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REPORTS

DATE:

2002

BURLINGTON RESOURCES

SAN JUAN DIVISION

April 14, 2003

Certified: 70993400001842167708

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: 2002 Annual Groundwater Investigation and Remediation Reports
San Juan Basin, New Mexico

Dear Mr. Olson:

As required in Burlington Resources' approved Groundwater Investigation and Remediation Plan dated August, 1998, enclosed are the 2002 annual reports for Burlington's groundwater impact sites in the San Juan Basin. Separate reports are enclosed for the following locations:

Cozzens B#1
Hampton #4M
Johnson Federal #4 Metering Station
Standard Oil Com. #1
Maddox Com 1A

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
Bruce Gantner - BR
WFS - Mark Harvey (Cozzens B#1, Hampton #4M)
EPFS - Scott Pope (Johnson Fed. #4, Standard Oil Com.#1)
Facility and Correspondence Files

BURLINGTON RESOURCES 2002ANNUAL GROUNDWATER REPORT

Hampton #4M

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 4th 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 ACTIVITIES

BR continued the quarterly monitoring program and trend analyses of data in 2002 to measure the passive natural remediation approach. Burlington Resources 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 contamination plume continues to be Monitoring Well MW-7. However, the COC concentrations in the MW-7 have reduce significantly. This reduction 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 COC. The ground water gradient has not change significantly in 2002.

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 work and effort has been performed by BR to remediate areas of contamination. The main remediation approach has been excavation and offsite treatment. The goal of the remediation is to prevent potential contamination movement away from the site and allow foe natural remediation of the COC.

The excavation work appears to have been effective in reducing or eliminating the free phase hydrocarbons from BR's upgradient location (i.e., SE corner). The horizontal extent of the ground water contamination in the north direction 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 maybe confined to a narrow flow path in the bottom of the box canyon following the topographic gradient of the sand bed wash that extends downgradient from the production location. Vertically the clay and sandstone unit that forms the sides and basement of the canyon is thought to confine the contamination and ground water vertically. The auger refusal encountered on the two downgradient offsite monitoring well attempts in 1999 support the 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 the box canyon. The confining unit acts as an impermeable catchment that collects and concentrates meteoric water filtering through the overlying sediments. The ground water then travels as bed flow along a narrow band 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. However, to date WFS has made no arrangements to engage in the cost sharing agreement with BR.

RECOMMENDATIONS

- BR recommends continuing a quarterly monitoring program and trend analyses 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

Burlington Resource Hampton 4m Groundwater Monitoring Summary 2001

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
MW-1			10/30/97	6110.10	2.4	2.3	<0.2	1.1	5.8	–	
Upgradient well			01/12/98	6107.47	4.3	3.3	0.2	1.0	8.8	–	
	6149.42		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	–	42.0
			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	03/22/02	6105.38							
		water level only	Missed	No level collected							
		water level only	Missed	No level collected							
		water level only	Missed	No level collected							
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	–	<30.0
			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	31.0	388.1	2651.3	–	
Upgradient PNM; downgradient Burlington			2/4/1997	6106.16	NA	NA	NA	NA	NA	–	
		(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	–	10.0 J
			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								

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
MW-5			10/29/1997	6075.23	5934	10024	709	8188	24855	--	
Downgradient along wash			1/12/1998	6075.09	7521	11213	779	8436	27949	--	
	6090.83		4/14/1998	6075.33	7000	11000	720	7800	26520	--	
			7/1/1998	6075.43	6500	10000	780	7500	24780	--	800
			10/5/1998	6074.48	6800	8400	740	6900	22840	--	
			11/9/1998	6074.89	6200	8200	670	6500	21570	--	
			1/27/1999	6074.87	6400	8900	660	6700	22660	--	
			5/5/1999	6075.23	6800	9800	900	7800	25300	--	
		(Burlington)	5/26/1999	NR	6600	10000	650	8100	25350	--	
			7/12/1999	6075.60	6300	10000	750	8800	25850	--	
			8/17/1999	6076.23	5400	9800	670	7500	23370	Sheen	
		(Eco. Split)	8/17/1999	6076.23	5900	8900	500	6200	21500	Sheen	
		(prelim.)	10/21/1999	6076.17	5200	9600	650	6900	22350	Sheen	
			1/27/2000	6076.10	4700	10000	680	7400	22780	sewer/black	
		BR/onsite labs	6/13/2000	6076.12	8400	19000	1700	22000	51100	sheeen	
		ACZ LABS	3/29/2001	lost	3890	9600	640	7730	21860	h2s odor	NR
		h2s odor	6/26/2001	6075.48	3800	11000	700	9000	24500		7400
		h2s odor	9/18/2001	6074.96	4100	11000	760	10000	25860		2200
		h2s odor	12/18/2001	6075.00	3200	9700	600	7800	21300	Sheen	6400
		h2s odor	3/22/2002	6075.29	3500	10000	830	8500	22830		6900
		h2s odor	6/28/2002	6074.97	3700	12000	760	10000	26460		8300
		petro odor	9/23/2002	6075.01	3000	9800	640	8300	21740		6900
		h2s odor	12/31/2002	6076.01	2900	8900	580	7300	19680		6000
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		1300
			9/18/2001	18.99	well purged dry no sample collected						
		dry	12/18/2001	19.59	No sample collected						
		insufficient h20	3/22/2002	19.52	No sample collected						
		insufficient h20	6/28/2002	20.06	No sample collected						
		insufficient h20	9/23/2002	19.51	No sample collected						
		insufficient h21	12/31/2002	19.50	No sample collected						
MW-6			11/12/1997	NC	NA	NA	NA	NA	NA	4.80	
PNM drip pit/product recovery			1/12/1998	NC	NA	NA	NA	NA	NA	4.71	
	6124.87		4/14/1998	NM	NA	NA	NA	NA	NA	pumping	
			7/1/1998	NC	NA	NA	NA	NA	NA	pumping	
			10/5/1998	NC	NA	NA	NA	NA	NA	pumping	
			11/9/1998	NC	NA	NA	NA	NA	NA	2.27	
			Well destroyed during Burlington excavation								

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
MW-7			1/12/1998	6047.12	780.0	246.0	258.0	3942.0	5226.0	–	
Downgradient along wash; adj pipeline			04/14/98	6047.09	820.0	340.0	190.0	2450.0	3800.0	–	
	6066.91		07/01/98	6047.03	950.0	440.0	200.0	3020.0	4610.0	–	200.0
			10/05/98	6046.77	1600.0	930.0	180.0	1530.0	4240.0	–	
			11/09/98	6046.77	1800.0	1000.0	160.0	1240.0	4200.0	–	
			01/27/99	6046.77	2100.0	1000.0	160.0	1050.0	4310.0	–	
			05/05/99	6046.44	210.0	2.9	30.0	147.0	389.9	–	
	(Burlington)		05/26/99	NR	190.0	7.4	32.0	150.0	379.4	–	
			7/12/1999	6046.04	130.0	7.2	22.0	101.3	260.5	–	
			8/17/1999	6046.61	NA	NA	NA	NA	NA	–	
	(prelim.)		10/21/1999	6047.47	260.0	11.0	15.0	89.0	375.0	–	
			01/27/00	6047.65	670.0	580.0	54.0	680.0	1984.0		
		BR/onsite labs	06/17/00	6047.87	420.0	1100.0	75.0	1400.0	2995.0		
		ACZ/Lost	03/29/01	lost	830.0	150.0	320.0	1790.0	3090.0		
		H2S odor	06/26/01	6047.39	540.0	330.0	250.0	1410.0	2530.0		310.0
		H2S odor	09/18/01	6047.06	870.0	560.0	320.0	2020.0	3770.0		620.0
		h2s odor	12/18/01	6046.71	400.0	30.0	160.0	885.0	1475.0	Sheen	790.0
		H2s odor	03/22/02	6046.43	180.0	ND	78.0	260.0	518.0	Cloudy	260.0
		H2s odor	06/28/02	6047.38	89.0	1.0	41.0	79.0	210.0		79.0
		H2s odor	09/23/02	6046.39	80.0	3.0	31.0	18.9	132.9		15.0
		H2s odor	12/31/02	6046.76	160.0	2.2	74.0	31.5	267.7		29.0
MW-8			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								
MW-9			7/1/1998	6100.12	12.0	0.2	0.6	1.3	14.1	–	<30.0
Upgradient PNM, crossgradient Burlington			10/5/1998	6100.03	16.0	<1.0	1.1	2.1	19.2	–	
	6122.52		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	
			1/27/2000	6100.62	130.0	nd	nd	nd	130.0		
		BR/onsite labs	6/13/2000	6100.54	<0.5	1.9	<0.5	2.5	4.4		
		ACZ/lost	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		<0.5
			9/18/2001	6099.85	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
		no odor	12/18/2001	6099.82	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
		H2s mild	3/22/2002	6099.84	ND	ND	ND	ND	0.0		ND
			6/28/2002	6099.64	ND	ND	ND	ND	0.0		ND
			9/23/2002	6099.62	ND	ND	ND	ND	0.0		ND
									0.0		

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
MW-10			7/1/1998	NC	NA	NA	NA	NA	NA	2.00	
Upgradient PNM, downgradient Burlington			10/5/1998	NC	NA	NA	NA	NA	NA	1.91	
	6122.5		11/9/1998	NC	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', near road	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		NR
		rdish brn h2o	6/26/2001	2959.14	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
		rdish brn h2o	9/18/2001	5959.28	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
		no odor	12/18/2001	5959.25	<0.5	<0.5	<0.5	<1.0	0.0		<0.5
		H2s	3/22/2002	5959.2	ND	ND	ND	ND	0.0		ND
			6/28/2002	5959.32	ND	ND	ND	ND	0.0		ND
			9/23/2002	5959.26	ND	ND	ND	ND	0.0		ND
			12/31/2002	5959.4	ND	ND	ND	ND	0.0		ND
MW-12 (source well @ MW-6)	6109.02		5/5/1999		790.0	840.0	260.0	2880.0	4770.0	--	
			5/5/1999		1200	13000	5100	68000	87300.0	--	
SOIL sample TPH (ppm)	2350		5/26/1999	6099.45	1900	820	200	1720	4640.0	Sheen	
		(Burlington)	5/26/1999		1800	640	160	1600	4200.0	--	
			7/12/1999	6099.63	4500	760	400	3100	8760.0	Sheen	
		(duplicate)	7/12/1999		4600	730	390	3080	8800.0	Sheen	
			8/17/1999	6100.56	4800	5000	320	3390	13510.0	Sheen	
		(Eco. Split)	8/17/1999	6100.56	5900	6100	390	4100	16490.0	Sheen	
		(prelim.)	10/21/1999	6100.17	5600	650	540	2890	9680.0	Sheen	
			1/27/2000	6070.49	4100	550	430	2379	7459.0		
		BR/onsite labs	6/13/2000	6085.43	5000	1300	490	2700	9490.0		
		ACZ/lost	3/29/2001	LOST	5170	1790	366	2620	9946.0		NR
		h2s odor	6/26/2001	6084.8	4800	1900	390	2560	9650.0		260.0
		h2s odor	9/18/2001	6084.71	5100	2400	430	2820	10750.0	Sheen	320.0
		h2s odor	12/18/2001	6084.72	4000	1500	320	1880	7700.0	Sheen	1600.0
		H2s odor	3/22/2002	6084.72	3200	930	290	1270	5790.0	sheen	1100.0
			6/28/2002	6084.56	4200	1800	410	1940	8350.0		1700.0
			9/23/2002	6084.56	3800	1500	310	1510	7120.0		1300.0
			12/31/2002	6084.62	3600	640	280	1010	5720.0	Sheen	830.0

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
MW-13	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		
MW-14		–	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					depth to product 20.40		
		BR/onsite labs	6/13/2000	Not sampled 2.16 feet product		Depth to water 22.51			depth to product 22.51		
MW-15	No survey data	(prelim.)	10/21/1999	–	<0.5	1.2	<0.5	1.5	2.7	–	
BROG well near separator pit	ground level MP			depth to water 17.84 (no datum surveyed yet)							
			1/27/2000		<0.5	<0.5	<0.5	<0.5	0.0		
				depth to water (DTW) 18.36 (no survey data available)							
			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		NR
		Onsite	6/26/2001	19.66 DTW	<0.5	<0.5	<0.5	,0.5	0.0		<1.0
		Onsite	9/18/2001	19.22 DTW	<0.5	<0.5	<0.5	,0.5	0.0		<1.0
		no odor	12/18/2001	19.12 DTW	<0.5	<0.5	<0.5	,0.5	0.0		<1.0
		no odor	3/22/2002	19.10 DTW	ND	ND	ND	ND	0.0		ND
			6/26/2002	19.09 DTW	ND	ND	ND	ND	0.0		ND
			9/23/2002	19.06 DTW	ND	ND	ND	ND	0.0		ND
			12/31/2002	19.00 DTW	ND	ND	ND	ND	0.0		ND
MW-16	No survey	(prelim.)	10/21/1999	–	220.0	300.0	5.4	142.0	667.4	–	
Recovery well near excavation	DTW ONLY	(Burlington)	10/21/1999	–	214.0	268.0	4.0	151.0	637.0	–	
				depth to water 14.93 (no datum surveyed yet)							
			1/27/2000		1600	170	56	225	2051.0		
				depth to water 24.22 (no survey data available			Note stick up added to well in 2000				
		BR/onsite labs	6/13/2000	24.16	8700	430	680	2200	12010.0		
				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	14644.9		3100.0
			9/18/2001	24.77	11000	6400	590	6400	24414.8	sheen	5400.0
		HC odor	12/18/2001	24.82	9900	6900	570	7400	24770.0	sheen	6300.0
		product odor	3/22/2002	24.92	10000	6500	1100	7400	25100.0	sheen	6200.0
			6/26/2002	25.03	11000	7000	770	5700	24470.0		5700.0
		product odor	9/23/2002	25.04	8900	9300	610	8500	27910.0	Sheen	7200.0
			12/31/2002	24.5	8800	7900	770	7400	24870.0	Sheen	6100.0

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
TMP-1			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	--	80.0
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		
EB WELL			11/25/1997	5959.74	<0.2	<0.2	<0.2	<0.2	<0.2	--	
Downgradient private well			10/21/1999	5960.93							
MP =	6028.64										
Burlington Excavation	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	<30.0
	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	--	
Intermittent Seep	Surface Water		7/1/1998	6098.72	1.6	0.7	0.6	0.36	3.26	rainbow	6.0 J
	Surface Water		4/14/1999		40.0	2.2	2.1	19.00	63.30	rainbow	
	Surface Water	(prelim.)	10/21/1999		65.0	230.0	11.0	434.00	740.00		
	Surface Water	ACZ/lost	3/29/2001	none	11.6	<0.2	0.7J	25.40	37.00		NR
	Surface Water	seep	6/26/2001	none	<0.5	<0.5	<0.5	<1.0	0.00		<0.5
	Surface Water	seep	9/18/2001	none	<0.5	<0.5	<0.5	<1.0	0.00		<0.5
	Surface Water	seep	12/18/2001	none	<0.5	<0.5	<0.5	<1.0	0.00		<0.5
	Surface Water	seep	3/22/2002	none	5.9	ND	0.8	3.40	10.10		3.4
	Surface Water	seep	6/28/2002	none	ND	ND	ND	ND	0.00		ND
	Surface Water	seep	9/23/2002	none	ND	ND	ND	ND	0.00		ND
	Surface Water	seep	12/31/2002	None	0.7	ND	ND	ND	0.70		ND

ANALYTICAL RESULTS SUMMARY - Hampton 4M

Well	Surveyed MP Elev. (ft,msl)	Sample Notes	Date Sampled	GW Elev. (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)	2-MP (ug/L)
Burlington Temporary Monitoring Well Sampling											

Sample	Matrix	Date Sampled	Depth (ft)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	Total BTEX (ppb)	TPH (mg/Kg)	PID (ppm)
TPW-01	Water	6/5/1997		20.0	<1	<1	<1	20.0	NA	0
	Soil		25-26'	<1	<1	<1	<1	<1	<10	
TPW-02	Water	6/5/1997	Product	NA	NA	NA	NA	NA	NA	187
	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	0
	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	33
	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	470
	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	61
	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	948
	Soil	6/6/1997	15-16'	7000.0	74000.0	20000.0	170000.0	271000.0	250	
Burlington Profile Borings										
SB-1 (near BROG excavation)	Soil	10/8/1998	15-16'	335	697	181	1808	3021	26.4	1555
SB-2 (near PNM former pit)	Soil	10/8/1998	15'	1950	9960	2460	22590	36960	194	>2000
PNM Test Holes along Wash									**PID (ppm)**	
TH-1	Soil	11/11/1997	12.7'	NA	NA	NA	NA	NA	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 byPNM unless otherwise noted in the "Sample Notes" column.
J = Analyte detected below Practical Quantitation Limit
B = Analyte detected in the associated Method Blank
NM = Not measured
NA = Not analyzed
NC = Not Calculated (product)

2001 Excavation standing water	none	grab	6/26/2002	None	2	<0.5	<0.5	<0.5	2		<0.5

☐ Development
☐ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number Seep

Project Name BR Well Sampling Project Manager Lisa Winn Project No. 15120000138

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address AZTEC N.M.

Development Criteria

☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) _____
Initial Depth to Water (feet) _____
Height of Water Column in Well (feet) _____
Diameter (inches): Well ____ Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing			
Gravel Pack			
Drilling Fluids			
Total			

Instruments

Serial No. (If applicable)

☐ pH Meter _____
☐ DO Monitor _____
☐ Conductivity Meter _____
☐ Temperature Meter _____
☐ Other _____

Water Disposal

_____

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-22-02	1200														

Comments Sample taken from seep down gradient from location in wash 1200

Developer's Signature(s) Christ. May Date 3 22 02 Reviewer JWinn Date 3/27/02

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 5 Page 1 of 1

Project Name B.R. well Sampling Project Manager Lisa Winn Project No. 517000139

Client Company Burlington Resources

Site Name Hampton #4 Site Address AZTec N.M.

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 20.16
Initial Depth to Water (feet) 15.54
Height of Water Column in Well (feet) 4.62
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	4.62	0.75 x 3	2.25
Gravel Pack			
Drilling Fluids			
Total			2.25

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

onsite in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-22-02	1129		X				.5	.5			14.1	6.66	3561		Cloudy yellow flakes bottom Egg odor
	1132		X				.5	1			13.6	6.67	3466		" "
	1135		X				.5	1.5			13.6	6.66	4412		" "
	1138		X				.5	2			13.5	6.67	3474		" "
	1140		X			12.11	.5	2.5			13.5	6.68	3495		No Change

Comments Sampled for BTEX 1148

Developer's Signature(s) Chris Mann Date 3-22-02 Reviewer J Winn Date 3/27/02

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 7

Page 1 of 1

Project Name B.R. well Sampling

Project Manager Lisa Winn

Project No. 151700B134

Client Company Burlington Resources

Site Name HAMPTON #4M

Site Address AZTEC NM.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 21.23
Initial Depth to Water (feet) 20.48
Height of Water Column in Well (feet) 0.75
Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	0.75	0.12 x 3	0.36
Gravel Pack			
Drilling Fluids			
Total			0.36

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

ON site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-22-02	1040		X			20.94	.25	.25			13.7	6.75	3719		Clear Rotten egg odor

Comments For the amount of water in well collected one set of water quality readings sampled for BTEX 1054

Developer's Signature(s) Chris T. Mann Date 3-22-02 Reviewer JWinn Date 3/27/02

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☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 4

Page 1 of 1

Project Name B.R. well Sampling

Project Manager LISA WINN

Project No. 15170001 38

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4

Site Address AZTEC N.M.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 32.89
Initial Depth to Water (feet) 22.68
Height of Water Column in Well (feet) 10.21
Diameter (inches): Well ____ Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.21	1.66 x 3	4.98
Gravel Pack			
Drilling Fluids			
Total			4.98

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

ON SITE in PIT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-22-02	1356						1	1			15.3	7.01	3076		Cloudy mild sulfur odor
	1359						1	2			14.2	6.69	3043		" "
	1402						1	3			14.1	6.60	3051		" "
	1406						1	4			14.1	6.58	3088		" "
	1409					22.85	1	5			13.8	6.58	3071		no change

Comments Sampled for BTEX 1415

Developer's Signature(s) [signature] Date 3-22-02

Reviewer [signature] Date 3/27/02

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☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 11 Page 1 of 1

Project Name B.R. well Sampling Project Manager Lisa Winn Project No 15120001138

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address AZTEC N.M.

Development Criteria

☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 71.51
Initial Depth to Water (feet) 56.55
Height of Water Column in Well (feet) 14.96
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	14.96	2.44 x 3	7.32
Gravel Pack			
Drilling Fluids			
Total			7.32

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

On Site

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-22-02	0942		X				1.5	1.5			13.8	6.12	2158		Cloudy Light Brown mild Septic odor
	0948		X				1.5	3			13.5	6.37	2209		" "
	0953		X				1.5	4.5			13.5	6.40	2204		Cloudy Brown Red Tint mild Septic odor
	0959		X				1.5	7			13.4	6.40	2181		" "
	1006		X			67.83	1.5	8.5			13.3	6.44	2183		no change

Comments SAMPLED FOR BTEX 1020

Developer's Signature(s) [signature] Date 3-22-02 Reviewer [signature] Date 3/27/02

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☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 12 Page 1 of 1

Project Name B.R. well Sampling Project Manager LISA Winn Project No. 151700138

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address AZTEC N.M.

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 34.40
Initial Depth to Water (feet) 24.30
Height of Water Column in Well (feet) 10.10
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.10	1.64 x 3	4.92
Gravel Pack			
Drilling Fluids			
Total			4.92

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Methods of Development

Pump: ☐ Centrifugal ☐ Submersible ☐ Peristaltic
Bailer: ☑ Bottom Valve ☐ Double Check Valve ☐ Stainless-steel Kemmerer
☐ Other _____

Water Disposal

on site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-22-02	1228		X				1	1			15.3	6.39	3149		Cloudy Grey Bottom Egg odor, Sheen
	1231		X				1	2			14.3	6.39	3037		" "
	1235		X				1	3			14	6.41	2959		Cloudy, Dark Grey Bottom Egg odor, Sheen
	1238		X				1	4			13.8	6.40	2938		" "
	1241		X			24.59	1	5			13.9	6.40	2946		No Change

Comments Sampled for BTEX 8021

Developer's Signature(s) Christ Om Date 3-22-02 Reviewer [signature] Date 3/27/02

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 15

Page 1 of 1

Project Name BR. well Sampling

Project Manager LISA winn

Project No. 15170001.39

Client Company Burlington Resources

Site Name HAMPTON #5 GM

Site Address AZTEC NM

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 25.32
Initial Depth to Water (feet) 19.10
Height of Water Column in Well (feet) 6.22
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	6.22	1.01 X 3	3.03
Gravel Pack			
Drilling Fluids			
Total			3.03

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

on site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-22-02	1447		X				.75	.75			15.3	4.28	3054		cloudy no odor
	1450		X				.75	1.5			13.8	4.19	2975		cloudy light Grey no odor
	1452		X				.75	2.25			13.5	4.14	2965		" "
	1455		X				.75	3			13.6	4.11	2950		" "
	1457		X			22.21	.75	3.75			13.4	4.13	2943		no change

Comments SAmpled for BTEX 1504

Developer's Signature(s) [signature] Date 3-22-02

Reviewer [signature] Date 3/27/02

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☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 16 Page 1 of 1

Project Name BR. well Sampling Project Manager LISA Winn Project No 517000139

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address AZTEC N.M.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 29.68
Initial Depth to Water (feet) 24.92
Height of Water Column in Well (feet) 4.76
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	4.76	3.10 X 3	9.3
Gravel Pack			
Drilling Fluids			
Total			9.3

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE in pit

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
3-22-02	1315		X				2	2			16.1	6.67	3158		Slightly Product Odor, Sheen
	1319		X				2	4			15.1	6.67	3239		" "
	1325		X			28.86	1	5			—	—	—		No Change

Comments AFTER Bailing Approximately 5 gal Bailed well Dry Let Recover Sampled for BTEX 1333

Developer's Signature(s) Chris + Mary Date 3-22-02 Reviewer [signature] Date 3/27/02

1100 1130

amec

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number TMW 1 Page 1 of 1

Project Name B.R. well Sampling Project Manager LISA Linn Project No. 151200138

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address AZTEC N.M.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☐ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 19.61
Initial Depth to Water (feet) 19.52
Height of Water Column in Well (feet) .09
Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	.09		
Gravel Pack			
Drilling Fluids			
Total			

Instruments

Serial No. (If applicable)

☐ pH Meter _____
☐ DO Monitor _____
☐ Conductivity Meter _____
☐ Temperature Meter _____
☐ Other _____

Water Disposal

_____

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
3-22-02	1130														

Comments NOT Enough water in well for water quality Readings or TO collect Samples

Developer's Signature(s) Chris Mary Date 3-22-02 Reviewer [illegible] Date 3/27/02

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WELL OBSERVATION DATA

Project Name: BR well Sampling

Project No.: 15/2000139

Project Mngr: Lisa Winn

Task:

Client Co.: Burlington Resources

Date: 3-22-02

Site Name: HAMPTON #4M

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (Feet)	Depth to Water (Feet)	Depth to Sinking Product (Feet)	Total Well Depth (Feet)	Floating Product Thickness	Sinking Product Thickness	Comments
MW 1	1515			44.04					

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments:

Signature: Chris A Mann

Date: 3-22-02

1135

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: _____

Page: _____ of _____

Purchase Order No.:	Project No.		
SEND INVOICE TO: Name		REPORT RESULTS TO: Name	Title
Company	Dept.	Company	
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	Telefax No.

PROJECT LOCATION:

SAMPLER'S SIGNATURE:

SAMPLE IDENTIFICATION	SAMPLE DATE	TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED	LAB ID

Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Method of Shipment:		Rush ☐ 24-48 Hours ☐ 10 Working Days ☐ By Date ☐	

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

April 06, 2002

Lisa Winn
AMEC Earth & Environmental Inc.
2060 Afton Place
Farmington, NM 87401
TEL: (505) 327-7928
FAX: (505) 326-5721

RE: Burlington Resources; Hampton #4M Order No.: 0203041

Dear Lisa Winn,

On Site Technologies, LTD. received 9 samples on 03/22/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD. **Date:** *06-Apr-02*

CLIENT: AMEC Earth & Environmental Inc.
Project: Burlington Resources; Hampton #4M
Lab Order: 0203041

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	Seep
Lab ID:	0203041-01A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 12:00:00 PM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	5.9	0.5		µg/L	1	03/25/2002
Toluene	ND	0.5		µg/L	1	03/25/2002
Ethylbenzene	0.8	0.5		µg/L	1	03/25/2002
m,p-Xylene	3.4	1		µg/L	1	03/25/2002
o-Xylene	ND	0.5		µg/L	1	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	MW 5
Lab ID:	0203041-02A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 11:48:00 AM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	3500	500		µg/L	1000	03/25/2002
Toluene	10000	500		µg/L	1000	03/25/2002
Ethylbenzene	830	500		µg/L	1000	03/25/2002
m,p-Xylene	6900	1000		µg/L	1000	03/25/2002
o-Xylene	1600	500		µg/L	1000	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	MW 7
Lab ID:	0203041-03A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 10:54:00 AM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	180	2.5		µg/L	5	03/25/2002
Toluene	ND	2.5		µg/L	5	03/25/2002
Ethylbenzene	78	2.5		µg/L	5	03/25/2002
m,p-Xylene	260	5		µg/L	5	03/25/2002
o-Xylene	ND	2.5		µg/L	5	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	MW 9
Lab ID:	0203041-04A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 2:15:00 PM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	03/25/2002
Toluene	ND	0.5		µg/L	1	03/25/2002
Ethylbenzene	ND	0.5		µg/L	1	03/25/2002
m,p-Xylene	ND	1		µg/L	1	03/25/2002
o-Xylene	ND	0.5		µg/L	1	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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LAB: (505) 325-1556
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ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	MW 11
Lab ID:	0203041-05A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 10:20:00 AM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	03/25/2002
Toluene	ND	0.5		µg/L	1	03/25/2002
Ethylbenzene	ND	0.5		µg/L	1	03/25/2002
m,p-Xylene	ND	1		µg/L	1	03/25/2002
o-Xylene	ND	0.5		µg/L	1	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	MW 12
Lab ID:	0203041-06A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 12:57:00 PM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	3300	25		µg/L	50	03/25/2002
Toluene	930	25		µg/L	50	03/25/2002
Ethylbenzene	290	25		µg/L	50	03/25/2002
m,p-Xylene	1100	50		µg/L	50	03/25/2002
o-Xylene	170	25		µg/L	50	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	MW 15
Lab ID:	0203041-07A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 3:04:00 PM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	03/25/2002
Toluene	ND	0.5		µg/L	1	03/25/2002
Ethylbenzene	ND	0.5		µg/L	1	03/25/2002
m,p-Xylene	ND	1		µg/L	1	03/25/2002
o-Xylene	ND	0.5		µg/L	1	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	MW 16
Lab ID:	0203041-08A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 4:33:00 PM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	10000	500		µg/L	1000	03/25/2002
Toluene	6600	500		µg/L	1000	03/25/2002
Ethylbenzene	1100	500		µg/L	1000	03/25/2002
m,p-Xylene	6200	1000		µg/L	1000	03/25/2002
o-Xylene	1200	500		µg/L	1000	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *06-Apr-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0203041	**Client Sample ID:**	Trip Blank
Lab ID:	0203041-09A **Matrix:** AQUEOUS	**Collection Date:**	03/22/2002 8:35:00 AM
Project:	Burlington Resources; Hampton #4M	**COC Record:**	11852

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	03/25/2002
Toluene	ND	0.5		µg/L	1	03/25/2002
Ethylbenzene	ND	0.5		µg/L	1	03/25/2002
m,p-Xylene	ND	1		µg/L	1	03/25/2002
o-Xylene	ND	0.5		µg/L	1	03/25/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499
EMAIL: ONSITE@ONSITELTD.COM

On Site Technologies, LTD.

Date: *06-Apr-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0203041
Project: Burlington Resources; Hampton #4M

QC SUMMARY REPORT

Method Blank

Sample ID: **MB_020325** Batch ID: **GC-1_020325** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **03/25/2002** Prep Date: **03/25/2002**
Client ID: **0203041** Run ID: **GC-1_020325A** SeqNo: **49031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.0826	0.5									J
1,4-Difluorobenzene	107.1	0									
4-Bromochlorobenzene	120.2	0									
Fluorobenzene	108.9	0									

Sample ID: **MB_020402** Batch ID: **GC-1_020402** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **04/02/2002** Prep Date:
Client ID: **0203041** Run ID: **GC-1_020402A** SeqNo: **49262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	.1005	1									J
o-Xylene	ND	0.5									
Toluene	.0807	0.5									J
1,4-Difluorobenzene	106.3	0									
4-Bromochlorobenzene	120.5	0									
Fluorobenzene	107.1	0									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *06-Apr-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0203041
Project: Burlington Resources; Hampton #4M

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0203040-08AMS** Batch ID: **GC-1_020325** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **03/25/2002** Prep Date: **03/25/2002**
Client ID: **0203041** Run ID: **GC-1_020325A** SeqNo: **49032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	393.4	5	400	8.34	96.3%	70	130				
Ethylbenzene	1481	5	400	1116	91.2%	70	130				
m,p-Xylene	1156	10	800	379.3	97.2%	70	130				
Methyl tert-Butyl Ether	469.6	10	400	43.78	106.4%	70	130				
o-Xylene	397	5	400	8.358	97.2%	70	130				
Toluene	396.8	5	400	8.164	97.1%	70	130				
1,4-Difluorobenzene	1047	0	1100	0	95.2%	70	130				
4-Bromochlorobenzene	1220	0	1100	0	110.9%	70	130				
Fluorobenzene	1071	0	1100	0	97.4%	70	130				

Sample ID: **0203040-08AMSD** Batch ID: **GC-1_020325** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **03/25/2002** Prep Date: **03/25/2002**
Client ID: **0203041** Run ID: **GC-1_020325A** SeqNo: **49033**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	396.8	5	400	8.34	97.1%	70	130	393.4	0.9%	15	
Ethylbenzene	1496	5	400	1116	94.9%	70	130	1481	1.0%	15	
m,p-Xylene	1170	10	800	379.3	98.8%	70	130	1156	1.2%	15	
Methyl tert-Butyl Ether	455.3	10	400	43.78	102.9%	70	130	469.6	3.1%	15	
o-Xylene	400.5	5	400	8.358	98.0%	70	130	397	0.9%	15	
Toluene	402.2	5	400	8.164	98.5%	70	130	396.8	1.4%	15	
1,4-Difluorobenzene	1047	0	1100	0	95.2%	70	130	0	0.0%	0	
4-Bromochlorobenzene	1214	0	1100	0	110.4%	70	130	0	0.0%	0	
Fluorobenzene	1073	0	1100	0	97.5%	70	130	0	0.0%	0	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0203041
Project: Burlington Resources; Hampton #4M

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **0203045-01AMS** Batch ID: **GC-1_020402** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **04/02/2002** Prep Date:
Client ID: **0203041** Run ID: **GC-1_020402A** SeqNo: **49263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	899	10	800	138.2	95.1%	70	130				
Ethylbenzene	2655	10	800	1857	99.8%	70	130				
m,p-Xylene	4030	20	1600	2323	106.7%	70	130				
Methyl tert-Butyl Ether	783.4	20	800	0	97.9%	70	130				
o-Xylene	765.8	10	800	12.23	94.2%	70	130				
Toluene	763.5	10	800	11.76	94.0%	70	130				
1,4-Difluorobenzene	2077	0	2200	0	94.4%	70	130				
4-Bromochlorobenzene	2450	0	2200	0	111.4%	70	130				
Fluorobenzene	2094	0	2200	0	95.2%	70	130				

Sample ID: **0203045-01AMSD** Batch ID: **GC-1_020402** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **04/02/2002** Prep Date:
Client ID: **0203041** Run ID: **GC-1_020402A** SeqNo: **49264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	873.7	10	800	138.2	91.9%	70	130	899	2.9%	15	
Ethylbenzene	2582	10	800	1857	90.7%	70	130	2655	2.8%	15	
m,p-Xylene	3922	20	1600	2323	100.0%	70	130	4030	2.7%	15	
Methyl tert-Butyl Ether	787.2	20	800	0	98.4%	70	130	783.4	0.5%	15	
o-Xylene	750.1	10	800	12.23	92.2%	70	130	765.8	2.1%	15	
Toluene	745.8	10	800	11.76	91.8%	70	130	763.5	2.4%	15	
1,4-Difluorobenzene	2078	0	2200	0	94.5%	70	130	0	0.0%	0	
4-Bromochlorobenzene	2466	0	2200	0	112.1%	70	130	0	0.0%	0	
Fluorobenzene	2108	0	2200	0	95.8%	70	130	0	0.0%	0	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *06-Apr-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0203041
Project: Burlington Resources; Hampton #4M

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS_020325** Batch ID: **GC-1_020325** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **03/25/2002** Prep Date: **03/25/2002**
Client ID: **0203041** Run ID: **GC-1_020325A** SeqNo: **49030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.37	0.5	40	0	98.4%	80	120				
Ethylbenzene	40.62	0.5	40	0	101.5%	80	120				
m,p-Xylene	80.01	1	80	0	100.0%	80	120				
Methyl tert-Butyl Ether	40.68	1	40	0	101.7%	80	120				
o-Xylene	39.88	0.5	40	0	99.7%	80	120				
Toluene	38.66	0.5	40	0.0826	96.4%	80	120				
1,4-Difluorobenzene	106.1	0	110	0	96.5%	70	130				
4-Bromochlorobenzene	121.6	0	110	0	110.6%	70	130				
Fluorobenzene	107.3	0	110	0	97.6%	70	130				

Sample ID: **LCS_020402** Batch ID: **GC-1_020402** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **04/02/2002** Prep Date:
Client ID: **0203041** Run ID: **GC-1_020402A** SeqNo: **49261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.4	0.5	40	0	93.5%	80	120				
Ethylbenzene	38.77	0.5	40	0	96.9%	80	120				
m,p-Xylene	77.13	1	80	0	96.4%	80	120				
Methyl tert-Butyl Ether	39.48	1	40	0.1005	98.5%	80	120				
o-Xylene	38.1	0.5	40	0	95.2%	80	120				
Toluene	36.95	0.5	40	0.0807	92.2%	80	120				
1,4-Difluorobenzene	105.4	0	110	0	95.8%	70	130				
4-Bromochlorobenzene	121.7	0	110	0	110.7%	70	130				
Fluorobenzene	106	0	110	0	96.3%	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0203041
Project: Burlington Resources; *Hampton #4M*

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1_020402** Batch ID: **GC-1_020402** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **04/02/2002** Prep Date:

Client ID: **0203041** Run ID: **GC-1_020402A** SeqNo: **49258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.66	0.5	20	0	98.3%	85	115				
Ethylbenzene	20.3	0.5	20	0	101.5%	85	115				
m,p-Xylene	40.57	1	40	0	101.4%	85	115				
Methyl tert-Butyl Ether	20.21	1	20	0	101.1%	85	115				
o-Xylene	19.78	0.5	20	0	98.9%	85	115				
Toluene	19.33	0.5	20	0	96.7%	85	115				
1,4-Difluorobenzene	106.1	0	110	0	96.5%	70	130				
4-Bromochlorobenzene	122.3	0	110	0	111.2%	70	130				
Fluorobenzene	106.5	0	110	0	96.8%	70	130				

Sample ID: **CCV2_020402** Batch ID: **GC-1_020402** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **04/02/2002** Prep Date:

Client ID: **0203041** Run ID: **GC-1_020402A** SeqNo: **49259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.4	0.5	20	0	97.0%	85	115				
Ethylbenzene	19.96	0.5	20	0	99.8%	85	115				
m,p-Xylene	39.84	1	40	0	99.6%	85	115				
Methyl tert-Butyl Ether	20.22	1	20	0	101.1%	85	115				
o-Xylene	19.53	0.5	20	0	97.6%	85	115				
Toluene	19.1	0.5	20	0	95.5%	85	115				
1,4-Difluorobenzene	105.5	0	110	0	95.9%	70	130				
4-Bromochlorobenzene	124	0	110	0	112.8%	70	130				
Fluorobenzene	106.5	0	110	0	96.8%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *06-Apr-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0203041
Project: Burlington Resources; Hampton #4M

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1_020325** Batch ID: **GC-1_020325** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **03/25/2002** Prep Date: **03/25/2002**
Client ID: **0203041** Run ID: **GC-1_020325A** SeqNo: **49028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.98	0.5	20	0	99.9%	85	115				
Ethylbenzene	20.66	0.5	20	0	103.3%	85	115				
m,p-Xylene	40.68	1	40	0	101.7%	85	115				
Methyl tert-Butyl Ether	20.32	1	20	0	101.6%	85	115				
o-Xylene	20.12	0.5	20	0	100.6%	85	115				
Toluene	19.6	0.5	20	0	98.0%	85	115				
1,4-Difluorobenzene	106.6	0	110	0	96.9%	70	130				
4-Bromochlorobenzene	121.9	0	110	0	110.8%	70	130				
Fluorobenzene	107.9	0	110	0	98.1%	70	130				

Sample ID: **CCV2_020325** Batch ID: **GC-1_020325** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **03/25/2002** Prep Date: **03/25/2002**
Client ID: **0203041** Run ID: **GC-1_020325A** SeqNo: **49029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.69	0.5	40	0	96.7%	85	115				
Ethylbenzene	39.63	0.5	40	0	99.1%	85	115				
m,p-Xylene	77.82	1	80	0	97.3%	85	115				
Methyl tert-Butyl Ether	40.48	1	40	0	101.2%	85	115				
o-Xylene	39.04	0.5	40	0	97.6%	85	115				
Toluene	37.93	0.5	40	0	94.8%	85	115				
1,4-Difluorobenzene	106.3	0	110	0	96.6%	70	130				
4-Bromochlorobenzene	118.7	0	110	0	107.9%	70	130				
Fluorobenzene	107.2	0	110	0	97.4%	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0203041
Project: Burlington Resources; Hampton #4M

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV3_020402** Batch ID: **GC-1_020402** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **04/02/2002** Prep Date:

Client ID: **0203041** Run ID: **GC-1_020402A** SeqNo: **49260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.17	0.5	40	0	95.4%	85	115				
Ethylbenzene	39.55	0.5	40	0	98.9%	85	115				
m,p-Xylene	78.4	1	80	0	98.0%	85	115				
Methyl tert-Butyl Ether	39.72	1	40	0	99.3%	85	115				
o-Xylene	38.79	0.5	40	0	97.0%	85	115				
Toluene	37.79	0.5	40	0	94.5%	85	115				
1,4-Difluorobenzene	104.8	0	110	0	95.2%	70	130				
4-Bromochlorobenzene	123.3	0	110	0	112.1%	70	130				
Fluorobenzene	105.7	0	110	0	96.1%	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 06-Apr-02

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0203041
Project: Burlington Resources; Hampton #4M
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0203040-08AMS	95.2	111	97.4
0203040-08AMSD	95.2	110	97.5
0203041-01A	96.3	109	97.9
0203041-02A	96.9	108	98.5
0203041-03A	95.6	108	97.2
0203041-04A	97.8	110	99
0203041-05A	97.5	110	99.3
0203041-06A	96.1	109	97.1
0203041-07A	97.7	110	99
0203041-08A	97.3	108	98.2
0203041-09A	97.6	110	98.8
0203045-01A	95.1	111	96.5
0203045-01AMS	94.4	111	95.2
0203045-01AMSD	94.4	112	95.8
0203045-03A	97.2	111	97.9
0203046-10A	94.3	109	96
0203046-11A	94.4	112	95.2
0203046-12A	96.6	112	97.5
0203046-13A	97	112	97.9
0203046-14A	96.2	111	97.8
0203048-01A	93.8	110	94.5
0203048-02A	96.9	113	98.1
CCV1_020325	96.9	111	98.1
CCV1_020402	96.5	111	96.8
CCV2_020325	96.6	108	97.4
CCV2_020402	95.9	113	96.8
CCV3_020402	95.2	112	96

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

1

CLIENT:	AMEC Earth & Environmental Inc.
Work Order:	0203041
Project:	Burlington Resources; Hampton #4M
Test No:	SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
LCS_020325	96.4	110	97.6
LCS_020402	95.8	111	96.3
MB_020325	97.3	109	99
MB_020402	96.6	110	97.4

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

12174

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 6-28-02

Page: 1 of 1

Purchase Order No.: | Project No. 1517000138

SEND INVOICE TO
Name: BURLINGTON RESOURCES - GREGG WURTZ
Company: BURLINGTON RESOURCES | Dept. ENV.
Address: 3401 E. 30TH ST.
City, State, Zip: FARMINGTON, NM 87402

REPORT RESULTS TO
Name: LISA WINN | Title: PROJECT MANAGER
Company: ~~BURLINGTON~~ AMEC E&E
Mailing Address: 2060 AFTON PLACE
City, State, Zip: FARMINGTON, NM 87401
Telephone No: (505) 327-7928 | Telefax No: (505) 326-5721

PROJECT LOCATION: HAMPTON #4M - AZTEC, NM

SAMPLER'S SIGNATURE: Rod Thompson

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	ANALYSIS REQUESTED: 8021	LAB ID
HAMPTON #4M - MW11	6-28-02	1257	GW	HCl	2	X	
HAMPTON #4M - MW07	6-28-02	1335	GW	HCl	2	X	
HAMPTON #4M - MW05	6-28-02	1413	GW	HCl	2	X	
HAMPTON #4M - SEEP	6-28-02	1420	GW	HCl	2	X	
HAMPTON #4M - MW12	6-28-02	1457	GW	HCl	2	X	
HAMPTON #4M - MW16	6-28-02	1530	GW	HCl	2	X	
HAMPTON #4M - MW09	6-28-02	1105	GW	HCl	2	X	
HAMPTON #4M - MW15	6-29-02	0935	GW	HCl	2	X	
TRIP BLANK	6-28-02	0845	H2O	HCl	2	X	

Relinquished by: Rod Thompson	Date/Time 7-1-02/1535	Received by:	Date/Time 7/1/02 1535
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number SEEP

Page 1 of 1

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 1517000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) _____
Initial Depth to Water (feet) _____
Height of Water Column in Well (feet) _____
Diameter (inches): Well ____ Gravel Pack ____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			
Gravel Pack			
Drilling Fluids			
Total			

Instruments

Serial No. (If applicable)

☐ pH Meter _____
☐ DO Monitor _____
☐ Conductivity Meter _____
☐ Temperature Meter _____
☐ Other _____

Water Disposal

_____

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					

Comments SAMPLE COLLECTED FROM SEEP DOWN GRADIENT FROM LOCATION IN WASH. SAMPLE COLLECTED AT 1420.

Developer's Signature(s) Robert Champion Date 6-28-02 Reviewer [signature] Date 7/2/02

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW-11 Page 1 of 1

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 1517000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

☒ ③ to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 71.51' TOR
Initial Depth to Water (feet) 56.43' TOR
Height of Water Column in Well (feet) 15.08
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	15.08	2.46	2.46 x 3
Gravel Pack			
Drilling Fluids			
Total			7.38

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-28-02	1200		X				0	0			17.9	6.29	2239		RUSTY COLOR
6-28-02	1211		X				2	2			16.1	6.29	2325		RUST COLOR
6-28-02	1221		X				2	4			16.1	6.29	2335		RUST COLOR
6-28-02	1231		X				2	6			15.4	6.31	2295		RUST COLOR
6-28-02	1240		X				2	8			18.6	6.37	2484		LIGHT BROWN

Comments SAMPLED FOR BTEX AT 1257

Developer's Signature(s) Robert Thompson Date 6-28-02 Reviewed JWinn Date 7/2/02

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☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW-7 Page 1 of 1

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 15170000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

☒ (3) to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 21.23' TOR
Initial Depth to Water (feet) 19.53' TOR
Height of Water Column in Well (feet) 1.70'
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	1.70'	0.28	0.28 x 3
Gravel Pack			
Drilling Fluids			
Total			0.84

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					

Comments NOT ENOUGH WATER TO RECORD WATER QUALITY READINGS. SAMPLED FOR BTEX AT 1335.

Developer's Signature(s) Robert Thompson Date 6-28-02 Reviewer [signature] Date 7/2/02

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☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number TMW-1 Page 1 of 1

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 1517000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

☒ ~~1~~ to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 20.15' TOR
Initial Depth to Water (feet) 20.05' TOR
Height of Water Column in Well (feet) 0.10
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	0.10	0.02	0.02x3
Gravel Pack			
Drilling Fluids			
Total			0.06

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					

DRY WELL FOR PURPOSES OF SAMPLING.

Comments NOT ENOUGH WATER IN WELL TO PURGE OR SAMPLE.

Developer's Signature(s) Robert Thompson Date 6-28-02 Reviewer J Winn Date 7/2/02

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☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW-5 Page 1 of 1

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 1517000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 20.16' TOR
Initial Depth to Water (feet) 15.86' TOR
Height of Water Column in Well (feet) 4.30
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	4.30	0.70	0.70 x 3
Gravel Pack			
Drilling Fluids			
Total			2.10

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☒ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
6-28-02	1347		X				0	0			19.4	6.63	4215		BLACKISH-YELLOW
6-28-02	1353		X				.75	.75			17.0	6.67	3748		BLACKISH-YELLOW
6-28-02	1358		X				.75	1.50			16.5	6.71	3706		BLACKISH-YELLOW
6-28-02	1405		X				.75	2.25			17.0	6.86	3775		BLACK

Comments SAMPLED FOR BTEX AT 1413.

Developer's Signature(s) Robert Champion Date 6-28-02 Reviewer [signature] Date 7/2/02

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☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW-12

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 1517000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 34.40' TOR
Initial Depth to Water (feet) 24.46' TOR
Height of Water Column in Well (feet) 9.94
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	9.94	1.62	1.62 x 3
Gravel Pack			
Drilling Fluids			
Total			4.86

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-28-02	1430		X				0	0			17.7	6.36	3209		CLOUDY
6-28-02	1437		X				1.5	1.5			15.3	6.33	3181		CLOUDY
6-28-02	1441		X				1.5	3.0			14.8	6.37	3107		CLOUDY
6-28-02	1446		X				1.5	4.5			14.9	6.39	3074		BLACK
6-28-02	1451		X				.5	5.0			14.9	6.39	3096		BLACK

Comments SAMPLED FOR BTEX AT 1457.

Developer's Signature(s) Robert Thompson Date 6-28-02 Reviewer L Winn Date 7/2/02

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW-16 Page 1 of 1

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 1517000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

~~☒~~ (3) to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 29.68' TOR
Initial Depth to Water (feet) 25.03' TOR
Height of Water Column in Well (feet) 4.65
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	4.65	3.04	3.04 x 3
Gravel Pack			
Drilling Fluids			
Total			9.12

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-28-02	1507		X				0	0			18.5	6.74	3193		LIGHT YELLOW
6-28-02	1512		X				2	2			16.0	6.68	3222		LIGHT YELLOW
6-28-02	1516		X				2	4			16.1	6.65	3351		CLOUDY

Comments WELL BAILED DRY AT 5.0 GALLONS. LET RECHARGE AND SAMPLED FOR BTEX AT 1530.

Developer's Signature(s) Robert Thompson Date 6-28-02 Reviewer [signature] Date 7/2/02

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☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW-9 Page 1 of 1

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 15170000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

☒ ~~6~~ to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 32.89' TOR
Initial Depth to Water (feet) 22.88' TOR
Height of Water Column in Well (feet) 10.01
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	10.01	1.63	1.63 x 3
Gravel Pack			
Drilling Fluids			
Total			4.89

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-28-02	1538		X				0	0			17.1	6.62	3125		CLEAR
6-28-02	1542		X				1.5	1.5			14.9	6.49	3103		CLOUDY
6-28-02	1546		X				1.5	3.0			14.8	6.44	3141		CLOUDY
6-28-02	1550		X				1.5	4.5			14.5	6.43	3125		CLOUDY
6-28-02	1554		X				.5	5.0			14.7	6.45	3154		CLOUDY

Comments SAMPLED FOR BTEX AT 1605.

Developer's Signature(s) Robert Thompson Date 6-28-02 Reviewer [signature] Date 7/2/02

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☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW-15 Page 1 of 1

Project Name BR WELL SAMPLING Project Manager LISA WINN Project No. 1517000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address AZTEC, NM

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 25.32' TOR
Initial Depth to Water (feet) 19.08' TOR
Height of Water Column in Well (feet) 6.24
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	6.24	1.02	1.02x3
Gravel Pack			
Drilling Fluids			
Total			3.06

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-29-02	0908		X				0	0			15.5	4.04	3072		CLOUDY
6-29-02	0914		X				1	1			14.4	4.05	3042		CLOUDY
6-29-02	0918		X				1	2			13.9	4.08	3016		LIGHT BROWN
6-29-02	0923		X				1	3			13.7	4.20	2987		LIGHT BROWN
6-29-02	0928		X				.5	3.5			14.0	4.27	3001		LIGHT BROWN-SILTY

Comments SAMPLED FOR BTEX AT 0935.

Developer's Signature(s) Robert Thompson Date 6-29-02 Reviewer [signature] Date 7/2/02

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OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

July 16, 2002

Lisa Winn
AMEC Earth & Environmental Inc.
2060 Afton Place
Farmington, NM 87401
TEL: (505) 327-7928
FAX: (505) 326-5721

RE: Hampton 4M, Aztec, NM Order No.: 0207003

Dear Lisa Winn,

On Site Technologies, LTD. received 9 samples on 07/01/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Heidi Reese

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FAX: (505) 327-1496

ON SITE
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On Site Technologies, LTD. **Date:** *16-Jul-02*

CLIENT:	AMEC Earth & Environmental Inc.
Project:	Hampton 4M, Aztec, NM
Lab Order:	0207003

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	Seep
Lab ID:	0207003-04A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 2:20:00 PM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	07/10/2002
Toluene	ND	0.5		µg/L	1	07/10/2002
Ethylbenzene	ND	0.5		µg/L	1	07/10/2002
m,p-Xylene	ND	1		µg/L	1	07/10/2002
o-Xylene	ND	0.5		µg/L	1	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	MW-11
Lab ID:	0207003-01A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 12:57:00 PM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	07/10/2002
Toluene	ND	0.5		µg/L	1	07/10/2002
Ethylbenzene	ND	0.5		µg/L	1	07/10/2002
m,p-Xylene	ND	1		µg/L	1	07/10/2002
o-Xylene	ND	0.5		µg/L	1	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	MW-07
Lab ID:	0207003-02A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 1:35:00 PM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	89	0.5		µg/L	1	07/10/2002
Toluene	1	0.5		µg/L	1	07/10/2002
Ethylbenzene	41	0.5		µg/L	1	07/10/2002
m,p-Xylene	79	1		µg/L	1	07/10/2002
o-Xylene	ND	0.5		µg/L	1	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	MW-05
Lab ID:	0207003-03A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 2:13:00 PM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	3700	50		µg/L	100	07/10/2002
Toluene	12000	50		µg/L	100	07/10/2002
Ethylbenzene	760	50		µg/L	100	07/10/2002
m,p-Xylene	8300	100		µg/L	100	07/10/2002
o-Xylene	1700	50		µg/L	100	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	MW-12
Lab ID:	0207003-05A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 2:57:00 PM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	4200	25		µg/L	50	07/10/2002
Toluene	1800	25		µg/L	50	07/10/2002
Ethylbenzene	410	25		µg/L	50	07/10/2002
m,p-Xylene	1700	50		µg/L	50	07/10/2002
o-Xylene	240	25		µg/L	50	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	MW-16
Lab ID:	0207003-06A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 3:30:00 PM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	11000	50		µg/L	100	07/10/2002
Toluene	7000	50		µg/L	100	07/10/2002
Ethylbenzene	770	50		µg/L	100	07/10/2002
m,p-Xylene	5700	100		µg/L	100	07/10/2002
o-Xylene	1100	50		µg/L	100	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	MW-09
Lab ID:	0207003-07A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 4:05:00 PM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	07/10/2002
Toluene	ND	0.5		µg/L	1	07/10/2002
Ethylbenzene	ND	0.5		µg/L	1	07/10/2002
m,p-Xylene	ND	1		µg/L	1	07/10/2002
o-Xylene	ND	0.5		µg/L	1	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	MW-15
Lab ID:	0207003-08A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 9:35:00 AM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	07/10/2002
Toluene	ND	0.5		µg/L	1	07/10/2002
Ethylbenzene	ND	0.5		µg/L	1	07/10/2002
m,p-Xylene	ND	1		µg/L	1	07/10/2002
o-Xylene	ND	0.5		µg/L	1	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *16-Jul-02*

Client:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0207003	**Client Sample ID:**	Trip Blank
Lab ID:	0207003-09A **Matrix:** AQUEOUS	**Collection Date:**	06/28/2002 8:45:00 AM
Project:	Hampton 4M, Aztec, NM	**COC Record:**	12174

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.5		µg/L	1	07/10/2002
Toluene	ND	0.5		µg/L	1	07/10/2002
Ethylbenzene	ND	0.5		µg/L	1	07/10/2002
m,p-Xylene	ND	1		µg/L	1	07/10/2002
o-Xylene	ND	0.5		µg/L	1	07/10/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surr: - Surrogate

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On Site Technologies, LTD.

Date: *15-Jul-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0207003
Project: Hampton 4M, Axtec, NM

QC SUMMARY REPORT

Method Blank

Sample ID: **MB_020710** Batch ID: **GC-1_020710** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **07/10/2002** Prep Date: **07/10/2002**

Client ID: **0207003** Run ID: **GC-1_020710A** SeqNo: **53940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	ND	0.5									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *15-Jul-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0207003
Project: Hampton 4M, Axtec, NM

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0207003-06AMS** Batch ID: **GC-1_020710** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **07/10/2002** Prep Date: **07/10/2002**
Client ID: **MW-16** **0207003** Run ID: **GC-1_020710A** SeqNo: **53941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	15360	50	4000	10760	115.1%	70	130				
Ethylbenzene	5174	50	4000	774.4	110.0%	70	130				
m,p-Xylene	14760	100	8000	5746	112.7%	70	130				
Methyl tert-Butyl Ether	4125	100	4000	0	103.1%	70	130				
o-Xylene	5345	50	4000	1126	105.5%	70	130				
Toluene	11420	50	4000	6960	111.4%	70	130				

Sample ID: **0207003-06AMSD** Batch ID: **GC-1_020710** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **07/10/2002** Prep Date: **07/10/2002**
Client ID: **MW-16** **0207003** Run ID: **GC-1_020710A** SeqNo: **53942**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	14970	50	4000	10760	105.4%	70	130	15360	2.6%	15	
Ethylbenzene	5063	50	4000	774.4	107.2%	70	130	5174	2.2%	15	
m,p-Xylene	14440	100	8000	5746	108.7%	70	130	14760	2.1%	15	
Methyl tert-Butyl Ether	4079	100	4000	0	102.0%	70	130	4125	1.1%	15	
o-Xylene	5250	50	4000	1126	103.1%	70	130	5345	1.8%	15	
Toluene	11140	50	4000	6960	104.6%	70	130	11420	2.4%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *15-Jul-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0207003
Project: Hampton 4M, Axtec, NM

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: **LCS_020710** Batch ID: **GC-1_020710** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **07/10/2002** Prep Date: **07/10/2002**

Client ID: **0207003** Run ID: **GC-1_020710A** SeqNo: **53939**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.26	0.5	40	0	100.7%	80	120				
Ethylbenzene	43.37	0.5	40	0	108.4%	80	120				
m,p-Xylene	86.07	1	80	0	107.6%	80	120				
Methyl tert-Butyl Ether	42.13	1	40	0	105.3%	80	120				
o-Xylene	41.35	0.5	40	0	103.4%	80	120				
Toluene	40.67	0.5	40	0	101.7%	80	120				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: *15-Jul-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0207003
Project: Hampton 4M, Axtec, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: **CCV1_020710** Batch ID: **GC-1_020710** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **07/10/2002** Prep Date: **07/10/2002**
Client ID: **0207003** Run ID: **GC-1_020710A** SeqNo: **53935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.45	0.5	20	0	97.3%	85	115				
Ethylbenzene	21.14	0.5	20	0	105.7%	85	115				
m,p-Xylene	41.57	1	40	0	103.9%	85	115				
Methyl tert-Butyl Ether	20.6	1	20	0	103.0%	85	115				
o-Xylene	20.08	0.5	20	0	100.4%	85	115				
Toluene	19.71	0.5	20	0	98.5%	85	115				
1,4-Difluorobenzene	111.6	0	110	0	101.5%	70	130				
4-Bromochlorobenzene	123.3	0	110	0	112.1%	70	130				
Fluorobenzene	116.1	0	110	0	105.6%	70	130				

Sample ID: **CCV2_020710** Batch ID: **GC-1_020710** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **07/10/2002** Prep Date: **07/10/2002**
Client ID: **0207003** Run ID: **GC-1_020710A** SeqNo: **53936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.61	0.5	20	0	98.1%	85	115				
Ethylbenzene	21.22	0.5	20	0	106.1%	85	115				
m,p-Xylene	41.69	1	40	0	104.2%	85	115				
Methyl tert-Butyl Ether	20.32	1	20	0	101.6%	85	115				
o-Xylene	20.12	0.5	20	0	100.6%	85	115				
Toluene	19.84	0.5	20	0	99.2%	85	115				
1,4-Difluorobenzene	110.9	0	110	0	100.9%	70	130				
4-Bromochlorobenzene	125.9	0	110	0	114.4%	70	130				
Fluorobenzene	115.9	0	110	0	105.4%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0207003
Project: Hampton 4M, Axtec, NM

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: **CCV3_020710** Batch ID: **GC-1_020710** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **07/10/2002** Prep Date: **07/10/2002**
Client ID: **0207003** Run ID: **GC-1_020710A** SeqNo: **53937**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.66	0.5	40	0	101.7%	85	115				
Ethylbenzene	43.53	0.5	40	0	108.8%	85	115				
m,p-Xylene	86.08	1	80	0	107.6%	85	115				
Methyl tert-Butyl Ether	41.58	1	40	0	104.0%	85	115				
o-Xylene	41.47	0.5	40	0	103.7%	85	115				
Toluene	40.88	0.5	40	0	102.2%	85	115				
1,4-Difluorobenzene	111.4	0	110	0	101.3%	70	130				
4-Bromochlorobenzene	126.6	0	110	0	115.1%	70	130				
Fluorobenzene	115.5	0	110	0	105.0%	70	130				

Sample ID: **CCV4_020710** Batch ID: **GC-1_020710** Test Code: **SW8021B** Units: **µg/L** Analysis Date: **07/10/2002** Prep Date: **07/10/2002**
Client ID: **0207003** Run ID: **GC-1_020710A** SeqNo: **53938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.37	0.5	20	0	101.8%	85	115				
Ethylbenzene	22.18	0.5	20	0	110.9%	85	115				
m,p-Xylene	43.54	1	40	0	108.8%	85	115				
Methyl tert-Butyl Ether	20.78	1	20	0	103.9%	85	115				
o-Xylene	21.24	0.5	20	0	106.2%	85	115				
Toluene	21.07	0.5	20	0	105.4%	85	115				
1,4-Difluorobenzene	111.6	0	110	0	101.5%	70	130				
4-Bromochlorobenzene	124.5	0	110	0	113.2%	70	130				
Fluorobenzene	116.4	0	110	0	105.8%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 15-Jul-02

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0207003
Project: Hampton 4M, Axtec, NM
Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
0206055-01A	102	115	106
0206058-12A	102	114	106
0206058-16A	103	113	107
0206058-17A	100	114	105
0206058-18A	101	117	105
0206058-19A	101	112	106
0206060-15A	102	115	106
0207001-01A	101	117	106
0207001-02A	102	114	106
0207003-01A	102	113	106
0207003-02A	100	118	104
0207003-03A	100	115	105
0207003-04A	101	113	106
0207003-05A	101	116	105
0207003-06A	101	115	105
0207003-06AMS	100	116	104
0207003-06AMSD	100	116	104
0207003-07A	102	113	106
0207003-08A	102	113	106
0207003-09A	102	112	106
0207008-01A	101	113	106
0207008-02A	102	113	106
CCV1_020710	101	112	106
CCV2_020710	101	114	105
CCV3_020710	101	115	105
CCV4_020710	101	113	106
LCS_020710	101	113	105

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

/

CLIENT:	AMEC Earth & Environmental Inc.
Work Order:	0207003
Project:	Hampton 4M, Axtec, NM
Test No:	SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ
MB_020710	101	121	105

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

iiná bá (for life's sake)

CHAIN OF CUSTODY RECORD

B 1460

Date: 9-24-02

Page 1 of 1

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Purchase Order No.:
Job No. 1517000159

SEND INVOICE TO
Name: Greg Wurtz
Company: Burlington Resources
Dept.
Address: P.O. Box 4289
City, State, Zip: Farmington N.M. 87499-4289

REPORT RESULTS TO
Name: Lisa Winn
Title: Project Manager
Company: AMEC
Mailing Address: 2060 Afton Place
City, State, Zip: Farmington N.M. 87401
Telephone No. (505) 327-7928
Telefax No. (505) 326-5721

Sampling Location: HAMPTON #4M

Sampler: [signature]

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX 8021									LAB ID
HAMPTON MW5	9/23	1200	H_2O	HCL	2	X									
HAMPTON MW7	9/23	1135	H_2O	HCL	2	X									
HAMPTON MW9	9/23/02	1135	H_2O	HCL	2	X									
HAMPTON MW 11	9/23	1045	H_2O	HCL	2	X									
HAMPTON MW 12	9/23	1300	H_2O	HCL	2	X									
HAMPTON MW 15	9/23	1420	H_2O	HCL	2	X									
HAMPTON MW 16	9/23	1335	H_2O	HCL	2	X									
HAMPTON SEEP	9/23	1440	H_2O	HCL	2	X									
Trip BLANK	9/23	0900	H_2O	HCL	2	X									

Relinquished by: [signature]	Date/Time 9/25/02 0845	Received by: [signature]	Date/Time 9/25/02 0845
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days

Special Instructions: ALSO SEND RESULTS TO GREG WURTZ AT Burlington Resources

Authorized by: ____________ Date ________
(Client Signature Must Accompany Request)

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number TMW 1 Page 1 of 1

Project Name B.R. well SAMpling Project Manager LISA Winn Project No 15/7000138

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address Rural SAN JAUN CO

Development Criteria
- ☑ 3 to 5 Casing Volumes of Water Removal
- ☑ Stabilization of Indicator Parameters
- ☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 19.61
Initial Depth to Water (feet) 19.51
Height of Water Column in Well (feet) .10
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing			
Gravel Pack			
Drilling Fluids			
Total			

Instruments (Serial No. (If applicable))
- ☑ pH Meter YSI 63
- ☐ DO Monitor
- ☑ Conductivity Meter YSI 63
- ☑ Temperature Meter YSI 63
- ☐ Other

Water Disposal On site in pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-23-02															

Comments NOT enough water for water quality Readings or TO collect Sample

Developer's Signature(s) [signature] Date 9-23-02 Reviewer [signature] Date 9/30/02

☐ Development
☐ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

amec

Well Number Seep

Page 1 of 1

Project Name B.R. well SAMpling

Project Manager LiSA Winn

Project No 517000138

Client Company Burlington Resources

Site Name HAMPTON #4M

Site Address Rural SAN JAUN CO

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal.
☐ Stabilization of Indicator Parameters
☐ Other ______

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☐ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other ______

Water Volume Calculation

Initial Depth of Well (feet) ______
Initial Depth to Water (feet) ______
Height of Water Column in Well (feet) ______
Diameter (inches): Well ____ Gravel Pack ____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			
Gravel Pack			
Drilling Fluids			
Total			

Instruments Serial No. (If applicable)

☐ pH Meter ______
☐ DO Monitor ______
☐ Conductivity Meter ______
☐ Temperature Meter ______
☐ Other ______

Water Disposal

______

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
9-23-02															

Comments SAMpled for BTex 1440 SAmple collected from seep in wash DOWN Gradient from Location

Developer's Signature(s) [signature] Date 9-23-02 Reviewer [signature] Date 9/30/02

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 5 Page 1 of 1

Project Name BR well SAMPLING Project Manager LISA WINN Project No. 15170000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M Site Address Rural SAN JUAN CO.

Development Criteria

☑ 3 to (5) Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 20.16
Initial Depth to Water (feet) 15.82
Height of Water Column in Well (feet) 4.34
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	4.34	0.70 X 3	2.1
Gravel Pack			
Drilling Fluids			
Total			2.1

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE in pit

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
9 23-02	1146		X				.5	.5			17.9	7.02	3465		Cloudy DARK GRX yellow Flakes PETRO odor
	1142		X				.5	1			17.3	6.93	3354		" "
	1144		X				.5	1.5			17.3	6.89	3618		" "
	1147		X				.5	2			17.5	6.95	3699		" "
	1150		X			17.86	.5	2.5			17.2	6.96	3729		NO CHANGE

Comment = SAMPLED FOR BTEX 1200

Developer's Signature(s) [signature] Date 9-23-02 Reviewer [signature] Date 9/30/02

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☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 7

Page 1 of 1

Project Name B.R. well SAMPLING

Project Manager LISA winn

Project No. 157000138

Client Company BURLINGTON RESOURCES

Site Name HAMPTON #4M

Site Address Rural SAN JUAN CO.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 21.23
Initial Depth to Water (feet) 20.52
Height of Water Column in Well (feet) .71
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	.71		
Gravel Pack			
Drilling Fluids			
Total			

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE in PIT

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
9-23-02	1119		X			21.10	.25	.25			16.0	7.03	2678		Cloudy yellow chips bottom egg odor

Comments AFTER Bailing Approximately .25 gal Bailed well Dry 1135

Developer's Signature(s) Chris A. Macy Date 9-23-02 Reviewer [signature] Date 9/30/02

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amec

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 9

Page 1 of 1

Project Name B.R. Well SAMpling

Project Manager LiSA Winn

Project No. 1517000158

Client Company Burlington Resources

Site Name HAMPTON #4M

Site Address Rural SAN JUAN CO.

Development Criteria

☒ (3) to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 32.89
Initial Depth to Water (feet) 22.90
Height of Water Column in Well (feet) 9.99
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	9.99	1.63X3	4.89
Gravel Pack			
Drilling Fluids			
Total			4.98

Instruments Serial No. (If applicable)

☒ pH Meter YSI 63
☐ DO Monitor
☒ Conductivity Meter YSI 63
☒ Temperature Meter YSI 63
☐ Other

Water Disposal
ON SITE in piT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-24-02	1112						1	1			17.4	6.36	2135		Cloudy, Light Grey, no odor
	1114						1	2			16.0	6.58	3023		" "
	1117						1	3			15.1	6.51	2995		" "
	1119						1	4			15.0	6.52	2994		" "
	1122					23.20	1	5			14.7	6.56	2989		no CHANGE

Comments SAMPLED FOR BTEX 1130

Developer's Signature(s) [signature] Date 9-24-02 Reviewer [signature] Date 9/30/02

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 11 Page 1 of 1

Project Name BR well SAMPLING Project Manager LISA WINN Project No 15120001.38

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address Rural SAN JUAN CO.

Development Criteria
- ☑ 3 to 5 Casing Volumes of Water Removal
- ☑ Stabilization of Indicator Parameters
- ☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 71.51
Initial Depth to Water (feet) 56.50
Height of Water Column in Well (feet) 15.01
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	15.01	2.44X3	7.32
Gravel Pack			
Drilling Fluids			
Total			7.32

Instruments — Serial No. (If applicable)
- ☑ pH Meter — YSI 63
- ☐ DO Monitor
- ☑ Conductivity Meter — YSI 63
- ☑ Temperature Meter — YSI 63
- ☐ Other

Water Disposal ON SITE in P.T

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-23-02	1013		X				1.5	1.5			14.5	5.98	364.7		Clear light reddish tint, no odor
	1017		X				1.5	3			13.9	6.42	751		Cloudy/light brown no odor
	1023		X				1.5	4.5			13.9	6.45	903		" "
	1028		X				1.5	6			13.8	6.48	924		Cloudy/Brown no odor
	1036		X			66.29	1.5	7.5			13.8	6.48	1078		NO CHANGE

Comments SAMPLED FOR BTEX 1045

Developer's Signature(s) [signature] Date 9-23-02 Reviewer [signature] Date 9/30/02

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☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 12 Page 1 of 1

Project Name B.R. well Sampling Project Manager LISA WINN Project No 151200038

Client Company Burlington Resources

Site Name HAMPTON #4M Site Address Rural SAN JUAN CO.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 34.40
Initial Depth to Water (feet) 24.46
Height of Water Column in Well (feet) 9.94
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.94	1.62 X 3	4.86
Gravel Pack			
Drilling Fluids			
Total			4.86

Instruments

Serial No. (If applicable)

☑ pH Meter YSI 63
☐ DO Monitor _____
☑ Conductivity Meter YSI 63
☑ Temperature Meter YSI 63
☐ Other _____

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other _____

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
9-23-02	1236		X				1	1			17.2	6.98	1656		Cloudy Grey/Sheen Petro Odor
	1239		X				1	2			15.3	6.72	2973		" "
	1241		X				1	3			15.5	6.62	2998		" "
	1244		X				1	4			15.1	6.59	2974		" "
	1246		X			24.20	1	5			15.1	6.71	2934		no Change

Comments SAMPLED for BTEX 1300

Developer's Signature(s) [signature] Date 9-23-02 Reviewer [signature] Date 9/30/02

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 15 Page 1 of 1

Project Name B.R. well SAMPLing Project Manager LISA Winn Project No. 151700013B

Client Company Burlington Resources

Site Name HAMPTON #4 M Site Address Rural SAN JUAN CO

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 25.32
Initial Depth to Water (feet) 19.05
Height of Water Column in Well (feet) 6.27
Diameter (inches): Well 2" Gravel Pack _____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	6.27	1.02x3	3.06
Gravel Pack			
Drilling Fluids			
Total			3.06

Instruments

	Serial No. (if applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

ON SITE IN PIT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-23-02	1408		X				.75	.75			17.5	6.31	3040		Cloudy, Light grey no odor
	1410		X				.75	1.5			16.5	5.07	2568		Cloudy, Grey no odor
	1412		X				.75	2.25			16.1	4.57	2947		" "
	1414		X				.75	3			15.8	4.44	2952		" "
	1416		X			22.45	.75	3.75			15.7	4.34	2961		no Change

Comments SAMPLED for BTEX 1420

Developer's Signature(s) [signature] Date 9-23-02 Reviewer [signature] Date 9/30/02

amec

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 16 Page 1 of 1

Project Name B.R. well SAMpling Project Manager LisA winn Project No. 15172000138

Client Company Burlington Resources

Site Name HAMpTON #4 M Site Address Rural SAN JAUN CO.

Development Criteria

☑ (3) to 5 Casing Volumes of Water Removal.
☑ Stabilization of Indicator Parameters
☐ Other ______

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic
☐ Other ______

Bailer
☑ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

Water Volume Calculation

Initial Depth of Well (feet) 29.68
Initial Depth to Water (feet) 25.04
Height of Water Column in Well (feet) 4.64
Diameter (inches): Well 4" Gravel Pack ______

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	4.64	3.02x3	9.06
Gravel Pack			
Drilling Fluids			
Total			9.06

Instruments

Instrument	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal ON SITE in piT

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
9-23-02	1325		X				2				19.0	7.50	2828		Cloudy Grey, Sheen product odor
	1330		X			28.44	2				15.1	7.01	2937		no Change

Comments AfTer Builing Approximately 4 gal Bailed well Dry LeT Recover Sampled for BTEX 1335

Developer's Signature(s) [signature] Date 9-23-02 Reviewer [signature] Date 9/30/02

CHAIN OF CUSTODY RECORD

B 1450

Page 1 of 1

Date: 1-2

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(for life's sake)

612 E. Murray Dr. • P. O. Box 2606 • Farmington NM 87499
(505) 327-1072 • FAX: (505) 327-1496

Purchase Order No.:	Job No.		
SEND INVOICE TO: Name		REPORT RESULTS TO: Name	Title
Company	Dept.	Company	
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	Telefax No.
Sampling Location:			
Sampler:			

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED	LAB ID
				HCL		X	
				HCL		X	
				HCL		X	
				HCL	2		
				HCL	2		
				HCL	2		
				HCL	3		
				HCL	2	X	

Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

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October 08, 2002

Lisa Winn
AMEC Earth & Environmental Inc.
2060 Afton Place
Farmington, NM 87401

TEL: (505) 327-7928
FAX (505) 326-5721

RE: Burlington Hampton #4M

Order No.: 0209022

Dear Lisa Winn:

iina ba, Ltd. received 9 samples on 9/25/2002 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

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P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

Date: *08-Oct-02*

CLIENT: AMEC Earth & Environmental Inc.
Project: Burlington Hampton #4M
Lab Order: 0209022

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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Fax: (505) 327-1496

Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	Seep
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 2:40:00 PM
Lab ID:	0209022-08A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.50		µg/L	1	9/26/2002
Ethylbenzene	ND	0.50		µg/L	1	9/26/2002
m,p-Xylene	ND	1.0		µg/L	1	9/26/2002
o-Xylene	ND	0.50		µg/L	1	9/26/2002
Toluene	ND	0.50		µg/L	1	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range

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Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	MW-5
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 12:00:00 PM
Lab ID:	0209022-01A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	3000	50		µg/L	100	9/26/2002
Toluene	9800	50		µg/L	100	9/26/2002
Ethylbenzene	640	50		µg/L	100	9/26/2002
m,p-Xylene	6900	100		µg/L	100	9/26/2002
o-Xylene	1400	50		µg/L	100	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range

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Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	MW-7
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 11:35:00 AM
Lab ID:	0209022-02A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	80	0.50		µg/L	1	9/26/2002
Ethylbenzene	31	0.50		µg/L	1	9/26/2002
m,p-Xylene	18	1.0		µg/L	1	9/26/2002
o-Xylene	0.89	0.50		µg/L	1	9/26/2002
Toluene	3.0	0.50		µg/L	1	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above quantitation range

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Fax: (505) 327-1496

Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	MW-9
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 11:35:00 AM
Lab ID:	0209022-03A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.50		µg/L	1	9/26/2002
Ethylbenzene	ND	0.50		µg/L	1	9/26/2002
m,p-Xylene	ND	1.0		µg/L	1	9/26/2002
o-Xylene	ND	0.50		µg/L	1	9/26/2002
Toluene	ND	0.50		µg/L	1	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range

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Fax: (505) 327-1496

Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	MW-11
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 10:45:00 AM
Lab ID:	0209022-04A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.50		µg/L	1	9/26/2002
Ethylbenzene	ND	0.50		µg/L	1	9/26/2002
m,p-Xylene	ND	1.0		µg/L	1	9/26/2002
o-Xylene	ND	0.50		µg/L	1	9/26/2002
Toluene	ND	0.50		µg/L	1	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range

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Farmington, NM 87499

Fax: (505) 327-1496

Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	MW-12
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 1:00:00 PM
Lab ID:	0209022-05A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	3800	25		µg/L	50	9/26/2002
Ethylbenzene	310	25		µg/L	50	9/26/2002
m,p-Xylene	1300	50		µg/L	50	9/26/2002
o-Xylene	210	25		µg/L	50	9/26/2002
Toluene	1500	25		µg/L	50	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above quantitation range

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

iiná bá

P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	MW-15
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 2:20:00 PM
Lab ID:	0209022-06A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.50		µg/L	1	9/26/2002
Ethylbenzene	ND	0.50		µg/L	1	9/26/2002
m,p-Xylene	ND	1.0		µg/L	1	9/26/2002
o-Xylene	ND	0.50		µg/L	1	9/26/2002
Toluene	ND	0.50		µg/L	1	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range

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P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	MW-16
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 1:35:00 PM
Lab ID:	0209022-07A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	8900	50		µg/L	100	9/26/2002
Ethylbenzene	610	50		µg/L	100	9/26/2002
m,p-Xylene	7200	100		µg/L	100	9/26/2002
o-Xylene	1300	50		µg/L	100	9/26/2002
Toluene	9900	50		µg/L	100	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above quantitation range

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

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P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

Date: *08-Oct-02*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton #4M
Work Order:	0209022	**Client Sample ID:**	Trip Blank
Project:	Burlington Hampton #4M	**Collection Date:**	9/23/2002 9:00:00 AM
Lab ID:	0209022-09A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **HNR**
Benzene	ND	0.50		µg/L	1	9/26/2002
Ethylbenzene	ND	0.50		µg/L	1	9/26/2002
m,p-Xylene	ND	1.0		µg/L	1	9/26/2002
o-Xylene	ND	0.50		µg/L	1	9/26/2002
Toluene	ND	0.50		µg/L	1	9/26/2002

Qualifiers:

ND - Not Detected at Practical Quantitaion Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range

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Date: *07-Oct-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0209022
Project: Burlington Hampton #4M

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID **MB_020926**	SampType: **MBLK**	TestCode: **BTEX_W**	Units: **µg/L**	Prep Date: **9/26/2002**	Run ID: **GC-1_020926A**
Client ID: **ZZZZZ**	Batch ID: **R3934**	TestNo: **SW8021B**		Analysis Date: **9/26/2002**	SeqNo: **58386**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0609	0.50									J
Ethylbenzene	0.0811	0.50									J
m,p-Xylene	ND	1.0									
o-Xylene	0.1176	0.50									J
Toluene	0.1152	0.50									J
Surr: 1,4-Difluorobenzene	108.2	0	110	0	98.4	82	112	0	0		
Surr: 4-Bromochlorobenzene	126.4	0	110	0	115	95	124	0	0		
Surr: Fluorobenzene	111.5	0	110	0	101	84	114	0	0		

Sample ID **LCS_020926**	SampType: **LCS**	TestCode: **BTEX_W**	Units: **µg/L**	Prep Date: **9/26/2002**	Run ID: **GC-1_020926A**
Client ID: **ZZZZZ**	Batch ID: **R3934**	TestNo: **SW8021B**		Analysis Date: **9/26/2002**	SeqNo: **58385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.39	0.50	40	0.0609	98.3	86	106	0	0		
Ethylbenzene	40.24	0.50	40	0.0811	100	88	110	0	0		
m,p-Xylene	80.53	1.0	80	0	101	86	110	0	0		
o-Xylene	38.82	0.50	40	0.1176	96.8	83	110	0	0		
Toluene	38.77	0.50	40	0.1152	96.6	84	105	0	0		
Surr: 1,4-Difluorobenzene	108.4	0	110	0	98.5	82	112	0	0		
Surr: 4-Bromochlorobenzene	125.7	0	110	0	114	95	124	0	0		
Surr: Fluorobenzene	110	0	110	0	100	84	114	0	0		

Sample ID **0209022-05AMS**	SampType: **MS**	TestCode: **BTEX_W**	Units: **µg/L**	Prep Date: **9/26/2002**	Run ID: **GC-1_020926A**
Client ID: **ZZZZZ**	Batch ID: **R3934**	TestNo: **SW8021B**		Analysis Date: **9/26/2002**	SeqNo: **58387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	6492	25	2000	3850	132	76	114	0	0		S
Ethylbenzene	2380	25	2000	307.6	104	80	113	0	0		
m,p-Xylene	5530	50	4000	1259	107	73	118	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0209022
Project: Burlington Hampton #4M

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID **0209022-05AMS**	SampType: **MS**	TestCode: **BTEX_W**	Units: **µg/L**	Prep Date: **9/26/2002**	Run ID: **GC-1_020926A**
Client ID: **ZZZZZ**	Batch ID: **R3934**	TestNo: **SW8021B**		Analysis Date: **9/26/2002**	SeqNo: **58387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	2167	25	2000	209.5	97.9	82	106	0	0		
Toluene	3785	25	2000	1506	114	80	110	0	0		S
Surr: 1,4-Difluorobenzene	5328	0	5500	0	96.9	82	112	0	0		
Surr: 4-Bromochlorobenzene	6273	0	5500	0	114	95	124	0	0		
Surr: Fluorobenzene	5426	0	5500	0	98.7	84	114	0	0		

Sample ID **0209022-05AMSD**	SampType: **MSD**	TestCode: **BTEX_W**	Units: **µg/L**	Prep Date: **9/26/2002**	Run ID: **GC-1_020926A**
Client ID: **ZZZZZ**	Batch ID: **R3934**	TestNo: **SW8021B**		Analysis Date: **9/26/2002**	SeqNo: **58388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	6387	25	2000	3850	127	76	114	6492	1.63	15	S
Ethylbenzene	2339	25	2000	307.6	102	80	113	2380	1.73	15	
m,p-Xylene	5446	50	4000	1259	105	73	118	5530	1.53	15	
o-Xylene	2137	25	2000	209.5	96.4	82	106	2167	1.42	15	
Toluene	3727	25	2000	1506	111	80	110	3785	1.54	15	S
Surr: 1,4-Difluorobenzene	5333	0	5500	0	97	82	112	0	0	0	
Surr: 4-Bromochlorobenzene	6341	0	5500	0	115	95	124	0	0	0	
Surr: Fluorobenzene	5395	0	5500	0	98.1	84	114	0	0	0	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

iina ba, Ltd.

Date: *07-Oct-02*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0209022
Project: Burlington Hampton #4M

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID **CCV1_020926**	SampType: **CCV**	TestCode: **BTEX_W**	Units: **µg/L**	Prep Date: **9/26/2002**	Run ID: **GC-1_020926A**
Client ID: **ZZZZZ**	Batch ID: **R3934**	TestNo: **SW8021B**		Analysis Date: **9/26/2002**	SeqNo: **58383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.91	0.50	20	0	94.5	85	115	0	0		
Ethylbenzene	19.53	0.50	20	0	97.7	85	115	0	0		
m,p-Xylene	38.52	1.0	40	0	96.3	85	115	0	0		
o-Xylene	18.8	0.50	20	0	94	85	115	0	0		
Toluene	18.45	0.50	20	0	92.3	85	115	0	0		
Surr: 1,4-Difluorobenzene	109.2	0	110	0	99.3	82	112	0	0		
Surr: 4-Bromochlorobenzene	125.5	0	110	0	114	95	124	0	0		
Surr: Fluorobenzene	110.2	0	110	0	100	84	114	0	0		

Sample ID **CCV2_020926**	SampType: **CCV**	TestCode: **BTEX_W**	Units: **µg/L**	Prep Date: **9/26/2002**	Run ID: **GC-1_020926A**
Client ID: **ZZZZZ**	Batch ID: **R3934**	TestNo: **SW8021B**		Analysis Date: **9/26/2002**	SeqNo: **58384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.63	0.50	40	0	102	85	115	0	0		
Ethylbenzene	41.34	0.50	40	0	103	85	115	0	0		
m,p-Xylene	82.49	1.0	80	0	103	85	115	0	0		
o-Xylene	39.71	0.50	40	0	99.3	85	115	0	0		
Toluene	39.84	0.50	40	0	99.6	85	115	0	0		
Surr: 1,4-Difluorobenzene	108.8	0	110	0	98.9	82	112	0	0		
Surr: 4-Bromochlorobenzene	121.7	0	110	0	111	95	124	0	0		
Surr: Fluorobenzene	110.3	0	110	0	100	84	114	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

iina ba, Ltd.

Date: 07-Oct-02

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0209022
Project: Burlington Hampton #4M
Test No: SW8021B **Matrix:** W

QC SUMMARY REPORT SURROGATE RECOVERIES

Sample ID	14FBZ	4BCBZ	FLBZ
0209022-01A	97.7	112	99.6
0209022-02A	95.0	115	97.6
0209022-03A	99.1	116	102
0209022-04A	99.6	115	102
0209022-05A	97.3	116	99.6
0209022-05AMS	96.9	114	98.7
0209022-05AMSD	97.0	115	98.1
0209022-06A	99.9	117	102
0209022-07A	97.5	113	98.4
0209022-08A	99.3	116	102
0209022-09A	99.1	114	101
CCV1_020926	99.3	114	100
CCV2_020926	98.9	111	100
LCS_020926	98.5	114	100
MB_020926	98.4	115	101

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	82-114
14FBZ	=	1,4-Difluorobenzene	82-112
4BCBZ	=	4-Bromochlorobenzene	95-124
4BCBZ	=	4-Bromochlorobenzene	94-125
FLBZ	=	Fluorobenzene	89-112
FLBZ	=	Fluorobenzene	84-114

*** Surrogate recovery outside acceptance limits**

/

CHAIN OF CUSTODY RECORD

B 1577

Page 1 of 1

Date: 1-2-03

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(for life's sake)

612 E. Murray Dr. • P. O. Box 2606 • Farmington NM 87499
(505) 327-1072 • FAX: (505) 327-1496

Purchase Order No.: | Job No. 151700138

SEND INVOICE TO
Name: Greg Wurtz
Company: Burlington Resources | Dept.
Address: 3535 E 30th St.
City, State, Zip: Farmington NM 87401

REPORT RESULTS TO
Name: Don Fowler | Title
Company: AMEC
Mailing Address: 2060 Afton Place
City, State, Zip: Farmington NM 87401
Telephone No.: 327-7923 | Telefax No.: 326-5721

Sampling Location: Hampton 4 MW

Sampler: James L Powell

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	PRES.	Number of Containers	BTEX	LAB ID
Hampton 4 MW MW 15	12-31-02	1100	H2O		2	X	
Hampton 4 MW MW 12	12-31-02	1130	H2O		2	X	
Hampton 4 m MW 5	12-31-02	1230	H2O		2	X	
Hampton 4 MW FMW 1	12-31-02		H2O		2	X	No Sample
Hampton 4m Seep	12-31-02	1330	H2O		2	X	
Hampton 4 m MW 16	12-31-02	1450	H2O		2	X	
Hampton 4m MW 7	12-31-02	1515	H2O		2	X	
Hampton 4m MW 11	12-31-02	1655	H2O		2	X	
Trip Blank	12-30-02	0820	H2O		2	X	

Relinquished by: Donald Fowler | Date/Time 1-2-03 0800 | Received by: | Date/Time
Relinquished by: | Date/Time | Received by: | Date/Time
Relinquished by: | Date/Time | Received by: | Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush | 24-48 Hours | 10 Working Days | Special Instructions: PC

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

WELL OBSERVATION DATA

amec

Project Name: BR Groundwater Sampling Project No.: 151700138*

Project Mngr: Don Fernald Task: 2

Client Co.: Burlington Resources Date: 12-31-02

Site Name: Hampton 4M

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (Feet)	Depth to Water (Feet)	Total Well Depth (Feet)	Floating Product Thickness	Comments
MW 15	0900		0	19	25.35	12	No visible Contamination
MW 12	1030			24.4	34.2		Cloudy Brown
							Cloudy Gray with Lite oil Sheen
MW 5	1145			14.82	20.05		Cloudy Gray w/Lite oil Sheen
					/		
TMW 1	1245			15.5	15.65		Well was to dry to get Sample with Bailer
Seep	1330						Rusty Brown
MW 16	1400						Well Bailed dry at 5 gal Cloudy gray w/lite oil Sheen
MW 7	1500						Black Cloudy w/No oil Sheen
MW 11	1600						Cloudy Red w/NO Oil Sheen

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments: Took sample MW15 @ 1000 Took Sample MW 12 @ 1130
Took sample MW5 @ 1230 Took Seep sample @ 1330 Took MW16 @ 1450

Signature: James Henderson Date: 12-31-02

Took Sample MW7 @ 1545
Took Sample MW11 @ 1655

WELL DEVELOPMENT AND PURGING DATA

amec

Well Number MW 15 ☐ Development ☒ Purging

Serial No. WDPD-

Project Name Burlington Resources Groundwater Sampling | Project Manager Don Fernald | Project No. 151700138*

Client Company Burlington Resources | Phase.Task No. 2

Site Name Hampton 4 M | Site Address Rural San Juan County

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 25.35
Initial Depth to Water (feet) 19
Height of Water Column in Well (feet) 6.35
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	6.35	1.03x3	3.11
Gravel Pack			
Drilling Fluids			
Total			3.11

Instruments

Serial No. (if applicable)

☒ PH Meter — YSI 63
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter — YSI 63
☐ Other

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

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

☐ Other

Water Disposal

Pit on site

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-31-02	0900		X			24.15	4	4			14.7	4.38	2775		No Visible Contamination cloudy Brown

Circle the date and time that the development criteria are met.

Comments Bailed 4 gal took sample at 1000

Developer's Signature (s) James Hancock Date 12-31-02 Reviewer _____ Date _____

amec

Well Number MW 12

Serial No. WDPD-

☐ Development ☒ Purging

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project Name Burlington Resources Groundwater Sampling | Project Manager Don Fernald | Project No. 151700138*

Client Company Burlington Resources | Phase.Task No. 2

Site Name Hampton 4M MW 12 | Site Address Rural San Juan County

Development Criteria

☒ 10 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 34.2
Initial Depth to Water (feet) 24.4
Height of Water Column in Well (feet) 9.8
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	9.8	1.60x3	4.8
Gravel Pack			
Drilling Fluids			
Total			4.8

Instruments

	Serial No. (if applicable)
☒ PH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

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

☐ Other

Water Disposal

On Site Pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-31-02	1030		X				5	5			14.2	6.36	3570		cloudy gray w/
						34.5									Lite oil sheen

Circle the date and time that the development criteria are met.

Comments Bailed 5 gal Took Sample at 1130

Developer's Signature (s) James Hewson Date 12-31-02 Reviewer _____ Date _____

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WELL DEVELOPMENT AND PURGING DATA

Well Number MW 5 ☐ Development ☒ Purging

Serial No. WDPD-

Page 1 of 1

Project Name Burlington Resources Groundwater Sampling | Project Manager Don Fernald | Project No. 151700138*

Client Company Burlington Resources | Phase.Task No. 2

Site Name Hampton 4M MW 5 | Site Address Rural San Juan County

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 20.05
Initial Depth to Water (feet) 14.82
Height of Water Column in Well (feet) 5.23
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	5.23	.85x3	2.56
Gravel Pack			
Drilling Fluids			
Total			2.56

Instruments

Instruments	Serial No. (if applicable)
☒ PH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63 / YSI 63
☒ Temperature Meter	
☐ Other	

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

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

☐ Other

Water Disposal

On site pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-31-02	1146		X				3	3			13.1	6.82	2057		cloudy Gray white Oil sheen
						18.5									

Circle the date and time that the development criteria are met.

Comments Bailed 3 gal took sample at 1230

Developer's Signature (s) James Hansen Date 12-31-02 Reviewer _____ Date _____

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amec

Well Number TMW-1 ☐ Development ☒ Purging

Serial No. WDPD-

WELL DEVELOPMENT AND PURGING DATA

Project Name Burlington Resources Groundwater Sampling | Project Manager Don Fernald | Project No. 151700138*

Client Company Burlington Resources | Phase.Task No. 2

Site Name Hampton 4M TMW1 | Site Address Rural San Juan County

Development Criteria

☒ 4 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 15.65
Initial Depth to Water (feet) 15.5
Height of Water Column in Well (feet) .15
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	.15	.02x3	.07
Gravel Pack			
Drilling Fluids			
Total			.07

Instruments

	Serial No. (if applicable)
☒ PH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other	

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

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

☐ Other

Water Disposal

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-31-02	1245		X												

Circle the date and time that the development criteria are met.

Comments Temporary well did not have enough liquid to pull sample with Bailer.

Developer's Signature (s) James Hewson Date 12-31-02 Reviewer _____ Date _____

amec

Well Number Seep ☐ Development ☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name Burlington Resources Groundwater Sampling Project Manager Don Fernald Project No. 151700138*

Client Company Burlington Resources Phase.Task No. 2

Site Name Hampton 4M Seep Site Address Rural San Juan County

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet)
Initial Depth to Water (feet)
Height of Water Column in Well (feet)
Diameter (inches): Well Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			
Gravel Pack			
Drilling Fluids			
Total			

Instruments

Serial No. (if applicable)

☐ PH Meter
☐ DO Monitor
☐ Conductivity Meter
☐ Temperature Meter
☐ Other

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

Bailer
☐ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					

Circle the date and time that the development criteria are met.

Comments Took Sample's at 1330 Rusty Brown discoloration on ground.

Developer's Signature (s) James Penroc Date 12-31-02 Reviewer Date

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 16

Project Name BR Groundwater Sampling Project Manager Don Fernald Project No. 151700138

Client Company Burlington Resources

Site Name Hampton 4M MW 16 Site Address Rural San Juan County

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 29.6
Initial Depth to Water (feet) 24.5
Height of Water Column in Well (feet) 5.1
Diameter (inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	5.1	3.33x3	10
Gravel Pack			
Drilling Fluids			
Total			10

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

On Site Pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-31-02	1400		X			29.95	5	5			13.7	6.77	2855		Cloudy gray w Lite diesel sheen

Comments Well bailed dry at 5gal Took samples at 1450

Developer's Signature(s) James Pierce Date 12-31-02 Reviewer _____ Date _____

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 7 Page 1 of 1

Project Name BR Groundwater Sampling Project Manager Don Fernald Project No 051700138

Client Company Burlington Resources

Site Name Hampton 4M MW 7 Site Address Rural San Juan County

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 21.3
Initial Depth to Water (feet) 20.15
Height of Water Column in Well (feet) 1.15
Diameter (inches): Well ____ Gravel Pack ____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	1.15	.19x3	.56
Gravel Pack			
Drilling Fluids			
Total			.56

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

On site pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-31-02	1500		X				.5	.5			6.0	6.81	3.5		Black Cloudy w/No oil sheen
						21.2									conductivity Not Reading Correctly

Comments Well Baided dry at approx. 1/2 gal Took sample at 1545

Developer's Signature(s) James F Penrose Date 12-31-02 Reviewer _____ Date _____

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 11 Page 1 of 1

Project Name BR Groundwater Sample Project Manager Don Fernald Project No. 151700138

Client Company Burlington Resources

Site Name Hampton 4m MW 11 Site Address Rural San Juan County

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☒ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 72.5
Initial Depth to Water (feet) 56.35
Height of Water Column in Well (feet) 16.15
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	16.15	2.63x3	7.91
Gravel Pack			
Drilling Fluids			
Total			7.91

Instruments

	Serial No. (If applicable)
☒ pH Meter	YSI 63
☐ DO Monitor	
☒ Conductivity Meter	YSI 63
☒ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

On site pit

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
12-31-02	1600		X				5	5			10.9	6.56	2049		Cloudy Red w/ no odor/sheen
						61.6	3	8			11.3	6.64	8.2		no change

Comments Bailed 8 gal Took Sample @ 16:55

Developer's Signature(s) James F Pennow Date 12-31-02 Reviewer _____ Date _____

L:\forms\MW Dvlpmnt 2.dot 11/29/01

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

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P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

January 13, 2003

Don Fenald
AMEC Earth & Environmental Inc.
2060 Afton Place
Farmington, NM 87401

TEL: 505-327-7928
FAX 505-326-5721

RE: Hampton 4M

Order No.: 0301002

Dear Don Fenald:

iina ba, Ltd. received 8 samples on 1/2/2003 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

612 E. Murray Drive
Farmington, NM 87401

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P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

iina ba, Ltd.

Date: *13-Jan-03*

CLIENT: AMEC Earth & Environmental Inc.
Project: Hampton 4M
Lab Order: 0301002

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

Analytical Comments for METHOD BTEX_W, SAMPLE 0301002-002A: MW-12; Sample pH was 3. Analytical Comments for METHOD BTEX_W, SAMPLE 0301002-005A: MW-16; Sample pH was 3.

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Date: *13-Jan-03*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0301002	**Client Sample ID:**	MW 15
Project:	Hampton 4M	**Collection Date:**	12/31/2002 10:00:00 AM
Lab ID:	0301002-001A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	ND	0.5		µg/L	1	1/8/2003
Ethylbenzene	ND	0.5		µg/L	1	1/8/2003
m,p-Xylene	ND	1.0		µg/L	1	1/8/2003
o-Xylene	ND	0.5		µg/L	1	1/8/2003
Toluene	ND	0.5		µg/L	1	1/8/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Date: *13-Jan-03*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0301002	**Client Sample ID:**	MW 12
Project:	Hampton 4M	**Collection Date:**	12/31/2002 11:30:00 AM
Lab ID:	0301002-002A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	3600	25		µg/L	50	1/8/2003
Ethylbenzene	280	5.0		µg/L	10	1/8/2003
m,p-Xylene	830	10		µg/L	10	1/8/2003
o-Xylene	180	5.0		µg/L	10	1/8/2003
Toluene	840	5.0		µg/L	10	1/8/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Date: *13-Jan-03*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0301002	**Client Sample ID:**	MW 5
Project:	Hampton 4M	**Collection Date:**	12/31/2002 12:30:00 PM
Lab ID:	0301002-003A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	2900	50		µg/L	100	1/8/2003
Ethylbenzene	580	5.0		µg/L	10	1/8/2003
m,p-Xylene	6000	100		µg/L	100	1/8/2003
o-Xylene	1300	5.0		µg/L	10	1/8/2003
Toluene	8900	50		µg/L	100	1/8/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Date: *13-Jan-03*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0301002	**Client Sample ID:**	Seep
Project:	Hampton 4M	**Collection Date:**	12/31/2002 1:30:00 PM
Lab ID:	0301002-004A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	0.7	0.5		µg/L	1	1/8/2003
Ethylbenzene	ND	0.5		µg/L	1	1/8/2003
m,p-Xylene	ND	1.0		µg/L	1	1/8/2003
o-Xylene	ND	0.5		µg/L	1	1/8/2003
Toluene	ND	0.5		µg/L	1	1/8/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Date: *13-Jan-03*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0301002	**Client Sample ID:**	MW 16
Project:	Hampton 4M	**Collection Date:**	12/31/2002 2:50:00 PM
Lab ID:	0301002-005A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	8800	50		µg/L	100	1/8/2003
Ethylbenzene	770	5.0		µg/L	10	1/8/2003
m,p-Xylene	6100	100		µg/L	100	1/8/2003
o-Xylene	1300	5.0		µg/L	10	1/8/2003
Toluene	7900	50		µg/L	100	1/8/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Date: *13-Jan-03*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0301002	**Client Sample ID:**	MW 7
Project:	Hampton 4M	**Collection Date:**	12/31/2002 3:45:00 PM
Lab ID:	0301002-006A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	160	0.5		µg/L	1	1/8/2003
Ethylbenzene	74	0.5		µg/L	1	1/8/2003
m,p-Xylene	29	1.0		µg/L	1	1/8/2003
o-Xylene	2.5	0.5		µg/L	1	1/8/2003
Toluene	2.2	0.5		µg/L	1	1/8/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Fax: (505) 327-1496

Date: *13-Jan-03*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0301002	**Client Sample ID:**	MW 11
Project:	Hampton 4M	**Collection Date:**	12/31/2002 4:55:00 PM
Lab ID:	0301002-007A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	ND	0.5		µg/L	1	1/8/2003
Ethylbenzene	ND	0.5		µg/L	1	1/8/2003
m,p-Xylene	ND	1.0		µg/L	1	1/8/2003
o-Xylene	ND	0.5		µg/L	1	1/8/2003
Toluene	ND	0.5		µg/L	1	1/8/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

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Date: *13-Jan-03*

CLIENT:	AMEC Earth & Environmental Inc.	**Client Sample Info:**	Hampton 4M
Work Order:	0301002	**Client Sample ID:**	Trip Blank
Project:	Hampton 4M	**Collection Date:**	12/30/2002 8:20:00 AM
Lab ID:	0301002-008A	**Matrix:**	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	ND	0.5		µg/L	1	1/8/2003
Ethylbenzene	ND	0.5		µg/L	1	1/8/2003
m,p-Xylene	ND	1.0		µg/L	1	1/8/2003
o-Xylene	ND	0.5		µg/L	1	1/8/2003
Toluene	ND	0.5		µg/L	1	1/8/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

iina ba, Ltd.

Sample Receipt Checklist

Client Name: **AME1004** Date and Time Received: **1/2/2003**

Work Order Number: **0301002** Received by: HNR

Checklist completed by: [signature] 1/2/03 (Signature / Date) Reviewed by: JGM 1-7-03 (Initials / Date)

Matrix: Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐
Water - pH acceptable upon receipt?	~~Yes~~ ☑ JGM 1/8/03	No ☒	

Adjusted? NO Checked by: JGM

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: BTEX pH WAS TESTED RIGHT BEFORE ANALYSIS.

pH FOR MW-12 & MW-16 WAS 3.

JGM 1/8/03

Corrective Action: _____

iina ba, Ltd.

Date: *13-Jan-03*

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0301002
Project: Hampton 4M

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	MB_030108	SampType:	MBLK	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	1/8/2003	Run ID:	GC-1_030108A
Client ID:	ZZZZZ	Batch ID:	R4200	TestNo:	SW8021B			Analysis Date:	1/8/2003	SeqNo:	61454

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									
o-Xylene	ND	0.50									
Toluene	0.1682	0.50									J

Sample ID	LCS_030108	SampType:	LCS	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	1/8/2003	Run ID:	GC-1_030108A
Client ID:	ZZZZZ	Batch ID:	R4200	TestNo:	SW8021B			Analysis Date:	1/8/2003	SeqNo:	61453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.77	0.50	40	0	96.9	88	110	0	0		
Ethylbenzene	39.06	0.50	40	0	97.6	90	110	0	0		
m,p-Xylene	77.87	1.0	80	0	97.3	86	110	0	0		
o-Xylene	38.54	0.50	40	0	96.4	89	110	0	0		
Toluene	38.48	0.50	40	0.1682	95.8	87	110	0	0		

Sample ID	0301002-002AMS	SampType:	MS	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	1/8/2003	Run ID:	GC-1_030108A
Client ID:	MW 12	Batch ID:	R4200	TestNo:	SW8021B			Analysis Date:	1/8/2003	SeqNo:	61455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5634	25	2000	3615	101	84	106	0	0		
Ethylbenzene	2272	25	2000	268.3	100	84	111	0	0		
m,p-Xylene	4799	50	4000	804.6	99.9	80	118	0	0		
o-Xylene	2164	25	2000	174.7	99.5	83	108	0	0		
Toluene	2814	25	2000	817.5	99.8	86	105	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0301002
Project: Hampton 4M

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID 0301002-002AMSD	SampType: MSD	TestCode: BTEX_W	Units: µg/L	Prep Date: 1/8/2003	Run ID: GC-1_030108A
Client ID: MW 12	Batch ID: R4200	TestNo: SW8021B		Analysis Date: 1/8/2003	SeqNo: 61456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5410	25	2000	3615	89.7	80	106	5634	4.06	5	
Ethylbenzene	2185	25	2000	268.3	95.8	82	108	2272	3.90	5	
m,p-Xylene	4618	50	4000	804.6	95.3	80	113	4799	3.84	5	
o-Xylene	2091	25	2000	174.7	95.8	82	105	2164	3.42	4	
Toluene	2705	25	2000	817.5	94.4	83	105	2814	3.96	5	

Sample ID CCV1_030108	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 1/8/2003	Run ID: GC-1_030108A
Client ID: ZZZZZ	Batch ID: R4200	TestNo: SW8021B		Analysis Date: 1/8/2003	SeqNo: 61450

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.99	0.50	20	0	99.9	85	115	0	0		
Ethylbenzene	20.06	0.50	20	0	100	85	115	0	0		
m,p-Xylene	39.32	1.0	40	0	98.3	85	115	0	0		
o-Xylene	19.65	0.50	20	0	98.2	85	115	0	0		
Toluene	19.79	0.50	20	0	99	85	115	0	0		

Sample ID CCV2_030108	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 1/8/2003	Run ID: GC-1_030108A
Client ID: ZZZZZ	Batch ID: R4200	TestNo: SW8021B		Analysis Date: 1/8/2003	SeqNo: 61451

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.6	0.50	40	0	99	85	115	0	0		
Ethylbenzene	39.87	0.50	40	0	99.7	85	115	0	0		
m,p-Xylene	79.34	1.0	80	0	99.2	85	115	0	0		
o-Xylene	39.32	0.50	40	0	98.3	85	115	0	0		
Toluene	39.48	0.50	40	0	98.7	85	115	0	0		

Sample ID CCV3_030108	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 1/8/2003	Run ID: GC-1_030108A
Client ID: ZZZZZ	Batch ID: R4200	TestNo: SW8021B		Analysis Date: 1/8/2003	SeqNo: 61452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.29	0.50	20	0	96.5	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

iina ba, Ltd.

Date: 13-Jan-03

CLIENT: AMEC Earth & Environmental Inc.
Work Order: 0301002
Project: Hampton 4M
Test No: SW8021B **Matrix:** W

QC SUMMARY REPORT
SURROGATE RECOVERIES

Sample ID	14FBZ	4BCBZ	FLBZ
0301002-001A	102	115	99.1
0301002-002A	101	113	98.5
0301002-002A	99.5	114	98.8
0301002-002A	100	113	98.9
0301002-002AMS	101	113	98.5
0301002-002AMSD	99.5	114	98.8
0301002-003A	99.8	111	99.2
0301002-004A	101	114	99.7
0301002-005A	100	112	98.3
0301002-006A	94.7	116	94.9
0301002-007A	101	116	99.5
0301002-008A	96.5	110	96.0
CCV1_030108	100	116	99.3
CCV2_030108	101	113	98.9
CCV3_030108	101	114	98.7
LCS_030108	100	115	99.7
MB_030108	100	115	99.3

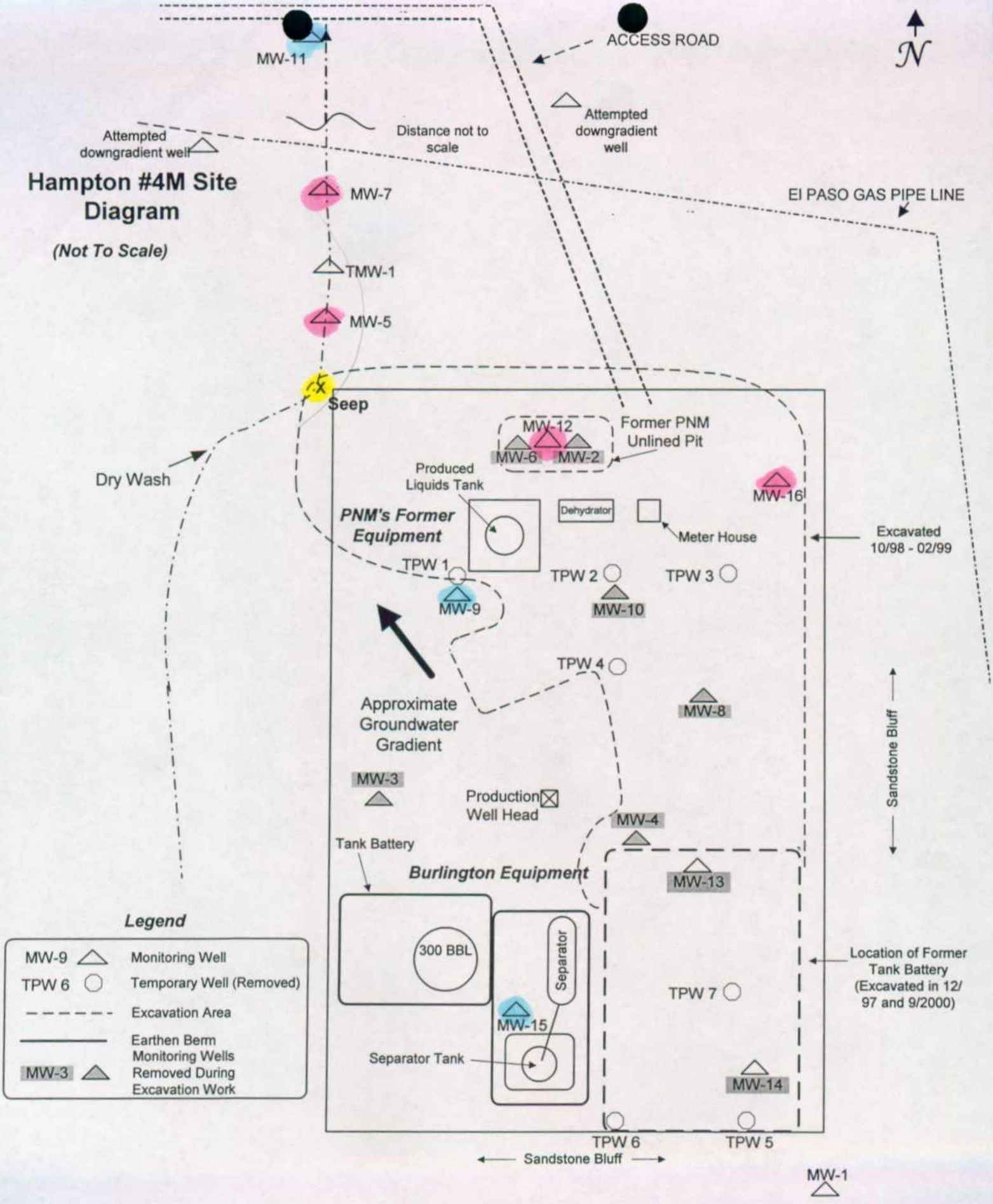
Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

/

Attachment 2

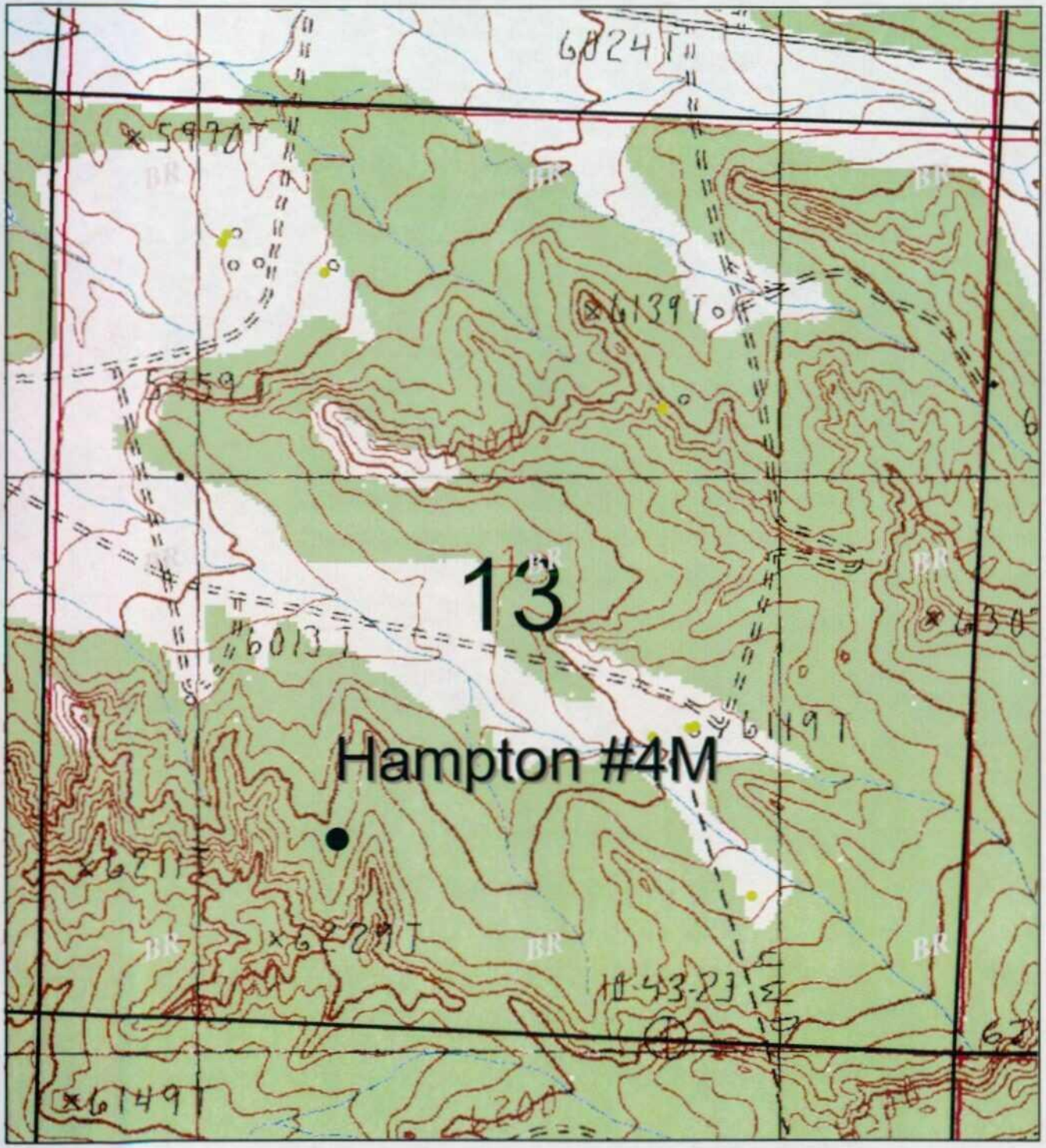
SITE DIAGRAM



Revised 3/22/00

Attachment 3

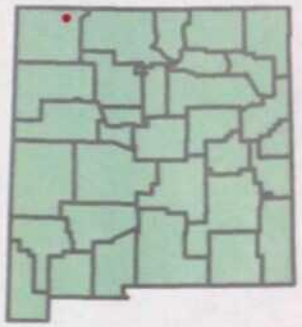
Topograhic Location Map



N

BURLINGTON RESOURCES PLAT

300 0 300 600 Feet



BURLINGTON RESOURCES
San Juan Division

Hampton #4M
Sec 13, T30N-R11W
Transverse Mercator
UTM - 1927 ; Zone 13
San Juan Co., NM
1:10308

Prepared By: Cheryl Groth
Date: 04/01/2002
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