

ERM NC, Inc.

8000 Corporate Center Dr.
Suite 200
Charlotte, NC 28226
(704) 541-8345
(704) 541-8416 (fax)

December 21, 2011

Reference: Notification of Water Supply Well Sample Results
1160 Sixty Five Highway
Forsyth County Parcel ID #: 6921-40-1108 & 6921-30-9647
Rural Hall, NC

Mr. Don Stewart
1160 Sixty Five Highway
Rural Hall, NC 27045



Dear Mr. Stewart:

On behalf of the R.J. Reynolds Tobacco Company, ERM NC, Inc. (ERM) would like to thank you for your cooperation in allowing us to sample your livestock water supply well on October 18, 2011.

As during previous sampling, the water sample obtained from your livestock well on October 18 was analyzed for the compounds noted in the table below. The table includes the applicable North Carolina Ground Water Standards and summarized data from the laboratory report, a copy of which is enclosed for your information. The laboratory analyses utilized methods approved by the North Carolina Department of Environment and Natural Resources (NCDENR).

Laboratory Sample ID	Owner Address Well Use	Don Stewart 1160 Sixty Five Hwy Barn - Livestock Livestock	NC Ground Water Standard
Inorganic Laboratory Analyses (µg/L)			
Iron		904	300
Manganese		340	50
Selenium		Not Detected	20
Barium		38	700
Cadmium		Not Detected	2.0
Chromium		Not Detected	10
Lead		3.1	15
Sulfates (mg/L)		64.5	250
Field Measurements			
pH (Standard Units)		9.4	6.5-8.5
Conductivity (µS/cm)		398	Not Established
Dissolved Oxygen (mg/l)		1.76	Not Established
Oxidation-Reduction Potential (millivolts)		-82	Not Established
Turbidity (NTUs)		10.3	Not Established
Temperature (degrees Celsius)		19.4	Not Established

µg/L = Micrograms per Liter (equivalent to parts per billion)

mg/L = Milligrams per Liter (equivalent to parts per million)

LIVESTOCK WELL RESULTS

Iron, manganese, barium, lead, and sulfates naturally occur in ground water within the Piedmont Region of North Carolina. The levels of barium, lead, and sulfates are below the North Carolina Ground Water Quality Standards (NCGWQS). However, manganese and iron were detected in the October 18 water sample from the livestock well at 340 µg/L for manganese which is above the applicable NCGWQS of 50 µg/L, and 904 µg/L for iron which is above the applicable NCGWQS of 300 µg/L. The results from the October 2011 sampling indicate that the levels are generally comparable to the results for the samples collected in June and August 2011.

ERM will submit the recent analytical results to the NCDENR and the Forsyth County Health Department for their records. The Forsyth County Health Department can provide information concerning recommendations for water use from the livestock well. Brock Turner, at 336-703-3225, is a contact at the Forsyth County Health Department.

As agreed upon during our August 26 conversation, additional sampling of your livestock well will be conducted to monitor water quality conditions. Sampling of the livestock well will be conducted quarterly for one year at which time the sample frequency will be reevaluated. The October 2011 sampling represents the first of the four quarterly samples. Sample results will be provided to you, NCDENR and the Forsyth County Health Department following each sample event. The next samples from your livestock well will be collected in January 2012. We will contact you in advance to coordinate the sampling.

If you have any questions, please contact me at 704-541-8345. Thank you for your assistance.

Sincerely,



Alan Martin
Project Manager

Attachment

cc: Jackie Drummond - NCDENR
Brock Turner - Forsyth County Health Department



Pace Analytical Services, Inc.
205 East Meadow Road - Suite A
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(828)254-7176

Pace Analytical Services, Inc.
9800 Kinsey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

October 27, 2011

Mr. Alan Martin
ERM
8000 Corporate Center Drive
Suite 200
Charlotte, NC 28226

RE: Project: RJRT RURAL HALL
Pace Project No.: 92104602

Dear Mr. Martin:

Enclosed are the analytical results for sample(s) received by the laboratory on October 18, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Godwin

kevin.godwin@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



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CERTIFICATIONS

Project: RJRT RURAL HALL
Pace Project No.: 92104602

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Arizona Certification #: AZ0735
Colorado Certification: FL NELAC Reciprocity
Connecticut Certification #: PH 0216
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: LA090012
Louisiana Environmental Certificate #: 05007
Maine Certification #: FL1264
Massachusetts Certification #: M-FL1264

Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Montana Certification #: Cert 0074
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New Jersey Certification #: FL765
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Pennsylvania Certification #: 68-547
Puerto Rico Certification #: FL01264
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
Virginia Certification #: 00432
Wyoming Certification: FL NELAC Reciprocity

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SAMPLE SUMMARY

Project: RJRT RURAL HALL

Pace Project No.: 92104602

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92104602001	DON STEWART LIVESTOCK	Water	10/18/11 12:45	10/18/11 15:25

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SAMPLE ANALYTE COUNT

Project: RJRT RURAL HALL
Pace Project No.: 92104602

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92104602001	DON STEWART LIVESTOCK	EPA 200.7	TAP	1	PASI-O
		EPA 200.8	DRS	6	PASI-O
		EPA 300.0	IRL	1	PASI-O

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ANALYTICAL RESULTS

Project: RJRT RURAL HALL
 Pace Project No.: 92104602

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: DON STEWART LIVESTOCK		Lab ID: 92104602001	Collected: 10/18/11 12:45		Received: 10/18/11 15:25		Matrix: Water	
200.7 MET ICP		Analytical Method: EPA 200.7						
Iron	904	ug/L	40.0	1	10/21/11 09:56	10/22/11 18:00	7439-89-6	
200.8 MET ICPMS		Analytical Method: EPA 200.8						
Barium	0.038	mg/L	0.0010	1	10/21/11 09:56	10/24/11 14:28	7440-39-3	
Cadmium	ND	mg/L	0.00010	1	10/21/11 09:56	10/24/11 14:28	7440-43-9	
Chromium	ND	mg/L	0.0010	1	10/21/11 09:56	10/24/11 14:28	7440-47-3	
Lead	0.0031	mg/L	0.0010	1	10/21/11 09:56	10/24/11 14:28	7439-92-1	
Manganese	0.34	mg/L	0.0010	1	10/21/11 09:56	10/24/11 14:28	7439-96-5	
Selenium	ND	mg/L	0.0010	1	10/21/11 09:56	10/24/11 14:28	7782-49-2	
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0						
Sulfate	64.5	mg/L	5.0	1		10/21/11 16:04	14808-79-8	



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QUALITY CONTROL DATA

Project: RJRT RURAL HALL
 Pace Project No.: 92104602

QC Batch: ICP/6209 Analysis Method: EPA 200.7
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 MET
 Associated Lab Samples: 92104602001

METHOD BLANK: 276506 Matrix: Water
 Associated Lab Samples: 92104602001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron	ug/L	ND	40.0	10/22/11 17:39	

LABORATORY CONTROL SAMPLE & LCSD: 276507 276508

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Iron	ug/L	2500	2520	2610	101	105	85-115	4	20	

MATRIX SPIKE SAMPLE: 276509

Parameter	Units	92104602001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	904	2500	3490	103	70-130	



QUALITY CONTROL DATA

Project: RJRT RURAL HALL
 Pace Project No.: 92104602

QC Batch: ICPM/6208 Analysis Method: EPA 200.8
 QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
 Associated Lab Samples: 92104602001

METHOD BLANK: 276502 Matrix: Water
 Associated Lab Samples: 92104602001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium	mg/L	ND	0.0010	10/24/11 14:19	
Cadmium	mg/L	ND	0.00010	10/24/11 14:19	
Chromium	mg/L	ND	0.0010	10/24/11 14:19	
Lead	mg/L	ND	0.0010	10/24/11 14:19	
Manganese	mg/L	ND	0.0010	10/24/11 14:19	
Selenium	mg/L	ND	0.0010	10/24/11 14:19	

LABORATORY CONTROL SAMPLE & LCSD: 276503 276504

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Barium	mg/L	.1	0.098	0.10	98	100	85-115	2	20	
Cadmium	mg/L	.01	0.0097	0.0098	97	98	85-115	.8	20	
Chromium	mg/L	.1	0.098	0.098	98	98	85-115	.4	20	
Lead	mg/L	.1	0.099	0.10	99	101	85-115	2	20	
Manganese	mg/L	.1	0.10	0.10	100	100	85-115	0	20	
Selenium	mg/L	.1	0.097	0.10	97	104	85-115	7	20	

MATRIX SPIKE SAMPLE: 276505

Parameter	Units	92104602001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.038	.1	0.14	100	70-130	
Cadmium	mg/L	ND	.01	0.0097	97	70-130	
Chromium	mg/L	ND	.1	0.098	98	70-130	
Lead	mg/L	0.0031	.1	0.11	102	70-130	
Manganese	mg/L	0.34	.1	0.45	106	70-130	
Selenium	mg/L	ND	.1	0.099	99	70-130	



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QUALITY CONTROL DATA

Project: RJRT RURAL HALL
 Pace Project No.: 92104602

QC Batch: WETA/12881 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Associated Lab Samples: 92104602001

METHOD BLANK: 276944 Matrix: Water
 Associated Lab Samples: 92104602001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	5.0	10/21/11 12:01	

LABORATORY CONTROL SAMPLE: 276945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	45.6	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 276946 276947

Parameter	Units	3541176007		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.								
Sulfate	mg/L	21.8	100	119	119	97	97	90-110	.04	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 276948 276949

Parameter	Units	3541287001		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.								
Sulfate	mg/L	9.3	50	57.9	57.9	97	97	90-110	.02	20	

QUALIFIERS

Project: RJRT RURAL HALL
Pace Project No.: 92104602

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach



Document Name:
Sample Condition Upon Receipt (SCUR)

Document Number:
F-CHR-CS-03-rev.05

Document Revised: July 29, 2011
Page 1 of 2

Issuing Authority:
Pace Huntersville Quality Office

Client Name: ERM NC Inc Project # 92104602

Where Received: Huntersville Asheville Eden

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer Used: IR Gun T1102 Type of Ice: Wet Blue None Samples on Ice, cooling process has begun

Temp Correction Factor Add / Subtract 0 °C

Optional:
Proj. Due Date
Proj. Name

Corrected Cooler Temp.: 5.5 C Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 10/18/11 [Signature]

	Yes	No	N/A	Comments:
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Analysis not Marked Received
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Sulfate / Metals
Sampler Name & Signature on COC:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6.
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11.
Sample Labels match COC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>				
All containers needing preservation have been checked.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/>	<input type="checkbox"/>		Initial when completed
Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	16.
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Pace Trip Blank Lot # (if purchased):				

Client Notification/ Resolution: _____ Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: [Signature] Date: 10/18/11 SRF Review: [Signature] Date: 10/19/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

