

2016 ANNUAL GROUNDWATER REPORT

Gallegos Canyon Unit #124E

NMOCD Case#: 3RP-407-0

Meter Code: 95608

T28N, R12W, Sec 35, Unit N

SITE DETAILS

Site Location: Latitude: 36.614105 N, Longitude: -108.083662 W

Land Type: Navajo

Operator: BP America Production Company

SITE BACKGROUND

- **Site Assessment:** 1/95
- **Excavation:** 10/95 (196 cy)

Environmental Remediation activities at the Gallegos Canyon Unit #124E (Site) are 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 Navajo Agricultural Products Industry land. Various site investigations have occurred from 1995 through 2012. Monitoring wells were installed in 1995 (MW-1) and 2013 (MW-2 through MW-7). Monitoring well MW-2 was plugged and abandoned on January 19, 2014. Currently, groundwater sampling is conducted on a semi-annual basis. In 2016, free product was observed in monitoring well MW-1 and 0.08 gallon was removed.

SUMMARY OF 2016 ACTIVITIES

On April 18 and October 14, 2016, water levels were gauged at MW-1, MW-3, MW-4, MW-5, MW-6, and MW-7. Groundwater samples were collected from MW-3, MW-4, MW-5, and MW-6 using HydraSleeve™ (HydraSleeve) no-purge groundwater sampling devices. The HydraSleeves were set during the previous sampling event approximately 0.5 foot above termination depth of the monitoring wells using a suspension tether and stainless steel weights to collect a sample from the screened interval. Groundwater samples were placed into laboratory-supplied sample containers, packed on ice, and shipped under standard chain-of-custody protocols to TestAmerica Laboratories, Inc. in Pensacola, Florida where they were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Additional field parameters are collected from the excess sample water recovered by the HydraSleeve. Excess sample water is poured into a YSI multi-parameter instrument sample cup and analyzed. Field parameters include dissolved oxygen, temperature, conductivity, pH, and oxidation-reduction potential ORP. Field parameters are not collected if free product is present. The unused sample water is combined in a waste container and taken to Basin Disposal, Inc. for disposal.

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T28N, R12W, Sec 35, Unit N

SUMMARY TABLES

Historic analytical and water level data are summarized in Table 1 and Table 2, respectively. When free product was present, static water level elevations were corrected for measurable thicknesses of free product (specific gravity of 0.75).

SITE MAPS

Groundwater analytical maps (Figures 1 and 3) and groundwater elevation contour maps (Figures 2 and 4) summarize results of the 2016 groundwater sampling and gauging events.

ANALYTICAL LAB REPORTS

The groundwater analytical lab reports are included as Appendix A.

GROUNDWATER RESULTS

- The groundwater flow direction at the Site is generally to the west-southwest (see Figures 2 and 4).
- Free product was observed in MW-1 in 2016 sampling events. No samples were collected from MW-1 in 2016.
- Concentrations of benzene were not detected in any of the Site monitoring wells sampled in 2016.
- Concentrations of toluene were not detected in any of the Site monitoring wells sampled in 2016.
- Concentrations of ethylbenzene were either below the New Mexico Water Quality Control Commission (NMWQCC) standard (750 µg/L) or not detected in any of the Site monitoring wells sampled in 2016.
- Concentrations of total xylenes were not detected in any of the Site monitoring wells sampled in 2016.

PLANNED FUTURE ACTIVITIES

Groundwater monitoring events will be conducted on a semi-annual basis. The 2017 Annual Report will be submitted in early 2018. When LNAPL is absent and BTEX concentrations in the Site monitoring wells are reported below the NMWQCC standards, groundwater sampling frequency will be increased to quarterly. After four consecutive quarters with no dissolved-phase hydrocarbon concentrations are observed EPCGP will request site closure from NMOCD.

TABLES

TABLE 1 – GROUNDWATER ANALYTICAL AND WATER LEVEL RESULTS

TABLE 2 – GROUNDWATER ELEVATION RESULTS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Gallegos Canyon Unit #124E					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-1	06/25/98	340	271	111	510
MW-1	09/14/98	410	251	68.3	220
MW-1	12/15/98	710	1300	160	940
MW-1	03/16/99	2960	5130	367	2890
MW-1	10/05/00	NS	NS	NS	NS
MW-1	11/15/00	NS	NS	NS	NS
MW-1	12/20/00	NS	NS	NS	NS
MW-1	01/09/01	NS	NS	NS	NS
MW-1	01/15/01	NS	NS	NS	NS
MW-1	01/22/01	NS	NS	NS	NS
MW-1	01/30/01	NS	NS	NS	NS
MW-1	03/12/01	NS	NS	NS	NS
MW-1	06/05/01	NS	NS	NS	NS
MW-1	07/13/01	NS	NS	NS	NS
MW-1	08/02/01	NS	NS	NS	NS
MW-1	08/31/01	NS	NS	NS	NS
MW-1	09/21/01	NS	NS	NS	NS
MW-1	10/02/01	NS	NS	NS	NS
MW-1	01/02/02	NS	NS	NS	NS
MW-1	01/07/02	NS	NS	NS	NS
MW-1	01/23/02	NS	NS	NS	NS
MW-1	01/30/02	NS	NS	NS	NS
MW-1	02/07/02	NS	NS	NS	NS
MW-1	02/14/02	NS	NS	NS	NS
MW-1	02/20/02	NS	NS	NS	NS
MW-1	03/04/02	NS	NS	NS	NS
MW-1	03/11/02	NS	NS	NS	NS
MW-1	03/21/02	NS	NS	NS	NS
MW-1	03/28/02	NS	NS	NS	NS
MW-1	04/03/02	NS	NS	NS	NS
MW-1	04/12/02	NS	NS	NS	NS
MW-1	04/18/02	NS	NS	NS	NS
MW-1	04/25/02	NS	NS	NS	NS
MW-1	05/03/02	NS	NS	NS	NS
MW-1	05/10/02	NS	NS	NS	NS
MW-1	05/17/02	NS	NS	NS	NS
MW-1	05/24/02	NS	NS	NS	NS
MW-1	05/31/02	NS	NS	NS	NS
MW-1	06/07/02	NS	NS	NS	NS
MW-1	06/12/02	NS	NS	NS	NS
MW-1	06/21/02	NS	NS	NS	NS
MW-1	06/27/02	NS	NS	NS	NS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Gallegos Canyon Unit #124E					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-1	07/02/02	NS	NS	NS	NS
MW-1	07/11/02	NS	NS	NS	NS
MW-1	07/15/02	NS	NS	NS	NS
MW-1	10/16/02	NS	NS	NS	NS
MW-1	01/15/03	NS	NS	NS	NS
MW-1	05/05/03	NS	NS	NS	NS
MW-1	07/18/03	NS	NS	NS	NS
MW-1	01/29/04	NS	NS	NS	NS
MW-1	04/15/04	NS	NS	NS	NS
MW-1	07/26/04	NS	NS	NS	NS
MW-1	10/15/04	NS	NS	NS	NS
MW-1	01/17/05	NS	NS	NS	NS
MW-1	04/19/05	38.8	<1	142	1160
MW-1	07/20/05	125	11.4	371	2640
MW-1	10/20/05	86.8	11.3	125	864
MW-1	01/19/06	77.9	12	101	656
MW-1	04/24/06	45.1	3.5 J	56.1	377
MW-1	07/31/06	60.8	1.5 J	79.3	524
MW-1	10/24/06	21.1	<1	56.6	349
MW-1	01/19/07	22.4	<1	60	367
MW-1	04/24/07	30.3	<1	60.6	407
MW-1	07/31/07	35.3	<2	68.4	416
MW-1	10/25/07	9	<1	33.2	173
MW-1	01/28/08	6	<2	41.6	210
MW-1	04/23/08	14.1	0.59 J	50.1	360
MW-1	07/23/08	72.7	6.7	65.8	210
MW-1	10/08/08	194	<50	43.6 J	328
MW-1	01/07/09	281	6 J	110	653
MW-1	08/25/09	57.9	8.8 J	58.4	298
MW-1	11/03/09	NS	NS	NS	NS
MW-1	02/15/10	98.3	4.1	80.6	385
MW-1	05/24/10	NS	NS	NS	NS
MW-1	09/27/10	159	<2	56.4	348
MW-1	11/01/10	NS	NS	NS	NS
MW-1	02/01/11	109	0.28 J	54.1	436
MW-1	05/02/11	NS	NS	NS	NS
MW-1	09/23/11	288	<1	116	1020
MW-1	02/22/12	255	<5	145	853
MW-1	05/07/12	NS	NS	NS	NS
MW-1	06/04/13	33	<0.60	11	0.86
MW-1	09/11/13	25	<0.30	9.8	8.9
MW-1	12/15/13	87	<0.30	50	100
MW-1	04/05/14	31	6.2	23	15
MW-1	10/25/14	NS	NS	NS	NS
MW-1	05/31/15	NS	NS	NS	NS
MW-1	11/22/15	NS	NS	NS	NS
MW-1	04/18/16	NS	NS	NS	NS
MW-1	10/14/16	NS	NS	NS	NS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Gallegos Canyon Unit #124E					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-2	12/15/13	<0.14	<0.30	<0.20	<0.23
MW-2	04/05/14	<0.20	<0.38	<0.20	<0.65
MW-2	10/25/14	<0.38	<0.70	<0.50	<1.6
MW-2	Well abandoned 1/19/2014				
MW-3	12/15/13	4.1	<0.30	7.4	27
MW-3	04/05/14	<0.20	<0.38	<0.20	<0.65
MW-3	10/25/14	<0.38	<0.70	<0.50	<1.6
MW-3	05/31/15	<1.0	<5.0	<1.0	<5.0
MW-3	11/22/15	<1.0	<1.0	<1.0	<3.0
MW-3	04/18/16	<1.0	<5.0	<1.0	<5.0
MW-3	10/14/16	<1.0	<5.0	<1.0	<5.0
MW-4	12/15/13	<0.14	<0.30	0.28 J	1.4 J
MW-4	04/05/14	<0.20	<0.38	<0.20	<0.65
MW-4	10/25/14	<0.38	<0.70	<0.50	<1.6
MW-4	05/31/15	<1.0	<5.0	<1.0	<5.0
MW-4	11/22/15	<1.0	<1.0	<1.0	<3.0
MW-4	04/18/16	<1.0	<5.0	<1.0	<5.0
MW-4	10/14/16	<1.0	<5.0	<1.0	<5.0
MW-5	12/15/13	9.3	<0.30	53	32
MW-5	04/05/14	11	5.8	13	<0.65
MW-5	10/25/14	5.9	<0.70	5.2	<1.6
MW-5	05/31/15	0.65 J	<5.0	<1.0	<5.0
MW-5	11/22/15	1.6	<1.0	2.7	<3.0
MW-5	04/18/16	<1.0	<5.0	<1.0	<5.0
MW-5	10/14/16	<1.0	<5.0	3.6	<5.0
MW-6	12/15/13	<0.14	<0.30	<0.20	2.0 J
MW-6	04/05/14	<0.20	<0.38	<0.20	<0.65
MW-6	10/25/14	<0.38	<0.70	<0.50	<1.6
MW-6	05/31/15	<1.0	<5.0	<1.0	<5.0
MW-6	11/22/15	<1.0	<1.0	<1.0	<3.0
MW-6	04/18/16	<1.0	<5.0	<1.0	<5.0
MW-6	10/14/16	<1.0	<5.0	<1.0	<5.0
MW-7	12/15/13	<0.14	<0.30	<0.20	<0.23
MW-7	04/05/14	<0.20	<0.38	<0.20	<0.65
MW-7	10/25/14	<0.38	<0.70	<0.50	<1.6
MW-7	05/31/15	<1.0	<5.0	<1.0	<5.0
MW-7	11/22/15	<1.0	<1.0	<1.0	<3.0
MW-7	04/18/16	NS	NS	NS	NS
MW-7	10/14/16	NS	NS	NS	NS

Notes:

µg/L = micrograms per liter

Results highlighted yellow exceed their respective New Mexico Water Quality Control Commission (NMWQCC) standards.

"J" = Result is less than the reporting limit but greater than or equal to the method detection limit and the result is an approximate value.

"<" = analyte was not detected at the indicated reporting limit (some historic data were reported at the detection limit).

"NS" = Monitoring well not sampled

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Gallegos Canyon Unit #124E						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-1	06/25/98	5949.45	27.21	NR		5922.24
MW-1	09/14/98	5949.45	27.50	NR		5921.95
MW-1	12/15/98	5949.45	28.16	27.61	0.55	5921.70
MW-1	03/16/99	5949.45	29.02	27.60	1.42	5921.50
MW-1	10/05/00	5949.45	29.46	29.04	0.42	5920.31
MW-1	11/15/00	5949.45	28.93	28.93		5920.52
MW-1	12/20/00	5949.45	28.98	NR		5920.47
MW-1	01/09/01	5949.45	29.21	29.18	0.03	5920.26
MW-1	01/15/01	5949.45	29.07	29.04	0.03	5920.40
MW-1	01/22/01	5949.45	28.99	NR		5920.46
MW-1	01/30/01	5949.45	29.09	NR		5920.36
MW-1	03/12/01	5949.45	29.26	NR		5920.19
MW-1	06/05/01	5949.45	29.32	29.28	0.04	5920.16
MW-1	07/13/01	5949.45	29.65	NR		5919.80
MW-1	08/02/01	5949.45	29.53	NR		5919.92
MW-1	08/31/01	5949.45	29.27	NR		5920.18
MW-1	09/21/01	5949.45	29.33	NR		5920.12
MW-1	10/02/01	5949.45	28.98	NR		5920.47
MW-1	01/02/02	5949.45	28.96	28.85	0.11	5920.57
MW-1	01/07/02	5949.45	28.99	28.94	0.05	5920.50
MW-1	01/23/02	5949.45	29.35	26.35	3.00	5922.35
MW-1	01/30/02	5949.45	29.24	29.22	0.02	5920.23
MW-1	02/07/02	5949.45	29.70	29.66	0.04	5919.78
MW-1	02/14/02	5949.45	29.29	29.28	0.01	5920.17
MW-1	02/20/02	5949.45	29.76	29.75	0.01	5919.70
MW-1	03/04/02	5949.45	29.30	NR		5920.15
MW-1	03/11/02	5949.45	29.17	NR		5920.28
MW-1	03/21/02	5949.45	29.47	NR		5919.98
MW-1	03/28/02	5949.45	29.33	NR		5920.12
MW-1	04/03/02	5949.45	29.33	NR		5920.12
MW-1	04/12/02	5949.45	29.70	NR		5919.75
MW-1	04/18/02	5949.45	29.31	NR		5920.14
MW-1	04/25/02	5949.45	30.11	NR		5919.34
MW-1	05/03/02	5949.45	30.18	NR		5919.27
MW-1	05/10/02	5949.45	30.25	NR		5919.20
MW-1	05/17/02	5949.45	29.57	NR		5919.88
MW-1	05/24/02	5949.45	29.70	NR		5919.75
MW-1	05/31/02	5949.45	29.54	NR		5919.91
MW-1	06/07/02	5949.45	29.42	NR		5920.03
MW-1	06/12/02	5949.45	29.21	NR		5920.24
MW-1	06/21/02	5949.45	30.12	NR		5919.33
MW-1	06/27/02	5949.45	30.18	NR		5919.27
MW-1	07/02/02	5949.45	29.99	29.98	0.01	5919.47
MW-1	07/11/02	5949.45	30.06	NR		5919.39

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Gallegos Canyon Unit #124E						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-1	07/15/02	5949.45	29.63	NR		5919.82
MW-1	10/16/02	5949.45	29.65	29.24	0.41	5920.11
MW-1	01/15/03	5949.45	28.63	ND		5920.82
MW-1	05/05/03	5949.45	27.72	27.69	0.03	5921.75
MW-1	07/18/03	5949.45	27.08	27.06	0.02	5922.39
MW-1	01/29/04	5949.45	25.40	ND		5924.05
MW-1	04/15/04	5949.45	24.98	ND		5924.47
MW-1	07/26/04	5949.45	24.50	ND		5924.95
MW-1	10/15/04	5949.45	24.98	ND		5924.47
MW-1	01/17/05	5949.45	25.49	ND		5923.96
MW-1	04/19/05	5949.45	25.45	ND		5924.00
MW-1	07/20/05	5949.45	24.73	ND		5924.72
MW-1	10/20/05	5949.45	24.85	ND		5924.60
MW-1	01/19/06	5949.45	24.53	ND		5924.92
MW-1	04/24/06	5949.45	24.25	ND		5925.20
MW-1	07/31/06	5949.45	25.68	ND		5923.77
MW-1	10/24/06	5949.45	24.94	ND		5924.51
MW-1	01/19/07	5949.45	26.33	ND		5923.12
MW-1	04/24/07	5949.45	25.97	ND		5923.48
MW-1	07/31/07	5949.45	26.26	ND		5923.19
MW-1	10/25/07	5949.45	26.44	ND		5923.01
MW-1	01/28/08	5949.45	26.67	ND		5922.78
MW-1	04/23/08	5949.45	26.67	ND		5922.78
MW-1	07/23/08	5949.45	23.49	ND		5925.96
MW-1	10/08/08	5949.45	22.30	ND		5927.15
MW-1	01/07/09	5949.45	23.74	ND		5925.71
MW-1	08/25/09	5949.45	26.65	ND		5922.80
MW-1	11/03/09	5949.45	25.62	ND		5923.83
MW-1	02/15/10	5949.45	25.93	ND		5923.52
MW-1	05/24/10	5949.45	19.47	ND		5929.98
MW-1	09/27/10	5949.45	19.78	ND		5929.67
MW-1	11/01/10	5949.45	19.82	ND		5929.63
MW-1	02/01/11	5949.45	21.70	ND		5927.75
MW-1	05/02/11	5949.45	23.32	ND		5926.13
MW-1	09/23/11	5949.45	24.71	ND		5924.74
MW-1	02/22/12	5949.45	23.51	ND		5925.94
MW-1	05/07/12	5949.45	24.20	ND		5925.25
MW-1	06/04/13	5949.45	25.87	ND		5923.58
MW-1	09/11/13	5949.45	25.74	ND		5923.71
MW-1	12/15/13	5949.45	25.67	ND		5923.78
MW-1	04/05/14	5949.45	26.27	ND		5923.18
MW-1	10/25/14	5949.45	27.07	27.06	0.01	5922.39
MW-1	05/31/15	5946.73	24.70	24.70	0.00	5922.03
MW-1	11/22/15	5946.73	24.33	24.33	0.00	5922.40
MW-1	04/18/16	5946.73	24.99	24.92	0.07	5921.79
MW-1	10/14/16	5946.73	25.21	25.06	0.15	5921.63

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Gallegos Canyon Unit #124E						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-2	12/15/13	5950.12	26.46	ND		5923.66
MW-2	04/05/14	5950.12	27.05	ND		5923.07
MW-2	10/25/14	5950.12	27.84	ND		5922.28
MW-2	Well abandoned 1/19/2014					
MW-3	12/15/13	5949.84	26.02	ND		5923.82
MW-3	04/05/14	5949.84	26.59	ND		5923.25
MW-3	10/25/14	5949.84	27.37	ND		5922.47
MW-3	05/31/15	5946.94	24.82	ND		5922.12
MW-3	11/22/15	5946.94	24.50	ND		5922.44
MW-3	04/18/16	5946.94	25.12	ND		5921.82
MW-3	10/14/16	5946.94	25.36	ND		5921.58
MW-4	12/15/13	5949.57	25.62	ND		5923.95
MW-4	04/05/14	5949.57	26.22	ND		5923.35
MW-4	10/25/14	5949.57	26.98	ND		5922.59
MW-4	05/31/15	5946.67	24.52	ND		5922.15
MW-4	11/22/15	5946.67	24.16	ND		5922.51
MW-4	04/18/16	5946.67	24.80	ND		5921.87
MW-4	10/14/16	5946.67	24.99	ND		5921.68
MW-5	12/15/13	5948.92	25.17	ND		5923.75
MW-5	04/05/14	5948.92	25.85	ND		5923.07
MW-5	10/25/14	5948.92	26.60	ND		5922.32
MW-5	05/31/15	5946.07	24.17	ND		5921.90
MW-5	11/22/15	5946.07	23.83	ND		5922.24
MW-5	04/18/16	5946.07	24.42	ND		5921.65
MW-5	10/14/16	5946.07	24.64	ND		5921.43
MW-6	12/15/13	5949.34	25.48	ND		5923.86
MW-6	04/05/14	5949.34	26.16	ND		5923.18
MW-6	10/25/14	5949.34	26.90	ND		5922.44
MW-6	05/31/15	5946.39	24.44	ND		5921.95
MW-6	11/22/15	5946.39	24.13	ND		5922.26
MW-6	04/18/16	5946.39	24.66	ND		5921.73
MW-6	10/14/16	5946.39	24.89	ND		5921.50
MW-7	12/15/13	5948.68	25.34	ND		5923.34
MW-7	04/05/14	5948.68	26.13	ND		5922.55
MW-7	10/25/14	5948.68	26.89	ND		5921.79
MW-7	05/31/15	5945.92	24.41	ND		5921.51
MW-7	11/22/15	5945.92	23.97	ND		5921.95
MW-7	04/18/16	5945.92	24.52	ND		5921.40
MW-7	10/14/16	5945.92	25.29	ND		5920.63

Notes:

"ft" = feet

"TOC" = Top of casing

"LNAPL" = Light non-aqueous phase liquid

"ND" = LNAPL not detected

"NR" = LNAPL not recorded

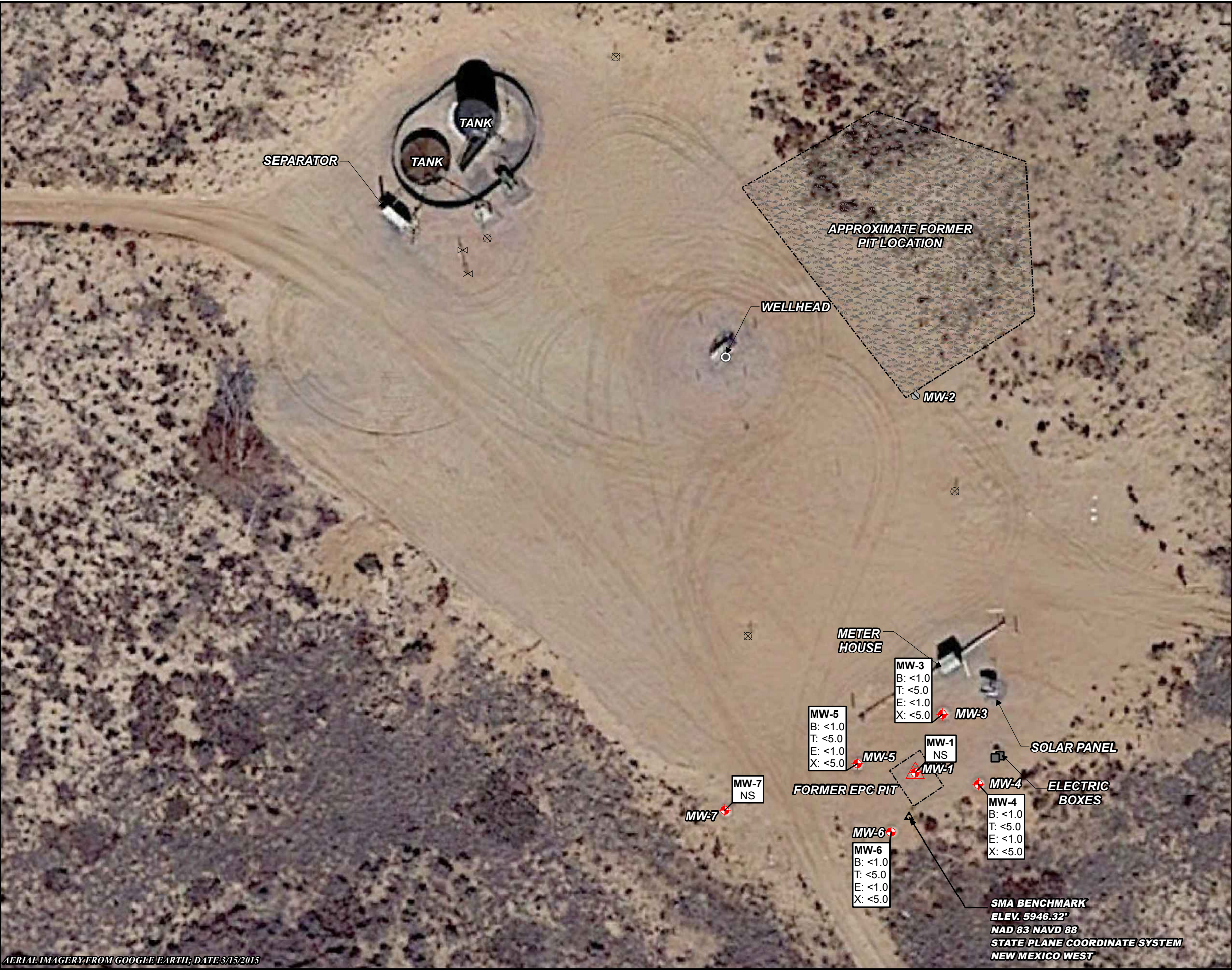
FIGURES

FIGURE 1: APRIL 18, 2016 GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 2: APRIL 18, 2016 GROUNDWATER ELEVATION MAP

FIGURE 3: OCTOBER 14, 2016 GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 4: OCTOBER 14, 2016 GROUNDWATER ELEVATION MAP



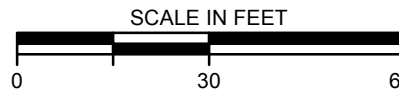
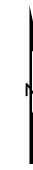
LEGEND:

- ABANDONED MONITORING WELL
- SMA BENCHMARK
- GAS VALVE
- MONITORING WELL
- MONITORING WELL WITH MEASUREABLE FREE PRODUCT
- RIG ANCHOR
- WELLHEAD

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
<1 = 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



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	10/6/2016	SLG	SLG	SRV

TITLE:

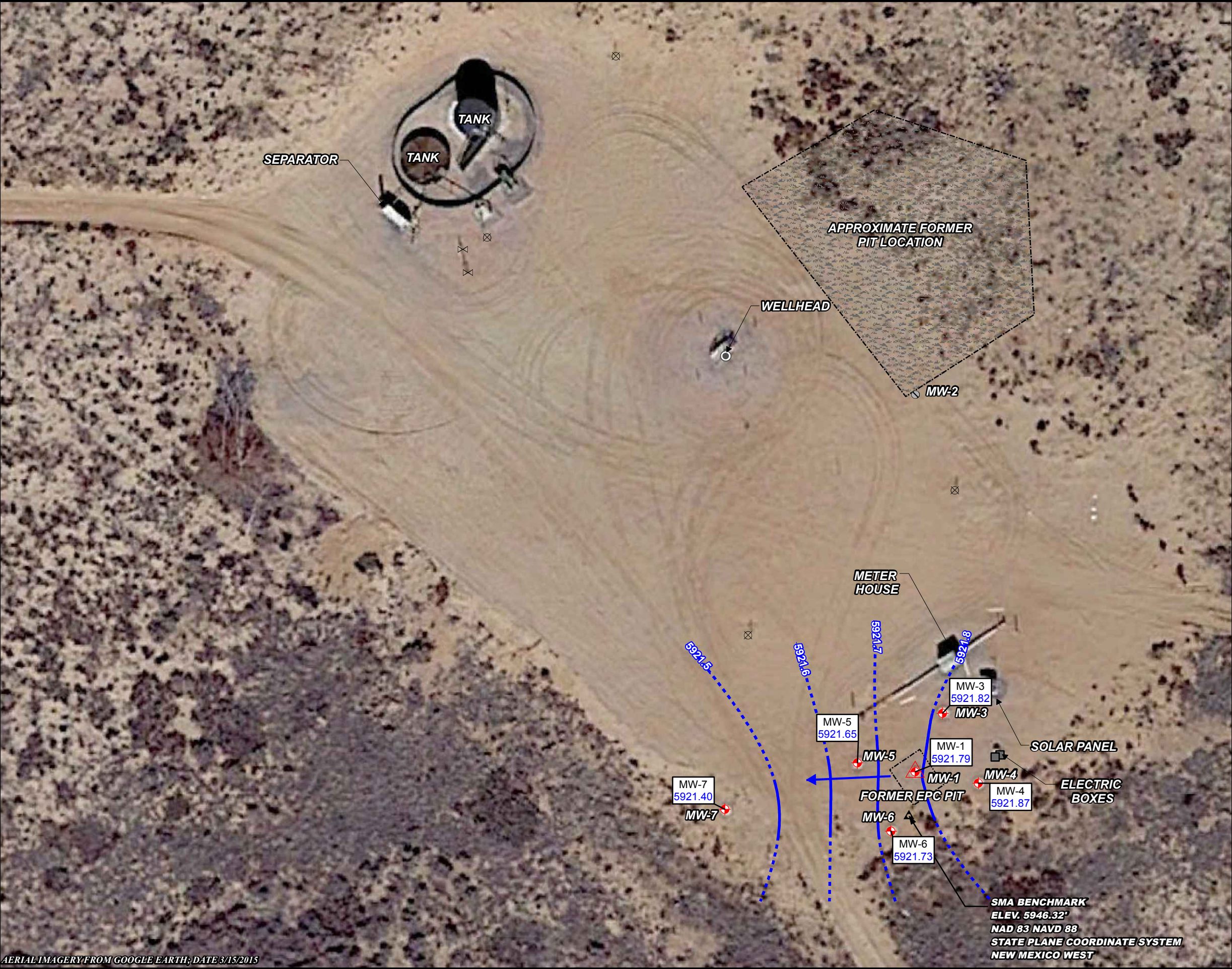
GROUNDWATER ANALYTICAL RESULTS
APRIL 18, 2016

PROJECT: **GALLEGOS CANYON UNIT #124E**
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO



Figure No.:

1



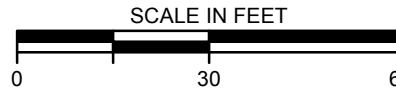
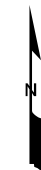
AERIAL IMAGERY FROM GOOGLE EARTH, DATE 3/15/2015

LEGEND:

- ABANDONED MONITORING WELL
- SMA BENCHMARK
- GAS VALVE
- MONITORING WELL
- MONITORING WELL WITH MEASUREABLE FREE PRODUCT
- RIG ANCHOR
- WELLHEAD

NOTES:

- 5922.44 GROUNDWATER ELEVATION CORRECTED FOR PRODUCT THICKNESS. FEET ABOVE MEAN SEA LEVEL
- 5922.2 CORRECTED WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL, 0.1 FOOT CONTOUR INTERVAL)
- DIRECTION OF GROUNDWATER FLOW



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	10/6/2016	SLG	SLG	SRV

TITLE:

**GROUNDWATER ELEVATION MAP
APRIL 18, 2016**

PROJECT:

**GALLEGOS CANYON UNIT #124E
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO**



Figure No.:

2



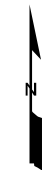
LEGEND:

- ABANDONED MONITORING WELL
- SMA BENCHMARK
- GAS VALVE
- MONITORING WELL
- MONITORING WELL WITH MEASUREABLE FREE PRODUCT
- RIG ANCHOR
- WELLHEAD

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
<1 = 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



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
	12/7/2017	SLG	SLG	SRV

TITLE:
**GROUNDWATER ANALYTICAL RESULTS
OCTOBER 14, 2016**

PROJECT: **GALLEGOS CANYON UNIT #124E
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO**



Figure No.:
3

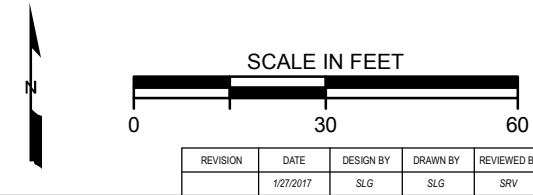


LEGEND:

- ABANDONED MONITORING WELL
- SMA BENCHMARK
- GAS VALVE
- MONITORING WELL
- MONITORING WELL WITH MEASUREABLE FREE PRODUCT
- RIG ANCHOR
- WELLHEAD

NOTES:

- 5922.44 GROUNDWATER ELEVATION CORRECTED FOR PRODUCT THICKNESS. FEET ABOVE MEAN SEA LEVEL
- 5922.2 CORRECTED WATER LEVEL ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL)
- DIRECTION OF GROUNDWATER FLOW



TITLE: **GROUNDWATER ELEVATION MAP
OCTOBER 14, 2016**

PROJECT: **GALLEGOS CANYON UNIT #124E
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO**



Figure No.:

4

APPENDIX A

APRIL 30, 2016 GROUNDWATER SAMPLING ANALYTICAL REPORT

OCTOBER 27, 2016 GROUNDWATER SAMPLING ANALYTICAL REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-120435-1

Client Project/Site: Gallegos Cnyon Unit #124E

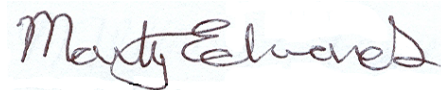
For:

MWH Americas Inc

11153 Aurora Avenue

Des Moines, Iowa 50322-7904

Attn: Steve Varsa



Authorized for release by:

4/30/2016 10:42:32 AM

Marty Edwards, Manager of Project Management

(850)474-1001

marty.edwards@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.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.

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Definitions/Glossary

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Glossary

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

Case Narrative

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Job ID: 400-120435-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-120435-1

Comments

No additional comments.

Receipt

The samples were received on 4/19/2016 9:43 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

GC VOA

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

Detection Summary

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Client Sample ID: MW-3

Lab Sample ID: 400-120435-1

No Detections.

Client Sample ID: MW-4

Lab Sample ID: 400-120435-2

No Detections.

Client Sample ID: MW-5

Lab Sample ID: 400-120435-3

No Detections.

Client Sample ID: MW-6

Lab Sample ID: 400-120435-4

No Detections.

Client Sample ID: TRIP BLANK

Lab Sample ID: 400-120435-5

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Sample Summary

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-120435-1	MW-3	Water	04/18/16 07:55	04/19/16 09:43
400-120435-2	MW-4	Water	04/18/16 08:00	04/19/16 09:43
400-120435-3	MW-5	Water	04/18/16 08:05	04/19/16 09:43
400-120435-4	MW-6	Water	04/18/16 08:10	04/19/16 09:43
400-120435-5	TRIP BLANK	Water	04/18/16 00:00	04/19/16 09:43

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Client Sample ID: MW-3

Lab Sample ID: 400-120435-1

Date Collected: 04/18/16 07:55

Matrix: Water

Date Received: 04/19/16 09:43

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			04/29/16 04:10	1
Ethylbenzene	<1.0		1.0	ug/L			04/29/16 04:10	1
Toluene	<5.0		5.0	ug/L			04/29/16 04:10	1
Xylenes, Total	<5.0		5.0	ug/L			04/29/16 04:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	103		78 - 124		04/29/16 04:10	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Client Sample ID: MW-4

Lab Sample ID: 400-120435-2

Date Collected: 04/18/16 08:00

Matrix: Water

Date Received: 04/19/16 09:43

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			04/29/16 05:10	1
Ethylbenzene	<1.0		1.0	ug/L			04/29/16 05:10	1
Toluene	<5.0		5.0	ug/L			04/29/16 05:10	1
Xylenes, Total	<5.0		5.0	ug/L			04/29/16 05:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	103		78 - 124				04/29/16 05:10	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Client Sample ID: MW-5

Lab Sample ID: 400-120435-3

Date Collected: 04/18/16 08:05

Matrix: Water

Date Received: 04/19/16 09:43

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			04/29/16 06:09	1
Ethylbenzene	<1.0		1.0	ug/L			04/29/16 06:09	1
Toluene	<5.0		5.0	ug/L			04/29/16 06:09	1
Xylenes, Total	<5.0		5.0	ug/L			04/29/16 06:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	102		78 - 124		04/29/16 06:09	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Client Sample ID: MW-6

Date Collected: 04/18/16 08:10

Date Received: 04/19/16 09:43

Lab Sample ID: 400-120435-4

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			04/29/16 07:08	1
Ethylbenzene	<1.0		1.0	ug/L			04/29/16 07:08	1
Toluene	<5.0		5.0	ug/L			04/29/16 07:08	1
Xylenes, Total	<5.0		5.0	ug/L			04/29/16 07:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	103		78 - 124				04/29/16 07:08	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 400-120435-5

Date Collected: 04/18/16 00:00

Matrix: Water

Date Received: 04/19/16 09:43

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			04/29/16 00:14	1
Ethylbenzene	<1.0		1.0	ug/L			04/29/16 00:14	1
Toluene	<5.0		5.0	ug/L			04/29/16 00:14	1
Xylenes, Total	<5.0		5.0	ug/L			04/29/16 00:14	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	104		78 - 124				04/29/16 00:14	1

QC Association Summary

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

GC VOA

Analysis Batch: 303827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-120432-A-6 MS	Matrix Spike	Total/NA	Water	8021B	
400-120432-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	
400-120435-1	MW-3	Total/NA	Water	8021B	
400-120435-2	MW-4	Total/NA	Water	8021B	
400-120435-3	MW-5	Total/NA	Water	8021B	
400-120435-4	MW-6	Total/NA	Water	8021B	
400-120435-5	TRIP BLANK	Total/NA	Water	8021B	
LCS 400-303827/1002	Lab Control Sample	Total/NA	Water	8021B	
MB 400-303827/3	Method Blank	Total/NA	Water	8021B	

QC Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 400-303827/3

Matrix: Water

Analysis Batch: 303827

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			04/28/16 12:18	1
Ethylbenzene	<1.0		1.0	ug/L			04/28/16 12:18	1
Toluene	<5.0		5.0	ug/L			04/28/16 12:18	1
Xylenes, Total	<5.0		5.0	ug/L			04/28/16 12:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	104		78 - 124		04/28/16 12:18	1

Lab Sample ID: LCS 400-303827/1002

Matrix: Water

Analysis Batch: 303827

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	49.3		ug/L		99	85 - 115
Ethylbenzene	50.0	49.3		ug/L		99	85 - 115
Toluene	50.0	49.2		ug/L		98	85 - 115
Xylenes, Total	150	148		ug/L		99	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	102		78 - 124

Lab Sample ID: 400-120432-A-6 MS

Matrix: Water

Analysis Batch: 303827

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.8		50.0	52.7		ug/L		94	44 - 150
Ethylbenzene	<1.0		50.0	47.4		ug/L		94	70 - 142
Toluene	9.5		50.0	56.6		ug/L		94	69 - 136
Xylenes, Total	8.5		150	150		ug/L		95	68 - 142

Surrogate	MS %Recovery	MS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	101		78 - 124

Lab Sample ID: 400-120432-A-6 MSD

Matrix: Water

Analysis Batch: 303827

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	5.8		50.0	49.2		ug/L		87	44 - 150	7	16
Ethylbenzene	<1.0		50.0	44.7		ug/L		88	70 - 142	6	16
Toluene	9.5		50.0	53.3		ug/L		87	69 - 136	6	16
Xylenes, Total	8.5		150	144		ug/L		90	68 - 142	5	15

Surrogate	MSD %Recovery	MSD Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	100		78 - 124

TestAmerica Pensacola

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Client Sample ID: MW-3

Date Collected: 04/18/16 07:55

Date Received: 04/19/16 09:43

Lab Sample ID: 400-120435-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	303827	04/29/16 04:10	MKA	TAL PEN
Instrument ID: ETHYL										

Client Sample ID: MW-4

Date Collected: 04/18/16 08:00

Date Received: 04/19/16 09:43

Lab Sample ID: 400-120435-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	303827	04/29/16 05:10	MKA	TAL PEN
Instrument ID: ETHYL										

Client Sample ID: MW-5

Date Collected: 04/18/16 08:05

Date Received: 04/19/16 09:43

Lab Sample ID: 400-120435-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	303827	04/29/16 06:09	MKA	TAL PEN
Instrument ID: ETHYL										

Client Sample ID: MW-6

Date Collected: 04/18/16 08:10

Date Received: 04/19/16 09:43

Lab Sample ID: 400-120435-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	303827	04/29/16 07:08	MKA	TAL PEN
Instrument ID: ETHYL										

Client Sample ID: TRIP BLANK

Date Collected: 04/18/16 00:00

Date Received: 04/19/16 09:43

Lab Sample ID: 400-120435-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	303827	04/29/16 00:14	MKA	TAL PEN
Instrument ID: ETHYL										

Laboratory References:

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

Certification Summary

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-16
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-16
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	05-31-16 *
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-16
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-16
West Virginia DEP	State Program	3	136	06-30-16

* Certification renewal pending - certification considered valid.

TestAmerica Pensacola

Method Summary

Client: MWH Americas Inc
Project/Site: Gallegos Cnyon Unit #124E

TestAmerica Job ID: 400-120435-1

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

Protocol References:

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

Laboratory References:

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

TestAmerica Pensacola
3355 McLeure Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Lab PM: Edwards, Marty P		Carrier Tracking No(s): 400-120435 COC		COC No: 400-54743-21700.1	
Client Contact: Ms. Sarah Gardner		Phone: 515 251 1005		E-Mail: mty.edwards@testamericainc.com		Page: Page 1 of 1	
Company: MWH Americas Inc		Address: 1560 Broadway Suite 1800		City: Denver		State, Zip: CO, 80202	
Phone: 303-291-2239(Tel)		Purchase Order Requested		FO #:		WO #:	
Email: sarah.gardner@mwhglobal.com		Project #:		40005479		SSOW#:	
Project Name: Gallegos Canyon Unit #124E		Site: Gallegos Canyon Unit #124E					
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)	
MW-1		4/18/16		NS		G	
MW-3		0755		0800		Water	
MW-4		0805		0810		Water	
MW-5		NS		NS		Water	
MW-6		NS		NS		Water	
MW-7		NS		NS		Water	
Trip Blank		NS		NS		Water	
Matrix (Residue, Sample, Composite, etc.)		Water		Water		Water	
Special Instructions/Note:		NO SAMPLE		NO SAMPLE		NO SAMPLE	
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 - AsH2O2	
P - Na2O4S		Q - Na2SO3		R - Na2SO4		S - H2SO4	
T - TSP Dodecylhydrate		U - Acetone		V - MCAA		W - pH 4-5	
Z - other (specify)							
Other:							
Analysis Requested		8021B - BTEX 8021		NO SAMPLE		NO SAMPLE	
Special Instructions/Note:		NO SAMPLE		NO SAMPLE		NO SAMPLE	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client		Disposal By Lab		Archive For	
Special Instructions/QC Requirements:							
Possible Hazard Identification		Non-Hazard		Flammable		Skin Irritant	
Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by:		Date:		Time:	
Relinquished by:		4/19/16		1530		Company: MWH	
Relinquished by:		4/19/16		0943		Company: JTA	
Relinquished by:		4/19/16		0943		Company: JTA	
Custody Seals intact:		A Yes		A No		Cooler Temperature(s) °C and Other Remarks: 2.4°C JRC 6	

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 400-120435-1

Login Number: 120435

List Source: TestAmerica Pensacola

List Number: 1

Creator: Crawford, Lauren E

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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	2.4°C IR-6
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 (excluding tests with immediate HTs)	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 $<6\text{mm}$ (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 Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-128746-1

Client Project/Site: Gallegos Canyon Unit #124E

For:

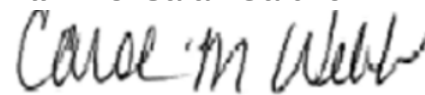
MWH Americas Inc

1560 Broadway

Suite 1800

Denver, Colorado 80202

Attn: Ms. Sarah Gardner



Authorized for release by:

10/27/2016 1:11:43 PM

Carol Webb, Project Manager II

(850)471-6250

carol.webb@testamericainc.com

LINKS

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results through

TotalAccess

Have a Question?



Visit us at:

www.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.

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Definitions/Glossary

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Glossary

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

Case Narrative

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Job ID: 400-128746-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-128746-1

Comments

No additional comments.

Receipt

The samples were received on 10/15/2016 9:13 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.2° C.

GC VOA

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

VOA Prep

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

Detection Summary

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Client Sample ID: MW-3

Lab Sample ID: 400-128746-1

No Detections.

Client Sample ID: MW-4

Lab Sample ID: 400-128746-2

No Detections.

Client Sample ID: MW-5

Lab Sample ID: 400-128746-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	3.6		1.0	ug/L	1		8021B	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 400-128746-4

No Detections.

Client Sample ID: TB

Lab Sample ID: 400-128746-5

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Sample Summary

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-128746-1	MW-3	Water	10/14/16 07:09	10/15/16 09:13
400-128746-2	MW-4	Water	10/14/16 07:14	10/15/16 09:13
400-128746-3	MW-5	Water	10/14/16 07:19	10/15/16 09:13
400-128746-4	MW-6	Water	10/14/16 07:24	10/15/16 09:13
400-128746-5	TB	Water	10/14/16 00:00	10/15/16 09:13

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Client Sample ID: MW-3

Date Collected: 10/14/16 07:09

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-1

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			10/21/16 21:15	1
Ethylbenzene	<1.0		1.0	ug/L			10/21/16 21:15	1
Toluene	<5.0		5.0	ug/L			10/21/16 21:15	1
Xylenes, Total	<5.0		5.0	ug/L			10/21/16 21:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	96		78 - 124				10/21/16 21:15	1

TestAmerica Pensacola

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Client Sample ID: MW-4
Date Collected: 10/14/16 07:14
Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-2
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			10/21/16 21:49	1
Ethylbenzene	<1.0		1.0	ug/L			10/21/16 21:49	1
Toluene	<5.0		5.0	ug/L			10/21/16 21:49	1
Xylenes, Total	<5.0		5.0	ug/L			10/21/16 21:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	95		78 - 124				10/21/16 21:49	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Client Sample ID: MW-5

Date Collected: 10/14/16 07:19

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-3

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			10/21/16 22:24	1
Ethylbenzene	3.6		1.0	ug/L			10/21/16 22:24	1
Toluene	<5.0		5.0	ug/L			10/21/16 22:24	1
Xylenes, Total	<5.0		5.0	ug/L			10/21/16 22:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	98		78 - 124				10/21/16 22:24	1

TestAmerica Pensacola

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Client Sample ID: MW-6

Date Collected: 10/14/16 07:24

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-4

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			10/21/16 22:59	1
Ethylbenzene	<1.0		1.0	ug/L			10/21/16 22:59	1
Toluene	<5.0		5.0	ug/L			10/21/16 22:59	1
Xylenes, Total	<5.0		5.0	ug/L			10/21/16 22:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	96		78 - 124				10/21/16 22:59	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Client Sample ID: TB

Date Collected: 10/14/16 00:00

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-5

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			10/21/16 16:05	1
Ethylbenzene	<1.0		1.0	ug/L			10/21/16 16:05	1
Toluene	<5.0		5.0	ug/L			10/21/16 16:05	1
Xylenes, Total	<5.0		5.0	ug/L			10/21/16 16:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	95		78 - 124				10/21/16 16:05	1

TestAmerica Pensacola

QC Association Summary

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

GC VOA

Analysis Batch: 327760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-128746-1	MW-3	Total/NA	Water	8021B	
400-128746-2	MW-4	Total/NA	Water	8021B	
400-128746-3	MW-5	Total/NA	Water	8021B	
400-128746-4	MW-6	Total/NA	Water	8021B	
400-128746-5	TB	Total/NA	Water	8021B	
MB 400-327760/5	Method Blank	Total/NA	Water	8021B	
LCS 400-327760/1002	Lab Control Sample	Total/NA	Water	8021B	
400-128744-A-1 MS	Matrix Spike	Total/NA	Water	8021B	
400-128744-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

QC Sample Results

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 400-327760/5

Matrix: Water

Analysis Batch: 327760

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			10/21/16 14:56	1
Ethylbenzene	<1.0		1.0	ug/L			10/21/16 14:56	1
Toluene	<5.0		5.0	ug/L			10/21/16 14:56	1
Xylenes, Total	<5.0		5.0	ug/L			10/21/16 14:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	95		78 - 124		10/21/16 14:56	1

Lab Sample ID: LCS 400-327760/1002

Matrix: Water

Analysis Batch: 327760

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.4		ug/L		97	85 - 115
Ethylbenzene	50.0	48.4		ug/L		97	85 - 115
Toluene	50.0	47.8		ug/L		96	85 - 115
Xylenes, Total	150	144		ug/L		96	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	99		78 - 124

Lab Sample ID: 400-128744-A-1 MS

Matrix: Water

Analysis Batch: 327760

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<1.0		50.0	54.3		ug/L		109	44 - 150
Ethylbenzene	<1.0		50.0	53.8		ug/L		108	70 - 142
Toluene	<5.0		50.0	53.3		ug/L		107	69 - 136
Xylenes, Total	<5.0		150	159		ug/L		106	68 - 142

Surrogate	MS %Recovery	MS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	100		78 - 124

Lab Sample ID: 400-128744-A-1 MSD

Matrix: Water

Analysis Batch: 327760

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<1.0		50.0	53.2		ug/L		106	44 - 150	2	16
Ethylbenzene	<1.0		50.0	54.1		ug/L		108	70 - 142	1	16
Toluene	<5.0		50.0	53.3		ug/L		107	69 - 136	0	16
Xylenes, Total	<5.0		150	160		ug/L		107	68 - 142	1	15

Surrogate	MSD %Recovery	MSD Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	100		78 - 124

TestAmerica Pensacola

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Client Sample ID: MW-3

Date Collected: 10/14/16 07:09

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	327760	10/21/16 21:15	SAB	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-4

Date Collected: 10/14/16 07:14

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	327760	10/21/16 21:49	SAB	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-5

Date Collected: 10/14/16 07:19

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	327760	10/21/16 22:24	SAB	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-6

Date Collected: 10/14/16 07:24

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	327760	10/21/16 22:59	SAB	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: TB

Date Collected: 10/14/16 00:00

Date Received: 10/15/16 09:13

Lab Sample ID: 400-128746-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	327760	10/21/16 16:05	SAB	TAL PEN
Instrument ID: CH_JOAN										

Laboratory References:

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

TestAmerica Pensacola

Certification Summary

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	06-30-17
Arizona	State Program	9	AZ0710	01-11-17
Arkansas DEQ	State Program	6	88-0689	09-01-17
California	ELAP	9	2510	03-31-18
Florida	NELAP	4	E81010	06-30-17
Georgia	State Program	4	N/A	06-30-17
Illinois	NELAP	5	200041	10-09-17
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	10-31-17
Kentucky (UST)	State Program	4	53	06-30-17
Kentucky (WW)	State Program	4	98030	12-31-16
Louisiana	NELAP	6	30976	06-30-17
Maryland	State Program	3	233	09-30-17
Massachusetts	State Program	1	M-FL094	06-30-17
Michigan	State Program	5	9912	05-06-17
New Jersey	NELAP	2	FL006	06-30-17
North Carolina (WW/SW)	State Program	4	314	12-31-16
Oklahoma	State Program	6	9810	08-31-17
Pennsylvania	NELAP	3	68-00467	01-31-17
Rhode Island	State Program	1	LAO00307	12-30-16
South Carolina	State Program	4	96026	06-30-16 *
Tennessee	State Program	4	TN02907	06-30-17
Texas	NELAP	6	T104704286-16-10	09-30-17
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-17
Washington	State Program	10	C915	05-15-17
West Virginia DEP	State Program	3	136	06-30-17

* Certification renewal pending - certification considered valid.

TestAmerica Pensacola

Method Summary

Client: MWH Americas Inc
Project/Site: Gallegos Canyon Unit #124E

TestAmerica Job ID: 400-128746-1

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

Protocol References:

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

Laboratory References:

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

Form with multiple sections: TestAmerica Pensacola, ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD, CLIENT INFORMATION, PROJECT INFORMATION, SAMPLE INFORMATION, and LABORATORY USE ONLY. Includes fields for dates, times, signatures, and various checkboxes.

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 400-128746-1

Login Number: 128746

List Source: TestAmerica Pensacola

List Number: 1

Creator: Benforado, Jessica L

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.2°C IR-6
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 (excluding tests with immediate HTs)	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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	