

10626 East 14th Street, Oakland, California

94603 (510) 577-8804 FAX (510) 577-8859

August 24, 2000

Mr. Barney Chan Alameda County Health Division Division of Environmental Protection Department of Environmental Health 1131 Harbor Bay Parkway, Second Floor Alameda, CA 94502

Dear Mr. Chan:

Subject: Quarterly Groundwater Monitoring Report

AC Transit. 1100 Seminary Avenue, Oakland, CA

AC Transit hereby submits the enclosed quarterly groundwater monitoring report for the second quarter of 2000 for the AC Transit facility located at 1100 Seminary Avenue in Oakland. The report was prepared by our consultant, Safety-Kleen Consulting.

Groundwater samples were collected from the six on-site monitoring wells on May 25, 2000. Samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline and diesel using EPA Method 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl-tert butyl ether (MTBE) using EPA Method 8260B, iron using EPA Method 6010B and nitrate and sulfate using Standard Methods 300.0A.

Analytical results of grab water samples showed benzene concentrations above the California maximum contaminant level of 1 ppb in wells MW-1, MW-2 and MW-3 and nondetectable concentrations in wells MW-9, MW-10 and MW11. Chemical concentrations above laboratory reporting limits in the three newly installed wells MW-9, MW-10, and MW-11, were limited to unspecified hydrocarbons, except for 16 ppb MTBE detected in MW-11. Results of geochemical analyses (dissolved oxygen, oxidation reduction potential, iron, sulfate and nitrate) of samples taken from all six wells suggest that biodegradation of TPH and related compounds may be occurring.

If you have any questions regarding this report or other matters pertaining to this site, please call me at (510) 577-8869.

Sincerely,

Suzanne Patton, P.E.

Environmental Manager

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GROUNDWATER MONITORING REPORT FOR THE AC TRANSIT FACILITY LOCATED AT 1100 SEMINARY AVENUE, OAKLAND, CALIFORNIA

August 17, 2000

Prepared For:

Ms. Suzanne Patton AC Transit 10626 E. 14th Street Oakland, California 94603

Prepared By:

Safety-Kleen Consulting 2233 Santa Clara Avenue Alameda, California 94501

Project No: 792588



GROUNDWATER MONITORING REPORT FOR THE AC TRANSIT FACILITY LOCATED AT 1100 SEMINARY AVENUE, OAKLAND, CALIFORNIA

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Project No: 792588

Written by Greg Pedersen Geologist I

Reviewed By Brad Wright, RG

Senior Geologist

Table of Contents

INTRODU	JCTION1
Gro Gro	VES AND SCOPE OF WORK
SUMMAR	Y OF RESULTS4
PROJECT	ED WORK AND RECOMMENDATIONS5
APPENDI APPENDI	IX ACertified Analytical Reports and Chain-of-Custody Documentation IX BSampling Event Data Sheets
	List of Figures
Figure 1 Figure 2	Site Location Map Potentiometric Surface Map
	List of Tables
Table 1 Table 2	Groundwater Level Measurements Analytical Results of Groundwater Samples

INTRODUCTION

This report presents the results from the May 2000 sampling event for the AC Transit Facility located at 1100 Seminary Avenue, Oakland, California (Site) (Figure 1). Groundwater sampling of monitor wells MW-1 through MW-3 and MW-9 through MW-11 was performed by Safety-Kleen Consulting, in accordance with directives by Alameda County Water District and the California Regional Water Quality Board, San Francisco Bay Region.

OBJECTIVES AND SCOPE OF WORK

Work performed during quarterly sampling included measuring depth to water and presence of free phase hydrocarbons in the monitor wells and sample collection. Field parameters collected during sampling included pH, temperature, electric conductivity, dissolved oxygen (DO) and oxygen reduction potential (ORP). Groundwater samples were collected for laboratory analysis using United States Environmental Protection Agency (USEPA) Method 8015 for total petroleum hydrocarbons (TPH) gasoline/diesel, USEPA Method 8260B for benzene, toluene, ethylbenzene, and xylene (BTEX) and methyl-tert, butyl ether (MTBE), USEPA Method 6010B for iron, and methods of chemical analysis for water and waste (MCAWW) 300.0A for nitrate and sulfate.

Chain-of-custody documents and certified analytical reports are presented in Appendix A. Field data sheets are included in Appendix B.

Groundwater Elevations and Flow Direction

Prior to purging and sample collection, all site monitor wells were inspected and measured for presence of free phase hydrocarbons and depth to groundwater. Measurements of depths to groundwater are presented on Table 1 and were used to construct the groundwater elevation contours shown in Figure 2. A free phase hydrocarbon layer was detected in MW-2 at a measured thickness of 0.12 feet. As shown on Figure 2, groundwater flow is to the west at a gradient of 0.02 feet/foot.

Groundwater Sampling Activities

The monitor wells were purged a minimum of three casing volumes, using a centrifugal pump and samples were collected using disposable polyethylene bailers. During well purging, field parameters for pH, electrical conductivity, DO, ORP and temperature were monitored using calibrated field meters. Due to the very low yield encountered while purging monitoring well MW-11, only one casing volume was evacuated before it became dry. Purge water was transferred to 55-gallon drums and placed in the Site's drum waste storage area.

Groundwater samples were transferred to appropriate laboratory supplied and preserved containers and placed in an ice-filled cooler for shipment under chain-of-custody to a State of California certified laboratory. A trip blank was submitted for analysis by USEPA Method 8260B.

Groundwater Analytical Results

Table 2 presents groundwater historic and second quarter 2000 analytical results. Concentrations of benzene above the State of California maximum contaminant level (MCL) of 1.0 part per billion (ppb) were detected in monitor wells MW-1 through MW-3. Chemical concentrations above laboratory reporting limits detected in newly installed wells MW-9 through MW-11 were limited to unspecified hydrocarbons, with the exception of 16 ppb MTBE detected in MW-11. The carbon chain range of the unspecified hydrocarbon suggest that these concentrations represent degraded diesel. No analytes were detected in the trip blanks or method blanks. A lab control spike and lab control spike duplicate passed the USEPA's criteria for acceptance.

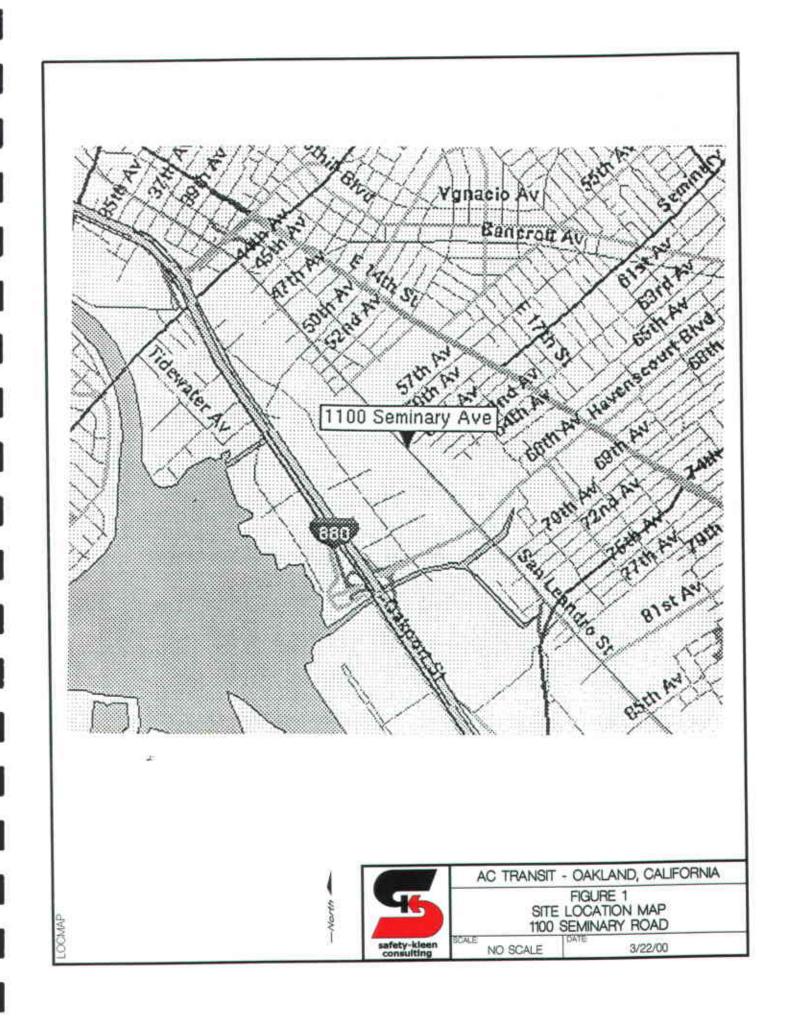
Additional geochemical analysis was performed to monitor natural attenuation and/or degradation of TPH and related compounds in groundwater. These included analysis for DO, ORP, iron, sulfate and nitrate. An evaluation of concentrations of the geochemical parameters for wells MW-1 through MW-3 and MW-9 through MW-11, suggests that biodegradation processes may be occurring. This is supported by higher sulfate and nitrate concentrations observed along the edge of contamination as compared to those detected in the interior of the affected area.

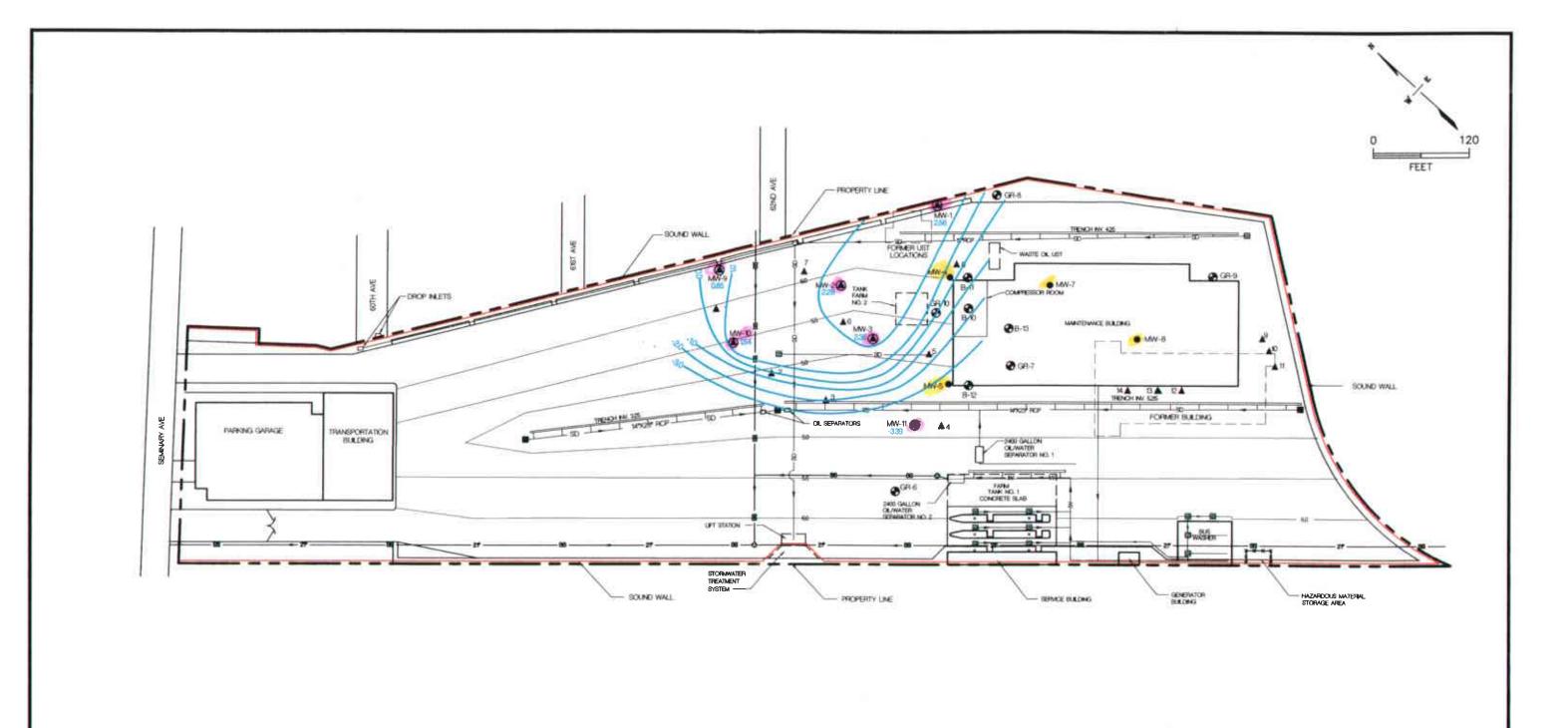
SUMMARY OF RESULTS

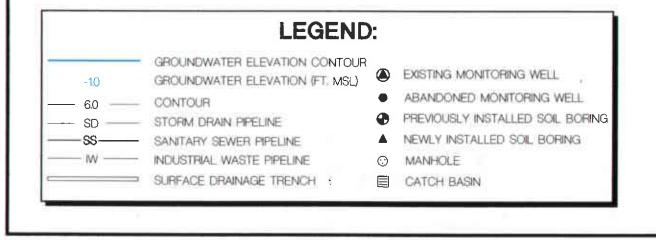
- A 0.12 foot free phase hydrocarbon layer was measured in monitor well MW-2.
- Groundwater flow direction is towards the west at a gradient of 0.02 feet/foot;
- Chemical concentrations of in excess of MCLs were limited to benzene in wells MW-1 through MW-3; and
- Sulfate and nitrate concentrations detected in Site monitor wells suggest that biodegradation of TPH and related compounds may be occurring.

PROJECTED WORK AND RECOMMENDATIONS

Quarterly groundwater monitoring is scheduled for August 2000.







BY	DATE	
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-		safety-kleen consulting

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	F	FIGURE 2	
AC TI	RANSIT -	OAKLAND, CALIFORNIA	
SEMINA		POTENTIOMETRIC SURFAC AY 25, 2000	E MAP
1" =	120'	DWG: NO: 792489-07	Λ

TABLE 1
GROUNDWATER LEVEL MEASUREMENTS
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Well	Date	Top of Casing Elevation (ft-msl)*	Product Thickness (feet)	DTW (feet)	Measured Groundwater Elevation (ft-msl)	Groundwater Elevation Corrected for Product Thickness**
MW-1	7-Jan-99	6,25	None	5,13	1.12	
791 41 - 1	7-Feb-00	0,25	None	3.75	2.5	
	25-May-00		None	3.69	2.56	
MW-2	7-Jan-99	5,53	2.27	6.91	-1.38	0.44
	8-Jun-99		2.23	5,83	-0.3	1.48
	9-Jun-99		0	3.9	1.63	1.63
	10-Jun-99		0	3.9	1.63	1,63
	15 -J un-99		0.42	3.92	1.61	1.95
	8-Jul-99		0.2	4.3	1.23	1.39
	7-Feb-00		Sheen	3,8	1.73	
	25-May-00		0.12	3.35	2.18	2.28
MW-3	7-Jan-99	4.76	None	4.11	0.65	
	7-Feb-00		None	3.1	1,66	
	25-May-00		None	2.41	2.35	
MW-9	7-Feb-00	5.8	None	4.37	1.43	
	25-May-00	5.0	None	4.95	0.85	
MW-10	7-Feb-00	4.65	None	2.10	1.46	
101 00 - 10		4.03		3.19	1.46	
	25-May-00		None	3.11	1.54	
MW-11	7-Feb-00	4.19	None	4.97	-0.78	
	25-May-00		None	7.58	-3.39	

Notes:

* ft-msl: feet-mean sea level

** used 0.8 specific gravity of product

DTW: Depth to Water

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES (ppb)
AC Transit Facility
1100 Seminary Avenue, Oakland, California

Ethyl Well/Boring TPH-G TPH-D TPH Benzene Date Fe Benzene Toluene **Xylenes** MTBE Nitrate Sulfate DO MCL (ppb) 700 150 1,750 MW-1 7-Jan-99 <100 470 17 2 NA 31 18 <50 150 3,400 360 53 7-Feb-00 1,300 13 390 <60 <10 <10 <10 <20 <50 1,200 1,220 11,800 25-May-00 <50 < 50 1,000 12 <1.0 <1.0 <1.0 <2.0 1,950 140 1,500 1,380 MW-2 8-Jun-99 11,000 434,000 117,000 1,000,000 <100,000 260,000 <300,000 <5,000,000 NA NA NA NA (Product) 7-Feb-00 51,000 160,000 < 5000 19,000 < 500 920 <500 <1000 51 <1000 7,300 6,660 25-May-00 <1200 <50000 <500 65,000 11,000 670 530 <1000 330 <1000 5,670 0 MW-3 7-Jan-99 199 2,680 NΑ 450 <10 250 190 <500 170 3,300 880 0 7-Feb-00 2,000 <150 3,100 26 <2 5 2 <4 <50 47,300 6,480 17,800 25-May-00 <50 <50 1,000 35 <1.0 6 4 <2.0 <50 21,700 4,640 600 MW-9 7-Feb-00 < 50 < 50 240 <1 <1 <1 < <2 230 183,000 6,940 9,000 25-May-00 <50 <50 130 <1.0 <1.0 <1.0 <1.0 <2.0 250 172,000 6,020 1,200 MW-10 7-Feb-00 < 50 470 <50 <1 <1 <1 <1 <2 53 114,000 1,200 55,000 25-May-00 <50 <50 220 <1.0 <1.0 <1.0 <1.0<2.0 480 136,000 1,940 0 MW-11 7-Feb-00 < 50 < 50 400 <1 < <1 <1 25 800 167,000 7,300 16,200 25-May-00 <50 <50 200 <1.0 <1.0 <1.0 <1.0 16 480 207,000 6,540 0

Notes:

ppb: parts per billion

TPH-G: total petroleum hydrocarbons as gasoline TPH-D: total petroleum hydrocarbons as diesel

TPH: total petroleum hydrocarbons as motor oil or unknow hydrocarbon

MCL: Maximum Contaminant Level

MTBE: Methyl-tert, butylether

DO: Dissolved Oxygen

Fe: Ferrous Iron

APPENDIX A CERTIFIED ANALYTICAL REPORTS CHAIN-OF-CUSTODY DOCUMENTS



Quanterra 880 Riverside Parkway West Sacramento, California 95605-1500

916 373-5600 Telephone 916 372-1059 Fax www.quanterra.com

June 29, 2000

QUANTERRA INCORPORATED PROJECT NUMBER: G0E260150

Brad Wright Safety Kleen Consulting 2233 Santa Clara Ave Suite 7 Alameda, CA 94501

Dear Mr. Wright,

This report contains the analytical results for the samples received under chain of custody by Quanterra Incorporated on 5/26/00. These samples are associated with your AC Transit Seminary project.

The case narrative is an integral part of this report.

Preliminary results were sent via facsimile on June 29, 2000.

If you have any questions, please feel free to call me at (916)374-4414.

Sincerely,

Bonnie J. McNeill Project Manager

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TABLE OF CONTENTS

QUANTERRA INCORPORATED PROJECT NUMBER G0E260150

Case Narrative

Quanterra's Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

WATER, CA LUFT, TVPH (Gas)
Performed at Quanterra - West Sacramento
Samples: 1, 2, 3, 4, 5, 6
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports

WATER, 8260B, BTEX + MTBE
Performed at Quanterra - West Sacramento
Samples: 1, 2, 3, 4, 5, 6, 7
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports

WATER, 8015 MOD, TEPH
Performed at Quanterra - West Sacramento
Samples: 1, 2, 3, 4, 5, 6
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports

General Chemistry - Various Methods
Samples: 1, 2, 3, 4, 5, 6
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER G0E260150

General Comments

Samples were received at 16 degrees Centigrade.

WATER, 8015 MOD, TEPH

The recoveries for the surrogate in the method and diesel in the LCS/LCSD were below the QC limit. The batch was re-extracted and the LCS/LCSD recoveries for diesel were still below the QC limits. There was no sample left for a second re-extraction. Surrogate recoveries were within limits for all samples in both extractions. This demonstrates acceptable extraction efficiency in the samples.

There were no other anomalies associated with this project.

Quanterra - Western Region Quality Control Definitions

QC Parameter Fill 1877	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Sample Summary G0E260150

<u>WO#</u>	Sample #	Client Sample ID	Sampling Date Received Date
DDRP1	1	MW-1	5/25/00 10:15 AM 5/25/00 06:20 PM
DDRP5	2	MW-3	5/25/00 11:30 AM 5/25/00 06:20 PM
DDRP7	3	MW-10	5/25/00 12:30 AM 5/25/00 06:20 PM
DDRP9	4	MW-11	5/25/00 12:50 AM 5/25/00 06:20 PM
DDRPA	5	MW-9	5/25/00 01:45 PM5/25/00 06:20 PM
DDRPC	6	MW-2	5/25/00 02:50 PM5/25/00 06:20 PM
DDRPH	7	TRIP BLANK	5/25/00 5/25/00 06:20 PM

Notes(s):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must no be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weigh

Chain of Custody Record

DISTRIBUTION: WHITE - Stave with the Sample: CANARY - Returned to Client with Record: PINK Field Conv.



QUA-4124 0797																											
Safety-Eleen		Project Mar	B	<u></u>	7 (لد	ر بار 	h	+								Date 5	 کرد ⁻	<u> </u>			Cha	in of (Custody	Numbe		94
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Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Aquecus	Sec.	jos	Unpres	H2SO4	HNOS	ğ	NaOH	ZnAc/ NaOH		1.4.6	BRLO BTEX IME	ભુન્	070											
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MW-11		12:50	X				П	7					$\overline{\mathbf{Y}}$	メ	Ϋ́	Ý			\top	\top					-/-		
MW-9		13:45	X					T	\neg			╗	7	$\vec{\chi}$	V	Ý	\top		\dashv	╁					$\overline{}$		
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WATER, CA LUFT, TVPH (Gas)

Client Sample ID: MW-1

GC Volatiles

Matrix....: WATER

Lot-Sample #...: G0E260150-001 Work Order #...: DDRP1104
Date Sampled...: 05/25/00 Date Received..: 05/25/00
Prep Date....: 06/07/00 Analysis Date..: 06/08/00
Prep Batch #...: 0166356

Dilution Factor: 1

Method.....: DHS CA LUFT

PARAMETER RESULT LIMIT

 PARAMETER
 RESULT
 LIMIT
 UNITS

 TPH (as Gasoline)
 ND
 50
 ug/L

 Unknown Hydrocarbon
 210
 50
 ug/L

SURROGATEPERCENTRECOVERY4-BromofluorobenzeneRECOVERYLIMITS113(70 - 130)

Client Sample ID: MW-3

GC Volatiles

Lot-Sample #...: G0E260150-002 Work Order #...: DDRP5104

Date Sampled...: 05/25/00 Prep Date....: 06/07/00

Prep Batch #...: 0166356

Dilution Factor: 1

Date Received..: 05/25/00 Analysis Date..: 06/08/00

Method.....: DHS CA LUFT

REPORTING

UNITS

ug/L

ug/L

LIMIT

50

50

Matrix....: WATER

PARAMETER TPH (as Gasoline)

SURROGATE

Unknown Hydrocarbon

4-Bromofluorobenzene

PERCENT

RESULT

ND

1400

RECOVERY 122

RECOVERY

LIMITS

(70 - 130)

Client Sample ID: MW-10

GC Volatiles

Lot-Sample #: G0E260150-003 Date Sampled: 05/25/00 Prep Date: 06/07/00 Prep Batch #: 0166356	Work Order #: Date Received: Analysis Date:	05/25/00	Matrix: WATER
Dilution Factor: 1	Method:	DHS CA LUF	T
P. P. M. P. P. P. M. P. P. P. M. P.		REPORTING	
PARAMETER	RESULT	LIMIT	<u>UNITS</u>
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L
	PERCENT	RECOVERY	

LIMITS

(70 - 130)

RECOVERY

102

SURROGATE

4-Bromofluorobenzene

Client Sample ID: MW-11

GC Volatiles

Lot-Sample #: G0E260150-004 Date Sampled: 05/25/00 Prep Date: 06/07/00 Prep Batch #: 0166356	Work Order #: Date Received: Analysis Date:	05/25/00	Matrix: WATER
Dilution Factor: 1	Method:	DHS CA LUF	r
PARAMETER	RESULT	REPORTING LIMIT	UNITS
TPH (as Gasoline)	ND	50	ug/L
Unknown Hydrocarbon	ND	50	ug/L
	PERCENT	RECOVERY	

<u>LIMITS</u> (70 - 130)

RECOVERY

98

SURROGATE

4-Bromofluorobenzene

Client Sample ID: MW-9

GC Volatiles

Lot-Sample #...: G0E260150-005 Work Order #...: DDRPA104

Date Sampled...: 05/25/00 **Prep Date....:** 06/07/00

Prep Batch #...: 0166356

Dilution Factor: 1

Date Received..: 05/25/00 Analysis Date..: 06/08/00

Method..... DHS CA LUFT

REPORTING

PARAMETER

SURROGATE

TPH (as Gasoline) Unknown Hydrocarbon

4-Bromofluorobenzene

RESULT ND

LIMIT 50 50

<u>UNIT</u>S ug/L ug/L

Matrix....: WATER

PERCENT

RECOVERY

RECOVERY LIMITS

94

ND

(70 - 130)

Client Sample ID: MW-2

GC Volatiles

Lot-Sample #...: G0E260150-006 Work Order #...: DDRPC104

Date Sampled...: 05/25/00 Prep Date....: 06/07/00 Prep Batch #...: 0166356

Dilution Factor: 25

Date Received..: 05/25/00 Analysis Date..: 06/08/00

Method....: DHS CA LUFT

REPORTING

PARAMETER TPH (as Gasoline)

Unknown Hydrocarbon

RESULT ND 34000

<u>LIMI</u>T 1200 1200

UNITS ug/L ug/L

Matrix....: WATER

SURROGATE

4-Bromofluorobenzene

PERCENT RECOVERY

110

RECOVERY LIMITS

(70 - 130)

QC DATA ASSOCIATION SUMMARY

G0B260150

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	DHS CA LUFT		0166356	
002	WATER	DHS CA LUFT		0166356	
003	WATER	DHS CA LUFT		0166356	
004	WATER	DHS CA LUFT		0166356	
005	WATER	DHS CA LUFT		0166356	
006	WATER	DHS CA LUFT		0166356	

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: G0E260150

Work Order #...: DEN2J101

Matrix..... WATER

MB Lot-Sample #: G0F140000-356

Prep Date....: 06/07/00

Analysis Date..: 06/07/00

Dilution Factor: 1

Prep Batch #...: 0166356

REPORTING

PARAMETER RESULT $\underline{\text{LIMI}}$ T TPH (as Gasoline) ND 50 Unknown Hydrocarbon ND 50

ug/L DHS CA LUFT DHS CA LUFT ug/L

METHOD

UNITS

PERCENT SURROGATE RECOVERY 4-Bromofluorobenzene 100

RECOVERY LIMITS (70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: G0E260150 Work Order #...: DEN2J102-LCS Matrix...... WATER

LCS Lot-Sample#: G0F140000-356 DEN2J103-LCSD

Prep Date....: 06/07/00 Analysis Date..: 06/07/00

Prep Batch #...: 0166356

Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURE AMOUNT	D UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Gasoline)	1000	1060	ug/L	106		DHS CA LUFT
	1000	903	ug/L	90	16	DHS CA LUFT
			PERCENT	RECOVERY		
SURROGATE	_		RECOVERY	LIMITS		
4-Bromofluorobenzene	_		119	(70 - 130)	
			121	(70 - 130)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: G0E260150 Work Order #...: DEN2J102-LCS Matrix..... WATER

LCS Lot-Sample#: G0F140000-356 DEN2J103-LCSD

Prep Date....: 06/07/00 **Analysis Date..:** 06/07/00

Prep Batch #...: 0166356

Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Gasoline)	106 90	(70 - 130) (70 - 130)	16	(0-35)	DHS CA LUFT DHS CA LUFT
		PERCENT	RECOV	/ERY	

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
4-Bromofluorobenzene	119	(70 - 130)
	121	(70 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

WATER, 8260B, BTEX + MTBE

Client Sample ID: MW-1

GC/MS Volatiles

Matrix....: WATER

Lot-Sample #:	G0E260150-001	Work Order #:	DDRP1105

 Date Sampled...:
 05/25/00
 Date Received...:
 05/25/00

 Prep Date.....:
 06/05/00
 Analysis Date...:
 06/05/00

Prep Batch #...: 0159321

Dilution Factor: 1 Method.....: SW846 8260B

		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	
Benzene	12	1.0	ug/L	
Toluene	ND	1.0	ug/L	
Ethylbenzene	ND	1.0	ug/L	
Methyl tert-butyl ether	ND	2.0	ug/L	

Methyl tert-butyl ether ND 2.0 ug/L (MTBE)

Kylenes (total) ND 1.0 ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	109	(70 - 130)
1,2-Dichloroethane-d4	111	(70 - 130)
Toluene-d8	110	(70 - 130)

Client Sample ID: MW-3

GC/MS Volatiles

Lot-Sample #: G0E260150-002	Work Order #: DDRP5105	Matrix WATER
Date Sampled: 05/25/00	Date Received: 05/25/00	
Prep Date: 06/05/00	Analysis Date - 06/05/00	

Prep Batch #...: 0159321

Dilution Factor: 1 Method.....: SW846 8260B

		REPORTING	G
PARAMETER	RESULT	LIMIT	UNITS
Benzene	35	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	6.2	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L
Xylenes (total)	3.5	1.0	ug/L
arma oca ma	PERCENT	RECOVERY	
SURROGATE	RECOVERY	<u>LIMITS</u>	
4-Bromofluorobenzene	112	(70 - 130)
1,2-Dichloroethane-d4	106	(70 - 130))
Toluene-d8	112	(70 - 130))

Client Sample ID: MW-10

GC/MS Volatiles

Lot-Sample #: G0E260150-003	Work Order #: DDRP7105	Matrix WATER
Date Sampled: 05/25/00	Date Received: 05/25/00	

Prep Batch #...: 0159321

Date Received.:: 05/25/00

Analysis Date.:: 06/05/00

Dilution Factor: 1 Method....: SW846 8260B

		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
4-Bromofluorobenzene	108	(70 - 130)
1,2-Dichloroethane-d4	115	(70 - 130)
Toluene-d8	106	(70 - 130)

Client Sample ID: MW-11

GC/MS Volatiles

Lot-S	Sample	#:	G0E260150-004
Date	Camela	. F.	0E /2E /0D

 Date Sampled...:
 05/25/00

 Prep Date....:
 06/05/00

 Prep Batch #...:
 0159321

Dilution Factor: 1

1,2-Dichloroethane-d4

Toluene-d8

Work Order #...: DDRP9105

Date Received.:: 05/25/00 Analysis Date.:: 06/05/00

Method.....: SW846 8260B

R	ΕI	20	R	rI.	NG
---	----	----	---	-----	----

(70 - 130)

(70 - 130)

Matrix....: WATER

PARAMETER	RESULT	LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	16	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
4-Bromofluorobenzene	105	(70 - 130)

114

107

Client Sample ID: MW-9

GC/MS Volatiles

Lot-Sample #: Date Sampled: Prep Date: Prep Batch #:	05/25/00 06/05/00	Work Order #: Date Received: Analysis Date:	05/25/00	Matrix: WATER
Dilution Factor:	1	Method:	SW846 8260	В
			REPORTING	
PARAMETER		RESULT	LIMIT	UNITS
Benzene		ND	1.0	ug/L
Toluene		ND	1.0	ug/L
Ethylbenzene		ND	1.0	ug/L
Methyl tert-butyl (MTBE)	. ether	ND	2.0	ug/L
Xylenes (total)		ND	1.0	ug/L

PERCENT	RECOVERY LIMITS	
RECOVERY		
106	(70 - 130)	
113	(70 - 130)	
110	(70 - 130)	
	RECOVERY 106 113	

Client Sample ID: MW-2

GC/MS Volatiles

Lot-Sample #: G0E260150-006 Date Sampled: 05/25/00 Prep Date: 06/08/00 Prep Batch #: 0160468	Work Order #: Date Received: Analysis Date:	05/25/00	Matrix: WATER
Dilution Factor: 500	Method:	SW846 8260	B
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Benzene	11000 Q	500	ug/L
Toluene	ND	500	ug/L
Ethylbenzene	670	500	ug/L
Methyl tert-butyl ether (MTBE)	ND	1000	ug/L
Xylenes (total)	530	500	ug/L
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
4-Bromofluorobenzene	100	(70 - 130)	
1,2-Dichloroethane-d4	95	(70 - 130)	
Toluene-d8	99	(70 - 130)	

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

NOTE(S):

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #: G0E260150-007	Work Order #:	DDRPH101	Matrix WATER
Date Sampled: 05/25/00	Date Received:	05/25/00	
Prep Date: 06/05/00	Analysis Date:	06/05/00	
Prep Batch #: 0159321			
Dilution Factor: 1	Method:	SW846 8260	B
,		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Benzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L
Xylenes (total)	ND	1.0	ug/L
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
4-Bromofluorobenzene	107	(70 - 130)	
1 O Dieblessebess 34		1=0	

(70 - 130)

(70 - 130)

111

104

1,2-Dichloroethane-d4

Toluene-d8

QC DATA ASSOCIATION SUMMARY

G0E260150

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8260B		0159321	
002	WATER	SW846 8260B		0159321	
003	WATER	SW846 8260B		0159321	
004	WATER	SW846 8260B		0159321	
005	WATER	SW846 8260B		0159321	
006	WATER	SW846 8260B		0160468	
007	WATER	SW846 8260B		0159321	

GC/MS Volatiles

Client Lot #...: G0E260150 Work Order #...: DEA18101 Matrix.....: WATER

MB Lot-Sample #: G0F070000-321

Prep Date...: 06/05/00

Analysis Date..: 06/05/00

Prep Batch #...: 0159321

Dilution Factor: 1

REPORTING

		REPORTI.	NG	
PARAMETER	RESULT	LIMIT	<u>UNITS</u>	METHOD
Chloromethane	ND	1.0	ug/L	SW846 8260B
Vinyl chloride	ND	1.0	ug/L	SW846 8260B
Bromomethane	ND	1.0	ug/L	SW846 8260B
Chloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Acetone	ND	2.0	ug/L	SW846 8260B
Carbon disulfide	ND	2.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
trans-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Vinyl acetate	ND	2.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone (MIBK)	ND.	2.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	N D	1.0	ug/L	SW846 8260B
2-Hexanone	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
o-Xylene	ND	1.0	ug/L	SW846 8260B
m-Xylene & p-Xylene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
cis-1,2-Dichloroethene	ND	1.0	ug/L	SW846 8260B
2-Butanone (MEK)	ND	2.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	2.0	ug/L	SW846 8260B
(MTBE)				· · · · · · · · · · · · · · · · · · ·

GC/MS Volatiles

Client Lot #: G0E260150	Work Order	#: DEA18101	Matrix WATER
PARAMETER	RESULT	REPORTING LIMIT UNITS	METHOD
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
4-Bromofluorobenzene	109	(70 - 130)	
1,2-Dichloroethane-d4	111	(70 - 130)	
Toluene-d8	107	(70 - 130)	
MOTER (C).			

Calculations are performed before rounding to avoid round-off errors in calculated results.

GC/MS Volatiles

Client Lot #...: G0E260150

Work Order #...: DEEHE101

Matrix....: WATER

MB Lot-Sample #: G0F080000-468

Prep Date....: 06/08/00

Analysis Date..: 06/08/00

Prep Batch #...: 0160468

Dilution Factor: 1

PERCETTE

		REPORTI	NG	
PARAMETER	RESULT	LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether (MTBE)	ND	2.0	ug/L	SW846 8260B
	PERCENT	RECOVERS	Y	
SURROGATE	RECOVERY	LIMITS		
4-Bromofluorobenzene	97	(70 - 13	30)	
1,2-Dichloroethane-d4	94	(70 - 13	30)	
Toluene-d8	101	(70 - 13	30)	

NOTR(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 Work Order #...: DEA18102-LCS Matrix WATER

LCS Lot-Sample#: G0F070000-321 DEA18103-LCSD

Prep Date....: 06/05/00 **Analysis Date..:** 06/05/00

Prep Batch #...: 0159321

Dilution Factor: 1

	SPIKE	MEASURE	ED C	PERCENT			
PARAMETER	AMOUNT	AMOUNT	UNITS	RECOVERY	RPD	METHO	D
1,1-Dichloroethene	10.0	10.4	ug/L	104		SW846	8260B
	10.0	11.6	ug/L	116	11	SW846	8260B
Benzene	10.0	10.0	ug/L	100		SW846	8260B
	10.0	10.9	ug/L	109	8.2	SW846	8260B
Trichloroethene	10.0	9.82	ug/L	98		SW846	8260B
	10.0	10.8	ug/L	108	9.9	SW846	8260B
Toluene	10.0	10.1	ug/L	101		SW846	8260B
	10.0	11.0	ug/L	110	8.3	SW846	8260B
Chlorobenzene	10.0	10.3	ug/L	103		SW846	8260B
	10.0	11.1	ug/L	111	7.6	SW846	8260B
			PERCENT	RECOVERY			
SURROGATE			RECOVERY	LIMITS	_		
4-Bromofluorobenzene			102	(70 - 130)		
			108	(70 - 130)		
1,2-Dichloroethane-d4			99	(70 - 130)		
			112	(70 - 130)		
Toluene-d8			101	(70 - 130)		
			106	(70 - 130)		

NOTE (S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 Work Order #...: DEA18102-LCS Matrix..... WATER

LCS Lot-Sample#: G0F070000-321 DEA18103-LCSD

Prep Date....: 06/05/00 **Analysis Date..:** 06/05/00

Prep Batch #...: 0159321

Dilution Factor: 1

PARAMETER	PERCENT	RECOVERY		RPD		_
1,1-Dichloroethene	RECOVERY	LIMITS	RPD	LIMITS	METHO	··· · · · · · · · · · · · · · · · · ·
1,1-bicinoroethene	104	(70 - 130)				8260B
	116	(70 - 130)	11	(0-35)	SW846	8260B
Benzene	100	(70 - 130)			SW846	8260B
	109	(70 - 130)	8.2	(0-35)	SW846	8260B
Trichloroethene	98	(70 - 130)			SW846	8260B
	108	(70 - 130)	9.9	(0-35)	SW846	8260B
Toluene	101	(70 - 130)			SW846	8260B
	110	(70 - 130)	8.3	(0-35)	-	8260B
Chlorobenzene	103	(70 - 130)		,,	SW846	
	111	(70 - 130)	7.6	(0-35)	SW846	
		(70 - 150)	7.0	(0-33)	24040	0200B
		PERCENT	RECOV	ERY		
SURROGATE		RECOVERY	LIMIT	S		
4-Bromofluorobenzene		102		130)		
		108	•	130)		
1,2-Dichloroethane-d4		99	(70 -	130)		
		112	(70 -	130)		
Toluene-d8		101		130)		
		106	(70 -	="		
			•	·		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 Work Order #...: DEEHE102-LCS Matrix...... WATER

LCS Lot-Sample#: G0F080000-468 DEEHE103-LCSD

Prep Date....: 06/08/00 Analysis Date..: 06/08/00

Prep Batch #...: 0160468

Dilution Factor: 1

PARAMETER Benzene	SPIKE AMOUNT 10.0 10.0	MEASURE AMOUNT 11.2 10.5	ED UNITS ug/L ug/L	PERCENT RECOVERY 112 105	RPD 6		B260B 8260B
Toluene	10.0	11.1	ug/L	111	6.4		8260B
	10.0	10.7	ug/L	107	3.6	SW846	8260B
Chlorobenzene	10.0	11.5	ug/L	115		SW846	8260B
1,1-Dichloroethene	10.0 10.0 10.0	10.6 11.6 11.1	ug/L ug/L ug/L	106 116 111	8.0		8260B 8260B
Trichloroethene	10.0	11.0	ug/L	110	4.0		8260B
	10.0	10.4	ug/L	104	6.2	SW846	8260B
SURROGATE 4-Bromofluorobenzene			PERCENT RECOVERY 100	RECOVERY LIMITS (70 - 130	-		
1,2-Dichloroethane-d4			101 95 97	(70 - 130 (70 - 130 (70 - 130)		
Toluene-d8			97 98	(70 - 130) (70 - 130))		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: G0E260150 Work Order #...: DEEHE102-LCS Matrix...... WATER

LCS Lot-Sample#: G0F080000-468 DEEHE103-LCSD

Prep Date....: 06/08/00 **Analysis Date..:** 06/08/00

Prep Batch #...: 0160468

Dilution Factor: 1

	PERCENT	RECOVERY		RPD	
PARAMETER	RECOVERY	LIMITS	RPD	LIMITS	METHOD
Benzene	112	(70 - 130)			SW846 8260B
	105	(70 - 130)	6.4	(0-35)	SW846 8260B
Toluene	111	(70 - 130)			SW846 8260B
	107	(70 - 130)	3.6	(0-35)	SW846 8260B
Chlorobenzene	115	(70 - 130)			SW846 8260B
	106	(70 - 130)	8.0	(0-35)	SW846 8260B
1,1-Dichloroethene	116	(70 - 130)			SW846 8260B
	111	(70 - 130)	4.0	(0-35)	SW846 8260B
Trichloroethene	110	(70 - 130)			SW846 8260B
	104	(70 - 130)	6.2	(0-35)	SW846 8260B
		PERCENT	RECOV	ERY	
SURROGATE		RECOVERY	LIMIT		
4-Bromofluorobenzene		100	(70 -		
• • • • • • • • • • • • • • • • • • • •		101	(70 -	· ·	
1.2-Dichloroethane-d4		95	(70 -		
_,		97	(70 -	130)	
Toluene-d8		97	(70 -	130)	
		98	(70 -		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

WATER, 8015 MOD, TEPH

Client Sample ID: MW-1

GC Semivolatiles

Lot-Sample #: G0E260150-001	Work Order #: DDRP1103	Matrix: WATER
Data Compled OF /SE /OS		

Date Sampled...: 05/25/00 Date Received..: 05/25/00 Prep Date....: 05/31/00 Analysis Date..: 06/09/00

Prep Batch #...: 0152442

Dilution Factor: 1 .Method..... SW846 8015 MOD

REPORTING

PARAMETER RESULT LIMIT UNITS TPH (as Diesel) ND 50 ug/L Unknown Hydrocarbon 880 50 ug/L

PERCENT RECOVERY SURROGATE RECOVERY LIMITS

o-Terphenyl 108 (66 - 136)

NOTE(S):

Client Sample ID: MW-1

GC Semivolatiles

Matrix....: WATER

Lot-Sample #...: G0E260150-001 Work Order #...: DDRP1203
Date Sampled...: 05/25/00 Date Received..: 05/25/00
Prep Date....: 06/13/00 Analysis Date..: 06/22/00
Prep Batch #...: 0165436

Dilution Factor: 1 Method....: SW846 8015 MOD

PARAMETER RESULT LIMIT UNITS
TPH (as Diesel) ND 50 ug/L
Unknown Hydrocarbon PERCENT RECOVERY

SURROGATE RECOVERY LIMITS
0-Terphenyl 131 (66 - 136)

NOTE(S):

Client Sample ID: MW-3

GC Semivolatiles

Lot-Sample #:	G0E260150-002	Work Order #: DDRP5103	Matrix WATER
Date Campled .		Barrier B. C. Carrier Co.	

 Date Sampled...:
 05/25/00
 Date Received...
 05/25/00

 Prep Date.....:
 05/31/00
 Analysis Date...
 06/09/00

Prep Date...: 05/31/00 Analysis Date..: 06/09/00 Prep Batch #...: 0152442

Dilution Factor: 1 Method....: SW846 8015 MOD

		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	690	50	ug/L

SURROGATEPERCENT
RECOVERY
RECOVERYRECOVERY
LIMITSo-Terphenyl66(66 - 136)

NOTE(S):

Client Sample ID: MW-3

GC Semivolatiles

Lot-	-Sample #	: G0E260150-002	Work Order #: DDRP5203	Matrix WATER

Date Sampled...: 05/25/00 Date Received..: 05/25/00 Prep Date....: 06/13/00 Analysis Date..: 06/22/00

Prep Batch #...: 0165436

Dilution Factor: 1 Method.....: SW846 8015 MOD

REPORTING

PARAMETER RESULT LIMIT UNITS TPH (as Diesel) ND 50 ug/L Unknown Hydrocarbon 720 50 ug/L

PERCENT RECOVERY SURROGATE **LIMITS** RECOVERY

o-Terphenyl 107 (66 - 136)

NOTE(S):

Client Sample ID: MW-10

GC Semivolatiles

Lot-Sample #:	G0E260150-003	Work Order #: DDRP7103	Matrix WATER
	A - 1 - 1		

Prep Date....: 05/31/00 Analysis Date..: 06/13/00 Prep Batch #...: 0152442

Dilution Factor: 1 Method....: SW846 8015 MOD

 PARAMETER
 RESULT
 LIMIT
 UNITS

 TPH (as Diesel)
 ND
 50
 ug/L

 Unknown Hydrocarbon
 96
 50
 ug/L

PERCENT RECOVERY
SURROGATE RECOVERY LIMITS

o-Terphenyl 69 (66 - 136)

NOTE(S):

Client Sample ID: MW-10

GC Semivolatiles

Lot-Sample #: G0E260150-003	Work Order #:	DDRP7203	Matrix WATER
Date Sampled: 05/25/00	Date Received:		
Prep Date: 06/13/00	Analysis Date:		
Prep Batch #: 0165436	-	,,	
Dilution Factor: 1	Method:	SW846 8015	MOD
PARAMETER	Ductor w	REPORTING	
TPH (as Diesel)	RESULT	LIMIT	UNITS
,	ND	50	ug/L
Unknown Hydrocarbon	220	50	ug/L
SURROGATE o-Terphenyl	PERCENT RECOVERY 71	RECOVERY LIMITS (66 - 136)	
	_	(55 150)	

NOTE(S):

Client Sample ID: MW-11

GC Semivolatiles

Lot-Sample #: G0E260150-004	Work Order #:	DDRP9103	Matrix W	IATER
Date Sampled: 05/25/00	Date Received:			
Prep Date: 05/31/00	Analysis Date:			
Prep Batch #: 0152442	•	,,		
Dilution Factor: 1	Method:	SW846 8015	MOD	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	
TPH (as Diesel)	ND	50	ug/L	
Unknown Hydrocarbon	180	50	ug/L	
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
o-Terphenyl	72	(66 - 136)		

NOTE(S):

Client Sample ID: MW-11

GC Semivolatiles

Lot-Sample #: G0E260150-004	Work Order #:	DDRP9203	Matrix WATER
Date Sampled: 05/25/00	Date Received:	05/25/00	
Prep Date: 06/13/00	Analysis Date:		
Prep Batch #: 0165436	_	,,	
Dilution Factor: 1	Method:	SW846 8015	MOD
		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
TPH (as Diesel)	ND	50	ug/L
Unknown Hydrocarbon	200	50	ug/L
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	
o-Terphenyl	81	(66 - 136)	
		(00 130)	

NOTE(S):

Client Sample ID: MW-9

GC Semivolatiles

Lot-Sample #: G0E260150-005	Work Order #:	DDRPA103	Matrix:	WATER
Date Sampled: 05/25/00	Date Received:			
<pre>Prep Date: 05/31/00</pre>	Analysis Date:			
Prep Batch #: 0152442	_	,,		
Dilution Factor: 1	Method:	SW846 8015	MOD	
		REPORTING		
PARAMETER	RESULT	LIMIT	UNITS	
TPH (as Diesel)	ND .	50	ug/L	
Unknown Hydrocarbon	96	50	ug/L	
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
o-Terphenyl	67	(66 - 136)		

NOTE(S):

The unknown from n-C14 to n-C30 is quantitated based on a diesel reference from n-C10 to n-C24.

Client Sample ID: MW-9

GC Semivolatiles

Lot-Sample #: G0E260150-005 Date Sampled: 05/25/00 Prep Date: 06/13/00 Prep Batch #: 0165436	Work Order #: Date Received: Analysis Date:	05/25/00	Matrix:	WATER
Dilution Factor: 1	Method:	SW846 8015	MOD	
PARAMETER TPH (as Diesel) Unknown Hydrocarbon	RESULT ND 130	REPORTING LIMIT 50 50	UNITS ug/L ug/L	

 SURROGATE
 PERCENT
 RECOVERY

 o-Terphenyl
 90
 LIMITS

 (66 - 136)

NOTE(S):

Client Sample ID: MW-2

GC Semivolatiles

Lot-Sample #: G0E260150-006 Date Sampled: 05/25/00	Work Order #: Date Received:		Matrix: WA	TER
Prep Batch #: 05/31/00 Prep Batch #: 0152442	Analysis Date:			
Dilution Factor: 1000	Method:	SW846 8015	MOD	
PARAMETER TPH (as Diesel) Unknown Hydrocarbon	RESULT ND 65000	REPORTING LIMIT 50000 50000	UNITS ug/L ug/L	
SURROGATE o-Terphenyl	PERCENT RECOVERY 0.0 SRD	RECOVERY LIMITS (66 - 136)		

NOTE(S):

SRD The surrogate recovery was not calculated because the extract was diluted beyond the ability to quantitate a recovery.

Elevated reporting limits. The reporting limits are elevated due to matrix interference.

Client Sample ID: MW-2

GC Semivolatiles

Date Sampled:	05/25/00	Work Order #: Date Received:	05/25/00	Matrix:	WATER
Prep Batch #:	0165436	Analysis Date:	06/22/00		
Dilution Factor:	500	Method:	SW846 8015	MOD	
PARAMETER		RESULT	REPORTING LIMIT	UNITS	
TPH (as Diesel)		ND	25000	ug/L	
Unknown Hydrocark	oon	58000	25000	ug/L	
		PERCENT	RECOVERY		

LIMITS

(66 - 136)

NOTE(S):

SURROGATE

o-Terphenyl

SRD The surrogate recovery was not calculated because the extract was diluted beyond the ability to quantitate a recovery.

RECOVERY

0.0 SRD

Elevated reporting limits. The reporting limits are elevated due to matrix interference.

QC DATA ASSOCIATION SUMMARY

G0R260150

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
002	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
003	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
004	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
005	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	
006	WATER	SW846 8015 MOD		0152442	
	WATER	SW846 8015 MOD		0165436	

GC Semivolatiles

Client Lot #...: G0E260150

MB Lot-Sample #: G0F130000-436

Work Order #...: DELN6101

Matrix....: WATER

Analysis Date..: 06/24/00

Prep Date....: 06/13/00

Prep Batch #...: 0165436

REPORTING

PARAMETER TPH (as Diesel)

Dilution Factor: 1

Unknown Hydrocarbon

RESULT ND ND

LIMIT UNITS 50 ug/L 50 ug/L

SW846 8015 MOD SW846 8015 MOD

METHOD

SURROGATE o-Terphenyl PERCENT RECOVERY RECOVERY LIMITS (66 - 136)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

GC Semivolatiles

Client Lot #...: G0E260150

Work Order #...: DE15T101

Matrix..... WATER

MB Lot-Sample #: G0E310000-442

Prep Date....: 05/31/00

Prep Batch #...: 0152442

Analysis Date..: 06/09/00 Dilution Factor: 1

REPORTING

		KEPOKIING		
PARAMETER	RESULT	LIMIT	UNITS	METHOD
TPH (as Diesel)	ND	50	ug/L	SW846 8015 MOD
Unknown Hydrocarbon	ND	50	ug/L	SW846 8015 MOD

PERCENT RECOVERY RECOVERY LIMITS (66 - 136)

SURROGATE o-Terphenyl

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

^{*} Surrogate recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: G0E260150 Work Order #...: DELN6102-LCS Matrix....: WATER

LCS Lot-Sample#: G0F130000-436 DELN6103-LCSD

Prep Date....: 06/13/00 Analysis Date..: 06/22/00

Prep Batch #...: 0165436

Dilution Factor: 1

PARAMETER TPH (as Diesel)	SPIKE AMOUNT 300	MEASURE AMOUNT 120 a	UNITS UQ/L	PERCENT RECOVERY	RPD	METHOD
,	300	140 a	ug/L	40 47	16	SW846 8015 MOD SW846 8015 MOD
SURROGATE o-Terphenyl			PERCENT RECOVERY 77	RECOVERY LIMITS (66 - 136	.	
			83	(66 - 136)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: G0E260150 Work Order #...: DE15T102-LCS Matrix..... WATER

LCS Lot-Sample#: G0E310000-442 DE15T103-LCSD

Prep Date....: 05/31/00 Analysis Date..: 06/09/00

Prep Batch #...: 0152442

Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURE AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Diesel)	300 300	133 a 138 a	ug/L ug/L	44 46	3.5	SW846 8015 MOD SW846 8015 MOD
SURROGATE o-Terphenyl			PERCENT RECOVERY 75 82	RECOVERY LIMITS (66 - 136 (66 - 136		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: G0E260150 Work Order #...: DELN6102-LCS Matrix..... WATER

LCS Lot-Sample#: G0F130000-436 DELN6103-LCSD

Prep Date....: 06/13/00 Analysis Date..: 06/22/00

Prep Batch #...: 0165436

Dilution Factor: 1

PARAMETER TPH (as Diesel)	RECOVERY 40 a 47 a	RECOVERY LIMITS (50 - 129) (50 - 129)	RPD LIMITS 16 (0-23)	METHOD SW846 8015 MOD SW846 8015 MOD
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS	
o-Terphenyl		77	(66 - 136)	

83

(66 - 136)

(66 - 136)

NOTE (S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: G0E260150 Work Order #...: DE15T102-LCS Matrix..... WATER

LCS Lot-Sample#: G0E310000-442 DE15T103-LCSD

Prep Date....: 05/31/00 Analysis Date..: 06/09/00

Prep Batch #...: 0152442

Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD RPD LIMITS	METHOD	
TPH (as Diesel)	44 a 4 6 a	(50 - 129) (50 - 129)	3.5 (0-23)	SW846 8015 MOD SW846 8015 MOD	
SIMPOGATE		PERCENT	RECOVERY		

 SURROGATE
 RECOVERY
 LIMITS

 o-Terphenyl
 75
 (66 - 136)

 82
 (66 - 136)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

General Chemistry - Various Methods

Client Sample ID: MW-1

General Chemistry

Lot-Sample #...: G0E260150-001

Date Sampled...: 05/25/00

Work Order #...: DDRP1

Date Received..: 05/25/00

Matrix..... WATER

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.14	0.050	mg/L	MCAWW 300.0A	05/26/00	0151362
	Di	ilution Fact	or: 1			
Sulfate	1.5	1.0	mg/L	MCAWW 300.0A	05/26/00	0151365

Dilution Factor: 1

Client Sample ID: MW-3

General Chemistry

Lot-Sample #...: G0E260150-002

Date Sampled...: 05/25/00

Work Order #...: DDRP5

Date Received..: 05/25/00

Matrix..... WATER

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrate as N	ND Dilu	0.050 tion Facto	mg/L r: 1	MCAWW 300.0A	05/26/00	0151362
Sulfate	21.7 Dilu	1.0 tion Facto	mg/L r: 1	MCAWW 300.0A	05/26/00	0151365

Client Sample ID: MW-10

General Chemistry

Lot-Sample #...: G0E260150-003

Date Sampled...: 05/25/00

Work Order #...: DDRP7

Date Received..: 05/25/00

Matrix....: WATER

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION - ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.48	0.050 tion Facto	mg/L r: 1	MCAWW 300.0A	05/26/00	0151362
Sulfate	136 Q Dilu	20.0 tion Facto	mg/L r: 20	MCAWW 300.0A	05/26/00	015136 5

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

Client Sample ID: MW-11

General Chemistry

Lot-Sample #...: G0E260150-004

Date Sampled...: 05/25/00

Work Order #...: DDRP9

Date Received..: 05/25/00

Matrix....: WATER

PARAMETER	RESULT	<u>RL</u>	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.48 Dilu	0.050 tion Facto	mg/L r: 1	MCAWW 300.0A	05/26/00	0151362
Sulfate	207 Q Dilu	20.0 tion Facto		MCAWW 300.0A	05/26/00	0151365

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

Client Sample ID: MW-9

General Chemistry

Lot-Sample #...: G0E260150-005

Work Order #...: DDRPA

Matrix....: WATER

Date Sampled...: 05/25/00

Date Received..: 05/25/00

PARAMETER	RESULT	<u>RL</u>	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.25	0.050 Ilution Fact	mg/L	MCAWW 300.0A	05/26/00	0151362
Sulfate	172 Q	20.0 Llution Fact	ing/L	MCAWW 300.0A	05/26/00	0151365

NOTE(S):

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

Client Sample ID: MW-2

General Chemistry

Lot-Sample #...: G0E260150-006

Date Sampled...: 05/25/00

Work Order #...: DDRPC

Date Received..: 05/25/00

Matrix..... WATER

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrate as N	0.33	0.050	mg/L	MCAWW 300.0A	05/26/00	0151362
	Dilu	tion Facto	r: 1			
Sulfate	ND	1.0	mg/L	MCAWW 300.0A	05/26/00	0151365
	Dilu	tion Facto	r: 1			

QC DATA ASSOCIATION SUMMARY

G0E260150

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP	MC DIDIH
<u> </u>		PILITION	BAICH #	BATCH #	MS RUN#
001	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
002	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
003	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
004	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
005	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115
006	WATER	MCAWW 300.0A		0151365	0151117
	WATER	MCAWW 300.0A		0151362	0151115

METHOD BLANK REPORT

General Chemistry

Client Lot #...: G0E260150

Matrix..... WATER

PARAMETER Nitrate as N	RESULT ND	Work Order #:	g/L	METHOD MB Lot-Sample #: MCAWW 300.0A	PREPARATION- ANALYSIS DATE G0E300000-362 05/26/00	PREP BATCH # 0151362
Sulfate	ND	Work Order #: 1.0 mg Dilution Factor:	g/L	MB Lot-Sample #: MCAWW 300.0A	G0E300000-365 05/26/00	0151365
NOTE (S) :						

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G0E260150

Matrix....: WATER

PARAMETER Nitrate as N	SPIKE AMOUNT 1.00	MEASUR AMOUNT 0.952	UNITS	PERCNT RECVRY METHOD DDWRD102 LCS Lot-Sample MCAWW 300.0A	PREPARATION- ANALYSIS DATE #: G0E300000-36 05/26/00	PREP <u>BATCH #</u> 62 0151362
Sulfate	20.0	20.5		DDWRH102 LCS Lot-Sample	e#: G0E300000-36 05/26/00	65 0151365

NOTE(S):

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G0E260150

Matrix....: WATER

<u>PARAMETER</u> Nitrate as N	PERCENT RECOVERY 95	RECOVERY PREPARATION LIMITS METHOD ANALYSIS DA Work Order #: DDWRD102 LCS Lot-Sample#: G0E (90 - 110) MCAWW 300.0A 05/26/00 Dilution Factor: 1	TE BATCH #
Sulfate	103	Work Order #: DDWRH102 LCS Lot-Sample#: G0E (90 - 110) MCAWW 300.0A 05/26/00 Dilution Factor: 1	

NOTE(S):

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: G0E260150

Date Sampled...: 05/25/00

Matrix....: WATER

Date Received..: 05/25/00

	SAMPLE	SPIKE	MEASURED		PERCNT				PREPA'	RATION-	- PREP
PARAMETER	AMOUNT	TMA	AMOUNT	UNITS	RECVRY	RPD	METHO	מנ	ANALY:	SIS DAT	
Nitrate as	N		WO#:					Lot-Sampl			
	0.14	20.0	19.6	mg/L	97			7 300.0A		/26/00	01513
	0.14	20.0	19.8	mg/L	98	1.2	MCAWW	AO.00E	-	/26/00	01513
			Dilut	ion Factor: 1					•	·	* 1
Sulfate			WO#:	DDRP1108-MS/	DDRP11)9-MSI	D MS	Lot-Sampl	.e #: (30E2601	.50-001
	1.5	300	310	1 -	103			300.0A		/26/00	01513
	1.5	300	310	mg/L	103	0.23	MCAWW	300.0A	-	/26/00	01513
			Dilut:	ion Factor: 1					- •	- 	42

NOTE(S):

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: G0E260150

Date Sampled...: 05/25/00

Matrix....: WATER

Date Received..: 05/25/00

PARAMETER	PERCENT RECOVERY		RPD LIMITS METHOD	PREPARATION- PREP ANALYSIS DATE BATCH #
Nitrate as N			DDRP1106-MS/DDRP1107-MSD N	MS Lot-Sample #: G0E260150-001
	97	(90 - 110)	MCAWW 300.0A	05/26/00 0151362
	98	(90 - 110)	1.2 (0-10) MCAWW 300.0A	05/26/00 0151362
		Dilut	ion Factor: 1	
Sulfate		WO#:	DDRP1108-MS/DDRP1109-MSD M	IS Lot-Sample #: G0E260150-001
	103	(90 - 110)	MCAWW 300.0A	05/26/00 0151365
	103		0.23 (0-10) MCAWW 300.0A ion Factor: 1	05/26/00 0151365

NOTE(S):

APPENDIX B SAMPLING EVENT DATA SHEETS

i,e

DEPTH TO WATER

DATE: 5-25

TECHNICIAN CP/BW 792588 AC Transit Semilary PROJECT **EVENT** Quarterly WELL OR NO. DATE LOCATION TIME MEASUREMENT CODE COMMENTS 5-25 8:51 3.69 MW-1 3.23 3.80 O 9.13 | 3.35 MW-2 9:06 2.41 3.42 OWI 3.23 MW-21 MW-3 4 TWI 3.35 9.13 5 OIL 6 7 8 8:57 4.95 MW-9 9:02 3.11 10 MW-10 9:05 7.58 MW-11 10 11 12 13 14

15

Total	Well Depth (f	T LES-SSI ni: 2" ni: 15.50 n, before purgi		ject Number: npie Date: (npie ID: inw	S-25-00.	•	
Deve	lopment Meth Baile	Tefi	on Stain	iess Steel _	PVC	ABS Plastic	
	X Pump	o: Ded Non	icated Submersib -Dedicated Subm	ie Pump ersible Pump		Sladder Pum	p
	Time	pH	Conduct. (umho/cm)	Temp. (Celsius)	Water Level	Cum. Vol.	Pump Rate (GPM)
L	938	(n,7	1697	19.3	5.36	2	0.5
-	933	7.0	1473	20.0	5.47	4	
-	936	7.0	1447	१५, ९	5.64	6	V
				7.24.1	Vol. = 6.	6	
	Pump:	Dedic Non-C	Stainler ated Submersible Jedicated Submer	Pump Sible Pump	PVC	ABS Plastic Bladder Pump	
QA/Q0	C Samples if a	ny (Duplicate, I	Reid Blank, Rinse	Blank, etc.l:			
	:	Trip B	16nk@ 100	0	D.O. = 1.	95	,
		Nitrate 19	Sulfate			179/	12
_	eter Collected:		0 - 1 - 2 -		F.E 0	1.50 mg/L	_
Santibil	Appearance OVA R	esdina (com)	20/020		ORP-61	_	.
	Suspen	ided Solids (de	scribe):		compto pursu		:
Decom	tamination Pen	formed:	Ce	nentus.	cup to pursu	,	
			TM Sed /	wased	500	nde (met	فدع
Comm	ents / Calculati	ions:	•	C.	L. 400 9:2	S	
		ght occur	<u>, </u>	ر ای	funta 9:2 for @ 93	7	•
	J.1	Jul Owen			ingled at 1		
	A.	. P	·		£ . 7	1 4 · 56	

. -		lonStair				
<u> </u>	Non	licated Submersi I-Dedicated Subn	ible Pump mersible Pump	_	Bladder Pum	Þ
Time	pH	Conduct.	Temp. (Celskis)	Water Level	Cum. Voi.	
1106	7.6	1168	24.8	6.31	2.5	
1111	7,6	965	24.6	7.25	5	
1114	7.6	920	24.3	8.37	7.5	上
			TotU	dl. pirsed	7, 55	
C = 1 Well V 3 to 5 Well c 3 well c Collection M	/olume in gal/i il Casing Volumes asing volumes ethod:	it, $X = 0.165$ former required print were removed (3 or 2 in. weils, X or to sample co prior to samplir	: = 0.37 for 3 in dection. ig.		65
E 3 to 5 Weil v 3 to 5 Weil c Collection M	/olume in gal/i Il Casing Volumes asing volumes ethod: Teflo	it, X = 0.165 formes required prices were removed prices. Stainless Stainless Stainless Submersibless Submersible	3 or 2 in. weils, X or to sample co prior to samplir ess Steel	: = 0.37 for 3 in dection. ig.	. weils, X = 0. ABS Plastic	65
K = 1 Well V 3 to 5 Well c 3 well c Collection M X Bailer:	/olume in gal/i Il Casing Volumes asing volumes ethod: Teflo	it, X = 0.165 formes required prices were removed prices. Stainless Stainless Stainless Submersibless Submersible	3 or 2 in. weils, X or to sample co prior to samplir ess Steel	: = 0.37 for 3 in dection. ig.	. weils, X = 0.	65
K = 1 Well V 3 to 5 Well Collection M X Bailer: Pump:	/olume in gal/i Il Casing Volumes exhod: Dedic	it, X = 0.165 formes required prices were removed to the staintent of the	3 or 2 in. weils, X or to sample co prior to samplir ess Steel le Pump ersible Pump	: = 0.37 for 3 in dection. ig.	. weils, X = 0. ABS Plastic	65 :
= 1 Well V : 3 to 5 Well c 3 well c Collection M X Bailer: Pump:	/olume in gal/i il Casing Volumes esthod: Dedic Dedic Non-i	it, X = 0.165 formes required print were removed print were removed print were stainled Stainled Submersible Dedicated Submersible Dedicated Submersible Field Blank, Rins	3 or 2 in. weils, X or to sample co prior to samplir ess Steel le Pump ersible Pump	2 = 0.37 for 3 in dilection.	ABS Plastic Eladder Pump	65 :
= 1 Well V : 3 to 5 Well c 3 well c Collection M X Bailer: Pump:	/olume in gal/i Il Casing Volumes asing volumes ethod: Dedic Dedic Non-i ny (Duplicate,	it, X = 0.165 formes required print were removed print were removed print were stainled Stainled Submersible Dedicated Submersible Dedicated Submersible Field Blank, Rins	3 or 2 in. weils, X or to sample co prior to samplir ess Steel le Pump ersible Pump ersible Pump	= 0.37 for 3 in discrion.	ABS Plastic Bladder Pump	
= 1 Well V: 3 to 5 Wei 3 well c Collection M X Bailer: Pump: Samples if ar	/olume in gal/i Il Casing Volumes asing volumes ethod: Teflo Dedic Non-i ny (Duplicate,	it, X = 0.165 formes required print were removed print were removed print were removed print were submersible bedicated Submersible Blank, Rins	3 or 2 in. weils, X or to sample co prior to samplir ess Steel le Pump ersible Pump ersible Pump	= 0.37 for 3 in discrion.	ABS Plastic Bladder Pump	
Collection M Co	Volume in gal/i Il Casing Volumes asing volumes ethod: Dedic Non-i Ty (Duplicate, \$0.15 GR eading (ppm)	it, X = 0.165 formes required print were removed print were removed print were removed print were Submersible Dedicated Submersible Submer	3 or 2 in. weils, X or to sample co prior to samplir ess Steel le Pump ersible Pump ersible Pump	= 0.37 for 3 in discrion.	ABS Plastic Bladder Pump	
Collection M Co	Volume in gal/i Il Casing Volumes asing volumes ethod: Dedic Dedic Non-i ny (Duplicate, \$0.15 GR	it, X = 0.165 formes required print were removed print were removed print were removed print were Submersible Dedicated Submersible Submer	3 or 2 in. weils, X or to sample co prior to samplir ess Steel le Pump ersible Pump ersible Pump	= 0.37 for 3 in dilection.	ABS Plastic Bladder Pump 1.64 -72 40 Purs	
= 1 Well V: 3 to 5 Weil C 3 well c Collection M X Bailer: Pump: Bamples if are Collected: Appearance OVA R	Volume in gal/i Il Casing Volumes esting volumes ethod: Dedic Dedic Non-i ny (Duplicate, \$0.15 GR eading (ppm) ided Solids (de	it. X = 0.165 formes required prices were removed prices and submersible Dedicated Submersible Dedicated Submersible Blank, Rins and Submersib	3 or 2 in. weils, X or to sample co prior to samplir ess Steel le Pump ersible Pump ersible Pump	D. O. = 4 F.E. = 6 ORP =	ABS Plastic Bladder Pump 1.64 -72 40 Purs	
2 1 Well V. 3 to 5 Wei collection M. Bailer: Pump: Samples if an Appearance OVA R. Suspen	Volume in gal/i Il Casing Volumes esting volumes ethod: Dedic Dedic Non-i ny (Duplicate, \$0.15 GR eading (ppm) ided Solids (de	it. X = 0.165 formes required prices were removed prices and submersible Dedicated Submersible Dedicated Submersible Blank, Rins and Submersib	3 or 2 in. weils, X or to sample co prior to samplir ess Steel le Pump ersible Pump ersible Pump	D. O. = 4 F.E. = 6 ORP =	ABS Plastic Bladder Pump	
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1701 7.4 2.86 m/cn 25.4 4.86 1.5 (203 7.4 3.32 24.8 5.24 3	0.5
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Vater Volume to be Purged (gail) = 1(.4c · 3.1(= 0.79 × .165=1,3-×3 = 4.1) Casing Length in Ft - Depth to Water in Ft) x X x 3 Where X = 1 Well Volume in galift, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for NOTE: 3 to 5 Well Casing Volumes required prior to sample collection. It least well casing volumes were removed prior to sampling. ample Collection Method: Bailer: Tefion Stainless Steel PVC ABS Plastic Pump: Dedicated Submercials G	
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laster Volume to be Purged (gail) = 11.40-3.11 = 5.79 × 165=1.3-×3 = 4.1 lasting Length in Ft - Depth to Water in Ft) x X x 3 here X = 1 Well Volume in gal/ft, X = 0.165 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 10.2 for 3 in. wells, X = 0.65 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 2 in. wells, X	= 0.65 for 4
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VQC Samples if any (Duplicate, Reid Blank, Rinse Blank, etc.):	meth
Vitrale/Selfate D. O. = 1,94 F.E. = 0	
rameter Collected: 8260	
mple Appearance 3015 GRU/DRC ORP = -40	
mple Appearance 3015 GRU/DRC ORP = -40 OVA Reading (ppm)	••
mple Appearance 3015 GRU/DRO ORP = -40 ORP = -40 Suspended Solids (describe):	pug
mple Appearance 3015 GRU/DRO OVA Reading (ppm) Suspended Solids (describe): Cent purpused to purp	pug
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mple Appearance 3015 GRU/DRO OVA Reading (ppm) Suspended Solids (describe): Cent. purpused to purpu	1
mple Appearance 3015 GRU/DRO ONA Reading (ppm) Suspended Solids (describe): Cent purpused to purpus	1
mple Appearance 3015 GRU/DRO OVA Reading (ppm) Suspended Solids (describe): Cent pump used to purp Contamination Performed: D/W/S/M	1

	X Pump	Dec	ilon Stain dicated Submersib n-Dedicated Subm		PVC 	_ ABS Plastic _ Bladder Pum	
	Time	ρH	Conduct.	Temp.	Water Level	Cum. Voi.	Pump
	10 53	7.5	1737	Z 3, 1	(to 0.07 ft)	(gai)	(GP
-						Z	/
			-			3	
							
				·			
Vhere NOTE	X = 1 Well Vole: 3 to 5 Well ca	olume in gal/i Casing Volumes sthod: Teflor	= 13.50 · 7.5 eter in Ft) x X x 3 ft, X = 0.165 for mes required prior were removed prior Stainles sated Submersible	2 In. wells, X to sample col ior to sampling	= 0.37 for 3 in. lection.	Weils, X = 0.0 ABS Plastic Bladder Pump	65 for 4
Vhere NOTE t least ample	X = 1 Well Volte: 3 to 5 Well care Collection Ma X Bailer: Pump:	olume in gal/i Casing Volumes sthod: Teffor	it. X = 0.165 for mes required prior were removed prior Stainles sated Submersible Dedicated Submen	2 in. weils, X to sample col ior to sampling Steel Pump sible Pump	= 0.37 for 3 in. lection.	weils, X = 0.0	65 for 4 (
Vhere NOTE t least ample	X = 1 Well Volte: 3 to 5 Well care Collection Ma X Bailer: Pump:	clume in gal/i Casing Volumes sthod: DedicNon-C	it, X = 0.165 for mes required prior were removed prior Stainles stainles Submersible Dedicated Submer Field Blank, Rinse	2 In. weils, X to sample col ior to sampling s Steel Pump sible Pump	= 0.37 for 3 in. lection. J. PVC	weils, X = 0.0 ABS Plastic Bladder Pump	65 for 4 (
Vhere NOTE At least ample	X = 1 Well Vol. E: 3 to 5 Well well ca Collection Me X Bailer: Pump: Pamp: Samples if any rer Collected: Appearance	Casing Volumes Ithod: Dedic Non-C (Duplicate, 1 8260 8015 6	it, X = 0.165 for mes required prior were removed prior Stainles stainles Submersible Dedicated Submer Field Blank, Rinse	2 In. weils, X to sample col ior to sampling s Steel Pump sible Pump Blank, etc.i:	= 0.37 for 3 in. lection. PVC D. 0. = 5.5 F. E. = 0 OR P = -41	weils, X = 0.0 ABS Plastic Bladder Pump	
Vhere NOTE t least smple	X = 1 Well Vol. E: 3 to 5 Well Collection Me X Bailer: Pump: Pump: Samples if am Appearance OVA Res	Casing Volumes Ithod: Dedic Non-C (Duplicate, 1 8260 8015 6	ter in Pt x X x 3 It X = 0.165 for mes required prior were removed prior Stainles sated Submersible Dedicated Submers Field Blank, Rinse	2 In. weils, X to sample col ior to sampling s Steel Pump sible Pump Blank, etc.i:	= 0.37 for 3 in. lection. PVC D. 0. = 5.5 F. E. = 0 OR P = -41	weils, X = 0.0 ABS Plastic Bladder Pump	
Vhere NOTE At least ample A/QC	X = 1 Well Vol. E: 3 to 5 Well Collection Me X Bailer: Pump: Pump: Samples if am Appearance OVA Res	clume in gal/i Casing Volumes sthod: Teffor Non-(Ouplicate, 8260 8015 G ading (ppm) ed Solids (dec	it. X = 0.165 for mes required prior were removed prior Stainles sated Submersible Dedicated Submers Field Blank, Rinse Suifak LOI DLO scribe):	2 In. weils, X to sample col ior to sampling s Steel Pump sible Pump Blank, etc.l:	= 0.37 for 3 in. lection. PVC D. 0. = 5.5 E E = 0	weils, X = 0.6 ABS Plastic Bladder Pump	

Baile	p: De	flon Stain dicated Submersib n-Dedicated Subm		PVC	ABS Plastic Bladder Pum	
Time	pH	Conduct. (umho/cm)	Temp.	Water Level	Cum. Vol. (gai)	F
1327	7.8	2.14 mS/cm		7.49	2-5	
1330 1335	7.7	2,13	23.5	9.39	5	
ر درن	7.7	2,12	23.7	11.47	7,5	
			Tr).b. 1	V 01.	- >7.5	
X = 1 Well ' E: 3 to 5 We st well e e Collection NX' Bailer:	Volume in gai/ eli Casing Volume: casing volume: lethod: Teffo	= $1\%.66 - 4.9\%$ [atter in Ft] x X x 3 [ft, X = 0.185 for imax required prior prior series were removed prior imax required	2 in. weils, X to sample coi rior to samplin	= 0.37 for 3 in. lection. g.	weils, X = 0.0	65 f
X = 1 Well TE: 3 to 5 Well of the st well of the Collection M	Volume in gal/ eli Casing Volume: casing volume: Lethod: Teflo	ft, X = 0.185 for imax required prior s were removed prior Stainles	2 in. weils, X to sample col rior to samplin	= 0.37 for 3 in. lection. g.	weils, X = 0.0	65 f
X = 1 Well 'E: 3 to 5 Well 's Collection N X Baller: Pump:	Volume in gal/ eli Casing Volume: casing volume: lethod: Teffo Dedic	fit, $X = 0.185$ for image required prior $x = 0.185$ for $x $	2 in. weils, X to sample coin rior to samplin s Steel Pump sible Pump	= 0.37 for 3 in. lection. g.	weils, X = 0.0	65 f
X = 1 Well 'E: 3 to 5 Well 's Collection N X Baller: Pump:	Volume in gal/ eli Casing Volume: casing volume: lethod: Teffo Dedic	fit, X = 0.185 for imax required prior imax required prior imax required prior imax required prior imax removed prior imax stainles imax stain	2 in. weils, X to sample coin rior to samplin s Steel Pump sible Pump	= 0.37 for 3 in. lection. g.	weils, X = 0.0 ABS Plastic Bladder Pump	65 f
X = 1 Well 'E: 3 to 5 Well 'E: 3 to 5 Well 'E: 4 Collection N. X Baller: Pump: Samples if a	Volume in gal/ eli Casing Volume casing volume lethod: Teffo Dedicate, ny (Duplicate,	fit, X = 0.185 for imax required prior imax required prior is were removed prior in Stainles cated Submersible Dedicated Submersible Field Blank, Rinse	2 in. weils, X to sample coin rior to samplin s Steel Pump sible Pump	= 0.37 for 3 in. liection. D: 0.=	weils, X = 0.0 ABS Plastic Bladder Pump	65 f
X = 1 Well 'E: 3 to 5 West well 's Well 's Pump: Samples if single Appearance	Volume in gal/ eli Casing Volume casing volume lethod: Teffo Dedicate, Non ny (Duplicate, 8260 8015 61	fit, X = 0.185 for imax required prior imax required prior imax required prior imax required prior imax removed prior imax stainles imax stain	2 in. weils, X to sample colling to sample colling to sample to sa	= 0.37 for 3 in. lection. D: 0: = F.E. =	weils, X = 0.0 ABS Plastic Bladder Pump	
X = 1 Well YE: 3 to 5 West well of a Collection Mailer: Pump: Samples if a collected: Appearance OVA R	Volume in gal/ eli Casing Volume casing volume lethod: Teflo Dedicate, Non ny (Duplicate, % 200 8015 Cileading (ppm)	fit, X = 0.185 for imax required prior imax required prior is were removed prior in Stainles cated Submersible Dedicated Submersible Field Blank, Rinse	2 in. weils, X to sample colling to sample colling to sample to sa	= 0.37 for 3 in. lection. D: 0: = F.E. =	weils, X = 0.0 ABS Plastic Bladder Pump	
X = 1 Well YE: 3 to 5 West well of the Collection Mailer: Pump: Pump: Pump: Pump: OVA R OVA R Susper	Volume in gal/ eli Casing Volume casing volume lethod: Dedic Non- ny (Duplicate, Volume Volu	fit, X = 0.185 for imax required prior imax removed prior imax stainles cated Submersible Dedicated Submersible Dedicated Submersible Field Blank, Rinse Sulfak	2 in. weils, X to sample colling to sample colling to sample to sa	= 0.37 for 3 in. lection. D: 0: = F.E. =	weils, X = 0.0 ABS Plastic Bladder Pump	
X = 1 Well YE: 3 to 5 West well of the Collection Mailer: Pump: Samples if a series of Appearance OVA R	Volume in gal/ eli Casing Volume casing volume lethod: Dedic Non- ny (Duplicate, Volume Volu	fit, X = 0.185 for imax required prior imax removed prior imax stainles cated Submersible Dedicated Submersible Dedicated Submersible Field Blank, Rinse Sulfak	2 in. weils, X to sample colling to sample colling to sample to sa	= 0.37 for 3 in. lection. D: 0: = F.E. =	weils, X = 0.0 ABS Plastic Bladder Pump	
X = 1 Well E: 3 to 5 We Collection N X Bailer: Pump: Samples if si ter Collected: Appearance OVA R Susper	Volume in gal/ eli Casing Volume casing volume lethod: Teffo Dedicate, Non- ny (Duplicate, % trak / & 200 8015 61 leading (ppm) ided Solids (deformed:	fit, X = 0.185 for imax required prior imax removed prior imax stainles cated Submersible Dedicated Submersible Dedicated Submersible Field Blank, Rinse Sulfak	2 in. weils, X to sample collinates Steel Pump sible Pump Ellanik, etc.):	= 0.37 for 3 in. lection. D: 0. = F.E. =	ABS Plastic Bladder Pump 6.02 1.70 - 27 Sound	

Time pH Conduct. Temp. Water Level Cum. Vol. Pump F (umho/cm) (Celekus) (to 0.01 ft) (gad) (GPN (GPN (GPN (GPN (GPN (GPN (GPN (GPN	Time pH Conduct. Temp. Water Level Cum. Vol. Pump F (gurino/cm) (Celekus) (to 0.01 ft) (gai) (GPN 14 8 8 879 26 4 9.31 3.5 6.5 14 14 15 16 17 16 16 16 17 14 15 16 17 17 18 18 19 18 18 18 14 15 16 18 19 18 18 18 18 14 15 16 18 18 18 18 18 14 15 16 18 18 18 18 14 15 16 18 18 18 18 14 15 16 18 18 18 14 15 16 18 18 18 14 15 18 18 18 18 15 16 18 18 18 16 16 18 18 18 16 16 18 18 18 16 18 18 18 18 16 18 18 18 17 18 18 18 18 18 18 18 18 18	Bailer	: Dec	fion Stain	ble 2:		ABS Plastic Bladder Pum	7
1418 B. 879 26.4 4.31 3.5 6.5 1424 Q.) 1.99 26.4 11.65 7 1420 3.0 2.04 Z6.6 14.30 105 ater Volume to be Purged (gail = 23.50 - 3.23 = 70.17 × .165=3.3 × 3-10. asing Length in R- Depth to Water in Rt x x x 3 here X = 1 Well Volume in gal/ft, X = 0.185 for 2 in. wells, X = 0.37 for 3 in. wells, X = 0.65 for 4 in. NOTE: 3 to 5 Well Casing Volumes required prior to sample collection. Lesst 3 well casing volumes were removed prior to sampling. Mailer:	1418 8.1 879 26.4 9.31 3.5 6.5 1424 0.1 1.99 26.4 11.65 7 1420 8.0 2.04 26.6 14.30 10.5 atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.56 - 3.23 = 20.7 × .165=3.3 × 3=10. Atter Volume to be Purged (gail = 23.66 = 20.7 × 3=10.0 × 3	•	X_NOI	n-Dedicated Subn	nersible Pump		<u>-</u>	Pump A
1424 0,1 199 26.4 11.65 7 1428 8.6 2.04 26.6 14.30 10.5	1429 9.0 1.99 26.4 11.65 7 1420 9.0 2.09 26.6 14.30 10.5 10.5 14.20 9.0 2.09 26.6 14.30 10.5 10.5 14.30 10.5 1	1418	8.1					(GPM
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