E YARD WELL INSTALLATION REPORT

Kinder Morgan Harbor Island Terminal

2720 13th Avenue Southwest, Seattle, Washington

Antea™Group Project No. STKM-W-0005
December 2011

Prepared for:
Washington State Department of Ecology
Northwest Regional Office
Toxics Cleanup Program
3160 160th Avenue Southeast
Bellevue, WA 98009

Prepared by:
Antea™Group
4006 148th Avenue NE
Redmond, WA 98052
800 477 7411

TABLE OF CONTENTS

EXECUTIVE SUMMARY i

1.0 Introduction 1

2.0 BACKGROUND 1
2.1 Previous Investigation Adjacent to the E Yard 1

3.0 SCOPE OF WORK 2

4.0 GROUNDWATER MONITORING WELL Installations 3

5.0 Waste Management 3

6.0 Sample Collection AND Analysis 4
6.1 Soil Sampling 4
6.2 Groundwater Sampling 4
6.3 Laboratory Analysis 4

7.0 Analytical Results 5
7.1 Soil 5
7.1.1 Quantitative Analytical Results 5
7.1.2 Forensic Results 5
7.2 Groundwater 5

8.0 Conclusions 5

9.0 Remarks 6

TABLE OF CONTENTS (Cont.)

Tables

Table 1	Summary of Soil Sample Analytical Results
Table 2	Summary of Groundwater Analytical Results

Figures

Figure 1	Site Map
Figure 2	E Yard Site Map
Figure 3	E Yard Soil Analytical Results – October 4, 2011
Figure 4	E Yard Groundwater Analytical Results – October 25, 2011

Appendices

Appendix A	Boring Logs
Appendix B	Field Data Sheets
Appendix C	Analytical Laboratory Reports and Chain-of-Custody Documentation

EXECUTIVE SUMMARY

Antea™Group has prepared this report to summarize well installation activities performed at the Kinder Morgan Liquid Terminals (KMLT) bulk facility located at 2720 13th Avenue Southwest, Seattle, Washington (the property, Figure 1). The work summarized in this report was performed to evaluate soil and groundwater conditions along the western boundary of the E Yard to determine whether hydrocarbon impacts are similar in nature to impacts observed along 13th Avenue, and to determine whether hydrocarbon impacts reflect a release that is thought to have occurred in the 1998/1999 time frame in the vicinity of the E Yard. The purpose of this investigation is to respond to EPA's concerns regarding further evaluation of the 13th Avenue Southwest contamination.

On October 3rd and 4th, 2011, Antea Group personnel directed the drilling and installation of four temporary groundwater monitoring wells (TMW-E1 through TMW-E4) at the property (Figure 2). Borings TMW-E1 through TMW-E4 were advanced to an approximate depth of 15 feet below ground surface (bgs) and completed as monitoring wells. Where recovered, soil samples were collected continuously from 5 to 15 feet bgs. Four samples from each boring were selected for laboratory analysis of petroleum hydrocarbons. All soil samples collected were field screened using a photo-ionization detector (PID).

Concentrations of total petroleum hydrocarbons (TPH) were detected above the cleanup level of 10,000 mg/kg in one of the soil samples collected (TMW-E2-6). Cleanup levels were established under Consent Decree Number 00-2-07760-2SEA. Concentrations of TPH ranged from less than 20 milligrams per kilogram (mg/kg) to 10,190 mg/kg. Additionally, one soil sample (TMW-E2-8) was submitted to Friedman & Bruya, Inc. (F&BI) for forensic analysis. Results indicate a low and medium boiling point material. According to F&BI, the middle boiling point material appeared indicative of a kerosene or jet fuel that has been heavily degraded. F&BI indicated that while the low boiling point material is in the gasoline range, it does not show a standard pattern. F&BI indicated that either the gasoline has been heavily degraded or is an antique gasoline. The results of the forensic analysis does not indicate that impacts from the E Yard reflect a gasoline release that is believed to have occurred in 1998/1999 time frame in the vicinity of the E Yard.

Groundwater samples were collected from the newly installed wells TMW-E1 through TMW-E4 on October 25, 2011. The laboratory analytical results indicated concentrations of total petroleum hydrocarbons as gasoline (TPH-G) and benzene exceeded cleanup levels under Consent Decree 002-2-07760-2SEA in TMW-E2 and TMW-E3. Total petroleum hydrocarbons as diesel (TPH-D), toluene, ethylbenzene, and total xylenes were also detected but at concentrations below the established cleanup levels.

1.0 INTRODUCTION

The work summarized in this report was performed to evaluate soil and groundwater conditions along the western boundary of the E Yard to determine whether hydrocarbon impacts are similar in nature to impacts observed along 13th Avenue, and to determine whether hydrocarbon impacts reflect a release that is thought to have occurred in the 1998/1999 time frame in the vicinity of the E Yard. The purpose of this investigation is to respond to EPA's concerns regarding further evaluation of the 13th Avenue Southwest contamination.

2.0 BACKGROUND

The Kinder Morgan Liquid Terminals, LLC Harbor Island Terminal is a bulk petroleum fuel storage facility which has been operating since 1944. Kinder Morgan Liquid Terminals, LLC (KMLT) purchased the terminal from GATX Terminals Corporation in February 2001. GATX previously owned and operated the facility since December 1994. Shell Oil Company owned and operated the terminal from 1944 through 1994. The facility is approximately 14 acres in area, and is situated on relatively flat topography in the north central portion of Harbor Island, a highly industrialized area located at the mouth of the Duwamish Waterway and Elliot Bay (Figure 1). The site is situated approximately 900 feet from the East Waterway and approximately 1,400 feet from the West Waterway with surface elevations (relative to NAVD 1988 vertical datum) ranging between approximately 9 to 17 feet above mean sea level (msl).

The Harbor Island Terminal has been divided into five distinct areas segregated on the basis of use, designated as the A, B, C, D, and E Yards (Figure 2). The B and C Yards contain bulk storage tanks. The B and C yards are each surrounded by concrete walls approximately 15 feet in height. Within the B and C Yards, the ground surface is unpaved gravel and silty sand.

The paved A Yard contains the facility office as well as the loading facilities for petroleum distribution. The D Yard consists of a driveway between the B and C Yards, and contains general repair and storage facilities. The E Yard is presently leased by another party and consists of an office building and vehicle storage facilities.

2.1 Previous Investigation Adjacent to the E Yard

An investigation was performed by BP in 2002. The investigation was prompted by a sudden increase in gasoline constituents detected beginning in 2000 in a monitoring well located BP Terminal's Plant 2 tank farm property near the KMLT's Olympic Pipeline Company (OPLC) lease area in the E Yard. The gasoline constituents were detected during the on-going groundwater monitoring program conducted by BP in accordance with their Consent Decree. Twenty-six soil borings were installed in and adjacent to the BP Terminal's tank farm. A groundwater sample was collected from each of the 26 borings. Results indicated that the highest gasoline concentrations were found in the area along the east and west sides of 13th Avenue SW, between the BP Plant 2 tank farm and the OPLC lease area in the KMLT E Yard. It was concluded that results indicated that the BP Plant 2 was being impacted by an

offsite source of gasoline. The investigation was summarized in a report entitled *"Plant 2 Gasoline Investigation,"* prepared by TechSolv Consulting Group, Inc. and dated January 9, 2003.

In previous status meetings with Ecology and KMLT in March and September 2010, it was contemplated whether impacts observed in the BP investigation could have migrated along utility corridors and impacted the downgradient portion of 13th Avenue SW in the vicinity of Shell well SH-04.

3.0 SCOPE OF WORK

The scope of work performed by Antea Group included the following tasks:

- Developed a site-specific Health and Safety Plan;
- Contracted One-Call and a private underground utility locater to delineate the location and marking of underground utilities and other potential subsurface obstructions in the vicinity of the proposed boring locations;
- Cleared for utilities to a minimum depth of 5 feet bgs using an air knife/vacuum rig;
- Drilled and installed four groundwater monitoring wells (TMW-E1 through TMW-E4);
- Collected soil samples continuously from 5 to 15 feet bgs using acetate sleeve samplers driven ahead of the drill bit into the undisturbed formation;
- Performed examination and description of each sample using the Unified Soil Classification System (USCS) and standard geologic techniques;
- Submitted soil samples for quantitative chemical analysis from each boring interval;
- Submitted one soil sample for forensic analysis;
- Developed and sampled the newly installed groundwater monitoring wells;
- Performed profiling, removal, and proper disposal of investigative derived waste; and
- Prepared a report summarizing the findings of the investigation.

4.0 GROUNDWATER MONITORING WELL INSTALLATIONS

On October 3rd and 4th, 2011, Antea Group personnel directed the drilling and installation of four groundwater monitoring wells (TMW-E1 through TMW-E4) at the property. Prior to the drilling activities, Antea Group coordinated the location and marking of underground utilities in the vicinity of the proposed boring locations. The utilities survey included contacting the local utility locating service and contracting with a private locating service.

Prior to drilling, each boring location was cleared to a final depth of 5 feet bgs with an air-knife and vacuum truck. Following air-knifing, borings were advanced using hydraulic direct-push drilling equipment operated by Cascade Drilling, Inc. All borings were advanced to an approximate depth of 15 feet bgs. Where recovered, soil samples were collected continuously from 5 to 15 feet bgs using acetate sleeve samplers advanced into the undisturbed formation ahead of the drill bit. Groundwater was encountered at each boring location at and approximate depth of 7 feet bgs. Borings TMW-E1 through TMW-E4 were completed as 2-inch temporary groundwater monitoring wells to a depth of 15 feet consisting of Schedule 40 (SCH 40) polyvinyl chloride (PVC) casing with 10 feet of 0.010-inch slotted screen. The annular spaces in all wells consisted of #2/12 filter sand to 2 feet above the screened interval, followed by a 1 foot seal of bentonite chips. Cement was placed in the remaining annular space and a flush-mount surface monument was installed over each well head. Soil encountered during the drilling activities primarily consisted of fine grained sand and silty-sand with periodic lenses of silt and/or fine gravel to the maximum drilled depth of 15 feet bgs.. Boring logs, soil sampling intervals, lithology descriptions, and well completion details are included in Appendix A.

Wells TMW-E1 through TMW-E4 were developed on October 4, 2011. Development activities were completed by purging the wells with a submersible pump until the amount of suspended sediment in the purge water decreased significantly and the water appeared clear. Approximately 10-gallons of water was purged from each monitoring well.

5.0 WASTE MANAGEMENT

Soil cuttings, decontamination fluids and purge water generated during drilling and sampling were temporarily stored in properly labeled 55-gallon DOT drums. Analytical data for soil and water samples were used for disposal profiling. The drums were removed by Filter Recycling Services on October 12, 2011 for off site treatment and disposal.

6.0 SAMPLE COLLECTION AND ANALYSIS

6.1 Soil Sampling

Soil samples were field screened using a PID for volatile petroleum hydrocarbons. Based on PID readings, soil samples from each boring were selected for quantitative and forensic chemical analysis for petroleum hydrocarbons. The soil samples were individually labeled, registered on a Chain-of-Custody form, and placed in a chilled cooler pending delivery to a certified analytical laboratory. Quantitative soil analytical results are presented in Table 1 and on Figure 3.

6.2 Groundwater Sampling

On October 25, 2011, Antea Group personnel collected groundwater samples newly installed monitoring wells TMW-E1 through TMW-E4. Tasks performed and associated with groundwater monitoring included:

- Water level measurement;
- Groundwater sample collection; and
- Sample shipping to the analytical laboratory.

Low flow techniques were used to collect the groundwater samples. New, dedicated polyethylene tubing was used at each monitoring well. Geochemical parameters were collected with a YSI multi-meter. Groundwater samples were collected in laboratory-supplied containers and individually labeled, registered on a Chain-of-Custody form, and placed in chilled coolers pending delivery to a certified analytical laboratory. A summary of groundwater analytical results are presented in Table 2 and Figure 4.

6.3 Laboratory Analysis

Soil samples were submitted to Alpha Analytical of Sparks, Nevada for quantitative chemical analysis. Sixteen soil samples were analyzed for the following parameters:

- Total petroleum hydrocarbons in the gasoline (TPH-G) range using Northwest Method NWTPH-Gx;
- Total petroleum hydrocarbons in the diesel (TPH-D) and oil (TPH-O) ranges using Northwest Method NWTPH-Dx with Silica Gel cleanup; and,
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Method SW8260B.

One split soil sample was collected from TMW-E2-8 and submitted to Friedman and Bruya, Inc (F&BI) for forensic analyses.

Groundwater samples were also submitted to Alpha Analytical of Sparks, Nevada for quantitative chemical analysis. Four groundwater samples were analyzed for the following parameters:

- TPH-G range using Northwest Method NWTPH-Gx;
- TPH-D and TPH-O ranges using Northwest Method NWTPH-Dx with Silica Gel cleanup; and,

- BTEX using EPA Method 8260B.

7.0 ANALYTICAL RESULTS

7.1 Soil

7.1.1 Quantitative Analytical Results

Total TPH concentrations were below the established cleanup criterion of 10,000 mg/kg levels in fifteen soil samples. Concentrations of total TPH were above the cleanup criterion in one of the soil samples collected (TMW-E2-6). The cleanup level was established under Consent Decree Number 00-2-07760-2SEA. Concentrations of TPH ranged from less than 20 milligrams per kilogram (mg/kg) to 10,190 mg/kg. Soil analytical results are presented in Table 1 and are shown on Figure 3. Soil analytical reports are included in Appendix C.

7.1.2 Forensic Results

One soil sample (TMW-E2-8) was submitted to F&BI for forensic analysis. Results indicate a low and medium boiling point material. According to F&BI, the middle boiling point material appeared indicative of a kerosene or jet fuel that has been heavily degraded. F&BI indicated that while the low boiling point material is in the gasoline range, it does not show a standard pattern. F&BI indicated that either the gasoline has been heavily degraded or is an antique gasoline.

7.2 Groundwater

The laboratory analytical results indicate that concentrations of TPH-G and benzene were below the established cleanup criteria in two of the four monitoring wells. Concentrations of TPH-G were detected above established cleanup level of 1.0 mg/L in monitoring wells TMW-E2 and TMW-E3 at 4.5 milligrams per liter (mg/L) and 1.6 mg/L, respectively. Concentrations of benzene were detected above established cleanup level of 0.071 mg/L in TMW-E2 and TMW-E3 at 0.38 mg/L and 0.087 mg/L, respectively. Concentrations of TPH-D, TPH-O, toluene, ethylbenzene, and total xylenes were either not detected or were detected at concentrations below established cleanup levels. Groundwater analytical results are presented in Table 2 and Figure 5. Groundwater analytical reports are included in Appendix C.

8.0 CONCLUSIONS

Antea Group directed the drilling and installation of four groundwater monitoring wells at the property on October 3rd and 4th, 2011. Total TPH concentrations were below the established cleanup criterion of 10,000 mg/kg levels in fifteen soil samples. Concentrations of total TPH were above the cleanup criterion in one of the soil samples collected (TMW-E2-6).

Groundwater samples were collected from the newly installed wells TMW-E1 through TMW-E4 on October 25, 2011. The laboratory analytical results indicate that concentrations of TPH-G and benzene were below the

established cleanup criteria in two of the four monitoring wells. Concentrations of TPH-G and benzene were detected above respective established cleanup levels in TMW-E2 and TMW-E3. Concentrations of TPH-D, TPH-O, toluene, ethylbenzene, and total xylenes were either not detected or were detected at concentrations below established cleanup levels.

The results of the forensic analysis does not indicate that impacts from the E Yard reflect a gasoline release that is believed to have occurred in 1998/1999 time frame in the vicinity of the E Yard. Additionally, quantitative soil and groundwater analyses indicate that impacts at the E Yard/13th Avenue SW boundary appear to be localized and does not appear to be a source of impacts observed further downgradient along 13th Avenue.

9.0 REMARKS

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Prepared by:

Date: December 2011

Megan MacDonald
Project Professional

Reviewed by:

Date: December 2011

Dawna Leong, PE
Consultant

Tables

Table 1 Summary of Soil Sample Analytical Results
Table 2 Summary of Groundwater Sample Analytical Data

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
Kinder Morgan Liquids Terminal, LLC
Harbor Island Terminal
2720 13th Avenue SW
Seattle, Washington

Sample Identification	Sample Collection Date	Sample Collection Depth (feet)	TPH-G (mg/kg)	TPH-D (mg/kg)	TPH-O (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)
TMW-E1-6	10/04/11	6	<5.0	<5.0	<10	<0.0096	<0.0096	<0.0096	<0.0096
TMW-E1-10	10/04/11	10	<5.0	<5.0	<10	<0.0096	<0.0096	<0.0096	<0.0096
TMW-E1-12	10/04/11	12	<5.0	<5.0	<10	<0.0083	<0.0083	<0.0083	<0.0083
TMW-E1-15	10/04/11	15	<5.0	<5.0	<10	<0.0083	<0.0083	<0.0083	<0.0083
TMW-E2-6	10/04/11	6	**5,000**	**4,600**	**590**	<1.6	<1.6	<1.6	<1.6
TMW-E2-8	10/04/11	8	2,500	1,500	240	<1.6	<1.6	<1.6	<1.6
TMW-E2-10	10/04/11	10	360	1,200	330	<0.33	<0.33	<0.33	<0.33
TMW-E2-15	10/04/11	15	<5.0	<5.0	<10	<0.0076	<0.0076	<0.0076	<0.0076
TMW-E3-6	10/04/11	6	<5.0	210	790	<0.0098	0.01	<0.0098	0.022
TMW-E3-10	10/04/11	10	16	34	96	0.045	<0.0078	0.03	<0.0078
TMW-E3-12	10/04/11	12	24	54	210	0.057	<0.0084	0.045	0.023
TMW-E3-15	10/04/11	15	<5.0	<5.0	<10	0.038	<0.0085	<0.019	<0.0085
TMW-E4-6	10/04/11	6	5	71	370	0.013	<0.0083	0.0087	<0.0083
TMW-E4-10	10/04/11	10	<5.0	<5.0	<10	<0.0084	<0.0084	<0.0084	<0.0084
TMW-E4-12	10/04/11	12	<5.0	<5.0	<10	<0.0088	<0.0088	<0.0088	<0.0088
TMW-E4-15	10/04/11	15	<5.0	<5.0	<10	<0.0088	<0.0088	<0.0088	<0.0088
Cleanup Level[1]			**10,000 mg/kg Total TPH**						

NOTES:

[1] Cleanup level established under Consent Decree 00-2-07760-2SEA

All concentrations are in mg/kg (ppm).

< = Less than the stated laboratory reporting limit

NA = not applicable

Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) analyzed using EPA Method 8021B

Gasoline range = Gasoline range hydrocarbons by Ecology Method NWTPH-Gx

Diesel and Heavy range hydrocarbons, respectively, by Ecology Method NWTPH-Dx with Acid Silica Gel Cleanup

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
Kinder Morgan Liquids Terminal, LLC
Harbor Island Terminal
2720 13th Avenue SW
Seattle, Washington

Sample Identification	Sample Collection Date	TPH-G (mg/L)	TPH-D (mg/L)	TPH-O (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)
TMW-E1	10/25/11	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	<0.0005
TMW-E2	10/25/11	**4.5**	0.39	<0.50	**0.38**	0.01	0.0051	0.014
TMW-E3	10/25/11	**1.6**	<0.25	<0.50	**0.087**	<0.001	0.014	<0.001
TMW-E4	10/25/11	<0.25	<0.25	<0.50	<0.0005	<0.0005	<0.0005	0.00062
Cleanup Level[1]		**1.0**	**10**	**10**	**0.071**	**--**	**29.0**	**--**

NOTES:
[1] Cleanup level established under Consent Decree 00-2-07760-2SEA
Bold values indicate concentrations which exceed CAP cleanup levels
mg/kg = milligrams per kilogram
NA = Not analyzed in the laboratory.
TPH-G = Total Petroleum Hydrocarbon as Gasoline; analyzed using Northwest Method NWTPH-Gx.
Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) analyzed using EPA Method 8021B
TPH-D = Total Petroleum Hydrocarbon as Diesel; TPH-O = Total Petroleum Hydrocarbons as Oil.
TPH-D and TPH-O analyzed using Northwest Method NWTPH-Dx w/ silica gel cleanup.

Figures

Figure 1 Site Map
Figure 2 E Yard Site Map
Figure 3 E Yard Soil Analytical Results – October 4, 2011
Figure 4 E Yard Groundwater Analytical Results – October 25, 2011

North

RAILROAD TRACKS

11th AVENUE S.W.

MW-13 MW-13R MW-12 MW-12R

GATE

SH-02 SH-02R MW-4 MW-07 MW-07R SH-05 SH-05R

MW-1 MW-15 MW-10D

Tank 43 Tank 44 Tank 42 Tank 37 Tank 39 Tank 35 Tank 18 Tank 19 Tank 22 Tank 20 Tank 23 Tank 29 Tank 24 Tank 21 Tank 27 Tank 28 Tank 32 Tank 31 Tank 25 Tank 33 Tank 26

WAREHOUSE

MAINTENANCE BUILDINGS

BBL STORAGE

RAMP

'E' YARD 'C' YARD 'D' YARD 'B' YARD 'A' YARD

OLYMPIC PIPELINE LEASE AREA

E-1

MW-20 MW-14 MW-5 MW-3 MW-19 MW-7 MW-21 MW-8 MW-11D MW-11 MW-9 MW-25

TRUCK LOADING RACK

FENCE

SF-01 SF-01R

FORMER PROPERTY LINE

RE-ESTABLISHED PROPERTY LINE (APPROXIMATE)

GARAGE

OFFICE BUILDING

PARKING

VAULT

GATE

PROPERTY LINE

TMW-E3 TMW-E2 TMW-E1 MW-2 MW-22 MW-6 MW-24 MW-23 MW-26

13th AVENUE S.W.

TMW-E4 MW-18 MW-17 MW-16 SH-04 A-28 A-28R A-23 A-24

LEGEND

- SH-02 — GROUNDWATER MONITORING WELL (INSTALLED BEFORE 1993)
- MW-7 — GROUNDWATER MONITORING WELL (INSTALLED AFTER 1993)
- MW-12R — REPLACEMENT GROUNDWATER MONITORING WELL (INSTALLED BETWEEN JANUARY 31 AND FEBRUARY 21, 2002)
- MW-23 — MONITORING WELLS INSTALLED SEPTEMBER 30, 2003
- TMW-E1 — MONITORING WELL INSTALLED OCTOBER 4, 2011
- A-13 — DESTROYED, DAMAGED OR DECOMMISSIONED DUE TO CONSTRUCTION ACTIVITIES
- 3 — ABANDONED GROUNDWATER MONITORING WELL, JUNE 2003
- ✳ — WELL INACCESSIBLE OR DAMAGED

0 100 FT

APPROX. SCALE

FIGURE 1

SITE MAP

KINDER MORGAN LIQUIDS TERMINALS, LLC
HARBOR ISLAND TERMINAL
2720 13TH AVENUE SOUTHWEST
SEATTLE, WASHINGTON

PROJECT NO. STKM-001-W.0005	DRAWN BY SB April 2005
FILE NO. STKM001W	PREPARED BY MM OCT 2011
REVISION NO.	REVIEWED BY WC

anteagroup

LEGEND:

- PROPERTY BOUNDARY
- FENCE
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATER LINE
- BURIED ELECTRIC LINE
- BURIED COMMUNICATIONS LINE
- OVERHEAD ELECTRIC AND COMUNICATIONS LINES
- BURIED PETROLEUM LINE
- TMW– TEMPORARY GROUNDWATER MONITORING WELL

TMW–E3

TMW–E4

TMW–E2

TMW–E1

TANK

OLYMPIC PIPELINE COMPANY LEASE
AREA IN E YARD

CONTROL
BUILDING

GATE

13TH AVENUE SW

WIDTH OF
CONCRETE

ROW

ROW

North

0 16

SCALE IN FEET

FIGURE 2
E YARD SITE MAP

KINDER MORGAN LIQUIDS TERMINALS, LLC
HARBOR ISLAND TERMINAL
2720 13TH AVENUE SOUTHWEST
SEATTLE, WASHINGTON

PROJECT NO. STKM-001-W.0005	DRAWN BY DR
FILE NO. STKM-001-P-d	PREPARED BY DL
PROJECT NO. 0	REVIEWED BY MM

anteagroup

LEGEND:

- PROPERTY BOUNDARY
- FENCE
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATER LINE
- BURIED ELECTRIC LINE
- BURIED COMMUNICATIONS LINE
- OVERHEAD ELECTRIC AND COMUNICATIONS LINES
- BURIED PETROLEUM LINE
- TMW– TEMPORARY GROUNDWATER MONITORING WELL

TMW–	SAMPLE ID
DATE 10/4/11	SAMPLE DATE
DEPTH 6'	SAMPLE DEPTH (FEET)
TPH–G <5.0	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
TPH–D <5.0	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
HR <10	HEAVY RANGE
B <0.0096	BENZENE
T <0.0096	TOLUENE
E <0.0096	ETHYLBENZENE
X <0.0096	TOTAL XYLENES

RESULTS EXPRESSED IN MILLIGRAMS PER KILOGRAM (mg/kg)

BOLD VALUES INDICATE CONCENTRATIONS WHICH EXCEED MTCA CLEANUP LEVELS

TMW–E4–6		TMW–E4–10		TMW–E4–12		TMW–E4–15	
DATE	10/4/11	DATE	10/4/11	DATE	10/4/11	DATE	10/4/11
DEPTH	6'	DEPTH	10'	DEPTH	12'	DEPTH	15'
TPH–G	5	TPH–G	<5.0	TPH–G	<5.0	TPH–G	<5.0
TPH–D	71	TPH–D	<5.0	TPH–D	<5.0	TPH–D	<5.0
HR	370	HR	<10	HR	<10	HR	<10
B	0.013	B	<0.0084	B	<0.0088	B	<0.0088
T	<0.0083	T	<0.0084	T	<0.0088	T	<0.0088
E	<0.0087	E	<0.0084	E	<0.0088	E	<0.0088
X	<0.0083	X	<0.0084	X	<0.0088	X	<0.0088

TMW–E3–6		TMW–E3–10		TMW–E3–12		TMW–E3–15	
DATE	10/4/11	DATE	10/4/11	DATE	10/4/11	DATE	10/4/11
DEPTH	6'	DEPTH	10'	DEPTH	12'	DEPTH	15'
TPH–G	<5.0	TPH–G	16	TPH–G	24	TPH–G	<5.0
TPH–D	210	TPH–D	34	TPH–D	54	TPH–D	<5.0
HR	790	HR	96	HR	210	HR	<10
B	<0.0098	B	**0.045**	B	**0.057**	B	**0.038**
T	0.01	T	<0.0078	T	<0.0084	T	<0.0085
E	<0.0098	E	0.03	E	0.045	E	<0.019
X	0.022	X	<0.0078	X	0.023	X	<0.0085

TMW–E2–6		TMW–E2–8		TMW–E2–10		TMW–E2–15	
DATE	10/4/11	DATE	10/4/11	DATE	10/4/11	DATE	10/4/11
DEPTH	6'	DEPTH	8'	DEPTH	10'	DEPTH	15'
TPH–G	**5,000**	TPH–G	**2,500**	TPH–G	**360**	TPH–G	<5.0
TPH–D	**4,600**	TPH–D	1,500	TPH–D	1,200	TPH–D	<5.0
HR	590	HR	240	HR	330	HR	<10
B	**<1.6**	B	**<1.6**	B	**<0.33**	B	<0.0076
T	<1.6	T	<1.6	T	<0.33	T	<0.0076
E	<1.6	E	<1.6	E	<0.33	E	<0.0076
X	<1.6	X	<1.6	X	<0.33	X	<0.0076

TMW–E1–6		TMW–E1–10		TMW–E1–12		TMW–E1–15	
DATE	10/4/11	DATE	10/4/11	DATE	10/4/11	DATE	10/4/11
DEPTH	6'	DEPTH	10'	DEPTH	12'	DEPTH	15'
TPH–G	<5.0	TPH–G	<5.0	TPH–G	<5.0	TPH–G	<5.0
TPH–D	<5.0	TPH–D	<5.0	TPH–D	<5.0	TPH–D	<5.0
HR	<10	HR	<10	HR	<10	HR	<10
B	<0.0096	B	<0.0096	B	<0.0083	B	<0.0083
T	<0.0096	T	<0.0096	T	<0.0083	T	<0.0083
E	<0.0096	E	<0.0096	E	<0.0083	E	<0.0083
X	<0.0096	X	<0.0096	X	<0.0083	X	<0.0083

TMW–E4 TMW–E3 TMW–E2 TMW–E1

TANK

OLYMPIC PIPELINE COMPANY LEASE AREA IN E YARD

CONTROL BUILDING

GATE

13TH AVENUE SW

WIDTH OF CONCRETE

ROW ROW

North

0 16

SCALE IN FEET

FIGURE 3
E YARD SOIL ANALYTICAL RESULTS
OCTOBER 4, 2011
KINDER MORGAN LIQUIDS TERMINALS, LLC
HARBOR ISLAND TERMINAL
2720 13TH AVENUE SOUTHWEST
SEATTLE, WASHINGTON

PROJECT NO. STKM-001-W.0005	DRAWN BY DR
FILE NO. STKM-001-P-d	PREPARED BY DL
PROJECT NO. 0	REVIEWED BY MM

anteagroup

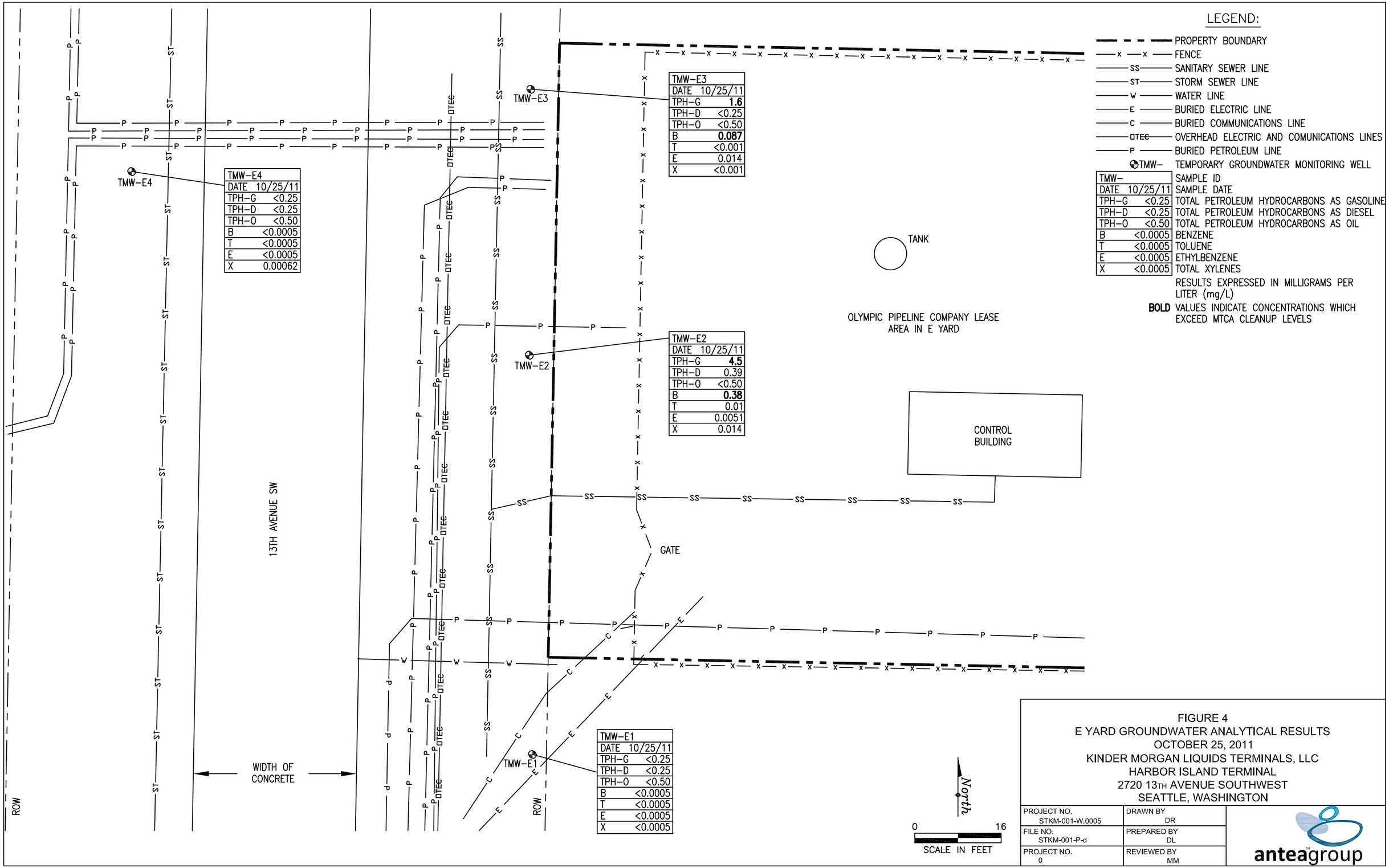


FIGURE 4
E YARD GROUNDWATER ANALYTICAL RESULTS
OCTOBER 25, 2011
KINDER MORGAN LIQUIDS TERMINALS, LLC
HARBOR ISLAND TERMINAL
2720 13TH AVENUE SOUTHWEST
SEATTLE, WASHINGTON

PROJECT NO. STKM-001-W.0005	DRAWN BY DR
FILE NO. STKM-001-P-d	PREPARED BY DL
PROJECT NO. 0	REVIEWED BY MM

anteagroup

Appendix A

Boring Logs

WELL/BORING LOCATION MAP	**Antea Group**	WELL/BORING: TMW-E1
	INSTALLATION DATE: 10/4/2011	DRILLING METHOD: Geoprobe
	PROJECT: Harbor Island Terminal	SAMPLING METHOD: Acetate Sleeve
	CLIENT: Kinder Morgan	BORING DIAMETER: 2.5"
	LOCATION: 2720 13th Ave SW	BORING DEPTH 15 feet
	CITY: Seattle	WELL CASING: SCH 40 PVC 2"
	STATE: WA	WELL SCREEN: 5 – 15 feet (0.010")
	DRILLER: Cascade Drilling, Inc.	SAND PACK: 3 – 15 (2x12)

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Megan MacDonald

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION
Concrete / Bentonite / Sand			MST	0.6	NA	6			SP		Fine SAND; dark brown; moist; loose; no staining; no odor.
			MST	0.6	NA	8			SP		Same as above with shell fragments.
			MST	0.9	NA	10			SP		Fine SAND; dark brown-black; moist; no staining; no odor.
			WET	0.7	NA	12			SM		Silty-SAND; wet; no staining; no odor.
			WET	0.8	NA	15			SP		Fine SAND; dark brown-black; no staining; no odor; woody organic debris.

11/16/2011

WELL/BORING LOCATION MAP

Antea Group

WELL/BORING: TMW-E2

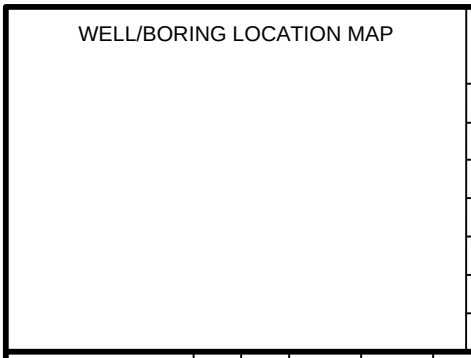
INSTALLATION DATE: 10/4/2011	DRILLING METHOD: Geoprobe
PROJECT: Harbor Island Terminal	SAMPLING METHOD: Acetate Sleeve
CLIENT: Kinder Morgan	BORING DIAMETER: 2.5"
LOCATION: 2720 13th Ave SW	BORING DEPTH 15 feet
CITY: Seattle	WELL CASING: SCH 40 PVC 2"
STATE: WA	WELL SCREEN: 5 – 15 feet (0.010")
DRILLER: Cascade Drilling, Inc.	SAND PACK: 3 – 15 (2x12)

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Megan MacDonald

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION
Concrete / Bentonite / Sand			MST	952.2	NA	6			SP		Gravelly-SAND; dark gray; 80% fine to coarse sand (predominantly fine sand), 20% fine gravel; moist; loose; odor.
			MST	1,647	NA	8			SP		Same as above, strong odor, sheen.
			WET	160.7	NA	10			SP		Fine SAND; Dark gray-black; strong odor; wet; sheen.
			WET	42.1	NA	12			SP		Fine SAND; black; loose; wet; mild odor.
			WET	5.5	NA	15			SP		Fine SAND; black; loose; wet; no odor.

WELL/BORING LOCATION MAP



Antea Group

WELL/BORING: TMW-E3

INSTALLATION DATE: 10/4/2011	DRILLING METHOD: Geoprobe
PROJECT: Harbor Island Terminal	SAMPLING METHOD: Acetate Sleeve
CLIENT: Kinder Morgan	BORING DIAMETER: 2.5"
LOCATION: 2720 13th Ave SW	BORING DEPTH 15 feet
CITY: Seattle	WELL CASING: SCH 40 PVC 2"
STATE: WA	WELL SCREEN: 5 – 15 feet (0.010")
DRILLER: Cascade Drilling, Inc.	SAND PACK: 3 – 15 (2x12)

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

DESCRIPTION/LOGGED BY: Megan MacDonald

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION
Concrete / Bentonite / Sand			MST	1.0	NA	6			SP		Fine SAND; brown; moist; loose; no staining; no odor.
			MST	0.6	NA	8			SP		Same as above.
			WET	25.0	NA	10			SP		Fine SAND; dark gray; loose; wet; no staining; moderate odor.
			WET	19.1	NA	12			SP		Same as above.
			WET	3.5	NA	15			SM		Silty SAND; 60% fine sand, 40% silt; dark gray; wet; no odor.

11/16/2011

WELL/BORING LOCATION MAP

Antea Group

WELL/BORING: TMW-E4

INSTALLATION DATE: 10/4/2011	DRILLING METHOD: Geoprobe
PROJECT: Harbor Island Terminal	SAMPLING METHOD: Acetate Sleeve
CLIENT: Kinder Morgan	BORING DIAMETER: 2.5"
LOCATION: 2720 13th Ave SW	BORING DEPTH 15 feet
CITY: Seattle	WELL CASING: SCH 40 PVC 2"
STATE: WA	WELL SCREEN: 5 – 15 feet (0.010")
DRILLER: Cascade Drilling, Inc.	SAND PACK: 3 – 15 (2x12)

CASING ELEVATION	-
SURVEY DATE:	-
DTW:	-

WELL/BORING COMPLETION	FIRST ▽	STABILIZED ▼	MOISTURE	PID (ppm)	DENSITY BLOWS / 6"	DEPTH (FEET)	RECOVERY	SAMPLE INTERVAL	USCS SYMBOL	GRAPHIC	DESCRIPTION/LOGGED BY: Megan MacDonald
Concrete / Bentonite / Sand			MST	13.1	NA	6			SP		Fine SAND; brown; moist; loose; no odor.
			MST	0.6	NA	8			SP		Same as above.
						9			GP		Fine GRAVEL; NOT pea gravel. Subangular.
			WET	0.9	NA	10			SP		Fine SAND; dark gray; wet; woody debris; no odor.
						11			GP		Fine GRAVEL; NOT pea gravel. Wet; no odor.
			WET	1.5	NA	12			SP		Fine SAND; dark gray; wet.
						13			SM		Silty SAND; 60% fine sand, 40% silt; wet; no odor.
						14			SP		Fine SAND; dark gray; wet; no odor.
									CL		Very thin layer of clay.
			WET	0.7	NA	15			SP		Fine SAND; dark gray; loose; wet; no odor.

11/16/2011

Appendix B

Field Data Sheets

GROUNDWATER SAMPLING FIELD SHEET

PROJECT NUMBER: STKM001W-0005 | CLIENT: Kinder Morgan

SITE No./JOB No.: | PAGE 1 of 1

SITE ADDRESS/LOCATION: 2720 13th Ave SW | DATE: 10-25-11

FIELD PERSONNEL: MM | WEATHER: Clouds 50°F

Well ID	Time	Well Diameter (in.)	Depth to Bottom (feet)	Depth to Water (feet)	Depth to LPH (feet)	LPH Thickness (feet)	Calc. Purge (gal)	Actual Purge (gal)	Purge Method (B/LF/P)	Dissolved Oxygen (mg/l)	Sample Appearance/ Comments
TMW-E1	9:20	2	–	7.96	–	–	–	2	LF		
TMW-E2	9:50	2	–	8.26	–	–	–	2	↓		
TMW-E3	10:20	2	–	8.08	–	–	–	2			
TMW-E4	10:50	2	–	8.21	–	–	–	2			

System Instructions:	Remedial System On-Site (Y / N)?	Comments:
	Operational Upon Arrival (Y / N)?	Comments:
	Shut Down System 1 / 24 hours before gauging (Y / N)?	Time/Date Downed:
	Re-Start System (Y / N)?	Time/Date Restarted:
	Purge Method:	Comments:

Purge Water Disposal Method:

- ☐ Treated through mobile carbon treatment unit and discharged on-site
- ☒ Placed in drums on site — No. of drums: 1
- ☐ Transported off-site for treatment — Facility/Location: D Yard

Measuring Device(s):

GROUNDWATER SAMPLING FIELD SHEET

DELTA PROJECT NUMBER:	STKM-001-W	**CLIENT:**	Kinder Morgan
SITE No./JOB No.:	Harbor Island, Seattle, WA	**PAGE:**	1 of 1
SITE ADDRESS/LOCATION:		**DATE:**	10/25/11
FIELD TECHNICIAN(S):	M. MacDonald	**WEATHER:**	Cloudy 50°F

Bioparameter / Water Quality Measurements: (Pre-Purge / Post- Purge / Low-flow Cell)

Well ID	TEMP (°C)	COND (ms/cm)	TDS (g/L)	DO (mg/L)	pH	ORP (mV)	Comments
TMW-E1	16.26	0.087	0.068	0.61	7.13	-8.1	
	16.29	0.087	0.068	0.60	7.13	-9.1	
	16.32	0.087	0.068	0.59	7.12	-10.2	
	16.36	0.086	0.067	0.56	7.11	-11.1	
TMW-E2	17.08	0.441	0.338	0.90	6.39	-90.7	
	17.12	0.442	0.338	0.87	6.39	-92.0	
	17.12	0.442	0.339	0.86	6.39	-93.3	
	17.10	0.443	0.339	0.85	6.40	-94.3	
TMW-E3	1657	0.594	0.466	0.70	6.42	-81.9	
	16.60	0.595	0.466	0.68	6.43	-83.4	
	16.60	0595	0.461	0.66	6.43	-84.9	
	16.60	0596	0.461	0.64	6.43	-86.2	
TMW-E4	16.36	0.288	0.224	0.43	6.79	-69.8	
	16.38	0.289	0.225	0.43	6.79	-71.0	
	16.39	0.289	0.225	0.42	6.78	-72.0	
	16.40	0.289	0.225	0.41	6.79	-72.9	

System Instructions:	**Remedial System On-Site (Y/N)?**	**Comments:**
	Operational Upon Arrival (Y/N)?	**Comments:**
	Shut Down System 1 / 24 hours before Gauging (Y/N)?	**Time/Date Downed:**
	Re-Start System (Y/N)?	**Time/Date Restarted:**

Purge Water Disposal Method:

- ☐ Treated through Mobile Carbon System
- ☒ Placed in drums on site — **No. of drums:** 1
- ☐ Transported off-site for treatment (Attach Bill of Lading) — **Facility/Location:** D Yard; **Hauler:**

Instrument Callibration: Note: Use DO Meter and YSI for Field Measurements.

YSI (Calibration Check):		**pH (4.00 ref.)**	**Cond. (4.49 ref.)**	**Turb. (0.0 ref.)**
DO Meter:	**mg/L**	**% Saturation**	**Temp**	
PID:	**ppm**	**(100 ppm Isobutylene Callibration Gas)**		

Appendix C

Analytical Laboratory Reports and Chain-of-Custody Documentation

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

Antea Group
4006 148TH AVE NE
Redmond, WA 98052
Job: STKM-W-005/ Kinder Morgan-HI

Attn: Dawna Leong
Phone: (425) 498-7726
Fax: (425) 869-1892

Northwest Total Petroleum Hydrocarbons - Diesel Extended (NWTPH-Dx)
Northwest Total Petroleum Hydrocarbons - Gasoline Extended (NWTPH-Gx)

		Parameter	Concentration		Reporting Limit	Date Extracted	Date Analyzed
Client ID :	**TMW-E1**						
Lab ID :	ALS11102744-01A	TPH-E (DRO), Silica Gel	ND		0.25 mg/L	10/28/11	10/29/11
Date Sampled	10/25/11 09:20	TPH-E (ORO), Silica Gel	ND		0.50 mg/L	10/28/11	10/29/11
		TPH-P (GRO)	ND		0.25 mg/L	10/31/11	10/31/11
Client ID :	**TMW-E2**						
Lab ID :	ALS11102744-02A	TPH-E (DRO), Silica Gel	0.39	K	0.25 mg/L	10/28/11	10/29/11
Date Sampled	10/25/11 09:50	TPH-E (ORO), Silica Gel	ND		0.50 mg/L	10/28/11	10/29/11
		TPH-P (GRO)	4.5		0.30 mg/L	10/31/11	10/31/11
Client ID :	**TMW-E3**						
Lab ID :	ALS11102744-03A	TPH-E (DRO), Silica Gel	ND		0.25 mg/L	10/28/11	10/29/11
Date Sampled	10/25/11 10:20	TPH-E (ORO), Silica Gel	ND		0.50 mg/L	10/28/11	10/29/11
		TPH-P (GRO)	1.6		0.25 mg/L	10/31/11	10/31/11
Client ID :	**TMW-E4**						
Lab ID :	ALS11102744-04A	TPH-E (DRO), Silica Gel	ND		0.25 mg/L	10/28/11	10/29/11
Date Sampled	10/25/11 10:50	TPH-E (ORO), Silica Gel	ND		0.50 mg/L	10/28/11	10/29/11
		TPH-P (GRO)	ND		0.25 mg/L	10/31/11	10/31/11

Diesel Range Organics (DRO) C13-C22
Gasoline Range Organics (GRO) C4-C13
K = DRO concentration may include contributions from lighter-end hydrocarbons that elute in the DRO range.
Oil Range Organics (ORO) C22-C40+
ND = Not Detected

Roger Scholl Randy Gardner Walter Hinchman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com
Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

11/7/11
Report Date

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778
(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

ANALYTICAL REPORT

Antea Group
4006 148TH AVE NE
Redmond, WA 98052

Attn: Dawna Leong
Phone: (425) 498-7726
Fax: (425) 869-1892
Date Received : 10/27/11

Job: STKM-W-005/ Kinder Morgan-HI

Volatile Organic Compounds (VOCs) EPA Method SW8260B

		Parameter	Concentration		Reporting Limit	Date Extracted	Date Analyzed
Client ID :	**TMW-E1**						
Lab ID :	ALS11102744-01A	Benzene	ND		0.50 µg/L	10/31/11	10/31/11
Date Sampled	10/25/11 09:20	Toluene	ND		0.50 µg/L	10/31/11	10/31/11
		Ethylbenzene	ND		0.50 µg/L	10/31/11	10/31/11
		Xylenes, Total	ND		0.50 µg/L	10/31/11	10/31/11
Client ID :	**TMW-E2**						
Lab ID :	ALS11102744-02A	Benzene	380		1.5 µg/L	10/31/11	10/31/11
Date Sampled	10/25/11 09:50	Toluene	10		1.5 µg/L	10/31/11	10/31/11
		Ethylbenzene	5.1		1.5 µg/L	10/31/11	10/31/11
		Xylenes, Total	14		1.5 µg/L	10/31/11	10/31/11
Client ID :	**TMW-E3**						
Lab ID :	ALS11102744-03A	Benzene	87		1.0 µg/L	10/31/11	10/31/11
Date Sampled	10/25/11 10:20	Toluene	ND	O	1.0 µg/L	10/31/11	10/31/11
		Ethylbenzene	14		1.0 µg/L	10/31/11	10/31/11
		Xylenes, Total	ND	O	1.0 µg/L	10/31/11	10/31/11
Client ID :	**TMW-E4**						
Lab ID :	ALS11102744-04A	Benzene	ND		0.50 µg/L	10/31/11	10/31/11
Date Sampled	10/25/11 10:50	Toluene	ND		0.50 µg/L	10/31/11	10/31/11
		Ethylbenzene	ND		0.50 µg/L	10/31/11	10/31/11
		Xylenes, Total	0.62		0.50 µg/L	10/31/11	10/31/11

O = Reporting Limits were increased due to sample foaming.
ND = Not Detected

Roger Scholl Randy Gardner Walter Hinchman

Roger L. Scholl, Ph.D., Laboratory Director • • Randy Gardner, Laboratory Manager • • Walter Hinchman, Quality Assurance Officer
Sacramento, CA • (916) 366-9089 / Las Vegas, NV • (702) 281-4848 / Carson, CA • (714) 386-2901 / info@alpha-analytical.com

Alpha certifies that the test results meet all requirements of NELAC unless footnoted otherwise.

11/7/11
Report Date

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

VOC Sample Preservation Report

Work Order: ALS11102744 **Job:** STKM-W-005/ Kinder Morgan-HI

Alpha's Sample ID	Client's Sample ID	Matrix	pH
11102744-01A	TMW-E1	Aqueous	2
11102744-02A	TMW-E2	Aqueous	2
11102744-03A	TMW-E3	Aqueous	2
11102744-04A	TMW-E4	Aqueous	2

11/7/11

Report Date

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: *07-Nov-11*

QC Summary Report

Work Order: 11102744

Method Blank

Type **MBLK** Test Code: **EPA Method SW8015B / E / SG**

File ID: **2A10281105.D** Batch ID: **27561SG** Analysis Date: **10/28/2011 16:26**

Sample ID: **MBLK-27561** Units : **mg/L** Run ID: **FID_1_111028C** Prep Date: **10/28/2011 10:09**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-E (DRO), Silica Gel	ND	0.25								
TPH-E (ORO), Silica Gel	ND	0.5								
Surr: Nonane, Silica Gel	0.174		0.15		116	49	145			

Laboratory Control Spike

Type **LCS** Test Code: **EPA Method SW8015B / E / SG**

File ID: **2A10281107.D** Batch ID: **27561SG** Analysis Date: **10/28/2011 17:19**

Sample ID: **LCS-27561** Units : **mg/L** Run ID: **FID_1_111028C** Prep Date: **10/28/2011 10:09**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-E (DRO), Silica Gel	2.54	0.05	2.5		101	70	130			
Surr: Nonane, Silica Gel	0.155		0.15		103	49	145			

Sample Matrix Spike

Type **MS** Test Code: **EPA Method SW8015B / E / SG**

File ID: **2A10281109.D** Batch ID: **27561SG** Analysis Date: **10/28/2011 18:10**

Sample ID: **11102528-11AMS** Units : **mg/L** Run ID: **FID_1_111028C** Prep Date: **10/28/2011 10:09**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-E (DRO), Silica Gel	2.49	0.05	2.5	0	99.6	53	150			
Surr: Nonane, Silica Gel	0.183		0.15		122	49	145			

Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8015B / E / SG**

File ID: **2A11011164.D** Batch ID: **27561SG** Analysis Date: **11/02/2011 13:45**

Sample ID: **11102528-11AMSD** Units : **mg/L** Run ID: **FID_1_111028C** Prep Date: **10/28/2011 10:09**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-E (DRO), Silica Gel	2.58	0.05	2.5	0	103	53	150	2.489	3.5(47)	
Surr: Nonane, Silica Gel	0.185		0.15		123	49	145			

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: *07-Nov-11*

QC Summary Report

Work Order: 11102744

Method Blank

Type **MBLK** Test Code: **EPA Method SW8015B/C**

File ID: **11103108.D** Batch ID: **MS12W1031B** Analysis Date: **10/31/2011 12:58**

Sample ID: **MBLK MS12W1031B** Units : **mg/L** Run ID: **MSD_12_111031A** Prep Date: **10/31/2011 12:58**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	ND	0.25								
Surr: 1,2-Dichloroethane-d4	0.00915		0.01		92	70	130			
Surr: Toluene-d8	0.0109		0.01		109	70	130			
Surr: 4-Bromofluorobenzene	0.00838		0.01		84	70	130			

Laboratory Control Spike

Type **LCS** Test Code: **EPA Method SW8015B/C**

File ID: **11103107.D** Batch ID: **MS12W1031B** Analysis Date: **10/31/2011 12:35**

Sample ID: **GLCS MS12W1031B** Units : **mg/L** Run ID: **MSD_12_111031A** Prep Date: **10/31/2011 12:35**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	0.405	0.05	0.4		101	70	130			
Surr: 1,2-Dichloroethane-d4	0.00853		0.01		85	70	130			
Surr: Toluene-d8	0.0104		0.01		104	70	130			
Surr: 4-Bromofluorobenzene	0.00994		0.01		99	70	130			

Sample Matrix Spike

Type **MS** Test Code: **EPA Method SW8015B/C**

File ID: **11103121.D** Batch ID: **MS12W1031B** Analysis Date: **10/31/2011 17:55**

Sample ID: **11102528-01AGS** Units : **mg/L** Run ID: **MSD_12_111031A** Prep Date: **10/31/2011 17:55**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	2.11	0.25	2	0	106	51	144			
Surr: 1,2-Dichloroethane-d4	0.0452		0.05		90	70	130			
Surr: Toluene-d8	0.0516		0.05		103	70	130			
Surr: 4-Bromofluorobenzene	0.0473		0.05		95	70	130			

Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8015B/C**

File ID: **11103122.D** Batch ID: **MS12W1031B** Analysis Date: **10/31/2011 18:18**

Sample ID: **11102528-01AGSD** Units : **mg/L** Run ID: **MSD_12_111031A** Prep Date: **10/31/2011 18:18**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
TPH-P (GRO)	2.26	0.25	2	0	113	51	144	2.115	6.8(29)	
Surr: 1,2-Dichloroethane-d4	0.0429		0.05		86	70	130			
Surr: Toluene-d8	0.0512		0.05		102	70	130			
Surr: 4-Bromofluorobenzene	0.0476		0.05		95	70	130			

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

Alpha Analytical, Inc.

255 Glendale Ave. • Suite 21 • Sparks, Nevada 89431-5778

(775) 355-1044 • (775) 355-0406 FAX • 1-800-283-1183

Date: *07-Nov-11*

QC Summary Report

Work Order: 11102744

Method Blank

Type **MBLK** Test Code: **EPA Method SW8260B**

File ID: **11103108.D** Batch ID: **MS12W1031A** Analysis Date: **10/31/2011 12:58**

Sample ID: **MBLK MS12W1031A** Units : **µg/L** Run ID: **MSD_12_111031A** Prep Date: **10/31/2011 12:58**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Benzene	ND	0.5								
Toluene	ND	0.5								
Ethylbenzene	ND	0.5								
Xylenes, Total	ND	0.5								
Surr: 1,2-Dichloroethane-d4	9.15		10		92	70	130			
Surr: Toluene-d8	10.9		10		109	70	130			
Surr: 4-Bromofluorobenzene	8.38		10		84	70	130			

Laboratory Control Spike

Type **LCS** Test Code: **EPA Method SW8260B**

File ID: **11103103.D** Batch ID: **MS12W1031A** Analysis Date: **10/31/2011 11:03**

Sample ID: **LCS MS12W1031A** Units : **µg/L** Run ID: **MSD_12_111031A** Prep Date: **10/31/2011 11:03**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Benzene	10.5	0.5	10		105	70	130			
Toluene	11.2	0.5	10		112	80	120			
Ethylbenzene	12	0.5	10		120	80	120			
Xylenes, Total	23.3	0.5	20		116	70	130			
Surr: 1,2-Dichloroethane-d4	8.87		10		89	70	130			
Surr: Toluene-d8	11		10		110	70	130			
Surr: 4-Bromofluorobenzene	9.74		10		97	70	130			

Sample Matrix Spike

Type **MS** Test Code: **EPA Method SW8260B**

File ID: **11103119.D** Batch ID: **MS12W1031A** Analysis Date: **10/31/2011 17:09**

Sample ID: **11102528-01AMS** Units : **µg/L** Run ID: **MSD_12_111031A** Prep Date: **10/31/2011 17:09**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Benzene	41.2	1.3	50	0	82	59	138			
Toluene	41.3	1.3	50	0	83	68	130			
Ethylbenzene	45	1.3	50	0	90	68	130			
Xylenes, Total	82.7	1.3	100	0	83	70	130			
Surr: 1,2-Dichloroethane-d4	52.4		50		105	70	130			
Surr: Toluene-d8	52.6		50		105	70	130			
Surr: 4-Bromofluorobenzene	45.7		50		91	70	130			

Sample Matrix Spike Duplicate

Type **MSD** Test Code: **EPA Method SW8260B**

File ID: **11103120.D** Batch ID: **MS12W1031A** Analysis Date: **10/31/2011 17:32**

Sample ID: **11102528-01AMSD** Units : **µg/L** Run ID: **MSD_12_111031A** Prep Date: **10/31/2011 17:32**

Analyte	Result	PQL	SpkVal	SpkRefVal	%REC	LCL(ME)	UCL(ME)	RPDRefVal	%RPD(Limit)	Qual
Benzene	53.4	1.3	50	0	107	59	138	41.24	25.7(21)	R5
Toluene	52.5	1.3	50	0	105	68	130	41.32	23.9(20)	R5
Ethylbenzene	59.7	1.3	50	0	119	68	130	44.96	28.2(20)	R5
Xylenes, Total	112	1.3	100	0	112	70	130	82.68	30.3(20)	R5
Surr: 1,2-Dichloroethane-d4	46.1		50		92	70	130			
Surr: Toluene-d8	52.5		50		105	70	130			
Surr: 4-Bromofluorobenzene	49.1		50		98	70	130			

Comments:

Calculations are based off of raw (non-rounded) data. However, for reporting purposes, all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

R5 = MS/MSD RPD exceeded the laboratory control limit. Recovery met acceptance criteria.

AMENDED

Billing Information :

CHAIN-OF-CUSTODY RECORD

WA

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

WorkOrder : ALS11102744

Report Due By : 5:00 PM On : 07-Nov-11

Client:
Antea Group
4006 148TH AVE NE

Redmond, WA 98052

Report Attention	Phone Number	EMail Address
Dawna Leong	(425) 498-7726 x	dawna.leong@anteagroup.com
Megan MacDonald	(425) 301-2741 x	megan.macdonald@anteagroup.com

EDD Required : **No**

Sampled by : Megan MacDonald

PO :

Client's COC # : 56790 Job : STKM-W-005/ Kinder Morgan-HI

Cooler Temp	Samples Received	Date Printed
5 °C	27-Oct-11	07-Nov-11

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests TPH/E_SG_W	TPH/P_W	VOC_W						Sample Remarks
ALS11102744-01A	TMW-E1	AQ	10/25/11 09:20	6	0	10	NWTPH-Dx Silica Gel	NWTPH-Gx	BTXE_C						
ALS11102744-02A	TMW-E2	AQ	10/25/11 09:50	6	0	10	NWTPH-Dx Silica Gel	NWTPH-Gx	BTXE_C						
ALS11102744-03A	TMW-E3	AQ	10/25/11 10:20	6	0	10	NWTPH-Dx Silica Gel	NWTPH-Gx	BTXE_C						
ALS11102744-04A	TMW-E4	AQ	10/25/11 10:50	6	0	10	NWTPH-Dx Silica Gel	NWTPH-Gx	BTXE_C						

Comments: No security seals. Blue Ice. Client provided temp blank. Total Xylenes. Amended 11/7/11 @ 8:48 to change TAT from standard to 7 day per email from Dawna, :

	Signature	Print Name	Company	Date/Time
Logged in by:	Sara Coffee	Sara Coffee	Alpha Analytical, Inc.	11/7/11 8:50

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Sara Coffee

From: Dawna Leong [Dawna.Leong@anteagroup.com]
Sent: Monday, November 07, 2011 8:17 AM
To: Sara Coffee
Subject: RE: ALS11102744, Sample Receipt

Hi Sara. Would it be possible to also get the results from this sampling event today?

Dawna Leong | Senior Project Manager
Antea™Group
Direct +1 425 498 7726 | Mobile +1 425 466 0726 | USA Toll Free 800 477 7411
4006 148th Avenue NE, Redmond, Washington 98052
dawna.leong@anteagroup.com | www.anteagroup.com

From: Sara Coffee [mailto:scoffee@alpha-analytical.com]
Sent: Thursday, October 27, 2011 4:57 PM
To: Dawna Leong
Cc: Megan MacDonald
Subject: ALS11102744, Sample Receipt

Please see attached file(s)

Sara Coffee

Sample Custodian

Alpha Analytical, Inc.

800-283-1183 Ext. 141

Billing Information :

CHAIN-OF-CUSTODY RECORD

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21 Sparks, Nevada 89431-5778
TEL: (775) 355-1044 FAX: (775) 355-0406

WA

WorkOrder : ALS11102744

Report Due By : 5:00 PM On : 10-Nov-11

Client:
Antea Group
4006 148TH AVE NE

Redmond, WA 98052

Report Attention	Phone Number	EMail Address
Dawna Leong	(425) 498-7726 x	dawna.leong@anteagroup.com
Megan MacDonald	(425) 301-2741 x	megan.macdonald@anteagroup.com

EDD Required : **No**

Sampled by : Megan MacDonald

PO :

Client's COC # : 56790 Job : STKM-W-005/ Kinder Morgan-HI

Cooler Temp	Samples Received	Date Printed
5 °C	27-Oct-11	**27-Oct-11**

QC Level : S3 = Final Rpt, MBLK, LCS, MS/MSD With Surrogates

Alpha Sample ID	Client Sample ID	Matrix	Collection Date	No. of Bottles Alpha	Sub	TAT	Requested Tests TPH/E_SG_W	TPH/P_W	VOC_W	Sample Remarks
ALS11102744-01A	TMW-E1	AQ	10/25/11 09:20	6	0	10	NWTPH-Dx Silica Gel	NWTPH-Gx	BTXE_C	
ALS11102744-02A	TMW-E2	AQ	10/25/11 09:50	6	0	10	NWTPH-Dx Silica Gel	NWTPH-Gx	BTXE_C	
ALS11102744-03A	TMW-E3	AQ	10/25/11 10:20	6	0	10	NWTPH-Dx Silica Gel	NWTPH-Gx	BTXE_C	
ALS11102744-04A	TMW-E4	AQ	10/25/11 10:50	6	0	10	NWTPH-Dx Silica Gel	NWTPH-Gx	BTXE_C	

Comments: No security seals. Blue Ice. Client provided temp blank. Total Xylenes. :

	Signature	Print Name	Company	Date/Time
Logged in by:	Sara Loffee	Sara Loffee	Alpha Analytical, Inc.	10/27/11 13:17

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for the report.

Matrix Type : AQ(Aqueous) AR(Air) SO(Soil) WS(Waste) DW(Drinking Water) OT(Other) Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

56790

Billing Information:
Company Name: Antea Group
Attn: Dawna Leong
Address: 4006 148th Ave NE
City, State, Zip: Redmond, WA 98052
Phone Number: 425-498-7726 Fax: 425-869-1892

Alpha Analytical, Inc.
255 Glendale Avenue, Suite 21
Sparks, Nevada 89431-5778
Phone (775) 355-1044
Fax (775) 355-0406

Samples Collected From Which State?
AZ ___ CA ___ NV ___ WA X DOD Site ___
ID ___ OR ___ OTHER ___ Page # 1 of 1

Consultant / Client Name: Antea Group
Address: 4006 148th Ave NE
City, State, Zip: Redmond WA 98052

Job #: STKM-W-0005
Job Name: Kinder Morgan-HI.

Report Attention / Project Manager
Name: Dawna Leong
Email: dawna.leong@anteagroup.com
Phone: 425-498-7726 Mobile: 425-869-1892

Data Validation Level: III or IV
EDD / EDF? YES ___ NO ___
Global ID # ___

Time Sampled	Date Sampled	Matrix* See Key Below	P.O. # STKM-W-0005 / Lab ID Number (Office Use Only)	Sample Description	TAT	Field Filtered	# Containers**	BTEX-8260	NWTPH-Gx	NWTPH-Dx w/ silica gel					REMARKS
9:20	10-25-11	AQ	ALS 1102744-01A	TMW-E1	Stand.	N	6V	X	X	X					
9:50			-02A	TMW-E2											
10:20			-03A	TMW-E3											
10:50	↓	↓	-04A	TMW-E4	↓	↓	↓	↓	↓	↓					

FOR LAB USE ONLY

ADDITIONAL INSTRUCTIONS:
Please issue 2 separate reports - 1 report per COC.

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled By: Megan MacDonald

Relinquished by: (Signature/Affiliation)	Received by: (Signature/Affiliation)	Date:	Time:
MM - Antea		10-25-11	15:00 To FedEX
	Received by: (Signature/Affiliation)	Date:	Time:
	Renee Lee / alpha	10/27/11	13:15
		Date:	Time:

*Key: AQ - Aqueous SO - Soil WA - Waste OT - Other AR - Air **: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this coc. The liability of the laboratory is limited to the amount paid for the report.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

October 17, 2011

Dawna Leong, Project Manager
Antea Group
4006 148th Ave NE
Redmond, WA 98052

Dear Ms. Leong:

Included are the results from the testing of material submitted on October 4, 2011 from the Kinder Morgan-Harbor Island STKM-W-0005, F&BI 110032 project. The soil sample submitted for forensic evaluation arrived in good condition. Upon arrival, the sample TMW-E2-8 was placed in a refrigerator maintained at 4°C until removed for sample processing.

The sample TMW-E2-8 was extracted and analyzed using a gas chromatograph with a flame ionization detector (GC/FID). The data generated yielded information on the boiling range and general chemical composition of the material present. The GC/FID traces are enclosed. A GC/FID trace of a standard consisting of normal alkanes is also provided for reference purposes.

Please contact us if additional consultation is needed by our firm in the interpretation of the analytical results provided. We appreciate this opportunity to be of service to you and hope you will call if you should have any questions. We will hold your samples for 30 days before disposal unless directed otherwise.

Sincerely,

FRIEDMAN & BRUYA, INC.

Kurt Johnson
Chemist

Enclosures
NAA1017R.DOC

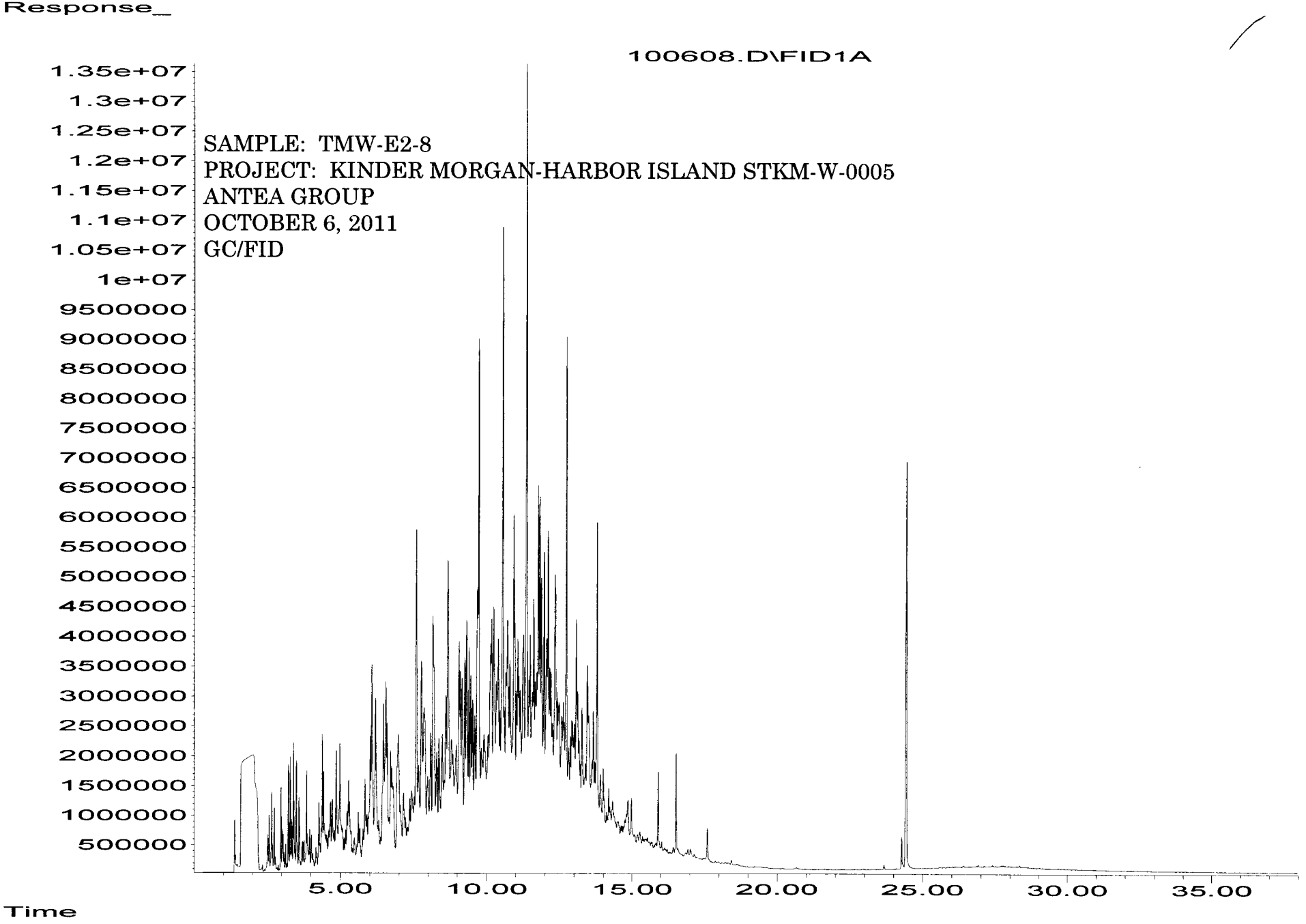
FRIEDMAN & BRUYA, INC.

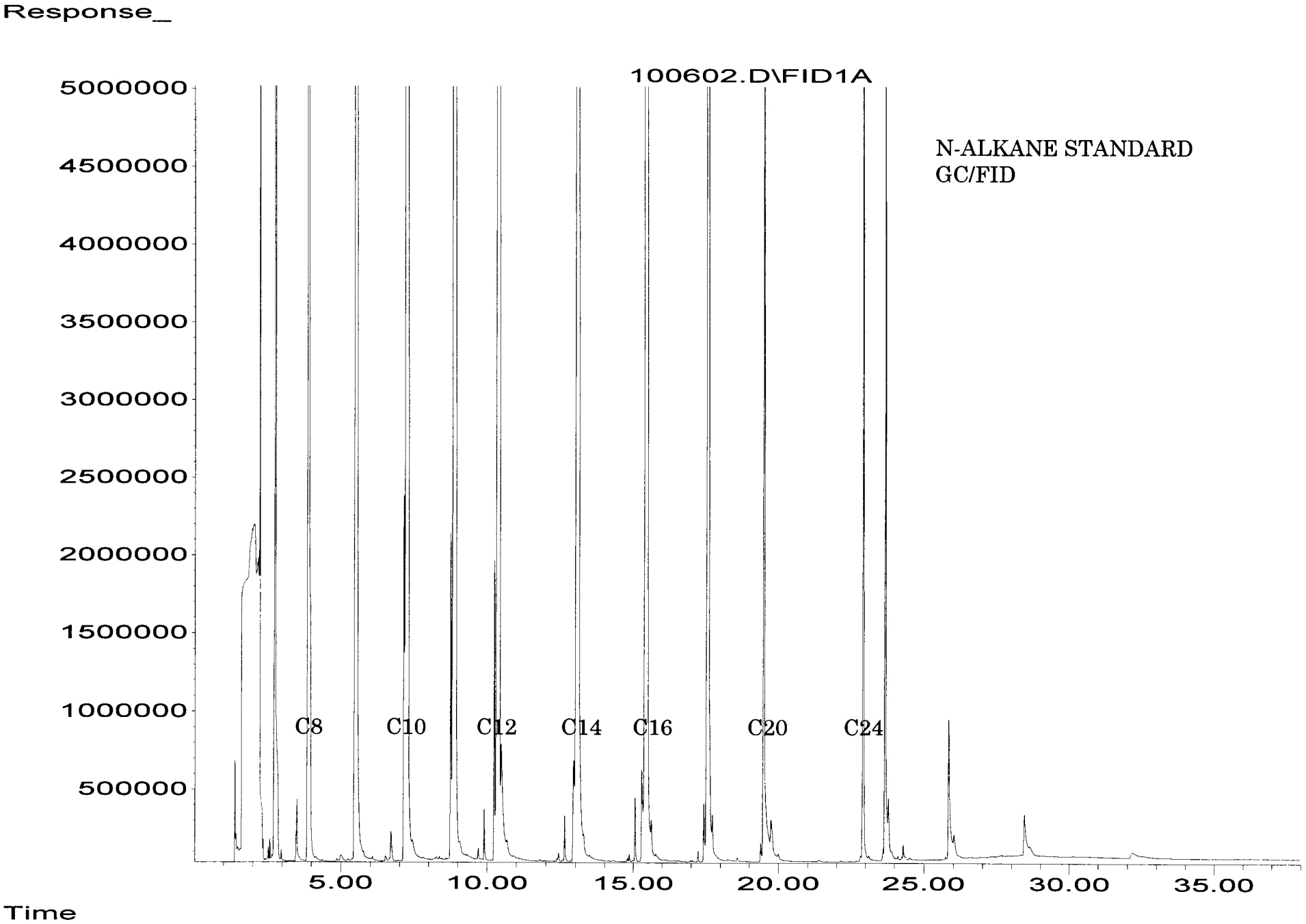
ENVIRONMENTAL CHEMISTS

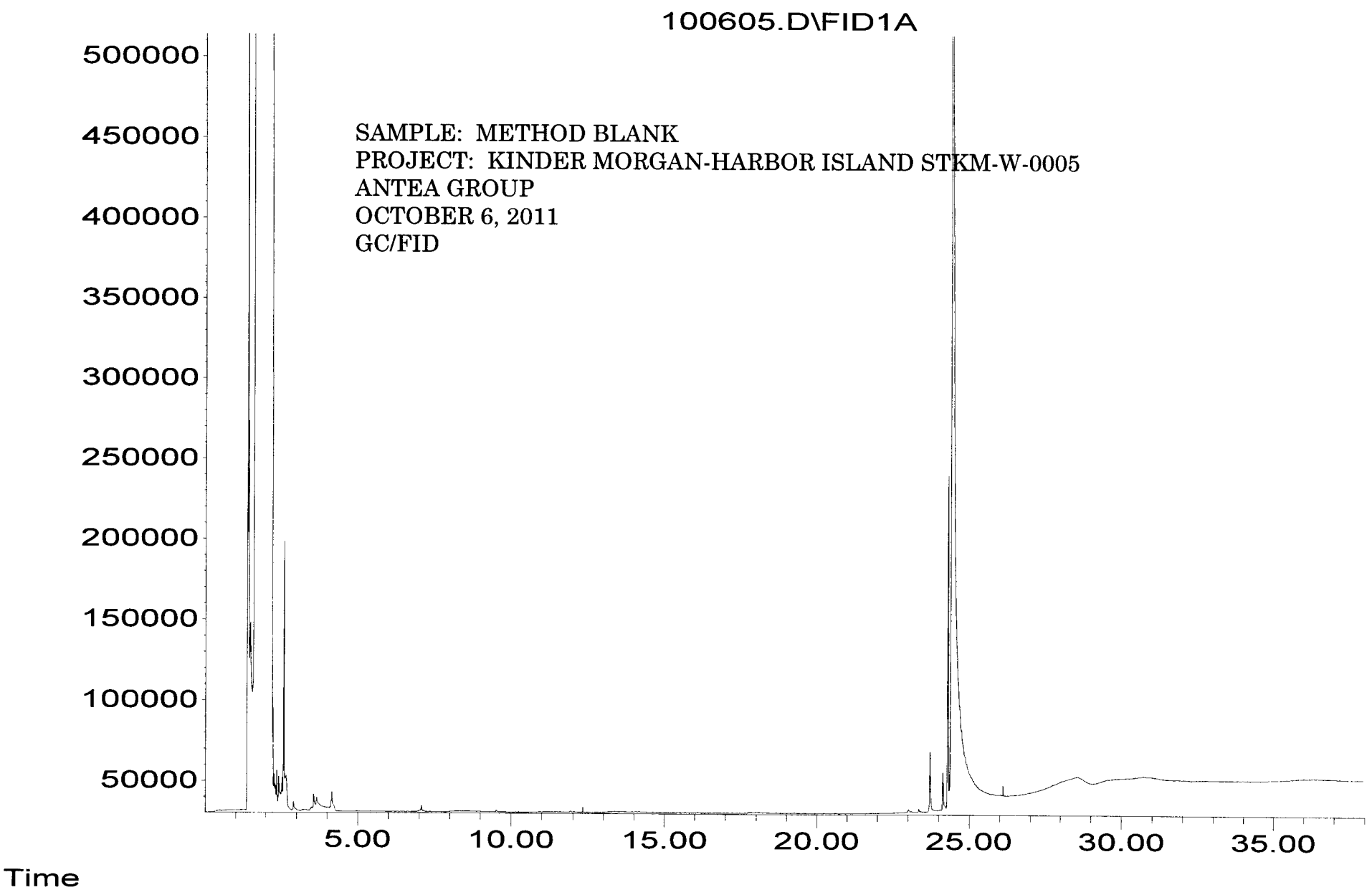
Date of Report: 10/17/11
Date Received: 10/04/11
Project: Kinder Morgan-Harbor Island STKM-W-0005, F&BI 110032
Date Extracted: 10/06/11
Date Analyzed: 10/06/11

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID)

Sample ID	GC Characterization
TMW-E2-8	The GC trace using the flame ionization detector (FID) showed the presence of low and medium boiling compounds. The patterns displayed by these peaks are indicative of a mixture of a low boiling material such as gasoline and a middle distillate such as kerosene or Jet A. The low boiling compounds appear as a ragged pattern of peaks eluting from *n*-C_6 to *n*-C_{10} showing a maximum near *n*-C_8. This correlates with a temperature range of approximately 70°C to 170°C with a maximum near 130°C. The relative abundance of the volatile and semivolatile constituents present indicates that substantial degradation has occurred to the fuel. The medium boiling compounds appear as a regular pattern of peaks on top of a hump or unresolved complex mixture (UCM). This material elutes from *n*-C_{10} to *n*-C_{18} showing a maximum near *n*-C_{13}. This correlates with a temperature range of approximately 170°C to 320°C with a maximum near 240°C. Within this range, the dominant peaks present are indicative of isoprenoids including norpristane, pristane, and phytane. A discernible pattern of peaks characteristic of the normal alkanes was not present. The abundance of isoprenoids in conjunction with the apparent absence of normal alkanes indicates that the fuel present has undergone substantial biological degradation. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis.


Response_
100608.D\FID1A
1.35e+07
1.3e+07
1.25e+07
1.2e+07
1.15e+07
1.1e+07
1.05e+07
1e+07
9500000
9000000
8500000
8000000
7500000
7000000
6500000
6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
SAMPLE: TMW-E2-8
PROJECT: KINDER MORGAN-HARBOR ISLAND STKM-W-0005
ANTEA GROUP
OCTOBER 6, 2011
GC/FID
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Time


Response_
100602.D\FID1A
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
N-ALKANE STANDARD
GC/FID
C8
C10
C12
C14
C16
C20
C24
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Time


Response_
100605.D\FID1A
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
SAMPLE: METHOD BLANK
PROJECT: KINDER MORGAN-HARBOR ISLAND STKM-W-0005
ANTEA GROUP
OCTOBER 6, 2011
GC/FID
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Time

110032

SAMPLE CHAIN OF CUSTODY MP 10/4/11

1 COC 1

Send Report To Dawna Leong
Company Antea Group
Address 4006 148th Ave NE
City, State, ZIP Redmond, WA 98052
Phone # 425-498-7726 Fax # 425-869-1892

SAMPLERS (signature) MM
PROJECT NAME/NO. Kinder Morgan-Harbor Island STKM-W-0005
PO #
REMARKS please call Dawna Leong to discuss results and further analysis.

Page # ____ of ____
TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☒ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	GC Fingerprint					Notes
TMW-E2-8	01	10-4-11	10:50	Soil	1 Jar							X					

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: MM	Megan MacDonald-Antea	Antea	10-4-11	15:15
Received by: [signature]	HONG NGUYEN	FEDEX	"	"
Relinquished by:				
Received by:				

Samples received at 19 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044
FORMS\COC\COC.DOC