3R - 170

2013 AGWMR

04 / 03 / 2014

MWH

BUILDING A BETTER WORLD

March 4, 2014

Mr. Glenn von Gonten
New Mexico Oil Conservation Division (NMOCD)
1220 South St., Francis Drive
Santa Fe, NM 87505

RE: 2013 Annual Report Submittals
San Juan River Basin Program - Pit Sites

Dear Mr. von Gonten

On behalf of El Paso CGP Company (EPCGPC), MWH is submitting the enclosed 2013 Annual Reports for 18 of its remaining San Juan River Basin pit groundwater remediation sites. The reports present the 2013 sampling data and planned activities for 2014 at these sites.

If you have any questions concerning the enclosed reports, please contact either Joe Wiley (representing EPCGPC) at 713-420-3475 or me at 515-253-0830.

Sincerely,

David C. Wombacher
Principal Engineer

/mja:dcw:hls
Enclosures
cc: Bill Freeman – NNEPA, Shiprock, NM (Navajo Nation Lands, See Table 1)
Mark Kelly – BLM, Farmington, NM (Federal Lands, See Table 1)
Brandon Powell – NMOCD, Aztec, NM (all 18 reports)
Joe Wiley – EPCGP Company (all 18 reports, electronic)

P:\Word Processing\EL PASO\NEW MEXICO\SAN JUAN RIVER BASIN PROGRAM\PIT SITES\LTR-03-14-2013 ANNUAL REPORT SUBMITTALS\Ltr-03-14-von Gonten-2013 Annual Report Submittals.docx

11153 Aurora Avenue
Des Moines, IA 50322-7904
TEL 515 253 0830
FAX 515 253 9592
www.mwhglobal.com

TABLE 1

REPORT LISTING AND LAND TYPE
SAN JUAN RIVER BASIN PROGRAM – PIT SITES

METER or LINE ID	NMOCD CASE NO.	SITE NAME	Land Type
87640	3RP-155-0	Canada Mesa #2	Federal
89961	3RP-170-0	Fields A#7A	Federal
73220	3RP-068-0	Fogelson 4-1 Com. #14	Federal
95608	3RP-407-0	Gallegos Canyon Unit #124E	Navajo
03906	3RP-179-0	GCU Com A #142E	State/Fee
89894	3RP-186-0	Hammond #41A	Federal
94715	3RP-196-0	James F. Bell #1E	Federal
70194	3RP-201-0	Johnston Fed #4	State/Fee
89232	3RP-202-0	Johnston Fed #6A	Federal
LD072	3RP-204-0	K27 LD072	Federal
LD087	3RP-205-0	K-31 Line Drip	State/Fee
72556	3RP-207-0	Knight #1	State/Fee
LD174	3RP-212-0	Lateral L 40	Federal
LD151	3RP-213-0	Lateral 0-21 Line Drip	Federal
94810	3RP-223-0	Miles Fed 1A	Federal
89620	3RP-235-0	Sandoval GC A #1A	Federal
70445	3RP-074-0	Standard Oil Com #1	State/Fee
71669	3RP-239-0	State Gas Com N #1	State/Fee

2013 ANNUAL GROUNDWATER REPORT

Fields A#7A
Meter Code: 89961
T32N , R11W , S 34, Unit E

SITE DETAILS

Site Location: Latitude: 36.944245 N, Longitude: -107.982116 W
Land Type: Federal
Operator: BP

SITE BACKGROUND

- **Site Assessment:** 8/94
- **Excavation:** 9/94 (70 cy)

Fields A#7 (Site) is 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 (EPCGP's) program methods. Currently, the site is operated by BP America Production Company and is active.

The site is located on Federal land. Various site investigations have occurred since 1994. Monitoring wells were installed in There are four monitoring wells, installed in 1995 at the site: MW-1, MW-2, MW-3 and MW-4. Temporary piezometers PZ-1 through PZ-5 were installed and removed in 1997. Free product has been observed and periodically recovered. Currently, groundwater sampling is conducted on a semi-annual basis and no free product was observed in 2013.

SUMMARY OF 2013 ACTIVITIES

In July 2013, a site survey was completed to re-develop a base site map and to confirm the accuracy of existing monitoring well elevations and locations.

On June 7, September 12, and December 13, 2013, water levels were gauged at MW-1, MW-2, MW-3, and MW-4 and groundwater samples were collected from MW-1 using a HydraSleeve™ (HydraSleeve); a disposable, no-purge passive groundwater sampling device. MW-2, MW-3, and MW-4 were gauged, but did not have enough water to collect a sample. The HydraSleeve was set during the previous sampling event approximately 0.5 foot above termination depth of the monitoring wells using a suspension tether and 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 Test America Laboratories 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 ORP using a YSI multi-parameter instrument. The de minimis water remaining in HydraSleeves was combined in a waste container and transferred to an off-site 55-gallon drum for later disposal by Safety-Kleen.

2013 ANNUAL GROUNDWATER REPORT

Fields A#7A
Meter Code: 89961
T32N , R11W , S 34, Unit E

SUMMARY TABLES

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

SITE MAPS

Groundwater analytical maps (Figures 1, 3, and 5) and groundwater elevation maps (Figures 2, 4, and 6) summarize the results of the 2013 groundwater sampling and gauging events.

ANALYTICAL LAB REPORTS

The groundwater analytical lab reports are included as Appendix A.

RESULTS

- During the three 2013 sampling events MW-2, MW-3, and MW-4 water levels were all gauged and measured as dry. The groundwater flow direction is historically to the southwest at the Site, but because MW-1 was the only well that contained measurable groundwater; elevation contours are not provided (Figure 2, 4, and 6).

- Concentrations of benzene in groundwater collected from MW-1 remained above the New Mexico Water Quality Control Commission (NMWQCC) standards for all three events. Toluene, ethylbenzene, and total xylenes concentrations remained below standards at MW-1 for all three sampling events.

- BTEX constituents were not sampled at MW-2, MW-3, and MW-4 due to insufficient groundwater during the 2013 sampling events.

- The presence of several monitoring wells and one passive vent well which do not belong to EPCGP implies that the current operator has had a release at this site.

PLANNED FUTURE ACTIVITIES

Following the completion of a Site access agreement with the current Site operator, installation of additional monitoring wells is planned, to further assess the extent of the dissolved phase hydrocarbons and to confirm and/or further define the groundwater gradient at the Site. Monitoring wells will be installed around the known extent of dissolved phase hydrocarbons in order to better delineate impacts from the former EPC pit. One well will be installed to replace the existing MW-4 monitoring well and provide a sample collection and groundwater elevation data point furthest downgradient from the former EPC pit. After construction, the surface and top of casing elevations of the wells will be surveyed by a licensed surveyor using state plane coordinates and the existing site benchmark. Following approval by the New Mexico Environment Department (NMED), existing monitoring wells MW-2, MW-3, and MW-4 will be plugged and abandoned in accordance with NMED, Ground Water Quality Bureau, Monitoring Well Construction and Abandonment Guidelines, dated March 2011. Additionally, existing monitoring well

MW-1 and newly installed monitoring wells will be sampled on a semi-annual basis.

The current operator will be contacted to determine the nature of environmental issues which have apparently occurred, based on the presence of monitoring wells and a passive vent well observed by EPCGP personnel.

TABLE

TABLE 1 – GROUNDWATER ANALYTICAL AND WATER LEVEL RESULTS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Fields A#7A								
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	08/09/95	1950	1946	115	1361	22.50	-	-
MW-1	01/03/96	3150	5280	361	3460	23.28	-	-
MW-1	04/18/96	1300	2140	119	1240	24.20	-	-
MW-1	05/08/96					24.20	-	-
MW-1	07/29/96	503	804	28	363	25.07	25.02	0.05
MW-1	10/21/96	843	1300	26	422	25.45	25.38	0.07
MW-1	01/30/97	1300	2200	76.8	966	26.83	26.57	0.26
MW-1	04/21/97	951	1920	73	894	26.47	26.44	0.03
MW-1	01/30/01					30.08	28.74	1.34
MW-1	02/08/01					29.85	28.65	1.20
MW-1	02/16/01					30.20	29.08	1.12
MW-1	02/17/01					29.66	29.08	0.58
MW-1	02/26/01					29.54	29.39	0.15
MW-1	03/05/01					29.28	29.25	0.03
MW-1	04/11/01					29.33	-	-
MW-1	06/05/01					29.46	29.34	0.12
MW-1	06/15/01					29.65	29.57	0.08
MW-1	07/06/01					30.00	-	-
MW-1	07/13/01					29.96	-	-
MW-1	07/20/01					29.69	-	-
MW-1	08/01/01					30.19	-	-
MW-1	08/08/01					30.12	-	-
MW-1	08/18/01					30.44	-	-
MW-1	08/20/01					30.32	-	-
MW-1	09/05/01					30.38	-	-
MW-1	09/21/01					30.63	-	-
MW-1	09/26/01					30.78	-	-
MW-1	10/03/01					30.69	-	-
MW-1	10/10/01					30.33	30.32	0.01
MW-1	12/04/01					30.51	-	-
MW-1	12/13/01					29.43	29.42	0.01
MW-1	12/21/01					30.40	30.39	0.01
MW-1	12/28/01					30.64	-	-
MW-1	01/07/02					30.59	30.58	0.01
MW-1	01/23/02					30.41	30.40	0.01
MW-1	01/31/02					30.95	30.94	0.01
MW-1	02/07/02					31.12	31.11	0.01
MW-1	02/14/02					31.18	31.17	0.01
MW-1	02/20/02					31.15	31.14	0.01
MW-1	03/21/02					30.80	30.78	0.02
MW-1	03/28/02					30.92	-	-
MW-1	04/04/02					30.64	-	-
MW-1	04/12/02					31.45	-	-
MW-1	04/19/02					31.56	-	-
MW-1	04/25/02					31.54	-	-
MW-1	05/03/02					31.51	-	-
MW-1	05/10/02					31.59	-	-
MW-1	05/17/02					31.16	-	-
MW-1	05/24/02					31.38	-	-
MW-1	05/31/02					31.23	-	-
MW-1	06/06/02					31.32	-	-
MW-1	06/14/02					31.34	-	-
MW-1	06/21/02					31.67	-	-
MW-1	06/27/02					31.81	-	-
MW-1	07/02/02					31.82	-	-
MW-1	07/11/02					31.84	-	-
MW-1	07/18/02					31.45	-	-

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Fields A#7A								
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	08/21/02					32.12	-	-
MW-1	10/01/02					31.77	-	-
MW-1	01/15/03					31.90	-	-
MW-1	04/27/03					31.07	31.06	0.01
MW-1	07/16/03					31.30	-	-
MW-1	10/27/03					30.97	-	-
MW-1	01/26/04	121	54	15.8	216	30.67	-	-
MW-1	04/21/04	116	58.1	29.3	83.3	30.83	-	-
MW-1	07/27/04					30.97	-	-
MW-1	10/18/04					31.15	-	-
MW-1	01/25/05					30.19	-	-
MW-1	04/18/05	108	29	14.2	274	30.19	-	-
MW-1	10/22/05	180	69.2	6.3	154	30.74	-	-
MW-1	04/25/06	83.7	23.8	2.1 J	82.5	31.41	-	-
MW-1	10/24/06	254	108	4	169	31.39	-	-
MW-1	04/24/07	106	37.2	3.3	112	31.66	-	-
MW-1	10/29/07					31.73	-	-
MW-1	04/21/08	246	38.3	1.6 J	81.3	30.31	-	-
MW-1	10/09/08					30.69	-	-
MW-1	04/07/09	25.5	11	0.6 J	21.5	31.24	-	-
MW-1	11/04/09					31.77	-	-
MW-1	05/24/10	100	43.8	1.1 J	56.9	31.33	-	-
MW-1	11/02/10					29.93	-	-
MW-1	05/04/11	158	2.6	2.4	12.1	29.91	-	-
MW-1	11/01/11					29.80	-	-
MW-1	05/07/12	27.1	8.7	1.1	14.2	30.29	-	-
MW-1	06/07/13	910	110	14.0	170	31.41	-	-
MW-1	09/12/13	130	13	3.1	29	31.55	-	-
MW-1	12/13/13	380	30	4.7	98	31.09	-	-

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Fields A#7A								
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-2	01/03/96	28.8	<2.5	297	1169	24.27	-	-
MW-2	04/18/96	<1	<1	2.64	<3	25.53	-	-
MW-2	05/08/96					25.53	-	-
MW-2	07/29/96	<2	<2	<2	<6	26.48	-	-
MW-2	10/21/96	<1	<1	<1	<3	26.96	-	-
MW-2	01/30/97	<2	<2	<2	<6	27.73	-	-
MW-2	04/21/97	<1	<1	<1	<3	27.77	-	-
MW-2	04/13/01	<0.5	<0.5	<0.5	<0.5	30.33	-	-
MW-2	06/05/01					30.71	-	-
MW-2	07/20/01					30.95	-	-
MW-2	08/20/01					31.03	-	-
MW-2	05/17/02					31.38	-	-
MW-2	10/27/03					31.79	-	-
MW-2	04/21/04					31.10	-	-
MW-2	04/18/05	<1	<1	<1	<2	30.98	-	-
MW-2	04/21/08	<2	<2	<2	<6	30.66	-	-
MW-2	11/02/10					29.65	-	-
MW-2	05/04/11	0.38 J	<1	<1	<3	31.10	-	-
MW-2	11/01/11					31.42	-	-
MW-2	05/07/12					31.29	-	-
MW-2	06/07/13					DRY	-	-
MW-2	09/12/13					DRY	-	-
MW-2	12/13/13					DRY	-	-

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Fields A#7A								
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-3	01/03/96	176	16.4	225	1550	24.88	-	-
MW-3	04/18/96	129	<2	212	463	25.75	-	-
MW-3	05/08/96					25.75	-	-
MW-3	07/29/96	212	<2	167	393	26.64	-	-
MW-3	10/21/96	165	<1	157	467	27.16	-	-
MW-3	01/30/97	144	<1	198	851	27.92	-	-
MW-3	04/21/97	2070	4340	332	4730	28.00	-	-
MW-3	04/13/01	120	5.2	<5	80	30.48	-	-
MW-3	06/05/01					30.79	-	-
MW-3	07/20/01					31.03	-	-
MW-3	08/20/01					31.14	-	-
MW-3	04/02/02					31.62	-	-
MW-3	05/17/02					32.05	-	-
MW-3	01/25/05					31.93	-	-
MW-3	04/18/05	<1	<1	<1	<2	30.77	-	-
MW-3	10/22/05					31.57	-	-
MW-3	04/25/06	46.4	<5	<5	<10	31.61	-	-
MW-3	10/24/06					31.90	-	-
MW-3	04/24/07	179	<5	12.3	37.9	31.90	-	-
MW-3	10/29/07					31.93	-	-
MW-3	04/21/08	140	2.5	2.7	16.9	30.40	-	-
MW-3	10/09/08					31.56	-	-
MW-3	04/07/09	182	<50	<50	<100	31.40	-	-
MW-3	11/04/09					31.97	-	-
MW-3	05/24/10					31.87	-	-
MW-3	11/02/10					29.83	-	-
MW-3	05/04/11	5.7	<1	0.42 J	<3	30.71	-	-
MW-3	11/01/11					31.08	-	-
MW-3	05/07/12	14.6	<1	0.3 J	2.5 J	31.57	-	-
MW-3	06/07/13					DRY	-	-
MW-3	09/12/13					DRY	-	-
MW-3	12/13/13					DRY	-	-

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Fields A#7A								
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-4	01/03/96	2470	1880	206	2350	25.69	-	-
MW-4	04/18/96	4760	2460	235	1880	26.42	-	-
MW-4						26.42	25.83	0.59
MW-4	07/29/96	1830	2380	106	967	28.65	26.82	1.83
MW-4	10/21/96	3320	4520	149	1680	28.84	27.45	1.39
MW-4	01/30/97	4320	7420	280	3250	28.85	28.43	0.42
MW-4	04/21/97	2410	5170	219	2530	28.68	28.58	0.10
MW-4	06/05/01					31.25	31.01	0.24
MW-4	06/15/01					31.56	31.12	0.44
MW-4	07/06/01					DRY	31.20	-
MW-4	07/13/01					DRY	31.44	-
MW-4	07/20/01					DRY	31.51	-
MW-4	08/01/01					DRY	31.54	-
MW-4	08/08/01					DRY	-	-
MW-4	08/16/01					DRY	-	-
MW-4	08/20/01					DRY	-	-
MW-4	09/05/01					DRY	-	-
MW-4	09/21/01					DRY	-	-
MW-4	09/26/01					DRY	-	-
MW-4	10/03/01					DRY	-	-
MW-4	10/10/01					DRY	-	-
MW-4	12/04/01					DRY	-	-
MW-4	12/13/01					DRY	31.65	-
MW-4	12/21/01					DRY	31.61	-
MW-4	12/28/01					31.61	-	-
MW-4	01/07/02					DRY	31.61	-
MW-4	01/23/02					DRY	31.62	-
MW-4	01/31/02					DRY	31.61	-
MW-4	02/07/02					DRY	31.60	-
MW-4	02/14/02					DRY	31.62	-
MW-4	02/20/02					DRY	31.62	-
MW-4	03/21/02					DRY	-	-
MW-4	04/04/02					DRY	-	-
MW-4	05/17/02					DRY	-	-
MW-4	05/24/02					DRY	-	-
MW-4	05/31/02					DRY	-	-
MW-4	06/06/02					DRY	-	-
MW-4	06/14/02					DRY	-	-
MW-4	07/18/02					DRY	-	-
MW-4	10/01/02					DRY	-	-
MW-4	01/15/03					DRY	-	-
MW-4	01/26/04					DRY	-	-
MW-4	04/21/04					DRY	-	-
MW-4	07/27/04					DRY	-	-
MW-4	10/18/04					DRY	-	-
MW-4	01/25/05					DRY	-	-
MW-4	04/18/05					DRY	-	-
MW-4	04/21/08	1580	679	6.8 J	3900	31.22	-	-
MW-4	10/09/08					31.40	-	-
MW-4	04/07/09	695	206	<50	745	31.40	-	-
MW-4	11/04/09					31.58	-	-
MW-4	05/24/10					31.47	-	-
MW-4	11/02/10					30.60	-	-
MW-4	05/04/11					31.05	-	-
MW-4	11/01/11	533	207	<10	419	31.05	-	-
MW-4	05/07/12					31.47	-	-

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Fields A#7A								
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-4	06/07/13					31.42	-	-
MW-4	09/12/13					DRY	-	-
MW-4	12/13/13					DRY	-	-

Notes:
Results highlighted yellow exceed their respective New Mexico Water Quality Control Comission standards.
"J" = Result is less than the reporting limit but greater than or equal to the method detection limit and the result in 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\FIELDS A#7\2013 MAPS\Fields_A#7_GARM_2Q_2013.mxd

TELEPHONE BOX
SEPARATOR
TANK
COMPRESSOR
6086
6085
TANK
6083
TANK
SMA BENCHMARK
ELEV. 6082.52'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST
6083
6082
6081
FORMER PIT
MW-1
MW-1
B: **910**
T: 110
E: 14
X: 170
WELLHEAD
METER HOUSE
MW-2
MW-2
DRY
MW-3
MW-3
DRY
MW-4
MW-4
DRY
WASH
Underground Electric Box

AERIAL IMAGERY FROM GOOGLE EARTH, DATED 6.10.2011

LEGEND:

- 6082 — APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- BOLLARD
- MONITORING WELL
- OTHER MONITORING WELL
- PASSIVE VENT WELL

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	2/24/2014	CCL	CCL	DAW

TITLE:
FIELDS A#7A
GROUNDWATER ANALYTICAL RESULTS
SAMPLED JUNE 7, 2013

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

MWH

Figure No.:
1

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\FIELDS A#7\2013 MAPS\Fields_A#7_GECM_2Q_2013.mxd

TELEPHONE BOX
SEPARATOR
TANK
COMPRESSOR
6086
6085
TANK
6083
TANK
SMA BENCHMARK
ELEV. 6082.52'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST
6083
6082
FORMER PIT
MW-1
6054.57
MW-1
6081
WELLHEAD
METER HOUSE
MW-2
MW-2
DRY
MW-3
MW-3
DRY
MW-4
MW-4
DRY
WASH
Underground Electric Box

AERIAL IMAGERY FROM GOOGLE EARTH, DATED 6.10.2011

LEGEND:

- 6082 — APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- BOLLARD
- MONITORING WELL
- OTHER MONITORING WELL
- PASSIVE VENT WELL

N

SCALE IN FEET
0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	2/24/2014	CCL	CCL	DAW

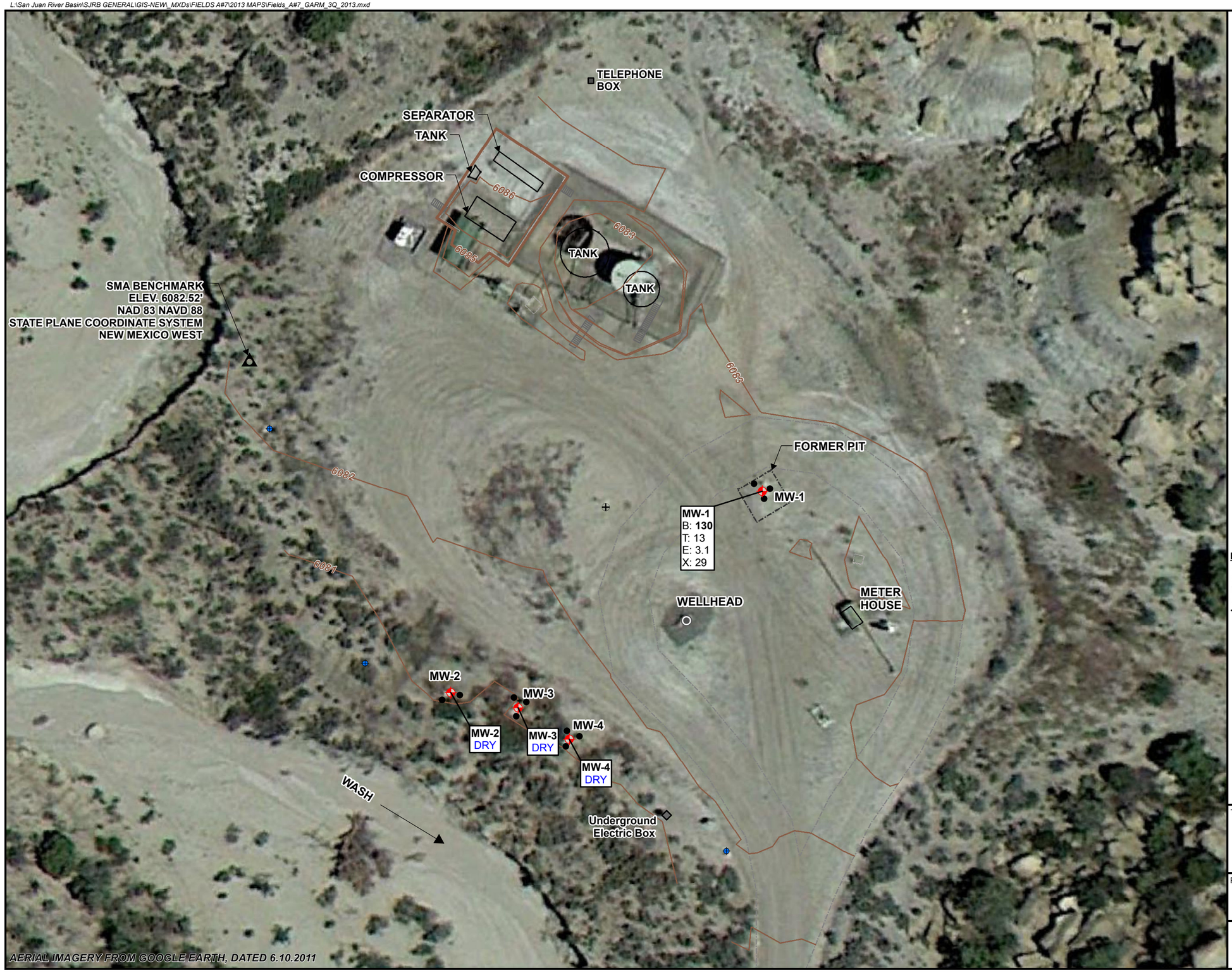
TITLE:
FIELDS A#7A
GROUNDWATER ELEVATION MAP
SAMPLED JUNE 7, 2013

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

MWH

Figure No.: 2

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\FIELDS A#7\2013 MAPS\Fields_A#7_GARM_3Q_2013.mxd



LEGEND:

- 6082 — APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- BOLLARD
- MONITORING WELL
- OTHER MONITORING WELL
- PASSIVE VENT WELL

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	2/24/2014	CCL	CCL	DAW

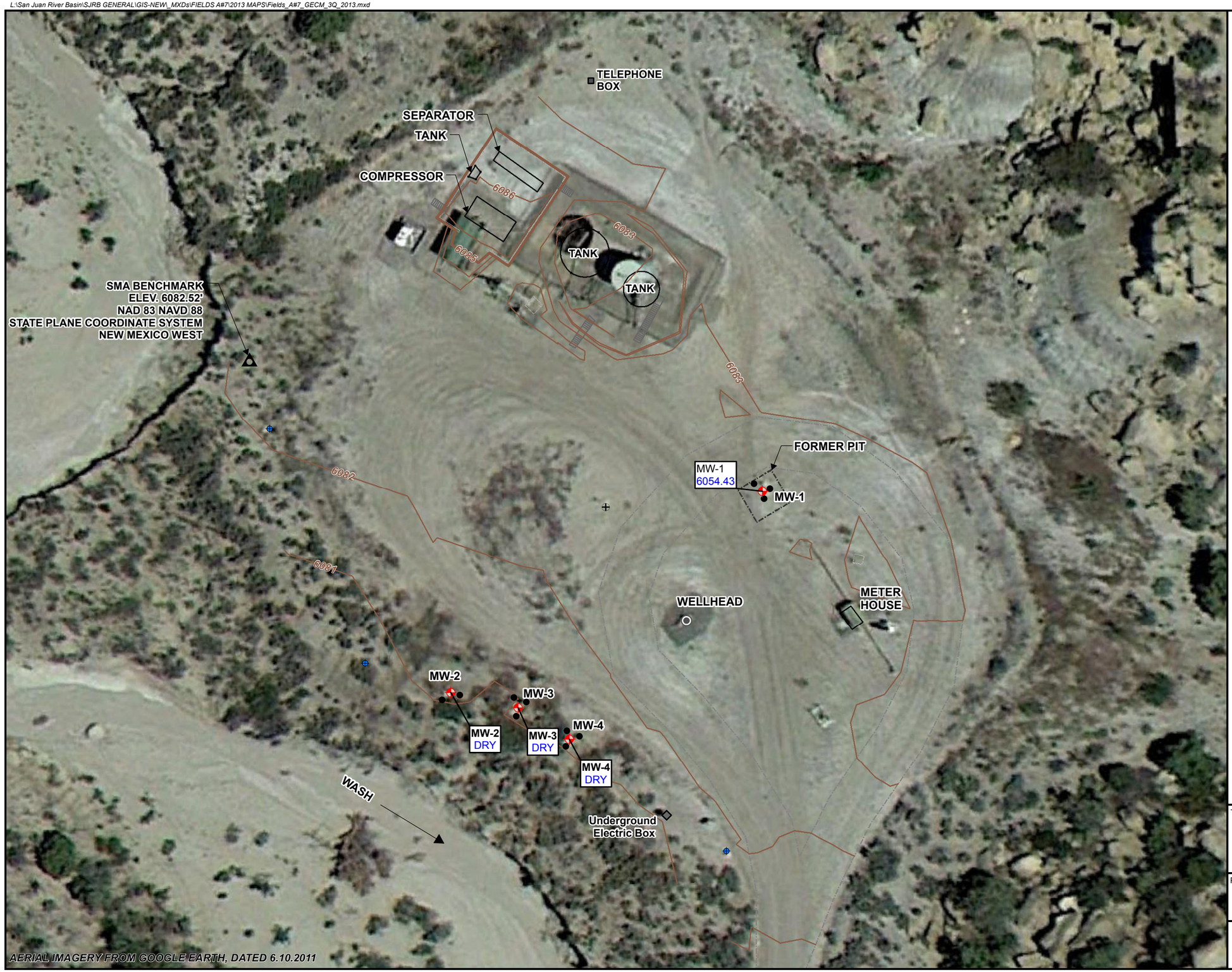
TITLE:
FIELDS A#7A
GROUNDWATER ANALYTICAL RESULTS
SAMPLED SEPTEMBER 12, 2013

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

MWH

Figure No.: 3

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\FIELDS A#7\2013 MAPS\Fields_A#7_GECM_3Q_2013.mxd



LEGEND:

- 6082 — APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- BOLLARD
- MONITORING WELL
- OTHER MONITORING WELL
- PASSIVE VENT WELL

N

SCALE IN FEET

0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	2/24/2014	CCL	CCL	DAW

TITLE:

FIELDS A#7A
GROUNDWATER ELEVATION MAP
SAMPLED SEPTEMBER 12, 2013

PROJECT:

SAN JUAN RIVER BASIN
MONITORING AND REMEDIATION
SAN JUAN COUNTY, NEW MEXICO

MWH

Figure No.: 4

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\FIELDS A#7\2013 MAPS\Fields_A#7_GARM_4Q_2013.mxd

TELEPHONE BOX
SEPARATOR
TANK
COMPRESSOR
6086
6085
TANK
6083
TANK
SMA BENCHMARK
ELEV. 6082.52'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST
6083
6082
FORMER PIT
MW-1
MW-1
B: 380
T: 30
E: 4.7
X: 98
6081
WELLHEAD
METER HOUSE
MW-2
MW-3
MW-4
MW-2
DRY
MW-3
DRY
MW-4
DRY
WASH
Underground Electric Box

AERIAL IMAGERY FROM GOOGLE EARTH, DATED 11.17.2013

LEGEND:

- 6082 — APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- BOLLARD
- MONITORING WELL
- OTHER MONITORING WELL
- PASSIVE VENT WELL

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	2/24/2014	CCL	CCL	DAW

TITLE:
FIELDS A#7A
GROUNDWATER ANALYTICAL RESULTS
SAMPLED DECEMBER 13, 2013

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

MWH

Figure No.:
5

L:\San Juan River Basin\SJRB GENERAL\GIS-NEW_MXDs\FIELDS A#7\2013 MAPS\Fields_A#7_GECM_4Q_2013.mxd

TELEPHONE BOX
SEPARATOR
TANK
COMPRESSOR
6086
6085
6083
TANK
TANK
SMA BENCHMARK
ELEV. 6082.52'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST
6083
FORMER PIT
6082
MW-1
MW-1
6054.89
6081
WELLHEAD
METER HOUSE
MW-2
MW-3
MW-4
MW-2
DRY
MW-3
DRY
MW-4
DRY
WASH
Underground Electric Box

AERIAL IMAGERY FROM GOOGLE EARTH, DATED 6.10.2011

LEGEND:

- 6082 — APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FORMER PIT
- BENCHMARK
- BOLLARD
- MONITORING WELL
- OTHER MONITORING WELL
- PASSIVE VENT WELL

N

SCALE IN FEET
0 30 60

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	2/24/2014	CCL	CCL	DAW

TITLE:
FIELDS A#7A
GROUNDWATER ELEVATION MAP
SAMPLED DECEMBER 13, 2013

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

MWH

Figure No.:
6

APPENDIX A

JUNE 7, 2013 GROUNDWATER SAMPLING ANALYTICAL REPORT
SEPTEMBER 12, 2013 GROUNDWATER SAMPLING ANALYTICAL REPORT
DECEMBER 13, 2013 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: 560-40564-1
TestAmerica Sample Delivery Group: June 2013
Client Project/Site: Fields A#7

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

Attn: Mr. Daniel Wade

Authorized for release by:
6/19/2013 7:38:55 PM

Timothy Kellogg, Lab Director
tim.kellogg@testamericainc.com

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)
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: 560-40564-1

Laboratory: TestAmerica Corpus Christi

Narrative

Receipt

The sample was received on 6/12/2013 10:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 4.0º C. No analytical or quality issues were noted.

Client: MWH Americas Inc
Project/Site: Fields A#7

TestAmerica Job ID: 560-40564-1
SDG: June 2013

Client Sample ID: MW-1
Date Collected: 06/10/13 13:15
Date Received: 06/12/13 10:00

Lab Sample ID: 560-40564-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.91		0.010	0.0014	mg/L			06/17/13 20:06	10
Ethylbenzene	0.014		0.010	0.0020	mg/L			06/17/13 20:06	10
Toluene	0.11		0.010	0.0030	mg/L			06/17/13 20:06	10
Xylenes, Total	0.17		0.030	0.0023	mg/L			06/17/13 20:06	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*70 - 130*		*06/17/13 20:06*	*10*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*06/17/13 20:06*	*10*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*06/17/13 20:06*	*10*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*06/17/13 20:06*	*10*

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

Lab Sample ID: MB 560-89169/8
Matrix: Water
Analysis Batch: 89169

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00014		0.0010	0.00014	mg/L			06/17/13 12:32	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			06/17/13 12:32	1
Toluene	<0.00030		0.0010	0.00030	mg/L			06/17/13 12:32	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			06/17/13 12:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*70 - 130*		*06/17/13 12:32*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*06/17/13 12:32*	*1*
Dibromofluoromethane (Surr)	*110*		*70 - 130*		*06/17/13 12:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*06/17/13 12:32*	*1*

Lab Sample ID: LCS 560-89169/3
Matrix: Water
Analysis Batch: 89169

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0250	0.0276		mg/L		110	70 - 130
Ethylbenzene	0.0250	0.0245		mg/L		98	70 - 130
Toluene	0.0250	0.0278		mg/L		111	70 - 130
Xylenes, Total	0.0750	0.0736		mg/L		98	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*70 - 130*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
Dibromofluoromethane (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Fields A#7

TestAmerica Job ID: 560-40564-1
SDG: June 2013

Client Sample ID: MW-1
Date Collected: 06/10/13 13:15
Date Received: 06/12/13 10:00

Lab Sample ID: 560-40564-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	89169	06/17/13 20:06	RT	TAL CC

Laboratory References:

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

Certification Summary

Client: MWH Americas Inc
Project/Site: Fields A#7

TestAmerica Job ID: 560-40564-1
SDG: June 2013

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	10-31-13
Oklahoma	State Program	6	9968	08-31-13
Texas	NELAP	6	T104704210-12-8	03-31-14
USDA	Federal		P330-11-00060	02-03-14

Method Summary

Client: MWH Americas Inc
Project/Site: Fields A#7

TestAmerica Job ID: 560-40564-1
SDG: June 2013

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	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: Fields A#7

TestAmerica Job ID: 560-40564-1
SDG: June 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-40564-1	MW-1	Water	06/10/13 13:15	06/12/13 10:00

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

No. 40419

CHAIN OF CUSTODY RECORD

Loc: 560
40564

560-40564 Chain of Custody

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: MWH	PROJECT NAME/NUMBER: Fields A #7
SEND REPORT TO: Daniel Wade	**BILLING INFORMATION**
ADDRESS: 1801 California St. Denver, CO 80202 SDW	BILL TO: Kinder Morgan ADDRESS: Houston, Tx
PHONE: 303-291-2250	PHONE: SDW
FAX:	FAX: PO NO:

SEAL INTACT: Yes
TEMP C: 4.8 C
CORR TEMP C: 4.0 C
IR GUN ID: 4
INITIAL/DATE: MW 06/13

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CC	8260	REMARKS/PRECAUTIONS.
	MW-1	6/10/13	1315	GW	VOA	HCL	3	X	

SAMPLER: Daniel Wade
SHIPMENT METHOD: FedEx
AIRBILL NO: 795788553894

REQUIRED TURNAROUND: ☒ ROUTINE TAT (10 BUSINESS DAYS) ☐ RUSH TAT (MAY REQUIRE SURCHARGE)

1. RELINQUISHED BY: Daniel Wade	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	6/11	SIGNATURE.		SIGNATURE:	
PRINTED NAME/COMPANY: MWH	TIME 1000	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY.	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE:	06/13/13	SIGNATURE.		SIGNATURE:	
PRINTED NAME/COMPANY:	TIME 1000	PRINTED NAME/COMPANY	TIME	PRINTED NAME/COMPANY:	TIME

TAL-8222-560 (0412)

TestAmerica
1733 N. Padre Island Drive
Corpus Christi, TX 78408
Phone: 361.289.2673/Fax: 361.289.2471

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-40564-1
SDG Number: June 2013

Login Number: 40564
List Number: 1
Creator: McDermott, Vivian

List Source: TestAmerica Corpus Christi

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.	N/A	

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: 560-42550-1
TestAmerica Sample Delivery Group: September 2013
Client Project/Site: Fields A#7 Groundwater Analysis

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

Attn: Mr. Daniel Wade

Authorized for release by:
10/3/2013 11:47:09 AM
Lindy Maingot, Project Manager I
lindy.maingot@testamericainc.com

Designee for

Timothy Kellogg, Lab Director
tim.kellogg@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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: 560-42550-1

Laboratory: TestAmerica Corpus Christi

Narrative

Job Narrative
560-42550-1

Comments
No additional comments.

Receipt
The sample was received on 9/14/2013 10:05 AM; the sample arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 1.4° C.

GC/MS VOA
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

Detection Summary

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater Analysis

TestAmerica Job ID: 560-42550-1
SDG: September 2013

Client Sample ID: MW-1

Lab Sample ID: 560-42550-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.13		0.0030	0.00042	mg/L	3		8260B	Total/NA
Ethylbenzene	0.0031		0.0030	0.00060	mg/L	3		8260B	Total/NA
Toluene	0.013		0.0030	0.00090	mg/L	3		8260B	Total/NA
Xylenes, Total	0.029		0.0090	0.00068	mg/L	3		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater Analysis

TestAmerica Job ID: 560-42550-1
SDG: September 2013

Client Sample ID: MW-1
Date Collected: 09/12/13 09:10
Date Received: 09/14/13 10:05

Lab Sample ID: 560-42550-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.13		0.0030	0.00042	mg/L			09/19/13 12:53	3
Ethylbenzene	0.0031		0.0030	0.00060	mg/L			09/19/13 12:53	3
Toluene	0.013		0.0030	0.00090	mg/L			09/19/13 12:53	3
Xylenes, Total	0.029		0.0090	0.00068	mg/L			09/19/13 12:53	3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*70 - 130*		*09/19/13 12:53*	*3*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*09/19/13 12:53*	*3*
Dibromofluoromethane (Surr)	*95*		*70 - 130*		*09/19/13 12:53*	*3*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 140*		*09/19/13 12:53*	*3*

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

Lab Sample ID: MB 560-92913/8
Matrix: Water
Analysis Batch: 92913

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00014		0.0010	0.00014	mg/L			09/19/13 09:56	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			09/19/13 09:56	1
Toluene	<0.00030		0.0010	0.00030	mg/L			09/19/13 09:56	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			09/19/13 09:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*70 - 130*		*09/19/13 09:56*	*1*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*		*09/19/13 09:56*	*1*
Dibromofluoromethane (Surr)	*96*		*70 - 130*		*09/19/13 09:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 140*		*09/19/13 09:56*	*1*

Lab Sample ID: LCS 560-92913/3
Matrix: Water
Analysis Batch: 92913

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0250	0.0226		mg/L		91	70 - 130
Ethylbenzene	0.0250	0.0237		mg/L		95	70 - 130
Toluene	0.0250	0.0218		mg/L		87	70 - 130
Xylenes, Total	0.0750	0.0715		mg/L		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*94*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 140*

Certification Summary

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater Analysis

TestAmerica Job ID: 560-42550-1
SDG: September 2013

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	10-31-13
Oklahoma	State Program	6	9968	08-31-14
Texas	NELAP	6	T104704210-12-8	03-31-14
USDA	Federal		P330-11-00060	02-03-14

Method Summary

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater Analysis

TestAmerica Job ID: 560-42550-1
SDG: September 2013

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	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: Fields A#7 Groundwater Analysis

TestAmerica Job ID: 560-42550-1
SDG: September 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-42550-1	MW-1	Water	09/12/13 09:10	09/14/13 10:05

Obs 1.3c
Corr 1.4c
IR4 seal

Chain of Custody Record

TestAmerica Corpus Christi
1733 North Padre Island Drive

Corpus Christi, TX 78408
phone 361.289.2673 fax 361.289.2471

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☑ Other:

Client Contact	Project Manager: Daniel Wade	Site Contact: Daniel Wade	Date: 9/17/13	COC No:
MWH Americas, Inc.	Tel/Fax: 303-291-2250	Lab Contact: Tim Kellogg	Carrier: FedEx	____ of ____ COCs
1801 California Street, Suite 2900	**Analysis Turnaround Time**			For Lab U
Denver, Colorado 80202	Calendar (C) or Work Days (W) ____			Walk-in C
(303) 291-2222 Phone	TAT if different from Below ____			Lab Samp
(303) 291-2221 FAX	☑ 2 weeks			Job / SDG
Project Name: San Juan River Basin	☐ 1 week			
Site: Fields A#7	☐ 2 days			Sampler:
P O # 56000058	☐ 1 day			

Loc: 560
42550

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample (Y / N)	Composite = C / Grab = G	8260 - BTEX	Sample Specific Notes:
MW-1	9/12/13	910	G	W	3			X	

560-42550 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____ | 2

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

FedEx Sat 803156423170

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	MWH	9/13/13 1200			9/14/13 1005 TAC
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4, dated 10/25/2012

10/3/2013

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-42550-1
SDG Number: September 2013

Login Number: 42550
List Number: 1
Creator: Wing, Randi

List Source: TestAmerica Corpus Christi

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.	N/A	
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.	N/A	

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: 560-44341-1
TestAmerica Sample Delivery Group: December 2013
Client Project/Site: Fields A#7 Groundwater

For:
MWH Americas Inc
2890 East Cottonwood Pkwy
Suite 300
Salt Lake City, Utah 84121

Attn: Mr. Cary Ruble

Authorized for release by:
12/30/2013 6:34:14 PM

Timothy Kellogg, Lab Director
(361)289-2673
tim.kellogg@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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)

Case Narrative

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater

TestAmerica Job ID: 560-44341-1
SDG: December 2013

Job ID: 560-44341-1

Laboratory: TestAmerica Corpus Christi

Narrative

Receipt

The sample was received on 12/17/2013 10:40 AM; the sample arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 1.5º C. No analytical or quality issues were noted.

Detection Summary

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater

TestAmerica Job ID: 560-44341-1
SDG: December 2013

Client Sample ID: MW-1

Lab Sample ID: 560-44341-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.38		0.0080	0.00080	mg/L	4		8021B	Total/NA
Toluene	0.030		0.0040	0.00075	mg/L	2		8021B	Total/NA
Ethylbenzene	0.0047		0.0040	0.00040	mg/L	2		8021B	Total/NA
Xylenes, Total	0.098		0.0040	0.0013	mg/L	2		8021B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater

TestAmerica Job ID: 560-44341-1
SDG: December 2013

Client Sample ID: MW-1
Date Collected: 12/13/13 08:30
Date Received: 12/17/13 10:40

Lab Sample ID: 560-44341-1
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.38		0.0080	0.00080	mg/L			12/21/13 22:35	4
Toluene	0.030		0.0040	0.00075	mg/L			12/20/13 14:31	2
Ethylbenzene	0.0047		0.0040	0.00040	mg/L			12/20/13 14:31	2
Xylenes, Total	0.098		0.0040	0.0013	mg/L			12/20/13 14:31	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*58 - 129*		*12/20/13 14:31*	*2*
4-Bromofluorobenzene (Surr)	*89*		*58 - 129*		*12/21/13 22:35*	*4*
Trifluorotoluene (Surr)	*90*		*54 - 130*		*12/20/13 14:31*	*2*
Trifluorotoluene (Surr)	*85*		*54 - 130*		*12/21/13 22:35*	*4*

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 560-96456/5
Matrix: Water
Analysis Batch: 96456

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00020		0.0020	0.00020	mg/L			12/20/13 10:21	1
Toluene	<0.00038		0.0020	0.00038	mg/L			12/20/13 10:21	1
Ethylbenzene	<0.00020		0.0020	0.00020	mg/L			12/20/13 10:21	1
Xylenes, Total	<0.00065		0.0020	0.00065	mg/L			12/20/13 10:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*58 - 129*		*12/20/13 10:21*	*1*
Trifluorotoluene (Surr)	*85*		*54 - 130*		*12/20/13 10:21*	*1*

Lab Sample ID: LCS 560-96456/4
Matrix: Water
Analysis Batch: 96456

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0400	0.0350		mg/L		87	70 - 130
Toluene	0.0400	0.0350		mg/L		87	70 - 130
Ethylbenzene	0.0400	0.0356		mg/L		89	70 - 130
Xylenes, Total	0.120	0.104		mg/L		87	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*58 - 129*
Trifluorotoluene (Surr)	*86*		*54 - 130*

Lab Sample ID: MB 560-96483/5
Matrix: Water
Analysis Batch: 96483

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00020		0.0020	0.00020	mg/L			12/21/13 21:49	1
Toluene	<0.00038		0.0020	0.00038	mg/L			12/21/13 21:49	1
Ethylbenzene	<0.00020		0.0020	0.00020	mg/L			12/21/13 21:49	1
Xylenes, Total	<0.00065		0.0020	0.00065	mg/L			12/21/13 21:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*58 - 129*		*12/21/13 21:49*	*1*
Trifluorotoluene (Surr)	*86*		*54 - 130*		*12/21/13 21:49*	*1*

Lab Sample ID: LCS 560-96483/4
Matrix: Water
Analysis Batch: 96483

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0400	0.0355		mg/L		89	70 - 130
Toluene	0.0400	0.0358		mg/L		90	70 - 130
Ethylbenzene	0.0400	0.0361		mg/L		90	70 - 130
Xylenes, Total	0.120	0.106		mg/L		88	70 - 130

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCS 560-96483/4
Matrix: Water
Analysis Batch: 96483

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*91*		*58 - 129*
Trifluorotoluene (Surr)	*87*		*54 - 130*

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater

TestAmerica Job ID: 560-44341-1
SDG: December 2013

Client Sample ID: MW-1

Lab Sample ID: 560-44341-1

Date Collected: 12/13/13 08:30

Matrix: Water

Date Received: 12/17/13 10:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		2	96456	12/20/13 14:31	RQH	TAL CC
Total/NA	Analysis	8021B		4	96483	12/21/13 22:35	RQH	TAL CC

Laboratory References:

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

Certification Summary

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater

TestAmerica Job ID: 560-44341-1
SDG: December 2013

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	T104704210-12-8	03-31-14
USDA	Federal		P330-11-00060	02-03-14

Method Summary

Client: MWH Americas Inc
Project/Site: Fields A#7 Groundwater

TestAmerica Job ID: 560-44341-1
SDG: December 2013

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: Fields A#7 Groundwater

TestAmerica Job ID: 560-44341-1
SDG: December 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-44341-1	MW-1	Water	12/13/13 08:30	12/17/13 10:40

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

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: CCL	Lab PM: Kellogg, Timothy L.	Carrier Tracking No(s):	COC No: 560-11604-1157.1
Client Contact: ~~Mr. Daniel Wade~~ Christopher Lee	Phone: 303 291 2342	E-Mail: tim.kellogg@testamericainc.com		Page: Page Loc: 560
Company: MWH Americas Inc				Job #: 44341
Address: 1801 California Street Suite 2900	Due Date Requested:			
City: Denver	TAT Requested (days):			
State, Zip: CO, 80202				
Phone: 713-420-3414(Tel)	PO #: Purchase Order not required			
Email: christopher.c.lee@mwhglobal.com ~~Daniel.A.Wade@us.mwhglobal.com~~	WO #: TWO # C-STLI-			
Project Name: San Juan River Basin Pit Sites	Project #: 56000058			
Site: Fields A#7	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
P - Na2O4S
Q - Na2SO3
R - Na2S2SO3
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	12/13/13	0830	G	Water			X		
				Water					
				Water					
				Water					
				Water					
Trip Blank				Water					

560-44341 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
Christopher Lee	12/16/13 0900		RWM	12/17/13 10:40	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: 1.3/1.3 IR4 Seal

Page 12 of 13

12/30/2013

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-44341-1
SDG Number: December 2013

Login Number: 44341
List Number: 1
Creator: Rood, Vivian R

List Source: TestAmerica Corpus Christi

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.	N/A	