3R - 431

2006 AGWMR

04/15/2007

3R431

BURLINGTON RESOURCES
San Juan Division

April 15, 2007

Hand Delivered

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APR 17 2007

Oil Conservation Division
Environmental Bureau

Glen Von Gonten
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: 2006 Annual Groundwater Investigation and Remediation Reports
San Juan Basin, New Mexico

Dear Mr. Von Gonten:

As required in Burlington Resources approved Groundwater Investigation and Remediation Plan dated August, 1998, enclosed are the 2005 annual reports for Burlington's groundwater impact sites in the San Juan Basin. Separate reports are enclosed for the following locations:

Hampton #4M
Johnson Federal #4 Metering Station
Flora Vista
Howell K-1

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: Brandon Powell - NMOCD Aztec
WFS - Mark Harvey (Hampton #4M)
EPFS - Scott Pope (Johnson Fed. #4)
Facility and Correspondence Files

3401 East 30th Street, 87402-8807, P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-326-9700, Fax 505-326-9833

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Oil Conservation Division
Environmental Bureau

BURLINGTON RESOURCES 2006 ANNUAL GROUND WATER REPORT

Howell K-1

SITE DETAILS

Location: Unit Letter K, Section 21, Township 31N, Range 8W; San Juan County, New Mexico
Land Type: FEE

RECENT ACTIVITIES

In August 2005, Burlington Resources (Burlington) excavated approximately 4000 cubic yards of impacted soil from an area southwest of the wellhead at the Howell K-1. The impacted soils were discovered in the area during below grade tank removal activities. The excavation went to a depth of 36 feet, and soils were still impacted at this depth. During the excavation, ground water was encountered at approximately 34 feet. The excavation of soil stopped at the practical limit of the machinery to operate safely. The excavation (i.e., approximately 70 feet by 50 feet by 36 feet deep) was backfilled with clean soil. A Field Closure Report for the excavated pit is attached.

In March 2006, one ground water monitoring well was placed in the middle of the backfilled excavation (Figure 1). Borehole logs and well completion diagrams are shown in Attachment 2. A ground water sample was collected from the well and analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), as well as general water quality parameters. Results are shown in tables 1 and 2. BTEX concentrations from the initial sample were not detected or only detected in trace amounts. General chemistry analysis indicated the ground water quality is comparable to local conditions. No contaminants of concern were detected in significant concentrations, except sulfate and manganese. The concentrations of sulfate and manganese could not be linked to the oil and gas operations conducted on location.

2006 GROUND WATER MONITORING

A quarterly ground water sampling program was initiated for Monitoring Well #1. The well is sampled for BTEX analysis. Prior to sampling at monitoring wells, depth to ground water and total depth of wells is measured with a Keck oil/water interface probe. Presence of any free-phase crude oil is also investigated using the interface probe. The interface probe is decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. The volume of water in the wells is calculated, and a minimum of three casing volumes of water is purged from each well using a disposable bailer or a permanent decontaminated PVC bailer. As water is removed, pH, electric conductivity and temperature are monitored. Wells are purged until these properties stabilize, indicating that the purge water is representative of aquifer conditions. Stabilization is defined as three consecutive stable readings for each water property (±0.4 units for pH, ±10 percent for electric conductivity and ±2° C for temperature). All purge water is disposed into tanks on site. Data is recorded on the attached *Well Development and Sampling Logs* (Attachment 3). Once each monitoring well is properly purged, groundwater samples are collected by filling at least two 40-milliliter (ml) glass vials. The pre-cleaned and pre-preserved (with hydrochloric acid or mercuric chloride) vials are filled and capped with no air inside to prevent degradation of the sample. Samples are labeled with the date and time of collection, well designation,

project name, collector's name and parameters to be analyzed. They are immediately sealed and packed on ice. The samples are shipped to ACZ Laboratory in Steamboat Springs, Colorado in a sealed cooler via FedEx before designated holding times expire. Proper chain-of-custody (COC) procedures are followed with logs documenting the date and time sampled, sample number, type of sample, sampler's name, preservative used, analyses required and sampler's signatures.

ACZ analyzes the samples for BTEX by USEPA Method 8021. Laboratory reports are included as Attachment 4. Results of quarterly sampling are shown in Table 1. The ground water in MW-1 has been beneath New Mexico Water Quality Control Commission (NMWQCC) standards for four successive quarters.

CONCLUSIONS

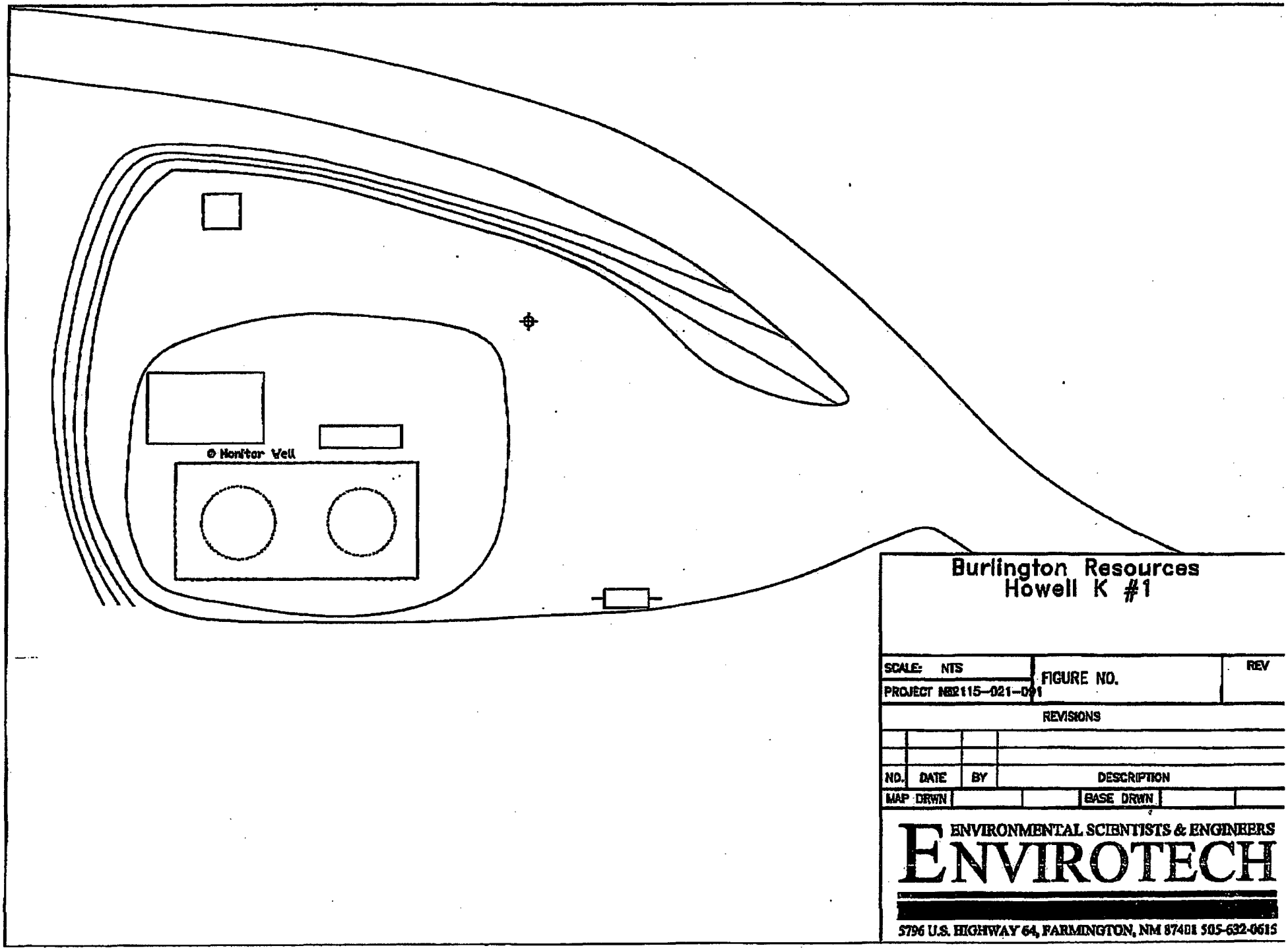
The petroleum-contaminated soils were removed from this location to the extent practical and safe. Ground water monitoring results during 2006 (Table 1) indicate that ground water quality is consistently below NMWQCC standards for BTEX. The only contaminants of concern detected in the ground water analysis were sulfate and manganese. The concentrations of these constituents are not likely linked to the oil and gas operations conducted on site.

RECOMMENDATIONS

- Burlington Resources proposes official closure of this site since four quarters of ground water analysis has demonstrated that BTEX concentrations are below NMWQCC standards. Appropriate closure forms will be submitted upon official closure of the site.

Attachments: Figure 1 - Site Map
Table 1 - Ground Water Sampling Results for Volatiles
Table 2 – Ground Water Sampling Results for General Chemistry
Attachment 1 – Field Pit Closure Report
Attachment 2 – Well Completion Diagrams
Attachment 3 - Well Development and Sampling Logs
Attachment 4 - Laboratory Reports

Figure 1: Site Map of Howell K-1



Burlington Resources
Howell K #1

SCALE: NTS	FIGURE NO.	REV
PROJECT NB2115-021-091		

REVISIONS

NO.	DATE	BY	DESCRIPTION

MAP DRWN | BASE DRWN

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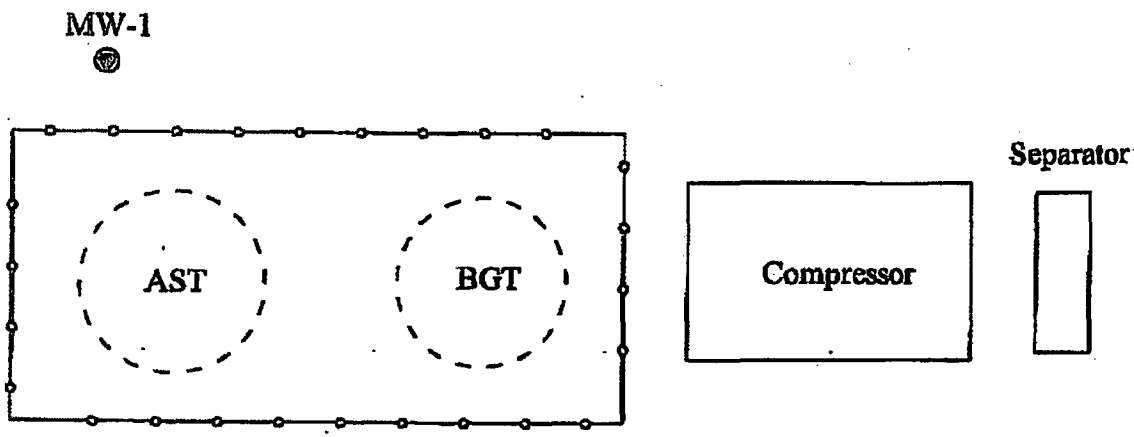
ENVIROTECH
5796 U.S. HIGHWAY 64, FARMINGTON, NM 87401 505-632-0615



Burlington Resources
Howell K No. 1
Unit K, Sec 21, Twp 30N, Rng 8W
San Juan County, New Mexico

SCALE: NTS	FIGURE NO. 1	REV
PROJECT NO.92115-058		

REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	MPM	4/5/06	BASE DRWN MPM 4/5/06

ENVIRONMENTAL SCIENTISTS & ENGINEERS
ENVIROTECH
5796 U.S. HIGHWAY 64, FARMINGTON, NM 87410 505-632-0615

Table 1: Ground Water Sampling Results for Volatiles

Ground Water Analytical Results
Howell K-1
MW-1

Sample Date	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	BTEX (ppb)	DTW (ft)
NMWQCC Standards	*10*	*750*	*750*	*620*	*50*	
3/22/2006	U	U	1	2	3	28.54
6/21/2006	1.4	1.4	U	10.6	13.4	29.15
10/19/2006	U	U	U	1.1	1.1	27.83
12/12/2006	U	0.5	0.4	2.1	3	28.22

Notes:
DTW is Depth to Water measured from top of well casing
U denotes analyte was not detected

Table 2: Ground Water Sampling Results for General Chemistry

Ground Water Analytical Results for General Chemistry
Howell K-1

Analyte	MW-1 Results	NMWQCC Standards
Metals		
Arsenic (mg/L)	U	0.1
Barium (mg/L)	0.021	1
Cadmium (mg/L)	U	0.01
Calcium (mg/L)	474	No Standard
Chromium (mg/L)	U	0.05
Copper (mg/L)	U	1
Iron (mg/L)	U	1
Magnesium (mg/L)	271	No Standard
Manganese (mg/L)	3.85	0.2
Potassium (mg/L)	1.9	No Standard
Sodium (mg/L)	443	No Standard
Zinc (mg/L)	U	10
General Chemistry		
Bicarbonate as CaCO3 (mg/L)	279	No Standard
Carbonate as CaCO3 (mg/L)	U	No Standard
Hydroxide (mg/L)	U	No Standard
Total Alkalinity (mg/L)	279	No Standard
Conductivity (umhos/cm)	4670	No Standard
pH	7.7	6-9
Anions		
Chloride (mg/L)	51	250
Sulfate (mg/L)	2910	600

Notes:
U denotes analyte was not detected

Attachment 1: Field Pit Closure Report

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: Burlington Resources Telephone: (505) 326-9841 e-mail address: LHasely@br-inc.com
Address: 3401 East 30th Street, Farmington, New Mexico, 87402
Facility or well name: Howell K No. 1 API #: 30045093130000 U/L or Qtr/Qtr K Sec 21 T 30N R 8W
County: San Juan Latitude 36.79505 Longitude -107.68474 NAD: 1927 ☒ 1983 ☐
Surface Owner: Federal ☒ State ☐ Private ☐ Indian ☐

Pit	Below-grade tank
Type: Drilling ☐ Production ☐ Disposal ☐ Workover ☐ Emergency ☐ Lined ☐ Unlined ☐ Liner type: Synthetic ☐ Thickness ____ mil Clay ☐ Pit Volume ____ bbl	Volume: 40 bbl Type of fluid: Produced Water and Incidental Oil Construction material: Fiberglass. Double-walled, with leak detection? Yes ☒ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)	20
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)	0
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)	10
	Ranking Score (Total Points)		30

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if you are burying in place) onsite ☐ offsite ☒ If offsite, name of facility Same Lease, Crouch Mesa. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☒ If yes, show depth below ground surface 34 ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments:
Potassium permanganate solution used to treat walls.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: _____
Printed Name/Title Mr. Ed Hasely, Environmental Advisor Signature _____

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title _____ Signature _____ Date: _____

CLIENT: Burlington Resources

ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64-3014
FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615

LOCATION NO: _____
C.O.C. NO: _____

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: Harrell K WELL #: 1 PIT:
QUAD/UNIT: K SEC: 21 TWP: 30N RNG: 8W PM: NMPM CNTY: SJ ST: NM
QTR/FOOTAGE: 1750' S 1650' W CONTRACTOR: L&R / M&M

DATE STARTED: 7/26/05
DATE FINISHED: 8/18/05
ENVIRONMENTAL SPECIALIST: MPM

EXCAVATION APPROX. 70 FT. x 50 FT. x 36' FT. DEEP. CUBIC YARDAGE: 4000 est.
DISPOSAL FACILITY: Sams Lease & Crouch Mesa REMEDIATION METHOD: _____
LAND USE: _____ LEASE: SF 078587-A FORMATION: _____

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 52' FT. 255° FROM WELLHEAD.
DEPTH TO GROUNDWATER: 20 NEAREST WATER SOURCE: 0 NEAREST SURFACE WATER: 10
NMOCD RANKING SCORE: 30 NMOCD TPH CLOSURE STD: 100 PPM

CHECK ONE:
___ PIT ABANDONED
✓ STEEL TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:

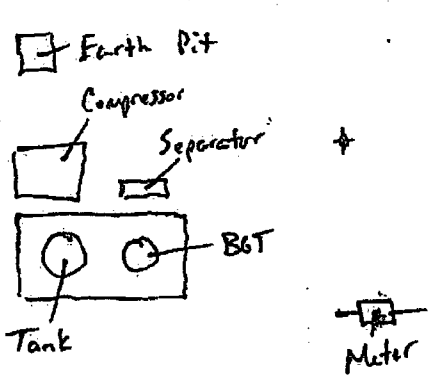
Beneath removed BGT, soil failed inital tests. Groundwater was encountered at approximately 34' depth. Excavation continued until it reached perimeter of location pad. Near water / soil interface, visible contamination still exists. Treated with 600 total gallons of potassium permanganate solution.

FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm
	SEE	418.1	Analysis		Log		

SCALE
0 FT

PIT PERIMETER



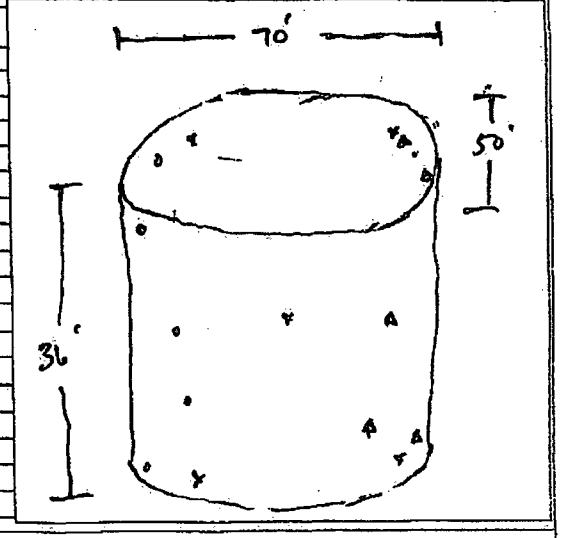
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 3' below	746 ppm
2	
3	
4 N. Area	1
5 E. Area	2
W. Area	0
S. Area	0

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME

PIT PROFILE



TRAVEL NOTES: CALLOUT: _____ ONSITE: _____

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

Method 418.1 Analysis Log
Total Petroleum Hydrocarbons

Date 8/11/05 Analyst MPM

Location Howell K No. 1 Instrument Foxboro

Job No. 92115-021-091

Date	Sample No.	Sample Description	Sample Wt. (g)	Volume Freon (mL)	Dilution Factor	Abs. Reading	TPH (mg/kg)	OVM
8/11	1	North Area 5 Pt Comp	5	20	1	0.011	76.3	1
8/11	2	East Area 5 Pt Comp	5	20	1	0.0056	38.9	2
8/18	3	West Area 5 Pt Comp	5	20	1	0.0054	37.5	0
8/18	4	South Area 5 Pt Comp	5	20	1	0.0088	61.1	0

Infrared Spectrophotometer Calibration

New Freon _____

Date Standards Prepared _____

Standard Concentration (mg/L)	Absorbance	
100		
200	8/11 0.120	8/18 0.122
500		
1000		

I-CAL RF: 1735 C-CAL RF: 1769

RSD: _____ % % Difference: _____ %

QA/QC Acceptance Criteria: I-CAL RSD +/- 20% C-Cal Difference +/- 10%

ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Client:	Burlington Resources	Project #:	92115-021-091
Sample No.:	1	Date Reported:	8/23/2005
Sample ID:	North Area, 5 Pt. Composite	Date Sampled:	8/11/2005
Sample Matrix:	Soil	Date Analyzed:	8/11/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**76.3**	**5.0**

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Howell K No. 1, 40 bbl BGT**

Analyst

Review

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ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Burlington Resources	Project #:	92115-021-091
Sample No.:	2	Date Reported:	8/23/2005
Sample ID:	East Area, 5 Pt Composite	Date Sampled:	8/11/2005
Sample Matrix:	Soil	Date Analyzed:	8/11/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**38.9**	**5.0**

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Howell K No. 1, 40 bbl BGT**

Analyst

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PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Burlington Resources	Project #:	92115-021-091
Sample No.:	3	Date Reported:	8/23/2005
Sample ID:	West Area, 5 Pt Composite	Date Sampled:	8/18/2005
Sample Matrix:	Soil	Date Analyzed:	8/18/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**37.5**	**5.0**

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Howell K No. 1, 40 bbl BGT**

Analyst

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ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 418.1
TOTAL PETROLEUM
HYDROCARBONS

Client:	Burlington Resources	Project #:	92115-021-091
Sample No.:	4	Date Reported:	8/23/2005
Sample ID:	South Area, 5 Pt Composite	Date Sampled:	8/18/2005
Sample Matrix:	Soil	Date Analyzed:	8/18/2005
Preservative:	Cool	Analysis Needed:	TPH-418.1
Condition:	Cool and Intact		

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	**61.1**	**5.0**

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **Howell K No. 1, 40 bbl BGT**

Analyst

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ENVIROTECH INC.

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 418.1
TOTAL PETROLEUM HYROCARBONS
QUALITY ASSURANCE REPORT

Client:	Burlington Resources	Project #:	92115-021-091
Sample ID:	QA/QC	Date Reported:	8/23/2005
Laboratory Number:	01-24-TPH.QA/QC	Date Sampled:	N/A
Sample Matrix:	Freon-113	Date Analyzed:	1/24/2005
Preservative:	N/A	Date Extracted:	1/24/2005
Condition:	N/A	Analysis Needed:	TPH

Calibration	I-Cal Date	C-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
	05-22-04	1/24/2005	1,735	1,667	3.9%	+/- 10%

Blank Conc. (mg/Kg)	Concentration	Detection Limit
TPH	ND	5.0

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
TPH	2,471	2,352	4.8%	+/- 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
TPH	2,471	2,000	5,030	112.5%	80 - 120%

ND = Parameter not detected at the stated detection limit.

References: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis os Water and Waste, USEPA Storet No. 4551, 1978.

Comments: **QA/QC for Howell K No. 1, 40 bbl BGT**

Analyst

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Burlington Resources	Project #:	92115-001-15329
Sample ID:	Maddox Com 1B	Date Reported:	01-26-06
Laboratory Number:	35846	Date Sampled:	01-20-06
Chain of Custody No:	15329	Date Received:	01-20-06
Sample Matrix:	Soil	Date Extracted:	01-24-06
Preservative:	Cool	Date Analyzed:	01-25-06
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Landfarm (2005 BG Proj) PID = 1.7 (from Howell K 1).**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Burlington Resources	Project #:	92115-001-15329
Sample ID:	Howell K 4B	Date Reported:	01-26-06
Laboratory Number:	35844	Date Sampled:	01-20-06
Chain of Custody No:	15329	Date Received:	01-20-06
Sample Matrix:	Soil	Date Extracted:	01-24-06
Preservative:	Cool	Date Analyzed:	01-25-06
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Landfarm (2005 BG Proj) PID = 1.1**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Burlington Resources	Project #:	92115-001-15329
Sample ID:	Howell K 4	Date Reported:	01-26-06
Laboratory Number:	35843	Date Sampled:	01-20-06
Chain of Custody No:	15329	Date Received:	01-20-06
Sample Matrix:	Soil	Date Extracted:	01-24-06
Preservative:	Cool	Date Analyzed:	01-25-06
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**ND**	**0.2**
Diesel Range (C10 - C28)	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Landfarm (2005 BG Proj) PID = 3.3**

Analyst

Review

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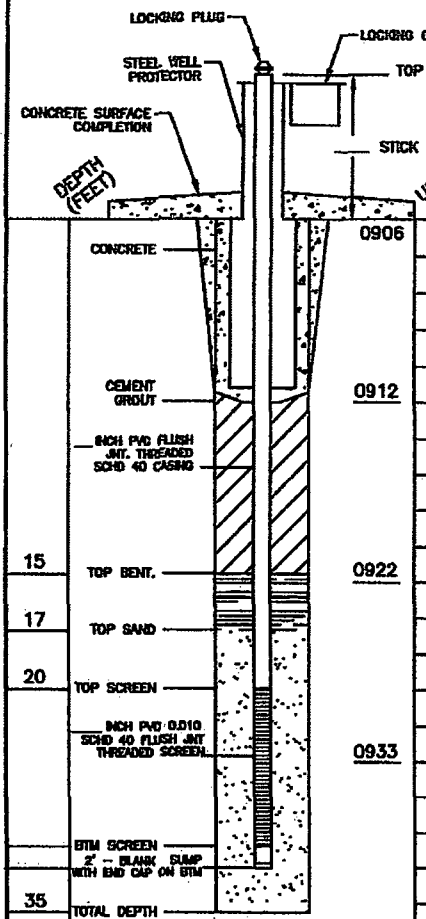
Attachment 2: Well Completion Diagrams

ABOVE GRADE WELL COMPLETION DIAGRAM / LITHOLOGY LOG

MW 1

SB



DEPTH (FEET)	USCS	SAMPLE TYPE	HEADSPACE (PPM)	LITHOLOGY	SAMPLE DESCRIPTION	DEPTH (FEET)
	0906					
	0912				Fill / sand / brown / dry / no odor / fine	10'
	0922				Fill / sand / brown / dry / no odor / fine	20'
					Fill / sand / brown / dry / no odor / course	
	0933	SS	4.7		Clay / olive gray / wet / slight odor / soil-water interface	30'
					TD = 35'	40'

Well Materials Used:

12 Sks 10-12 Silica Sand
1 Sks Bentonite Chips
___ Sks Class "A" Cement
___ Sks Quickcrete
20 Ft Blank Casing
15 Ft Screen

Well Development:

4 Volumes Bailed
___ Pumped
1 Gallons of Water

Remarks:

Well developed by ETECH

DRILLER: Thurman Benally
HELPER: Farrell Chee
DRILLING COMPANY: Envirotech
DRILLING METHOD: Auger

BIT SIZE: 7 7/8
TOTAL BORING DEPTH: 35'
DATE STARTED: 3 / 10 / 06
SAMPLER TYPE: Split Spoon (SS)

LOCATION: Howell K No. 1
ELEVATION:
DATE COMPLETED 3 / 10 / 06
GEOLOGIST: Michael Marquez

Burlington Resources

REVISIONS
BY ___ DATE ___
BY ___ DATE ___

JOB # 92115-058-003

ENVIROTECH INC.

ENVIRONMENTAL SCIENTISTS & ENGINEERS
5796 U.S. HIGHWAY 64
FARMINGTON, NEW MEXICO 87401
(505) 632-0615
AbvGrdlog.dwg

DATE 3/28/06 DRAWN MPM
SCALE NTS APPROVED CJC

PAGE 1 OF 1

Attachment 3: Ground Water Monitoring Well Development and Sampling Logs

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30003.0 Project Name BR Groundwater Sampling Client: Burlington

Location: Howell K No 1 Well No: MW-1 **Development & Sampling**

Project Manager MJN Date 3/22/06 Start Time 1103 Weather clear 50s

Depth to Water 28.54 Depth to Product na Product Thickness: na Measuring Point TOC

Water Column Height 8.86 Well Dia. 2"

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

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

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

	Water Volume in Well		
Gal/ft x ft of water	Gallons	Ounces	**Gal**/oz to be removed
8.86 x 0.16	1.42		4.25

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
1142	**6.50**	**5290**	**60.8**				**0.25**	**surge well, brown, silty**
	6.44	**5210**	**62.4**				**.5**	**surge well, brown, silty**
	6.43	**5310**	**62.9**				**.75**	**surge well, brown, silty**
	6.43	**5280**	**63.0**				**1**	**surge well, brown, silty**
	6.40	**5170**	**62.2**				**2**	**surge well, brown, silty**
	6.41	**5110**	**61.8**				**3**	**surge well, brown, silty**
	6.42	**5110**	**61.3**				**4**	**surge well, brown, silty**
	6.48	**5000**	**61.2**				**5**	**surge well, brown, silty**
	6.44	**4740**	**61.1**				**6**	**surge well, brown, silty**
	6.45	**4900**	**59.4**				**7**	**surge well, brown, silty**
	6.64	**5100**	**60.1**				**8**	**surge well, brown, silty**
	6.69	**5100**	**59.6**				**9**	**surge well, brown, silty**
	6.70	**5100**	**59.7**				**9.25**	**cloudy, fine sand**
	6.65	**5110**	**60.0**				**9.5**	**cloudy, fine sand**
	6.60	**5110**	**59.7**				**9.75**	**cloudy, fine sand**
1229	**6.55**	**5005**	**58.6**				**10.0**	**cloudy, fine sand**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1229	**6.55**	**5005**	**58.6**					**10.0**	**cloudy, fine sand**

COMMENTS:

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**

DO Monitor _____ Other _____

Conductivity Meter **X** _____

Water Disposal onsite Sample ID Howell K no. 1 MW-1 Sample Time 1233

BTEX Major Cations/Anions

MS/MSD_____ BD_____ BD Name/Time_____ TB_____

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:_____ Project Name: Burlington Ground Water Client: Burlington
Location: Howell K1 Well No: MW-1 Development **Sampling**
Project Manager MJN Date 08/28/06 Start Time 1518 Weather sunny, 37
Depth to Water 29.15 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 8.25 Well Dia. 2"

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

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

Gal/ft x ft of water	Water Volume in Well		**Gal**/oz to be removed
	Gallons	Ounces	
8.25 x .16	1.32 x 3	x 3	3.96

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (g)	Comments/ Flow rate
1518	**7.03**	**3620**	**71**				**.25**	**clear**
	7.07	**3580**	**69**				**.5**	**silty**
	7.08	**3340**	**68.9**				**1**	**silty**
	7.07	**3450**	**69.5**				**2**	**silty**
	7.07	**3590**	**69.6**				**3**	**silty**
1536	**7.12**	**3590**	**69.1**				**4**	**silty**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
1536	**7.12**	**3590**	**69.1**				**4**	**silty**

COMMENTS:

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____
Water Disposal On site Sample ID Howell K#1 MW-1 Sample Time 1538
BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus CHCs
MS/MSD_____ BD_____ BD Name/Time_____ TB_

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:_____ Project Name: Burlington Ground Water Client: Burlington
Location: Howell K1 Well No: MW-1 Development **Sampling**
Project Manager MJN Date 08/28/06 Start Time 0900 Weather sunny, 37
Depth to Water 27.83 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 11.72 Well Dia. 2"

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

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

Gal/ft x ft of water	Water Volume in Well		**Gal**/oz to be removed
	Gallons	Ounces	
11.72 x .16	1.88 x 3	x 3	5.62

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (g)	Comments/ Flow rate
0910	**5.93**	**4370**	**60.9**				**1**	**Brown color, silty**
	6.00	**4460**	**60.9**				**2**	
	5.94	**4520**	**60.0**				**3**	
	6.04	**4400**	**59.5**				**4**	
	6.13	**4280**	**59.0**				**4.25**	**Well is bailing down**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
0924	**6.15**	**4240**	**58.8**				**4.40 g**	**Well has bailed down**

COMMENTS:

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____
Water Disposal On site Sample ID Howell K#1 MW-1 Sample Time 0930
BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus CHCs
MS/MSD_____ BD_____ BD Name/Time_____ TB 20102006TB01

WELL DEVELOPMENT AND SAMPLING LOG

Project No_____ Project Name Burlington Ground Water Sampling Client: Burlington
Location: Howell K1 Well No: MW-1 Development **Sampling**
Project Manager MJN Date 12/12/06 Start Time 1440 Weather clear 40
Depth to Water 28.22 Depth to Product na Product Thickness: na Measuring Point TOC
Water Column Height 11.33 Well Dia. 2"

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

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

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

Gal/ft x ft of water	Water Volume in Well		**Gal**/oz to be removed
	Gallons	Ounces	
11.33 x .16	1.81 x 3		5.44

Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (g)	Comments/ Flow rate
1440	**6.11**	**6740**	**58.3**				**1**	**Brown, cloudy**
	6.15	**6660**	**59.2**				**2**	
	6.14	**6530**	**57.7**				**3**	
	6.17	**6410**	**54.0**				**4**	
	6.15	**6780**	**53.8**				**5**	
	6.15	**6720**	**53.7**				**5.25**	
	6.18	**6700**	**53.8**				**5.50**	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1520	**6.17**	**6710**	**53.8**					**5.75 gal**	

COMMENTS:

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____
Water Disposal onsite Sample ID Howell K1 MW-1 Sample Time 1525
BTEX VOCs Diesel
MS/MSD_____ BD_____ BD Name/Time_____ TB 12122006TB01

Attachment 4: Laboratory Analytical Reports

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 04, 2006

Report to:
Gregg Wurtz
Burlington Resources, Inc.
3401 E. 30th St. P.O. Box 4289
Farmington, NM 87499

Bill to:
Gregg Wurtz
Burlington Resources, Inc.
P.O. Box 4289
Farmington, NM 87499

cc: Martin Nee

Project ID: HOWELL K #1
ACZ Project ID: L55785

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 23, 2006. This project has been assigned to ACZ's project number, L55785. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L55785. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

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

All samples and sub-samples associated with this project will be disposed of after May 04, 2006. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

04/Apr/06

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

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Burlington Resources, Inc.
Project ID: HOWELL K #1
Sample ID: HOWELL K #1 MW-1

ACZ Sample ID: ***L55785-01***
Date Sampled: *03/22/06 12:33*
Date Received: *03/23/06*
Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, dissolved	M200.8 ICP-MS		U		mg/L	0.001	0.005	03/27/06 22:22	jjr
Barium, dissolved	M200.7 ICP	0.021			mg/L	0.006	0.02	03/29/06 13:19	mea
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0002	0.001	03/27/06 22:22	jjr
Calcium, dissolved	M200.7 ICP	474			mg/L	0.4	2	03/29/06 13:19	mea
Chromium, dissolved	M200.8 ICP-MS		U		mg/L	0.0002	0.001	03/27/06 22:22	jjr
Copper, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/27/06 22:22	jjr
Iron, dissolved	M200.7 ICP		U		mg/L	0.04	0.1	03/29/06 13:19	mea
Magnesium, dissolved	M200.7 ICP	271			mg/L	0.4	2	03/29/06 13:19	mea
Manganese, dissolved	M200.7 ICP	3.85			mg/L	0.01	0.05	03/29/06 13:19	mea
Potassium, dissolved	M200.7 ICP	1.9	B		mg/L	0.6	2	03/29/06 13:19	mea
Sodium, dissolved	M200.7 ICP	443			mg/L	0.6	2	03/29/06 13:19	mea
Zinc, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/29/06 13:19	mea

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		279			mg/L	2	20	03/27/06 0:00	jlf
Carbonate as CaCO3			U		mg/L	2	20	03/27/06 0:00	jlf
Hydroxide as CaCO3			U		mg/L	2	20	03/27/06 0:00	jlf
Total Alkalinity		279			mg/L	2	20	03/27/06 0:00	jlf
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.8			%			04/04/06 0:00	calc
Sum of Anions		68.1			meq/L	0.1	0.5	04/04/06 0:00	calc
Sum of Cations		65.7			meq/L	0.1	0.5	04/04/06 0:00	calc
Chloride	M325.2 - Colorimetric	51			mg/L	1	5	03/28/06 17:27	jag
Conductivity @25C	M120.1 - Meter	4670			umhos/cm	1	10	03/25/06 13:37	jlf
Lab Filtration	SM 3030 B			*				03/24/06 12:30	tam
Lab Filtration & Acidification	SM 3030 B			*				03/29/06 17:02	djt
pH (lab)	M150.1 - Electrometric								
pH		7.7	H		units	0.1	0.1	03/25/06 0:00	jlf
pH measured at		18.0			C	0.1	0.1	03/25/06 0:00	jlf
Sulfate	SM4500 SO4-D	2910			mg/L	10	50	03/28/06 10:53	jlf

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calivation Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	Analyte was analyzed for but not detected at the indicated MDL
V	High blank data accepted because sample concentration is 10 times higher than blank concentration
W	Poor recovery for Silver quality control is accepted because Silver often precipitates with Chloride.
X	Quality control sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(5)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(6)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995.

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L55785***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L55785-01	WG204035	Copper, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Burlington Resources, Inc.
Project ID: HOWELL K #1
Sample ID: HOWELL K #1 MW-1

ACZ Sample ID: ***L55785-01***
Date Sampled: *03/22/06 12:33*
Date Received: *03/23/06*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

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

Workgroup: ***WG204013***
Analyst: *km*
Extract Date: *03/27/06 20:52*
Analysis Date: ***03/27/06 20:52***

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	000071-43-2		U	1	*	ug/L	0.3	1
Ethylbenzene	000100-41-4	1		1		ug/L	0.2	1
m p Xylene	01330 20 7	1.6	J	1		ug/L	0.4	2
o Xylene	00095-47- 6	0.4	J	1		ug/L	0.2	1
Toluene	000108-88-3		U	1		ug/L	0.2	1

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Bromofluorobenzene	000460-00-4	104.5		1		%	83	117

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Method References

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

Comments

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

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L55785***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L55785-01	WG204013	Benzene	M8021B GC/PID	V8	Calibration verification recovery was below the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.

Burlington Resources, Inc. ACZ Project ID: ***L55785***

Wet Chemistry

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Lab Filtration	SM 3030 B
Lab Filtration & Acidification	SM 3030 B

ACZ Laboratories, Inc.

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

Sample Receipt

Burlington Resources, Inc.
HOWELL K #1

ACZ Project ID: L55785
Date Received: 3/23/2006
Received By:
Date Printed: 3/23/2006

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
293		8.3	15

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

Notes

ACZ Laboratories, Inc.

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

Sample Receipt

Burlington Resources, Inc.
HOWELL K #1

ACZ Project ID: L55785
Date Received: 3/23/2006
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L55785-01	HOWELL K #1 MW-1									X		

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

L55785

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Gregg Wurtz
Company: Burlington
E-mail:
Address: 4289 (PO Box) Farmington NM 87499
Telephone: 505 326 9537

Copy of Report to:

Name: M Nee
Company: Lodestar
E-mail: mjn@lodestarservices.com
Telephone: 505 334 2791

Invoice to:

Name: AS Above
Company: Burlington
E-mail:
Address:
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #:
Project/PO #: Howell K #1
Reporting state for compliance testing: NM
Sampler's Name: M Nee
Are any samples NRC licensable material?

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	Standard (GW)	BTEX						
Howell K #1 MW-1	3/22/06	WG	6	4	2						

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

REMARKS

Fed Ex
8479 82592640

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature] 3/22/06	1600	[signature]	3.23.06 10:00

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

July 12, 2006

Report to:
Gregg Wurtz
Burlington Resources, Inc.
3401 E. 30th St. P.O. Box 4289
Farmington, NM 87499

Bill to:
Gregg Wurtz
Burlington Resources, Inc.
P.O. Box 4289
Farmington, NM 87499

cc: Martin Nee

Project ID: HOWELL K-1
ACZ Project ID: L57333

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 23, 2006. This project has been assigned to ACZ's project number, L57333. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L57333. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

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

All samples and sub-samples associated with this project will be disposed of after August 12, 2006. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

12/Jul/06

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

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Burlington Resources, Inc.
Project ID: HOWELL K-1
Sample ID: HOWELL MW-1

ACZ Sample ID: ***L57333-01***
Date Sampled: *06/21/06 15:38*
Date Received: *06/23/06*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

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

Workgroup: ***WG208951***
Analyst: *ccp*
Extract Date:
Analysis Date: ***07/05/06 18:48***

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2	1.4		1	*	ug/L	0.3	1
Ethylbenzene	100-41-4		U	1	*	ug/L	0.2	1
m p Xylene	1330 20 7	9.2		1	*	ug/L	0.4	2
o Xylene	95-47- 6	1.4		1		ug/L	0.2	1
Toluene	108-88-3	1.4		1	*	ug/L	0.2	1

Surrogate Recoveries	CAS	% Recovery	Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	93.9	1		%	83	117

** Please refer to Qualifier Reports for detail.*

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Method References

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

Comments

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

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L57333***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L57333-01	WG208951	Benzene	M8021B GC/PID	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
		Ethylbenzene	M8021B GC/PID	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
		m p Xylene	M8021B GC/PID	M1	Matrix spike recovery was high, the method control sample recovery was acceptable.
		Toluene	M8021B GC/PID	B1	Target analyte detected in prep / method blank at or above the method reporting limit. See Case Narrative.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Certification Qualifiers

Burlington Resources, Inc.

ACZ Project ID: ***L57333***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Burlington Resources, Inc.
HOWELL K-1

ACZ Project ID: L57333
Date Received: 6/23/2006
Received By:
Date Printed: 6/23/2006

Receipt Verification

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

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

One container was received broken.

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

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1410		0.5	17

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

Notes

ACZ Laboratories, Inc.

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

Sample Receipt

Burlington Resources, Inc.
HOWELL K-1

ACZ Project ID: L57333
Date Received: 6/23/2006
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L57333-01	HOWELL MW-1									X		

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

L57333

ACZ Laboratories, Inc.

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

CHAIN of CUSTODY

Report to:

Name: Gregg Wurtz	Address: P.O. Box 4289
Company: Burlington	Farmington, N.M. 87499
E-mail:	Telephone: 505-326-9537

Copy of Report to:

Name: M Nee	E-mail: MJN@lodestanservices.com
Company: Lodestan	Telephone: 505-334-2791

Invoice to:

Name: Gregg Wurtz	Address:
Company: As Above	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #:

Project/PO #: Howell K-1

Reporting state for compliance testing: N.M

Sampler's Name:

Are any samples NRC licensable material?

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	BTEX								
Howell mw-1	6/21/06 1538	GW	2	2								

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

REMARKS

Fed Ex 847982594263

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	622061600		6230 1020

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

December 22, 2006

Report to:
Gregg Wurtz
Burlington Resources, Inc.
3401 E. 30th St. P.O. Box 4289
Farmington, NM 87499

Bill to:
Gregg Wurtz
Burlington Resources, Inc.
P.O. Box 4289
Farmington, NM 87499

cc: Martin Nee

Project ID: HOWELL K1
ACZ Project ID: L59607

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 24, 2006. This project has been assigned to ACZ's project number, L59607. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L59607. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

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

All samples and sub-samples associated with this project will be disposed of after January 22, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

22/Dec/06

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

Burlington Resources, Inc.
Project ID: HOWELL K1
Sample ID: HOWELL K1 MW-1

ACZ Sample ID: ***L59607-01***
Date Sampled: *10/19/06 9:30*
Date Received: *10/24/06*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

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

Workgroup: ***WG215778***
Analyst: *ccp*
Extract Date:
Analysis Date: ***11/02/06 16:26***

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1		ug/L	0.3	1
Ethylbenzene	100-41-4		U	1		ug/L	0.2	1
m p Xylene	1330 20 7	1.1	J	1		ug/L	0.4	2
o Xylene	95-47- 6		U	1		ug/L	0.2	1
Toluene	108-88-3		U	1		ug/L	0.2	1

Surrogate Recoveries	CAS	% Recovery	Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	111	1		%	70	130

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Reference

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Method References

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

Comments

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

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L59607***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION

No extended qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Certification Qualifiers

Burlington Resources, Inc.

ACZ Project ID: ***L59607***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.

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

Sample Receipt

Burlington Resources, Inc.
HOWELL K1

ACZ Project ID: L59607
Date Received: 10/24/2006
Received By:
Date Printed: 10/24/2006

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1019		4.1	15

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

Notes

ACZ Laboratories, Inc.

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

Sample Receipt

Burlington Resources, Inc.
HOWELL K1

ACZ Project ID: L59607
Date Received: 10/24/2006
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L59607-01	HOWELL K1 MW-1									X		

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc.

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

L59607

CHAIN of CUSTODY

Report to:

Name: Gregg Wurtz	Address: Box 4289
Company: Burlington ConocoPhillips	Farmington, NM 87499
E-mail: gwurtz@BR-inc.com	Telephone: 505 326 9537

Copy of Report to:

Name: M. Nee	E-mail: mjn@lodestarservices.com
Company: Lodestar Services	Telephone: 505 334 2791

Invoice to:

Name: Gregg Wurtz	Address:
Company: as above	
E-mail: "	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ✓ / NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #:
Project/PO #: Howell K1
Reporting state for compliance testing:
Sampler's Name: ALA
Are any samples NRC licensable material?

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	BTEX 8021B							
Howell K1 MW-1	101906 0930	GW	3	✓							

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

REMARKS

FedEx 847982594285

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Ashley Ager	10 20 06: 1525		102006 1525
	102306 1600		10.24.06 1147

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 05, 2007

Report to:
Gregg Wurtz
Burlington Resources, Inc.
3401 E. 30th St. P.O. Box 4289
Farmington, NM 87499

Bill to:
Gregg Wurtz
Burlington Resources, Inc.
P.O. Box 4289
Farmington, NM 87499

cc: Martin Nee

Project ID: HOWELL K1
ACZ Project ID: L60376

Gregg Wurtz:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 14, 2006. This project has been assigned to ACZ's project number, L60376. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan, version 11.0. The enclosed results relate only to the samples received under L60376. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

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

All samples and sub-samples associated with this project will be disposed of after February 05, 2007. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

05/Jan/07

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

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Burlington Resources, Inc.
Project ID: HOWELL K1
Sample ID: HOWELL K1 MW-1

ACZ Sample ID: ***L60376-01***
Date Sampled: *12/12/06 15:25*
Date Received: *12/14/06*
Sample Matrix: *Ground Water*

Benzene, Toluene, Ethylbenzene & Xylene

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

Workgroup: ***WG218508***
Analyst: *ccp*
Extract Date:
Analysis Date: ***12/22/06 18:53***

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Benzene	71-43-2		U	1	*	ug/L	0.3	1
Ethylbenzene	100-41-4	0.4	J	1		ug/L	0.2	1
m p Xylene	1330 20 7	2.1		1		ug/L	0.4	2
o Xylene	95-47- 6		U	1		ug/L	0.2	1
Toluene	108-88-3	0.5	J	1		ug/L	0.2	1

Surrogate Recoveries	CAS	% Recovery	Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	108.6	1		%	70	130

Report Header Explanations

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

QC Sample Types

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

QC Sample Type Explanations

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

ACZ Qualifiers (Qual)

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

Method References

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

Comments

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

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Organic Extended Qualifier Report

Burlington Resources, Inc.

ACZ Project ID: ***L60376***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L60376-01	WG218508	Benzene	M8021B GC/PID	V8	Calibration verification recovery was below the method control limit for this analyte, however the average % difference or % drift for all the analytes met method criteria.

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Certification Qualifiers

Burlington Resources, Inc.

ACZ Project ID: ***L60376***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.

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Sample Receipt

Burlington Resources, Inc.
HOWELL K1

ACZ Project ID: L60376
Date Received: 12/14/2006
Received By:
Date Printed: 12/14/2006

Receipt Verification

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

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

N/A

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

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
1244		5.9	22

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

Notes

ACZ Laboratories, Inc.
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Sample Receipt

Burlington Resources, Inc.
HOWELL K1

ACZ Project ID: L60376
Date Received: 12/14/2006
Received By:

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L60376-01	HOWELL K1 MW-1									X		

Sample Container Preservation Legend

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

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: _____

ACZ Laboratories, Inc. L60376

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

CHAIN of CUSTODY

Report to:

Name: Gregg Wurtz	Address: Box 4289 Farmington NM 87499
Company: Burlington Conoco Phillips	
E-mail: gwurtz@BR-inc.com	Telephone: 505 334 2791

Copy of Report to:

Name: M Nee	E-mail: mjn@ledestarservices.com
Company: Ledestar services	Telephone: 505 334 2791

Invoice to:

Name: G Wurtz	Address:
Company: as above	
E-mail: "	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ✓ NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #:

Project/PO #: Howell K1

Reporting state for compliance testing:

Sampler's Name: ALA

Are any samples NRC licensable material?

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	BTEX 8021B							
Howell K1 MW-1	121206 1525	GW	3	✓							

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

REMARKS

FedEx 847982594300

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Ashley L Ager	121306 1530		12.14.06 11:00

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.