3R – 186

2013 AGWMR

03 / 04 / 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
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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

Hammond #41A
Meter Code: 89894
T27N, R8W, Sec25, Unit 0

SITE DETAILS

Site Location: Latitude: 36.540090 N, Longitude: -107.631944 W
Land Type: Federal
Operator: M&G Drilling Company

SITE BACKGROUND

- **Site Assessment:** 6/94
- **Excavation:** 7/94
- **Re-excavation:** 5/97
- **ORC Nutrient Injection:** 7/98

Hammond #41A (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 (EPCPG) program methods. Currently, the Site is operated by M & G Drilling Company and is active.

The Site is located on Federal land. Various Site investigations have occurred from 1994 through 2003. Monitoring wells were installed in 1997 (MW-1), 1999 (MW-2 and MW-3), and 2003 (MW-4). Currently, groundwater sampling is conducted on a semi-annual basis and free product has not been observed.

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 5, September 11, and December 11, 2013, water levels were gauged at MW-1, MW-2, MW-3, and MW-4. For each sampling event in 2013, monitoring wells MW-1, MW-2 and MW-3 were dry. Groundwater samples were collected from monitoring well MW-4 during each 2013 quarterly sampling event using a HydraSleeve™ (HydraSleeve); a disposable, no-purge passive groundwater sampling device. 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 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

Hammond #41A
Meter Code: 89894
T27N, R8W, Sec25, Unit 0

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 contour 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

- The groundwater flow direction cannot be determined based on our observations. MW-4 was the only monitoring well where groundwater elevation data are presented, due to the other wells onsite being dry (see Figures 2, 4, and 6).

- Groundwater samples collected from monitoring well MW-4 exhibited either non-detect results or low concentrations below New Mexico Water Quality Control Commission standards for BTEX constituents during each of the three 2013 quarterly sampling events.

- Monitoring wells MW-1, MW-2, and MW-3 were dry during each event in 2013.

PLANNED FUTURE ACTIVITIES

Following the completion of a Site access agreement with the current Site operator, the installation of additional monitoring wells is planned, to further assess the extent of dissolved phase hydrocarbons and to define the groundwater gradient at the Site. MW-4 and the newly installed monitoring wells will be sampled on a semi-annual basis. Monitoring wells MW-1, MW-2, and MW-3 will be plugged and abandoned in accordance with NMED, Ground Water Quality Bureau, Monitoring Well Construction and Abandonment Guidelines, dated March 2011.

TABLE

TABLE 1 – GROUNDWATER ANALYTICAL AND WATER LEVEL RESULTS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Hammond #41A								
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	05/21/97	150	60.1	56.7	484	18.79	-	-
MW-1	06/09/97	190	12.3	36.9	181	18.89	-	-
MW-1	09/17/97	1230	<5	263	830	18.79	-	-
MW-1	12/09/97	685	<1	141	261	18.47	-	-
MW-1	03/20/98	662	3.06	78.7	292	18.05	-	-
MW-1	06/04/98	286	2.43	38.4	140	18.54	-	-
MW-1	09/10/98	391	<1	34	144	18.19	-	-
MW-1	12/17/98	330	1.6	30	150	17.42	-	-
MW-1	03/23/99	197	<1	15.8	74.1	17.56	-	-
MW-1	06/11/99	260	3.3	42	270	17.80	-	-
MW-1	09/20/99	460	16	78	440	17.36	-	-
MW-1	12/09/99	110	3.9	13	53	17.42	-	-
MW-1	03/31/00	98	3.4	19	59	17.15	-	-
MW-1	06/09/00	290	9.7	49	290	17.64	-	-
MW-1	09/21/00	110	1.7	16	44	18.10	-	-
MW-1	12/05/00	10	<0.5	3.6	4.3	17.91	-	-
MW-1	06/04/01	39	0.6	5.5	16	18.09	-	-
MW-1	08/07/01	33	<0.5	2.8	4.9	18.62	-	-
MW-1	11/27/01	3.2	<0.5	0.6	<0.5	18.06	-	-
MW-1	02/25/02	3.9	<0.5	0.5	<1	17.86	-	-
MW-1	05/21/02	4.4	<0.5	<0.5	<1	18.16	-	-
MW-1	08/21/02					18.70	-	-
MW-1	09/05/02	2.7	0.5	2.2	1.4	18.82	-	-
MW-1	11/15/03					18.26	-	-
MW-1	02/29/04					17.75	-	-
MW-1	05/11/04					17.88	-	-
MW-1	08/19/04					19.06	-	-
MW-1	11/16/04					18.83	-	-
MW-1	02/21/05					18.29	-	-
MW-1	05/18/05					18.21	-	-
MW-1	08/23/05					19.03	-	-
MW-1	11/08/05					18.76	-	-
MW-1	02/23/06					18.48	-	-
MW-1	05/23/06					18.77	-	-
MW-1	11/08/06					17.86	-	-
MW-1	05/24/07	26.6	106	77.4	446	17.50	-	-
MW-1	08/21/07					18.19	-	-
MW-1	11/13/07					18.13	-	-
MW-1	02/12/08					17.66	-	-
MW-1	08/26/08					18.46	-	-
MW-1	02/17/09					17.92	-	-
MW-1	08/25/09					18.06	-	-
MW-1	02/16/10					18.37	-	-
MW-1	02/01/11					18.36	-	-
MW-1	09/23/11					DRY	-	-
MW-1	02/22/12					18.35	-	-
MW-1	06/05/13					DRY	-	-
MW-1	09/11/13					DRY	-	-
MW-1	12/11/13					DRY	-	-

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Hammond #41A								
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	10/15/99	<0.5	<0.5	<0.5	<0.5	14.12	-	-
MW-2	08/28/00	69	1.3	9.4	28	17.32	-	-
MW-2	06/04/01	<0.5	<0.5	<0.5	<0.5	17.54	-	-
MW-2	08/07/01	<0.5	<0.5	<0.5	<0.5	18.08	-	-
MW-2	11/27/01	<0.5	<0.5	<0.5	<0.5	17.47	-	-
MW-2	02/25/02	<0.5	<0.5	<0.5	<1	17.30	-	-
MW-2	05/21/02	<0.5	<0.5	<0.5	<1	17.62	-	-
MW-2	08/21/02					18.19	-	-
MW-2	10/08/02	<0.5	<0.5	<0.5	0.5	17.80	-	-
MW-2	11/15/03					17.69	-	-
MW-2	02/29/04					17.16	-	-
MW-2	05/11/04					17.30	-	-
MW-2	08/19/04					18.51	-	-
MW-2	11/16/04					18.30	-	-
MW-2	02/21/05					17.72	-	-
MW-2	05/18/05					17.65	-	-
MW-2	08/23/05					18.48	-	-
MW-2	11/08/05					18.20	-	-
MW-2	02/23/06					19.95	-	-
MW-2	05/23/06					18.28	-	-
MW-2	11/08/06					17.18	-	-
MW-2	05/24/07					16.90	-	-
MW-2	08/21/07					17.56	-	-
MW-2	11/13/07					17.60	-	-
MW-2	02/12/08					17.13	-	-
MW-2	08/26/08					17.51	-	-
MW-2	02/17/09					17.33	-	-
MW-2	08/25/09					17.40	-	-
MW-2	02/16/10					17.75	-	-
MW-2	09/27/10					DRY	-	-
MW-2	02/01/11					17.66	-	-
MW-2	09/23/11					DRY	-	-
MW-2	02/22/12					DRY	-	-
MW-2	06/05/13					DRY	-	-
MW-2	09/11/13					DRY	-	-
MW-2	12/11/13					DRY	-	-

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Hammond #41A								
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	10/15/99	<0.5	<0.5	<0.5	<0.5	16.43	-	-
MW-3	08/28/00	<0.5	<0.5	<0.5	<0.5	18.96	-	-
MW-3	06/04/01					19.05	-	-
MW-3	08/07/01	<0.5	<0.5	<0.5	<0.5	19.58	-	-
MW-3	11/27/01					19.02	-	-
MW-3	02/25/02					18.81	-	-
MW-3	05/21/02					19.10	-	-
MW-3	08/21/02					19.67	-	-
MW-3	10/08/02	<0.5	<0.5	<0.5	0.6	19.38	-	-
MW-3	11/15/03					19.23	-	-
MW-3	02/29/04					18.72	-	-
MW-3	05/11/04					18.84	-	-
MW-3	08/19/04					19.84	-	-
MW-3	11/16/04					19.77	-	-
MW-3	02/21/05					19.24	-	-
MW-3	05/18/05					19.15	-	-
MW-3	08/23/05					19.99	-	-
MW-3	11/08/05					19.71	-	-
MW-3	02/23/06					19.40	-	-
MW-3	05/23/06					19.70	-	-
MW-3	11/08/06					18.85	-	-
MW-3	05/24/07					18.48	-	-
MW-3	08/21/07					18.77	-	-
MW-3	11/13/07					19.24	-	-
MW-3	02/12/08					18.36	-	-
MW-3	08/26/08					18.57	-	-
MW-3	02/17/09					18.63	-	-
MW-3	08/25/09					18.55	-	-
MW-3	02/16/10					18.75	-	-
MW-3	09/27/10					DRY	-	-
MW-3	02/01/11					DRY	-	-
MW-3	09/23/11					DRY	-	-
MW-3	02/22/12					DRY	-	-
MW-3	06/05/13					DRY	-	-
MW-3	09/11/13					DRY	-	-
MW-3	12/11/13					DRY	-	-

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Hammond #41A								
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	08/13/03	7.3	128	44.8	625	17.22	-	-
MW-4	11/15/03	19.2	113	84.6	1200	16.40	-	-
MW-4	02/17/04	22.3	109	83.2	774	16.01	-	-
MW-4	02/29/04					15.89	-	-
MW-4	05/11/04	27.2	255	56.6	685	16.03	-	-
MW-4	08/19/04	3.1	<0.5	2.6	5.6	17.24	-	-
MW-4	11/16/04	55.2	53.3	70.7	306	17.00	-	-
MW-4	02/21/05	11.2	20.2	28.9	196	16.43	-	-
MW-4	05/18/05	140	398	252	1710	16.35	-	-
MW-4	08/23/05	<1	<1	<1	5.6	17.18	-	-
MW-4	11/08/05	13.9	20.1	20.1	149	16.91	-	-
MW-4	02/23/06	64.2	195	118	641	16.23	-	-
MW-4	05/23/06	49.2	188	85.1	304	16.92	-	-
MW-4	11/08/06	1.7	1.8	2.2	4.7	15.97	-	-
MW-4	02/24/07					15.66	-	-
MW-4	05/24/07	25.8	103	74.3	399	15.66	-	-
MW-4	08/21/07	15.9	81	59.6	322	16.33	-	-
MW-4	11/13/07	21.7	83	93.4	343	16.30	-	-
MW-4	02/12/08	24.2	74.5	99.1	362	16.81	-	-
MW-4	08/26/08	15.9	60.6	73.5	255	16.62	-	-
MW-4	02/17/09	14.3	50.6	85.3	246	17.06	-	-
MW-4	08/25/09	2.7	23.4	28.3	127	17.17	-	-
MW-4	02/16/10	13.8	1.2	52.9	79.9	16.55	-	-
MW-4	09/27/10	2.6	<2	3.2	4.2 J	17.15	-	-
MW-4	02/01/11	11.8	0.88 J	82.7	249	16.51	-	-
MW-4	09/23/11	<1	<1	<1	<3	17.30	-	-
MW-4	02/22/12	8.5	0.34 J	69.4	88.7	16.53	-	-
MW-4	06/05/13	0.73	<0.30	16.0	4.0	16.51	-	-
MW-4	09/11/13	<0.14	<0.20	<0.30	<0.23	16.52	-	-
MW-4	12/11/13	<0.20	<0.38	2.0	11	15.87	-	-

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\HAMMOND #41A\2013 MAPS\Hammond#41A_GARM_2Q_2013.mxd

SMA BENCHMARK
ELEV. 5975.98'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST

MW-4
B: 0.73
T: <0.30
E: 16
X: 4

MW-2
DRY

MW-1
DRY

MW-3
DRY

HAMMOND #41A WELLHEAD
METER HOUSE
SEPARATOR
DRIP TANK
DOGLEG
GAS RISER
METER RUN
(OUTSIDE)
OTHER WELLHEAD
METER HOUSE
(NOT IN USE)

5976
5977
5978
5979
5980

LEGEND:

- 5980 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- G A S — NATURAL GAS LINE
- MONITORING WELL
- SMA BENCHMARK

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 40 80

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	10/14/2013	CCL	CCL	DAW

TITLE:
HAMMOND #41A
GROUNDWATER ANALYTICAL RESULTS
SAMPLED JUNE 5, 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\HAMMOND #41A\2013 MAPS\Hammond#41A_GECM_2Q_2013.mxd

SMA BENCHMARK
ELEV. 5975.98'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST

MW-2
DRY
MW-2

MW-4
5959.71
MW-4

MW-1
DRY
MW-1

MW-3
DRY
MW-3

5976

METER HOUSE

HAMMOND #41A WELLHEAD

SEPARATOR

DRIP TANK

DOGLEG

5977

5979

5980

5978

GAS RISER

METER RUN
(OUTSIDE)

OTHER WELLHEAD

METER HOUSE
(NOT IN USE)

LEGEND:

- 5980 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- GAS — NATURAL GAS LINE
- MONITORING WELL
- SMA BENCHMARK

N

SCALE IN FEET
0 40 80

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

TITLE:
HAMMOND #41A
GROUNDWATER ELEVATION MAP
GAUGED JUNE 5, 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\HAMMOND #41A\2013 MAPS\Hammond#41A_GARM_3Q_2013.mxd

SMA BENCHMARK
ELEV. 5975.98'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST

MW-4
B: <0.14
T: <0.20
E: <0.30
X: <0.23

MW-2
DRY

MW-1
DRY

MW-3
DRY

HAMMOND #41A WELLHEAD
METER HOUSE
SEPARATOR
DRIP TANK
DOGLEG
GAS RISER
METER RUN
(OUTSIDE)
OTHER WELLHEAD
METER HOUSE
(NOT IN USE)

5976
5977
5978
5979
5980

LEGEND:

- 5980 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- G A S — NATURAL GAS LINE
- MONITORING WELL
- SMA BENCHMARK

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 40 80

REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	10/14/2013	CCL	CCL	DAW

TITLE:
HAMMOND #41A
GROUNDWATER ANALYTICAL RESULTS
SAMPLED SEPTEMBER 11, 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\HAMMOND #41A\2013 MAPS\Hammond#41A_GECM_3Q_2013.mxd

SMA BENCHMARK
ELEV. 5975.98'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST

MW-2
DRY
MW-2

MW-4
5959.70
MW-4

MW-1
DRY
MW-1

MW-3
DRY
MW-3

HAMMOND #41A WELLHEAD

METER HOUSE

SEPARATOR

DRIP TANK

DOGLEG

GAS RISER

METER RUN
(OUTSIDE)

OTHER WELLHEAD

METER HOUSE
(NOT IN USE)

5976 5977 5978 5979 5980

LEGEND:

- 5980 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- G A S — NATURAL GAS LINE
- MONITORING WELL
- SMA BENCHMARK

N

SCALE IN FEET
0 40 80

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

TITLE:
HAMMOND #41A
GROUNDWATER ELEVATION MAP
GAUGED SEPTEMBER 11, 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\HAMMOND #41A\2013 MAPS\Hammond#41A_GARM_4Q_2013.mxd

SMA BENCHMARK
ELEV. 5975.98'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST

MW-4
B: <0.20
T: <0.38
E: 2.0
X: 11

MW-2
DRY

MW-1
DRY

MW-3
DRY

METER HOUSE

HAMMOND #41A WELLHEAD

SEPARATOR

DRIP TANK

DOGLEG

GAS RISER

METER RUN
(OUTSIDE)

OTHER WELLHEAD

METER HOUSE
(NOT IN USE)

5976 5977 5978 5979 5980

LEGEND:

- 5980 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- GAS — NATURAL GAS LINE
- MONITORING WELL
- SMA BENCHMARK

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 40 80

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

TITLE:
HAMMOND #41A
GROUNDWATER ANALYTICAL RESULTS
SAMPLED DECEMBER 11, 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\HAMMOND #41A\2013 MAPS\Hammond#41A_GECM_4Q_2013.mxd

SMA BENCHMARK
ELEV. 5975.98'
NAD 83 NAVD 88
STATE PLANE COORDINATE SYSTEM
NEW MEXICO WEST

MW-2
DRY
MW-2

MW-4
5960.35
MW-4

MW-1
DRY
MW-1

MW-3
DRY
MW-3

5976

HAMMOND #41A WELLHEAD

METER HOUSE

SEPARATOR

DRIP TANK

DOGLEG

5977

5978

5979

5980

GAS RISER

METER RUN
(OUTSIDE)

OTHER WELLHEAD

METER HOUSE
(NOT IN USE)

LEGEND:

- 5980 — APPROXIMATE GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- G A S — NATURAL GAS LINE
- MONITORING WELL
- SMA BENCHMARK

N

SCALE IN FEET

0 40 80

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

TITLE:
HAMMOND #41A
GROUNDWATER ELEVATION MAP
GAUGED DECEMBER 11, 2013

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

MWH

Figure No.:
6

APPENDIX A

JUNE 5, 2013 GROUNDWATER SAMPLING ANALYTICAL REPORT
SEPTEMBER 11, 2013 GROUNDWATER SAMPLING ANALYTICAL REPORT
DECEMBER 11, 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: 560-40559-1
TestAmerica Sample Delivery Group: June 2013
Client Project/Site: Hammond #41A

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

Attn: Mr. Daniel Wade

Authorized for release by:
6/19/2013 7:25:40 PM

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

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
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)

Client: MWH Americas Inc
Project/Site: Hammond #41A

TestAmerica Job ID: 560-40559-1
SDG: June 2013

Job ID: 560-40559-1

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: Hammond #41A

TestAmerica Job ID: 560-40559-1
SDG: June 2013

Client Sample ID: MW-4
Date Collected: 06/08/13 11:30
Date Received: 06/12/13 10:00

Lab Sample ID: 560-40559-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.00073**	**J**	0.0010	0.00014	mg/L			06/17/13 16:19	1
Ethylbenzene	**0.016**		0.0010	0.00020	mg/L			06/17/13 16:19	1
Toluene	<0.00030		0.0010	0.00030	mg/L			06/17/13 16:19	1
Xylenes, Total	**0.0040**		0.0030	0.00023	mg/L			06/17/13 16:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*70 - 130*		*06/17/13 16:19*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*06/17/13 16:19*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*06/17/13 16:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 130*		*06/17/13 16:19*	*1*

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: Hammond #41A

TestAmerica Job ID: 560-40559-1
SDG: June 2013

Client Sample ID: MW-4
Date Collected: 06/08/13 11:30
Date Received: 06/12/13 10:00

Lab Sample ID: 560-40559-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	89169	06/17/13 16:19	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: Hammond #41A

TestAmerica Job ID: 560-40559-1
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: Hammond #41A

TestAmerica Job ID: 560-40559-1
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: Hammond #41A

TestAmerica Job ID: 560-40559-1
SDG: June 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-40559-1	MW-4	Water	06/08/13 11:30	06/12/13 10:00

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

No. [illegible]

CHAIN OF CUSTODY RECORD

Loc: 560
40559

560-40559 Chain of Custody

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: MWH	PROJECT NAME/NUMBER: Hammond #41A
SEND REPORT TO: Daniel Wade	**BILLING INFORMATION**
ADDRESS: 1801 California St, Suite 2900 Denver, CO 80202	BILL TO: Kinder Morgan ADDRESS: Houston, TX
PHONE: 303-291-2250	PHONE:
FAX:	FAX. PO NO:

ANALYSIS/METHOD REQUEST

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

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF	8260	REMARKS/PRECAUTIONS.
	MW-4	6/8/13	1130	GW	VOA	HCl	3	f	

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

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

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Daniel Wade	6/11 ~~6/10~~/13	SIGNATURE. DW		SIGNATURE:	
PRINTED NAME/COMPANY: MWH	TIME 1000 ~~1730~~	PRINTED NAME/COMPANY: DW	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE:	06/12/13	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: 560-40559-1
SDG Number: June 2013

Login Number: 40559
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: 560-42548-1
TestAmerica Sample Delivery Group: September 2013
Client Project/Site: Hammond #41A 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 11:42:28 AM
Lindy Maingot, Project Manager I
lindy.maingot@testamericainc.com

Designee for

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)
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: 560-42548-1

Laboratory: TestAmerica Corpus Christi

Narrative

Job Narrative
560-42548-1

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: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-42548-1
SDG: September 2013

Client Sample ID: MW-4 **Lab Sample ID: 560-42548-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: MWH Americas Inc
Project/Site: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-42548-1
SDG: September 2013

Client Sample ID: MW-4
Date Collected: 09/11/13 12:50
Date Received: 09/14/13 10:05

Lab Sample ID: 560-42548-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00014		0.0010	0.00014	mg/L			09/20/13 16:33	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			09/20/13 16:33	1
Toluene	<0.00030		0.0010	0.00030	mg/L			09/20/13 16:33	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			09/20/13 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*70 - 130*		*09/20/13 16:33*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*09/20/13 16:33*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*09/20/13 16:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 140*		*09/20/13 16:33*	*1*

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

Lab Sample ID: MB 560-92958/8
Matrix: Water
Analysis Batch: 92958

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			09/20/13 09:51	1
Ethylbenzene	<0.00020		0.0010	0.00020	mg/L			09/20/13 09:51	1
Toluene	<0.00030		0.0010	0.00030	mg/L			09/20/13 09:51	1
Xylenes, Total	<0.00023		0.0030	0.00023	mg/L			09/20/13 09:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*70 - 130*		*09/20/13 09:51*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*09/20/13 09:51*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 130*		*09/20/13 09:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 140*		*09/20/13 09:51*	*1*

Lab Sample ID: LCS 560-92958/3
Matrix: Water
Analysis Batch: 92958

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	0.0249		mg/L		99	70 - 130
Ethylbenzene	0.0250	0.0248		mg/L		99	70 - 130
Toluene	0.0250	0.0245		mg/L		98	70 - 130
Xylenes, Total	0.0750	0.0734		mg/L		98	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
Dibromofluoromethane (Surr)	*98*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 140*

Certification Summary

Client: MWH Americas Inc
Project/Site: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-42548-1
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: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-42548-1
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: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-42548-1
SDG: September 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-42548-1	MW-4	Water	09/11/13 12:50	09/14/13 10:05

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

Chain of Custody

560-42548 Chain of Custody

TestAmerica

Loc: 560
42548

Client Information	Sampler: DAW	Lab PM: Kellogg, Timothy L.	OC No: 60-10718-1157
Client Contact: Mr. Daniel Wade	Phone: 303-912-2625	E-Mail: tim.kellogg@testamericainc.com	age: Page 1 of 1
Company: MWH Americas Inc			Job #:
Address: 1801 California Street Suite 2900	Due Date Requested:		
City: Denver	TAT Requested (days): Standard		
State, Zip: CO, 80202			
Phone: 713-420-3414(Tel)	PO #: Purchase Order not required		
Email: Daniel.A.Wade@us.mwhglobal.com	WO #: TWO # C-STLI-		
Project Name: San Juan River Basin Pit Sites	Project #: 56000058		
Site: Hammond #41A	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:

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-4	9/11/13	1250	G	Water			X		
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					

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: Fedex Sat
Relinquished by:	Date/Time: 9/13/13 1200	Company	Received by: Date/Time: 09/14/13 1005 Company: TAL CC
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: IBS 1.3C Corr 1.4C IR4

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-42548-1
SDG Number: September 2013

Login Number: 42548
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: 560-44347-1
TestAmerica Sample Delivery Group: December 2013
Client Project/Site: Hammond #41A Groundwater Analysis

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 6:51:19 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: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-44347-1
SDG: December 2013

Job ID: 560-44347-1

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: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-44347-1
SDG: December 2013

Client Sample ID: MW-4

Lab Sample ID: 560-44347-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.0020		0.0020	0.00020	mg/L	1		8021B	Total/NA
Xylenes, Total	0.011		0.0020	0.00065	mg/L	1		8021B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: MWH Americas Inc
Project/Site: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-44347-1
SDG: December 2013

Client Sample ID: MW-4
Date Collected: 12/11/13 14:55
Date Received: 12/17/13 10:40

Lab Sample ID: 560-44347-1
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00020		0.0020	0.00020	mg/L			12/19/13 10:21	1
Toluene	<0.00038		0.0020	0.00038	mg/L			12/19/13 10:21	1
Ethylbenzene	**0.0020**		0.0020	0.00020	mg/L			12/19/13 10:21	1
Xylenes, Total	**0.011**		0.0020	0.00065	mg/L			12/19/13 10:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*58 - 129*		*12/19/13 10:21*	*1*
Trifluorotoluene (Surr)	*85*		*54 - 130*		*12/19/13 10:21*	*1*

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 560-96379/5
Matrix: Water
Analysis Batch: 96379

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			12/19/13 09:53	1
Toluene	<0.00038		0.0020	0.00038	mg/L			12/19/13 09:53	1
Ethylbenzene	<0.00020		0.0020	0.00020	mg/L			12/19/13 09:53	1
Xylenes, Total	<0.00065		0.0020	0.00065	mg/L			12/19/13 09:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*58 - 129*		*12/19/13 09:53*	*1*
Trifluorotoluene (Surr)	*86*		*54 - 130*		*12/19/13 09:53*	*1*

Lab Sample ID: LCS 560-96379/4
Matrix: Water
Analysis Batch: 96379

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	0.0364		mg/L		91	70 - 130
Toluene	0.0400	0.0361		mg/L		90	70 - 130
Ethylbenzene	0.0400	0.0367		mg/L		92	70 - 130
Xylenes, Total	0.120	0.108		mg/L		90	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*58 - 129*
Trifluorotoluene (Surr)	*89*		*54 - 130*

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-44347-1
SDG: December 2013

Client Sample ID: MW-4
Date Collected: 12/11/13 14:55
Date Received: 12/17/13 10:40

Lab Sample ID: 560-44347-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	96379	12/19/13 10:21	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: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-44347-1
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: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-44347-1
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: Hammond #41A Groundwater Analysis

TestAmerica Job ID: 560-44347-1
SDG: December 2013

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
560-44347-1	MW-4	Water	12/11/13 14:55	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

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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 2242	E-Mail: tim.kellogg@testamericainc.com		Page: Page 1 of 1
Company: MWH Americas Inc				Job #:

Loc: 560
44347

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: Hammond #41A	SSOW#:

Analysis Requested

Preservation

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-4	12/11/13	1455	G	Water			X		
				Water					
				Water					
				Water					
				Water					
				Water					
				Water					
Trip Blank				Water					

560-44347 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
Chris Lee	12/16/2013 0900		RWN	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: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 1.3/1.5 IR4 Seal

Page 11 of 12

12/20/2013

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 560-44347-1
SDG Number: December 2013

Login Number: 44347
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	