

2016 ANNUAL GROUNDWATER REPORT

Knight #1
NMOCD Case #: 3RP-207-0
Meter Code: 72556
T30N, R13W, Sec5, Unit A

SITE DETAILS

Site Location: Latitude: 36.846870 N, Longitude: -108.222305 W
Land Type: Fee
Operator: Fuller Production (Well P&A'd)

SITE BACKGROUND

- **Site Assessment:** 1/95
- **Excavation:** 1/95 (60 cy)
- **ORC Nutrient Injection** 11/96

Environmental Remediation activities at the Knight #1 (Site) are being managed pursuant to the procedures set forth in the document entitled, "Remediation Plan for Groundwater Encountered during Pit Closure Activities" (Remediation Plan, El Paso Natural Gas Company / El Paso Field Services Company, 1995). This Remediation Plan was conditionally approved by the New Mexico Oil Conservation Division (OCD) in correspondence dated November 30, 1995; and the OCD approval conditions were adopted into El Paso CGP Company, LLC's (EPCGP's) program methods. Formerly, the Site was operated by Fuller Production, Inc. and is no longer active. The wellhead was plugged and abandoned in August 2006.

The Site is located on Private/Fee land. Various site investigations have occurred from 1995 through 2016. Monitoring wells were installed in 1995 (MW-1 through MW-4), 2000 (MW-5), and 2015 (MW-6 through MW-13). A soil assessment was completed in 2016 (GP-1 through GP-24). Free product recovery has been periodically observed and recovered at the Site. In 2016, free product was observed in monitoring well MW-4 and 0.16 gallon was removed. Currently, groundwater sampling is conducted on a semi-annual basis.

SOIL BORING ACTIVITIES

A total of 24 direct push soil borings (GP-1 though GP-24) were advanced in March 2016, to evaluate the general extent of hydrocarbons to be addressed in a planned future excavation of the Site. The soil boring locations were first staked and surveyed for permitting and utility locating purposes. Soil borings were advanced by Vista Geoscience in accordance with the 2016 Soil Assessment Work Plan, submitted to the NMOCD on March 1, 2016 (Work Plan). Pertinent site features and soil boring locations are shown in Figure 1-6. Boring logs are included as Appendix A.

2016 ANNUAL GROUNDWATER REPORT

Knight #1
NMOCD Case #: 3RP-207-0
Meter Code: 72556
T30N, R13W, Sec5, Unit A

During direct push activities, recovered soil cores were logged and field screened with a photoionization detector (PID) in 1 foot intervals. No soil samples were retained for off-site laboratory analysis. Historical sampling results are shown in Figure 2. Following advancement and abandonment, the final soil boring locations were surveyed by a licensed surveyor using state plane coordinates. Decontamination water was containerized and transported to Basin Disposal, Inc. in Bloomfield, New Mexico for disposal. Soil drums were staged on site for later disposal at Envirotech, Inc. (Envirotech), located south of Bloomfield, New Mexico. On March 11, 2016, Sierra Oilfield Services, Inc. removed 2 drums of soil cuttings from the Site and delivered them to Envirotech. Disposal documentation is contained in Appendix B.

GROUNDWATER SAMPLING ACTIVITIES

Groundwater monitoring and sampling was completed on April 15 and October 11, 2016. During each sampling event, water levels were gauged from monitoring wells MW-1 through MW-13. Monitoring wells MW-1, MW-2, MW-4, MW-7, MW-8 and MW-11 were sampled in 2016 to evaluate concentration trends at these locations. Monitoring wells MW-3, MW-5, MW-6, MW-9, MW-10, MW-12, and MW-13 were not sampled in 2016.

Groundwater samples were collected from selected monitoring wells using HydraSleeve™ (HydraSleeve) no-purge groundwater sampling devices. A groundwater sample was not collected from monitoring well MW-4 on October 11, 2016 due to the presence of free product. 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-Pensacola where they were analyzed for BTEX. Additional field parameters were collected from the excess sample water recovered by the HydraSleeve. Excess sample water was poured into an 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.

SUMMARY TABLES

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

2016 ANNUAL GROUNDWATER REPORT

Knight #1
NMOCD Case #: 3RP-207-0
Meter Code: 72556
T30N, R13W, Sec5, Unit A

SITE MAPS

Soil boring locations and PID results are shown in Figure 1. Historical soil analytical results are summarized in Figure 2. Groundwater analytical maps and groundwater elevation contour maps from each sampling event are included as Figures 3 through 6.

ANALYTICAL LAB REPORTS

The groundwater analytical lab reports are included as Appendix C.

GROUNDWATER RESULTS

- The groundwater flow direction at the Site is generally to the south (see Figures 4 and 6).
- Free product was observed in MW-4 at the time of the October 2016 sampling event. No sample was collected from MW-4 on October 2016.
- Groundwater samples collected in 2016 from MW-1, MW-4, MW-7, and MW-11 exceeded the New Mexico Water Quality Control Commission (NMWQCC) standard (10 µg/L) for benzene in groundwater. Monitoring wells MW-2, and MW-8 were either below the standard or not detected.
- Concentrations of toluene were either below the NMWQCC standard (750 µg/L) or not detected in all of the Site monitoring wells sampled in 2016.
- A groundwater sample collected in April 2016 from MW-1 exceeded the NMWQCC standard (750 µg/L) for ethylbenzene in groundwater. Monitoring wells MW-2, MW-4, MW-7, MW-8, and MW-11 were either below the standard or not detected.
- Groundwater samples collected in 2016 from MW-1, MW-7, and MW-11, exceeded the NMWQCC standard (620 µg/L) for total xylenes in groundwater. Monitoring wells MW-2, MW-4, and MW-8, were either below the standard or not detected.

SOIL RESULTS

The direct-push soil boring locations were field screened with a PID at 1 foot intervals to a depth of 30 feet below ground surface (bgs). A summary of the screening results are listed below.

Field screening results at soil boring locations: GP-4, GP-7, GP-11, GP-13, GP-14, GP-15, GP-16, GP-19, GP-20, and GP-23 had PID readings of 1000 parts per million by volume (ppmv) or greater, at depths ranging from 15 to 25 feet bgs.

2016 ANNUAL GROUNDWATER REPORT

Knight #1

NMOCD Case #: 3RP-207-0

Meter Code: 72556

T30N, R13W, Sec5, Unit A

Field screening results at soil boring locations: GP-6, GP-8, GP-10, GP-12, GP-18, and GP-22 ranged from 100 to 999 ppmv at depths ranging from 11 to 26 feet bgs.

Field screening results at soil boring locations: GP-2 and GP-17 ranged from 0 to 100 ppmv.

Field screening results at soil boring locations: GP-1, GP-3, GP-5, GP-9, GP-21, and GP-24 did not have detections. The locations and PID results for the completed direct push soil borings, previously-completed soil borings and monitoring wells are presented on Figure 1. Soil analytical results are shown in Figure 2.

PLANNED FUTURE ACTIVITIES

Groundwater monitoring events will be conducted on a semi-annual basis, utilizing a selection of site monitoring wells which provides an adequate representation of site conditions.

A Work Plan will be submitted to the NMOCD for any additional activities to be completed at the Site in 2017. The 2017 Annual Report will be submitted in early 2018.

P:\Word Processing\KINDER MORGAN\EL PASO - NM\KNIGHT #1\2016 ANNUAL REPORT (KNIGHT #1)\2017-03_Rpt-2016 Annual Report (Knight).doc

TABLES

TABLE 1 – GROUNDWATER ANALYTICAL RESULTS

TABLE 2 – GROUNDWATER ELEVATION RESULTS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Knight #1					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-1	10/16/95	5080	1180	1050	9970
MW-1	12/12/95	4330	679	1010	8560
MW-1	04/09/96	5490	208	1100	7370
MW-1	07/17/96	6450	279	990	9060
MW-1	10/15/96	9870	840	1120	10900
MW-1	01/13/97	7760	332	914	10900
MW-1	04/22/97	2700	<1	492	6690
MW-1	07/14/97	3900	36.7	530	6700
MW-1	10/22/97	4270	48.7	728	8580
MW-1	01/09/98	4750	24.2	819	9480
MW-1	04/24/98	5610	44.7	898	9530
MW-1	04/16/99	7340	42.8	853	10600
MW-1	04/19/00	9400	510	4300	66000
MW-1	09/05/01	NS	NS	NS	NS
MW-1	09/11/01	NS	NS	NS	NS
MW-1	09/04/02	NS	NS	NS	NS
MW-1	12/10/02	NS	NS	NS	NS
MW-1	03/20/03	NS	NS	NS	NS
MW-1	06/19/03	NS	NS	NS	NS
MW-1	09/17/03	NS	NS	NS	NS
MW-1	12/09/03	NS	NS	NS	NS
MW-1	03/15/04	NS	NS	NS	NS
MW-1	09/15/04	NS	NS	NS	NS
MW-1	03/16/05	NS	NS	NS	NS
MW-1	09/19/05	4430	23.7	487	7370
MW-1	03/27/06	4410	26.6 J	337	7860
MW-1	09/26/06	5880	36.5	633	11000
MW-1	03/28/07	3740	<50	441	9210
MW-1	09/17/07	4640	93.3	444	8180
MW-1	03/04/08	NS	NS	NS	NS
MW-1	09/09/08	3230	<50	324	6780
MW-1	03/02/09	NS	NS	NS	NS
MW-1	08/27/09	2790	8.3 J	1190	12500
MW-1	02/11/10	NS	NS	NS	NS
MW-1	05/21/10	NS	NS	NS	NS
MW-1	09/29/10	2910	<50	1600	15000
MW-1	11/02/10	NS	NS	NS	NS
MW-1	02/02/11	NS	NS	NS	NS
MW-1	05/04/11	NS	NS	NS	NS
MW-1	09/30/11	1590	5 J	1120	10600
MW-1	11/11/11	NS	NS	NS	NS
MW-1	02/16/12	NS	NS	NS	NS
MW-1	05/08/12	NS	NS	NS	NS
MW-1	06/07/13	830	<60	1100	14000
MW-1	09/13/13	810	<60	960	3100
MW-1	12/13/13	600	25 J	730	2200
MW-1	04/03/14	330	28	<0.20	1400
MW-1	10/21/14	380	<7.0	<5.0	3000
MW-1	05/27/15	110	<100	1300	11000
MW-1	11/17/15	220	6.9	770	710
MW-1	04/15/16	110	<25	910	1000
MW-1	10/11/16	110	<25	460	100

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Knight #1					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-2	12/12/95	175	<12.5	74.3	671
MW-2	04/09/96	39.2	<1	13.4	77.9
MW-2	07/17/96	9.55	<1	2.39	3.65
MW-2	10/15/96	49.7	<1	<1	38.4
MW-2	01/13/97	20.3	<1	<1	37.3
MW-2	04/22/97	19.4	<1	<1	29.8
MW-2	10/22/97	155	<1	12.6	204
MW-2	01/09/98	58	<1	3.85	207
MW-2	04/24/98	19.4	<1	<1	40.7
MW-2	02/09/99	19	<1	<1	48
MW-2	04/16/99	16.7	<1	<1	41
MW-2	04/19/00	23	0.5	<0.5	26
MW-2	09/11/01	110	<0.5	17	200
MW-2	09/04/02	269	7.4	48.9	482.4
MW-2	12/10/02	NS	NS	NS	NS
MW-2	06/19/03	NS	NS	NS	NS
MW-2	09/17/03	177	<1	41	343
MW-2	12/09/03	NS	NS	NS	NS
MW-2	03/15/04	NS	NS	NS	NS
MW-2	09/15/04	291	<0.5	48.9	431
MW-2	03/16/05	NS	NS	NS	NS
MW-2	09/19/05	126	<1	9.5	231
MW-2	03/27/06	NS	NS	NS	NS
MW-2	09/26/06	95.8	<1	5.5	189
MW-2	03/28/07	NS	NS	NS	NS
MW-2	09/17/07	317	<1	12.5	354
MW-2	03/04/08	NS	NS	NS	NS
MW-2	09/09/08	34.3	<1	1.1	71.9
MW-2	03/02/09	NS	NS	NS	NS
MW-2	08/27/09	26.6	1.3	1.6	9
MW-2	02/11/10	NS	NS	NS	NS
MW-2	05/21/10	NS	NS	NS	NS
MW-2	09/29/10	100	<2	11.5	34.8
MW-2	11/02/10	NS	NS	NS	NS
MW-2	02/02/11	NS	NS	NS	NS
MW-2	05/04/11	NS	NS	NS	NS
MW-2	09/30/11	26.6	<1	1	9.5
MW-2	11/11/11	NS	NS	NS	NS
MW-2	02/16/12	NS	NS	NS	NS
MW-2	05/08/12	NS	NS	NS	NS
MW-2	06/07/13	200	<0.30	4.4	21
MW-2	09/13/13	120	<0.30	17	150
MW-2	12/13/13	27	3	5.5	74
MW-2	04/03/14	120	3.2 J	12	190
MW-2	10/21/14	0.64 J	<0.70	<0.50	<1.6
MW-2	05/27/15	190	2.5 J	18	59
MW-2	11/17/15	34	<1.0	<1.0	<3.0
MW-2	04/15/16	7.8	<5.0	<1.0	<5.0
MW-2	10/11/16	2	<5.0	<1.0	<5.0

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Knight #1					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-3	12/12/95	979	<125	398	2540
MW-3	04/09/96	328	<1	132	369
MW-3	07/17/96	299	<1	76.7	251
MW-3	01/13/97	395	<1	126	955
MW-3	07/14/97	499	<1	104	583
MW-3	10/22/97	817	7.22	141	869
MW-3	01/09/98	702	<1	185	1080
MW-3	04/24/98	377	11.8	126	525
MW-3	04/16/99	191	4.11	18.1	169
MW-3	04/19/00	40	0.6	1.1	28
MW-3	09/05/01	NS	NS	NS	NS
MW-3	09/11/01	NS	NS	NS	NS
MW-3	09/04/02	NS	NS	NS	NS
MW-3	12/10/02	NS	NS	NS	NS
MW-3	06/19/03	NS	NS	NS	NS
MW-3	09/17/03	NS	NS	NS	NS
MW-3	12/09/03	NS	NS	NS	NS
MW-3	03/15/04	NS	NS	NS	NS
MW-3	09/15/04	NS	NS	NS	NS
MW-3	03/16/05	NS	NS	NS	NS
MW-3	09/19/05	73.8	<1	5.2	158
MW-3	03/27/06	NS	NS	NS	NS
MW-3	09/26/06	3370	25	498	3960
MW-3	03/28/07	NS	NS	NS	NS
MW-3	09/17/07	288	<1	65.4	599
MW-3	03/04/08	NS	NS	NS	NS
MW-3	09/09/08	805	3.3	160	1630
MW-3	03/02/09	NS	NS	NS	NS
MW-3	08/27/09	2490	<25	842	6560
MW-3	02/11/10	NS	NS	NS	NS
MW-3	05/21/10	NS	NS	NS	NS
MW-3	09/29/10	2710	<50	1390	10600
MW-3	11/02/10	NS	NS	NS	NS
MW-3	02/02/11	NS	NS	NS	NS
MW-3	05/04/11	NS	NS	NS	NS
MW-3	09/30/11	1410	5.8 J	1280	12600
MW-3	11/11/11	NS	NS	NS	NS
MW-3	02/16/12	NS	NS	NS	NS
MW-3	05/08/12	NS	NS	NS	NS
MW-3	06/07/13	760	<0.30	1700	19000
MW-3	09/13/13	770	<0.30	1400	11000
MW-3	12/13/13	610	<38	960	9200
MW-3	04/03/14	670	<19	890	10000
MW-3	10/21/14	250	<35	990	10000
MW-3	05/27/15	52	<100	1400	4700
MW-3	11/17/15	44	5.2	1400	1100
MW-3	04/15/16	NS	NS	NS	NS
MW-3	10/11/16	NS	NS	NS	NS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Knight #1					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-4	12/12/95	90.1	<12.5	16.8	144
MW-4	04/09/96	63.1	<1	<1	42.5
MW-4	07/17/96	35	<1	<1	17.8
MW-4	10/15/96	53.5	<1	<1	28.4
MW-4	01/13/97	56.2	<1	<1	48.4
MW-4	04/22/97	32.8	<1	<1	15.2
MW-4	07/14/97	10.4	<1	<1	5.79
MW-4	10/22/97	215	<1	5.5	184
MW-4	01/09/98	114	<1	2.66	85.7
MW-4	04/24/98	55.4	<1	<1	19.3
MW-4	04/16/99	129	<1	2.03	87.3
MW-4	04/19/00	110	6.5	17	140
MW-4	09/11/01	140	<0.5	9.6	110
MW-4	09/04/02	261	3.1	20.1	246.5
MW-4	12/10/02	NS	NS	NS	NS
MW-4	06/19/03	NS	NS	NS	NS
MW-4	09/17/03	192	<1	26.3	194
MW-4	12/09/03	NS	NS	NS	NS
MW-4	03/15/04	NS	NS	NS	NS
MW-4	09/15/04	182	<0.5	9.8	161
MW-4	03/16/05	NS	NS	NS	NS
MW-4	09/19/05	199	<1	53.8	416
MW-4	03/27/06	NS	NS	NS	NS
MW-4	09/26/06	180	12.5	55.9	417
MW-4	03/28/07	NS	NS	NS	NS
MW-4	09/17/07	272	4.7	21.3	236
MW-4	03/04/08	NS	NS	NS	NS
MW-4	09/09/08	265	0.94 J	26.5	274
MW-4	03/02/09	NS	NS	NS	NS
MW-4	08/27/09	NS	NS	NS	NS
MW-4	09/23/09	2110	12.6 J	676	6440
MW-4	10/19/09	NS	NS	NS	NS
MW-4	11/05/09	NS	NS	NS	NS
MW-4	12/21/09	NS	NS	NS	NS
MW-4	02/11/10	NS	NS	NS	NS
MW-4	05/21/10	NS	NS	NS	NS
MW-4	09/29/10	1400	<50	1020	6410
MW-4	11/02/10	NS	NS	NS	NS
MW-4	02/02/11	NS	NS	NS	NS
MW-4	05/04/11	NS	NS	NS	NS
MW-4	09/30/11	534	<10	1800	9510
MW-4	11/11/11	NS	NS	NS	NS
MW-4	02/16/12	NS	NS	NS	NS
MW-4	05/08/12	NS	NS	NS	NS
MW-4	06/07/13	2700	<0.30	900	12000
MW-4	09/13/13	NS	NS	NS	NS
MW-4	12/13/13	NS	NS	NS	NS
MW-4	04/03/14	NS	NS	NS	NS
MW-4	10/21/14	NS	NS	NS	NS
MW-4	05/27/15	NS	NS	NS	NS
MW-4	11/17/15	NS	NS	NS	NS
MW-4	04/15/16	15	<5.0	8.7	510
MW-4	10/11/16	NS	NS	NS	NS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Knight #1					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-5	11/15/00	<0.5	<0.5	<0.5	<0.5
MW-5	09/11/01	<0.5	<0.5	<0.5	0.6
MW-5	09/04/02	<0.5	0.3	0.9	1.4
MW-5	12/10/02	NS	NS	NS	NS
MW-5	06/19/03	NS	NS	NS	NS
MW-5	09/17/03	NS	NS	NS	NS
MW-5	12/09/03	NS	NS	NS	NS
MW-5	03/15/04	NS	NS	NS	NS
MW-5	09/15/04	NS	NS	NS	NS
MW-5	03/16/05	NS	NS	NS	NS
MW-5	09/19/05	NS	NS	NS	NS
MW-5	03/28/07	NS	NS	NS	NS
MW-5	09/17/07	NS	NS	NS	NS
MW-5	03/04/08	NS	NS	NS	NS
MW-5	09/09/08	NS	NS	NS	NS
MW-5	03/02/09	NS	NS	NS	NS
MW-5	08/27/09	NS	NS	NS	NS
MW-5	02/11/10	NS	NS	NS	NS
MW-5	05/21/10	NS	NS	NS	NS
MW-5	09/29/10	34.1	<2	<2	2.7 J
MW-5	11/02/10	NS	NS	NS	NS
MW-5	02/02/11	NS	NS	NS	NS
MW-5	05/04/11	NS	NS	NS	NS
MW-5	09/30/11	<1	<1	<1	1.2 J
MW-5	11/11/11	NS	NS	NS	NS
MW-5	02/16/12	NS	NS	NS	NS
MW-5	05/08/12	NS	NS	NS	NS
MW-5	06/07/13	<0.14	<0.30	<0.20	<0.23
MW-5	09/13/13	<0.14	<0.30	<0.20	<0.23
MW-5	12/13/13	<0.20	<0.38	<0.20	0.68 J
MW-5	04/03/14	<0.20	<0.38	<0.20	<0.65
MW-5	10/21/14	<0.38	<0.70	<0.50	<1.6
MW-5	05/27/15	<1.0	<5.0	<1.0	<5.0
MW-5	11/17/15	<1.0	<1.0	<1.0	<3.0
MW-5	04/15/16	NS	NS	NS	NS
MW-5	10/11/16	NS	NS	NS	NS

TABLE 1 - GROUNDWATER ANALYTICAL RESULTS

Knight #1					
Location	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards:		10	750	750	620
MW-6	11/17/15	<1.0	<1.0	<1.0	<3.0
MW-6	04/15/16	NS	NS	NS	NS
MW-6	10/11/16	NS	NS	NS	NS
MW-7	11/17/15	18	<1.0	38	100
MW-7	04/15/16	7.8	<10	4.3	48
MW-7	10/11/16	81	<10	320	1700
MW-8	11/17/15	<1.0	<1.0	<1.0	<3.0
MW-8	04/15/16	<1.0	<5.0	<1.0	<5.0
MW-8	10/11/16	<1.0	<5.0	<1.0	<5.0
MW-9	11/17/15	1.1	<1.0	<1.0	<3.0
MW-9	04/15/16	NS	NS	NS	NS
MW-9	10/11/16	NS	NS	NS	NS
MW-10	11/17/15	<1.0	<1.0	<1.0	<3.0
MW-10	04/15/16	NS	NS	NS	NS
MW-10	10/11/16	NS	NS	NS	NS
MW-11	11/17/15	2000	3.7	800	1600
MW-11	04/15/16	410	<50	32	54
MW-11	10/11/16	1100	<100	280	2000
MW-12	11/17/15	19	<1.0	12	90
MW-12	04/15/16	NS	NS	NS	NS
MW-12	10/11/16	NS	NS	NS	NS
MW-13	11/17/15	<1.0	<1.0	<1.0	<3.0
MW-13	04/15/16	NS	NS	NS	NS
MW-13	10/11/16	NS	NS	NS	NS
PH-1	02/25/97	1.21	<1	3.42	35.9
PH-2	02/25/97	<1	<1	<1	<3
PH-3	02/25/97	<1	<1	<1	<3
PH-4	02/25/97	<1	<1	<1	<3
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

Knight #1						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-1	10/16/95	5512.35	26.03	NR		5486.32
MW-1	12/12/95	5512.35	25.91	NR		5486.44
MW-1	04/09/96	5512.35	26.71	26.34	0.37	5485.92
MW-1	07/17/96	5512.35	25.39	25.35	0.04	5486.99
MW-1	10/15/96	5512.35	27.35	26.60	0.75	5485.56
MW-1	01/13/97	5512.35	26.53	NR		5485.82
MW-1	04/22/97	5512.35	26.23	NR		5486.12
MW-1	07/14/97	5512.35	25.25	NR		5487.10
MW-1	10/22/97	5512.35	26.22	NR		5486.13
MW-1	01/09/98	5512.35	25.82	NR		5486.53
MW-1	04/24/98	5512.35	26.01	25.87	0.14	5486.44
MW-1	04/16/99	5512.35	26.52	26.40	0.12	5485.92
MW-1	04/19/00	5512.35	27.14	27.07	0.07	5485.26
MW-1	09/05/01	5512.35	28.32	27.93	0.39	5484.32
MW-1	09/11/01	5512.35	28.10	28.05	0.05	5484.29
MW-1	09/04/02	5512.35	28.39	28.31	0.08	5484.02
MW-1	12/10/02	5512.35	28.47	28.31	0.16	5484.00
MW-1	03/20/03	5512.35	28.14	28.05	0.09	5484.28
MW-1	06/19/03	5512.35	28.02	28.00	0.02	5484.34
MW-1	09/17/03	5512.35	28.97	28.95	0.02	5483.39
MW-1	12/09/03	5512.35	28.32	28.30	0.02	5484.04
MW-1	03/15/04	5512.35	27.99	27.89	0.10	5484.43
MW-1	09/15/04	5512.35	28.78	28.77	0.01	5483.58
MW-1	03/16/05	5512.35	28.12	ND		5484.68
MW-1	09/19/05	5512.35	27.47	ND		5484.88
MW-1	03/27/06	5512.35	26.49	ND		5485.86
MW-1	09/26/06	5512.35	25.91	ND		5486.44
MW-1	03/28/07	5512.35	25.87	ND		5486.48
MW-1	09/17/07	5512.35	26.94	ND		5485.41
MW-1	03/04/08	5512.35	25.70	ND		5486.65
MW-1	09/09/08	5512.35	26.68	ND		5485.67
MW-1	03/02/09	5512.35	24.71	ND		5487.64
MW-1	08/27/09	5512.35	24.30	ND		5488.05
MW-1	02/11/10	5512.35	24.83	ND		5487.52
MW-1	05/21/10	5512.35	23.54	ND		5488.81
MW-1	09/29/10	5512.35	24.33	ND		5488.02
MW-1	11/02/10	5512.35	22.31	ND		5490.04
MW-1	02/02/11	5512.35	23.62	ND		5488.73
MW-1	05/04/11	5512.35	22.50	ND		5489.85
MW-1	09/30/11	5512.35	22.26	ND		5490.09
MW-1	11/11/11	5512.35	22.87	ND		5489.48
MW-1	02/16/12	5512.35	24.01	ND		5488.34
MW-1	05/08/12	5512.35	22.01	ND		5490.34
MW-1	06/07/13	5512.35	21.73	ND		5490.62
MW-1	09/13/13	5512.35	26.75	ND		5485.60
MW-1	12/13/13	5512.35	26.45	ND		5485.90
MW-1	04/03/14	5512.35	25.71	ND		5486.64
MW-1	10/21/14	5512.35	25.88	ND		5486.47
MW-1	05/27/15	5512.35	19.29	ND		5493.06
MW-1	11/17/15	5512.35	22.76	ND		5489.59
MW-1	04/15/16	5512.35	23.54	ND		5488.81
MW-1	10/11/16	5512.35	21.69	ND		5490.66

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Knight #1						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-2	12/12/95	5511.65	25.37	NR		5486.28
MW-2	04/09/96	5511.65	25.58	NR		5486.07
MW-2	07/17/96	5511.65	25.09	NR		5486.56
MW-2	10/15/96	5511.65	26.36	NR		5485.29
MW-2	01/13/97	5511.65	26.05	NR		5485.60
MW-2	04/22/97	5511.65	25.82	NR		5485.83
MW-2	10/22/97	5511.65	25.86	NR		5485.79
MW-2	01/09/98	5511.65	25.50	NR		5486.15
MW-2	04/24/98	5511.65	25.60	NR		5486.05
MW-2	02/09/99	5511.65	26.05	NR		5485.60
MW-2	04/16/99	5511.65	26.16	NR		5485.49
MW-2	04/19/00	5511.65	25.92	NR		5485.73
MW-2	09/11/01	5511.65	27.60	NR		5484.05
MW-2	09/04/02	5511.65	27.88	NR		5483.77
MW-2	12/10/02	5511.65	27.90	NR		5483.75
MW-2	06/19/03	5511.65	27.46	ND		5484.19
MW-2	09/17/03	5511.65	28.42	ND		5483.23
MW-2	12/09/03	5511.65	27.87	ND		5483.78
MW-2	03/15/04	5511.65	27.55	ND		5484.10
MW-2	09/15/04	5511.65	28.25	ND		5483.40
MW-2	03/16/05	5511.65	27.30	ND		5484.35
MW-2	09/19/05	5511.65	26.80	ND		5484.85
MW-2	03/27/06	5511.65	26.18	ND		5485.47
MW-2	09/26/06	5511.65	25.66	ND		5485.99
MW-2	03/28/07	5511.65	25.58	ND		5486.07
MW-2	09/17/07	5511.65	26.63	ND		5485.02
MW-2	03/04/08	5511.65	25.47	ND		5486.18
MW-2	09/09/08	5511.65	26.30	ND		5485.35
MW-2	03/02/09	5511.65	24.46	ND		5487.19
MW-2	08/27/09	5511.65	24.00	ND		5487.65
MW-2	02/11/10	5511.65	24.45	ND		5487.20
MW-2	05/21/10	5511.65	23.21	ND		5488.44
MW-2	09/29/10	5511.65	23.00	ND		5488.65
MW-2	11/02/10	5511.65	22.03	ND		5489.62
MW-2	02/02/11	5511.65	23.41	ND		5488.24
MW-2	05/04/11	5511.65	22.67	ND		5488.98
MW-2	09/30/11	5511.65	21.75	ND		5489.90
MW-2	11/11/11	5511.65	22.59	ND		5489.06
MW-2	02/16/12	5511.65	23.72	ND		5487.93
MW-2	05/08/12	5511.65	21.99	ND		5489.66
MW-2	06/07/13	5511.65	22.88	ND		5488.77
MW-2	09/13/13	5511.65	26.49	ND		5485.16
MW-2	12/13/13	5511.65	26.18	ND		5485.47
MW-2	04/03/14	5511.65	25.43	ND		5486.22
MW-2	10/21/14	5511.65	25.62	ND		5486.03
MW-2	05/27/15	5511.65	20.41	ND		5491.24
MW-2	11/17/15	5511.65	22.57	ND		5489.08
MW-2	04/15/16	5511.65	23.23	ND		5488.42
MW-2	10/11/16	5511.65	21.33	ND		5490.32

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Knight #1						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-3	12/12/95	5512.19	25.67	NR		5486.52
MW-3	04/09/96	5512.19	25.78	NR		5486.41
MW-3	07/17/96	5512.19	25.15	NR		5487.04
MW-3	01/13/97	5512.19	26.41	26.25	0.16	5485.90
MW-3	07/14/97	5512.19	25.21	NR		5486.98
MW-3	10/22/97	5512.19	26.01	NR		5486.18
MW-3	01/09/98	5512.19	25.69	NR		5486.50
MW-3	04/24/98	5512.19	25.76	NR		5486.43
MW-3	04/16/99	5512.19	26.30	NR		5485.89
MW-3	04/19/00	5512.19	26.75	NR		5485.44
MW-3	09/05/01	5512.19	27.91	27.84	0.07	5484.33
MW-3	09/11/01	5512.19	27.91	27.89	0.02	5484.29
MW-3	09/04/02	5512.19	28.17	28.16	0.01	5484.03
MW-3	12/10/02	5512.19	28.20	28.17	0.03	5484.01
MW-3	06/19/03	5512.19	27.81	ND		5484.38
MW-3	09/17/03	5512.19	28.79	28.76	0.03	5483.42
MW-3	12/09/03	5512.19	28.11	ND		5484.08
MW-3	03/15/04	5512.19	27.78	ND		5484.41
MW-3	09/15/04	5512.19	28.60	ND		5483.59
MW-3	03/16/05	5512.19	27.48	ND		5484.71
MW-3	09/19/05	5512.19	27.16	ND		5485.03
MW-3	03/27/06	5512.19	26.34	ND		5485.85
MW-3	09/26/06	5512.19	25.83	ND		5486.36
MW-3	03/28/07	5512.19	25.71	ND		5486.48
MW-3	09/17/07	5512.19	26.85	ND		5485.34
MW-3	03/04/08	5512.19	25.55	ND		5486.64
MW-3	09/09/08	5512.19	25.62	ND		5486.57
MW-3	03/02/09	5512.19	24.55	ND		5487.64
MW-3	08/27/09	5512.19	24.13	ND		5488.06
MW-3	02/11/10	5512.19	24.67	ND		5487.52
MW-3	05/21/10	5512.19	23.40	ND		5488.79
MW-3	09/29/10	5512.19	23.42	ND		5488.77
MW-3	11/02/10	5512.19	22.20	ND		5489.99
MW-3	02/02/11	5512.19	23.44	ND		5488.75
MW-3	05/04/11	5512.19	22.37	ND		5489.82
MW-3	09/30/11	5512.19	21.94	ND		5490.25
MW-3	11/11/11	5512.19	22.75	ND		5489.44
MW-3	02/16/12	5512.19	23.85	ND		5488.34
MW-3	05/08/12	5512.19	21.90	ND		5490.29
MW-3	06/07/13	5512.19	21.61	ND		5490.58
MW-3	09/13/13	5512.19	26.71	ND		5485.48
MW-3	12/13/13	5512.19	26.31	ND		5485.88
MW-3	04/03/14	5512.19	25.55	ND		5486.64
MW-3	10/21/14	5512.19	25.73	ND		5486.46
MW-3	05/27/15	5512.19	19.02	ND		5493.17
MW-3	11/17/15	5512.19	22.61	ND		5489.58
MW-3	04/15/16	5512.19	23.37	ND		5488.82
MW-3	10/11/16	5512.19	21.54	ND		5490.65

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Knight #1						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-4	12/12/95	5512.86	26.27	NR		5486.59
MW-4	04/09/96	5512.86	26.40	NR		5486.46
MW-4	07/17/96	5512.86	25.77	NR		5487.09
MW-4	10/15/96	5512.86	27.26	NR		5485.60
MW-4	01/13/97	5512.86	26.96	NR		5485.90
MW-4	04/22/97	5512.86	26.69	NR		5486.17
MW-4	07/14/97	5512.86	25.78	NR		5487.08
MW-4	10/22/97	5512.86	26.72	NR		5486.14
MW-4	01/09/98	5512.86	26.34	NR		5486.52
MW-4	04/24/98	5512.86	26.44	NR		5486.42
MW-4	04/16/99	5512.86	26.97	NR		5485.89
MW-4	04/19/00	5512.86	26.09	NR		5486.77
MW-4	09/11/01	5512.86	28.48	NR		5484.38
MW-4	09/04/02	5512.86	28.76	NR		5484.10
MW-4	12/10/02	5512.86	28.80	NR		5484.06
MW-4	06/19/03	5512.86	28.43	ND		5484.43
MW-4	09/17/03	5512.86	29.36	ND		5483.50
MW-4	12/09/03	5512.86	28.73	ND		5484.13
MW-4	03/15/04	5512.86	28.42	ND		5484.44
MW-4	09/15/04	5512.86	29.20	ND		5483.66
MW-4	03/16/05	5512.86	28.12	ND		5484.74
MW-4	09/19/05	5512.86	27.74	ND		5485.12
MW-4	03/27/06	5512.86	26.87	ND		5485.99
MW-4	09/26/06	5512.86	26.45	ND		5486.41
MW-4	03/28/07	5512.86	26.34	ND		5486.52
MW-4	09/17/07	5512.86	27.44	ND		5485.42
MW-4	03/04/08	5512.86	26.23	ND		5486.63
MW-4	09/09/08	5512.86	26.15	ND		5486.71

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Knight #1						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-4	03/02/09	5512.86	25.19	ND		5487.67
MW-4	08/27/09	5512.86	27.10	24.13	2.97	5487.99
MW-4	09/23/09	5512.86	26.15	25.35	0.80	5487.31
MW-4	10/19/09	5512.86	25.70	25.15	0.55	5487.57
MW-4	11/05/09	5512.86	25.95	25.69	0.26	5487.10
MW-4	12/21/09	5512.86	26.05	25.85	0.20	5486.96
MW-4	02/11/10	5512.86	25.40	25.28	0.12	5487.55
MW-4	05/21/10	5512.86	24.05	24.03	0.02	5488.82
MW-4	09/29/10	5512.86	25.05	23.35	1.70	5489.08
MW-4	11/02/10	5512.86	23.38	22.74	0.64	5489.96
MW-4	02/02/11	5512.86	24.37	24.18	0.19	5488.63
MW-4	05/04/11	5512.86	22.13	ND		5490.73
MW-4	09/30/11	5512.86	24.52	21.85	2.67	5490.34
MW-4	11/11/11	5512.86	23.74	23.40	0.34	5489.37
MW-4	02/16/12	5512.86	24.68	ND		5488.18
MW-4	05/08/12	5512.86	22.46	22.44	0.02	5490.41
MW-4	06/07/13	5512.86	24.76	23.75	1.01	5488.86
MW-4	09/13/13	5512.86	28.84	27.07	1.77	5485.35
MW-4	12/13/13	5512.86	27.30	26.78	0.52	5485.95
MW-4	04/03/14	5512.86	26.43	26.07	0.36	5486.70
MW-4	10/21/14	5512.86	27.02	26.14	0.88	5486.50
MW-4	05/27/15	5512.86	20.58	20.58		5492.28
MW-4	11/17/15	5512.86	23.64	23.07	0.57	5489.65
MW-4	04/15/16	5512.86	23.96	ND		5488.90
MW-4	10/11/16	5512.86	22.55	21.93	0.62	5490.77

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Knight #1						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-5	11/15/00	5510.04	25.62	NR		5484.42
MW-5	09/11/01	5510.04	25.94	NR		5484.10
MW-5	09/04/02	5510.04	26.21	NR		5483.83
MW-5	12/10/02	5510.04	26.11	NR		5483.93
MW-5	06/19/03	5510.04	25.80	ND		5484.24
MW-5	09/17/03	5510.04	26.67	ND		5483.37
MW-5	12/09/03	5510.04	25.88	ND		5484.16
MW-5	03/15/04	5510.04	25.52	ND		5484.52
MW-5	09/15/04	5510.04	26.60	ND		5483.44
MW-5	03/16/05	5510.04	25.21	ND		5484.83
MW-5	09/19/05	5510.04	25.20	ND		5484.84
MW-5	03/28/07	5510.04	23.54	ND		5486.50
MW-5	09/17/07	5510.04	24.87	ND		5485.17
MW-5	03/04/08	5510.04	23.28	ND		5486.76
MW-5	09/09/08	5510.04	23.69	ND		5486.35
MW-5	03/02/09	5510.04	22.52	ND		5487.52
MW-5	08/27/09	5510.04	22.51	ND		5487.53
MW-5	02/11/10	5510.04	22.74	ND		5487.30
MW-5	05/21/10	5510.04	21.43	ND		5488.61
MW-5	09/29/10	5510.04	21.33	ND		5488.71
MW-5	11/02/10	5510.04	20.48	ND		5489.56
MW-5	02/02/11	5510.04	20.52	ND		5489.52
MW-5	05/04/11	5510.04	20.66	ND		5489.38
MW-5	09/30/11	5510.04	20.24	ND		5489.80
MW-5	11/11/11	5510.04	21.89	ND		5488.15
MW-5	02/16/12	5510.04	21.85	ND		5488.19
MW-5	05/08/12	5510.04	19.79	ND		5490.25
MW-5	06/07/13	5510.04	20.70	ND		5489.34
MW-5	09/13/13	5510.04	24.68	ND		5485.36
MW-5	12/13/13	5510.04	24.13	ND		5485.91
MW-5	04/03/14	5510.04	23.42	ND		5486.62
MW-5	10/21/14	5510.04	23.72	ND		5486.32
MW-5	05/27/15	5510.04	17.17	ND		5492.87
MW-5	11/17/15	5510.04	20.74	ND		5489.30
MW-5	04/15/16	5510.04	21.35	ND		5488.69
MW-5	10/11/16	5510.04	19.74	ND		5490.30

TABLE 2 - GROUNDWATER ELEVATION RESULTS

Knight #1						
Location	Date	TOC	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	GW Elevation (ft.)
MW-6	11/17/15	5510.36	21.31	ND		5489.05
MW-6	04/15/16	5510.36	21.90	ND		5488.46
MW-6	10/11/16	5510.36	20.22	ND		5490.14
MW-7	11/17/15	5511.16	21.77	ND		5489.39
MW-7	04/15/16	5511.16	22.43	ND		5488.73
MW-7	10/11/16	5511.16	20.68	ND		5490.48
MW-8	11/17/15	5511.95	22.21	ND		5489.74
MW-8	04/15/16	5511.95	22.94	ND		5489.01
MW-8	10/11/16	5511.95	21.25	ND		5490.70
MW-9	11/17/15	5513.44	23.49	ND		5489.95
MW-9	04/15/16	5513.44	24.29	ND		5489.15
MW-9	10/11/16	5513.44	22.48	ND		5490.96
MW-10	11/17/15	5513.72	24.06	ND		5489.66
MW-10	04/15/16	5513.72	24.84	ND		5488.88
MW-10	10/11/16	5513.72	22.87	ND		5490.85
MW-11	11/17/15	5513.41	23.91	ND		5489.50
MW-11	04/15/16	5513.41	24.73	ND		5488.68
MW-11	10/11/16	5513.41	22.66	ND		5490.75
MW-12	11/17/15	5511.47	22.40	ND		5489.07
MW-12	04/15/16	5511.47	23.05	ND		5488.42
MW-12	10/11/16	5511.47	21.13	ND		5490.34
MW-13	11/17/15	5509.07	20.26	ND		5488.81
MW-13	04/15/16	5509.07	20.83	ND		5488.24
MW-13	10/11/16	5509.07	19.01	ND		5490.06

Notes:

"ft" = feet

"TOC" = Top of casing

"LNAPL" = Light non-aqueous phase liquid

"ND" = LNAPL not detected

"NR" = LNAPL not recorded

No water level data recorded for the geoprobe (PH) points completed on February 25, 1997.

FIGURES

FIGURE 1: MARCH 13, 2016 SOIL BORING LOCATIONS AND PID RESULTS

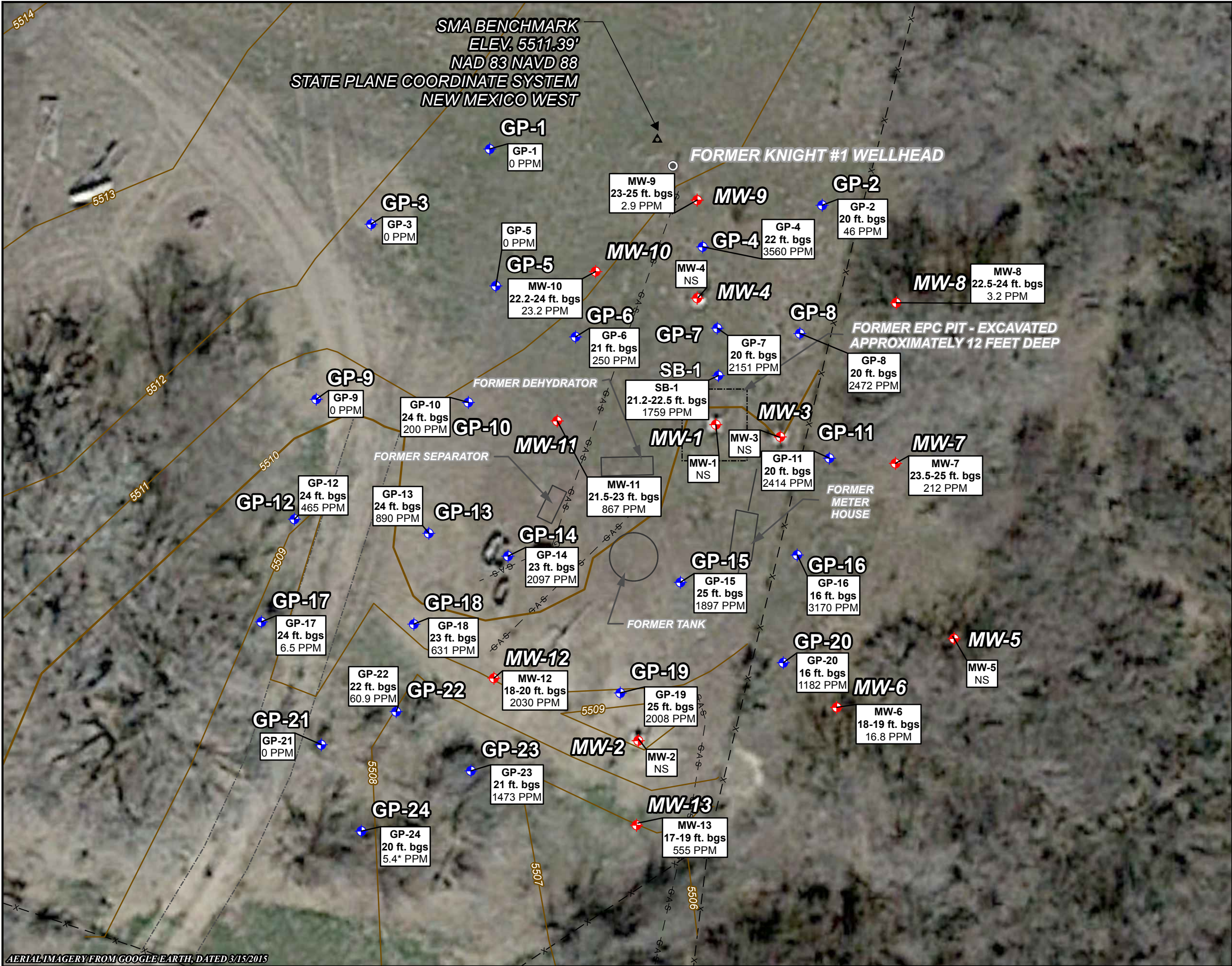
FIGURE 2: HISTORICAL SOIL ANALYTICAL RESULTS

FIGURE 3: APRIL 15, 2016 GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 4: APRIL 15, 2016 GROUNDWATER ELEVATION MAP

FIGURE 5: OCTOBER 11, 2016 GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 6: OCTOBER 11, 2016 GROUNDWATER ELEVATION MAP



LEGEND:

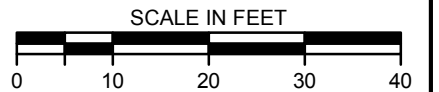
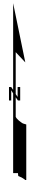
- 5509** APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- X- FENCE
- A-S- GAS LINE
- FORMER WELLHEAD
- MONITORING WELL
- SOIL BORING
- ▲ SMA BENCHMARK

NOTES:

UTILITY LOCATIONS ARE APPROXIMATE.

VALUES REPRESENTED THE HIGHEST READING AT OR ABOVE 25' BGS.

* = RESULT FROM FIELD SCREENING READING, AS NO HEADSPACE VALUES WERE COLLECTED
PPM = PARTS PER MILLION
ft. bgs = FEET BELOW GROUND SURFACE
NS = NOT SAMPLED



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	2/9/2017	SLG	SLG	SRV

TITLE:

SOIL BORING LOCATIONS AND PID RESULTS

PROJECT:

KNIGHT #1
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO



Figure No.:

1



LEGEND:

- 5509 APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- X- FENCE
- GAS- GAS LINE
- FORMER WELLHEAD
- ⬮ MONITORING WELL
- ⬮ SOIL BORING
- ▲ SMA BENCHMARK

NOTES:
MW-13 SAMPLES COLLECTED 6/23/2015; MW-7 AND MW-8 6/24/2015; MW-6 AND MW-10 6/25/2015; MW-9 AND MW-11 6/26/2015; MW-12 AND SB-1 6/27/2015.

UTILITY LOCATIONS ARE APPROXIMATE.

ft. bgs = FEET BELOW GROUND SURFACE
NS = NOT SAMPLED

EXPLANATION OF ANALYTES AND APPLICABLE STANDARDS:
RESULTS IN **BOLDFACE** TYPE INDICATE CONCENTRATION IN EXCESS OF APPLICABLE NEW MEXICO OIL CONSERVATION DIVISION SOIL CRITERIA FOR THAT ANALYTE.
mg/kg = MILLIGRAM/KILOGRAM
BRL = BELOW REPORTING LIMITS

ANALYTE	NMOC D STANDARDS
B = Benzene	10 mg/kg
BTEX = Benzene, toluene, ethylbenzene, xylenes	50 mg/kg
TPH = Total Petroleum Hydrocarbons	100 mg/kg
Cl = Chloride	600 mg/kg



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	2/9/2017	SLG	SLG	SRV

TITLE:
HISTORICAL SOIL CONCENTRATIONS

PROJECT:
KNIGHT #1
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO



Figure No.:
2



LEGEND:

- 5509** APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- X- FENCE
- GAS- GAS LINE
- FORMER WELLHEAD
- + 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
<1 = BELOW REPORTING 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
A	2/9/2017	SLG	SLG	SRV

TITLE:
**GROUNDWATER ANALYTICAL RESULTS
APRIL 15, 2016**

PROJECT: **KNIGHT #1
SAN JUAN RIVER BASIN
SAN JUAN COUNTY, NEW MEXICO**



Figure No.:
3







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

LEGEND:

- APPROX. GROUND SURFACE CONTOUR AND ELEVATION, FEET
- ACCESS ROAD
- FENCE
- GAS LINE
- FORMER WELLHEAD
- MONITORING WELL
- SMA BENCHMARK

NOTES:

- GROUNDWATER ELEVATION (CORRECTED FOR PRODUCT THICKNESS WHEN PRESENT) FEET ABOVE MEAN SEA LEVEL
- CORRECTED WATER ELEVATION CONTOUR DASHED WHERE INFERRED (FEET ABOVE MEAN SEA LEVEL) 0.2 FOOT CONTOUR INTERVAL)
- DIRECTION OF APPARENT GROUNDWATER FLOW



REVISION	DATE	DESIGN BY	DRAWN BY	REVIEWED BY
A	2/9/2017	SLG	SLG	SRV

TITLE:	GROUNDWATER ELEVATION MAP OCTOBER 11, 2016
PROJECT:	KNIGHT #1 SAN JUAN RIVER BASIN SAN JUAN COUNTY, NEW MEXICO
MWH	Figure No.: 6

APPENDIX A



Soil Boring GP-1

Project	<u>Knight #1</u>	Owner	<u>El Paso CGP Company, LLC</u>
Location	<u>San Juan County, New Mexico</u>	Project Number	<u>10508814</u>
Surface Elev.	<u>5511.64 ft</u>	North	<u>2127844</u>
		East	<u>2609245</u>
Top of Casing	<u>NA</u>	Water Level Initial	<u>▽</u>
		Static	<u>▼</u>
Hole Depth	<u>30.0ft</u>	Screen: Diameter	<u>NA</u>
		Length	<u>NA</u>
		Type/Size	<u>NA</u>
Hole Diameter	<u>2.875 in</u>	Casing: Diameter	<u>NA</u>
		Length	<u>NA</u>
		Type	<u>NA</u>
Drill Co.	<u>Vista Geoscience, LLC</u>	Drilling Method	<u>Direct Push/Dual-tube</u>
		Sand Pack	<u>NA</u>
Driller	<u>Chase Cain/Mike Martin</u>	Driller Reg. #	<u>WD-1705</u>
		Log By	<u>Brad Barton</u>
Start Date	<u>3/7/2016</u>	Completion Date	<u>3/8/2016</u>
		Checked By	<u>Steve Varsa</u>

Grassy ground cover (farm field). NA = Not Analyzed.

 Bentonite Grout
 Bentonite Granules
 Grout
 Portland Cement
 Sand Pack
 Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening (ppm)	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5511.64
		0.0	NA				Clay with silt and fine sand, brown, slightly moist to moist at 7.5', moderate to high plasticity at 7.5', no hydrocarbon odor, (0-8' hand augered)	5510
		0.0	NA					
		0.0	NA					
		0.0	NA			CL		
5		0.0	NA					
		0.0	NA					
		0.0	NA					5505
	100%	0.0	NA					
		0.0	NA				Clay, moist, high plasticity, soft, no hydrocarbon odor	
10	100%	0.0	NA			CH		
		0.0	NA					
		0.0	NA				Sand, silty, medium brown, loose, slightly moist, medium sand, no hydrocarbon odor	5500
		0.0	NA			SM		
		0.0	NA					
	100%	0.0	NA					
15		0.0	NA				Clay with silt and sand, moist, water at 22', soft, brown, medium plasticity, no hydrocarbon odor	5495
		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA			CL		5490
20		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA				Gravels, silty, sandy, dark brown, loose, angular, wet, no hydrocarbon odor, gravels up to 2"	5485
25		0.0	NA					
		0.0	NA			GP GM		
		0.0	NA					
30	100%	0.0	NA				End of boring at 30'. Boring cement grouted 0-30'.	5480

Soil Boring **GP-2**

Project	<u>Knight #1</u>	Owner	<u>El Paso CGP Company, LLC</u>				
Location	<u>San Juan County, New Mexico</u>	Project Number	<u>10508814</u>				
Surface Elev.	<u>5510.75 ft</u>	North	<u>2127832</u>	East	<u>2609314</u>		
Top of Casing	<u>NA</u>	Water Level Initial	<u>▽</u>	Static	<u>▼</u>		
Hole Depth	<u>30.0ft</u>	Screen: Diameter	<u>NA</u>	Length	<u>NA</u>	Type/Size	<u>NA</u>
Hole Diameter	<u>2.875 in</u>	Casing: Diameter	<u>NA</u>	Length	<u>NA</u>	Type	<u>NA</u>
Drill Co.	<u>Vista Geoscience, LLC</u>	Drilling Method	<u>Direct Push/Dual-tube</u>	Sand Pack	<u>NA</u>		
Driller	<u>Chase Cain/Mike Martin</u>	Driller Reg. #	<u>WD-1705</u>	Log By	<u>Brad Barton</u>		
Start Date	<u>3/10/2016</u>	Completion Date	<u>3/10/2016</u>	Checked By	<u>Steve Varsa</u>		

Grassy ground cover (farm field). NA = Not Analyzed.

 Bentonite Grout
 Bentonite Granules
 Grout
 Portland Cement
 Sand Pack
 Sand Pack

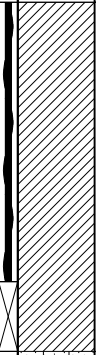
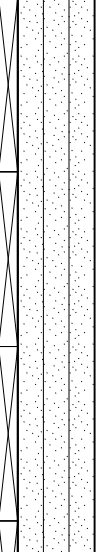
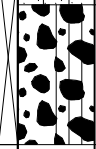
	Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
	0								5510.75
			0.0	NA				Clay, minor silt and sand at 4.5', dark brown to brown, medium to high plasticity, soft to medium stiff, slightly moist to moist at 7.5', (0-8' hand augered)	5510
			0.0	NA					
			0.0	NA					
			0.0	NA					
	5		0.0	NA					
			0.0	NA					
			0.0	NA					5505
		100%	0.0	NA					
			0.0	NA					
	10	100%	0.0	NA					5500
			0.0	NA					
			0.0	NA					
			0.0	NA					
			0.0	NA					
			0.0	NA					
	15	100%	0.0	NA					
			0.7	NA				very moist at 15.5', saturated at 20.5', dark gray hydrocarbon staining at 19.5', no hydrocarbon odor	5495
			0.9	NA					
			1.4	NA					
			20.1	6.6					
	20	100%	28.8	46					5490
			24.3	19.3					
			3.8	NA					
			0.9	NA					
			1.1	NA					
	25	100%	0.5	NA					5485
			0.0	NA				Clay with sand, minor gravels, light gray, saturated/wet, no hydrocarbon odor	
			0.0	NA			CL		
			0.0	NA					
			0.0	NA					
	30	100%	0.0	NA			GM	Gravels with sand, light brown, loose, wet	
								End of boring at 30'. Boring cement grouted 0-30'.	5480

Soil Boring **GP-3**

Project	<u>Knight #1</u>	Owner	<u>El Paso CGP Company, LLC</u>				
Location	<u>San Juan County, New Mexico</u>	Project Number	<u>10508814</u>				
Surface Elev.	<u>5511.85 ft</u>	North	<u>2127828</u>	East	<u>2609220</u>		
Top of Casing	<u>NA</u>	Water Level Initial	<u>▽</u>	Static	<u>▼</u>		
Hole Depth	<u>30.0ft</u>	Screen: Diameter	<u>NA</u>	Length	<u>NA</u>	Type/Size	<u>NA</u>
Hole Diameter	<u>2.875 in</u>	Casing: Diameter	<u>NA</u>	Length	<u>NA</u>	Type	<u>NA</u>
Drill Co.	<u>Vista Geoscience, LLC</u>	Drilling Method	<u>Direct Push/Dual-tube</u>	Sand Pack	<u>NA</u>		
Driller	<u>Chase Cain/Mike Martin</u>	Driller Reg. #	<u>WD-1705</u>	Log By	<u>Brad Barton</u>		
Start Date	<u>3/7/2016</u>	Completion Date	<u>3/7/2016</u>	Checked By	<u>Steve Varsa</u>		

Grassy ground cover (farm field). NA = Not Analyzed.

 Bentonite Grout
 Bentonite Granules
 Grout
 Portland Cement
 Sand Pack
 Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5511.85
		0.0	NA			CL	Clay with silt and sand, fine sand, brown, slightly moist to moist, no hydrocarbon odor, medium to high plasticity, (0-8' hand augered)	
		0.0	NA					5510
		0.0	NA					
		0.0	NA					
5		0.0	NA					
		0.0	NA					
		0.0	NA					5505
	100%	0.0	NA					
		0.0	NA					
10	100%	0.0	NA			SM	Sand, silty, with minor clay, light brown, moist, water at 21', medium sand, loose, compressed in liner	
		0.0	NA					5500
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
15	100%	0.0	NA					5495
		0.0	NA					
		0.0	NA					
		0.0	NA					
20	100%	0.0	NA					5490
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
25	100%	0.0	NA			GM	Gravels, sandy, silty, light brown, wet, gravels up to 1" size, loose, medium sand	
		0.0	NA					5485
		0.0	NA					
		0.0	NA					
		0.0	NA					
30	100%	0.0	NA				End of boring at 30'. Boring cement grouted 0-30'.	5480



MWH

Drilling Log

Soil Boring **GP-4**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5510.85 ft North 2127824 East 2609289
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/10/2016 Completion Date 3/10/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (pdm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5510.85
0.0		0.0	NA				Clay, minor silt and sand at 4.5', dark brown to brown, medium to high plasticity, slightly moist to moist at 7.5', no hydrocarbon odor, (0-8' hand augered)	5510
0.0		0.0	NA					
0.0		0.0	NA					
0.0		0.0	NA					
5.0		0.0	NA					
5.0		0.0	NA					
5.0		0.0	NA					5505
5.0		0.0	NA					
10.0	100%	0.0	NA					
10.0	100%	0.0	NA					
10.0		0	NA				medium stiff at 10.5', soft and very moist at 12.5'	5500
10.0		0	NA					
10.0		0	NA					
10.0		0	NA			CL CH		
15.0	100%	0	NA					
15.0		0.5	NA					5495
15.0		0.7	NA					
15.0		2.6	NA					
20.0	100%	10.1	NA				minor dark gray hydrocarbon staining at 17.5' with no to very slight hydrocarbon odor, dark gray to black hydrocarbon staining at 20.5' with moderate odor, black staining at 23.5', water at 25'	
20.0		5.8	NA					5490
20.0		683	950					
20.0		1850	3560					
20.0		306	559					
25.0	100%	498	929					
25.0		1462	3505					5485
25.0		163	465					
25.0		3.4	NA				Sand, gravelly, gravels angular, sand medium to coarse, loose, wet, brown, no hydrocarbon odor	
25.0		6.0	NA			GM		
30.0	100%	3.0	NA					
30.0		14.0	NA					5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16

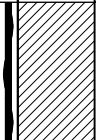
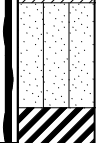
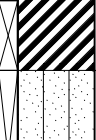
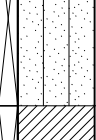
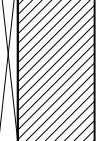
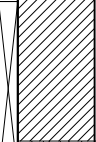
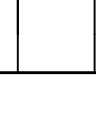


Soil Boring GP-5

Project	<u>Knight #1</u>	Owner	<u>El Paso CGP Company, LLC</u>
Location	<u>San Juan County, New Mexico</u>	Project Number	<u>10508814</u>
Surface Elev.	<u>5511.31 ft</u>	North	<u>2127816</u>
		East	<u>2609246</u>
Top of Casing	<u>NA</u>	Water Level Initial	<u>▽</u>
		Static	<u>▼</u>
Hole Depth	<u>30.0ft</u>	Screen: Diameter	<u>NA</u>
		Length	<u>NA</u>
		Type/Size	<u>NA</u>
Hole Diameter	<u>2.875 in</u>	Casing: Diameter	<u>NA</u>
		Length	<u>NA</u>
		Type	<u>NA</u>
Drill Co.	<u>Vista Geoscience, LLC</u>	Drilling Method	<u>Direct Push/Dual-tube</u>
		Sand Pack	<u>NA</u>
Driller	<u>Chase Cain/Mike Martin</u>	Driller Reg. #	<u>WD-1705</u>
		Log By	<u>Brad Barton</u>
Start Date	<u>3/7/2016</u>	Completion Date	<u>3/8/2016</u>
		Checked By	<u>Steve Varsa</u>

Grassy ground cover (farm field). NA = Not Analyzed.

 Bentonite Grout
 Bentonite Granules
 Grout
 Portland Cement
 Sand Pack
 Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5511.31
		0.0	NA			CL	Clay with silt and sand, dark brown, moist to slightly moist, medium plasticity, no hydrocarbon odor, (0-8' hand augered)	5510
		0.0	NA			SM	Sand, silty, light brown, loose, fine to medium sand, slightly moist, no hydrocarbon odor	
5		0.0	NA			SM		5505
		0.0	NA			CH	Clay, minor silt and sand, very moist, soft, high plasticity, no hydrocarbon odor	
10	100%	0.0	NA			SM	Sand, silty, fine to medium sand, loose, very minor clay, no hydrocarbon odor, compressed in liner	5500
		0.0	NA			SM		
		0.0	NA			SM		
15	100%	0.0	NA			CL	Clay, with silt and sand, brown, trace black organics, very moist, medium to high plasticity, soft, water at 20'	5495
		0.0	NA			CL		5490
20	100%	0.0	NA			CL		
		0.0	NA			CL		
		0.0	NA			CL		
25	100%	0.0	NA			GM	Gravels, silty, sandy, with clay, wet, loose, angular gravels up to 1", very minor hydrocarbon odor and minor staining from 25 to 29', minor iron staining present, discoloration present (red and dark gray), increasing sand content at 29.5'	5485
		0.0	NA			GM		
30	100%	0.0	NA			GM		
							End of boring at 30'. Boring cement grouted 0-30'.	5480



MWH

Drilling Log

Soil Boring **GP-6**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5510.95 ft North 2127805 East 2609263
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/9/2016 Completion Date 3/10/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5510.95
		0.0	NA				Clay with silt, brown, slightly moist to moist, soft, fine to medium sand, no hydrocarbon odor, (0-8' hand augered), water at 25'	5510
		0.0	NA					
		0.0	NA					
		0.0	NA					
5		0.0	NA					5505
		0.0	NA					
		0.0	NA					
	100%	0.0	NA					
		0.0	NA					
10	100%	0.0	NA				high plasticity and medium stiff at 10.5'	5500
		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA					
15		26.4	35.2				dark gray to black hydrocarbon staining with slight hydrocarbon odor at 16'	5495
		64.2	49.0					
		51.2	43.0					
		73.1	50.5					
20	100%	79.2	225.9					5490
		164.0	250					
		110.5	169					
		170.9	244					
		45.5	51.0					
25	100%	22.2	15.0					
		0.0	NA				Sand, gravelly, brown to light gray, wet, loose, medium to coarse sand, gravels angular up to 1", no hydrocarbon odor	5485
		0.0	NA					
		0.0	NA					
		0.0	NA					
30	100%	1.8	NA					5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH I.A.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-7**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5510.54 ft North 2127807 East 2609292
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/9/2016 Completion Date 3/10/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5510.54
		0.0	NA				Clay with silt and sand, brown, slightly moist to moist, soft, fine to medium sand, no hydrocarbon odor, medium to low plasticity, (0-8' hand augered)	5510
		0.0	NA					
		0.0	NA					
		0.0	NA					
5		0.0	NA					5505
		0.0	NA					
		0.0	NA					
	100%	0.0	NA					
		0.0	NA					
10	100%	0.8	NA				minor dark gray/black hydrocarbon staining at 10', moderate to strong hydrocarbon odor	5500
		335	296				moist to very moist and medium high plasticity at 10.5', medium stiff to stiff at 15.5', increasing sand content at 22.5', water at 25'	
		380.4	347			CL CH		
		304.1	646					
		691.3	599					
15	100%	1728	1494					5495
		344	585					
		1354	932					
		1117	941					
		497	541					
20	100%	2840	2151					5490
		1089	920					
		813.2	985					
		1439	1593					
		1733	1361					
25	100%	1580	1905					
		4.0	NA				Sand, gravelly, dark gray to brown, gravels angular, medium to coarse sand, loose, wet, very minor hydrocarbon odor	5485
		5.0	NA			GM		
		4.0	NA					
		5.0	NA					
30	100%	8.3	NA					5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-8**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5510.42 ft North 2127806 East 2609309
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/10/2016 Completion Date 3/10/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5510.42
0.0		0.0	NA				Clay, minor sand and silt at 4.5', dark brown to brown, soft to medium stiff, slightly moist to moist at 7.5', medium to high plasticity, no hydrocarbon odor, (0-8' hand augered)	5510
0.0		0.0	NA					
0.0		0.0	NA					
0.0		0.0	NA					
5		0.0	NA					5505
0.0		0.0	NA					
0.0		0.0	NA					
0.0		0.0	NA					
10	100%	0.0	NA					5500
0.0		0.0	NA					
1.1		0.0	NA					
0.7		0.0	NA					
4.5		0.0	NA					
4.2		0.0	NA					
15	100%	59.5	61.2			CL CH	dark gray to black hydrocarbon staining and slight hydrocarbon odor at 14.5' becoming strong at 15.5', soft and very moist at 15.5'	5495
316		132						
304		284						
526		941						
869		1592						
20	100%	771	2472					5490
374		418					very moist, soft, dark gray hydrocarbon staining at 20.5', minor sand present at 22.5', water at 26'	
637		658						
179		157						
110		86.3						
25	100%	398	685					5485
63.0		40.5						
6.5		NA				CL	Clay with gravels, dark gray hydrocarbon staining with very strong hydrocarbon odor, wet, gravels angular, soft	
9.6		NA						
8.3		NA				GM	Sand, gravelly, brown, gravels angular, sand medium to coarse, wet, loose, no hydrocarbon odor	
30	100%	9.8	NA					5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16

Soil Boring **GP-9**

Project	<u>Knight #1</u>	Owner	<u>El Paso CGP Company, LLC</u>
Location	<u>San Juan County, New Mexico</u>	Project Number	<u>10508814</u>
Surface Elev.	<u>5510.48 ft</u>	North	<u>2127792</u>
		East	<u>2609209</u>
Top of Casing	<u>NA</u>	Water Level Initial	<u>▽</u>
		Static	<u>▼</u>
Hole Depth	<u>30.0ft</u>	Screen: Diameter	<u>NA</u>
		Length	<u>NA</u>
		Type/Size	<u>NA</u>
Hole Diameter	<u>2.875 in</u>	Casing: Diameter	<u>NA</u>
		Length	<u>NA</u>
		Type	<u>NA</u>
Drill Co.	<u>Vista Geoscience, LLC</u>	Drilling Method	<u>Direct Push/Dual-tube</u>
		Sand Pack	<u>NA</u>
Driller	<u>Chase Cain/Mike Martin</u>	Driller Reg. #	<u>WD-1705</u>
		Log By	<u>Brad Barton</u>
Start Date	<u>3/7/2016</u>	Completion Date	<u>3/8/2016</u>
		Checked By	<u>Steve Varsa</u>

Grassy ground cover (farm field). NA = Not Analyzed.

 Bentonite Grout
  Bentonite Granules
  Grout
  Portland Cement
  Sand Pack
  Sand Pack

	Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
	0								5510.48
			0.0	NA				Sand, silty, minor clay at 12.5, light brown, dry to slightly moist at 12.5'; loose to medium dense at 4.5' and 12.5', no hydrocarbon odor, medium sand, (0-8' hand augered)	5510
			0.0	NA					
			0.0	NA					
			0.0	NA					
	5		0.0	NA					
			0.0	NA					5505
			0.0	NA					
		100%	0.0	NA			SM		
			0.0	NA					
	10	100%	0.0	NA					5500
			0.0	NA					
			0.0	NA					
			0.0	NA					
			0.0	NA					
			0.0	NA					
	15	100%	0.0	NA					
			0.0	NA				Clay, brown, soft, very moist, high plasticity, no hydrocarbon odor, trace roots, water at 20'	5495
			0.0	NA			CH		
			0.0	NA					
			0.0	NA					
	20	100%	0.0	NA					
			0.0	NA				Clay with sand, brown, soft, wet, loose/medium sand, no hydrocarbon odor	5490
			0.0	NA					
			0.0	NA					
			0.0	NA					
			0.0	NA					
	25	100%	0.0	NA					
			0.0	NA			CL SC		5485
			0.0	NA					
			0.0	NA					
			0.0	NA					
	30	100%	0.0	NA					
								End of boring at 30'. Boring cement grouted 0-30'.	5480

Soil Boring **GP-10**

Project	<u>Knight #1</u>	Owner	<u>El Paso CGP Company, LLC</u>				
Location	<u>San Juan County, New Mexico</u>	Project Number	<u>10508814</u>				
Surface Elev.	<u>5510.92 ft</u>	North	<u>2127791</u>	East	<u>2609240</u>		
Top of Casing	<u>NA</u>	Water Level Initial	<u>▽</u>	Static	<u>▽</u>		
Hole Depth	<u>30.0ft</u>	Screen: Diameter	<u>NA</u>	Length	<u>NA</u>	Type/Size	<u>NA</u>
Hole Diameter	<u>2.875 in</u>	Casing: Diameter	<u>NA</u>	Length	<u>NA</u>	Type	<u>NA</u>
Drill Co.	<u>Vista Geoscience, LLC</u>	Drilling Method	<u>Direct Push/Dual-tube</u>	Sand Pack	<u>NA</u>		
Driller	<u>Chase Cain/Mike Martin</u>	Driller Reg. #	<u>WD-1705</u>	Log By	<u>Brad Barton</u>		
Start Date	<u>3/7/2016</u>	Completion Date	<u>3/8/2016</u>	Checked By	<u>Steve Varsa</u>		

Grassy ground cover (farm field). NA = Not Analyzed.

 Bentonite Grout
 Bentonite Granules
 Grout
 Portland Cement
 Sand Pack
 Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description	Elevation (ft)
							(Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	
0								5510.92
0		0.0	NA				Sand, silty, with clay, sand becomes more medium grained at 10.5', light brown, dry, moist at 14.5', soft to medium dense, no hydrocarbon odor, (0-8' hand augered)	5510
		0.0	NA					
		0.0	NA					
		0.0	NA					
5		0.0	NA					5505
		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA			SM		
		0.0	NA					
10	100%	0.0	NA					5500
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA					
15	100%	0.0	NA				Clay with silt and sand, dark olive brown, medium stiff, slightly moist to moist, medium plasticity, no hydrocarbon odor, compressed in liner	5495
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA			CL		
20	100%	0.0	NA				Clay, dark gray, hydrocarbon staining and slight hydrocarbon odor, moist, high plasticity, soft, water at 25'	5490
		26.7	21.6					
		7.7	NA					
		54.9	64.2					
		341.7	200					
	100%	144.2	37.5			CH		
25	100%	0.7	NA				Gravels, silty, sandy, with clay, dark gray, minor hydrocarbon staining, angular, slight to no hydrocarbon odor, wet, loose	5485
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA			GM		
30	100%	0.0	NA				Sand, silty, light brown, wet, loose, fine to medium sand	5480
							End of boring at 30'. Boring cement grouted 0-30'.	



MWH

Drilling Log

Soil Boring **GP-11**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5509.61 ft North 2127780 East 2609315
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/9/2016 Completion Date 3/10/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5509.61
		0.0	NA				Clay with silt and sand, dark brown to brown, slightly moist to moist, medium to high plasticity, no hydrocarbon odor, minor iron oxidation (reddish/brown) at 6.5', (0-8' hand augered)	
		0.0	NA					
		0.0	NA					
		0.0	NA					
5		0.0	NA					5505
		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA					
		0.0	NA					
10	100%	0.0	NA			CL CH		5500
		1.3	NA					
		4.3	NA					
		24.7	10.8				black hydrocarbon stained, slight hydrocarbon odor to medium to strong at 13.5', very moist, soft	
		385	454					
15	100%	482.1	358					5495
		977.5	1269					
		962.7	1583					
		1777	2135					
		1814	1874					
20	100%	1689	2414					5490
		1758	813				Gravels with sand and clay, red and light olive brown gravels, with black hydrocarbon stained sand and clay at 21.5', moist to slightly moist, water at 25'	
		1125	1223			GM		
		375.4	352					
		1169	854					
25	100%	356.8	405					5485
		7.1	NA				Sand, gravelly, black hydrocarbon stained from 25' to 28.5', brown at 28.5', wet, loose, gravels angular, sand is medium to coarse, slight hydrocarbon odor	
		11.0	NA			SM		
		12.7	NA					
		39.0	6.0					
30	100%	14.0	NA					5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-12**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5509.02 ft North 2127767 East 2609204
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/7/2016 Completion Date 3/8/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5509.02
5		0.0	NA			SC SM	Sand, silty, dry, loose to medium dense at 6.5', minor clay content at 6.5', medium to fine sand, no hydrocarbon odor, light brown, (0-8' hand augered)	5505
10	100%	0.0	NA			CL	Clay with silt and sand, medium stiff, dry to slightly moist, low to medium plasticity	5500
15	100%	0.0	NA			CH	Clay, soft, moist, high plasticity, no hydrocarbon odor, brown, compressed in liner	5495
20	100%	0.0	NA			CL	Clay with sand, fine sand, soft, medium to high plasticity, moist to wet, no hydrocarbon odor, light brown, water at 21', dark gray to black hydrocarbon staining, wet, slight hydrocarbon odor	5490
25	100%	51.3	3.0			GM	Gravels, silty, sandy, with minor clay, black hydrocarbon staining at 25', light brown at 26', angular gravels, loose, wet	5485
30	100%	136.3	39.0			SM	Sand, silty, fine sand, light brown, loose, wet	5480
		379.7	433.1				End of boring at 30'. Boring cement grouted 0-30'.	
		191.2	465.4					
		118.3	129					
		0.6	NA					
		1.8	NA					
		1.1	NA					
		0.0	NA					
		0.0	NA					

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-13**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5510.30 ft North 2127764 East 2609232
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/8/2016 Completion Date 3/9/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5510.30
		0.0	NA				Sand, silty, brown, dry, loose, fine to medium sand, no hydrocarbon odor, (0-8' hand augered)	5510
		0.0	NA					
		0.0	NA					
		0.0	NA					
5		0.0	NA			SM		5505
		0.0	NA					
		0.0	NA					
	100%	0.0	NA					
10	100%	0.0	NA					5500
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
15	100%	0.0	NA			CL	Clay, with silt and sand, moist, medium to high plasticity, soft to medium stiff, no hydrocarbon odor, no hydrocarbon odor, water at 25'	5495
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.6	NA					
20	100%	1.9	NA				very moist, minor dark gray/black hydrocarbon staining at 18.5', no hydrocarbon odor ; hydrocarbon staining present at 20.5', slight to medium hydrocarbon odor	5490
		63.1	98.6					
		134.4	85.0					
		35.4	187.2					
		1090	890.1					
25	100%	1129	449.8					5485
		222.8	635.6					
		49.9	137.9					
		6.1	NA			SM	Sand, gravelly, black/dark gray hydrocarbon staining present, slight hydrocarbon odor, brown with no staining or odor at 28', angular gravels, medium to coarse sand, loose, wet	
		7.0	NA					
30	100%	16.4	NA					5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-14**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5510.42 ft North 2127760 East 2609249
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/8/2016 Completion Date 3/9/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field), moved location 2-3' west due to old abandoned pipeline, moved location another 1' south after no recovery from the 8' to 15' interval in the first borehole. NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5510.42
		0.0	NA				Sand, silty, brown, dry, loose, fine to medium sand, no hydrocarbon odor, (0-8' hand augered)	5510
		0.0	NA					
		0.0	NA					
		0.0	NA					
5		0.0	NA			SM		5505
		0.0	NA					
	100%	0.0	NA					
10	100%	0.0	NA					5500
		0.0	NA					
		0.0	NA					
		0.0	NA					
		0.0	NA					
		1.6	NA				Clay with silt and sand, moist to very moist, soft, brown, medium to high plasticity, dark gray to black hydrocarbon stained with slight to medium hydrocarbon odor at 14.5' and 16.5', water at 25'	
15	100%	31.7	14.3					5495
		36.6	29.0					
		119.7	75.3					
		717	658.9			CL CH		
		735.9	828.4					
20	100%	1768	808.2					5490
		1140	1243					
		929.2	1473					
		1534	2097					
		607.2	1353					
25	100%	556.3	295.3					5485
		9.6	NA				Gravel with sand, angular gravels, loose, wet, very slight hydrocarbon odor and minor hydrocarbon staining from 25' to 28.5', brown with no staining or odor from 28.5' to 30'	
		14.4	NA			GM		
		4.1	NA					
		3.3	NA					
30	100%	1.9	NA					5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-15**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5509.92 ft North 2127754 East 2609284
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/9/2016 Completion Date 3/10/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5509.92
5		0.0	NA			SM	Sand, silty, minor clay content at 8.5', brown, dry to slightly moist at 8.5', loose, fine to medium sand, no hydrocarbon odor, (0-8' hand augered)	5505
10		0.0	NA					5500
15		0.0	NA					5495
20		0.0	NA			CL CH	Clay with silt/sand, brown, moist to very moist at 17.5', soft, medium to high plasticity, very minor dark gray hydrocarbon staining at 14.5' and dark gray to black hydrocarbon staining at 15.5' with slight to medium hydrocarbon odor, water at 25'	5490
25		0.0	NA					5485
30		0.0	NA			GM	Sand, gravelly, loose, wet, minor hydrocarbon staining, slight hydrocarbon odor, gravels angular up to 1", medium to coarse sand, less gravel and no hydrocarbon odor below 26.5'	5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-16**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5509.13 ft North 2127760 East 2609308
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/9/2016 Completion Date 3/9/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5509.13
		0.0	NA				Clay, slightly silty and sandy at 6.5', dark brown to brown, slightly moist to moist, medium plasticity, soft to medium stiff, no hydrocarbon odor, water at 25', (0-8' hand augered)	
		0.0	NA					
		0.0	NA					
		0.0	NA					5505
5		0.0	NA					
		0.0	NA					
		0.0	NA					
	100%	0.0	NA					5500
10	100%	0.0	NA					
		1.8	NA					
		5.4	NA					
		12.1	NA			CL		
		54.0	107.7				medium hydrocarbon odor and hydrocarbon staining present at 13.5', strong hydrocarbon odor at 14.5', very moist, dark gray to black	5495
15	100%	1420	1769					
		1761	3170					
		1031	2128					
		1354	728.4					
		1163	922.6					5490
20	100%	3098	585					
		557	501					
		792.9	1252					
		517.6	382.9					
		62.4	51.0					5485
25	100%	3588	366.7					
		19.1	NA					
		6.9	NA					
		2.7	NA					
		5.5	NA			GM	Gravels with sand, minor hydrocarbon staining from 25' to 26', brown, wet, loose, angular gravels, medium to coarse sand, no staining from 26' to 30', no to slight hydrocarbon odor	5480
30	100%	14.1	NA					
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-17**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5509.00 ft North 2127746 East 2609197
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/7/2016 Completion Date 3/8/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5509.00
5		0.0	NA			SM	Sand, silty, with minor clay, brown, slightly moist to moist, (0-8' hand augered)	5505
10		0.0	NA					5500
15		0.0	NA			CL CH	Clay with silt and sand, moist, light brown to light olive brown at 15.5', low to medium plasticity, fine to medium sand, no hydrocarbon odor, soft to medium stiff at 15.5', water at 25'	5495
20		0.0	NA					5490
25		0.0	NA				minor dark gray to black hydrocarbon staining with slight hydrocarbon odor at 22.5'	5485
30		0.0	NA			GM	Gravels with clay and sand, sand content increases with depth, fine to medium sand, brown, loose, wet, no hydrocarbon odor, angular gravels	5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16

Soil Boring **GP-18**

Project	<u>Knight #1</u>	Owner	<u>El Paso CGP Company, LLC</u>				
Location	<u>San Juan County, New Mexico</u>	Project Number	<u>10508814</u>				
Surface Elev.	<u>5509.72 ft</u>	North	<u>2127745</u>	East	<u>2609229</u>		
Top of Casing	<u>NA</u>	Water Level Initial	<u>▽</u>	Static	<u>▼</u>		
Hole Depth	<u>30.0ft</u>	Screen: Diameter	<u>NA</u>	Length	<u>NA</u>	Type/Size	<u>NA</u>
Hole Diameter	<u>2.875 in</u>	Casing: Diameter	<u>NA</u>	Length	<u>NA</u>	Type	<u>NA</u>
Drill Co.	<u>Vista Geoscience, LLC</u>	Drilling Method	<u>Direct Push/Dual-tube</u>	Sand Pack	<u>NA</u>		
Driller	<u>Chase Cain/Mike Martin</u>	Driller Reg. #	<u>WD-1705</u>	Log By	<u>Brad Barton</u>		
Start Date	<u>3/8/2016</u>	Completion Date	<u>3/8/2016</u>	Checked By	<u>Steve Varsa</u>		

Grassy ground cover (farm field). NA = Not Analyzed.

 Bentonite Grout
 Bentonite Granules
 Grout
 Portland Cement
 Sand Pack
 Sand Pack

	Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
	0								5509.72
			0.0	NA				Sand, silty, brown, loose, dry, medium sand to fine sand, minor gravels, no hydrocarbon odor, (0-8' hand augered)	
			0.0	NA					
			0.0	NA					
			0.0	NA					
	5		0.0	NA					5505
			0.0	NA			SM		
			0.0	NA					
		100%	0.0	NA					
	10	100%	0.0	NA					5500
			0.0	NA					
			0.0	NA					
			0.0	NA					
			0.0	NA					
			0.0	NA					
	15	100%	0.0	NA				Clay with silt and sand, brown to light brown, medium to high plasticity, moist to very moist at 17.5', no hydrocarbon odor, medium stiff to stiff at 17.5', water at 25'	5495
			0.0	NA					
			0.0	NA			CL CH		
			0.0	NA					
			0.0	NA					
	20	100%	0.0	NA					5490
			166.1	112				dark gray to black hydrocarbon staining, slight to moderate hydrocarbon odor	
			668.8	345.4					
			668.6	631.2					
			357.7	514.5					
	25	100%	52.7	198					5485
			0.0	NA					
			0.0	NA					
			0.0	NA					
			0.0	NA					
	30	100%	0.0	NA			GM		5480
								End of boring at 30'. Boring cement grouted 0-30'.	



MWH

Drilling Log

Soil Boring **GP-19**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5509.61 ft North 2127731 East 2609272
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/9/2016 Completion Date 3/9/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5509.61
		0.0	NA				Sand, silty, loose, brown to light brown, fine to medium sand, no hydrocarbon odor, (0-8' hand augered)	
		0.0	NA					
		0.0	NA					
		0.0	NA					
5		0.0	NA			SM		5505
		0.0	NA					
		0.0	NA					
	100%	0.0	NA					
10	100%	0.0	NA					5500
		29.6	9.0				Clay with sand and silt, soft, medium to high plasticity, very moist to saturated at 20.5', brown, hydrocarbon odor from 10' to 12' with dark gray to black hydrocarbon staining, water at 25'	
		62.9	97.0					
		155.3	508					
		1299	116.2					
15	100%	1585	1575					5495
		1851	1502					
		1916	1222					
		1608	1548			CL CH		
		862.1	1695					
20	100%	772	1680					5490
		1772	1653					
		1898	1489					
		1256	1574					
		2669	1761					
25	100%	1551	2008					5485
		85.0	463				Sand, gravelly, dark gray to black hydrocarbon stained, loose, medium to coarse sand, wet, slight hydrocarbon odor, gravels angular up to 1"	
		13.0	NA					
		15.0	NA			GM		
		14.0	NA					
30	100%	12.0	NA					5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-20**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5508.62 ft North 2127737 East 2609306
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/9/2016 Completion Date 3/9/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5508.62
0.0		0.0	NA				Clay, some silt and sand with depth, dark brown to brown, slightly moist to very moist at 10.5', medium to high plasticity, no hydrocarbon odor, soft at 10.5' to very soft at 15.5', water at 21', (0-8' hand augered)	
0.0		0.0	NA					
0.0		0.0	NA					
0.0		0.0	NA					5505
0.0		0.0	NA					
0.0		0.0	NA					
0.0		0.0	NA					
0.0		0.0	NA					
0.0	100%	0.0	NA					5500
0.0	100%	0.0	NA					
0.8		0.8	NA			CL		
1.5		1.5	NA			CH		
9.3		9.3	NA					
49.6	100%	83.0	451				black and dark gray hydrocarbon staining at 13.5' and 15.5', moderate to strong hydrocarbon odor at 13.5'	5495
643.3		1182						
409.8		484						
1148		816						5490
335.2	100%	384						
323.6		536						
526.2		428						
119.9		223						
64.8		130						
10.5	100%	NA				SW	Sand, loose, medium sand, black hydrocarbon stained, wet, slight hydrocarbon odor	5485
10.4		NA						
33.4		NA				GM	Gravels with sand, wet, slight hydrocarbon odor, gravels angular, poor recovery 25-30'	
							No recovery from 25.5' to 30'	
NR		NA						
NR		NA						
NR		NA						5480
NR	10%	NA						
30							End of boring at 30'. Boring cement grouted 0-30'.	



MWH

Drilling Log

Soil Boring **GP-21**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5508.70 ft North 2127721 East 2609210
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/8/2016 Completion Date 3/9/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (pdm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5508.70
5		0.0	NA			SM	Sand, silty, minor rounded gravels up to 0.5" at 4.5', brown, dry to slightly moist at 8.5', loose, fine to medium sand, no hydrocarbon odor, (0-8' hand augered)	5505
10		0.0	NA					5500
15		0.0	NA			CL	Clay with silt and sand, moist to very moist at 20.5', brown, medium to high plasticity, soft to medium stiff, no hydrocarbon odor, water at 25'	5495
20		0.0	NA					5490
25		0.0	NA			GM	Gravels with sand and silt, brown, gravels up to 1", angular, medium to coarse sand, loose, wet, no hydrocarbon odor	5485
30		0.0	NA				End of boring at 30'. Boring cement grouted 0-30'.	5480

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16

Soil Boring **GP-22**

Project	<u>Knight #1</u>	Owner	<u>El Paso CGP Company, LLC</u>
Location	<u>San Juan County, New Mexico</u>	Project Number	<u>10508814</u>
Surface Elev.	<u>5507.76 ft</u>	North	<u>2127727</u>
		East	<u>2609225</u>
Top of Casing	<u>NA</u>	Water Level Initial	<u>▽</u>
		Static	<u>▼</u>
Hole Depth	<u>30.0ft</u>	Screen: Diameter	<u>NA</u>
		Length	<u>NA</u>
		Type/Size	<u>NA</u>
Hole Diameter	<u>2.875 in</u>	Casing: Diameter	<u>NA</u>
		Length	<u>NA</u>
		Type	<u>NA</u>
Drill Co.	<u>Vista Geoscience, LLC</u>	Drilling Method	<u>Direct Push/Dual-tube</u>
		Sand Pack	<u>NA</u>
Driller	<u>Chase Cain/Mike Martin</u>	Driller Reg. #	<u>WD-1705</u>
		Log By	<u>Brad Barton</u>
Start Date	<u>3/8/2016</u>	Completion Date	<u>3/9/2016</u>
		Checked By	<u>Steve Varsa</u>

Grassy ground cover (farm field), adjacent to drainage ditch. NA = Not Analyzed.

 Bentonite Grout
 Bentonite Granules
 Grout
 Portland Cement
 Sand Pack
 Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5507.76
5		0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100% 0.0	NA NA NA NA NA NA NA NA NA NA			SM	Sand, silty, minor rounded gravels, dry to moist. loose, fine to medium sand, no hydrocarbon odor, roots present from 4' to 5', (0-8' hand augered)	5505 5500
10	100%	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 100% 0.0	NA NA NA NA NA NA NA NA NA NA			CL	Clay with silt and sand, brown, olive brown to gray at 15.5', slightly moist to very moist at 15.5', soft to medium stiff at 15.5', no hydrocarbon odor, medium to high plasticity, fine to medium sand, water at 22'	5495 5490
15	100%	0.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 100% 5.2	NA NA NA NA NA NA NA NA NA NA			CL		5485
20	100%	36.1 150.8 0.6 3.5 9.1 2.6 2.6 0.0 0.8 0.4	15.4 60.9 NA NA NA NA NA NA NA NA			CL	dark gray hydrocarbon staining at 20.5', soft, very moist, very slight hydrocarbon odor, trace gravels	5485
25	100%					GM	Gravels with sand, loose, angular, wet, dark gray and black to brown, hydrocarbon staining present, no hydrocarbon odor, medium to coarse sand	5480
30	100%					SP	Sand, loose, wet, brown, medium to coarse sand, no hydrocarbon odor, compressed in liner	5480
							End of boring at 30'. Boring cement grouted 0-30'.	5475



MWH

Drilling Log

Soil Boring **GP-23**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5507.31 ft North 2127715 East 2609241
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/8/2016 Completion Date 3/9/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field), moved location 5' south due to drainage ditch. NA = Not Analyzed.

Bentonite Grout
 Bentonite Granules
 Grout
 Portland Cement
 Sand Pack
 Sand Pack

Depth (ft)	% Recovery	Field Screening (ppm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5507.31
0.0		0.0	NA				Sand, silty, some rounded gravels, clay content increases with depth, brown, loose, dry to slightly moist, no hydrocarbon odor, (0-8' hand augered)	
0.0		0.0	NA					5505
0.0		0.0	NA					
0.0		0.0	NA					
5		0.0	NA			SM		
0.0		0.0	NA					
0.0		0.0	NA					5500
0.0	100%	0.0	NA					
0.0	100%	0.0	NA					
0		0	NA				Clay with silt and sand, brown, slightly moist, soft becoming stiff at 12.5', medium to high plasticity, no hydrocarbon odor from 9' to 14', water at 22'	
0		0	NA					5495
0.6		0.6	NA					
2.3		2.3	NA				dark gray and black hydrocarbon staining with slight hydrocarbon odor present at 14' and moderate hydrocarbon odor present at 16'	
15	100%	34.4	18.1			CL		5490
		336.1	400.1					
		446.7	525					5490
		536.4	841.5					
		763.6	651.2					
20	100%	722.2	1297					
		1880	1473					5485
		1140	700.4					
		241.6	198.7					
		305.3	105					
25	100%	391.3	210.1			GM	Gravels with silt and sand, hydrocarbon stained, dark gray to black, loose, wet, angular gravels, slight to moderate hydrocarbon odor	
		NR	NA				No recovery from 25' to 30'	5480
		NR	NA					
		NR	NA					
		NR	NA					
30	0%	NR	NA					
							End of boring at 30'. Boring cement grouted 0-30'.	5475

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16



MWH

Drilling Log

Soil Boring **GP-24**

Page: 1 of 1

Project Knight #1 Owner El Paso CGP Company, LLC
 Location San Juan County, New Mexico Project Number 10508814
 Surface Elev. 5508.09 ft North 2127703 East 2609218
 Top of Casing NA Water Level Initial ▼ Static ▼
 Hole Depth 30.0ft Screen: Diameter NA Length NA Type/Size NA
 Hole Diameter 2.875 in Casing: Diameter NA Length NA Type NA
 Drill Co. Vista Geoscience, LLC Drilling Method Direct Push/Dual-tube Sand Pack NA
 Driller Chase Cain/Mike Martin Driller Reg. # WD-1705 Log By Brad Barton
 Start Date 3/8/2016 Completion Date 3/9/2016 Checked By Steve Varsa

COMMENTS

Grassy ground cover (farm field). NA = Not Analyzed.

Bentonite Grout Bentonite Granules Grout Portland Cement Sand Pack Sand Pack

Depth (ft)	% Recovery	Field Screening (pdm)	Headspace Screening	Recovery	Graphic Log	USCS	Description (Color, Moisture, Texture, Structure, Odor) Geologic Descriptions are Based on the USCS.	Elevation (ft)
0								5508.09
5		0.0	NA			SM	Sand, silty, minor rounded gravels from 4' to 6', brown to light brown, dry to slightly moist at 7.5', loose, fine to medium sand, no hydrocarbon odor, (0-8' hand augered)	5505
10		0.0	NA					5500
15		0.0	NA			CL CH	Clay with silt and sand, slightly moist increasing with depth, soft becoming stiff at 18.5', medium to high plasticity, brown to dark olive brown at 21.5', no hydrocarbon odor, minor discoloration (dark gray/brown) at 18.5', water at 24'	5495
20		0.0	NA					5490
25		0.0	NA			GM	black hydrocarbon staining/no hydrocarbon odor at 24' Gravels with clay and silt and sand, loose, angular, wet, no hydrocarbon odor	5485
30		0.0	NA			SP	Sand, coarse to medium sand, loose, brown to light brown, no hydrocarbon odor	5480
							End of boring at 30'. Boring cement grouted 0-30'.	

Drilling Log KNIGHT # 1 2016.GPJ MWH IA.GDT 4/6/16

APPENDIX B

APPENDIX C

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: 400-120372-1

Client Project/Site: Knight #1

For:

MWH Americas Inc

11153 Aurora Avenue

Des Moines, Iowa 50322-7904

Attn: Steve Varsa



Authorized for release by:

4/29/2016 9:46:56 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.



Table of Contents

Cover Page	1
Table of Contents	2
Definitions	3
Case Narrative	4
Detection Summary	5
Sample Summary	6
Client Sample Results	7
QC Association	12
QC Sample Results	13
Chronicle	14
Certification Summary	15
Method Summary	16
Chain of Custody	17
Receipt Checklists	18

Definitions/Glossary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

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: Knight #1

TestAmerica Job ID: 400-120372-1

Job ID: 400-120372-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-120372-1

Comments

No additional comments.

Receipt

The samples were received on 4/16/2016 9:09 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: Knight #1

TestAmerica Job ID: 400-120372-1

Client Sample ID: MW-1

Lab Sample ID: 400-120372-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	110		5.0	ug/L	5		8021B	Total/NA
Ethylbenzene	910		5.0	ug/L	5		8021B	Total/NA
Xylenes, Total	1000		25	ug/L	5		8021B	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 400-120372-2

No Detections.

Client Sample ID: MW-7

Lab Sample ID: 400-120372-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	7.8		2.0	ug/L	2		8021B	Total/NA
Ethylbenzene	4.3		2.0	ug/L	2		8021B	Total/NA
Xylenes, Total	48		10	ug/L	2		8021B	Total/NA

Client Sample ID: MW-11

Lab Sample ID: 400-120372-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	410		10	ug/L	10		8021B	Total/NA
Ethylbenzene	32		10	ug/L	10		8021B	Total/NA
Xylenes, Total	54		50	ug/L	10		8021B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 400-120372-5

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Sample Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-120372-1	MW-1	Water	04/15/16 13:30	04/16/16 09:09
400-120372-2	MW-2	Water	04/15/16 13:35	04/16/16 09:09
400-120372-3	MW-7	Water	04/15/16 13:40	04/16/16 09:09
400-120372-4	MW-11	Water	04/15/16 13:45	04/16/16 09:09
400-120372-5	TRIP BLANK	Water	04/15/16 00:00	04/16/16 09:09

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

Client Sample ID: MW-1

Lab Sample ID: 400-120372-1

Date Collected: 04/15/16 13:30

Matrix: Water

Date Received: 04/16/16 09:09

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	110		5.0	ug/L			04/27/16 18:07	5
Ethylbenzene	910		5.0	ug/L			04/27/16 18:07	5
Toluene	<25		25	ug/L			04/27/16 18:07	5
Xylenes, Total	1000		25	ug/L			04/27/16 18:07	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	97		78 - 124				04/27/16 18:07	5

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

Client Sample ID: MW-2

Lab Sample ID: 400-120372-2

Date Collected: 04/15/16 13:35

Matrix: Water

Date Received: 04/16/16 09:09

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			04/27/16 15:50	1
Ethylbenzene	<1.0		1.0	ug/L			04/27/16 15:50	1
Toluene	<5.0		5.0	ug/L			04/27/16 15:50	1
Xylenes, Total	<5.0		5.0	ug/L			04/27/16 15:50	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	89		78 - 124				04/27/16 15:50	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

Client Sample ID: MW-7

Date Collected: 04/15/16 13:40

Date Received: 04/16/16 09:09

Lab Sample ID: 400-120372-3

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	7.8		2.0	ug/L			04/27/16 18:41	2
Ethylbenzene	4.3		2.0	ug/L			04/27/16 18:41	2
Toluene	<10		10	ug/L			04/27/16 18:41	2
Xylenes, Total	48		10	ug/L			04/27/16 18:41	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	88		78 - 124				04/27/16 18:41	2

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

Client Sample ID: MW-11

Lab Sample ID: 400-120372-4

Date Collected: 04/15/16 13:45

Matrix: Water

Date Received: 04/16/16 09:09

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	410		10	ug/L			04/27/16 19:15	10
Ethylbenzene	32		10	ug/L			04/27/16 19:15	10
Toluene	<50		50	ug/L			04/27/16 19:15	10
Xylenes, Total	54		50	ug/L			04/27/16 19:15	10
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	95		78 - 124				04/27/16 19:15	10

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 400-120372-5

Date Collected: 04/15/16 00:00

Matrix: Water

Date Received: 04/16/16 09:09

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			04/27/16 16:24	1
Ethylbenzene	<1.0		1.0	ug/L			04/27/16 16:24	1
Toluene	<5.0		5.0	ug/L			04/27/16 16:24	1
Xylenes, Total	<5.0		5.0	ug/L			04/27/16 16:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	90		78 - 124				04/27/16 16:24	1

QC Association Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

GC VOA

Analysis Batch: 303665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-120372-1	MW-1	Total/NA	Water	8021B	
400-120372-2	MW-2	Total/NA	Water	8021B	
400-120372-2 MS	MW-2	Total/NA	Water	8021B	
400-120372-2 MSD	MW-2	Total/NA	Water	8021B	
400-120372-3	MW-7	Total/NA	Water	8021B	
400-120372-4	MW-11	Total/NA	Water	8021B	
400-120372-5	TRIP BLANK	Total/NA	Water	8021B	
LCS 400-303665/1002	Lab Control Sample	Total/NA	Water	8021B	
MB 400-303665/4	Method Blank	Total/NA	Water	8021B	

QC Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 400-303665/4

Matrix: Water

Analysis Batch: 303665

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			04/27/16 13:41	1
Ethylbenzene	<1.0		1.0	ug/L			04/27/16 13:41	1
Toluene	<5.0		5.0	ug/L			04/27/16 13:41	1
Xylenes, Total	<5.0		5.0	ug/L			04/27/16 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	90		78 - 124		04/27/16 13:41	1

Lab Sample ID: LCS 400-303665/1002

Matrix: Water

Analysis Batch: 303665

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	49.1		ug/L		98	85 - 115
Ethylbenzene	50.0	44.5		ug/L		89	85 - 115
Toluene	50.0	45.2		ug/L		90	85 - 115
Xylenes, Total	150	130		ug/L		87	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	97		78 - 124

Lab Sample ID: 400-120372-2 MS

Matrix: Water

Analysis Batch: 303665

Client Sample ID: MW-2

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	52.1		ug/L		104	44 - 150
Ethylbenzene	<1.0		50.0	47.1		ug/L		94	70 - 142
Toluene	<5.0		50.0	47.2		ug/L		94	69 - 136
Xylenes, Total	<5.0		150	140		ug/L		93	68 - 142

Surrogate	MS %Recovery	MS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	95		78 - 124

Lab Sample ID: 400-120372-2 MSD

Matrix: Water

Analysis Batch: 303665

Client Sample ID: MW-2

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	49.0		ug/L		98	44 - 150	6	16
Ethylbenzene	<1.0		50.0	47.8		ug/L		96	70 - 142	1	16
Toluene	<5.0		50.0	48.1		ug/L		96	69 - 136	2	16
Xylenes, Total	<5.0		150	141		ug/L		94	68 - 142	1	15

Surrogate	MSD %Recovery	MSD Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	96		78 - 124

TestAmerica Pensacola

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

Client Sample ID: MW-1

Date Collected: 04/15/16 13:30

Date Received: 04/16/16 09:09

Lab Sample ID: 400-120372-1

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		5	5 mL	5 mL	303665	04/27/16 18:07	GRK	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-2

Date Collected: 04/15/16 13:35

Date Received: 04/16/16 09:09

Lab Sample ID: 400-120372-2

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	303665	04/27/16 15:50	GRK	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-7

Date Collected: 04/15/16 13:40

Date Received: 04/16/16 09:09

Lab Sample ID: 400-120372-3

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		2	5 mL	5 mL	303665	04/27/16 18:41	GRK	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-11

Date Collected: 04/15/16 13:45

Date Received: 04/16/16 09:09

Lab Sample ID: 400-120372-4

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		10	5 mL	5 mL	303665	04/27/16 19:15	GRK	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: TRIP BLANK

Date Collected: 04/15/16 00:00

Date Received: 04/16/16 09:09

Lab Sample ID: 400-120372-5

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	303665	04/27/16 16:24	GRK	TAL PEN
Instrument ID: CH_JOAN										

Laboratory References:

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

Certification Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-120372-1

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: Knight #1

TestAmerica Job ID: 400-120372-1

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 McLeomore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Ms. Sarah Gardner Company: MWH Americas Inc. Address: 1560 Broadway Suite 1800 City: Denver State, Zip: CO, 80202 Phone: 303-291-2239 (Tel) Email: sarah.gardner@mwhglobal.com Project Name: Knight #1 Knight #1: Site: Knight #1		Lab PM: Edwards, Marty P E-Mail: marty.edwards@testamericainc.com Carrier Tracking No(s): COC No: 400-54331-21707.1 Page: 1 of 1 Job #:	
Due Date Requested: 14 C.F.L. DAYS TAT Requested (days): PO #: Purchase Order Requested WO #:		Analysis Requested  400-120372 COC	
Sample Identification MW-1* MW-2* MW-4 MW-7 MW-6 MW-11* TRIP Blank		Matrix (Water, Solid, Overstuffed) Water Water Water Water Water Water Water	
Sample Date 4/15/16 1330 1335 NS 1340 NS 1345 -		Sample Time 1330 1335 NS 1340 NS 1345 -	
Sample Type (C=comp, G=grab) G G G G G G G		Special Instructions/Note: Two Preservative * Unpreserved will be shipped under separate chain of custody will be shipped under separate COC * Unpreserved	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: i, ii, iii, iv, Other (specify)			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months			
Special Instructions/QC Requirements:			
Empty Kit Relinquished by:			
Relinquished by: [Signature] Date/Time: 4/15/16 1530 Company:		Relinquished by: [Signature] Date/Time: 4/16/16 0909 Company:	
Relinquished by: [Signature] Date/Time: 4/15/16 1530 Company:		Relinquished by: [Signature] Date/Time: 4/16/16 0909 Company:	
Relinquished by: [Signature] Date/Time: 4/15/16 1530 Company:		Relinquished by: [Signature] Date/Time: 4/16/16 0909 Company:	
Custody Seal's Intact: A. Yes ☒ No ☐		Cooler Temperature(s) °C and Other Remarks: 2.4°C JRB	

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 400-120372-1

Login Number: 120372

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	

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 400-128677-1

Client Project/Site: Knight #1

For:

MWH Americas Inc
1560 Broadway
Suite 1800
Denver, Colorado 80202

Attn: Ms. Sarah Gardner

Madonna Myers

Authorized for release by:

10/26/2016 9:47:51 AM

Madonna Myers, Project Manager II

(615)796-1870

madonna.myers@testamericainc.com

Designee for

Carol Webb, Project Manager II

(850)471-6250

carol.webb@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.



Table of Contents

Cover Page	1
Table of Contents	2
Definitions	3
Case Narrative	4
Detection Summary	5
Sample Summary	6
Client Sample Results	7
QC Association	13
QC Sample Results	14
Chronicle	16
Certification Summary	18
Method Summary	19
Chain of Custody	20
Receipt Checklists	21

Definitions/Glossary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

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: Knight #1

TestAmerica Job ID: 400-128677-1

Job ID: 400-128677-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-128677-1

Comments

No additional comments.

Receipt

The samples were received on 10/13/2016 9:39 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6° C.

GC VOA

Method(s) 8021B: The sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, when verified by the laboratory, the pH was greater than 2 and the following samples were analyzed after 7 days from sampling: MW-7 (400-128677-3).

Method(s) 8021B: The result for Xylenes, Total exceeded the linear range of the instrument for sample MW-7 (400-128677-3). The reanalysis was not performed within 7 days and the pH was >2. Therefore, the original analysis is reported as primary and the reanalysis is reported as secondary for this analyte.

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

VOA Prep

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

Detection Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: MW-1

Lab Sample ID: 400-128677-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	110		5.0	ug/L	5		8021B	Total/NA
Ethylbenzene	460		5.0	ug/L	5		8021B	Total/NA
Xylenes, Total	100		25	ug/L	5		8021B	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 400-128677-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	2.0		1.0	ug/L	1		8021B	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 400-128677-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	81		2.0	ug/L	2		8021B	Total/NA
Ethylbenzene	320		2.0	ug/L	2		8021B	Total/NA
Xylenes, Total	1700		10	ug/L	2		8021B	Total/NA
Xylenes, Total - DL	1600		25	ug/L	5		8021B	Total/NA

Client Sample ID: MW-8

Lab Sample ID: 400-128677-4

No Detections.

Client Sample ID: MW-11

Lab Sample ID: 400-128677-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1100		20	ug/L	20		8021B	Total/NA
Ethylbenzene	280		20	ug/L	20		8021B	Total/NA
Xylenes, Total	2000		100	ug/L	20		8021B	Total/NA

Client Sample ID: TB-3

Lab Sample ID: 400-128677-6

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Sample Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-128677-1	MW-1	Water	10/11/16 17:16	10/13/16 09:39
400-128677-2	MW-2	Water	10/11/16 17:21	10/13/16 09:39
400-128677-3	MW-7	Water	10/11/16 17:27	10/13/16 09:39
400-128677-4	MW-8	Water	10/11/16 17:37	10/13/16 09:39
400-128677-5	MW-11	Water	10/11/16 17:48	10/13/16 09:39
400-128677-6	TB-3	Water	10/11/16 00:00	10/13/16 09:39

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: MW-1

Lab Sample ID: 400-128677-1

Date Collected: 10/11/16 17:16

Matrix: Water

Date Received: 10/13/16 09:39

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	110		5.0	ug/L			10/18/16 02:50	5
Ethylbenzene	460		5.0	ug/L			10/18/16 02:50	5
Toluene	<25		25	ug/L			10/18/16 02:50	5
Xylenes, Total	100		25	ug/L			10/18/16 02:50	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	101		78 - 124				10/18/16 02:50	5

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: MW-2
Date Collected: 10/11/16 17:21
Date Received: 10/13/16 09:39

Lab Sample ID: 400-128677-2
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0		1.0	ug/L			10/18/16 03:24	1
Ethylbenzene	<1.0		1.0	ug/L			10/18/16 03:24	1
Toluene	<5.0		5.0	ug/L			10/18/16 03:24	1
Xylenes, Total	<5.0		5.0	ug/L			10/18/16 03:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	94		78 - 124				10/18/16 03:24	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: MW-7

Date Collected: 10/11/16 17:27

Date Received: 10/13/16 09:39

Lab Sample ID: 400-128677-3

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	81		2.0	ug/L			10/18/16 03:58	2
Ethylbenzene	320		2.0	ug/L			10/18/16 03:58	2
Toluene	<10		10	ug/L			10/18/16 03:58	2
Xylenes, Total	1700		10	ug/L			10/18/16 03:58	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	101		78 - 124		10/18/16 03:58	2

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	1600		25	ug/L			10/19/16 16:12	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	103		78 - 124		10/19/16 16:12	5

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: MW-8

Lab Sample ID: 400-128677-4

Date Collected: 10/11/16 17:37

Matrix: Water

Date Received: 10/13/16 09:39

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			10/18/16 04:32	1
Ethylbenzene	<1.0		1.0	ug/L			10/18/16 04:32	1
Toluene	<5.0		5.0	ug/L			10/18/16 04:32	1
Xylenes, Total	<5.0		5.0	ug/L			10/18/16 04:32	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	93		78 - 124				10/18/16 04:32	1

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: MW-11

Lab Sample ID: 400-128677-5

Date Collected: 10/11/16 17:48

Matrix: Water

Date Received: 10/13/16 09:39

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1100		20	ug/L			10/18/16 05:06	20
Ethylbenzene	280		20	ug/L			10/18/16 05:06	20
Toluene	<100		100	ug/L			10/18/16 05:06	20
Xylenes, Total	2000		100	ug/L			10/18/16 05:06	20
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	99		78 - 124				10/18/16 05:06	20

Client Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: TB-3

Lab Sample ID: 400-128677-6

Date Collected: 10/11/16 00:00

Matrix: Water

Date Received: 10/13/16 09:39

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<1.0		1.0	ug/L			10/18/16 05:40	1
Ethylbenzene	<1.0		1.0	ug/L			10/18/16 05:40	1
Toluene	<5.0		5.0	ug/L			10/18/16 05:40	1
Xylenes, Total	<5.0		5.0	ug/L			10/18/16 05:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	94		78 - 124		10/18/16 05:40	1

QC Association Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

GC VOA

Analysis Batch: 326994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-128677-1	MW-1	Total/NA	Water	8021B	
400-128677-2	MW-2	Total/NA	Water	8021B	
400-128677-3	MW-7	Total/NA	Water	8021B	
400-128677-4	MW-8	Total/NA	Water	8021B	
400-128677-5	MW-11	Total/NA	Water	8021B	
400-128677-6	TB-3	Total/NA	Water	8021B	
MB 400-326994/5	Method Blank	Total/NA	Water	8021B	
LCS 400-326994/1003	Lab Control Sample	Total/NA	Water	8021B	
400-128594-C-1 MS	Matrix Spike	Total/NA	Water	8021B	
400-128594-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Analysis Batch: 327303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-128677-3 - DL	MW-7	Total/NA	Water	8021B	
MB 400-327303/4	Method Blank	Total/NA	Water	8021B	
LCS 400-327303/1002	Lab Control Sample	Total/NA	Water	8021B	
400-128823-B-1 MS	Matrix Spike	Total/NA	Water	8021B	
400-128823-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

QC Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 400-326994/5

Matrix: Water

Analysis Batch: 326994

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			10/17/16 12:55	1
Ethylbenzene	<1.0		1.0	ug/L			10/17/16 12:55	1
Toluene	<5.0		5.0	ug/L			10/17/16 12:55	1
Xylenes, Total	<5.0		5.0	ug/L			10/17/16 12:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	95		78 - 124		10/17/16 12:55	1

Lab Sample ID: LCS 400-326994/1003

Matrix: Water

Analysis Batch: 326994

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	49.0		ug/L		98	85 - 115
Ethylbenzene	50.0	50.9		ug/L		102	85 - 115
Toluene	50.0	50.2		ug/L		100	85 - 115
Xylenes, Total	150	151		ug/L		101	85 - 115

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

Lab Sample ID: 400-128594-C-1 MS

Matrix: Water

Analysis Batch: 326994

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	54.8		ug/L		110	44 - 150
Ethylbenzene	<1.0		50.0	54.8		ug/L		110	70 - 142
Toluene	<5.0		50.0	54.3		ug/L		109	69 - 136
Xylenes, Total	<5.0		150	162		ug/L		108	68 - 142

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

Lab Sample ID: 400-128594-C-1 MSD

Matrix: Water

Analysis Batch: 326994

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	55.7		ug/L		111	44 - 150	2	16
Ethylbenzene	<1.0		50.0	56.2		ug/L		112	70 - 142	3	16
Toluene	<5.0		50.0	55.5		ug/L		111	69 - 136	2	16
Xylenes, Total	<5.0		150	166		ug/L		111	68 - 142	2	15

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

TestAmerica Pensacola

QC Sample Results

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

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

Lab Sample ID: MB 400-327303/4

Matrix: Water

Analysis Batch: 327303

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			10/19/16 09:45	1
Ethylbenzene	<1.0		1.0	ug/L			10/19/16 09:45	1
Toluene	<5.0		5.0	ug/L			10/19/16 09:45	1
Xylenes, Total	<5.0		5.0	ug/L			10/19/16 09:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (pid)	94		78 - 124		10/19/16 09:45	1

Lab Sample ID: LCS 400-327303/1002

Matrix: Water

Analysis Batch: 327303

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	42.7		ug/L		85	85 - 115
Ethylbenzene	50.0	44.7		ug/L		89	85 - 115
Toluene	50.0	44.1		ug/L		88	85 - 115
Xylenes, Total	150	133		ug/L		89	85 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (pid)	98		78 - 124

Lab Sample ID: 400-128823-B-1 MS

Matrix: Water

Analysis Batch: 327303

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	54.4		ug/L		109	44 - 150
Ethylbenzene	<1.0		50.0	55.6		ug/L		111	70 - 142
Toluene	<5.0		50.0	55.3		ug/L		111	69 - 136
Xylenes, Total	<5.0		150	164		ug/L		110	68 - 142

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

Lab Sample ID: 400-128823-B-1 MSD

Matrix: Water

Analysis Batch: 327303

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	56.2		ug/L		112	44 - 150	3	16
Ethylbenzene	<1.0		50.0	56.1		ug/L		112	70 - 142	1	16
Toluene	<5.0		50.0	55.6		ug/L		111	69 - 136	1	16
Xylenes, Total	<5.0		150	166		ug/L		111	68 - 142	1	15

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

TestAmerica Pensacola

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: MW-1

Date Collected: 10/11/16 17:16

Date Received: 10/13/16 09:39

Lab Sample ID: 400-128677-1

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		5	5 mL	5 mL	326994	10/18/16 02:50	GRK	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-2

Date Collected: 10/11/16 17:21

Date Received: 10/13/16 09:39

Lab Sample ID: 400-128677-2

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	326994	10/18/16 03:24	GRK	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-7

Date Collected: 10/11/16 17:27

Date Received: 10/13/16 09:39

Lab Sample ID: 400-128677-3

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		2	5 mL	5 mL	326994	10/18/16 03:58	GRK	TAL PEN
Instrument ID: CH_JOAN										
Total/NA	Analysis	8021B	DL	5	5 mL	5 mL	327303	10/19/16 16:12	SAB	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-8

Date Collected: 10/11/16 17:37

Date Received: 10/13/16 09:39

Lab Sample ID: 400-128677-4

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	326994	10/18/16 04:32	GRK	TAL PEN
Instrument ID: CH_JOAN										

Client Sample ID: MW-11

Date Collected: 10/11/16 17:48

Date Received: 10/13/16 09:39

Lab Sample ID: 400-128677-5

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		20	5 mL	5 mL	326994	10/18/16 05:06	GRK	TAL PEN
Instrument ID: CH_JOAN										

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

Client Sample ID: TB-3
Date Collected: 10/11/16 00:00
Date Received: 10/13/16 09:39

Lab Sample ID: 400-128677-6
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	326994	10/18/16 05:40	GRK	TAL PEN
Instrument ID: CH_JOAN										

Laboratory References:

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

Certification Summary

Client: MWH Americas Inc
Project/Site: Knight #1

TestAmerica Job ID: 400-128677-1

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: Knight #1

TestAmerica Job ID: 400-128677-1

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

Chain of Custody Record

Client Information Client Contact: Clint Oberbroeckling Phone: 515 210 4299 Lab PM: Carol Webb E-Mail:		Carrier Tracking No(s): COC No: 400-59087-25370-11 Page: Page 11 of 11 Job #:	
Company: MWH Americas Inc Address: 11153 Aurora Avenue City: Des Moines State, Zip: IA, 50322-7904 Phone: 515 210 4299 Email: clint.w.oberbroeckling@mwhglobal.com Project Name: Knight Site: Knight			
Due Date Requested: 5/1 TAT Requested (days): 5th turn PO #: WO #: Project #: 10508834 SSOW#:		Analysis Requested	
Sample Identification		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 Other:	
Sample ID MW-1 MW-2 MW-7 MW-8 MW-11 TB-3		Matrix (Water, Specific, Other) Water Water Water Water Water Water	
Sample Type (C-comp, G-grab) G G G G G G		Sample Time 1716 1721 1727 1737 1748	
Sample Date 10/11/16 10/11/16 10/11/16 10/11/16 10/11/16		Field Filtered Sample (Yes or No) X X X X X X	
Total Number of Containers 3 3 3 3 3 3		Special Instructions/Note: 400-128677 COC	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological			
Deliverable Requested: I, II, III, IV, Other (specify)			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For Months			
Special Instructions/QC Requirements:			
Empty Kit Relinquished by:		Date:	
Relinquished by: Carol Webb		Date/Time: 10/18/16 1200 Company: MWH	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact:		Cooler Temperature(s) °C and Other Remarks: 3.6°C IRC	

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 400-128677-1

SDG Number:

Login Number: 128677

List Source: TestAmerica Pensacola

List Number: 1

Creator: Hughes, Nicholas T

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	3.6°C - IR6
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	