

**3RP-069**

# **GW monitoring report**

**DATE:**  
**2004**

**BURLINGTON**  
**RESOURCES**  
San Juan Division

March 31, 2005

**RECEIVED**

Certified: 70993400001842167364

Glen Von Gonten

New Mexico Oil Conservation Division **APR 06 2005**

1220 South St. Francis Drive

Santa Fe, NM 87505

**Oil Conservation Division**

**Environmental Bureau**

**RECEIVED**

**APR 06 2005**

**RE: 2004 Annual Groundwater Investigation and Remediation Reports**

**San Juan Basin, New Mexico**

**Oil Conservation Division  
Environmental Bureau**

Dear Mr. von Gonten:

As required in Burlington Resources approved Groundwater Investigation and Remediation Plan dated August, 1998, enclosed are the 2004 annual reports for Burlington's groundwater impact sites in the San Juan Basin. Separate reports are enclosed for the following locations:

3RP 66	Cozzens B#1
3RP 69	Hampton #4M
3RP 71	Johnson Federal #4 Metering Station
3RP 173	Flora Vista (ENTERPRISE FIELD SUCES - FLORANCE VISTA #1)
3RP 37	Marcotte Pool Unit #1 (BAM) 30-045-29466
	Sategna #2 (30-045-07974)

If you have questions or additional information is needed, please contact me at (505) 326-9537.

Sincerely,



Gregg Wurtz

Sr. Environmental Representative

Attachments - Groundwater Investigation and Remediation Reports

cc: Denny Foust - NMOCD Aztec  
WFS - Mark Harvey (Cozzens B#1, Hampton #4M)  
EPFS - Scott Pope (Johnson Fed. #4,)  
Facility and Correspondence Files

**BURLINGTON RESOURCES 2004 ANNUAL GROUNDWATER REPORT****Hampton #4M****RECEIVED**

APR 06 2005

Oil Conservation Division  
Environmental Bureau**SITE DETAILS**

Location: Unit Letter N, Section 13, Township 30N, Range 11W; San Juan County, New Mexico  
Land Type: Federal

**PREVIOUS ACTIVITIES**

PNM conducted limited excavation (approximately 60 cubic yards) of impacted soil underneath their former earthen pit and installed groundwater monitoring wells and a product recovery well.

Burlington Resources (BR) excavated impacted soil down to groundwater depth underneath our former area of operation and installed groundwater monitoring wells. During November 1998, BR began excavation of additional impacted soils to a depth of approximately 27 feet from under and around PNM's former earthen pit. Approximately 77 cubic yards of additional soils were also removed from BR's excavation in the southeast part of the location.

In 1999 BR continued excavation work at the Hampton #4M location, continuing south from PNM's area of operation toward BR's area of operation. Impacted soils were excavated until all apparent source materials had been removed. Prior to backfilling, 30 barrels of Oxy-1 chemical was applied to the bottom and sides of the excavation to stimulate bioremediation. BR also installed a monitoring well (MW-13) in the vicinity of the former MW-4 and downgradient of BR's original excavation under the former tank battery. Details on these activities can be found in the status report submitted to the OCD on September 16, 1999.

BR installed three additional monitoring wells (MW-14,15,16) on the Hampton #4M location. BR also attempted to install two downgradient offsite wells, but both wells hit "auger refusal" prior to contacting any groundwater. Details on these wells and attempts can be found in the status reports submitted to the OCD on October 28, 1999 and January 11, 2000.

The OCD sampled the groundwater seep to the northwest side of the well pad on April 14, 1999. The analytical results show that benzene is present in concentrations in excess of New Mexico Water Quality Control Commission groundwater standards.

Groundwater sampling from monitoring well (MW-14) revealed a level of free phase hydrocarbons in the extreme southeast part of location.

---

## **2000 ACTIVITIES**

Activities completed in 2000 included additional excavation, quarterly well monitoring, and PNMs transfer of environmental responsibility and ownership to Williams Field Services (WFS).

The excavation remediation work proposed in the April 12, 2000 letter to OCD was completed as planned. The excavation was located in the extreme southeast corner of the location adjacent to areas excavated in 1997 and 1998 and within the former tank battery location. The excavation activities were driven by the detection of free phase hydrocarbons in the monitoring well MW-14 installed in the southeast corner on October 1999. The monitoring wells MW-13 and MW-14 were destroyed during the excavation work and will be replaced with one well in a similar location as MW-14. The excavation was completed down to groundwater and approximately 120 cu. yds. were removed. Impacted soils were excavated until all apparent source materials had been removed. The contaminated soils were land farmed off location on a BR location within the same lease. The bottom of the excavation was ended into approximately 2 feet of dry non-contaminated blue green shale that appears to be the confining layer for the catchment basin encompassing the Hampton location. This current excavation work should represent the last remaining area to be excavated and no further excavation is planned or necessary at this time. The excavation has remained open to allow seepage of any potential free product that was detected in the ground water well MW-14 and to promote volatilization of the excavated area. To date, no measurable thickness of hydrocarbons has been detected on the surface of the approximately 1 foot of water in the bottom of the excavation. A sample will be collected of the water in the excavation in 2001 and analyzed for BTEX constituents.

Quarterly monitoring was performed for the first two quarters of 2000. The ground water results are provided in Attachment 1 and the analytical data for 2000 is also attached. The ground water monitoring for the last two quarters of 2000 was missed related to a miscommunication with consultants and the transfer of monitoring activities from PNM and BR. The first quarter groundwater samples have been collected for 2001 and the consultant has been given clear instructions regarding the sampling frequency and number of wells to be sampled for 2001. The upgradient well MW-1 was not sampled because it has demonstrated non-detect concentrations for four consecutive quarters and there is no potential source of contamination upgradient.

A summary of groundwater analytical data is presented in Attachment 1. A site diagram is presented as Attachment 2. An aerial photograph, which is from PNM's OCD exhibit, is also included as Attachment 3 for a better reference of scale.

## **2001 ACTIVITIES**

The excavation completed in 2000 was backfilled with clean soil the third quarter of 2001. The landfarms associated with the excavated dirt were tested and determined clean and closed. Approximately a one foot static water level was observed in the open excavation in the first quarters of 2001. No visible sheen was observed on the water surface and a benzene level of 2 ug/l was detected in a second quarter 2001 grab sample. BR applied a potassium permanganate solution to the excavation to enhance the degradation of the hydrocarbons remaining in the exposed excavated soil and passively treat insitu the soils and ground water down gradient from the excavation prior to backfilling the excavation.

Quarterly monitoring was continued for the 2001. The ground water field notes and the analytical data are provided in Attachment 1 for 2001. The first quarter field notes were lost by the contractor performing the work, but the lab analysis was recovered. BR collected only water level data from the upgradient well



---

MW-1. No constituents of concern were detected in four consecutive quarters at MW-1 and no upgradient source of contamination is present.

Wells MW-15, MW-11, and MW-9 remained clean for the four quarters of sampling in 2001. MW-11 is the furthest down gradient well to the north. Well MW-9 is upgradient of Williams equipment location and down gradient from BR's historical and current production equipment locations as well as the 2000 excavation work. The non-detect analytical results in MW-9 support the natural remediation and effectiveness of the excavation work performed upgradient of the well. Well MW-15 is within the current BR well production equipment containment berm and has not detected constituents of concern (COC). Clean ground water from MW-15, near BR's separator, indicates the separator pit is not a source of contamination.

Wells MW-12, MW-16, MW-5 and MW-7 detected COC. Well MW-12 is located adjacent and downgradient of the former Willaim's unlined pit and the levels of COC are elevated and remain within the range of 2000 sampling levels. MW-16 located on the eastern boundary of the location along a sandstone out crop shows COC level to be increasing in the last two quarters of 2001. MW-5 is located in the sand bed wash downgradient from the location and closest to William's unlined pit and the analytical results for 2001 are in a similar range to 2000. MW-7 is located in the sand bed wash downgradient from the location downgradient from well MW-5. The COC levels in MW-7 are similar to historic levels with the exception that a viable sheen was observed in the 4<sup>th</sup> quarter sampling event that has not been observed in prior events. A seep located northeast of the production location along the eastern side of the sand bed wash was sampled quarterly in 2001 and only the first quarter detected any COC. TMW-1 is located in the sand bed wash between MW-5 and MW-7 and no samples were collected because of insufficient water to collect a sample.

## **2002 THROUGH 2004 ACTIVITIES**

BR continued the quarterly ground water well monitoring program from 2002 to 2004 to measure the progression of the passive natural remediation occurring at this site. BR also continued quarterly sampling the seep on location. The monitoring results are provided in Attachment 1 GROUND WATER ANALYTICAL RESULTS SUMMARY.

## **CONCLUSIONS**

The downgradient extent of the ground water impacts continues to be Monitoring Well MW-7 based on the 2004 monitoring data. The hydrocarbon concentrations in the MW-7 well reduce in 2002 and 2004 but a minor increase was observed in 2003. This 2003 increase in BTEX concentrations may be contributed to the excavation work and insitu treatment performed by BR in 2000 and 2001. The ground water monitoring in the furthest down gradient well, MW-11 has still not detected any hydrocarbon constituents. The ground water gradient has not change significantly in 2004.

Historically, the source of contamination appeared to be defined and originated from two areas related to BR and WFS historical operations. A considerable amount of excavation and treatment work has been performed by BR to remediate the areas of contamination. The main remediation approach has been excavation and offsite treatment. However, chemical oxidizer has also been applied to the excavations. The goal of the remediation is to prevent potential contamination movement away from the site and allow for the natural break down of the hydrocarbons.

The excavation work completed in 2000 appeared to have been effective in reducing or eliminating the free phase hydrocarbons in well MW-16. However, a minor sheen of hydrocarbons and strong

---

hydrocarbon odors have been observed in this well in subsequent monitoring years. The horizontal extent of the ground water contamination at this location appears to start approximately in an area near wells MW-16 and MW-12 and continues to well MW-7.

The furthest downgradient well MW-11 has not detected contamination exceeding the New Mexico Water Quality Control Commissions ground water standards since monitoring began.

The zone of greatest hydraulic conductivity and the approximate natural ground water flow path leaving the area of contamination may be confined to a narrow flow path at the bottom of the box canyon drainage. The hydrologic gradient follows the topographic gradient of the sand bed wash that extends downgradient from the production location. The vertical extent of contamination migration is confined to a clay and sandstone unit that forms the sides and basement of the canyon. The auger refusal encountered on the two downgradient offsite monitoring well attempts in 1999 and observations of the stratigraphy in the excavations support this theory that the ground water is located in a relatively narrow band generally following the surface drainage flow path.

The ground water regime at the location appears to be typical for the San Jan Basin and the arid southwest. The hydrogeology consists of an unconfined aquifer comprised of fine eolian and alluvial sands and silts overlying an impermeable clay unit that forms the sides and basement of this box canyon catchment basin. The confining unit acts as an impermeable catchment that collects and concentrates meteoric water filtering through the overlying sediments. The ground water then travels out of the canyon as bed flow along a narrow band generally following the ephemeral wash that drains the basin.

The water supply for local residents is supplied by the City of Aztec and no domestic wells were identified in the area adjacent to the site. The location is on the edge of a rural county subdivision with no residents to the east and south. The formations in this area typically do not produce a quality of water acceptable for domestic, livestock or irrigation use, nor do they produce sufficient quantities to be considered aquifers.

Burlington Resources has been in discussion with WFS to assure proper assessment and closure of this site. BR has been managing and funding the sampling and analysis activities since 2000. A cost sharing agreement with WFS and BR was established in 2000. WFS has not approached BR with arrangements to engage in the cost sharing agreement.

## **RECOMMENDATIONS**

- BR recommends continuing a quarterly monitoring program of data to measure the passive natural remediation approach use to adequately remediate the dissolved hydrocarbons in the groundwater and any remaining trace amounts of soil hydrocarbon contamination.
- Burlington Resources will continue quarterly sampling the seep if sufficient water is available.

Attachments:    Attachment 1 - Groundwater Sampling Results Summary  
                         Attachment 2 - Site Diagram  
                         Attachment 3 - Aerial Photo

---

# **Attachment 1**

## **GROUNDWATER ANALYTICAL RESULTS SUMMARY**

---

## **Attachment 2**

# **SITE DIAGRAM**

---

## **Attachment 3**

# **Topographic Location Map**

---

**Attachment 1**

**GROUNDWATER ANALYTICAL RESULTS  
SUMMARY**

# Burlington Resource Hampton 4M Groundwater Monitoring Summary 2004

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzen (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)
MW-1			10/30/97	6110.10	2.4	2.3	<0.2	1.1	5.8	--
Upgradient well	6149.42		01/12/98	6107.47	4.3	3.3	0.2	1.0	8.8	--
			04/14/98	6107.52	1.0	1.3	<0.5	<0.5	2.3	--
			07/01/98	6107.13	1.3	1.0	<0.5	3.7	6.0	--
			10/05/98	6106.09	<1.0	<1.0	<1.0	<3.0	<6.0	--
			11/09/98	6107.40	NA	NA	NA	NA	NA	--
			01/27/99	6107.51	0.8	0.9	<0.5	<1.5	1.7	--
			05/05/99	6106.76	NA	NA	NA	NA	NA	--
			07/12/99	6106.55	1.1	0.5	<0.5	<0.5	1.6	--
			08/17/99	6106.47	NA	NA	NA	NA	NA	--
			10/21/99	6106.60	NA	NA	NA	NA	NA	--
			01/27/00	6106.39	no sample collected					
		BR/onsite labs	06/13/00	6106.39	no sample collected					
Sample analysis terminated		Lost	01/01/01							
		water level only	6/26/2001	6104.48	no sample collected					
		water level only	09/18/01	6104.95		no sample collected				
		water level only	12/18/02	6105.20	no sample collected					
		water level only	3/22/02	6105.38						
			3/27/03	No level collected						
			6/27/03	No level collected						
		Clear water	9/24/03	6105.9	0.9J	1	ND	0.4J	2.3J	
		Clear water	12/15/03	6105.92	1.1	0.9J	ND	ND	2.0J	
		Silty	3/15/04	6105.8	U	U	U	U	N/A	
		Cloudy	6/21/04	6105.97	U	U	U	U	N/A	
		Grey/clear	9/29/04	6106.08	U	U	U	U	N/A	
		Clear/cloudy	12/31/04	6106.01	U	0.9J	U	3.3J	N/A	

MW-2				12/16/96	NM	3840.0	7960.0	896.0	7920.0	20616.0	NM	
PNM drip pit well				02/04/97	NC	NA	NA	NA	NA	NA	4.40	
	6122.23			08/27/97	NC	NA	NA	NA	NA	NA	4.75	
				10/29/97	NC	NA	NA	NA	NA	NA	4.58	
				01/12/98	NC	NA	NA	NA	NA	NA	4.41	
				04/14/98	NC	NA	NA	NA	NA	NA	2.59	
				07/01/98	NC	NA	NA	NA	NA	NA	2.25	
				10/05/98	NC	NA	NA	NA	NA	NA	2.01	
				11/09/98	NC	NA	NA	NA	NA	NA	2.15	
				Well destroyed during Burlington excavation								
MW-3				1/31/1997	NM	<0.2	<0.2	<0.2	<0.2	<0.2	--	
Up & cross-gradient to PNM				2/4/1997	6101.06	NA	NA	NA	NA	NA	--	
	6121.49			5/5/1997	NM	NA	NA	NA	NA	NA	--	
			(Burlington)	10/29/1997	6101.19	<0.2	<0.2	<0.2	<0.2	<0.2	--	
				1/12/1998	6101.11	<0.2	<0.2	<0.2	<0.2	<0.2	--	
				4/14/1998	6100.97	<0.5	<0.5	<0.5	<0.5	<0.5	--	
				7/1/1998	6101.14	0.03 JB	0.05 JB	<0.5	<0.5	0.08 JB	--	
				10/5/1998	6100.57	<1.0	<1.0	<1.0	<3.0	<6.0	--	
				11/9/1998	6100.89	<1.0	<1.0	<1.0	<3.0	<6.0	--	
				Well destroyed during Burlington excavation								
MW-4				1/31/1997	NM	811.7	1420.5					
Upgradient PNM; downgradient Burlington				2/4/1997	6106.16	NA	NA	31.0	388.1	2651.3	--	
			(Burlington)	5/1/1997	NM	1162.0	1797.0	41.0	486.0	3486.0	--	
	6123.105			8/27/1997	6106.87	NA	NA	NA	NA	NA	--	
				10/29/1997	6106.73	NA	NA	NA	NA	NA	--	
				1/12/1998	6105.88	1251.0	6.0	82.0	24.0	1363.0	--	
				4/14/1998	6105.93	1100.0	7.2	28.0	12.0	1147.2	--	
				7/1/1998	6106.14	1400.0	50.0	120.0	124.0	1694.0	--	
				10/5/1998	NC	NA	NA	NA	NA	NA	0.63	
				11/9/1998	NC	NA	NA	NA	NA	NA	0.26	
				1/27/1999	NC	NA	NA	NA	NA	NA	0.40	
				Well destroyed during Burlington excavation								





TMW-1 TEMP WELL IN WASH BETWEEN MW5 AND 7								
NONE		1/27/2000	18.09 dtw	930	1400	350	6700	9380
BR/onsite labs		6/13/2000	17.44 dtw	2400	3400	550	9100	15450 Film
Lost								
		60/26/01	18.23 DTW	1100	3500	330	5500	10430
		9/18/2001	18.99 well purged dry no sample collected					0
dry		12/18/2001	19.59 No sample collected					0
insufficient h2o		3/22/02	19.52 No sample collected					0
insufficient h2o		6/28/02	20.05 No sample collected					0
insufficient h2o		9/23/02	19.51 No sample collected					0
insufficient h2o		12/31/02	19.5 No sample collected					0
insufficient h21		3/27/03	19.5 No sample collected					0
Special sampling		5/23/03	Lost	830	123	107	1004.7	2064.7
Bailed dry		6/27/03	17.75	474	36.6	59.6	490.7	1060.9
Bailed dry		9/24/03	18.83	292	139	17	221	669
insufficient h2o		3/15/04	Dry	No sample collected				
Clear		6/21/04	18.85 DTW	40.6 U		14.1	14.7	69.4
Black/H2s odor		9/29/04	19.08 DTW	410	8.7	59.6	458.5	936.8
Grey/bailed dry		12/31/04	19.32 DTW	3J	5J	1J	11J	0
Bailed dry		12/15/03	19.08	55.9	1.3	3.9	42.5	103.6
MW-6		insufficient h2	3/27/03	19.5 No sample collected				0
PNM drip pit/product recovery		Special sample	5/23/03	Lost	830	123	107	1004.7 2064.7
		Bailed dry	6/27/03	17.75	474	36.6	59.6	490.7 1060.9
		Bailed dry	9/24/03	18.83	292	139	17	221 669
		Bailed dry	12/15/03	19.08	55.9	1.3	3.9	42.5 103.6
		11/9/1998	NC	NA	NA	NA	NA	2.27
		Well destroyed during Burlington excavation						

MW-7			1/12/1998	6047.12	780.0	246.0	258.0	3942.0	5226	--
Downgradient along wash; adj pipeline			04/14/98	6047.09	820.0	340.0	190.0	2450.0	3800	--
	6066.91		07/01/98	6047.03	950.0	440.0	200.0	3020.0	4610	--
			10/05/98	6046.77	1600.0	930.0	180.0	1530.0	4240	--
			11/09/98	6046.77	1800.0	1000.0	160.0	1240.0	4200	--
			01/27/99	6046.77	2100.0	1000.0	160.0	1050.0	4310	--
			05/05/99	6046.44	210.0	2.9	30.0	147.0	390	--
(Burlington)			05/26/99	NR	190.0	7.4	32.0	150.0	379	--
			7/12/1999	6046.04	130.0	7.2	22.0	101.3	261	--
			8/17/1999	6046.61	NA	NA	NA	NA	NA	--
(prelim.)			10/21/1999	6047.47	260.0	11.0	15.0	89.0	375	--
			01/27/00	6047.65	670.0	580.0	54.0	680.0	1984	
		BR/onsite labs	06/17/00	6047.87	420.0	1100.0	75.0	1400.0	2995	
		ACZ/Lost	03/29/01	lost	830.0	150.0	320.0	1790.0	3090	
		H2S odor	06/26/01	6047.39	540.0	330.0	250.0	1410.0	2530	
		H2S odor	09/18/01	6047.06	870.0	560.0	320.0	2020.0	3770	
		h2s odor	12/18/01	6046.71	400.0	30.0	160.0	885.0	1475	Sheen
		h2s odor	3/22/02	6046.43	180	ND	78	260	518	Cloudy
		h2s odor	6/28/02	6047.38	89	1	41	79	210	
		h2s odor	9/23/02	6046.39	80	3	31	18.89	133	
		h2s odor	12/31/02	6046.76	160	2.2	74	31.5	268	
		Grey color	3/27/03	6047.13	195	0.4	44.2	109	349	
		H2S odor	6/27/03	6047.57	300	1.4 J	117	461.6	879	
			9/24/03	6047.03	90	12	2	694	798	
		HC odor	12/15/04	6046.77	150	4J	115	549	814	
		Bailed Dry	3/15/04	6046.71	56	1J	6	3	65	
		Bailed Dry	6/21/04	6047.21	180	U	55	58J	235	
		Bailed Dry	9/29/04	6046.79	163	0.9J	54.5	69.8	287	
		black	12/31/04	6046.88	94	3J	10	24J	104	

<b>MW-8</b>				1/12/1998	6104.71	6410.0	17301.0	693.0	9397.0	33801.0	Sheen
Upgradient PNM; downgradient Burlington				4/14/1998	6104.41	NA	NA	NA	NA	NA	0.37
	6122.97			7/1/1998	6105.14	NA	NA	NA	NA	NA	0.37
				10/5/1998	6104.54	NA	NA	NA	NA	NA	0.13
				11/9/1998	6104.77	NA	NA	NA	NA	NA	0.02
				Well destroyed during Burlington excavation							
<b>MW-9</b>											
Upgradient PNM, crossgradient Burlington				7/1/1998	6100.12	12.0	0.2	0.6	1.3	14.1	--
	6122.52			10/5/1998	6100.03	16.0	<1.0	1.1	2.1	19.2	--
				11/9/1998	6100.40	12.0	<1.0	<1.0	<3.0	12.0	--
				1/27/1999	6099.23	0.8	<0.5	<0.5	2.2	3.0	--
				5/5/1999	6099.92	73.0	<0.5	2.2	1.6	76.8	--
				5/26/1999	6100.07	120.0	<0.5	2.5	1.8	124.3	--
			(Burlington)	5/26/1999	NR	120.0	<0.5	1.6	0.8	122.4	--
				7/12/1999	6100.18	140.0	<0.5	1.5	<0.5	141.5	--
			(prelim.)	8/17/1999	6100.92	290.0	<0.5	0.6	<1.5	290.6	--
			(prelim.)	10/21/1999	6100.73	320.0	<0.5	0.6	<1.5	320.0	Sheen
			BR/onsite labs	1/27/2000	6100.62	130.0	nd	nd	nd	130.0	
			ACZ/lost	6/13/2000	6100.54	<0.5	1.9	<0.5	2.5	4.4	
				3/29/2001	lost	<0.2	<0.2	<0.2	<0.2	0.0	
				6/26/2001	6099.90	<0.5	<0.5	<0.5	<1.0	0.0	
				9/18/2001	6099.85	<0.5	<0.5	<0.5	<1.0	0.0	
			no odor	12/18/2001	6099.82	<0.5	<0.5	<0.5	<1.0	0.0	
			H2s mild	3/22/2002	6099.84	ND	ND	ND	ND	0	
				6/28/2002	6099.64	ND	ND	ND	ND	0	
				9/23/2002	6099.62	ND	ND	ND	ND	0	
				3/27/03	6100.09	ND	ND	ND	ND		
				6/27/03	6100	0.4 J	ND	ND	0.4J		
				9/24/03	6099.81	ND	ND	ND	ND	0	
			Clear	12/15/03	6099.88	0.5J	ND	ND	0.5J		
			Clear	3/15/04	6099.84	U	U	U	N/A		
			clear to cloudy	6/21/04	6099.80	U	U	U	N/A		
			Lt. Brown	9/29/04	6099.78	U	U	U	N/A		
			Clear	12/31/2004	6099.82	U	0.4J	U	0.7J	1.1J	

MW-10				7/1/1998	NC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00
Upgradient PNM, downgradient Burlington				10/5/1998	NC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.91
	6122.5			11/9/1998	NC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.10
				Well destroyed during Burlington excavation													
MW-11				1/27/1999	5958.60	<0.5	2.5	0.7	13.1	16.3	--	--	--	--	--	--	--
Downgradient well - 1800', r	6015.75			5/5/1999	5958.65	<0.5	<0.5	<0.5	<1.5	0.0	--	--	--	--	--	--	--
		(Burlington)		5/26/1999	NR	0.8	1.7	<0.5	1.1	3.6	--	--	--	--	--	--	--
				7/12/1999	5958.27	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
				8/17/1999	5958.62	NA	NA	NA	NA	NA	--	--	--	--	--	--	--
	(prelim.)			10/21/1999	5958.90	<0.5	<0.5	<0.5	<1.5	<3.0	--	--	--	--	--	--	--
				1/27/2000	5959.10	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--
		BR/onsite labs		6/13/2000	5959.21	<0.5	<0.5	<0.5	0.9	0.9	--	--	--	--	--	--	--
		ACZ/lost		3/29/2001	lost	<0.2	<0.2	<0.2	<0.2	0.0	--	--	--	--	--	--	--
		rdish brn h2o		6/26/2001	2959.14	<0.5	<0.5	<0.5	<1.0	0.0	--	--	--	--	--	--	--
		rdish brn h2o		9/18/2001	5959.28	<0.5	<0.5	<0.5	<1.0	0.0	--	--	--	--	--	--	--
		no odor		12/18/2001	5959.25	<0.5	<0.5	<0.5	<1.0	0.0	--	--	--	--	--	--	--
		H2s		12/19/2001	5959.2	ND	ND	ND	ND	0	--	--	--	--	--	--	--
				12/20/2001	5959.32	ND	ND	ND	ND	0	--	--	--	--	--	--	--
				12/21/2001	5959.25	ND	ND	ND	ND	0	--	--	--	--	--	--	--
				12/22/2001	5959.4	ND	ND	ND	ND	0	--	--	--	--	--	--	--
				5/24/03	Lost	ND	ND	ND	ND	0	--	--	--	--	--	--	--
				6/27/03	5959.4	0.4J	0.3J	ND	0.4J	1.1J	--	--	--	--	--	--	--
				9/24/03	5959.51	ND	ND	ND	ND	0	--	--	--	--	--	--	--
				12/15/03	5959.59	0.5J	ND	ND	ND	0.5J	--	--	--	--	--	--	--
				3/15/04	5959.61	U	U	U	U	N/A	--	--	--	--	--	--	--
		Clear		6/210/04	5959.61	U	U	U	0.5J	N/A	--	--	--	--	--	--	--
		Clear brown		9/29/04	5959.6	U	U	U	U	N/A	--	--	--	--	--	--	--
		red/brown		12/31/2004	5959.53	U	U	U	U	N/A	--	--	--	--	--	--	--

MW-12 (source well @ MW)	6109.02			5/5/1999		790.0	840.0	260.0	2880.0	4770	--
SOIL sample TPH (ppm)	2350			5/5/1999		1200	13000	5100	68000	87300	--
		(Burlington)		5/26/1999	6099.45	1900	820	200	1720	4640	Sheen
				5/26/1999		1800	640	160	1600	4200	--
		(duplicate)		7/12/1999	6099.63	4500	760	400	3100	8760	Sheen
				7/12/1999		4600	730	390	3080	8800	Sheen
				8/17/1999	6100.56	4800	5000	320	3390	13510	Sheen
		(Eco. Split)		8/17/1999	6100.56	5900	6100	390	4100	16490	Sheen
		(prelim.)		10/21/1999	6100.17	5600	650	540	2890	9680	Sheen
				1/27/2000	6070.49	4100	550	430	2379	7459	
		BR/onsite labs		6/13/2000	6085.43	5000	1300	490	2700	9490	
		ACZ/lost		3/29/2001	LOST	5170	1790	366	2620	9946	
		h2s odor		6/26/2001	6084.8	4800	1900	390	2560	9650	
		h2s odor		9/18/2001	6084.71	5100	2400	430	2820	10750	Sheen
		h2s odor		12/18/2001	6084.72	4000	1500	320	1880	7700	Sheen
		H2s odor		3/22/2002	6084.72	3300	930	290	1270	5790	sheen
				6/28/2002	6084.56	4200	1800	410	1940	8350	
				9/23/2002	6084.56	3800	1500	310	1510	7120	
				12/31/2002	6084.62	3600	840	280	1010	5730	Sheen
				03/27/03	Dry					0	
				05/24/03	lost	3990.0	2230.0	299.0	1470.0	7989	
				06/27/03	6084.9	5290.0	2750.0	360.0	1600.0	10000	Sheen
		HC odor		09/24/03	6084.7	4600.0	1690.0	290.0	1150.0	7730	
		HC Odor		12/15/03	6084.8	4200.0	1360.0	240.0	1150.0	6950	
		clear		03/15/04	6084.8	2090.0	1120.0	300.0	1250.0	4760	
		Gray		06/21/04	6084.7	3870.0	1820.0	280.0	1500.0	7470	
		Blk,HC odor,clear		06/29/04	6088.7	5140.0	2220.0	240.0	1280.0	8880	
		black/gray		12/31/04	6088.8	4160.0	1220.0	250.0	1150.0	6780	

<b>MW-13</b>	6122.76		5/26/1999	--	1800.0	25.0	12.0	35.3	1872.3	--
BROG well between pit & MW-4		(Burlington)	5/26/1999	--	2100	22	8.8	29	2159.8	--
			7/12/1999	6104.3	2100	14	9.9	10.9	2134.8	--
			8/17/1999	6104.7	1900	<10	<10	<30	1900.0	--
		(prelim.)	10/21/1999	6104.71	1600	<10	<10	<30	1600.0	--
			1/27/2000	6104.44	1600	2.2	1.5	0.5	1604.2	
		BR/onsite labs	6/13/2000	6104.59	730	<2.5	<2.5	<2.5	730.0	
<b>MW-14</b>			10/21/1999	--	not sampled - 2 feet of free product					1.92
BROG well near TPW07		--			depth to water 22.14, depth to product 20.22 (no datum surveyed yet)					
			1/27/2000		Not sampled 2.5 feet free product depth to water 22.90					
		BR/onsite labs	6/13/2000		Not sampled 2.16 feet product Depth to water 22.51					
<b>MW-15</b>			10/21/1999	--	<0.5	1.2	<0.5	1.5	2.7	--
BROG well near separator	No survey data	(prelim.)			depth to water 17.84 (no datum surveyed yet)					
	ground level MP		1/27/2000		<0.5	<0.5	<0.5	<0.5	0.0	
			6/13/2000	0	<0.5	<0.5	<0.5	<0.5	<0.5	
				18.08 DTW						
		ACZ/lost	3/29/2001	lost	<0.2	<0.2	<0.2	<0.2	0	
		Onsite	6/26/2001	19.66 DTW	<0.5	<0.5	<0.5	0.5	0.0	
		Onsite	9/18/2001	19.22 DTW	<0.5	<0.5	<0.5	0.5	0.0	
		no odor	12/18/2001	19.12 DTW	<0.5	<0.5	<0.5	0.5	0.0	
		no odor	3/22/02	19.10 DTW	ND	ND	ND	ND	0	
			6/28/02	19.08 DTW	ND	ND	ND	ND	0	
			9/23/02	19.05 DTW	ND	ND	ND	ND	0	
			12/31/02	19.00 DTW	ND	ND	ND	ND	0	
			3/27/2003	18.72 DTW	U	0.3J	U	0.9J	1.2 J	
		Slight HC odor	6/27/2003	18.12 DTW	0.4J	ND	ND	ND	0.4J	
		Light Gray	9/24/2003	18.43 DTW	ND	ND	ND	ND	0.0	
		Clear	12/15/2004	18.61 DTW	0.7J	ND	ND	ND	0.7J	
		Silty	3/15/2004	18.75 DTW	U	0.3J	U	U	0.3J	
		Cloudy	6/21/2004	18.25 DTW	U	U	U	U	N/A	
		Cloudy	9/29/2004	18.33 DTW	U	U	U	U	N/A	
		Clear	12/31/2004	18.48 DTW	U	0.9J	0.3J	1.4J	1.6J	

<b>MW-16</b>	No survey	(prelim.)	10/21/1999	--	220.0	300.0	5.4	142.0	667	--
Recovery well near excavation	DTW ONLY	(Burlington)	10/21/1999	--	214.0	268.0	4.0	151.0	637	--
				depth to water 14.93 (no datum surveyed yet)	1600	170	56	225	2051	
			1/27/2000		Note stick up added to well in 2000					
		depth to water 24.22 (no survey)		data available						
		BR/onsite labs	6/13/2000	24.16	8700	430	680	2200	12010	
				No sample collected well could not be found due to excavation materials adjacent to well						
		H2s odor	6/26/2001	24.91	9300	1100	810	3410	14645	
			9/18/2001	24.77	11000	6400	590	6400	24415	sheen
		HC odor	12/18/2001	24.82	9900	6900	570	7400	24770	sheen
		product odor	3/22/2003	24.92	10000	6600	1100	7400	25100	sheen
			6/28/2002	25.03	11000	7000	770	5700	24470	
		product odor	9/23/2002	25.04	8900	9900	610	8500	27910	Sheen
			12/31/2002	24.5	8800	7900	770	7400	24870	Sheen
			3/27/03	24.63	10400	11200	840	8670	31110	Sheen
		Bailed Dry	5/27/03	24.67					0	
		Bailed Dry/HC od	9/24/03	24.74	10300	15400	870	10590	37160	
		Strong HC odor	12/15/04	27.70	9640	12600	720	1550	24510	
		Heavy HC odor	3/15/04	24.79 DTW	9200	16000	1310	12000	38510	
		Heavy HC odor	6/21/04	24.76 DTW	8040	18100	2450	18580	47170	
		Bailed Dry	9/29/04	24.79 DTW	8330	14000	760	8230	31320	
		HC odor/dry	12/31/04	24.77 DTW	8340	17100	1550	18830	45820	
<b>TMP-1</b>			11/11/1997	NM	2171.0	4185.0	190.0	2856.0	9402.0	--
11			7/1/1998	6057.61	2000.0	4300.0	180.0	2700.0	9180.0	--
MP =	6076.48		11/9/1998	NM	980.0	1900.0	84.0	1540.0	4504.0	--
		(prelim.)	10/21/1999	6058.11	1000.0	3100.0	410.0	9700.0	14210.0	
<b>EB WELL</b>										
Downgradient private well			11/25/1997	5959.74	<0.2		<0.2	<0.2		--
MP =	6028.64		10/21/1999	5960.93						
<b>Burlington Excavation</b>	Surface Water		2/11/1998	15'	1800	1700	<25	1420	4920	rainbow
	Surface Water		7/1/1998	6106.26	10.0	0.4	0.1	1.5	12.0	rainbow
	Surface Water		11/9/1998	NM	2.9	16.0	<1	18.1	37.0	--
	Soil - @ water		7/1/1998	NM	36000.0	560000.0	100000.0	1430000.0	2126000.0	--



<b>Intermittent Seep</b>		Surface Water	7/1/1998	6098.72	1.6	0.7	0.6	0.36	3.26	rainbow
		Surface Water	4/14/1999		40.0	2.2	2.1	19.00	63.30	rainbow
		Surface Wat (prelim.)	10/21/1999		65.0	230.0	11.0	434.00	740.00	
		Surface Wat ACZ/lost	3/29/2001	none	11.6	<0.2	0.7J	25.40	37.00	
		Surface Wat seep	6/26/2001	none	<0.5	<0.5	<0.5	<1.0	0.00	
		Surface Wat seep	9/18/2001	none	<0.5	<0.5	<0.5	<1.0	0.00	
		Surface Wat seep	12/18/2001	none	<0.5	<0.5	<0.5	<1.0	0.00	
		Surface Water seep	3/22/2002	none	5.9	ND	0.8	3.4	10.1	
		Surface Water seep	6/28/2002	none	ND	ND	ND	ND	0	
		Surface Water seep	9/23/2002	none	ND	ND	ND	ND	0	
		Surface Water seep	12/31/2002	None	0.7	ND	ND	ND	0.7	
		Surface Water seep	3/27/2003	None	6.3	0.2J	1.8	10.1	18.4	
		Surface Water DRY	5/27/2003	DRY						
		Surface Water Seep	9/24/2003	None	ND	0.3J	ND	ND	0.3J	
		Surface Water Seep Clear	12/15/2003	None	0.4J	0.3J	ND	ND	0.7J	
		Surface Water Seep	3/15/2004	None	U	U	U	U	N/A	
		Surface Water Seep	6/21/2004	None	U	U	U	U	N/A	
		Surface Water Seep	9/29/2004	None	U	U	U	U	N/A	
		Surface Water Seep	12/31/2004	None	U	0.2J	U	0.4J	0.6	
<b>Burlington Temporary Monitoring Well Sampling</b>										
<b>Sample</b>	<b>Matrix</b>		<b>Date Sampled</b>	<b>Depth (ft)</b>	<b>Benzene (ppb)</b>	<b>Toluene (ppb)</b>	<b>Ethylbenzene (ppb)</b>	<b>Xylenes (ppb)</b>	<b>Total BTEX (ppb)</b>	<b>TPH (mg/Kg)</b>
TPW-01	Water		6/5/1997		20.0	<1	<1	<1	20.0	NA
	Soil			25-26'	<1	<1	<1	<1	<1	<10
TPW-02	Water		6/5/1997	Product	NA	NA	NA	NA	NA	NA
	Soil			25-26'	2000.0	4600.0	14000.0	39000.0	59600.0	600.0
TPW-03	Water		6/5/1997	Dry	NA	NA	NA	NA	NA	NA
	Soil		6/5/1997	25-26	<1	<1	<1	<1	<1	25
TPW-04	Water		6/6/1997		2000.0	3100.0	57.0	810.0	5967.0	NA
	Soil		6/6/1997	20-21.5'	28.0	3.4	76.0	40.0	147.4	52

TPW-05	Water		6/6/1997		5800.0	460.0	16000.0	7000.0	29260.0	NA
	Soil		6/6/1997	15-16'	4000.0	10000.0	4500.0	28000.0	46500.0	61
TPW-06	Water		6/6/1997		1600.0	3400.0	48.0	690.0	5738.0	NA
	Soil		6/6/1997	16-16.5'	<1	<1	2.8	4.8	7.6	11
TPW-07	Water		6/6/1997		5300.0	18000.0	620.0	9300.0	33220.0	NA
	Soil		6/6/1997	15-16'	7000.0	74000.0	20000.0	170000.0	271000.0	250
<b>Burlington Profile Borings</b>										
SB-1 (near BROG excavated)	Soil		10/8/1998	15-16'	335	697	181	1808	3021	26.4
SB-2 (near PNM former pit)	Soil		10/8/1998	15'	1950	9960	2460	22590	36960	194
<b>PNM Test Holes along Wash</b>										
TH-1	Soil		11/11/1997	12.7'	NA	NA	NA	NA	NA	PID (ppm) 1412
TH-2	Soil		11/11/1997	14.4'	NA	NA	NA	NA	NA	1357
TH-3	Soil		11/11/1997	16.5'	NA	NA	NA	NA	NA	0
TH-4	Soil		11/11/1997	15'	NA	NA	NA	NA	NA	279
TH-5	Soil		11/11/1997	14.5'	NA	NA	NA	NA	NA	1211
TH-6	Soil		11/11/1997	16'	NA	NA	NA	NA	NA	0
TH-7 (temporary well)	Water		11/11/1997	NA	2171.0	4185.0	190.0	2856.0	170000.0	279
TH-8	Soil		11/12/1997	14'	NA	NA	NA	NA	NA	0
Notes:	All wells sampled by PNM unless otherwise noted in the "Sample Notes" column.									
	J = Analyte detected below Practical Quantitation Limit							NM = Not measured	NC = Not Calculated (product)	
	B = Analyte detected in the associated Method Blank							NA = Not analyzed	ND = Analyzed for but not detected	
<b>2001 Excavation standing</b>		none	grab	6/26/2002	None	2	<0.5	<0.5	2	

# WELL DEVELOPMENT AND SAMPLING LOG



Project No.: 30003.0 Project Name: Groundwater sampling Client: Burlington Resources  
 Location: Hampton 4M Well No: Seep Development **Sampling**  
 Project Manager MJN Date 3/15/04 Start Time 1312 Weather sunny 60s  
 Depth to Water \_\_\_\_\_ Depth to Product na Product Thickness na Measuring Point TOC  
 Water Column Height \_\_\_\_\_ Well Dia. \_\_\_\_\_

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer ☒ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (oz)	Comments/ Flow rate

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b><u>1124</u></b>									

COMMENTS: Water was clear.

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite Sample ID Hampton 4M Seep Sample Time 1312  
**BTEX** VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals  
 Total Phosphorus  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name: Groundwater sampling Client: Burlington Resources  
 Location: Hampton 4M Well No: TMW-1 Development **Sampling**  
 Project Manager MJN Date 3/15/04 Start Time 0920 Weather cloudy 40s  
 Depth to Water na Depth to Product na Product Thickness na Measuring Point TOC  
 Water Column Height na Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer ☒ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate

COMMENTS: No water in well. No sample collected.

INSTRUMENTATION: pH Meter ☒ Temperature Meter ☒  
                             DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
                             Conductivity Meter ☒ \_\_\_\_\_

Water Disposal onsite Sample ID na Sample Time na

**BTEX** VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals

Total Phosphorus

MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: \_\_\_\_\_ Project Name BR Groundwater Sampling Client: Burlington  
 Location: : Hampton 4M Well No: MW-1 Development **Sampling**  
 Project Manager MJN Date 3/15/04 Start Time 0930 Weather clear 40s  
 Depth to Water 43.62 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 5.92 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal **X** stabilization of Indicator Parameters **X** Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
5.92 x 0.16	0.97		2.90

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
<b>0943</b>	<b>5.9</b>	<b>3860</b>	<b>55.9</b>				<b>0.25</b>	<b>silty</b>
	<b>5.29</b>	<b>4000</b>	<b>56.3</b>				<b>0.5</b>	
	<b>5.12</b>	<b>3980</b>	<b>56.4</b>				<b>0.75</b>	
<b>0948</b>	<b>5.09</b>	<b>4040</b>	<b>56.7</b>				<b>1.0</b>	
	<b>5.04</b>	<b>4010</b>	<b>56.3</b>				<b>2.0</b>	

<b>Final:</b>	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>0958</b>	<b>5.08</b>	<b>4040</b>	<b>56.4</b>					<b>3.0</b>	<b>Silty</b>

COMMENTS:

INSTRUMENTATION: pH Meter **X** \_\_\_\_\_ Temperature Meter **x** \_\_\_\_\_  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter **X** \_\_\_\_\_

Water Disposal onsite Sample ID MW-1 Sample Time 0958

**BTEX** VOCs

MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name: BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-5 Development **Sampling**  
 Project Manager MJN Date 3/15/04 Start Time 1325 Weather clear 40s  
 Depth to Water 14.55 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 7.64 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
7.64 x 0.16	1.25		3.75

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1325</b>	<b>4.46</b>	<b>5560</b>	<b>58.9</b>				<b>0.25</b>	
	<b>5.22</b>	<b>5750</b>	<b>57.3</b>				<b>0.5</b>	
	<b>2.72</b>	<b>5920</b>	<b>55.8</b>				<b>0.75</b>	
<b>1330</b>	<b>3.01</b>	<b>5520</b>	<b>55.8</b>				<b>1.0</b>	
<b>1333</b>	<b>3.51</b>	<b>5950</b>	<b>55.6</b>				<b>2.0</b>	
<b>1337</b>	<b>3.94</b>	<b>5320</b>	<b>57.0</b>				<b>3.0</b>	

<b>Final:</b>	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
Time <b>1342</b>	<b>4.25</b>	<b>5430</b>	<b>55.8</b>					<b>4.00</b>	<b>clear</b>

COMMENTS: well bailing down

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒ \_\_\_\_\_  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite Sample ID MW-5 Sample Time 1345  
 Analysis **BTEX**  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name BR Groundwater Sampling Client: Burlington  
 Location: : Hampton 4M Well No: MW-7 Development Sampling  
 Project Manager MJN Date 3/15/04 Start Time 1410 Weather clear 40s  
 Depth to Water 20.20 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 2.05 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
2.05 x 0.16	0.33		0.99

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
1413	6.35	6080	63.4				0.125	Bailing dry

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1415	6.05	6050	62.8					0.25	clear

COMMENTS: well bailing down

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite Sample ID MW-7 Sample Time 1420  
BTEX VOCs  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name BR Groundwater Sampling Client: Burlington  
 Location: : Hampton 4M Well No: MW-9 Development Sampling  
 Project Manager MJN Date 3/15/04 Start Time 1105 Weather clear 40s  
 Depth to Water 22.68 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 11.87 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
11.87 x 0.16	1.94		5.81

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
<b>1105</b>	<b>6.61</b>	<b>4790</b>	<b>60.3</b>				<b>1.0</b>	<b>clear</b>
	<b>6.64</b>	<b>4780</b>	<b>59.4</b>				<b>2.0</b>	
	<b>6.63</b>	<b>4730</b>	<b>59.0</b>				<b>3.0</b>	
<b>1119</b>	<b>6.70</b>	<b>4790</b>	<b>58.3</b>				<b>4.0</b>	
<b>1123</b>	<b>6.69</b>	<b>4650</b>	<b>58.8</b>				<b>5.0</b>	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1128</b>	<b>6.70</b>	<b>4670</b>	<b>58.3</b>					<b>6.0</b>	<b>clear</b>

COMMENTS:

INSTRUMENTATION: pH Meter ☒ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_

Water Disposal onsite Sample ID MW-9 Sample Time 1130

**BTEX** VOCs

MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_



# WELL DEVELOPMENT AND SAMPLING LOG

Project No 30003.0      Project Name: BR Groundwater Sampling      Client: Burlington  
 Location: Hampton 4M      Well No: MW-11      Development Sampling  
 Project Manager MJN      Date 3/15/04      Start Time 1347      Weather clear 40s  
 Depth to Water 56.14      Depth to Product na      Product Thickness: na      Measuring Point TOC  
 Water Column Height 15.49      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
15.49 x 0.16	2.53		7.58

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1437</b>	<b>7.33</b>	<b>3870</b>	<b>62.3</b>				<b>1</b>	<b>clear</b>
	<b>6.87</b>	<b>3680</b>	<b>58.7</b>				<b>2</b>	
<b>1450</b>	<b>6.78</b>	<b>3610</b>	<b>56.7</b>				<b>3</b>	
	<b>7.15</b>	<b>3580</b>	<b>55.9</b>				<b>4</b>	
<b>1457</b>	<b>6.91</b>	<b>3580</b>	<b>55.5</b>				<b>5</b>	
	<b>6.86</b>	<b>3540</b>	<b>55.6</b>				<b>6</b>	
	<b>6.8</b>	<b>3440</b>	<b>55.9</b>				<b>7</b>	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1508</b>	<b>6.86</b>	<b>3670</b>	<b>55.5</b>					<b>8.0</b>	<b>clear</b>

COMMENTS: Pump depleting well

INSTRUMENTATION: pH Meter ☒      Temperature Meter ☒  
                                  DO Monitor      Other \_\_\_\_\_  
                                  Conductivity Meter ☒

Water Disposal onsite      Sample ID MW-11      Sample Time 1510

**BTEX** VOCs

MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: Hampton 4M    Well No: MW-12    Development Sampling  
 Project Manager MJN    Date 3/15/04    Start Time 1240    Weather clear 40s  
 Depth to Water 24.26    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 11.81    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐  
 Bottom Valve Bailer    Double Check Valve ☐ Bailer    Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
11.81 x 0.16	1.93		5.78

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1240</b>	<b>3.9</b>	<b>4510</b>	<b>61.5</b>				<b>0.5</b>	<b>Clear</b>
<b>1244</b>	<b>5.08</b>	<b>4610</b>	<b>59.2</b>				<b>1.0</b>	
<b>1247</b>	<b>3.7</b>	<b>4430</b>	<b>57.7</b>				<b>2.0</b>	
	<b>4.2</b>	<b>4690</b>	<b>57.9</b>				<b>3.0</b>	
<b>1252</b>	<b>4.0</b>	<b>4440</b>	<b>58.1</b>				<b>4.0</b>	

<b>Final:</b>	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1255</b>	<b>4.12</b>	<b>4480</b>	<b>58.1</b>					<b>6.0</b>	<b>clear</b>

COMMENTS:

INSTRUMENTATION:    pH Meter ☒    \_\_\_\_\_    Temperature Meter ☒  
                                  DO Monitor    \_\_\_\_\_    Other \_\_\_\_\_  
                                  Conductivity Meter ☒    \_\_\_\_\_

Water Disposal onsite    Sample ID MW-12    Sample Time 1258

**BTEX** VOCs

MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No 30003.0      Project Name BR Groundwater Sampling      Client: Burlington  
 Location: Hampton 4M      Well No: MW-15      Development Sampling  
 Project Manager MJN      Date 3/15/04      Start Time 1010      Weather clear 40s  
 Depth to Water 18.75      Depth to Product na      Product Thickness: na      Measuring Point TOC  
 Water Column Height 8.54      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
8.54 x 0.16	1.39		4.18

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1022</b>	<b>4.98</b>	<b>5190</b>	<b>56.9</b>				<b>1.0</b>	<b>silty</b>
<b>1025</b>	<b>4.72</b>	<b>5070</b>	<b>58.2</b>				<b>2.0</b>	
	<b>4.57</b>	<b>5080</b>	<b>58.7</b>				<b>3.0</b>	
<b>1030</b>	<b>4.53</b>	<b>4880</b>	<b>58.8</b>				<b>4.0</b>	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1033</b>	<b>4.50</b>	<b>4860</b>	<b>58.8</b>					<b>5.0</b>	<b>silty</b>

COMMENTS:

INSTRUMENTATION: pH Meter ☒      Temperature Meter ☒  
                                  DO Monitor      Other \_\_\_\_\_  
                                  Conductivity Meter ☒

Water Disposal onsite      Sample ID MW-15      Sample Time 1038

**BTEX** VOCs

MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name: BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-16 Development **Sampling**  
 Project Manager MJN Date 3/15/04 Start Time 1150 Weather clear 40s  
 Depth to Water 24.79 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 6.81 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer ☒ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.81 x 0.65	4.43		13.28

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1150</b>	<b>5.54</b>	<b>4160</b>	<b>61.9</b>				<b>0.5</b>	<b>Heavy hydrocarbon odor</b>
<b>1153</b>	<b>4.3</b>	<b>4020</b>	<b>59.7</b>				<b>1.0</b>	
<b>1155</b>	<b>3.49</b>	<b>4190</b>	<b>58.6</b>				<b>2.0</b>	
<b>1157</b>	<b>2.94</b>	<b>4400</b>	<b>57.5</b>				<b>4.0</b>	
<b>1201</b>	<b>2.04</b>	<b>4390</b>	<b>57.3</b>				<b>5.0</b>	
<b>1204</b>	<b>2.39</b>	<b>4600</b>	<b>57.9</b>				<b>7.0</b>	<b>Bailing dry</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1213</b>	<b>3.25</b>	<b>4730</b>	<b>56.9</b>					<b>8.0</b>	<b>clear</b>

COMMENTS: well bailed dry

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite Sample ID MW-16 Sample Time 1222  
**BTEX** VOCs  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# CHAIN of CUSTODY

**Report to:**

Name: Tregg Wurtz  
Company: Burlington Res.  
E-mail:

Address: 3401 E. 30TH ST  
Farmington 87499  
Telephone: 505 326 9700

**Copy of Report to:**

Name: \_\_\_\_\_  
Company: \_\_\_\_\_

E-mail: \_\_\_\_\_  
Telephone: \_\_\_\_\_

**Invoice to:**

Name: SAME AS ABOVE  
Company:  
E-mail:

Address: \_\_\_\_\_  
 \_\_\_\_\_  
 Telephone: \_\_\_\_\_

COPY

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES	
NO	

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

**is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.**

## PROJECT INFORMATION

## ANALYSES REQUESTED (attach list or use quote number)

Quote #:
Project/PO #: N/ISC - GWD Sampling
Shipping Co.:
Tracking #:
Reporting state for compliance testing:
Are any samples NRC licensable material?

# of Containers

679

SAMPLE IDENTIFICATION	DATE: TIME	Matrix
-----------------------	------------	--------

MARLOTE MW-2	3-15-04	0835	GW BZO	2
HAMPTON MW-1	3-15-04	0958	GW	2
HAMPTON MW-15	3-15-04	1038	GW	2
HAMPTON MW-9	3-15-04	1130	GW	2
HAMPTON MW-16	3-15-04	1222	GW	2
HAMPTON MW-12	3-15-04	1258	GW	2
HAMPTON SEEP	3-15-04	1312	GW	2
HAMPTON MW-5	3-15-04	1345	GW	2
HAMPTON MW-7	3-15-04	1422	GW	2
HAMPTON MW-11	3-15-04	1510	GW	2

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify) \_\_\_\_\_

## REMARKS

Please provide a separate report for each location, Hampton, Marclote, Cozzens, Flower Vista

**RELINQUISHED BY:**

DATE: TIME:

RECEIVED BY:

DATE: TIME:

Page

<del>DNS</del> (NEE)	3-16-04 0945	CM	3/17/04 1009
----------------------	--------------	----	--------------

Of

L44980: Page 15 of 15

Gregg Wurtz  
Burlington Resources, Inc.  
3401 E. 30th St. PO BOX 4289  
Farmington, NM 87402-4289

March 31, 2004

Project ID: MISC. GW SAMPLING  
ACZ Project ID: L44980

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 17, 2004. This project has been assigned to ACZ's project number, L44980. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 10.0. The enclosed results relate only to the samples received under L44980. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after April 30, 2004. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.

31/Mar/04

Sue Barkey, Project Manager, has reviewed and approved this report in its entirety.



**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING

Sample ID: HAMPTON MW-1

ACZ Sample ID: **L44980-01**

Date Sampled: 03/15/04 9:58

Date Received: 03/17/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**Analyst: *jj*

Extract Date: 03/26/04 15:11

Analysis Date: 03/26/04 15:11

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	Xc	Units	MDL	PQL
Benzene	000071-43-2		U	*	ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	%Recovery	Xc	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	97.2		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING  
Sample ID: HAMPTON SEEP

ACZ Sample ID: **L44980-06**  
Date Sampled: 03/15/04 13:12  
Date Received: 03/17/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: *jj*  
Extract Date: 03/26/04 20:11  
Analysis Date: 03/26/04 20:11  
Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XC	Units	MDL	PQL
Benzene	000071-43-2		U	*	ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XC	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	98.6		%	83	117



**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING

Sample ID: HAMPTON MW-5

ACZ Sample ID: **L44980-07**

Date Sampled: 03/15/04 13:45

Date Received: 03/17/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**Analyst: *jj*

Extract Date: 03/26/04 20:53

Analysis Date: 03/26/04 20:53

Dilution Factor: 100

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	1370		*	ug/L	30	100
Ethylbenzene	000100-41-4	660			ug/L	20	100
m p Xylene	01330 20 7	7020			ug/L	40	200
o Xylene	00095-47-6	1690			ug/L	20	100
Toluene	000108-88-3	8100			ug/L	20	100

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	101		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING

Sample ID: HAMPTON MW-7

ACZ Sample ID: **L44980-08**

Date Sampled: 03/15/04 14:20

Date Received: 03/17/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 03/29/04 17:07

Analysis Date: 03/29/04 17:07

Dilution Factor: 5

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	56			ug/L	2	5
Ethylbenzene	000100-41-4	6			ug/L	1	5
m p Xylene	01330 20 7		U		ug/L	2	10
o Xylene	00095-47-6	3	J		ug/L	1	5
Toluene	000108-88-3	1	J		ug/L	1	5

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	103.5		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING

Sample ID: HAMPTON MW-9

ACZ Sample ID: **L44980-03**

Date Sampled: 03/15/04 11:30

Date Received: 03/17/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**Analyst: *jj*

Extract Date: 03/26/04 17:19

Analysis Date: 03/26/04 17:19

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U	*	ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	97.8		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING

Sample ID: HAMPTON MW-11

ACZ Sample ID: **L44980-09**

Date Sampled: 03/15/04 15:10

Date Received: 03/17/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**Analyst: *jj*

Extract Date: 03/26/04 22:20

Analysis Date: 03/26/04 22:20

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U	*	ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	96.1		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING  
 Sample ID: HAMPTON MW-12

ACZ Sample ID: **L44980-05**  
 Date Sampled: 03/15/04 12:58  
 Date Received: 03/17/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: *jj*  
 Extract Date: 03/26/04 18:45  
 Analysis Date: 03/26/04 18:45  
 Dilution Factor: 50

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	2090		*	ug/L	20	50
Ethylbenzene	000100-41-4	300			ug/L	10	50
m p Xylene	01330 20 7	1050			ug/L	20	100
o Xylene	00095-47- 6	200			ug/L	10	50
Toluene	000108-88-3	1120			ug/L	10	50

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	108.9		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING  
 Sample ID: HAMPTON MW-15

ACZ Sample ID: **L44980-02**  
 Date Sampled: 03/15/04 10:38  
 Date Received: 03/17/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: *jj*  
 Extract Date: 03/26/04 16:36  
 Analysis Date: 03/26/04 16:36  
 Dilution Factor: 1

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U	*	ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3	0.3	J		ug/L	0.2	1

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	95.8		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC. GW SAMPLING  
 Sample ID: HAMPTON MW-16

ACZ Sample ID: **L44980-04**  
 Date Sampled: 03/15/04 12:22  
 Date Received: 03/17/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: *jj*  
 Extract Date: 03/26/04 18:02  
 Analysis Date: 03/26/04 18:02  
 Dilution Factor: 100

Compound

Compound	CAS	Result	QUAL	Xo	Units	MDL	RQL
Benzene	000071-43-2	9200		*	ug/L	30	100
Ethylbenzene	000100-41-4	1310			ug/L	20	100
m p Xylene	01330 20 7	9810			ug/L	40	200
o Xylene	00095-47-6	2190			ug/L	20	100
Toluene	000108-88-3	16000			ug/L	20	100

Surrogate Recoveries

Surrogate	CAS	% Recovery	Xo	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	99.6		%	83	117

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality control sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Organic analyses are reported on an "as received" basis.



Burlington Resources, Inc.

ACZ Project ID: **L44980**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L44980-01	WG169653	Benzene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L44980-02	WG169653	Benzene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L44980-03	WG169653	Benzene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L44980-04	WG169653	Benzene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L44980-05	WG169653	Benzene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L44980-06	WG169653	Benzene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L44980-07	WG169653	Benzene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L44980-09	WG169653	Benzene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.

**Burlington Resources, Inc.**  
MISC. GW SAMPLING

ACZ Project ID: L44980  
Date Received: 3/17/2004  
Received By: coryd

**Receipt Verification**

- 1) Does this project require special handling procedures such as CLP protocol?
- 2) Are the custody seals on the cooler intact?
- 3) Are the custody seals on the sample containers intact?
- 4) Is there a Chain of Custody or other directive shipping papers present?
- 5) Is the Chain of Custody complete?
- 6) Is the Chain of Custody in agreement with the samples received?
- 7) Is there enough sample for all requested analyses?
- 8) Are all samples within holding times for requested analyses?
- 9) Were all sample containers received intact?
- 10) Are the temperature blanks present?
- 11) Are the trip blanks (VOA and/or Cyanide) present?
- 12) Are samples requiring no headspace, headspace free?
- 13) Do the samples that require a Foreign Soils Permit have one?

YES	NO	NA
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Exceptions: If you answered no to any of the above questions, please describe**

N/A

**Contact: (For any discrepancies, the client must be contacted)**

N/A

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (µR/hr)
ACZ	0.4	12

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

**Notes**

**Burlington Resources, Inc.**  
MISC. GW SAMPLING

ACZ Project ID: L44980  
Date Received: 3/17/2004  
Received By: coryd

**Sample Container Preservation**

SAMPLE	CLIENT ID	R < 2	G < 2	Y < 2	YG < 2	B < 2	BG < 2	O < 2	T > 12	P > 12	N/A	RAD
L44980-01	HAMPTON MW-1										Ö	
L44980-02	HAMPTON MW-15										Ö	
L44980-03	HAMPTON MW-9										Ö	
L44980-04	HAMPTON MW-16										Ö	
L44980-05	HAMPTON MW-12										Ö	
L44980-06	HAMPTON MW-SEEP										Ö	
L44980-07	HAMPTON MW-5										Ö	
L44980-08	HAMPTON MW-7										Ö	
L44980-09	HAMPTON MW-11										Ö	

**Sample Container Preservation Legend**

Abbreviation	Description	Container Type	Preservative/Limits
B	Filtered/Sulfuric	BLUE	pH must be < 2
BG	Filtered/Sulfuric	BLUE GLASS	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0      Project Name: Groundwater sampling      Client: Burlington Resources  
 Location: Hampton 4M      Well No: Seep      Development **Sampling**  
 Project Manager MJN      Date 6/21/04      Start Time 1145      Weather sunny 80s  
 Depth to Water \_\_\_\_\_ Depth to Product na      Product Thickness na      Measuring Point TOC  
 Water Column Height \_\_\_\_\_ Well Dia. \_\_\_\_\_

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐  
                          Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (oz)	Comments/ Flow rate

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b><u>1145</u></b>									

COMMENTS: seep water was clear, collected grab sample

INSTRUMENTATION:      pH Meter ☒      \_\_\_\_\_      Temperature Meter ☒  
                                  DO Monitor      \_\_\_\_\_      Other \_\_\_\_\_  
                                  Conductivity Meter ☒      \_\_\_\_\_  
 Water Disposal onsite      Sample ID Hampton 4M Seep      Sample Time 1145  
 Analysis **BTEX**  
 MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0      Project Name: Groundwater sampling      Client: Burlington Resources  
 Location: Hampton 4M      Well No: TMW-1      Development **Sampling**  
 Project Manager MJN      Date 6/21/04      Start Time 1215      Weather cloudy 80s  
 Depth to Water 18.85      Depth to Product na      Product Thickness na      Measuring Point TOC  
 Water Column Height 0.75      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
0.75 x 16	.12		.36

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
<b>1215</b>	<b>5.35</b>	<b>3130</b>	<b>72.4</b>				<b>0.09</b>	<b>clear</b>
<b>1217</b>	<b>5.60</b>	<b>2860</b>	<b>71.0</b>				<b>0.13</b>	<b>well has bailed down</b>

<b>Final:</b> Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1217</b>	<b>5.60</b>	<b>2860</b>	<b>71.0</b>					<b>0.13</b>	<b>well has bailed down</b>

COMMENTS:

INSTRUMENTATION:      pH Meter ☒      \_\_\_\_\_      Temperature Meter ☒  
                                  DO Monitor      \_\_\_\_\_      Other \_\_\_\_\_  
                                  Conductivity Meter ☒      \_\_\_\_\_

Water Disposal onsite      Sample ID na      Sample Time 1220

Analysis **BTEX**

MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: \_\_\_\_\_ Project Name BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-1 Development Sampling  
 Project Manager MJN Date 6/21/04 Start Time 0840 Weather clear 70s  
 Depth to Water 43.45 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 6.09 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.09 x 0.16	0.99		2.98

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>0840</b>	<b>4.5</b>	<b>1440</b>	<b>61.0</b>				<b>0.25</b>	<b>clear</b>
	<b>4.22</b>	<b>1480</b>	<b>57.8</b>				<b>0.5</b>	<b>cloudy</b>
	<b>4.16</b>	<b>1510</b>	<b>56.8</b>				<b>0.75</b>	<b>cloudy</b>
	<b>4.15</b>	<b>1480</b>	<b>56.8</b>				<b>2</b>	<b>cloudy</b>
	<b>4.11</b>	<b>1620</b>	<b>56.6</b>				<b>2.25</b>	<b>cloudy</b>
	<b>4.10</b>	<b>1620</b>	<b>56.3</b>				<b>2.5</b>	<b>cloudy</b>
	<b>4.11</b>	<b>1630</b>	<b>56.4</b>				<b>2.75</b>	<b>cloudy</b>
<b>0857</b>	<b>4.10</b>	<b>1620</b>	<b>56.2</b>				<b>3.0</b>	<b>cloudy</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>0857</b>	<b>4.10</b>	<b>1620</b>	<b>56.2</b>					<b>3.0</b>	<b>cloudy</b>

COMMENTS:

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_

Water Disposal onsite \_\_\_\_\_ Sample ID MW-1 Sample Time 0900

Analysis BTEX

MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name: BR Groundwater Sampling    Client: Burlington  
 Location: Hampton 4M    Well No: MW-5    Development Sampling  
 Project Manager MJN    Date 6/21/04    Start Time 1152    Weather clear 70s  
 Depth to Water 15.48    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 6.71    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐  
 Bottom Valve Bailer    Double Check Valve ☐ Bailer    Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.71 x 0.16	1.10		3.30

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1152</b>	<b>3.71</b>	<b>3070</b>	<b>72.3</b>				<b>0.25</b>	<b>black</b>
	<b>1.17</b>	<b>2230</b>	<b>65.3</b>				<b>0.5</b>	
	<b>1.0</b>	<b>2150</b>	<b>64.2</b>				<b>0.75</b>	
	<b>0.95</b>	<b>2170</b>	<b>63.8</b>				<b>1.0</b>	<b>well is bailing down</b>
	<b>0.96</b>	<b>2170</b>	<b>62.7</b>				<b>2</b>	
<b>1203</b>	<b>1.11</b>	<b>2160</b>	<b>62.3</b>				<b>2.25</b>	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1203</b>	<b>1.11</b>	<b>2160</b>	<b>62.3</b>					<b>2.25</b>	

COMMENTS: well bailing down

INSTRUMENTATION:    pH Meter ☒    \_\_\_\_\_    Temperature Meter ☒  
                                  DO Monitor    \_\_\_\_\_    Other \_\_\_\_\_  
                                  Conductivity Meter ☒    \_\_\_\_\_  
 Water Disposal onsite    Sample ID MW-5    Sample Time 1205  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: Hampton 4M    Well No: MW-7    Development Sampling  
 Project Manager MJN    Date 6/21/04    Start Time 1237    Weather clear 80s  
 Depth to Water 19.70    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 0.5    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐  
 Bottom Valve Bailer    Double Check Valve ☐ Bailer    Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
2.05 x 0.16	0.08		30.72

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. ( oz)	Comments/ Flow rate
<b>1237</b>	<b>4.27</b>	<b>2450</b>	<b>70.1</b>				<b>12</b>	<b>clear</b>
	<b>3.06</b>	<b>2380</b>	<b>62.3</b>				<b>16</b>	
	<b>2.42</b>	<b>2390</b>	<b>59.9</b>				<b>24</b>	
<b>1242</b>	<b>2.61</b>	<b>2760</b>	<b>61.3</b>				<b>30</b>	<b>well has bailed dry</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1242</b>	<b>2.61</b>	<b>2760</b>	<b>61.3</b>					<b>30</b>	<b>well has bailed dry</b>

COMMENTS: well bailing down

INSTRUMENTATION: pH Meter ☒    Temperature Meter ☒  
                                  DO Monitor    Other \_\_\_\_\_  
                                  Conductivity Meter ☒

Water Disposal onsite    Sample ID MW-7    Sample Time 1247  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_



# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: : Hampton 4M    Well No: MW-9    Development Sampling  
 Project Manager MJN    Date 6/21/04    Start Time 1105    Weather clear 70s  
 Depth to Water 22.72    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 11.83    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐

Bottom Valve Bailer    Double Check Valve ☐ Bailer    Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
11.83 x 0.16	1.93		5.79

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>0953</b>	<b>6.62</b>	<b>2180</b>	<b>66.5</b>				<b>0.25</b>	<b>clear</b>
	<b>6.10</b>	<b>2100</b>	<b>62.8</b>				<b>0.5</b>	<b>clear</b>
	<b>6.29</b>	<b>2080</b>	<b>60.6</b>				<b>0.75</b>	<b>cloudy</b>
	<b>6.06</b>	<b>2040</b>	<b>59.6</b>				<b>2</b>	<b>cloudy</b>
	<b>6.12</b>	<b>2040</b>	<b>60.1</b>				<b>3</b>	<b>cloudy</b>
	<b>6.06</b>	<b>2070</b>	<b>59.9</b>				<b>4</b>	<b>cloudy</b>
	<b>6.02</b>	<b>2080</b>	<b>60.1</b>				<b>5</b>	<b>cloudy</b>
	<b>6.08</b>	<b>2060</b>	<b>60.1</b>				<b>5.5</b>	<b>cloudy</b>
	<b>6.09</b>	<b>2070</b>	<b>60.1</b>				<b>5.75</b>	<b>cloudy</b>
<b>1012</b>	<b>6.04</b>	<b>2060</b>	<b>60.3</b>				<b>6.0</b>	<b>cloudy</b>

<b>Final:</b>	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>Time</b>	<b>6.04</b>	<b>2060</b>	<b>60.3</b>					<b>6.0</b>	<b>cloudy</b>
<b>1012</b>									

COMMENTS:

INSTRUMENTATION:    pH Meter ☒    \_\_\_\_\_    Temperature Meter ☒ \_\_\_\_\_  
                                  DO Monitor    \_\_\_\_\_    Other    \_\_\_\_\_  
                                  Conductivity Meter ☒    \_\_\_\_\_  
 Water Disposal onsite    Sample ID MW-9    Sample Time 1014  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No 30003.0      Project Name: BR Groundwater Sampling      Client: Burlington  
 Location: Hampton 4M      Well No: MW-11      Development Sampling  
 Project Manager MJN      Date 6/21/04      Start Time 1255      Weather clear 80s  
 Depth to Water 56.14      Depth to Product na      Product Thickness: na      Measuring Point TOC  
 Water Column Height 15.49      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
15.49 x 0.16	2.53		7.58

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
1255	5.74	1591	68.6				.25	clear
	5.31	1490	64.2				.5	clear
	5.22	1490	62.5				.75	clear
	5.94	1520	63				2	clear
	5.68	1470	63				3	clear
	5.86	1500	64				4	clear
	5.92	1610	63.7				6	clear
	5.40	1590	63.5				7	clear
	5.41	1590	63.1				7.25	clear
1325	5.40	1560	63.1				7.5	clear

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1325	5.40	1560	63.1					7.5	clear

COMMENTS: Pump depleting well

INSTRUMENTATION: pH Meter ☒      Temperature Meter ☒  
                          DO Monitor ☐      Other ☐  
                          Conductivity Meter ☒

Water Disposal onsite      Sample ID MW-11      Sample Time 1327

Analysis BTEX

MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: Hampton 4M    Well No: MW-12    Development Sampling  
 Project Manager MJN    Date 6-21-04    Start Time 1107    Weather clear 70s  
 Depth to Water 24.30    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 11.77    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐  
                          Bottom Valve Bailer                                      Double Check Valve ☐ Bailer                                      Stainless-Steel Kemr ☐ Bailer

Criteria:    3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
11.77 x 0.16	1.92		5.76

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1107</b>	<b>5.62</b>	<b>830</b>	<b>71.2</b>				<b>0.25</b>	<b>gray</b>
	<b>4.41</b>	<b>810</b>	<b>66.4</b>				<b>1</b>	<b>gray</b>
	<b>3.32</b>	<b>2100</b>	<b>64.8</b>				<b>2</b>	<b>gray</b>
	<b>2.82</b>	<b>2100</b>	<b>64.3</b>				<b>3</b>	<b>gray</b>
	<b>2.40</b>	<b>2190</b>	<b>64.4</b>				<b>5</b>	<b>gray</b>
	<b>2.59</b>	<b>2310</b>	<b>64.8</b>				<b>5.25</b>	<b>gray</b>
	<b>2.51</b>	<b>2240</b>	<b>64.1</b>				<b>5.5</b>	<b>gray</b>
<b>1128</b>	<b>2.57</b>	<b>2300</b>	<b>64.7</b>				<b>5.75</b>	<b>gray</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1128</b>	<b>2.57</b>	<b>2300</b>	<b>64.7</b>					<b>5.75</b>	<b>gray</b>

COMMENTS:

INSTRUMENTATION:    pH Meter ☒    \_\_\_\_\_    Temperature Meter ☒  
                                  DO Monitor    \_\_\_\_\_    Other \_\_\_\_\_  
                                  Conductivity Meter ☒    \_\_\_\_\_

Water Disposal onsite                                      Sample ID MW-12    Sample Time 1130

Analysis BTEX

MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: Hampton 4M    Well No: MW-15    Development Sampling  
 Project Manager MJN    Date 6/21/04    Start Time 0915    Weather clear 70s  
 Depth to Water 18.25    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 9.04    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐

Bottom Valve Bailer ☒    Double Check Valve Bailer ☐    Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
9.04 x 0.16	1.48		4.43

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
<b>0915</b>	<b>3.75</b>	<b>2040</b>	<b>57.1</b>				<b>0.2</b>	<b>clear</b>
	<b>3.75</b>	<b>2060</b>	<b>56.6</b>				<b>0.4</b>	<b>cloudy</b>
	<b>3.62</b>	<b>2080</b>	<b>56.3</b>				<b>0.56</b>	<b>cloudy</b>
	<b>3.58</b>	<b>2030</b>	<b>56.0</b>				<b>1</b>	<b>cloudy</b>
	<b>3.55</b>	<b>2040</b>	<b>56.2</b>				<b>2</b>	<b>cloudy</b>
	<b>3.55</b>	<b>2080</b>	<b>56.4</b>				<b>3</b>	<b>cloudy</b>
	<b>3.54</b>	<b>2040</b>	<b>56.4</b>				<b>4</b>	<b>cloudy</b>
	<b>3.55</b>	<b>2020</b>	<b>56.6</b>				<b>4.25</b>	<b>cloudy</b>
	<b>3.53</b>	<b>2020</b>	<b>56.5</b>				<b>4.5</b>	<b>cloudy</b>
<b>0937</b>	<b>3.53</b>	<b>2030</b>	<b>56.4</b>				<b>4.75</b>	<b>cloudy</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>0937</b>	<b>3.53</b>	<b>2030</b>	<b>56.4</b>					<b>4.75</b>	<b>cloudy</b>

COMMENTS:

INSTRUMENTATION: pH Meter ☒    Temperature Meter ☒  
                          DO Monitor ☐    Other ☐  
                          Conductivity Meter ☒

Water Disposal onsite    Sample ID MW-15    Sample Time 1040

Analysis BTEX

MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name: BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-16 Development Sampling  
 Project Manager MJN Date 6/21/04 Start Time 1027 Weather clear 70s  
 Depth to Water 24.76 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 6.84 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer ☒ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.84 x 0.65	4.45		13.34

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1027</b>	<b>5.77</b>	<b>1730</b>	<b>71.0</b>				<b>.5</b>	<b>Heavy hydrocarbon odor</b>
	<b>4.04</b>	<b>1900</b>	<b>62.9</b>				<b>2</b>	
	<b>5.10</b>	<b>1510</b>	<b>61.0</b>				<b>4</b>	
	<b>5.13</b>	<b>2020</b>	<b>60.3</b>				<b>4.5</b>	<b>well is bailing down</b>
	<b>5.10</b>	<b>2040</b>	<b>60.4</b>				<b>4.75</b>	
<b>1048</b>	<b>5.0</b>	<b>2070</b>	<b>59.9</b>				<b>5</b>	<b>well has bailed dry</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1048</b>	<b>5.0</b>	<b>2070</b>	<b>59.9</b>					<b>5</b>	<b>well has bailed dry</b>

COMMENTS: well bailed dry

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite Sample ID MW-16 Sample Time 1050  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_



Gregg Wurtz  
Burlington Resources, Inc.  
3401 E. 30th St. PO BOX 4289  
Farmington, NM 87402-4289

July 12, 2004

Project ID: MISC SAMPLING  
ACZ Project ID: L46371

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 24, 2004. This project has been assigned to ACZ's project number, L46371. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 10.0. The enclosed results relate only to the samples received under L46371. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after August 12, 2004. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.

12/Jul/04

Sue Barkey, Project Manager, has reviewed and approved this report in its entirety.



**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
 Sample ID: SEEP HAMPTONS

ACZ Sample ID: **L46371-06**  
 Date Sampled: 06/21/04 11:45  
 Date Received: 06/24/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: km  
 Extract Date: 06/29/04 16:35  
 Analysis Date: 06/29/04 16:35  
 Dilution Factor: 1

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U	*	ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	98.6		%	83	117



**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
Sample ID: TMW-1 HAMPTONS

ACZ Sample ID: **L46371-08**  
Date Sampled: 06/21/04 12:20  
Date Received: 06/24/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: km  
Extract Date: 06/29/04 18:44  
Analysis Date: 06/29/04 18:44  
Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	Xc	Units	MDL	PQL
Benzene	000071-43-2	40.6		*	ug/L	0.3	1
Ethylbenzene	000100-41-4	14.1			ug/L	0.2	1
m p Xylene	01330 20 7	7.9			ug/L	0.4	2
o Xylene	00095-47- 6	6.8			ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	Xc	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	110.7		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
Sample ID: MW-1 HAMPTONS

ACZ Sample ID: **L46371-01**  
Date Sampled: 06/21/04 9:00  
Date Received: 06/24/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: km  
Extract Date: 06/29/04 12:18  
Analysis Date: 06/29/04 12:18  
Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U	*	ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	95.4		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
Sample ID: MW-5 HAMPTONS

ACZ Sample ID: **L46371-07**  
Date Sampled: 06/21/04 12:05  
Date Received: 06/24/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: km  
Extract Date: 06/29/04 18:00  
Analysis Date: 06/29/04 18:00  
Dilution Factor: 50

Compound

Compound	CAS	Result	QUAL	Xc	Units	MDL	PQL
Benzene	000071-43-2	1610		*	ug/L	20	50
Ethylbenzene	000100-41-4	640			ug/L	10	50
m p Xylene	01330 20 7	6530			ug/L	20	100
o Xylene	00095-47- 6	1690			ug/L	10	50
Toluene	000108-88-3	8740			ug/L	10	50

Surrogate Recoveries

Surrogate	CAS	% Recovery	Xc	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	105		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
Sample ID: MW-7 HAMPTONS

ACZ Sample ID: **L46371-09**  
Date Sampled: 06/21/04 12:47  
Date Received: 06/24/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: km  
Extract Date: 07/01/04 21:18  
Analysis Date: 07/01/04 21:18  
Dilution Factor: 20

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	180			ug/L	6	20
Ethylbenzene	000100-41-4	55			ug/L	4	20
m p Xylene	01330 20 7	27	J		ug/L	8	40
o Xylene	00095-47-6	31			ug/L	4	20
Toluene	000108-88-3		U		ug/L	4	20

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	104.2		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
Sample ID: MW-9 HAMPTONS

ACZ Sample ID: **L46371-03**  
Date Sampled: 06/21/04 10:14  
Date Received: 06/24/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: km  
Extract Date: 06/29/04 14:27  
Analysis Date: 06/29/04 14:27  
Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U	*	ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	96.4		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
Sample ID: MW-12 HAMPTONS

ACZ Sample ID: **L46371-05**  
Date Sampled: 06/21/04 11:30  
Date Received: 06/24/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km  
Extract Date: 06/29/04 15:52  
Analysis Date: 06/29/04 15:52  
Dilution Factor: 50

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	3870			ug/L	20	50
Ethylbenzene	000100-41-4	280			ug/L	10	50
m p Xylene	01330 20 7	1280		*	ug/L	20	100
o Xylene	00095-47-6	220			ug/L	10	50
Toluene	000108-88-3	1820			ug/L	10	50

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	101.9		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
Sample ID: MW-15 HAMPTONS

ACZ Sample ID: **L46371-02**  
Date Sampled: 06/21/04 9:40  
Date Received: 06/24/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: km  
Extract Date: 06/29/04 13:44  
Analysis Date: 06/29/04 13:44  
Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U	*	ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	97.1		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
Sample ID: MW-16 HAMPTONS

ACZ Sample ID: **L46371-04**  
Date Sampled: 06/21/04 10:50  
Date Received: 06/24/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: km  
Extract Date: 06/29/04 15:09  
Analysis Date: 06/29/04 15:09  
Dilution Factor: 100

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	8040			ug/L	30	100
Ethylbenzene	000100-41-4	2450			ug/L	20	100
m p Xylene	01330 20 7	15000		*	ug/L	40	200
o Xylene	00095-47-6	3580			ug/L	20	100
Toluene	000108-88-3	18100			ug/L	20	100

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	116.1		%	83	117



**Burlington Resources, Inc.**

Project ID: MISC SAMPLING  
 Sample ID: TRIP BLANK 061104-03

ACZ Sample ID: **L46371-11**  
 Date Sampled: 06/21/04 13:30  
 Date Received: 06/24/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: km  
 Extract Date: 06/29/04 20:53  
 Analysis Date: 06/29/04 20:53  
 Dilution Factor: 1

Compound

Compound	CAS	Result	QUAL	Xc	Units	MDL	PQL
Benzene	000071-43-2		U	*	ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

Surrogate Recoveries

Surrogate	CAS	% Recovery	Xc	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	98.4		%	83	117

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality control sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Organic analyses are reported on an "as received" basis.

Burlington Resources, Inc.

ACZ Project ID: **L46371**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L46371-01	WG174234	m p Xylene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-02	WG174234	m p Xylene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-03	WG174234	m p Xylene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-04	WG174234	m p Xylene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-05	WG174234	m p Xylene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-06	WG174234	m p Xylene	M8021B GC/PID	V7	Calibration verification recovery was above the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-07	WG174234	Benzene	M8021B GC/PID	V8	Calibration verification recovery was below the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-08	WG174234	Benzene	M8021B GC/PID	V8	Calibration verification recovery was below the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-10	WG174234	Benzene	M8021B GC/PID	V8	Calibration verification recovery was below the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.
L46371-11	WG174234	Benzene	M8021B GC/PID	V8	Calibration verification recovery was below the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.

**Burlington Resources, Inc.**  
MISC SAMPLING

ACZ Project ID: L46371  
Date Received: 6/24/2004  
Received By:

**Receipt Verification**

- 1) Does this project require special handling procedures such as CLP protocol?
- 2) Are the custody seals on the cooler intact?
- 3) Are the custody seals on the sample containers intact?
- 4) Is there a Chain of Custody or other directive shipping papers present?
- 5) Is the Chain of Custody complete?
- 6) Is the Chain of Custody in agreement with the samples received?
- 7) Is there enough sample for all requested analyses?
- 8) Are all samples within holding times for requested analyses?
- 9) Were all sample containers received intact?
- 10) Are the temperature blanks present?
- 11) Are the trip blanks (VOA and/or Cyanide) present?
- 12) Are samples requiring no headspace, headspace free?
- 13) Do the samples that require a Foreign Soils Permit have one?

YES	NO	NA
		X
X		
		X
X		
X		
X		
X		
X		
X		
X		
		X

**Exceptions: If you answered no to any of the above questions, please describe**

N/A

**Contact (For any discrepancies the client must be contacted)**

N/A

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (µR/hr)
ACZ	1.6	15

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

**Notes**

**Burlington Resources, Inc.**  
MISC SAMPLING

ACZ Project ID: L46371  
Date Received: 6/24/2004  
Received By:

**Sample Container Preservation**

SAMPLE	CLIENT ID	R < 2	G < 2	Y < 2	YG < 2	B < 2	BG < 2	O < 2	T > 12	P > 12	N/A	RAD
L46371-01	MW-1 HAMPTONS										0	
L46371-02	MW-15 HAMPTONS										0	
L46371-03	MW-9 HAMPTONS										0	
L46371-04	MW-16 HAMPTONS										0	
L46371-05	MW-12 HAMPTONS										0	
L46371-06	SEEP HAMPTONS										0	
L46371-07	MW-5 HAMPTONS										0	
L46371-08	TMW-1 HAMPTONS										0	
L46371-09	MW-7 HAMPTONS										0	
L46371-10	MW-11 HAMPTONS										0	
L46371-11	TRIP BLANK 061104-03										0	

**Sample Container Preservation Legend**

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 3
B	Filtered/Sulfuric	BLUE	pH must be < 2
BG	Filtered/Sulfuric	BLUE GLASS	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

# ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of  
CUSTODY

## Report to

Name: GREGG WURTZ

Company: BURLINGTON RESOURCES

E-mail:

Address: 3401 EAST 30TH ST.

TAMMINGTON NM 87499

Telephone: 505 326 9700

## Copy of Report to

Name:

Company:

E-mail:

Telephone:

## Invoice to

Name: SAME

Company:

E-mail:

Address:

Telephone:

## PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #:

Project/PO #: MISC- GW Sampling

Shipping Co.:

Tracking #:

Reporting State for compliance testing:

# of Containers

BTEX

## SAMPLE IDENTIFICATION

DATE TIME

Matrix

MW-1 Hampton	092904	1200	GW	2	✓														
MW-15 Hampton	092904	1235	GW	2	✓														
MW-9 Hampton	092904	1315	GW	2	✓														
MW-16 Hampton	092904	1405	GW	2	✓														
MW-12 Hampton	092904	1450	GW	2	✓														
SEEP Hampton	092904	1458	GW	2	✓														
MW-5 Hampton	092904	1530	GW	2	✓														
TWIN-1 Hampton	092904	1550	GW	2	✓														
MW-7 Hampton	092904	1610	GW	2	✓														
MW-11 Hampton	092904	1700	GW	2	✓														
TB092104-02 Trip Blank				1	✓														

Matrix

SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

## REMARKS

RELINQUISHED BY

DATE TIME

RECEIVED BY

DATE TIME

PAGE

KE	9/30/04 1300			

Of

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0      Project Name: Groundwater sampling      Client: Burlington Resources  
 Location: Hampton 4M      Well No: Seep      Development **Sampling**  
 Project Manager MJN      Date 9/29/04      Start Time 1458      Weather rain 70s  
 Depth to Water na      Depth to Product na      Product Thickness na      Measuring Point TOC  
 Water Column Height na      Well Dia. na

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐  
                          Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (oz)	Comments/ Flow rate

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b><u>1458</u></b>									

COMMENTS: seep water was clear, collected grab sample

INSTRUMENTATION:      pH Meter ☒      \_\_\_\_\_      Temperature Meter ☒  
                                  DO Monitor      \_\_\_\_\_      Other      \_\_\_\_\_  
                                  Conductivity Meter ☒      \_\_\_\_\_  
 Water Disposal onsite      Sample ID Hampton 4M Seep      Sample Time 1458  
 Analysis **BTEX**  
 MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB tb092104-02

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: \_\_\_\_\_ Project Name BR Groundwater Sampling Client: Burlington  
 Location: : Hampton 4M Well No: MW-1 Development Sampling  
 Project Manager MJN Date 9/29/04 Start Time 1125 Weather clear 70s  
 Depth to Water 43.34 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 6.20 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.20 x 0.16	0.99		2.98

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
<b>1137</b>	<b>6.17</b>	<b>2480</b>	<b>56.7</b>				<b>.25</b>	<b>clear</b>
	<b>5.84</b>	<b>2390</b>	<b>55.9</b>				<b>.5</b>	<b>grey, clear</b>
	<b>5.41</b>	<b>2470</b>	<b>55.5</b>				<b>.75</b>	<b>grey, clear</b>
	<b>6.28</b>	<b>2530</b>	<b>55.6</b>				<b>1</b>	<b>grey, clear</b>
	<b>5.83</b>	<b>2420</b>	<b>55.4</b>				<b>2</b>	<b>grey, clear</b>
	<b>5.62</b>	<b>2440</b>	<b>55.3</b>				<b>3</b>	<b>grey, clear</b>
	<b>5.65</b>	<b>2410</b>	<b>55.2</b>				<b>3.25</b>	<b>grey, clear</b>
<b>1157</b>	<b>5.62</b>	<b>2380</b>	<b>55.1</b>				<b>3.5</b>	<b>grey, clear</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1157</b>	<b>5.62</b>	<b>2380</b>	<b>55.1</b>					<b>3.5</b>	<b>grey, clear</b>

COMMENTS:

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_

Water Disposal onsite Sample ID MW-1 Sample Time 1200

Analysis BTEX

MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB tb092104-02



# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name: BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-5 Development Sampling  
 Project Manager MJN Date 9/29/04 Start Time 1152 Weather rain 70s  
 Depth to Water 16.20 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 5.99 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
5.99 x 0.16	.96		2.88

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1513</b>	<b>3.38</b>	<b>3090</b>	<b>63.5</b>				<b>.25</b>	<b>black, hydrocarbon odor</b>
	<b>3.51</b>	<b>3050</b>	<b>62.0</b>				<b>.5</b>	<b>black, hydrocarbon odor</b>
	<b>2.99</b>	<b>3300</b>	<b>61.4</b>				<b>.75</b>	<b>black, hydrocarbon odor</b>
	<b>3.0</b>	<b>2980</b>	<b>60.8</b>				<b>1</b>	<b>black, hydrocarbon odor</b>
	<b>3.12</b>	<b>2940</b>	<b>60.4</b>				<b>1.25</b>	<b>well is bailing down</b>
<b>1522</b>	<b>2.72</b>	<b>2940</b>	<b>60.6</b>				<b>1.5</b>	<b>well has bailed dry</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1522</b>	<b>2.72</b>	<b>2940</b>	<b>60.6</b>					<b>1.5</b>	<b>well has bailed dry</b>

COMMENTS: well bailing down

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite Sample ID MW-5 Sample Time 1530  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB tb092104-02

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0      Project Name: Groundwater sampling      Client: Burlington Resources  
 Location: Hampton 4M      Well No: TMW-1      Development **Sampling**  
 Project Manager MJN      Date 9/29/04 Start Time 1540      Weather cloudy 70s  
 Depth to Water 19.08      Depth to Product na      Product Thickness na      Measuring Point TOC  
 Water Column Height 0.52      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Ounces to be removed
	Gallons	Ounces	
0.52 x 16	.08	10.65	31.95

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
<b>1543</b>	<b>5.02</b>	<b>2860</b>	<b>59.7</b>				<b>10</b>	<b>blackish, odor</b>
<b>1547</b>	<b>4.89</b>	<b>2800</b>	<b>60.1</b>				<b>12</b>	<b>blackish, odor</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1217</b>	<b>5.60</b>	<b>2860</b>	<b>71.0</b>					<b>0.13</b>	<b>well has bailed down</b>

COMMENTS:

INSTRUMENTATION: pH Meter ☒      Temperature Meter ☒  
                          DO Monitor      Other \_\_\_\_\_  
                          Conductivity Meter ☒      \_\_\_\_\_  
 Water Disposal onsite      Sample ID na      Sample Time 1550  
 Analysis **BTEX**  
 MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB tb092104-02

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-7 Development Sampling  
 Project Manager MJN Date 9/29/04 Start Time 1600 Weather cloudy 70s  
 Depth to Water 20.12 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 0.08 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Ounces to be removed
	Gallons	Ounces	
.08 x 0.16	0.01	1.64	4.92

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. ( oz)	Comments/ Flow rate
<b>1605</b>	<b>2.76</b>	<b>3200</b>	<b>58.8</b>				<b>6</b>	<b>clear, black</b>
<b>1609</b>	<b>3.0</b>	<b>3340</b>	<b>59.6</b>				<b>7</b>	<b>well has bailed down</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
<b>1609</b>	<b>3.0</b>	<b>3340</b>	<b>59.6</b>				<b>7</b>	<b>well has bailed down</b>

COMMENTS: well bailing down

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite Sample ID MW-7 Sample Time 1610  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB tb092104-02

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: : Hampton 4M    Well No: MW-9    Development Sampling  
 Project Manager MJN    Date 9/29/04    Start Time 1249    Weather rain 70s  
 Depth to Water 22.74    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 11.81    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐  
 Bottom Valve Bailer    Double Check Valve ☐ Bailer    Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
11.81 x 0.16	1.89		5.67

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1252</b>	<b>6.79</b>	<b>3860</b>	<b>57.4</b>				<b>.25</b>	<b>light brown</b>
	<b>6.80</b>	<b>3860</b>	<b>57.9</b>				<b>.5</b>	<b>light brown</b>
	<b>6.89</b>	<b>4000</b>	<b>58.0</b>				<b>.75</b>	<b>light brown</b>
	<b>6.59</b>	<b>3760</b>	<b>58.1</b>				<b>1.75</b>	<b>light brown</b>
	<b>6.60</b>	<b>3940</b>	<b>58.1</b>				<b>2.75</b>	<b>light brown</b>
	<b>6.61</b>	<b>4010</b>	<b>58.0</b>				<b>4.75</b>	<b>light brown</b>
	<b>6.60</b>	<b>4030</b>	<b>58.1</b>				<b>5</b>	<b>light brown</b>
	<b>6.61</b>	<b>4000</b>	<b>57.9</b>				<b>5.25</b>	<b>light brown</b>
<b>1309</b>	<b>6.60</b>	<b>4000</b>	<b>58.0</b>				<b>5.5</b>	<b>light brown</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1309</b>	<b>6.60</b>	<b>4000</b>	<b>58.0</b>					<b>5.5</b>	<b>light brown</b>

COMMENTS:

INSTRUMENTATION: pH Meter ☒    Temperature Meter ☒  
                                  DO Monitor    Other \_\_\_\_\_  
                                  Conductivity Meter ☒

Water Disposal onsite    Sample ID MW-9    Sample Time 1315  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB tb092104-02

# WELL DEVELOPMENT AND SAMPLING LOG

Project No 30003.0      Project Name: BR Groundwater Sampling      Client: Burlington  
 Location: Hampton 4M      Well No: MW-11      Development Sampling  
 Project Manager MJN      Date 9/29/04      Start Time 1618      Weather cloudy 70s  
 Depth to Water 56.15      Depth to Product na      Product Thickness: na      Measuring Point TOC  
 Water Column Height 15.48      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
15.48x 0.16	2.53		7.58

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1628</b>	<b>4.2</b>	<b>1950</b>	<b>58.2</b>				<b>0.25</b>	<b>clear</b>
	<b>4.65</b>	<b>1970</b>	<b>57.8</b>				<b>0.5</b>	<b>clear brown</b>
	<b>5.54</b>	<b>1950</b>	<b>58.0</b>				<b>0.75</b>	<b>clear brown</b>
	<b>6.16</b>	<b>1920</b>	<b>58.3</b>				<b>5.5</b>	<b>clear brown</b>
	<b>6.17</b>	<b>1970</b>	<b>58.1</b>				<b>7.5</b>	<b>clear brown</b>
	<b>6.19</b>	<b>1920</b>	<b>57.7</b>				<b>7.75</b>	<b>clear brown</b>
<b>1656</b>	<b>6.20</b>	<b>1940</b>	<b>57.9</b>				<b>8.0</b>	<b>clear brown</b>

<b>Final:</b>	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
<b>Time 1656</b>	<b>6.20</b>	<b>1940</b>	<b>57.9</b>				<b>8.0</b>	<b>clear brown</b>

COMMENTS: Pump depleting well

INSTRUMENTATION: pH Meter ☒      Temperature Meter ☒  
                          DO Monitor ☐      Other ☐  
                          Conductivity Meter ☒

Water Disposal onsite      Sample ID MW-11      Sample Time 1700  
 Analysis BTEX  
 MS/MSD                           BD                           BD Name/Time                           TB tb092104-02

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: Hampton 4M    Well No: MW-12    Development Sampling  
 Project Manager MJN    Date 9-29-04    Start Time 1415    Weather rain 70s  
 Depth to Water 20.28    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 11.79    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐  
 Bottom Valve Bailer    Double Check Valve ☐ Bailer    Stainless-Steel Kemr ☐ er

Criteria: 3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
11.79x 0.16	1.89		5.66

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1424</b>	<b>5.83</b>	<b>1950</b>	<b>58.4</b>				<b>.25</b>	<b>black, clear, strong hydrocarbon odor</b>
	<b>5.88</b>	<b>2130</b>	<b>58.7</b>				<b>.5</b>	<b>black, clear, strong hydrocarbon odor</b>
	<b>5.25</b>	<b>2220</b>	<b>58.1</b>				<b>.75</b>	<b>black, clear, strong hydrocarbon odor</b>
	<b>5.83</b>	<b>2270</b>	<b>58.7</b>				<b>3.75</b>	<b>black, clear, strong hydrocarbon odor</b>
	<b>5.83</b>	<b>2240</b>	<b>58.5</b>				<b>4.2</b>	<b>black, clear, strong hydrocarbon odor</b>
	<b>5.80</b>	<b>2270</b>	<b>58.7</b>				<b>4.75</b>	<b>black, clear, strong hydrocarbon odor</b>
<b>1443</b>	<b>5.80</b>	<b>2260</b>	<b>58.1</b>				<b>5.25</b>	<b>black, clear, strong hydrocarbon odor</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1443</b>	<b>5.80</b>	<b>2260</b>	<b>58.1</b>					<b>5.25</b>	<b>black, clear, strong hydrocarbon odor</b>

COMMENTS:

INSTRUMENTATION: pH Meter ☒    Temperature Meter ☒  
 DO Monitor    Other \_\_\_\_\_  
 Conductivity Meter ☒

Water Disposal onsite    Sample ID MW-12    Sample Time 1458

Analysis BTEX

MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB tb092104-02

# WELL DEVELOPMENT AND SAMPLING LOG

Project No 30003.0      Project Name BR Groundwater Sampling      Client: Burlington  
 Location: Hampton 4M      Well No: MW-15      Development Sampling  
 Project Manager MJN      Date 9/29/04      Start Time 1208      Weather 70s  
 Depth to Water 18.33      Depth to Product na      Product Thickness: na      Measuring Point TOC  
 Water Column Height 8.96      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
8.96 x 0.16	1.43		4.30

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1211</b>	<b>5.9</b>	<b>4820</b>	<b>59.3</b>				<b>.25</b>	<b>clear</b>
	<b>5.81</b>	<b>4240</b>	<b>60.1</b>				<b>.5</b>	<b>cloudy</b>
	<b>5.61</b>	<b>4250</b>	<b>60.2</b>				<b>.75</b>	<b>cloudy</b>
	<b>5.65</b>	<b>4160</b>	<b>60.2</b>				<b>2</b>	<b>cloudy</b>
	<b>5.32</b>	<b>4140</b>	<b>60.1</b>				<b>3</b>	<b>cloudy</b>
	<b>5.41</b>	<b>4120</b>	<b>60.2</b>				<b>4</b>	<b>cloudy</b>
	<b>5.40</b>	<b>4130</b>	<b>60.2</b>				<b>4.25</b>	<b>cloudy</b>
<b>1231</b>	<b>5.38</b>	<b>4210</b>	<b>60.3</b>				<b>4.5</b>	<b>cloudy</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1231</b>	<b>5.38</b>	<b>4210</b>	<b>60.3</b>					<b>4.5</b>	<b>cloudy</b>

COMMENTS:

INSTRUMENTATION:      pH Meter ☒      \_\_\_\_\_      Temperature Meter ☒  
                                  DO Monitor      \_\_\_\_\_      Other \_\_\_\_\_  
                                  Conductivity Meter ☒      \_\_\_\_\_  
 Water Disposal onsite      Sample ID MW-15      Sample Time 1235  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB tb092104-02

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name: BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-16 Development Sampling  
 Project Manager MJN Date 9/29/04 Start Time 1340 Weather rain 70s  
 Depth to Water 24.79 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 6.84 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer ☒ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.81 x 0.65	4.43		13.28

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1348</b>	<b>6.11</b>	<b>2490</b>	<b>57.2</b>				<b>1</b>	<b>clear strong hydrocarbon odor</b>
	<b>8.40</b>	<b>2680</b>	<b>57.5</b>				<b>2</b>	<b>blackish gray</b>
	<b>8.3</b>	<b>2560</b>	<b>57.9</b>				<b>3</b>	<b>blackish gray</b>
	<b>7.45</b>	<b>2540</b>	<b>57.7</b>				<b>4</b>	<b>blackish gray</b>
	<b>6.5</b>	<b>2770</b>	<b>57.8</b>				<b>4.5</b>	<b>blackish gray</b>
	<b>6.57</b>	<b>2700</b>	<b>57.8</b>				<b>5</b>	<b>well is bailing down</b>
<b>1359</b>	<b>6.5</b>	<b>2730</b>	<b>57.6</b>				<b>5.5</b>	<b>well has bailed dry</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1359</b>	<b>6.5</b>	<b>2730</b>	<b>57.6</b>					<b>5.5</b>	<b>well has bailed dry</b>

COMMENTS: well bailed dry

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite \_\_\_\_\_ Sample ID MW-16 Sample Time 1405  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB tb092104-02





October 14, 2004

## Report to:

Gregg Wurtz  
Burlington Resources, Inc.  
3401 E. 30th St. PO BOX 4289  
Farmington, NM 87402-4289

## Bill to:

Gregg Wurtz  
Burlington Resources, Inc.  
3401 E. 30th St. PO BOX 4289  
Farmington, NM 87402-4289

## Project ID:

ACZ Project ID: L48067

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 01, 2004. This project has been assigned to ACZ's project number, L48067. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 10.0. The enclosed results relate only to the samples received under L48067. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 14, 2004. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.

14/Oct/04

Sue Barkey, Project Manager, has reviewed and approved this report in its entirety.



Burlington Resources, Inc.

October 14, 2004

Project ID:

ACZ Project ID: L48067

**Sample Receipt**

ACZ Laboratories, Inc. (ACZ) received 11 ground water samples from Burlington Resources, Inc. on October 1, 2004. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L48067. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

**Holding Times**

All analyses were performed within EPA recommended holding times.

**Sample Analysis**

These samples were analyzed for organic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following anomaly required further explanation not provided by the Extended Qualifier Report:

1. For sample numbers flagged with an "N1", the sample that was spiked had many late eluting compounds. These compounds interfered with the spike recovery for Ethylbenzene and m p Xylene.

**Burlington Resources, Inc.**

Project ID:

Sample ID: SEEP HAMPTON

Locator:

ACZ Sample ID: **L48067-06**

Date Sampled: 09/29/04 14:58

Date Received: 10/01/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 10/07/04 14:16

Analysis Date: 10/07/04 14:16

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	95.5		%	83	117

**Burlington Resources, Inc.**

Project ID:

Sample ID: MW-1 HAMPTON

Locator:

ACZ Sample ID: **L48067-01**

Date Sampled: 09/29/04 12:00

Date Received: 10/01/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**

Extract Method: **Method**

Analyst: km

Extract Date: 10/06/04 21:01

Analysis Date: 10/06/04 21:01

Dilution Factor: 1

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U	*	ug/L	0.2	1
m p Xylene	01330 20 7		U	*	ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	89.3		%	83	117

**Burlington Resources, Inc.**

Project ID:

Sample ID: MW-5 HAMPTON

Locator:

ACZ Sample ID: **L48067-07**

Date Sampled: 09/29/04 15:30

Date Received: 10/01/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 10/07/04 15:00

Analysis Date: 10/07/04 15:00

Dilution Factor: 50

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	1710			ug/L	20	50
Ethylbenzene	000100-41-4	670			ug/L	10	50
m p Xylene	01330 20 7	6380			ug/L	20	100
o Xylene	00095-47- 6	1710			ug/L	10	50
Toluene	000108-88-3	7250			ug/L	10	50

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	100.7		%	83	117

**Burlington Resources, Inc.**

Project ID:

Sample ID: TMW-1 HAMPTON

Locator:

ACZ Sample ID: **L48067-08**

Date Sampled: 09/29/04 15:50

Date Received: 10/01/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**

Extract Method: **Method**

Analyst: km

Extract Date: 10/07/04 15:43

Analysis Date: 10/07/04 15:43

Dilution Factor: 2.5

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	410		*	ug/L	0.8	3
Ethylbenzene	000100-41-4	59.6		*	ug/L	0.5	3
m p Xylene	01330 20 7	454		*	ug/L	1	5
o Xylene	00095-47-6	4.5		*	ug/L	0.5	3
Toluene	000108-88-3	8.7		*	ug/L	0.5	3

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	101.3		%	83	117

**Burlington Resources, Inc.**

Project ID:

Sample ID: MW-7 HAMPTON

Locator:

ACZ Sample ID: **L48067-09**

Date Sampled: 09/29/04 16:10

Date Received: 10/01/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**

Extract Method: **Method**

Analyst: km

Extract Date: 10/08/04 6:40

Analysis Date: 10/08/04 6:40

Dilution Factor: 2

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	163			ug/L	0.6	2
Ethylbenzene	000100-41-4	54.5			ug/L	0.4	2
m p Xylene	01330 20 7	27.8			ug/L	0.8	4
o Xylene	00095-47-6	42			ug/L	0.4	2
Toluene	000108-88-3	0.9	J		ug/L	0.4	2

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	PQL	UCL
Bromofluorobenzene	000460-00-4	112.5		%	83	117



**Burlington Resources, Inc.**

Project ID:  
 Sample ID: MW-9 HAMPTON  
 Locator:

ACZ Sample ID: **L48067-03**  
 Date Sampled: 09/29/04 13:15  
 Date Received: 10/01/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: km  
 Extract Date: 10/07/04 11:25  
 Analysis Date: 10/07/04 11:25  
 Dilution Factor: 1

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	94.1		%	83	117

**Burlington Resources, Inc.**

Project ID:  
 Sample ID: MW-11 HAMPTON  
 Locator:

ACZ Sample ID: **L48067-10**  
 Date Sampled: 09/29/04 17:00  
 Date Received: 10/01/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: km  
 Extract Date: 10/07/04 17:52  
 Analysis Date: 10/07/04 17:52  
 Dilution Factor: 1

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	97.1		%	83	117

**Burlington Resources, Inc.**

Project ID:

Sample ID: MW-12 HAMPTON

Locator:

ACZ Sample ID: **L48067-05**

Date Sampled: 09/29/04 14:50

Date Received: 10/01/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 10/07/04 13:33

Analysis Date: 10/07/04 13:33

Dilution Factor: 50

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	5140			ug/L	20	50
Ethylbenzene	000100-41-4	240			ug/L	10	50
m p Xylene	01330 20 7	970			ug/L	20	100
o Xylene	00095-47-6	310			ug/L	10	50
Toluene	000108-88-3	2220			ug/L	10	50

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	98.9		%	83	117

**Burlington Resources, Inc.**

Project ID:  
 Sample ID: MW-15 HAMPTON  
 Locator:

ACZ Sample ID: **L48067-02**  
 Date Sampled: 09/29/04 12:35  
 Date Received: 10/01/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: km  
 Extract Date: 10/06/04 21:44  
 Analysis Date: 10/06/04 21:44  
 Dilution Factor: 1

Compound

Compound	CAS	Result	QUAL	XG	Units	MPL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U	*	ug/L	0.2	1
m p Xylene	01330 20 7		U	*	ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

Surrogate Recoveries

Surrogate	CAS	% Recovery	XG	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	94.1		%	83	117

**Burlington Resources, Inc.**

Project ID:  
 Sample ID: MW-16 HAMPTON  
 Locator:

ACZ Sample ID: **L48067-04**  
 Date Sampled: 09/29/04 14:05  
 Date Received: 10/01/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: km  
 Extract Date: 10/07/04 12:50  
 Analysis Date: 10/07/04 12:50  
 Dilution Factor: 100

Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	8330			ug/L	30	100
Ethylbenzene	000100-41-4	760			ug/L	20	100
m p Xylene	01330 20 7	6360			ug/L	40	200
o Xylene	00095-47-6	1870			ug/L	20	100
Toluene	000108-88-3	14000			ug/L	20	100

Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	99.9		%	83	117

**Burlington Resources, Inc.**

Project ID:

Sample ID: TBO92104-02

Locator:

ACZ Sample ID: **L48067-11**

Date Sampled: 09/29/04 0:00

Date Received: 10/01/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 10/07/04 18:35

Analysis Date: 10/07/04 18:35

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	97.9		%	83	117

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality control sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Organic analyses are reported on an "as received" basis.

Burlington Resources, Inc.

ACZ Project ID: **L48067**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L48067-01	WG179312	Ethylbenzene	M8021B GC/PID	N1	See Case Narrative.
		m p Xylene	M8021B GC/PID	N1	See Case Narrative.
L48067-02	WG179312	Ethylbenzene	M8021B GC/PID	N1	See Case Narrative.
		m p Xylene	M8021B GC/PID	N1	See Case Narrative.
L48067-08	WG179364	Benzene	M8021B GC/PID	Q3	Sample received with improper chemical preservation.
		Ethylbenzene	M8021B GC/PID	Q3	Sample received with improper chemical preservation.
		m p Xylene	M8021B GC/PID	Q3	Sample received with improper chemical preservation.
		o Xylene	M8021B GC/PID	Q3	Sample received with improper chemical preservation.
		Toluene	M8021B GC/PID	Q3	Sample received with improper chemical preservation.



Burlington Resources, Inc.

ACZ Project ID: L48067  
Date Received: 10/1/2004  
Received By:

**Receipt Verification**

- 1) Does this project require special handling procedures such as CLP protocol?
- 2) Are the custody seals on the cooler intact?
- 3) Are the custody seals on the sample containers intact?
- 4) Is there a Chain of Custody or other directive shipping papers present?
- 5) Is the Chain of Custody complete?
- 6) Is the Chain of Custody in agreement with the samples received?
- 7) Is there enough sample for all requested analyses?
- 8) Are all samples within holding times for requested analyses?
- 9) Were all sample containers received intact?
- 10) Are the temperature blanks present?
- 11) Are the trip blanks (VOA and/or Cyanide) present?
- 12) Are samples requiring no headspace, headspace free?
- 13) Do the samples that require a Foreign Soils Permit have one?

YES	NO	NA
		X
X		
		X
X		
X		
X		
X		
X		
X		
X		
		X

**Exceptions: If you answered no to any of the above questions, please describe**

N/A

**Contact (For any discrepancies, the client must be contacted)**

N/A

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (µR/hr)
ACZ	5.2	14

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

**Notes**

**Burlington Resources, Inc.**

ACZ Project ID: L48067  
Date Received: 10/1/2004  
Received By:

**Sample Container Preservation**

SAMPLE	CLIENT ID	R < 2	G < 2	Y < 2	YG < 2	B < 2	BG < 2	O < 2	T > 12	P > 12	N/A	RAD
L48067-01	MW-1 HAMPTON										Ö	
L48067-02	MW-15 HAMPTON										Ö	
L48067-03	MW-9 HAMPTON										Ö	
L48067-04	MW-16 HAMPTON										Ö	
L48067-05	MW-12 HAMPTON										Ö	
L48067-06	SEEP HAMPTON										Ö	
L48067-07	MW-5 HAMPTON										Ö	
L48067-08	TMW-1 HAMPTON										Ö	
L48067-09	MW-7 HAMPTON										Ö	
L48067-10	MW-11 HAMPTON										Ö	
L48067-11	TBO92104-02										Ö	

**Sample Container Preservation Legend**

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BG	Filtered/Sulfuric	BLUE GLASS	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0      Project Name: Groundwater sampling      Client: Burlington Resources  
 Location: Hampton 4M      Well No: Seep      Development **Sampling**  
 Project Manager MJN      Date 12/1304      Start Time 1315      Weather clear 30s  
 Depth to Water na      Depth to Product na      Product Thickness na      Measuring Point TOC  
 Water Column Height na      Well Dia. na

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐  
                          Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (oz)	Comments/ Flow rate

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate

COMMENTS: seep water was clear, collected grab sample

INSTRUMENTATION:      pH Meter ☒      \_\_\_\_\_      Temperature Meter ☒  
                                  DO Monitor      \_\_\_\_\_      Other      \_\_\_\_\_  
                                  Conductivity Meter ☒      \_\_\_\_\_  
 Water Disposal onsite      Sample ID Hampton 4M Seep      Sample Time 1315  
 Analysis **BTEX**  
 MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: \_\_\_\_\_ Project Name BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-1 Development: Sampling  
 Project Manager MJN Date 12/13/04 Start Time 1040 Weather: clear 30s  
 Depth to Water 43.41 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 6.09 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.13 x 0.16	0.981 x 3		2.942

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1045</b>	<b>5.65</b>	<b>3700</b>	<b>52.1</b>				<b>.25</b>	<b>Clear</b>
	<b>5.00</b>	<b>3770</b>	<b>53.6</b>				<b>.50</b>	<b>Cloudy</b>
	<b>5.10</b>	<b>3760</b>	<b>54.1</b>				<b>.75</b>	<b>Cloudy</b>
	<b>5.10</b>	<b>3760</b>	<b>54.0</b>				<b>1.5</b>	
	<b>5.61</b>	<b>3810</b>	<b>54.3</b>				<b>2.5</b>	
<b>1100</b>	<b>5.15</b>	<b>3790</b>	<b>54.0</b>				<b>3.5</b>	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1100</b>	<b>5.15</b>	<b>3790</b>	<b>54.0</b>					<b>3.5</b>	

COMMENTS:

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite \_\_\_\_\_ Sample ID MW-1 Sample Time 01110  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0      Project Name: Groundwater sampling      Client: Burlington Resources  
 Location: Hampton 4M      Well No: TMW-1      Development Sampling  
 Project Manager MJN      Date 12/13/04 Start Time 1343      Weather clear 30s  
 Depth to Water 19.32      Depth to Product na      Product Thickness na      Measuring Point TOC  
 Water Column Height 0.28      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
0.28 x .16	.045 x 3		0.134

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
1345	6.10	3020	59.1				.047	Grey, well has bailed dry

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1345	6.10	3020	59.1					.047	Well has bailed dry

COMMENTS:

INSTRUMENTATION: pH Meter ☒      Temperature Meter ☒  
                          DO Monitor      Other \_\_\_\_\_  
                          Conductivity Meter ☒

Water Disposal onsite      Sample ID na      Sample Time 1350  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name: BR Groundwater Sampling Client: Burlington  
 Location: : Hampton 4M Well No: MW-5 Development Sampling  
 Project Manager MJN Date 12/13/04 Start Time 1320 Weather clear 30s  
 Depth to Water 15.58 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 6.61 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ Bailer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.61 x 0.16	1.058 x 3		3.173

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1322</b>	<b>3.10</b>	<b>5490</b>	<b>59.7</b>				<b>.25</b>	<b>Black</b>
	<b>4.20</b>	<b>4070</b>	<b>59.7</b>				<b>.50</b>	<b>Black</b>
	<b>4.10</b>	<b>4015</b>	<b>59.6</b>				<b>.75</b>	<b>Black</b>
	<b>4.20</b>	<b>4090</b>	<b>59.7</b>				<b>2.5</b>	<b>Well is bailing down</b>
<b>1332</b>	<b>4.40</b>	<b>4110</b>	<b>58.7</b>				<b>2.75</b>	<b>Well has bailed dry</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1332</b>	<b>4.40</b>	<b>4110</b>	<b>58.7</b>					<b>2.75</b>	<b>Well has bailed dry</b>

COMMENTS: well bailing down

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite \_\_\_\_\_ Sample ID MW-5 Sample Time 1338  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-7 Development Sampling  
 Project Manager MJN Date 12/13/04 Start Time 1400 Weather clear 30s  
 Depth to Water 20.03 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 0.17 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐  
 Bottom Valve Bailer Double Check Valve ☐ Bailer Stainless-Steel Kemr ☐ er

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
.17 x 0.16	0.027 x 3		0.082

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
1400	5.17	3680	58.9				0.031	Black

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
1400	5.17	3680	58.9				0.031	Black

COMMENTS: well bailing down

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite \_\_\_\_\_ Sample ID MW-7 Sample Time 1410  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: : Hampton 4M    Well No: MW-9    Development Sampling  
 Project Manager MJN    Date 12/13/04    Start Time 1150    Weather clear 30s  
 Depth to Water 22.7    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 11.85    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐  
                          Bottom Valve Bailer                                      Double Check Valve ☐ Bailer                                      Stainless-Steel Kemr ☐ Bailer  
 Criteria:    3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
11.85 x 0.16	1.896 x 3		5.69

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
<b>1152</b>	<b>7.13</b>	<b>4630</b>	<b>55.9</b>				<b>.25</b>	<b>Clear</b>
	<b>6.81</b>	<b>4650</b>	<b>57.5</b>				<b>.50</b>	<b>Clear</b>
	<b>6.69</b>	<b>4690</b>	<b>58.3</b>				<b>.75</b>	<b>Clear</b>
	<b>6.64</b>	<b>4770</b>	<b>58.4</b>				<b>3.50</b>	<b>Clear</b>
	<b>6.59</b>	<b>4710</b>	<b>58.3</b>				<b>4.50</b>	<b>Clear</b>
	<b>6.61</b>	<b>4750</b>	<b>57.8</b>				<b>5.0</b>	<b>Clear</b>
<b>1212</b>	<b>6.63</b>	<b>4690</b>	<b>57.9</b>				<b>6.0</b>	<b>Clear</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1212</b>	<b>6.63</b>	<b>4690</b>	<b>57.9</b>					<b>6.0</b>	<b>Clear</b>

COMMENTS:

INSTRUMENTATION:    pH Meter ☒    \_\_\_\_\_    Temperature Meter ☒  
                                  DO Monitor    \_\_\_\_\_    Other \_\_\_\_\_  
                                  Conductivity Meter ☒    \_\_\_\_\_  
 Water Disposal onsite    Sample ID MW-9    Sample Time 1215  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_



# WELL DEVELOPMENT AND SAMPLING LOG

Project No 30003.0      Project Name: BR Groundwater Sampling      Client: Burlington  
 Location: Hampton 4M      Well No: MW-11      Development Sampling  
 Project Manager MJN      Date 12/13/04      Start Time 1416      Weather clear 30s  
 Depth to Water 56.22      Depth to Product na      Product Thickness: na      Measuring Point TOC  
 Water Column Height 15.41      Well Dia. 2"

Sampling Method: Submersible Pump ☐      Centrifugal Pump ☐      Peristaltic Pump ☐      Other ☐

Bottom Valve Bailer ☒      Double Check Valve Bailer ☐      Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒      stabilization of Indicator Parameters ☒      Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
15.41x 0.16	2.466 x 3		7.397

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1416</b>	<b>5.99</b>	<b>2270</b>	<b>56.7</b>				<b>.25</b>	<b>Clear</b>
	<b>5.94</b>	<b>2790</b>	<b>56.3</b>				<b>.50</b>	<b>Red/brown</b>
	<b>5.89</b>	<b>2740</b>	<b>55.2</b>				<b>2.0</b>	<b>Red/brown</b>
	<b>5.93</b>	<b>2670</b>	<b>55.3</b>				<b>4.0</b>	<b>Red/brown</b>
	<b>6.0</b>	<b>2670</b>	<b>54.2</b>				<b>6.0</b>	<b>Red/brown</b>
	<b>6.02</b>	<b>2730</b>	<b>54.8</b>				<b>7.0</b>	<b>Red/brown</b>
<b>1444</b>	<b>6.00</b>	<b>2710</b>	<b>54.9</b>				<b>8.0</b>	<b>Red/brown</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
<b>1444</b>	<b>6.00</b>	<b>2710</b>	<b>54.9</b>				<b>8.0</b>	<b>Red/brown</b>

COMMENTS: Pump depleting well

INSTRUMENTATION: pH Meter ☒      Temperature Meter ☒  
                                  DO Monitor      Other \_\_\_\_\_  
                                  Conductivity Meter ☒

Water Disposal onsite      Sample ID MW-11      Sample Time 1447  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_      BD \_\_\_\_\_      BD Name/Time \_\_\_\_\_      TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: Hampton 4M    Well No: MW-12    Development Sampling  
 Project Manager MJN    Date 12/13/04    Start Time 1242    Weather clear 30s  
 Depth to Water 20.26    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 11.81    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐  
 Bottom Valve Bailer    Double Check Valve ☐ Bailer    Stainless-Steel Kemr ☐ erer

Criteria: 3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
11.81x 0.16	1.89 x 3		5.67

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
<b>1245</b>	<b>5.03</b>	<b>3910</b>	<b>57.8</b>				<b>.25</b>	<b>Black/grey</b>
	<b>5.0</b>	<b>3920</b>	<b>58.6</b>				<b>.50</b>	<b>Black/grey</b>
	<b>5.10</b>	<b>3960</b>	<b>58.4</b>				<b>.75</b>	<b>Black/grey</b>
	<b>5.10</b>	<b>3960</b>	<b>58.6</b>				<b>3.0</b>	<b>Black/grey</b>
	<b>5.07</b>	<b>4100</b>	<b>58.4</b>				<b>4.0</b>	<b>Black/grey</b>
	<b>5.03</b>	<b>4190</b>	<b>58.5</b>				<b>5.0</b>	<b>Black/grey</b>
<b>1300</b>	<b>5.10</b>	<b>4110</b>	<b>58.5</b>				<b>6.0</b>	<b>Black/grey</b>

<b>Final:</b>	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>Time</b>									
<b>1300</b>	<b>5.10</b>	<b>4110</b>	<b>58.5</b>					<b>6.0</b>	<b>Black/grey</b>

COMMENTS:

INSTRUMENTATION:    pH Meter ☒    \_\_\_\_\_    Temperature Meter ☒  
                                  DO Monitor    \_\_\_\_\_    Other    \_\_\_\_\_  
                                  Conductivity Meter ☒    \_\_\_\_\_  
 Water Disposal onsite    Sample ID MW-12    Sample Time 1304  
 Analysis    **BTEX**  
 MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No 30003.0    Project Name BR Groundwater Sampling    Client: Burlington  
 Location: Hampton 4M    Well No: MW-15    Development Sampling  
 Project Manager MJN    Date 12/13/04    Start Time 1115    Weather clear 30s  
 Depth to Water 18.48    Depth to Product na    Product Thickness: na    Measuring Point TOC  
 Water Column Height 8.81    Well Dia. 2"

Sampling Method: Submersible Pump ☐    Centrifugal Pump ☐    Peristaltic Pump ☐    Other ☐

Bottom Valve Bailer ☒    Double Check Valve Bailer ☐    Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒    stabilization of Indicator Parameters ☒    Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
8.81 x 0.16	1.41 x 3		4.229

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/Flow rate
<b>1120</b>	<b>5.42</b>	<b>4900</b>	<b>55.1</b>				<b>.25</b>	<b>Clear</b>
	<b>5.60</b>	<b>5150</b>	<b>56.0</b>				<b>.50</b>	<b>Clear</b>
	<b>4.67</b>	<b>4730</b>	<b>56.7</b>				<b>.75</b>	<b>Clear</b>
	<b>4.53</b>	<b>4850</b>	<b>56.5</b>				<b>1.25</b>	<b>Clear</b>
	<b>4.41</b>	<b>4700</b>	<b>56.0</b>				<b>2.0</b>	<b>Clear</b>
	<b>4.71</b>	<b>4790</b>	<b>56.2</b>				<b>3.0</b>	<b>Clear</b>
	<b>4.57</b>	<b>4810</b>	<b>56.2</b>				<b>4.0</b>	<b>Clear</b>
<b>1142</b>	<b>4.50</b>	<b>4790</b>	<b>56.1</b>				<b>4.5</b>	<b>Clear</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1142</b>	<b>4.50</b>	<b>4790</b>	<b>56.1</b>					<b>4.5</b>	<b>Clear</b>

COMMENTS:

INSTRUMENTATION:    pH Meter ☒    \_\_\_\_\_    Temperature Meter ☒  
                                  DO Monitor    \_\_\_\_\_    Other    \_\_\_\_\_  
                                  Conductivity Meter ☒    \_\_\_\_\_

Water Disposal onsite \_\_\_\_\_    Sample ID MW-15    Sample Time 1145

**BTEX** VOCs

MS/MSD \_\_\_\_\_    BD \_\_\_\_\_    BD Name/Time \_\_\_\_\_    TB \_\_\_\_\_

# WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name: BR Groundwater Sampling Client: Burlington  
 Location: Hampton 4M Well No: MW-16 Development Sampling  
 Project Manager MJN Date 12/13/04 Start Time 1220 Weather clear 30s  
 Depth to Water 24.77 Depth to Product na Product Thickness: na Measuring Point TOC  
 Water Column Height 6.83 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer ☒ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☒ stabilization of Indicator Parameters ☒ Other or bail dry

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
6.83 x 0.65	4.44 x 3		13.319

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
<b>1222</b>	<b>5.32</b>	<b>3660</b>	<b>57.2</b>				<b>.50</b>	<b>Grey</b>
	<b>4.96</b>	<b>4080</b>	<b>57.9</b>				<b>1.0</b>	<b>Heavy odor</b>
	<b>4.60</b>	<b>4120</b>	<b>57.6</b>				<b>2.5</b>	<b>Heavy odor</b>
	<b>4.62</b>	<b>4100</b>	<b>58.1</b>				<b>5.0</b>	<b>Heavy odor</b>
	<b>4.60</b>	<b>4260</b>	<b>58.0</b>				<b>5.25</b>	<b>Heavy odor, well is bailing dry</b>
<b>1235</b>	<b>4.65</b>	<b>4170</b>	<b>57.9</b>				<b>5.50</b>	<b>Well has bailed dry</b>

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
<b>1235</b>	<b>4.65</b>	<b>4170</b>	<b>57.9</b>					<b>5.50</b>	<b>Well has bailed dry</b>

COMMENTS: well bailed dry

INSTRUMENTATION: pH Meter ☒ \_\_\_\_\_ Temperature Meter ☒  
 DO Monitor \_\_\_\_\_ Other \_\_\_\_\_  
 Conductivity Meter ☒ \_\_\_\_\_  
 Water Disposal onsite \_\_\_\_\_ Sample ID MW-16 Sample Time 1238  
 Analysis BTEX  
 MS/MSD \_\_\_\_\_ BD \_\_\_\_\_ BD Name/Time \_\_\_\_\_ TB \_\_\_\_\_



**Laboratories, Inc.**

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**CHAIN of  
CUSTODY**

**Report to:**

Name: GREGG WURTE

Company: BURLINGTON

E-mail:

Address: 3401 20TH ST

FARMINGTON NM 87499

Telephone: 505 326 9700

**Copy of Report to:**

Name:

Company:

E-mail:

Telephone:

**Invoice to:**

Name: SAME AS ABOVE

Company:

Email:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES

NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

**PROJECT INFORMATION**

**ANALYSES REQUESTED (attach list or use quote number)**

Quote #:

Project/PO #: MISC. GROUNDWATER SAMPLE

Reporting state for compliance testing:

Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers																	
Hampton MW 1	12/13/04 1110	GW	2																	
Hampton MW 15	12/13/04 1145	GW	2																	
Hampton MW 9	12/13/04 1215	GW	2																	
Hampton MW 16	12/13/04 1238	GW	2																	
Hampton MW 12	12/13/04 1304	GW	2																	
Hampton JEEP	12/13/04 1315	SW	2																	
Hampton MW 5	12/13/04 1338	GW	2																	
Hampton TMW 1	12/13/04 1350	GW	2																	
Hampton MW 7	12/13/04 1410	GW	2																	
Hampton MW-11	12/13/04 1447	GW	2																	

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

**REMARKS**

PLEASE PROVIDE SEPARATE REPORTS FOR EACH LOCATION.

Please refer to ACZ's terms & conditions located on the reverse side of this COC

RELINQUISHED BY	DATE:TIME	RECEIVED BY	DATE:TIME
<u>[Signature]</u> (NEE)	12-13-04 2025		

SAMPLED BY	INTERNAL USE ONLY

L49151

**Laboratories, Inc.**

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**CHAIN of  
CUSTODY**

Report to:

Name: GREGG WURTZCompany: BURLINGTON

E-mail:

Address: 3401 30TH STFARMINGTON NM 87499Telephone: 505 326 9700

Copy of Report to:

Name:

E-mail:

Company:

Telephone:

Invoice to:

Name: SAME AS ABOVE

Email:

Company:

Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses?

YES ☐NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO"

is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

ANALYSES REQUESTED: (attach list or use quote number)

Quote #:

Project/PO #: MISC. GROUND WATER SAMPLE

Reporting state for compliance testing:

Are any samples NRC licensable material?

SAMPLE IDENTIFICATION			DATE: TIME	Matrix	# of Containers														
Hampton MW 1	12/13/04	1110	GW	2															
Hampton MW 15	12/13/04	1145	GW	2															
Hampton MW 9	12/13/04	1215	GW	2															
Hampton MW 16	12/13/04	1238	GW	2															
Hampton MW 12	12/13/04	1304	GW	2															
Hampton JEEP	12/13/04	1315	SW	2															
Hampton MW 5	12/13/04	1338	GW	2															
Hampton TMW 1	12/13/04	1350	GW	2															
Hampton MW 7	12/13/04	1410	GW	2															
Hampton MW-11	12/13/04	1447	GW	2															

Matrix SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS:

PLEASE PROVIDE SEPARATE REPORTS FOR EACH LOCATION.

Please refer to ACZ's terms &amp; conditions located on the reverse side of this COC

RELINQUISHED BY	DATE: TIME	RECEIVED BY	DATE: TIME
<u>Martin Nee</u> (NEE)	<u>12-13-04 2025</u>	<u>Rebecca Horney</u>	<u>12/15/04</u> <u>1100</u>
SAMPLED BY		INTERNAL USE ONLY	
<u>Martin Nee as per</u> <u>Gregg Wurtz</u> <u>RMS 12/15/04</u>			

FRMAD050.09.04.01

White - Return with sample.

Yellow - Retain for your records.

L49151: Page 16 of 16

December 28, 2004

## Report to:

Gregg Wurtz  
Burlington Resources, Inc.  
3401 E. 30th St. PO BOX 4289  
Farmington, NM 87499

## Bill to:

Gregg Wurtz  
Burlington Resources, Inc.  
3401 E. 30th St. PO BOX 4289  
Farmington, NM 87499

Project ID: MISC GW SAMPLE

ACZ Project ID: L49151

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 15, 2004. This project has been assigned to ACZ's project number, L49151. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L49151. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after January 28, 2005. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than \$10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years. Please notify your Project Manager if you have other needs.

If you have any questions, please contact your Project Manager or Customer Service Representative.

28/Dec/04

Sue Barkey, Project Manager, has reviewed and approved this report in its entirety.



**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE

Sample ID: Hampton SEEP

Locator:

ACZ Sample ID: **L49151-06**

Date Sampled: 12/13/04 13:15

Date Received: 12/15/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 12/20/04 22:03

Analysis Date: 12/20/04 22:03

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7	0.4	J		ug/L	0.4	2
o Xylene	00095-47-6		U		ug/L	0.2	1
Toluene	000108-88-3	0.2	J		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	102.4		%	83	117



**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE

Sample ID: Hampton MW 1

Locator:

ACZ Sample ID: **L49151-01**

Date Sampled: 12/13/04 11:10

Date Received: 12/15/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 12/20/04 17:04

Analysis Date: 12/20/04 17:04

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7	2.6			ug/L	0.4	2
o Xylene	00095-47- 6	0.7	J		ug/L	0.2	1
Toluene	000108-88-3	0.9	J		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	96.2		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE

Sample ID: Hampton MW 5

Locator:

ACZ Sample ID: **L49151-07**

Date Sampled: 12/13/04 13:38

Date Received: 12/15/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 12/20/04 22:46

Analysis Date: 12/20/04 22:46

Dilution Factor: 50

## Compound

Compound	CAS	Result	QUAL	Xq	Units	MDL	PQL
Benzene	000071-43-2	1820			ug/L	20	50
Ethylbenzene	000100-41-4	730			ug/L	10	50
m p Xylene	01330 20 7	7240			ug/L	20	100
o Xylene	00095-47- 6	1790			ug/L	10	50
Toluene	000108-88-3	9150			ug/L	10	50

## Surrogate Recoveries

Surrogate	CAS	% Recovery	Xq	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	98.3		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE

Sample ID: Hampton TMW 1

Locator:

ACZ Sample ID: **L49151-08**

Date Sampled: 12/13/04 13:50

Date Received: 12/15/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 12/20/04 23:28

Analysis Date: 12/20/04 23:28

Dilution Factor: 5

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	POL
Benzene	000071-43-2	3	J		ug/L	2	5
Ethylbenzene	000100-41-4	1	J		ug/L	1	5
m p Xylene	01330 20 7	9	J		ug/L	2	10
o Xylene	00095-47- 6	2	J		ug/L	1	5
Toluene	000108-88-3	5	J		ug/L	1	5

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	99		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE  
 Sample ID: Hampton MW 7  
 Locator:

ACZ Sample ID: **L49151-09**  
 Date Sampled: 12/13/04 14:10  
 Date Received: 12/15/04  
 Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
 Extract Method: **Method**

Analyst: km  
 Extract Date: 12/21/04 0:12  
 Analysis Date: 12/21/04 0:12  
 Dilution Factor: 10

Compound

Compound	CAS	Result	QUAL	Xc	Units	MDL	PCL
Benzene	000071-43-2	94			ug/L	3	10
Ethylbenzene	000100-41-4	10			ug/L	2	10
m p Xylene	01330 20 7	13	J		ug/L	4	20
o Xylene	00095-47- 6	11			ug/L	2	10
Toluene	000108-88-3	3	J		ug/L	2	10

Surrogate Recoveries

Surrogate	CAS	% Recovery	Xc	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	96.2		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE  
Sample ID: Hampton MW 9  
Locator:

ACZ Sample ID: **L49151-03**  
Date Sampled: 12/13/04 12:15  
Date Received: 12/15/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**

Analysis Method: **M8021B GC/PID**  
Extract Method: **Method**

Analyst: km  
Extract Date: 12/20/04 19:53  
Analysis Date: 12/20/04 19:53  
Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7	0.5	J		ug/L	0.4	2
o Xylene	00095-47- 6	0.2	J		ug/L	0.2	1
Toluene	000108-88-3	0.4	J		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	91.4		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE

Sample ID: Hampton MW-11

Locator:

ACZ Sample ID: **L49151-10**

Date Sampled: 12/13/04 14:47

Date Received: 12/15/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 12/21/04 0:54

Analysis Date: 12/21/04 0:54

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4		U		ug/L	0.2	1
m p Xylene	01330 20 7		U		ug/L	0.4	2
o Xylene	00095-47- 6		U		ug/L	0.2	1
Toluene	000108-88-3		U		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	93.5		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE  
Sample ID: Hampton MW 12  
Locator:

ACZ Sample ID: **L49151-05**  
Date Sampled: 12/13/04 13:04  
Date Received: 12/15/04  
Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km  
Extract Date: 12/20/04 21:19  
Analysis Date: 12/20/04 21:19  
Dilution Factor: 50

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	4160			ug/L	20	50
Ethylbenzene	000100-41-4	250			ug/L	10	50
m p Xylene	01330 20 7	930			ug/L	20	100
o Xylene	00095-47-6	220			ug/L	10	50
Toluene	000108-88-3	1220			ug/L	10	50

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	98.6		%	83	117

**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE

Sample ID: Hampton MW 15

Locator:

ACZ Sample ID: **L49151-02**

Date Sampled: 12/13/04 11:45

Date Received: 12/15/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 12/20/04 19:11

Analysis Date: 12/20/04 19:11

Dilution Factor: 1

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2		U		ug/L	0.3	1
Ethylbenzene	000100-41-4	0.3	J		ug/L	0.2	1
m p Xylene	01330 20 7	0.9	J		ug/L	0.4	2
o Xylene	00095-47- 6	0.5	J		ug/L	0.2	1
Toluene	000108-88-3	0.9	J		ug/L	0.2	1

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	96.9		%	83	117



**Burlington Resources, Inc.**

Project ID: MISC GW SAMPLE

Sample ID: Hampton MW 16

Locator:

ACZ Sample ID: **L49151-04**

Date Sampled: 12/13/04 12:38

Date Received: 12/15/04

Sample Matrix: Ground Water

**Benzene, Toluene, Ethylbenzene & Xylene**Analysis Method: **M8021B GC/PID**Extract Method: **Method**

Analyst: km

Extract Date: 12/20/04 20:37

Analysis Date: 12/20/04 20:37

Dilution Factor: 100

## Compound

Compound	CAS	Result	QUAL	XQ	Units	MDL	PQL
Benzene	000071-43-2	8340			ug/L	30	100
Ethylbenzene	000100-41-4	1550			ug/L	20	100
m p Xylene	01330 20 7	14800			ug/L	40	200
o Xylene	00095-47- 6	4030			ug/L	20	100
Toluene	000108-88-3	17100			ug/L	20	100

## Surrogate Recoveries

Surrogate	CAS	% Recovery	XQ	Units	LCL	UCL
Bromofluorobenzene	000460-00-4	95.2		%	83	117

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

B	Analyte detected in daily blank
H	Analysis exceeded method hold time.
J	Analyte concentration detected at a value between MDL and PQL
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality control sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
E	Analyte concentration is estimated due to result exceeding calibration range.
M	Analyte concentration is estimated due to matrix interferences.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (5) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December, 1996.
- (6) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Organic analyses are reported on an "as received" basis.

Burlington Resources, Inc.

ACZ Project ID: **L49151**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
--------	---------	-----------	--------	------	-------------

No extended qualifiers associated with this analysis

**Burlington Resources, Inc.**

MISC GW SAMPLE

ACZ Project ID: L49151

Date Received: 12/15/2004

Received By:

**Receipt Verification**

- 1) Does this project require special handling procedures such as CLP protocol?
- 2) Are the custody seals on the cooler intact?
- 3) Are the custody seals on the sample containers intact?
- 4) Is there a Chain of Custody or other directive shipping papers present?
- 5) Is the Chain of Custody complete?
- 6) Is the Chain of Custody in agreement with the samples received?
- 7) Is there enough sample for all requested analyses?
- 8) Are all samples within holding times for requested analyses?
- 9) Were all sample containers received intact?
- 10) Are the temperature blanks present?
- 11) Are the trip blanks (VOA and/or Cyanide) present?
- 12) Are samples requiring no headspace, headspace free?
- 13) Do the samples that require a Foreign Soils Permit have one?

YES	NO	NA
		X
X		
		X
X		
	X	
X		
X		
X		
X		
		X
		X
X		
		X

**Exceptions: If you answered no to any of the above questions, please describe**

"Sampled by" not relinquished.

**Contact (For any discrepancies, the client must be contacted)**

Gregg Wurtz was contacted. Gregg indicated who did the sampling.

**Shipping Containers**

Cooler Id	Temp (°C)	Rad (µR/hr)
ACZ	8.5	13

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

**Notes**

**Burlington Resources, Inc.**  
MISC GW SAMPLE

ACZ Project ID: L49151  
Date Received: 12/15/2004  
Received By:

**Sample Container Preservation**

SAMPLE	CLIENT ID	R < 2	G < 2	Y < 2	YG < 2	B < 2	BG < 2	O < 2	T > 12	P > 12	N/A	RAD
L49151-01	Hampton MW 1										X	
L49151-02	Hampton MW 15										X	
L49151-03	Hampton MW 9										X	
L49151-04	Hampton MW 16										X	
L49151-05	Hampton MW 12										X	
L49151-06	Hampton SEEP										X	
L49151-07	Hampton MW 5										X	
L49151-08	Hampton TMW 1										X	
L49151-09	Hampton MW 7										X	
L49151-10	Hampton MW-11										X	

**Sample Container Preservation Legend**

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BG	Filtered/Sulfuric	BLUE GLASS	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

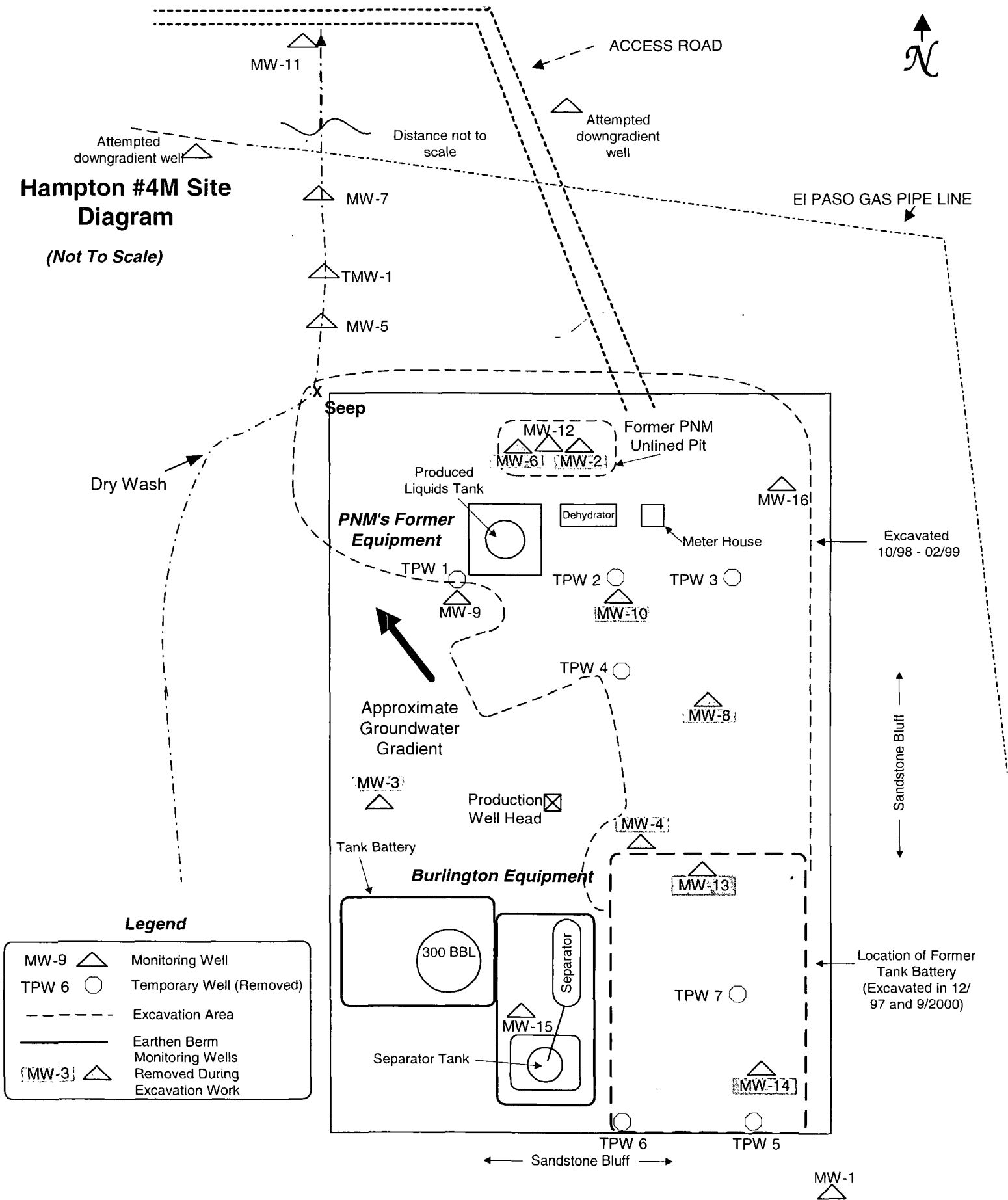
---

# **Attachment 2**



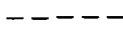

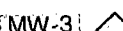
## **SITE DIAGRAM**

# Hampton #4M Site Diagram

(Not To Scale)



## Legend

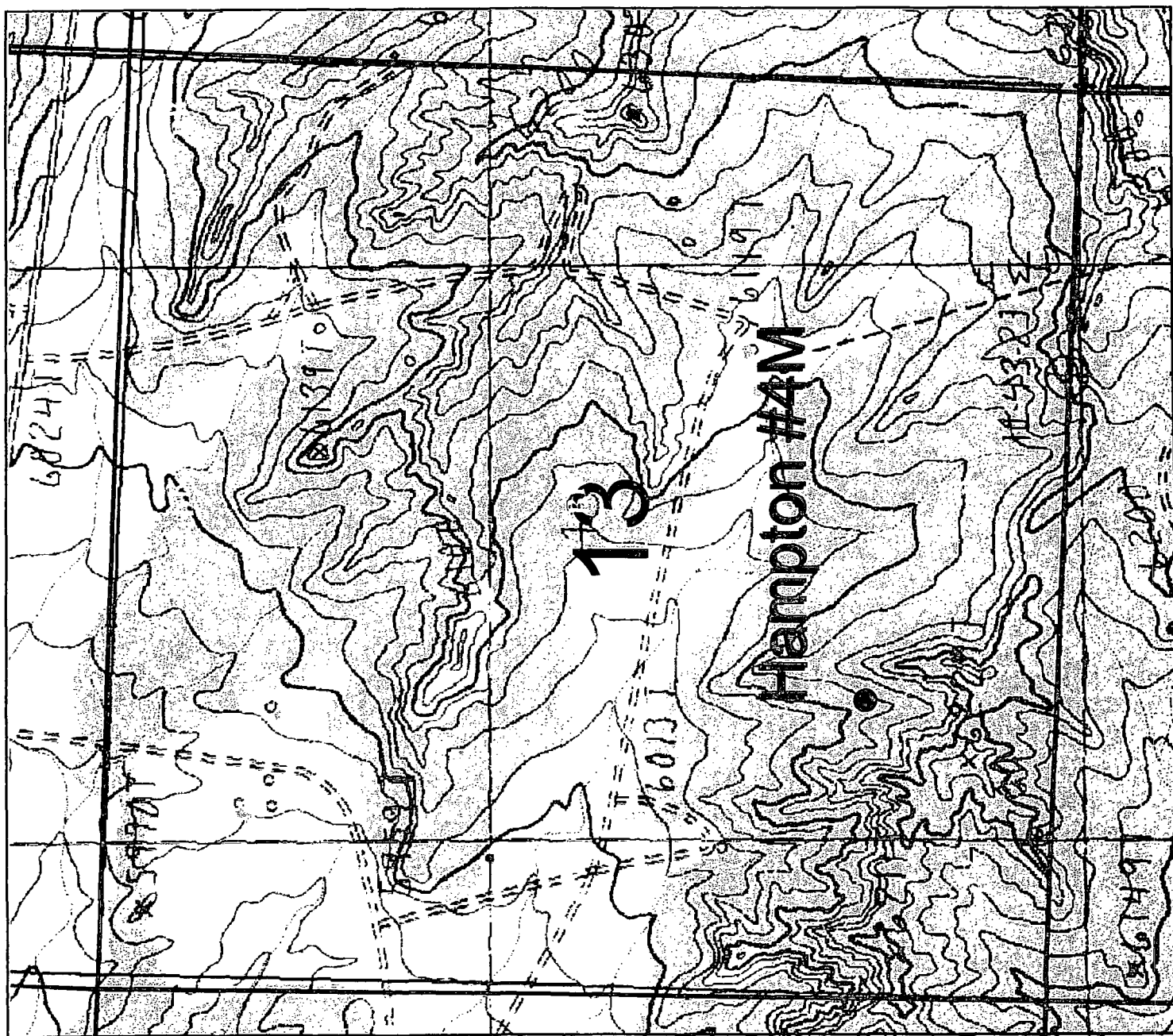
- MW-9  Monitoring Well
- TPW 6  Temporary Well (Removed)
-  Excavation Area
-  Earthen Berm
-  Monitoring Wells Removed During Excavation Work

---

## **Attachment 3**

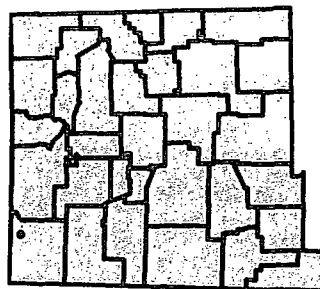
# **Topographic Location Map**





BURLINGTON RESOURCES  
 PLAT

300 0 300 600 Feet



BURLINGTON RESOURCES  
 San Juan Division

Hampton #4M  
 Sec 13, T30N-R11W  
 San Juan Co., NM  
 1:10308

Transverse Mercator  
 UTM - 1927 ; Zone 13  
 Prepared By: Cheryl Groth  
 File No. <Please enter file number>  
 File Name: c:\platform and run outlines\kso.apr  
 Date: 04/01/2002  
 Revised: <Revision date>