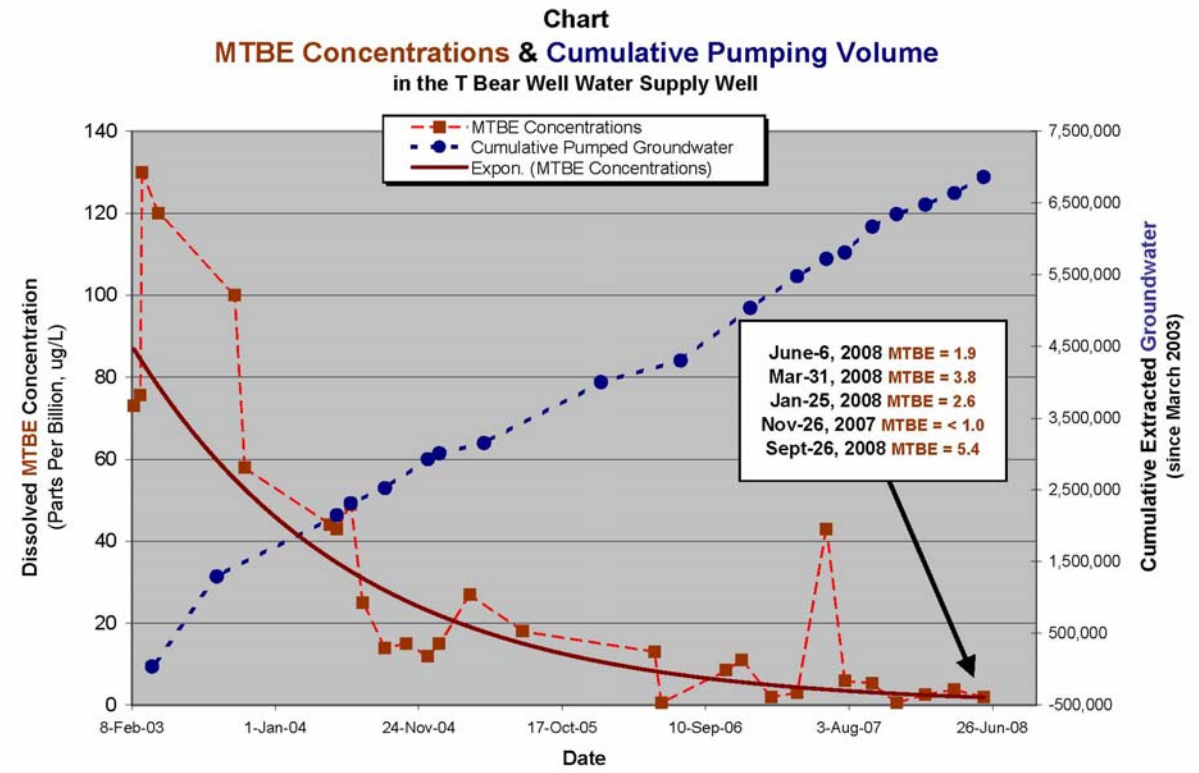
- Tabulation of carbon treatment system sampling results (Table 1) and a chart showing MTBE concentrations over time.
- A copy of the State-certified laboratory's *Certificate of Analysis* (Appendix A).
- Well head treatment system schematic (Figure 1).
- Copies of field notes, sampling and decontamination protocols, and photos (Appendix C).

BACKGROUND: MTBE, a constituent compound of gasoline, has been detected since February 2003 in the T Bear Ranch water supply well located approximately 550 feet downgradient from the *Former Sunol Tree Gas Station* (see Aerial Vicinity Map, Figure 2). The source of the release has been linked to contamination discovered during the April 2002 closure of underground storage tanks (UST) at the Site. None of six nearby water supply wells have had detections of MTBE contamination, including the water supply well at the Fuel Leak Site.

The former owner of the *Sunol Tree Gas Station* (Murray Kelsoe) subsequently declared bankruptcy in 2004 and Alameda County Environmental Health (ACEH) obtained funding from the State Underground Storage Tank Cleanup Fund's *Emergency, Abandoned, Recalcitrant (EAR) Account* to conduct: 1) treatment and monitoring of the impacted, T Bear Ranch water supply well, and 2) characterization of the vertical and horizontal extent of the residual MTBE plume impacting shallow groundwater. New owners took over fueling operations in June 2007 *(Sunol Super Shop Gas Station)* and are responsible for maintaining the carbon filtration system at the T Bear Ranch. Specifically:



- Installation of Carbon Filtration System: A carbon filter system was installed and maintained since November 2003, and continues to treat the MTBE-impacted groundwater water supply at the wellhead, which is pumped at an average rate of approximately 3.5 gallons per minute. MTBE concentrations at the wellhead have dropped from a high of 130 parts per billion (ppb, Mar-2003) to a low of non-detect (< 1 ppb, Nov-2007). The most recent results collected in June-2008 contained MTBE at a concentration of 1.9 ppb. The water quality goal for MTBE is 5 ppb (see Chart 1, and Table 1).



The samples were obtained in clean, preserved VOA's to laboratory testing of chemicals of concern, to monitor MTBE-removal efficiency and carbon loading. Samples were obtained from:

1) The pre-filtration sampling port ("Pre" sample),
2) The sampling port between the two sets of carbon canisters ("Mid" sample); and
3) The sampling port located at a sampling port positioned at the back end of the 4-canister treatment system ("Post" sample).

System monitoring results continue to show that the existing setup of four, carbon-filled, fiberglass tanks placed in a parallel series configuration is effectively removing the low-level MTBE concentrations. The carbon filtration system appears to be acting as a Bio-GAC treatment since the Mid-Point sample has not had a detection of MTBE since Sept-2007 (carbon was last changed out in July 2007).

- Subsurface Characterization: A number of investigations were completed to assess subsurface conditions and define the extent of the fuel leak. Completed work included:

1. *Supply Well Assessment:* Video logging of the T Bear well indicated the well had a 6-inch diameter, PVC insert, having slots from approximately 3 feet below the top of the casing

(BTOC) to the base of the well that was encountered at a depth of 40-feet BTOC. Static groundwater has been measured to be approximately 7 feet BTOC. Groundwater pumping at the well has historically been activated with demand (pressure tank), but recently has been hooked up to high-low volume float-triggers positioned in one of the new 3,000-gallon, water storage tanks. Transducer monitoring of groundwater in the T Bear well has shown: a) that most of the pumping occurs primarily during daytime hours, b) groundwater drawdown is approximately 1.5 feet during pumping and has a near immediate aquifer recovery following pumping. Flow measurements taken with a totalizing flow meter showed pumping rates are generally 7-8 gpm (high as 14 gpm) and an average water use rate of 5,100 gallons per day.

2. *Conformation of Groundwater Flow Direction*: Piezometers were initially installed to determine groundwater flow gradient in two shallow aquifer zones.

3. *Water Supply Well Assessments*: Well integrity and aquifer connectivity assessment was completed on the impacted T-Bear Ranch well and the gas station water supply well (geophysical inspection, discrete interval sampling and transducer-flow meter monitoring).

4. *Identification of Subsurface Stratigraphy*: Deep exploratory borings were continuously cored and a deep monitoring point (RW-1) was installation to identify the potential presence of continuous clay barrier & underlying production aquifers.

5. *High-Definition Groundwater Monitoring*: A transect installation of twelve 9 Multi-Level Wells was installed to precisely monitor the residual MTBE plume as it migrates past the property boundary.

Existing data shows that a fairly well defined plume of dissolved MTBE concentrations is migrating from the Fuel Leak Site and remains at fairly stable concentrations. The dissolved plume appears to be pulled laterally toward the impacted T Bear Ranch well which is acting as a pump and treat remediation system and concentrations in this water supply well have a consistent track record of decreasing over time (see attached Chart 1). The existing body of data indicates that contaminant concentrations in groundwater are decreasing but remain at levels that exceed regulatory threshold levels. Continued monitoring of the dissolved contaminant plume coupled with some remediation should bring concentrations to acceptable levels in a reasonable timeframe.

ATTACHMENTS to this letter report include:

- **A chart** (*MTBE Concentrations & Cumulative Pumping Volume*): this chart presents the volume of groundwater pumped from the T Bear water supply well since 2003 and the decreasing MTBE concentrations over time. The downward trend of MTBE concentrations detected in the T Bear well has been less than 3.8 ug/L throughout the 3 monitoring events conducted in 2008 (January = 2.6 ppb; March = 3.8 ppb, and June = 1.9 ppb). This downward trend continues to suggest the residual gasoline plume that originated at the Former Sunol Tree Station is diminishing in magnitude.
- **A summary table** (*Carbon Treatment System Sample Results*): tabulated chronology of laboratory results obtained from the T Bear Well and the carbon treatment system samples (Pre, Mid, & Post samples) obtained since August 2003). Current results show low dissolved fuel contamination in water extracted from the TBear pumping well (MTBE = 1.9 ppb). The table also provides a timeline record of carbon change-outs.
- **A field sheets** documenting the system sampling and O&M. A check of the system piping and parts showed the system to be running effectively.

- The **State-certified testing laboratory's *Certificate of Analysis* report** for the tested Pre (influent) and Mid (between carbon cannisters) water samples collected in January, March, and June 2008. The MID sample had no detections of MTBE or other fuel compounds (TPH-gas, BTEX, fuel oxygenates).

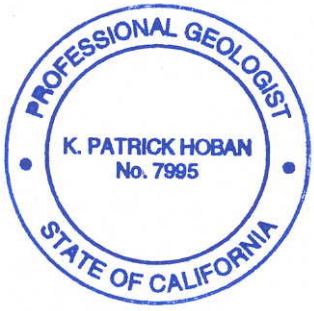
The next planned carbon system sampling event is scheduled for the week of August 4th.

LIMITATIONS: Our service consists of professional opinions and recommendations made in accordance with generally accepted geologic and engineering principles and practices. This warranty is in lieu of all others, either expressed or implied. The analysis and conclusions in this report are based on sampling and testing which are necessarily limited. Additional data from future work may lead to modifications of the options expressed herein.

All work has be conducted by and/or under the direct supervision of a geologist registered in the State of California. If you have any questions or comments regarding this workplan, please contact us at our office.

Respectfully submitted,

WEBER, HAYES AND ASSOCIATES
A California Corporation



Pat Hoban
Senior Geologist, PG #7995

Cc: **Mr. Obaid Abdullah and Mr. Eddie Fedhai**
Khan Petroleum Inc.
3004 Andrade Road
Sunol, California 94586-9453

Attachments:

Table 1:	Tabulation of carbon treatment system sampling results
Figure 1:	Chart showing MTBE removal estimates
Appendix A:	Field Logs, Photos System Design Info, and Protocol
Appendix B:	Entech Analytical Laboratory, *Certificate of Analysis* and Chain of Custody documentation

Table

Carbon Treatment System Sample Results

T Bear Ranch Domestic Well

3000 Andrade Road, Sunol

Date	*Extracted Groundwater (gallons)*	*Sample Location (ID#)*	*Total Petroleum Hydrocarbons as GASOLINE*	*Volatile Organic Compounds*										*FLOW METER READINGS (gal) COMMENTS*
				Benzene	*Toluene*	*Ethyl-benzene*	*Xylenes*	FUEL OXYGENATES						
								MTBE (2)	*TBA*	*ETBE*	*DIPE*	*TAME*	*Ethanol*	
6-Jun-08	**6,861,570**	Pre	ND	ND	ND	ND	ND	**1.9**	ND	ND	ND	ND	ND	T-Bear meter = 6,284,250. Backup Well Meter = 577,320.
		Mid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
		Post	---	---	---	---	---	---	---	---	---	---	---	
31-Mar-08	**6,636,090**	Pre	ND	ND	ND	ND	ND	**3.8**	ND	ND	ND	ND	ND	T-Bear meter = 6,058,790. Backup Well Meter = 577,300.
		Mid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
		Post	---	---	---	---	---	---	---	---	---	---	---	
25-Jan-08	**6,477,620**	Pre	ND	ND	ND	ND	ND	**2.6**	ND	ND	ND	ND	ND	T-Bear meter = 5,900,310 . Backup Well Meter = 577,310.
		Mid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
		Post	---	---	---	---	---	---	---	---	---	---	---	
20-Nov-07	**6,343,780**	Pre	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	T-Bear meter = 5,766,480 . Backup Well Meter = 577,300.
		Mid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
		Post	---	---	---	---	---	---	---	---	---	---	---	
26-Sep-07	**6,170,150**	Pre	ND	ND	ND	ND	ND	**5.4**	ND	ND	ND	ND	ND	T-Bear meter = 5,592,880 . Backup Well Meter = 577,270.
		Mid	ND	ND	0.54	ND	ND	**1.0**	ND	ND	ND	ND	ND	
		Post	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
31-Jul-07	**5,921,710**	**Carbon Change-out of Front Set of Carbon Cannisters**												**T-Bear meter = 5,344,440 . Backup Well Meter = 577,270.**
25-Jul-07	**5,809,980**	Pre	ND	ND	ND	ND	ND	**5.9**	ND	ND	ND	ND	ND	T-Bear meter = 5,232,710 . Backup Well Meter = 577,270.
		Mid	ND	ND	0.54	ND	ND	**2.5**	ND	ND	ND	ND	ND	
		Post	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
13-Jun-07	**5,721,860**	Pre	**42**	ND	ND	ND	ND	**43**	ND	ND	ND	ND	ND	T-Bear Well Meter = 5,232,020. Backup Well Meter = 489,840.
		Mid	ND	ND	ND	ND	ND	**11**	0	ND	ND	ND	ND	
		Post	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
7-Apr-07	**5,478,284**	Pre	ND	ND	ND	ND	ND	**3.0**	ND	ND	ND	ND	---	T-Bear Well Meter = 5,282,650. Backup Well Meter = 195,6340.
		Mid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	
		Post	---	---	---	---	---	---	---	---	---	---	---	
20-Feb-07	**5,363,900**	**Carbon Change-out in all Vessels**												**T-Bear meter = 5,168,260 . Backup Well Meter = 195,640.**
7-Feb-07	**---**	Pre	ND	ND	ND	ND	ND	**2.0**	ND	ND	ND	ND	---	
		Mid	ND	1.7	2.6	0.68	2.8	**1.6**	ND	ND	ND	ND	---	
		Post	ND	0.67	1.8	0.77	4.6	ND	ND	ND	ND	ND	---	
Dec-01, 2006 (Confirmation)	**---**	Pre	ND	ND	ND	ND	ND	**11**	ND	ND	ND	ND	ND	
		Mid	ND	ND	ND	ND	ND	ND	Nn	ND	ND	ND	ND	
27-Oct-06	**---**	Pre	ND	ND	ND	ND	ND	**8.5**	ND	ND	ND	ND	---	
		Mid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	---	
15-Jul-06	**4,498,630**	**Carbon Change-out in all Vessels (carbon into distribution system, repaired)**												**T-Bear meter = 4,303,130 . Backup Well Meter = 195,500.**

Table

Carbon Treatment System Sample Results

T Bear Ranch Domestic Well

3000 Andrade Road, Sunol

Date	*Extracted Groundwater (gallons)*	*Sample Location (ID#)*	*Total Petroleum Hydrocarbons as GASOLINE*	*Volatile Organic Compounds*											*FLOW METER READINGS (gal) COMMENTS*
				Benzene	*Toluene*	*Ethyl-benzene*	*Xylenes*	FUEL OXYGENATES							
								MTBE (2)	*TBA*	*ETBE*	*DIPE*	*TAME*	*Ethanol*		
1-Jun-06	---	Pre	**280**	ND	**140**	ND	**1.4**	ND	ND	ND	ND	ND	ND		
		Mid	**33**	ND	ND	ND	ND	**2.5**	ND	ND	ND	ND	ND		Backup Well Meter = 108,810.
		Post	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
16-May-06	---	Pre	**36**	ND	**12**	ND	ND	**13**	ND	ND	ND	ND	ND		Backup well pumping (temporarily)
		Post	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		- Pre-sample from RW well
14-Jan-06	**4,059,750**	**Carbon Change-out in all Vessels**													**T-Bear meter = 4,009,620. Backup Well Meter = 505,130.**
6-Jan-06	3,990,000	Pre	**28**	ND	ND	ND	ND	**16**	ND	ND	ND	ND	ND		
		Mid	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		* install prefilter
		Post	**41**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		on August 22, 2005
26-Jul-05	**3,479,320**	**Carbon Change-out of Front Set of Carbon Cannisters**													**T-Bear meter = 3,479,260. Backup Well Meter = 60.**
Jul-19, 2005 (Confirmation Sample)	3,453,135	Pre	**28**	ND	ND	ND	ND	**18**	ND	ND	ND	ND	ND		
		Mid	ND	ND	ND	ND	ND	**2.4**	ND	ND	ND	ND	ND		
		Post	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
12-Jul-05	---	Pre	ND	ND	ND	ND	ND	**19**	ND	ND	ND	ND	---		
		Mid	ND	ND	ND	ND	ND	**1.0**	ND	ND	ND	ND	---		
		Post	ND	ND	ND	ND	ND	**18**	ND	ND	ND	ND	---		
22-Apr-05	**3,153,100**	**Carbon Change-out of Front Set of Carbon Cannisters**													
21-Mar-05	3,398,820	Pre	**36**	ND	ND	ND	ND	**27**	ND	ND	ND	ND	ND		
		Mid	ND	ND	ND	ND	ND	**1.9**	ND	ND	ND	ND	ND		
		Post	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
3-Feb-05		**Carbon Change-out of Front Set of Carbon Cannisters**													
10-Jan-05	3,010,609	Pre	< 25	< 0.5	< 0.5	< 0.5	< 0.5	**15**	< 10	< 5	< 5	< 5	< 100		
		Mid	< 25	< 0.5	< 0.5	< 0.5	< 0.5	1.6	< 10	< 5	< 5	< 5	< 100		
		Post	< 25	< 0.5	< 0.5	< 0.5	< 0.5	< 1	< 10	< 5	< 5	< 5	< 100		
15-Dec-05	2,928,540	Influent	79	< 0.5	< 0.5	< 0.5	< 1	12	< 5	< 0.5	< 1	< 0.5	< 25		Weiss Associates Sampling
		Mid	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5	< 0.5	< 1	< 0.5	< 25		
8-Nov-04		**Carbon Change-out**													

Table

Carbon Treatment System Sample Results

T Bear Ranch Domestic Well

3000 Andrade Road, Sunol

Date	*Extracted Groundwater (gallons)*	*Sample Location (ID#)*	*Total Petroleum Hydrocarbons as GASOLINE*	*Volatile Organic Compounds*											*FLOW METER READINGS (gal) COMMENTS*
				Benzene	*Toluene*	*Ethyl-benzene*	*Xylenes*	FUEL OXYGENATES							
								MTBE (2)	*TBA*	*ETBE*	*DIPE*	*TAME*	*Ethanol*		
26-Oct-04	**---**	Influent	ND	ND	ND	ND	ND	**15**	ND	ND	ND	ND	ND	Weiss Associates Sampling	
		Mid	ND	ND	ND	ND	ND	0.57	ND	ND	ND	ND	ND		
8-Sep-04	**2,703,174**	Influent (Pre)	< 25	< 0.5	< 0.5	< 0.5	<1	**14**	< 10	<5	<5	<5	<100	Residual Chlorine = 0.15 ppm (at Retention Tank)	
		Mid	< 25	< 0.5	< 0.5	< 0.5	<1	<1	< 10	<5	<5	<5	<100		
2-Aug-04	**2,524,230**	**Carbon Change-out of Front Set of Carbon Canisters**													
19-Jul-04	**---**	Influent	---	ND	ND	ND	ND	**25**	<10	<5	<5	<5	---	Initial breakthrough of MTBE at "mid" following changeout (between 35-76 days)	
		Mid	<25	**0.59**	ND	ND	<1	**17**	<10	<5	<5	<5	---		
		Effluent (Post)	<25	ND	ND	ND	<1	<1	<10	<5	<5	<5	---		
22-Jun-04	**2,315,310**	Influent (Pre)	---	ND	ND	ND	<1	**49**	< 10	<5	<5	<5	---	Residual Chlorine = 0.15 ppm (at Retention Tank)	
		Mid	---	ND	ND	ND	<1	<1	< 10	<5	<5	<5	---		
25-May-04		**Complete Carbon change-out of both sets of Carbon Canisters**													
21-May-04	**2,146,750**	Influent	ND	ND	ND	ND	<1	**43**	<10	<5	<5	<5	---		
		Mid	ND	ND	ND	ND	<1	3	<10	<5	<5	<5	---		
		Effluent (Post)	ND	ND	ND	ND	<1	<1	<10	<5	<5	<5	---		
5-May-04	**---**	Influent	ND	ND	ND	ND	ND	**44**	**13**	ND	ND	ND	<50	Initial breakthrough of MTBE at effluent end of carbon system (between 138-202 days)	
		Mid	ND	ND	ND	ND	ND	6	ND	ND	ND	ND	<50		
		Effluent	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	<50		
9-Mar-04	**---**	Influent	ND - Sample obtained from incorrect sampling port											Sequoia Lab Sampling/Testing	
		Mid	ND	ND	ND	ND	ND	3	**<20**	ND	ND	ND	<100		
		Effluent	ND	ND	ND	ND	ND	ND	**<20**	ND	ND	ND	<100		
17-Feb-04	**---**	Influent	ND - Sample obtained from incorrect sampling port											Sequoia Lab Sampling/Testing	
		Mid	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	<50		
		Effluent	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<50		
27-Jan-04	**---**	Influent	ND - Sample obtained from incorrect sampling port											Initial breakthrough of MTBE at "mid" following changeout, between 68 89 days (Sequoia Lab Sampling/Testing)	
		Mid	ND	ND	ND	ND	ND	1	**<20**	ND	ND	ND	<100		
6-Jan-04	**---**	Influent	ND - Sample obtained from incorrect sampling port											Sequoia Lab Sampling/Testing	
		Mid	ND	ND	ND	ND	ND	ND	**<20**	ND	ND	ND	<100		
2-Dec-03	**---**	"Hose Bib "	ND	ND	ND	ND	<1	ND	ND	ND	<1.0	ND	---	Cerco Lab Sampling/Testing	
6-Nov-03		**CARBON SYSTEM STARTUP**													
Aug-21-03	**1,293,740**		---	---	---	---	---	---	---	---	---	---	---		
Regulatory Limits for Groundwater (AIs or MCLs):			Not Established	1	150	300	1,750	13	12	Not Established					
Laboratory's Detection Limits (DL's):			*25*	*0.5*	*0.5*	*0.5*	*1*	*1*	*10*	*5*	*5*	*5*	*100*		

NOTES:

Bold Print = *Bold Print indicates concentrations are above regulatory Action Levels.*

< # = *Detection limit elevated due to sample dilution and compound not detected at or above detection limit reported.*

ND = *Not detected at or above the lab's practical quantitation limit.*

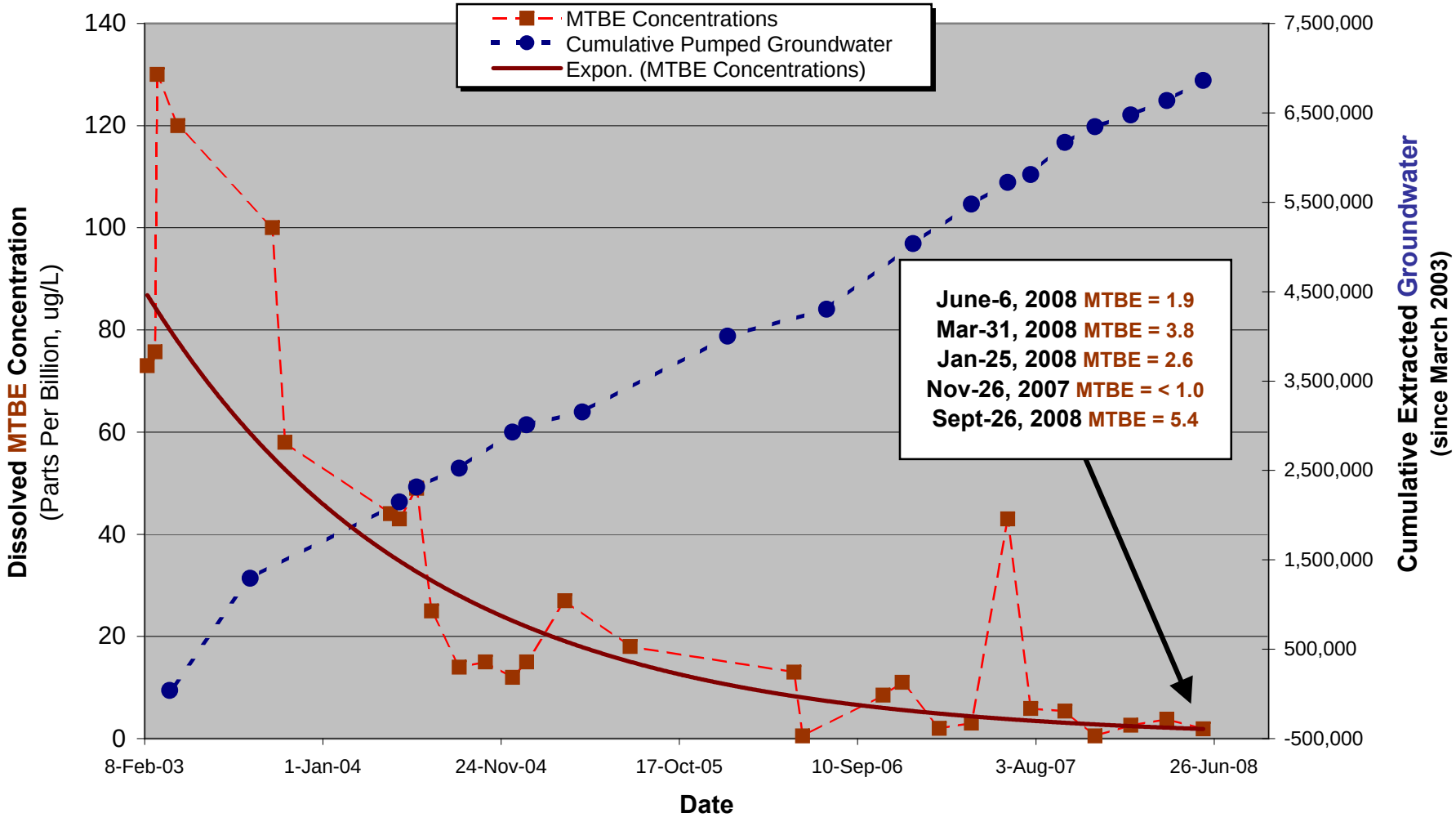
--- = *Sample not analyzed for this compound(s).*

MCLs = *Water quality goals for groundwater are based on State DHS-established Maximum Contaminant Levels*

MTBE = Methyl-tert-Butyl Ether
TAME = Tert-amyl methyl ether
ETBE = Ethyl tert-butyl ether

DIPE = Di-isopropyl ether
TBA = Tert-butyl alcohol
EtOH = Ethanol

Chart
MTBE Concentrations & Cumulative Pumping Volume
in the T Bear Well Water Supply Well



APPENDIX A

Field Logs, Photos System Design Info, and Protocol

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
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INDICATE ATTACHMENTS THAT APPLY

- ___ Site Map
- ___ Data Sheets
- ___ Geologic Logs
- ___ Photo Sheets
- ___ COC's
- ___ Chargeable Materials

Client: Khan Petroleum	Date: 6-6-08
Site Location: T=Bear Carbon System Sampling - Andrade RD, Sunol	Study #: 27004
Field Tasks: [ ] Drilling [x] Sampling [ ] Other (see below):	Weather Conditions: clear, warm
Personnel / Company On-Site: Josh Pritchard (Weber, Hayes and Associates: WHA)	

TIME:

1035 JP - on site for Carbon System Sampling

- Check Backup Well (outside) → Lifted floats inside tank by Hand Outside well turns on.
- Total Flow: (Inside well): 6,284,250 off
  (Outside well): 577,320 off
- Turn inside well Back on
- Pressures: pre-2 (Both wells not pumping)
  Post-2
- Filters: Pre - Good
  Post - Good
- Close Both Filter Housings
- Collect samples for Pre, mid, & Post
- Chlorine tank not clicking (both wells not pumping)
- Leave site for Accu-Test to drop samples.

JP 6-6-08

6-6-08
Signature of Field Personel & Date

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
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INDICATE ATTACHMENTS THAT APPLY
- ___ Site Map
- ___ Data Sheets
- ___ Geologic Logs
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- ___ COC's
- ___ Field Tags (sub-contractors)
- ___ Chargeable Materials

Client: **Khan Petroleum**	Date: **March 31, 2008**
Site Location: **T=Bear Carbon System Sampling - Andrade Road, Sunol**	Study #: **27004**
Field Tasks: [ ] Drilling [x] Sampling [ ] Other (see below): **carbon system sampling**	Weather Conditions: Clear, warm
Personnel / Company On-Site: **(Weber, Hayes and Associates: WHA)**	

TIME:

1452 Arrive on-site for Carbon System Sampling

- Check back up well to see if it is working Properly → Backup well (outside) did not turn on → (Inside) well turned Back on
- Total Flow = (Inside well) - 6,058,790 Flowing
  (Outside well) - 577,300 off
- Pressures = Pre - 19.5 psi
  Post - 3 psi
- Filters - Pre - Some use but o.k.
  Post - O.K.
- Collect samples For Pre, Mid, & Post
- Chlorine tank is not clicking

1521 Leave site for Accu Test Lab to drop samples.

JP 3-31-08

3-31-08
Signature of Field Personel & Date

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

Text Page 1/1

INDICATE ATTACHMENTS THAT APPLY
- ___ Site Map
- ___ Data Sheets
- ___ Geologic Logs
- ___ Photo Sheets
- ___ COC's
- ___ Chargeable Materials

Client: Khan Petroleum	Date: 1-25-08
Site Location: T-Bear Carbon System Sampling-Andrade RD Swol	Study #: 27004
Field Tasks: ☐ Drilling ☐ Sampling ☐ Other (see below):	Weather Conditions: Rain, wind
Personnel / Company On-Site: Josh Pritchard (Weber, Hayes and Associates: WHA)	

TIME:

1105	Arrive on-site
	- Chlorine Tank Full
	- Switch Bypass & run for 5 mins before Sampling
	- Collect Samples
	- Turn Bypass off
	- Inside meter reads: 5,900,310
	- Outside meter reads: 577,310
	Pressures: 0 → Pump not on
	- Check Filters (Harmsco) → 1 wing nut missing (no Leak)
	Turn Bypass on to check Pressures Pre = 18 psi Post = 23 psi Turn off Bypass
1153	Leave site for Entech

JP 1-25-08

1-25-08
Signature of Field Personel & Date

SYSTEM DESIGN

The system came on line on November 6, 2003, and was designed to treat a maximum groundwater volume of up to 10,000 gallons per day (average daily pumping volume of 4,000 gpd) and a MTBE concentration of up to 130 parts per billion (ppb). The system consisted of:

- A chlorine drip, injection system having a with a 120-gallon retention tank to treat colliform bacteria.
- Four, fiberglass tanks placed in a parallel series configuration. Each fiberglass tank was designed to have a minimum capacity of 5 ft^3 for carbon storage (total of 20 ft^3 of carbon). Culligan estimated that 1.5 ft^3 (approximately 44 lbs) of carbon would be used up for each month of operation (Appendix B).
- Two, 3,000-gallon poly storage tanks equipped with high-low water level switches that trigger pumping.
- A 220 volt, repressurization system motor and pressure tank.
- PVC bi-pass valving for carbon change outs, and sample ports for sampling.

Subsequent changes to the system include:

- A manual on-off switch was added on to facilitate sampling of carbon treated water (May 28, 2004).
- Re-plumbing of the system's distribution piping in order to place the chlorine drip injection after carbon treatment so as to prevent unnecessary chlorine loading of the carbon (June 29, 2004).
- A digital-recording flow meter was installed to monitor daily pumping at the T Bear well (July 12, 2003, re-installed August 13, 2004).

A flow chart of the current well head treatment system is presented on page 2 of this report

1-Overview.jpg

2-Pre-Filter-Quick-Release.jpg

003-inside overview.JPG

004-inside overview.JPG

004-TBear Well_On-Off.jpg

005-Pre-Port.jpg

006-Mid-ports for sampling.jpg

007-Post-Port.jpg

008-High-Low Sensor Bipass_for sampling.JPG

009-Inside Flow Meter.jpg

010-Outside Flow Meter.jpg

011-chlorine Tank.JPG

012-bucket for observation check of water.jpg

Inside-Well-Flow-Shutoff.jpg

Outside Well Power Switch.jpg

General Field Methodology for:
Groundwater Sampling

Weber, Hayes and Associates' groundwater sampling field methodology is based on procedures specified in the *LUFT Field Manual*. The first step in groundwater sampling is for Weber, Hayes and Associates field personnel to measure the depth-to-groundwater to the nearest hundredth (0.01) of a foot with an electric sounder. If the well appears to be pressurized, or the groundwater level is fluctuating, measurements are made until the groundwater levels stabilize, and a final depth-to-groundwater measurement is taken and recorded. After the depth-to-groundwater is measured, the well is then checked for the presence of a free product with a clear, disposable polyethylene bailer. If free product is present, the thickness of the layer is recorded, and the product is bailed to a sheen. All field data (depth-to-groundwater, well purge volume, physical parameters, and sampling method) are recorded on field data sheets (see attached). Because removing free product may skew the data, wells that contain free product are not used in groundwater elevation and gradient calculations.

After measuring the depth-to-groundwater, each well, starting with the cleanest well (based on analytical results from the last sampling event), is purged with a low flow submersible electric pump. During purging the physical parameters of temperature, conductivity, pH, dissolved oxygen (D.O.) concentration, and Oxidation-Reduction Potential (ORP) of the purge water are monitored with a *QED MP20 Micropurge Flow Through Cell* equipped meter to insure that these parameters have stabilized (are within ~ 15 percent of the previous measurement). The QED MP20 meter is capable of continuously monitoring the physical parameters of the purge water via the flow through cell and providing an alarm to indicate when the physical parameters have stabilized to the users specifications. Purging is determined to be complete (stabilized aquifer conditions reached) after the removal of approximately three to five well volumes of water or when the physical parameters have stabilized. Dissolved oxygen and ORP measurements are used as an indicator of intrinsic bioremediation within the contaminant plume. All field instruments are calibrated before use.

All purge water is stored on site in DOT-approved, 55-gallon drums for disposal by a state-licensed contractor pending laboratory analysis for fuel hydrocarbons.

After purging, the water level in the well is allowed to recover to 80 percent of its original depth before a sample is collected. After water level recovery, a groundwater sample is collected from each well with a new, disposable bailer, and decanted into the appropriate laboratory-supplied sample container(s). The sample containers at this site were 40-ml. vials. Each vial was filled until a convex meniscus formed above the vial rim, then sealed with a Teflon®-septum cap, and inverted to insure that there were no air bubbles or head space in the vial. All samples are labeled in the field and transported in insulated containers cooled with blue ice to state-certified laboratories under proper chain of custody procedures.

All field and sampling equipment is decontaminated before, between, and after measurements or sampling by washing in a Liqui-Nox and tap water solution, rinsing with tap water, and rinsing with distilled water.

APPENDIX B

A Entech Analytical Laboratory,
Certificate of Analysis and Chain of Custody documentation

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering

120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

OF

Khan Petroleum / 27004

LABORATORY: Entech

SEND CERTIFIED RESULTS TO: Weber, Hayes & Associates - Attention: Jered Chaney

TURNAROUND TIME: Standard Five-Day 48hr Rush 72hr Rush

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

GLOBAL I.D.:

Sampler: *Josh Pritchard*

Date: 6-6-08

C1171

Sample Identification	Date Sampled	Matrix	SAMPLE CONTAINERS				REQUESTED ANALYSIS							
							Total Petroleum Hydrocarbons			Volatile Organics			Additional Analysis	
			40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	Diesel & Oil Range Organics EPA Method# 8015M	Total Recoverable Petroleum Hydrocarbons	TPH-Gas & BTEX by EPA Method GC/MS	Fuel Oxygenates EPA Method# 8260	TBA EPA Method# 8260	1,2-DCA EPA Method# 8260	Fuel Oxygenates by EPA Method 8260	NO_3, Mn, Fe^{2+}, SO_4, CH_4, CO_2
PRE	6-6-08	Aq	3		001				X	X				
MID	↓		3		002				X	X				
POST			3		003				(Hold) see note below					
Need 3 VOA's for each														
w/ 5.4° Temp														

	RELEASED BY:	Date & Time		RECEIVED BY:	Date & Time	SAMPLE CONDITION: (circle 1)		
1.)	*Josh Pritchard*	6-6-08 / 1149	→		06/06/08 11:55	Ambient	Refrigerated	Frozen
2.)			→			Ambient	Refrigerated	Frozen
3.)			→			Ambient	Refrigerated	Frozen
4.)			→			Ambient	Refrigerated	Frozen
5.)			→			Ambient	Refrigerated	Frozen

NOTES:

ADDITIONAL COMMENTS

These Samples (Pre, Mid, Post) were obtained from the T-bear Ranch well located behind Khan Petroleum

- Fuel Oxygenates should include DIPE, TAME, ETBE, MTBE, TBA, & Ethanol

Analyze "POST" sample if "MID" sample contains detections

Northern California ACCUTEST Laboratories

3334 Victor Court
Santa Clara, CA 95054
Phone: (408) 588-0200
Fax: (408) 588-0201
www.accutest.com

Jered Chaney
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Lab Order Number: C1171
Issued: 06/13/2008

Project Number: 27004
Project Name: Khan Petroleum

Certificate of Analysis - Final Report

On June 06, 2008, samples were received under chain of custody for analysis.
Accutest-Northern California analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test / Comments
Liquid	VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Accutest-Northern California is certified for environmental analyses by the State of California (#2346).
Subcontracted work is the responsibility of the subcontract laboratory, this includes turn-around-time and data quality.
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

ACCUTEST Laboratories

Northern California *3334 Victor Court, Santa Clara, CA 95054* *Phone: (408) 588-0200* *Fax: (408) 588-0201*

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Jered Chaney

Project Number: 27004
Project Name: Khan Petroleum

Certificate of Analysis - Data Report

Samples Received: 06/06/2008
Sample Collected by: Client

Lab # : C1171-001 **Sample ID: PRE** **Matrix: Liquid** **Sample Date: 06/06/2008**

VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	06/13/2008	VM1
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	06/13/2008	VM1
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	06/13/2008	VM1
Xylenes, Total	ND		1.0	1.0	µg/L	N/A	N/A	06/13/2008	VM1
Methyl-t-butyl Ether	**1.9**		1.0	1.0	µg/L	N/A	N/A	06/13/2008	VM1
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	06/13/2008	VM1
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	06/13/2008	VM1
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	06/13/2008	VM1
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	06/13/2008	VM1
Ethanol	ND		1.0	200	µg/L	N/A	N/A	06/13/2008	VM1

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	95.4	60 - 130
Dibromofluoromethane	116	60 - 130
Toluene-d8	110	60 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

Lab # : C1171-002 **Sample ID: MID** **Matrix: Liquid** **Sample Date: 06/06/2008**

VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	06/12/2008	WM1080612
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	06/12/2008	WM1080612
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	06/12/2008	WM1080612
Xylenes, Total	ND		1.0	1.0	µg/L	N/A	N/A	06/12/2008	WM1080612
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	06/12/2008	WM1080612
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	06/12/2008	WM1080612
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	06/12/2008	WM1080612
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	06/12/2008	WM1080612
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	06/12/2008	WM1080612
Ethanol	ND		1.0	200	µg/L	N/A	N/A	06/12/2008	WM1080612

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.5	60 - 130
Dibromofluoromethane	111	60 - 130
Toluene-d8	112	60 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Northern California 3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: VM1

Validated by: MaiChiTu - 06/13/08

QC Batch Analysis Date: 6/13/2008

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethanol	ND	1	200	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	1.0	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**99.4**	60 - 130
Dibromofluoromethane	**108**	60 - 130
Toluene-d8	**110**	60 - 130

Northern California *3334 Victor Court, Santa Clara, CA 95054* *Phone: (408) 588-0200* *Fax: (408) 588-0201*

Method Blank - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM1080612

Validated by: MaiChiTu - 06/12/08

QC Batch Analysis Date: 6/12/2008

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethanol	ND	1	200	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	1.0	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**101**	60 - 130
Dibromofluoromethane	**100**	60 - 130
Toluene-d8	**112**	60 - 130

Northern California 3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: VM1

Reviewed by: MaiChiTu - 06/13/08

QC Batch ID Analysis Date: 6/13/2008

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	20	19.1	µg/L	95.5	70 - 130
Methyl-t-butyl Ether	<1.0	20	17.3	µg/L	86.5	70 - 130
Toluene	<0.50	20	18.5	µg/L	92.5	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**100.0**	60 - 130
Dibromofluoromethane	**106.0**	60 - 130
Toluene-d8	**102.0**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	20	19.9	µg/L	99.5	4.1	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	17.2	µg/L	86.0	0.58	25.0	70 - 130
Toluene	<0.50	20	20.8	µg/L	104	12	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**100.0**	60 - 130
Dibromofluoromethane	**103.0**	60 - 130
Toluene-d8	**107.0**	60 - 130

Northern California 3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM1080612

Reviewed by: MaiChiTu - 06/12/08

QC Batch ID Analysis Date: 6/12/2008

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	20	21.1	µg/L	106	70 - 130
Methyl-t-butyl Ether	<1.0	20	17.7	µg/L	88.5	70 - 130
Toluene	<0.50	20	20.8	µg/L	104	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**101.0**	60 - 130
Dibromofluoromethane	**102.0**	60 - 130
Toluene-d8	**106.0**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	20	23.8	µg/L	119	12	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	20.1	µg/L	100	13	25.0	70 - 130
Toluene	<0.50	20	23.7	µg/L	118	13	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**102.0**	60 - 130
Dibromofluoromethane	**102.0**	60 - 130
Toluene-d8	**105.0**	60 - 130

Northern California ACCUTEST Laboratories

Sample Receiving Checklist

Job # C1171

Review Chain of Custody: The Chain of Custody is to be completely and legibly filed out by Client.

- ☑ Are these regulatory (NPDES) samples? **Yes** / (**No**) circle one ☐ Is pH requested? **Yes** / **No** circle one
- ☐ Was Client informed that the hold time is 15mins **Yes** / **No** circle one If yes, did they consent to continue? _____
- ☐ Are sample within one-half hold-time? **Yes** / **No** circle one If no, was the lab informed? _____
- ☑ Report to info is complete and legible, including;
  - ☐ Type of Deliverable needed ☑ name ☑ address ☑ phone ☑ email
- ☑ Bill to info is complete and legible, including: ☐ PO# ☐ Credit card ☑ contact ☑ address ☑ phone ☑ email
- ☐ Contact and/or Project Mgr identified, including; ☐ phone ☐ email
- ☐ Project name / number ☐ Special requirements? **Yes** / **No** circle one
- ☑ Sample IDs / date & time of collection provided? (**Yes**) / **No** circle one
- ☑ Matrix listed and correct? (**Yes**) / **No** circle one
- ☑ Analyses listed are those we do ~~or client has authorized a subcontract?~~ (**Yes**) / **No** circle one
- ☑ Chain is signed / dated by both client and sample custodian? (**Yes**) / **No** circle one
- ☐ TAT requested available? Approved by _____

Review Coolers:

- ☐ Samples / Coolers are at 0-6°C? If sampled within 4hrs, then "on ice" is acceptable.

  If a cooler is outside the 0-6°C range; note below the bottles in that cooler below.

  Note that ANC does NOT accept evidentiary samples. (We do not lock refrigerators)

  Shipment Method: _____

  Custody Seals Present: **Yes** / **No** circle one Un-broken: **Yes** / **No** circle one

Review of Sample Bottles: If you answer no, explain below

- ☑ IDs / bottle number / Date / Time of bottle labels match CoC?
- ☐ Sample bottle intact? **Yes** / **No** circle one
- ☑ Proper containers and volumes? **Yes** / **No** circle one
- ☐ Proper preservatives? Check pH on preserved samples except 1664, 625, 8270, and VOAs and list below.
- ☐ VOAs received without headspace? **Yes** / **No** circle one

Lab #	Client Sample ID	pH Check:	Other Comments / Issues

☐ Client informed of irregularities at receiving ☐ Project Mgr needs to contact Client for issues

Comments:

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

Khan Petroleum / 27004

LABORATORY: Entech

SEND CERTIFIED RESULTS TO: Weber, Hayes & Associates - Attention: Jered Chaney

TURNAROUND TIME: (Standard Five-Day) 48hr Rush 72hr Rush

ELECTRONIC DELIVERABLE FORMAT: [ ] YES [x] NO

GLOBAL I.D.:

Sampler: *Josh Pritchard*

Date: 3-31-08

C0405

Sample Identification	Date Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: Diesel & Oil Range Organics EPA Method# 8015M	Total Recoverable Petroleum Hydrocarbons	TPH-Gas & BTEX by EPA Method GC/MS	Volatile Organics: Fuel Oxygenates EPA Method# 8260	TBA EPA Method# 8260	1,2-DCA EPA Method# 8260	Additional Analysis: Fuel Oxygenates by EPA Method 8260	NO_3, Mn, Fe^{2+}, SO_4, CH_4, CO_2
PRE	3-31-08	Aq	3		-001				X	X				
MID	↓	↓	3		-002				X	X				
POST	↓	↓	3		-003				(Hold) see note below					
Rec'd 3 VOA's Hcl each w/ 18.6° Temp														

	RELEASED BY:	Date & Time		RECEIVED BY:	Date & Time
1.)	[signature]	3-31-08 / 1545	→	[signature]	3/31/08 1515
2.)			→		
3.)			→		
4.)			→		
5.)			→		

SAMPLE CONDITION: (circle 1)

Ambient	(Refrigerated)	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

ADDITIONAL COMMENTS

These Samples (Pre, Mid, Post) were obtained from the T-bear Ranch well located behind Khan Petroleum

- Fuel Oxygenates should include DIPE, TAME, ETBE, MTBE, TBA, & Ethanol

Analyze "POST" sample if "MID" sample contains detections

Northern California ACCUTEST Laboratories

3334 Victor Court
Santa Clara, CA 95054
Phone: (408) 588-0200
Fax: (408) 588-0201
www.accutest.com

Jered Chaney
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Lab Order Number: C0405
Issued: 04/04/2008

Project Number: 27004
Project Name: Khan Petroleum

Certificate of Analysis - Final Report

On March 31, 2008, samples were received under chain of custody for analysis.
Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test / Comments
Liquid	VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater Hold TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
Subcontracted work is the responsibility of the subcontract laboratory, this includes turn-around-time and data quality.
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Laurie Glantz-Murphy
Laboratory Director

ACCUTEST Laboratories

Northern California *3334 Victor Court, Santa Clara, CA 95054* *Phone: (408) 588-0200* *Fax: (408) 588-0201*

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Jered Chaney

Project Number: 27004
Project Name: Khan Petroleum

Certificate of Analysis - Data Report

Samples Received: 03/31/2008
Sample Collected by: Client

Lab # : C0405-001 **Sample ID: PRE** **Matrix:** Liquid **Sample Date:** 3/31/2008

VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	4/3/2008	WM7080403
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	4/3/2008	WM7080403
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	4/3/2008	WM7080403
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	4/3/2008	WM7080403
Methyl-t-butyl Ether	**3.8**		1.0	1.0	µg/L	N/A	N/A	4/3/2008	WM7080403
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	4/3/2008	WM7080403
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	4/3/2008	WM7080403
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	4/3/2008	WM7080403
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	4/3/2008	WM7080403
Ethanol	ND		1.0	200	µg/L	N/A	N/A	4/3/2008	WM7080403

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.7	60 - 130
Dibromofluoromethane	98.7	60 - 130
Toluene-d8	97.8	60 - 130

Analyzed by: Bela
Reviewed by: MaiChiTu

TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	25	µg/L	N/A	N/A	4/3/2008	WM7080403

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.6	60 - 130
Dibromofluoromethane	103	60 - 130
Toluene-d8	98.2	60 - 130

Analyzed by: Bela
Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

ACCUTEST Laboratories

Northern California *3334 Victor Court, Santa Clara, CA 95054* *Phone: (408) 588-0200* *Fax: (408) 588-0201*

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Jered Chaney

Project Number: 27004
Project Name: Khan Petroleum

Certificate of Analysis - Data Report

Samples Received: 03/31/2008
Sample Collected by: Client

Lab # : C0405-002 **Sample ID: MID** **Matrix:** Liquid **Sample Date:** 3/31/2008

VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	4/3/2008	WM7080403
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	4/3/2008	WM7080403
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	4/3/2008	WM7080403
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	4/3/2008	WM7080403
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	4/3/2008	WM7080403
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	4/3/2008	WM7080403
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	4/3/2008	WM7080403
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	4/3/2008	WM7080403
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	4/3/2008	WM7080403
Ethanol	ND		1.0	200	µg/L	N/A	N/A	4/3/2008	WM7080403

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.4	60 - 130
Dibromofluoromethane	99.1	60 - 130
Toluene-d8	97.9	60 - 130

Analyzed by: Bela
Reviewed by: MaiChiTu

TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	25	µg/L	N/A	N/A	4/3/2008	WM7080403

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	100	60 - 130
Dibromofluoromethane	103	60 - 130
Toluene-d8	98.3	60 - 130

Analyzed by: Bela
Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Northern California 3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM7080403

Validated by: MaiChiTu - 04/04/08

QC Batch Analysis Date: 4/3/2008

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethanol	ND	1	200	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**95.0**	60 - 130
Dibromofluoromethane	**97.5**	60 - 130
Toluene-d8	**99.9**	60 - 130

Method Blank - Liquid - TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

QC Batch ID: WM7080403

Validated by: MaiChiTu - 04/04/08

QC Batch Analysis Date: 4/3/2008

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**99.0**	60 - 130
Dibromofluoromethane	**102**	60 - 130
Toluene-d8	**100**	60 - 130

Northern California 3334 Victor Court, Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

LCS / LCSD - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM7080403

Reviewed by: MaiChiTu - 04/04/08

QC Batch ID Analysis Date: 4/3/2008

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	0.0	20	22.0	µg/L	110	70 - 130
Benzene	<0.50	20	19.9	µg/L	99.5	70 - 130
Chlorobenzene	0.0	20	19.4	µg/L	96.9	70 - 130
Methyl-t-butyl Ether	<1.0	20	18.4	µg/L	92.2	70 - 130
Toluene	<0.50	20	20.8	µg/L	104	70 - 130
Trichloroethene	0.0	20	20.2	µg/L	101	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**95.1**	60 - 130
Dibromofluoromethane	**100.0**	60 - 130
Toluene-d8	**99.3**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	0.0	20	23.3	µg/L	117	5.9	25.0	70 - 130
Benzene	<0.50	20	21.4	µg/L	107	7.0	25.0	70 - 130
Chlorobenzene	0.0	20	20.5	µg/L	102	5.7	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	18.7	µg/L	93.6	1.5	25.0	70 - 130
Toluene	<0.50	20	21.9	µg/L	109	4.9	25.0	70 - 130
Trichloroethene	0.0	20	22.2	µg/L	111	9.3	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**94.0**	60 - 130
Dibromofluoromethane	**100.0**	60 - 130
Toluene-d8	**97.8**	60 - 130

LCS / LCSD - Liquid - TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

QC Batch ID: WM7080403

Reviewed by: MaiChiTu - 04/04/08

QC Batch ID Analysis Date: 4/3/2008

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	115	µg/L	92.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**101.0**	60 - 130
Dibromofluoromethane	**103.0**	60 - 130
Toluene-d8	**98.2**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	135	µg/L	108	16	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.3**	60 - 130
Dibromofluoromethane	**102.0**	60 - 130
Toluene-d8	**101.0**	60 - 130

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MS / MSD - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM7080403

Reviewed by: MaiChiTu - 04/04/08

QC Batch ID Analysis Date: 4/3/2008

MS Sample Spiked: C0405-002

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
Benzene	ND	1	20	24.2	µg/L	4/3/2008	121	70 - 130
Methyl-t-butyl Ether	ND	1	20	21.0	µg/L	4/3/2008	105	70 - 130
Toluene	ND	1	20	24.7	µg/L	4/3/2008	123	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**97.1**	60 - 130
Dibromofluoromethane	**101.0**	60 - 130
Toluene-d8	**96.7**	60 - 130

MSD Sample Spiked: C0405-002

Parameter	Sample Result	DF	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	ND	1	20	22.7	µg/L	4/3/2008	114	6.1	25.0	70 - 130
Methyl-t-butyl Ether	ND	1	20	20.1	µg/L	4/3/2008	101	4.6	25.0	70 - 130
Toluene	ND	1	20	23.2	µg/L	4/3/2008	116	5.9	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**96.9**	60 - 130
Dibromofluoromethane	**101.0**	60 - 130
Toluene-d8	**96.0**	60 - 130

Weber, Hayes & Associates
Hydrogeology and Environmental Engineering
120 Westgate Dr., Watsonville, CA 95076
(831) 722-3580 (831) 662-3100
Fax: (831) 722-1159

CHAIN -OF-CUSTODY RECORD

Khan Petroleum / 27004

LABORATORY: Entech

SEND CERTIFIED RESULTS TO: Weber, Hayes & Associates - Attention: Jered Chaney

TURNAROUND TIME: Standard Five-Day 48hr Rush 72hr Rush

ELECTRONIC DELIVERABLE FORMAT: ☐ YES ☒ NO

GLOBAL I.D.:

Sampler: *Josh Pritchard*

Date: 1-25-08

59362

Sample Identification	Date Sampled	Matrix	SAMPLE CONTAINERS: 40 mL VOAs (preserved)	1 Liter Amber Jars	___mL Poly Bottle	Liner Acetate or Brass	REQUESTED ANALYSIS: Total Petroleum Hydrocarbons: Diesel & Oil Range Organics EPA Method# 8015M	Total Recoverable Petroleum Hydrocarbons	TPH-Gas & BTEX by EPA Method GC/MS	Volatile Organics: Fuel Oxygenates EPA Method# 8260	TBA EPA Method# 8260	1,2-DCA EPA Method# 8260	Additional Analysis: Fuel Oxygenates by EPA Method 8260	NO_3, Mn, Fe^{2+}, SO_4, CH_4, CO_2
PRE	001	Aq	3						X	X				
MID	002		3						X	X				
POST	003		3						(Hold) see note below					

RELEASED BY:	Date & Time	RECEIVED BY:	Date & Time
1.)	1-25-08/1227		1/25/08 1213
2.)			
3.)			
4.)			
5.)			

SAMPLE CONDITION: (circle 1)

Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen
Ambient	Refrigerated	Frozen

NOTES:

ADDITIONAL COMMENTS

These Samples (Pre, Mid, Post) were obtained from the T-bear Ranch well located behind Khan Petroleum

- Fuel Oxygenates should include DIPE, TAME, ETBE, MTBE, TBA, & Ethanol

Analyze "POST" sample if "MID" sample contains detections

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Jered Chaney
Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076

Lab Certificate Number: 59362
Issued: 01/30/2008

Project Number: 27004
Project Name: Khan Petroleum

Certificate of Analysis - Final Report

On January 25, 2008, samples were received under chain of custody for analysis.
Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test / Comments
Liquid	VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater Hold TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
Subcontracted work is the responsibility of the subcontract laboratory, this includes turn-around-time and data quality.
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

C. L. Thom
Laboratory Director

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Jered Chaney

Project Number: 27004
Project Name: Khan Petroleum

Certificate of Analysis - Data Report

Samples Received: 01/25/2008
Sample Collected by: Client

Lab # : 59362-001 **Sample ID: PRE** **Matrix:** Liquid **Sample Date:** 1/25/2008

VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	1/29/2008	WM7080129
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	1/29/2008	WM7080129
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	1/29/2008	WM7080129
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	1/29/2008	WM7080129
Methyl-t-butyl Ether	**2.6**		1.0	1.0	µg/L	N/A	N/A	1/29/2008	WM7080129
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	1/29/2008	WM7080129
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	1/29/2008	WM7080129
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	1/29/2008	WM7080129
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	1/29/2008	WM7080129
Ethanol	ND		1.0	200	µg/L	N/A	N/A	1/29/2008	WM7080129

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	100	60 - 130
Dibromofluoromethane	94.8	60 - 130
Toluene-d8	98.3	60 - 130

Analyzed by: Bela
Reviewed by: MaiChiTu

TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	25	µg/L	N/A	N/A	1/29/2008	WM7080129

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.3	60 - 130
Dibromofluoromethane	96.8	60 - 130
Toluene-d8	96.6	60 - 130

Analyzed by: Bela
Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Weber, Hayes and Associates
120 Westgate Drive
Watsonville, CA 95076
Attn: Jered Chaney

Project Number: 27004
Project Name: Khan Petroleum

Certificate of Analysis - Data Report

Samples Received: 01/25/2008
Sample Collected by: Client

Lab # : 59362-002 **Sample ID: MID** **Matrix:** Liquid **Sample Date:** 1/25/2008

VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	ND		1.0	0.50	µg/L	N/A	N/A	1/29/2008	WM7080129
Toluene	ND		1.0	0.50	µg/L	N/A	N/A	1/29/2008	WM7080129
Ethyl Benzene	ND		1.0	0.50	µg/L	N/A	N/A	1/29/2008	WM7080129
Xylenes, Total	ND		1.0	0.50	µg/L	N/A	N/A	1/29/2008	WM7080129
Methyl-t-butyl Ether	ND		1.0	1.0	µg/L	N/A	N/A	1/29/2008	WM7080129
tert-Butyl Ethyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	1/29/2008	WM7080129
tert-Butanol (TBA)	ND		1.0	10	µg/L	N/A	N/A	1/29/2008	WM7080129
Diisopropyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	1/29/2008	WM7080129
tert-Amyl Methyl Ether	ND		1.0	5.0	µg/L	N/A	N/A	1/29/2008	WM7080129
Ethanol	ND		1.0	200	µg/L	N/A	N/A	1/29/2008	WM7080129

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	102	60 - 130
Dibromofluoromethane	95.7	60 - 130
Toluene-d8	98.5	60 - 130

Analyzed by: Bela
Reviewed by: MaiChiTu

TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	ND		1.0	25	µg/L	N/A	N/A	1/29/2008	WM7080129

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	100	60 - 130
Dibromofluoromethane	98.5	60 - 130
Toluene-d8	96.9	60 - 130

Analyzed by: Bela
Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

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Method Blank - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM7080129

Validated by: MaiChiTu - 01/30/08

QC Batch Analysis Date: 1/29/2008

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Diisopropyl Ether	ND	1	5.0	µg/L
Ethanol	ND	1	200	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
tert-Amyl Methyl Ether	ND	1	5.0	µg/L
tert-Butanol (TBA)	ND	1	10	µg/L
tert-Butyl Ethyl Ether	ND	1	5.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**101**	60 - 130
Dibromofluoromethane	**94.5**	60 - 130
Toluene-d8	**98.3**	60 - 130

Method Blank - Liquid - TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

QC Batch ID: WM7080129

Validated by: MaiChiTu - 01/30/08

QC Batch Analysis Date: 1/29/2008

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	25	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**99.1**	60 - 130
Dibromofluoromethane	**94.5**	60 - 130
Toluene-d8	**96.6**	60 - 130

Entech Analytical Labs, Inc.

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LCS / LCSD - Liquid - VOCs: EPA 5030B / EPA 8260B for Groundwater and Water - EPA 624 for Wastewater

QC Batch ID: WM7080129 Reviewed by: MaiChiTu - 01/30/08

QC Batch ID Analysis Date: 1/29/2008

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
1,1-Dichloroethene	0.0	20	18.5	µg/L	92.6	70 - 130
Benzene	<0.50	20	17.6	µg/L	87.8	70 - 130
Chlorobenzene	0.0	20	17.4	µg/L	87.2	70 - 130
Methyl-t-butyl Ether	<1.0	20	18.6	µg/L	93.2	70 - 130
Toluene	<0.50	20	17.7	µg/L	88.7	70 - 130
Trichloroethene	0.0	20	18.5	µg/L	92.6	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**101.0**	60 - 130
Dibromofluoromethane	**103.0**	60 - 130
Toluene-d8	**95.5**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
1,1-Dichloroethene	0.0	20	20.9	µg/L	105	12	25.0	70 - 130
Benzene	<0.50	20	19.7	µg/L	98.6	12	25.0	70 - 130
Chlorobenzene	0.0	20	19.7	µg/L	98.5	12	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	20.9	µg/L	104	11	25.0	70 - 130
Toluene	<0.50	20	19.9	µg/L	99.4	11	25.0	70 - 130
Trichloroethene	0.0	20	21.0	µg/L	105	12	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**100.0**	60 - 130
Dibromofluoromethane	**101.0**	60 - 130
Toluene-d8	**95.2**	60 - 130

LCS / LCSD - Liquid - TPH-Purgeable - GC/MS: EPA 5030B / GC/MS

QC Batch ID: WM7080129 Reviewed by: MaiChiTu - 01/30/08

QC Batch ID Analysis Date: 1/29/2008

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	120	µg/L	95.9	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.1**	60 - 130
Dibromofluoromethane	**99.7**	60 - 130
Toluene-d8	**96.2**	60 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	132	µg/L	106	9.6	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**98.4**	60 - 130
Dibromofluoromethane	**98.3**	60 - 130
Toluene-d8	**95.6**	60 - 130