2014 ANNUAL GROUNDWATER REPORT

Lateral L-40 Line Drip
Meter Code: LD174
T28N, R4W, Sec13, Unit H

SITE DETAILS

Site Location: Latitude: 36.659672 N, Longitude: -107.194520 W
Land Type: Federal
Operator: Enterprise

SITE BACKGROUND

- **Site Assessment:** 1/95
- **Excavation:** 1/95 (60 cy)

Lateral L-40 Line Drip (Site) is being managed pursuant to the procedures set forth in the document entitled, "Remediation Plan for Groundwater Encountered during Pit Closure Activities" (Remediation Plan, El Paso Natural Gas Company / El Paso Field Services Company, 1995). This remediation plan was conditionally approved by the New Mexico Oil Conservation Division (OCD) in correspondence dated November 30, 1995; and the OCD approval conditions were adopted into El Paso CGP Company (EPCPG) program methods. Currently, the Site is operated by Enterprise and is not active.

The Site is located on Federal land. Two site investigations were conducted in 1995 and 2000. A monitoring well was installed in 1995 (MW-1) and additional monitoring wells were attempted to be installed in 2000. Boring advancements were refused at 25 to 37 feet below ground surface. Free product recovery has been periodically conducted at the Site. Currently, groundwater sampling is conducted on a semi-annual basis. Free product was not observed in 2014.

SUMMARY OF 2014 ACTIVITIES

On April 6 and October 26, 2014, water levels were gauged at MW-1, and groundwater samples were collected from monitoring well MW-1 during each 2014 semi-annual sampling event using HydraSleeve™ (HydraSleeve) no-purge passive groundwater sampling devices. The HydraSleeves were set during the previous sampling event approximately 0.5 foot above termination depth of the monitoring wells using a suspension tether and stainless steel weights to collect a sample from the screened interval. Groundwater samples were placed into laboratory-supplied sample containers, packed on ice, and shipped under standard chain-of-custody protocols to TestAmerica Laboratories, Inc. in Corpus Christi, Texas where they were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Additional field parameters were collected including dissolved oxygen, temperature, conductivity, pH, and oxidation-reduction potential (ORP) using a YSI multi-parameter instrument. The water remaining in the HydraSleeves was combined in a waste container and taken to Basin Disposal, Inc. for disposal.

SUMMARY TABLES

Historic analytical and water level data are summarized in Table 1.

2014 ANNUAL GROUNDWATER REPORT

Lateral L-40 Line Drip
Meter Code: LD174
T28N, R4W, Sec13, Unit H

SITE MAPS

Groundwater analytical maps and groundwater elevation contour maps from each sampling event are included as Figures 1 through 4.

ANALYTICAL LAB REPORTS

The groundwater analytical lab reports are included as Appendix A.

RESULTS

- The groundwater flow direction cannot be determined based on observations because monitoring well MW-1 is the only monitoring well on site (see Figures 2 and 4).

- Concentrations of benzene and total xylenes in groundwater collected from MW-1 remained above the New Mexico Water Quality Control Commission (NMWQCC) standards during each of the 2014 sampling events. Toluene and ethylbenzene were not detected above their respective NMWQCC standards during any sampling event in 2014.

PLANNED FUTURE ACTIVITIES

Following the completion of a site access agreement with the National Forest Service, installation of additional monitoring wells is planned at the Site to further assess the extent of dissolved-phase hydrocarbons and to define the groundwater gradient at the Site. Monitoring wells will be sampled on a semi-annual basis.

TABLES

TABLE 1 – GROUNDWATER ANALYTICAL AND WATER LEVEL RESULTS

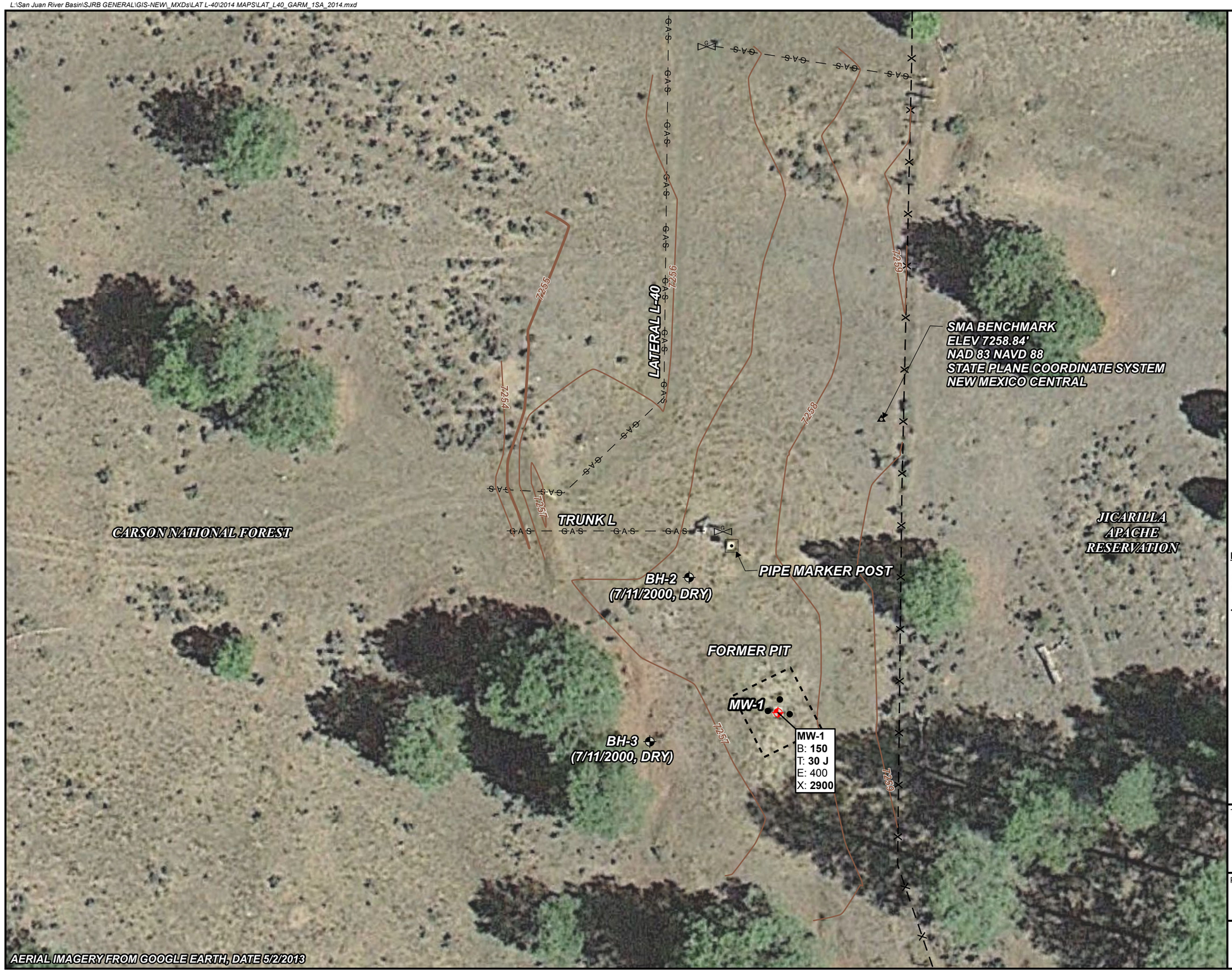
TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Lat. L-40 Line Drip								
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)
NMWQCC Standards:		10	750	750	620	NA	NA	NA
MW-1	09/26/95	121	218	7.4	75.1	36.68	-	-
MW-1	11/11/96	12000	20400	612	6075	36.62	36.16	0.46
MW-1	03/31/97	11100	24700	702	7440	36.68	36.18	0.50
MW-1	05/09/97	12900	22900	761	7730	36.57	36.45	0.12
MW-1	11/06/00	8.2	<0.5	15	6.9	35.06	-	-
MW-1	01/02/01					39.08	37.95	1.13
MW-1	06/08/01					39.00	37.89	1.11
MW-1	07/02/01					39.14	37.93	1.21
MW-1	08/03/01					39.10	37.83	1.27
MW-1	09/12/01					38.96	38.02	0.94
MW-1	10/12/01					38.43	38.19	0.24
MW-1	12/13/01					38.75	38.40	0.35
MW-1	03/12/02					38.76	38.42	0.34
MW-1	04/03/02					38.66	38.39	0.27
MW-1	05/20/02					38.56	38.46	0.10
MW-1	06/10/02					38.56	38.51	0.05
MW-1	07/19/02					38.64	-	-
MW-1	10/11/02					38.87	38.84	0.03
MW-1	05/06/03					37.97	37.94	0.03
MW-1	07/17/03					38.95	-	-
MW-1	10/13/03					39.06	-	-
MW-1	04/20/04					39.18	-	-
MW-1	07/27/04					39.22	-	-
MW-1	10/26/04					39.35	-	-
MW-1	04/22/05					39.52	-	-
MW-1	07/19/05					39.34	-	-
MW-1	10/21/05					39.57	-	-
MW-1	01/24/06					38.67	-	-
MW-1	05/10/06					38.72	-	-
MW-1	07/26/06					38.72	-	-
MW-1	10/22/06					38.91	-	-
MW-1	04/29/07					38.92	-	-
MW-1	07/31/07					38.85	-	-
MW-1	10/30/07					38.79	-	-
MW-1	04/17/08	396	<50	484	2770	38.98	-	-
MW-1	07/23/08					38.99	-	-
MW-1	10/09/08					38.95	-	-
MW-1	04/08/09	387	7.9 J	466	2680	39.04	-	-
MW-1	06/03/10	272	<50	384	2240	39.40	-	-
MW-1	09/24/10					39.45	-	-
MW-1	11/02/10					39.47	-	-
MW-1	05/03/11	115	4.8	430	2160	39.55	-	-
MW-1	09/28/11					39.63	-	-
MW-1	11/02/11					39.73	-	-
MW-1	05/09/12	302	10.2	404	1830	39.73	-	-
MW-1	06/09/13	150	13	330	2800	37.97	-	-
MW-1	09/11/13	160	330	15 J	2600	38.86	-	-
MW-1	12/14/13	160	15	320	2500	40.09	-	-
MW-1	04/06/14	150	30 J	400	2900	40.09	-	-
MW-1	10/26/14	120	9.9 J	350	2000	40.22	-	-

Notes:
Results highlighted yellow exceed their respective New Mexico Water Quality Control Comission standards.
"J" = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
"<" = analyte was not detected at the indicated reporting limit (some historic data were reported at the detection limit).

FIGURES

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\LAT L-40\2014 MAPS\LAT_L40_GARM_1SA_2014.mxd



LEGEND:

- 7259 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- GAS — NATURAL GAS LINE
- FENCE
- MONITORING WELL
- BOREHOLE
- SMA BENCHMARK
- GAS LINE VALVE

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:

RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF THE STANDARD FOR THAT ANALYTE.
NS = NOT SAMPLED
µg/L = MICROGRAMS PER LITER
<0.30 = BELOW METHOD DETECTION LIMIT

ANALYTE	NMWQCC STANDARDS
B = Benzene	10 µg/L
T = Toluene	750 µg/L
E = Ethylbenzene	750 µg/L
X = Total Xylenes	620 µg/L

N

SCALE IN FEET
0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	10/15/2014	CCL	CCL	DAW

TITLE:

LAT L-40
GROUNDWATER ANALYTICAL RESULTS
SAMPLED APRIL 6, 2014

PROJECT: **SAN JUAN RIVER BASIN**
MONITORING AND REMEDIATION
RIO ARRIBA COUNTY, NEW MEXICO

MWH

Figure No.: 1

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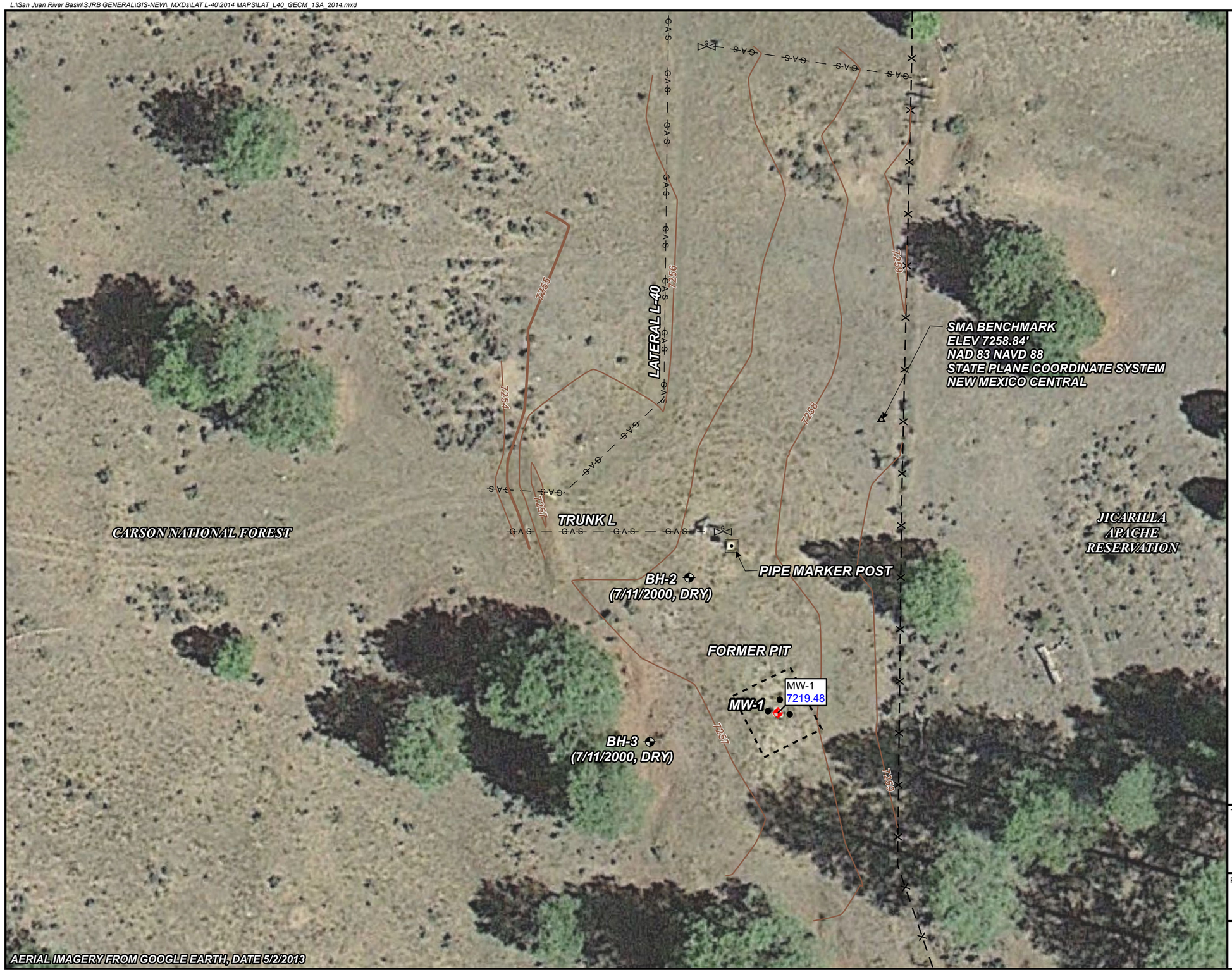

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N

SCALE IN FEET

0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	10/15/2014	CCL	CCL	DAW

TITLE:

LAT L-40
GROUNDWATER ELEVATION MAP
GAUGED APRIL 6, 2014

PROJECT: **SAN JUAN RIVER BASIN**
MONITORING AND REMEDIATION
RIO ARRIBA COUNTY, NEW MEXICO

MWH

Figure No.: **2**

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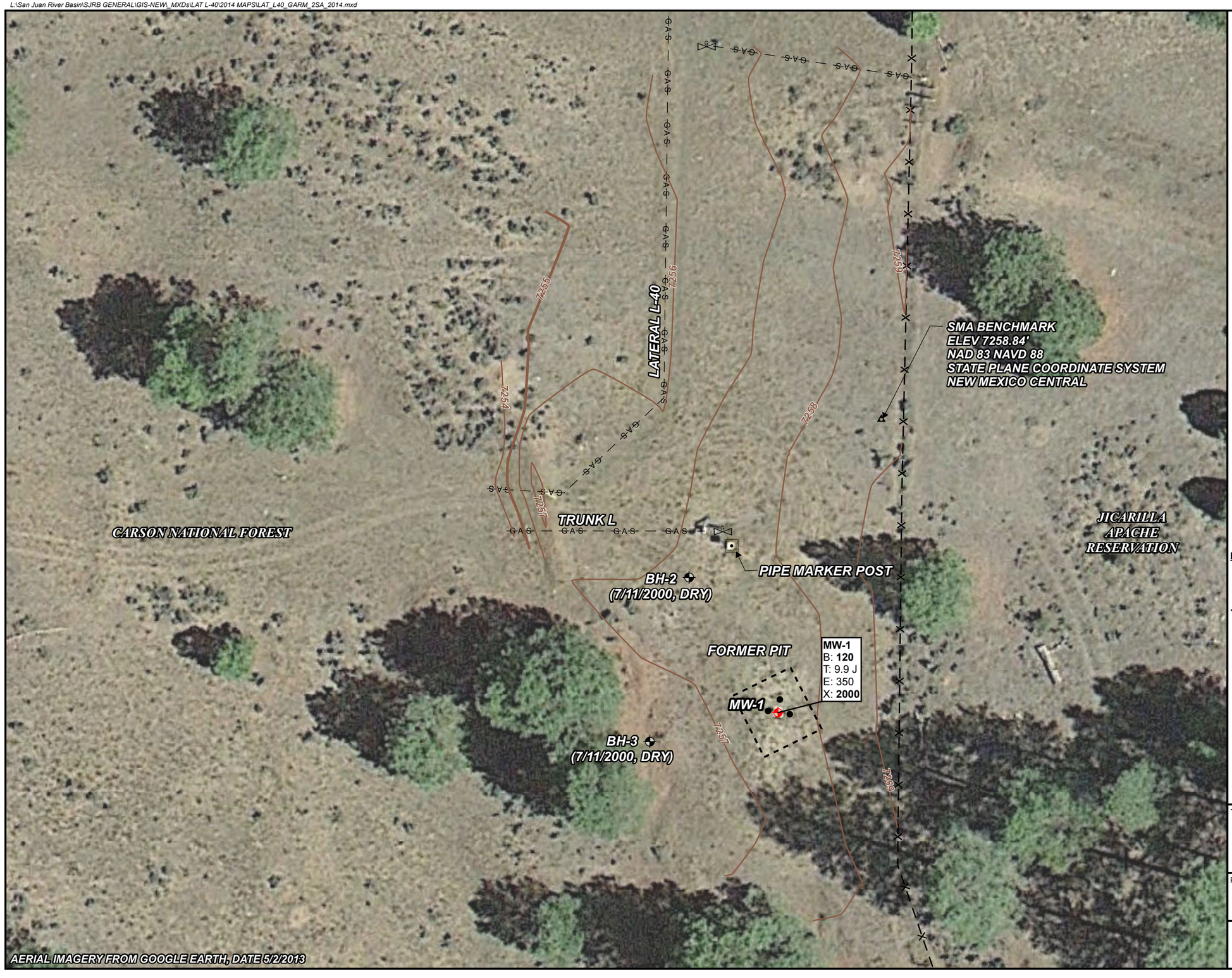

LEGEND:

- 7259 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
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EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:

RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF THE STANDARD FOR THAT ANALYTE.
NS = NOT SAMPLED
µg/L = MICROGRAMS PER LITER
<0.30 = BELOW METHOD DETECTION LIMIT

ANALYTE	NMWQCC STANDARDS
B = Benzene	10 µg/L
T = Toluene	750 µg/L
E = Ethylbenzene	750 µg/L
X = Total Xylenes	620 µg/L

N

SCALE IN FEET
0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	11/17/2014	CCL	CCL	DAW

TITLE:

LAT L-40
GROUNDWATER ANALYTICAL RESULTS
GAUGED OCTOBER 26, 2014

PROJECT: ***SAN JUAN RIVER BASIN MONITORING AND REMEDIATION RIO ARRIBA COUNTY, NEW MEXICO***

MWH

Figure No.: **3**

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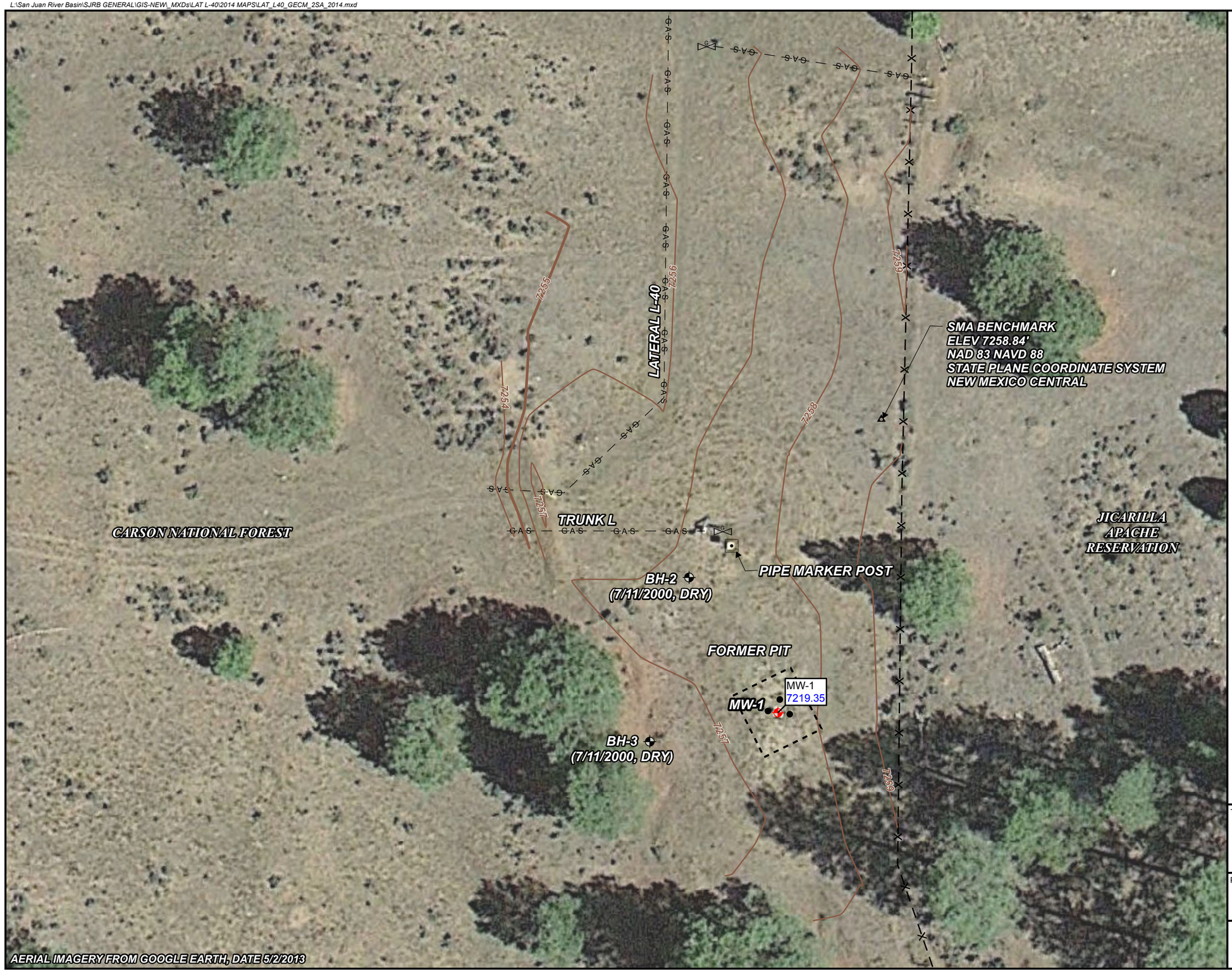

LEGEND:

- 7259 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- GAS — NATURAL GAS LINE
- FENCE
- MONITORING WELL
- BOREHOLE
- SMA BENCHMARK
- GAS LINE VALVE

N

SCALE IN FEET

0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	11/17/2014	CCL	CCL	DAW

TITLE:

LAT L-40
GROUNDWATER ELEVATION MAP
GAUGED OCTOBER 26, 2014

PROJECT: **SAN JUAN RIVER BASIN**
MONITORING AND REMEDIATION
RIO ARRIBA COUNTY, NEW MEXICO

MWH

Figure No.: **4**

APPENDIX A

APRIL 6, 2014 GROUNDWATER SAMPLING ANALYTICAL REPORT
OCTOBER 26, 2014 GROUNDWATER SAMPLING ANALYTICAL REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Corpus Christi
1733 N. Padre Island Drive
Corpus Christi, TX 78408
Tel: (361)289-2673

TestAmerica Job ID: 560-46602-1
Client Project/Site: Lateral L-40, 4/6/14 BTEX

For:
MWH Americas Inc
1801 California Street
Suite 2900
Denver, Colorado 80202

Attn: Ms. Sarah Gardner

Authorized for release by:
4/21/2014 9:26:56 AM

Neal Salcher, Senior Project Manager
neal.salcher@testamericainc.com

Client: MWH Americas Inc
Project/Site: Lateral L-40, 4/6/14 BTEX

TestAmerica Job ID: 560-46602-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 560-46602-1

Laboratory: TestAmerica Corpus Christi

Narrative

Job Narrative
560-46602-1

Comments
No additional comments.

Receipt
The sample was received on 4/8/2014 9:45 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.8º C.

GC VOA
Method(s) 8021B: LCS and MB are also designated as ICV and ICB for calibration...batch 100781

No other analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: MWH Americas Inc
Project/Site: Lateral L-40, 4/6/14 BTEX

TestAmerica Job ID: 560-46602-1

Client Sample ID: MW-1

Lab Sample ID: 560-46602-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	150		40	4.0	ug/L	20		8021B	Total/NA
Toluene	30	J	40	7.5	ug/L	20		8021B	Total/NA
Ethylbenzene	400		40	4.0	ug/L	20		8021B	Total/NA
Xylenes, Total	2900		40	13	ug/L	20		8021B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: MWH Americas Inc
Project/Site: Lateral L-40, 4/6/14 BTEX

TestAmerica Job ID: 560-46602-1

Client Sample ID: MW-1
Date Collected: 04/06/14 11:00
Date Received: 04/08/14 09:45

Lab Sample ID: 560-46602-1
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	150		40	4.0	ug/L			04/14/14 17:55	20
Toluene	30	J	40	7.5	ug/L			04/14/14 17:55	20
Ethylbenzene	400		40	4.0	ug/L			04/14/14 17:55	20
Xylenes, Total	2900		40	13	ug/L			04/14/14 17:55	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*58 - 129*		*04/14/14 17:55*	*20*
Trifluorotoluene (Surr)	*96*		*54 - 130*		*04/14/14 17:55*	*20*

Client: MWH Americas Inc
Project/Site: Lateral L-40, 4/6/14 BTEX

TestAmerica Job ID: 560-46602-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 560-100789/7
Matrix: Water
Analysis Batch: 100789

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.20		2.0	0.20	ug/L			04/14/14 16:55	1
Toluene	<0.38		2.0	0.38	ug/L			04/14/14 16:55	1
Ethylbenzene	<0.20		2.0	0.20	ug/L			04/14/14 16:55	1
Xylenes, Total	<0.65		2.0	0.65	ug/L			04/14/14 16:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*58 - 129*		*04/14/14 16:55*	*1*
Trifluorotoluene (Surr)	*100*		*54 - 130*		*04/14/14 16:55*	*1*

Lab Sample ID: LCS 560-100789/6
Matrix: Water
Analysis Batch: 100789

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	40.0	38.5		ug/L		96	70 - 130
Toluene	40.0	40.6		ug/L		101	70 - 130
Ethylbenzene	40.0	39.6		ug/L		99	70 - 130
Xylenes, Total	120	114		ug/L		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*58 - 129*
Trifluorotoluene (Surr)	*106*		*54 - 130*

Certification Summary

Client: MWH Americas Inc
Project/Site: Lateral L-40, 4/6/14 BTEX

TestAmerica Job ID: 560-46602-1

Laboratory: TestAmerica Corpus Christi

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Kansas	NELAP	7	E-10362	10-31-14
Oklahoma	State Program	6	9968	08-31-14
Texas	NELAP	6	T104704210	03-31-15

Method Summary

Client: MWH Americas Inc
Project/Site: Lateral L-40, 4/6/14 BTEX

TestAmerica Job ID: 560-46602-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	TAL CC

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

Sample Summary

Client: MWH Americas Inc
Project/Site: Lateral L-40, 4/6/14 BTEX

TestAmerica Job ID: 560-46602-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-46602-1	MW-1	Water	04/06/14 11:00	04/08/14 09:45

TestAmerica Corpus Christi
1733 N. Padre Island Drive
Corpus Christi, TX 78408
Phone (361) 289-2673 Fax (361) 289-2471

Chain of Custody Record

Client Information	Sampler: Sarah Gardner / Chris Lee	Lab PM: Kellogg, Timothy L.	Carrier Tracking No(s): Fedex 8695277573 12	COC No. 560-13131-1157
Client Contact: ~~Mr. Daniel Wade~~ Sarah Gardner	Phone: 303 291 2239	E-Mail: tim.kellogg@testamericainc.com		Page: Page 1 of 1
Company: MWH Americas Inc				Job #: Loc: 560 46602
Address: 1801 California Street Suite 2900	Due Date Requested:			
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202				
Phone: ~~713-420-3414(Tel)~~ 303 291 2239	PO #: Purchase Order not required			
Email: Sarah.gardner ~~Daniel.A.Wade~~@us.mwhglobal.com	WO #: TWO # C-STLI-			
Project Name: San Juan River Basin Pit Sites	Project #: 56000058			
Site: Lateral L-40	SSOW#:			

Analysis Requested

Preserv: A - HCL; B - NaOH; C - Zn Ac; D - Nitric; E - NaHS; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - ph 4-5; Z - other (specify); Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - BTEX	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
MW-1	4/6/14	1100		Water			X	3	
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					

560-46602 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Sarah Gardner	4/7/14 900	MWH	[illegible]	4/8/14 9:45	TACC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.6°C CF 1.8°C IR4

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-46602-1

Login Number: 46602

List Source: TestAmerica Corpus Christi

List Number: 1

Creator: Rood, Vivian R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pensacola
3355 McLemore Drive
Pensacola, FL 32514
Tel: (850)474-1001

TestAmerica Job ID: 400-97682-1
Client Project/Site: KM Lateral 40

For:
MWH Americas Inc
1801 California Street
Suite 2900
Denver, Colorado 80202

Attn: Ms. Sarah Gardner

Authorized for release by:
11/6/2014 1:43:06 PM
Bernard Kirkland, Manager of Project Management
(912)354-7858 e.3238
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Designee for

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Table of Contents

Client: MWH Americas Inc
Project/Site: KM Lateral 40

TestAmerica Job ID: 400-97682-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 400-97682-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-97682-1

Comments
No additional comments.

Receipt
The samples were received on 10/28/2014 9:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.1° C.

GC/MS VOA
Method(s) 8260B: Benzene was detected in the TRIP BLANK (400-97682-2). The results for were confirmed by re-analysis. The orginial results are being reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: MWH Americas Inc
Project/Site: KM Lateral 40

TestAmerica Job ID: 400-97682-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-97682-1	MW-1	Water	10/26/14 11:00	10/28/14 09:05
400-97682-2	TRIP BLANK	Water	10/26/14 11:10	10/28/14 09:05

Client: MWH Americas Inc
Project/Site: KM Lateral 40

TestAmerica Job ID: 400-97682-1

Client Sample ID: MW-1

Lab Sample ID: 400-97682-1

Date Collected: 10/26/14 11:00

Matrix: Water

Date Received: 10/28/14 09:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**120**		10	3.8	ug/L			10/31/14 17:10	10
Ethylbenzene	**350**		10	5.0	ug/L			10/31/14 17:10	10
Toluene	**9.9**	**J**	10	7.0	ug/L			10/31/14 17:10	10
Xylenes, Total	**2000**		100	16	ug/L			10/31/14 17:10	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*78 - 118*		*10/31/14 17:10*	*10*
Dibromofluoromethane	*97*		*81 - 121*		*10/31/14 17:10*	*10*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/31/14 17:10*	*10*

Client Sample ID: TRIP BLANK

Lab Sample ID: 400-97682-2

Date Collected: 10/26/14 11:10

Matrix: Water

Date Received: 10/28/14 09:05

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.65**	**J**	1.0	0.38	ug/L			10/31/14 15:53	1
Ethylbenzene	<0.50		1.0	0.50	ug/L			10/31/14 15:53	1
Toluene	<0.70		1.0	0.70	ug/L			10/31/14 15:53	1
Xylenes, Total	<1.6		10	1.6	ug/L			10/31/14 15:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*78 - 118*		*10/31/14 15:53*	*1*
Dibromofluoromethane	*99*		*81 - 121*		*10/31/14 15:53*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/31/14 15:53*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 400-234995/4
Matrix: Water
Analysis Batch: 234995

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.38		1.0	0.38	ug/L			10/31/14 08:29	1
Ethylbenzene	<0.50		1.0	0.50	ug/L			10/31/14 08:29	1
Toluene	<0.70		1.0	0.70	ug/L			10/31/14 08:29	1
Xylenes, Total	<1.6		10	1.6	ug/L			10/31/14 08:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*78 - 118*		*10/31/14 08:29*	*1*
Dibromofluoromethane	*99*		*81 - 121*		*10/31/14 08:29*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/31/14 08:29*	*1*

Lab Sample ID: LCS 400-234995/1002
Matrix: Water
Analysis Batch: 234995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			50.0	44.9		ug/L		90	79 - 120		
Ethylbenzene			50.0	49.0		ug/L		98	80 - 120		
Toluene			50.0	47.8		ug/L		96	80 - 120		
Xylenes, Total			100	96.1		ug/L		96	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*78 - 118*
Dibromofluoromethane	*97*		*81 - 121*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Chronicle

Client: MWH Americas Inc
Project/Site: KM Lateral 40

TestAmerica Job ID: 400-97682-1

Client Sample ID: MW-1

Lab Sample ID: 400-97682-1

Date Collected: 10/26/14 11:00

Matrix: Water

Date Received: 10/28/14 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	234995	10/31/14 17:10	CLN	TAL PEN

Client Sample ID: TRIP BLANK

Lab Sample ID: 400-97682-2

Date Collected: 10/26/14 11:10

Matrix: Water

Date Received: 10/28/14 09:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	234995	10/31/14 15:53	CLN	TAL PEN

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Method Summary

Client: MWH Americas Inc
Project/Site: KM Lateral 40

TestAmerica Job ID: 400-97682-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Chris Lee, Sarah Gardner	Lab PM: Salcher, Neal	Carrier Tracking No(s):	COC No: 560-15435-1547.1
Client Contact: Ms. Sarah Gardner	Phone: 303 291-2242	E-Mail: neal.salcher@testamericainc.com		Page: Page 1 of 1
Company: MWH Americas Inc				Job #:
Address: 1801 California Street Suite 2900	Due Date Requested:			
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202				
Phone: 303-291-2239(Tel)	PO #: Purchase Order Requested			
Email: sarah.gardner@mwhglobal.com	WO #: As per Enfos			
Project Name: ~~Sandoval CC A#1~~ KM LATERAL 40	Project #: 56004990			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

400-97682 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - BTEX	Total Number of containers	Special Instructions/Note:
Preservation Code:							A		
MW-1	10/26/14	1100	G	Water			X		
TRIP BLANK	10/26/14	1110	G	W			X		

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Chris Lee	10/27/14 915	MWH		10/28/14 0839	TA-Ken
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.1°C IR-2