Case Narrative

Preliminary Results of GC/MS Analysis of Water Samples for PAH's, TPH and Oil Fingerprint Assessment.

Date: **January 06, 2011**
To: **P. Campagna, Work Assignment Manager; EPA/ERTC**
From: **V. Kansal, Analytical Section Leader; SERAS** Vinod Kansal
Project: **Hovensa Flare release: WA# 0-116**
Chain of Custody: **No: 2-122010-123266-0002 ; 3 pages.**
Samples/matrix: **Twenty six water samples.**

This report contains the preliminary analytical results of 26 samples listed on three chain of custody sheets; each sheet is numbered No: 2-122010-123266-0002. The water samples were received by the SERAS lab on 12/22/10, extraction completed on 12/23/10, and all the extracts analyzed before 01/05/11. There were two samples that were extracted as "duplicates" (P007 and P022) since extra sample was provided. The samples were analyzed by GC/MS for PAH's, TPH and Oil Fingerprint Assessment using SERAS GC/MS-SIM Method#1803. Supplemental analysis was performed on the extracts using GC/MS using method 8270D linear scan analysis to provide qualitative identification of observed peaks/compounds that would not be identified as PAH's or classified as TPH.

RESULTS:

The results of the GC/MS-SIM analysis of **ALL** the samples/extracts indicate that there was **NO** PAH compounds or TPH patterns detected in any of the samples. The detection limit for individual PAH compounds is 1.00 µg/L each, and 50.0 µg/L for TPH. The GC/MS system was calibrated for individual PAH compounds and TPH as #2 diesel fuel. Two samples (P022 and P005) showed a few low level non-PAH/TPH peaks, and re-analysis of those extracts using linear scan identified the peaks as organic acids: n-hexadecanoic acid and n-octadecanoic acid. It is estimated that the concentration is less than 10µg/L for each compound. All the remaining extracts are currently being re-analyzed using GC/MS linear scan to confirm/investigate any non-PAH or TPH compounds that may not have been detected by the GC/MS-SIM analysis.

Since TPH was not detected, there are no fingerprints, or fingerprint assessment to report.

All QC criteria such as surrogate recoveries, LCS, MS/MSD analysis and other and compliance indicators were within acceptable limits. The extraction blanks and solvent/method blanks were free of target compounds and TPH.

Attached are six results tables where the PAH compounds and TPH eluting between n-C8 to n-C40 (GRO, DRO and ORO) with corresponding detection limits are reported. The tables contain all "U", or not detected as the results. The original chain of custody documentation is also attached.

J. Syslo 01/06/2011

Table 1.0 Results of the Analysis for PAH's and Total Petroleum Hydrocarbons (TPH) in Water
Hovensa Flare Release: WA# 0-116

SERAS/REAC GC/MS Method #1803

Sample Number	Water Blank	P001-CW-121510-001	P002-CW-121510-001	P003-CW-121510-001	P004-CW-121510-001
Sample Location	SERAS # 1000104-BLK1	P001	P002	P003	P004
GC/MS File Name	SL01786	SL01786	SL01791	SL01796	SL01797
Matrix	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1

Compound Name	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L
Naphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylnaphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluorene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzothiophene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Phenanthrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylanthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Chrysene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(b)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(k)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(e)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Indeno(1,2,3-cd)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzo(a,h)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(g,h,i)perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Total TPH (GRO, DRO & ORO	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0

Sample Number and Location as listed on the Chain of Custody

Table 1.1 Results of the Analysis for PAH's and Total Petroleum Hydrocarbons (TPH) in Water
Hovensa Flare Release: WA# 0-116

SERAS/REAC GC/MS Method #1803

Sample Number	P005-CW-121510-001	P006-CW-121510-001	P007-CW-121610-001	P007-CW-121610-001 Dup.	P008-CW-121610-001
Sample Location	P005	P006	P007	P007 Duplicate	P008
GC/MS File Name	SL01798	SL01799	SL01787	SL01790	SL01800
Matrix	Water	Water	Water	Water	Water
Dilution Factor	1	1	1	1	1

Compound Name	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L
Naphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylnaphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluorene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzothiophene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Phenanthrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylanthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Chrysene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(b)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(k)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(e)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Indeno(1,2,3-cd)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzo(a,h)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(g,h,i)perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Total TPH (GRO, DRO & ORO	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0

Sample Number and Location as listed on the Chain of Custody

Table 1.2 Results of the Analysis for PAH's and Total Petroleum Hydrocarbons (TPH) in Water
Hovensa Flare Release: WA# 0-116

SERAS/REAC GC/MS Method #1803

Sample Number	P009-CW-121610-001	P009-CW-121610-002	P010-CW-121610-001	P011-CW-121610-001	P012-CW-121610-001
Sample Location	P009	P009	P010	P011	P012
GC/MS File Name	SL01801	SL01802	SL01803	SL01804	SL01811
Matrix	Water	Water	Water	Water	Water

Compound Name	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L
Naphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylnaphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluorene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzothiophene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Phenanthrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylanthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Chrysene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(b)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(k)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(e)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Indeno(1,2,3-cd)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzo(a,h)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(g,h,i)perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Total TPH (GRO, DRO & ORO	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0

Sample Number and Location as listed on the Chain of Custody

Table 1.3 Results of the Analysis for PAH's and Total Petroleum Hydrocarbons (TPH) in Water
Hovensa Flare Release: WA# 0-116

SERAS/REAC GC/MS Method #1803

Sample Number	P013-CW-121610-001	P014-CW-121710-001	Water Blank	P015-CW-121710-001	P016-CW-121710-001
Sample Location	P013	P014	SERAS # 1000105-BLK1	P015	P016
GC/MS File Name	SL01812	SL01813	SL01814	SL01824	SL01825
Matrix	Water	Water	Water	Water	Water

Compound Name	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L
Naphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylnaphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluorene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzothiophene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Phenanthrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylanthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Chrysene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(b)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(k)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(e)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Indeno(1,2,3-cd)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzo(a,h)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(g,h,i)perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Total TPH (GRO, DRO & ORO	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0

Sample Number and Location as listed on the Chain of Custody

Table 1.4 Results of the Analysis for PAH's and Total Petroleum Hydrocarbons (TPH) in Water
Hovensa Flare Release: WA# 0-116

SERAS/REAC GC/MS Method #1803

Sample Number	P017-CW-121710-001	P018-CW-121710-001	P019-CW-121710-001	P020-CW-121710-001	P021-CW-121710-001
Sample Location	P017	P018	P019	P020	P021
GC/MS File Name	SL01826	SL01827	SL01828	SL01829	SL01836
Matrix	Water	Water	Water	Water	Water

Compound Name	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L
Naphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylnaphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluorene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzothiophene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Phenanthrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylanthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Chrysene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(b)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(k)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(e)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Indeno(1,2,3-cd)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzo(a,h)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(g,h,i)perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Total TPH (GRO, DRO & ORO	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0

Sample Number and Location as listed on the Chain of Custody

Table 1.5 Results of the Analysis for PAH's and Total Petroleum Hydrocarbons (TPH) in Water
Hovensa Flare Release: WA# 0-116

SERAS/REAC GC/MS Method #1803

Sample Number	P022-CW-121710-001	P022-CW-121710-001 Dup.	P023-CW-121710-001	P023-CW-121710-002	P024-CW-121610-001
Sample Location	P022	P022 Duplicate	P023	P023	P024
GC/MS File Name	SL01815	SL01818	SL01837	SL01838	SL01839
Matrix	Water	Water	Water	Water	Water

Compound Name	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L	Conc. µg/L	RL µg/L
Naphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylnaphthalene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Acenaphthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluorene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzothiophene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Phenanthrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
2-Methylanthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Chrysene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(b)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(k)fluoranthene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(e)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(a)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Indeno(1,2,3-cd)pyrene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Dibenzo(a,h)anthracene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Benzo(g,h,i)perylene	U	1.00	U	1.00	U	1.00	U	1.00	U	1.00
Total TPH (GRO, DRO & ORO	U	50.0	U	50.0	U	50.0	U	50.0	U	50.0

Sample Number and Location as listed on the Chain of Custody

USEPA

DateShipped: 12/20/2010
CarrierName: FedEx
AirbillNo: 8658 6963 4855
WO# R012004

CHAIN OF CUSTODY RECORD

Site #: 4139
Contact Name: Ed Knyfd
Contact Phone: (732) 585-4441

No: 2-122010-123226-0002

Lab: Lockheed Martin/SERAS
Lab Contact: Vinol Kansal
Lab Phone: (732) 321-4252

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
01	P001-CW-121510-001	P001	TPH/PAH with GC/MS - SIM	Water	12/15/2010	10:26	2	1 liter amber	H2SO4 pH<2	N
02	P002-CW-121510-001	P002	TPH/PAH with GC/MS - SIM	Water	12/15/2010	13:47	2	1 liter amber	H2SO4 pH<2	N
03	P003-CW-121510-001	P003	TPH/PAH with GC/MS - SIM	Water	12/15/2010	14:00	2	1 liter amber	H2SO4 pH<2	N
04	P004-CW-121510-001	P004	TPH/PAH with GC/MS - SIM	Water	12/15/2010	10:40	2	1 liter amber	H2SO4 pH<2	N
05	P005-CW-121510-001	P005	TPH/PAH with GC/MS - SIM	Water	12/15/2010	13:50	2	1 liter amber	H2SO4 pH<2	N
06	P006-CW-121510-001	P006	TPH/PAH with GC/MS - SIM	Water	12/15/2010	14:10	2	1 liter amber	H2SO4 pH<2	N
07	P007-CW-121610-001	P007	TPH/PAH with GC/MS - SIM	Water	12/16/2010	09:45	6	1 liter amber	H2SO4 pH<2	Y
08	P008-CW-121610-001	P008	TPH/PAH with GC/MS - SIM	Water	12/16/2010	11:05	2	1 liter amber	H2SO4 pH<2	N
09	P009-CW-121610-001	P009	TPH/PAH with GC/MS - SIM	Water	12/16/2010	09:30	2	1 liter amber	H2SO4 pH<2	N
10	P009-CW-121610-002	P009	TPH/PAH with GC/MS - SIM	Water	12/16/2010	09:35	2	1 liter amber	H2SO4 pH<2	N
11	P010-CW-121610-001	P010	TPH/PAH with GC/MS - SIM	Water	12/16/2010	09:55	2	1 liter amber	H2SO4 pH<2	N

Special Instructions: 24 to 48 hour turnaround time per discussion between OSC and Lab.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
all samples all analyses	Jack Petty	12/20/10	Fed Ex	12/20/10	15:30				[illegible]	12/22/10	16:00
All /Analysis	[illegible]	12/22/10	[illegible]	12/22/10	9:35						

USEPA

DateShipped: 12/20/2010
CarrierName: FedEx
AirbillNo: 8658 6963 4855
WO# R012004

CHAIN OF CUSTODY RECORD

Site #: 4139
Contact Name: Ed Knyfd
Contact Phone: (732) 585-4441

No: 2-122010-123226-0002

Lab: Lockheed Martin/SERAS
Lab Contact: Vinol Kansal
Lab Phone: (732) 321-4252

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
12	P011-CW-121610-001	P011	TPH/PAH with GC/MS - SIM	Water	12/16/2010	10:45	2	1 liter amber	H2SO4 pH<2	N
13	P012-CW-121610-001	P012	TPH/PAH with GC/MS - SIM	Water	12/16/2010	11:17	2	1 liter amber	H2SO4 pH<2	N
14	P013-CW-121610-001	P013	TPH/PAH with GC/MS - SIM	Water	12/16/2010	11:30	2	1 liter amber	H2SO4 pH<2	N
15	P014-CW-121710-001	P014	TPH/PAH with GC/MS - SIM	Water	12/17/2010	09:25	2	1 liter amber	H2SO4 pH<2	N
16	P015-CW-121710-001	P015	TPH/PAH with GC/MS - SIM	Water	12/17/2010	11:00	2	1 liter amber	H2SO4 pH<2	N
17	P016-CW-121710-001	P016	TPH/PAH with GC/MS - SIM	Water	12/17/2010	12:03	2	1 liter amber	H2SO4 pH<2	N
18	P017-CW-121710-001	P017	TPH/PAH with GC/MS - SIM	Water	12/17/2010	12:18	2	1 liter amber	H2SO4 pH<2	N
19	P018-CW-121710-001	P018	TPH/PAH with GC/MS - SIM	Water	12/17/2010	09:30	2	1 liter amber	H2SO4 pH<2	N
20	P019-CW-121710-001	P019	TPH/PAH with GC/MS - SIM	Water	12/17/2010	10:00	2	1 liter amber	H2SO4 pH<2	N
21	P020-CW-121710-001	P020	TPH/PAH with GC/MS - SIM	Water	12/17/2010	11:05	2	1 liter amber	H2SO4 pH<2	N
22	P021-CW-121710-001	P021	TPH/PAH with GC/MS - SIM	Water	12/17/2010	11:50	2	1 liter amber	H2SO4 pH<2	N

Special Instructions: 24 to 48 hour turnaround time per discussion between OSC and Lab.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
all samples all analyses	Joel Petty	12/20/10	Fed Ex	12/20/10	15:30				[illegible]	12/22/10	16:00
All Analysis	[illegible]	12/22/10	[illegible]	12/22/10	9:35						

USEPA
DateShipped: 12/20/2010
CarrierName: FedEx
AirbillNo: 8658 6963 4855
WO# R012004

CHAIN OF CUSTODY RECORD
Site #: 4139
Contact Name: Ed Knyfd
Contact Phone: (732) 585-4441

No: 2-122010-123226-0002
Lab: Lockheed Martin/SERAS
Lab Contact: Vinol Kansai
Lab Phone: (732) 321-4252

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
23	P022-CW-121710-001	P022	TPH/PAH with GC/MS - SIM	Water	12/17/2010	15:21	6	1 liter amber	H2SO4 pH<2	Y
24	P023-CW-121710-001	P023	TPH/PAH with GC/MS - SIM	Water	12/17/2010	17:30	2	1 liter amber	H2SO4 pH<2	N
25	P023-CW-121710-002	P023	TPH/PAH with GC/MS - SIM	Water	12/17/2010	17:35	2	1 liter amber	H2SO4 pH<2	N
26	P024-CW-121610-001	P024	TPH/PAH with GC/MS - SIM	Water	12/16/2010	14:40	2	1 liter amber	H2SO4 pH<2	N

Joel Petty

Special Instructions: 24 to 48 hour turnaround time per discussion between OSC and Lab.

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
all samples all analyses	Joel Petty	12/20/10	Fed Ex	12/20/10	15:30				Tommy Morris	12/21/10	16:00
All/Analysis	Tommy Morris	12/22/10	[illegible]	12/22/10	9:35						