

ERM NC, Inc.

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

July 6, 2011

North Carolina Department of Environment and Natural Resources  
Division of Waste Management  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646  
Attention: Ms. Jaclynne Drummond

*Via Electronic Mail and US Mail*



Reference: R.J. Reynolds Ash Landfill - Permit #34-05  
Off-Site Access & Groundwater Modeling  
Rural Hall, North Carolina

Dear Jackie:

On behalf of R.J. Reynolds Tobacco Company ("RJRT"), this letter follows up on the June 10, 2011 letter from Jaclynne Drummond, Compliance Hydrogeologist, Solid Waste Section, DENR, to Yi Yongsheng ("Assessment Letter") and provides: (1) documentation of efforts to obtain access for installation of an off-site groundwater monitoring well on the properties adjacent to and east/northeast of the landfill and (2) the proposed groundwater modeling approach to evaluate the potential for groundwater contamination to migrate off-site across Leak Creek to the east/northeast of the landfill.

#### *OFF-SITE MONITORING WELL ACCESS*

Paragraph 4, Conditions for Compliance, of the April 17, 2009 Compliance Order, as modified by the Assessment Letter, required the delineation of any constituents in the groundwater. ERM sought access for installation of a monitoring well on three adjacent properties to complete the delineation of contaminants to the east/northeast of the landfill. The properties included: 8390 Crestbrook Road (Michael and Susan Sprinkle, owners), 8420 Crestbrook Road (Jack Guthrie, owner) and 8600 Crestbrook Road (Barbara Jessup and Shirley Gordon, co-administrators for the Payne property). All of the property owners refused access for the well installation. A summary of efforts to obtain access is presented below and contact logs with the property owner representatives are included with this letter.

#### *SPRINKLE PROPERTY*

Verbal requests were made to Michael and Susan Sprinkle in the fall of 2010 for authorization to install a monitoring well on their property to evaluate groundwater quality east of the property. On September 29, 2010, ERM met with the Sprinkles to review the well installation request. They indicated they would consider the request and contact me the following week. After one follow-up telephone conversation, the Sprinkles ceased returning telephone calls. An alternate location was identified southwest of the proposed Sprinkle well location and monitoring well W-9 was installed in December 2011 on Ken Stewart's property.

### *GUTHRIE PROPERTY*

Three voice messages were left in September and October 2010 for Jack Guthrie requesting a return call to discuss the potential installation of a monitoring well on his property for evaluation of groundwater quality east of the landfill. No response was received. ERM contacted Mr. Guthrie again in May 2011 via telephone requesting authorization to install a well on the topographic ridge north of his mother's residence. Mr. Guthrie orally declined the initial oral request by ERM due to the extensive land clearing activities required for an access road to the proposed well location. A letter was sent to Mr. Guthrie on May 25, 2011 requesting that he reply in writing with his access denial. At Mr. Guthrie's request, ERM met with him at the property on June 13, 2011 to review the proposed well location and potential access routes. Mr. Guthrie stated again that the land clearing activities would be excessively disruptive to his mother and declined the request for well installation. Mr. Guthrie provided a letter to ERM dated June 14, 2011 denying property access for the well installation. A copy of the letter is enclosed.

### *PAYNE PROPERTY*

ERM met with Barbara Jessup and Shirley Gordon, daughters of Mrs. Margie Payne and co-administrators of the Payne property, in September 2010 to request installation of a monitoring well on the Payne property for evaluation of groundwater quality northeast of the landfill. Mrs. Jessup and Mrs. Gordon stated they would discuss the request with the family before deciding. On October 20, 2010, Mrs. Jessup orally declined the request due to Mrs. Payne's health. ERM met with Mrs. Jessup and Mrs. Gordon on May 5, 2011 and requested access for the well installation on the Payne property. A letter was sent to Mrs. Jessup on May 25, 2011 requesting a reply in writing with access denial, and a copy of the reply correspondence from Mrs. Jessup and Mrs. Gordon is enclosed.

The Guthrie and Payne properties are the only reasonable locations for a proposed monitoring well for the purposes of evaluating groundwater quality northeast and downgradient of the landfill. Steep topography in the region allows for limited locations suitable for drill rig access. Other properties in the vicinity with feasible drilling locations are located between 2,000 and 2,500 feet downgradient of the limits of the landfill and are separated from the landfill by several minor drainage divides as well as Leak Creek. These locations are too far downgradient to provide useful information for evaluating the extent of sulfate-affected groundwater from the landfill and have not been considered for placement of the additional monitoring well.

### *GROUNDWATER MODELING APPROACH*

ERM proposes to develop three-dimensional groundwater flow and contaminant transport models to simulate groundwater flow and contaminant transport near the landfill area, including the watershed east and northeast of the landfill.

ERM will utilize MODAEM, from which aquifer transmissivities are derived using a regional water balance approach based on USGS' online stream flow data. A localized 3D MODFLOW/MT3D model with finer grid (variable spacing) will be developed around the site, based on the boundary conditions and aquifer properties that are derived from the regional modeling. The model will include aquifer anisotropy to reflect the preferential groundwater flow conditions in fractured rock and saprolite. The model will be calibrated using observed groundwater elevations at the landfill and contaminant concentration data. The model will be applied to evaluate the extent of groundwater impacts east/northeast of the landfill.

ERM requests NCDENR's agreement that efforts for obtaining access for the off-site monitoring well is adequate and the proposed modeling approach is acceptable for evaluating the potential for groundwater contamination to migrate off-site across Leak Creek to the east/northeast of the landfill.

If you should have any questions or require additional information concerning this letter, please contact us at your convenience at (704) 541-8345.

Sincerely,



Alan Martin, P.G.  
*Project Manager*

cc: Mr. Jason Watkins - NCDENR DWM Winston-Salem Regional Office (e-mail)  
Mr. Yong Yi - R.J. Reynolds Tobacco Company

# CONTACT LOG

By Alan Martin, ERM

Sprinkle Property - 8390 Crestbrook Road

Michael & Susan Sprinkle

Phone: 336-969-4440 (home)

*September 24, 2010, Friday - 5:15 pm*

Telephone discussion with Michael Sprinkle and A. Martin of ERM. A. Martin inquired about installation of monitoring well on their property at 8390 Crestbrook Road. Proposed well location is along ridge trending west of house. Mr. Sprinkle expressed concern regarding the limited flat land available on the property and the resulting restrictions that the monitoring well would place on available space for future construction plus the potential loss of real estate value due to presence of the well on the property. Site meeting scheduled for September 29 to review the proposed location and discuss further.

*September 29, 2010, Wednesday - 3:00 pm*

Site meeting with Mr. Sprinkle to review potential location of proposed well. A. Martin reviewed water quality data associated with nearby ash landfill and explained purpose of well. Mr. Sprinkle expressed concern for loss of trees, potential devaluation of property due to presence of well onsite, limited available flat space for well and future construction by Sprinkles if flat space consumed by well. Sprinkles will consider the request to install the well. A. Martin to contact Sprinkles next week to inquire about well installation.

*October 11, 2010, Monday, 2:00 pm*

Telephone conversation with Susan Sprinkle regarding well installation. Mrs. Sprinkle indicated they are concerned with potential devaluation of their property with well installation and potential groundwater quality impacts. Sprinkles have retained an attorney to evaluate their options. Mrs. Sprinkle indicated they have not decided about well installation but she would have Michael Sprinkle contact me tomorrow to discuss.

*October 19, 2010 - Tuesday, 2:30 pm*

No response from Sprinkles. A. Martin left message inquiring about well installation on their property.

*October 26, 2010 - Tuesday, 10:15 am*

No response from Sprinkles. A. Martin left message inquiring about well installation on their property.

*October 28, 2010 - Thursday, 4:45 pm*

No response from Sprinkles. A. Martin left message inquiring about well installation on their property.

*May 31, 2011, Tuesday*

Letter sent to Sprinkles requesting authorization to re-sample water supply well.

*June 6, 2011, Monday*

Voice mail from Susan Sprinkle to A. Martin. Sprinkles currently have their house for sale and they are concerned about the effects of the re-sampling results may have on their real estate value. A. Martin on vacation week of June 6 and returned call upon return.

# CONTACT LOG

By Alan Martin, ERM

Sprinkle Property - 8390 Crestbrook Road  
Michael & Susan Sprinkle  
Phone: 336-969-4440 (home)

*June 13, 2011, Monday 1:20 pm*

A. Martin left voice messages on Michael and Susan Sprinkle's cell phones to understand their concerns regarding re-sampling of supply well.

*June 17, 2011, Friday 9:30 am*

Telephone discussion with Susan Sprinkle to understand her concerns regarding re-sampling of supply well. Sprinkles are concerned about the effects of the re-sampling results and potential groundwater impacts nearby may have on their real estate value. I told her I could not advise her regarding real estate matters and she understood.

A. Martin inquired if acceptable to re-sample Sprinkle's supply well next week. I explained that RJRT is re-sampling all the water supply wells in the area that were sampled in 2009 for purposes evaluating current groundwater quality in the area. Mrs. Sprinkle tentatively agreed to allow re-sampling but would discuss with Michael Sprinkle to confirm and call back today if there was a concern. I alerted her that the sampling was scheduled for Wednesday/Thursday, June 22-23. Matt Horine of ERM spoke with Mrs. Sprinkle late morning June 17 inquiring independently of permission to sample and she confirmed it was acceptable to sample their well.

# CONTACT LOG

By Alan Martin, ERM

Guthrie Property - 8420 Crestbrook Road

Jack (Posie) Guthrie

Phone: 336-924-5857 (home)

Property is owned by Mr. Guthrie but occupied by his mother, Mildred Nunn.

*September 21, 2010, Tuesday – 4:20 pm*

A. Martin of ERM left voice message requesting call back to discuss installation of monitoring well on 8420 Crestbrook Road property

*September 27, 2010, Monday – 10:30 am*

A. Martin left voice message requesting call back to discuss installation of monitoring well

*October 7, 2010, Thursday – 1:00 pm*

A. Martin left voice message requesting call back to discuss installation of monitoring well

*May 18, 2011, Wednesday – 4:00 pm*

A. Martin spoke with Jack Guthrie via telephone to discuss possibility of installing well on 8420 Crestbrook Road property. Due to topography and groundwater flow direction, trees and vegetation would be cleared along ridgeline north of his mother's home (single-wide mobile home) to install monitoring well at reasonable location. Mr. Guthrie replied that well installation would significantly disturb his mother who is in her 80s. Mr. Guthrie declined request to install well. I alerted him that I would send a written request via certified mail and asked that he reply for the benefit of NCDENR. He responded that he would look at the request upon its receipt and consider replying at that time.

*May 25, 2011*

Written request for well installation mailed to Jack Guthrie

*May 31, 2011, Tuesday*

Letter sent to Guthrie requesting authorization to re-sample water supply well.

*June 3, 2011, Friday – 3:15 pm*

Jack Guthrie called A. Martin to discuss well installation. Mr. Guthrie expressed concern regarding damage to vegetation and resulting erosion due to access road clearing. Mr. Guthrie indicated that topography in conjunction with property boundaries would make access to the ridge line north of the residence very difficult. Mr. Guthrie requested that A. Martin visit property to inspect the area. Site meeting scheduled for June 13 at 3:00 p.m.

*June 13, 2011*

Site meeting with Jack Guthrie to review proposed monitoring well location and discuss access issues. Mr. Guthrie reiterated his concern of damage to vegetation resulting from access road installation. A. Martin reviewed topography onsite and, due to steepness of terrain, the only safe access to the ridge line north of residence would require relocating the mobile home off of the ridge line to provide access for a drill rig capable of installing a 200+ foot deep monitoring well. Access to the ridge line is not feasible without relocating trailer.

# CONTACT LOG

By Alan Martin, ERM

Guthrie Property - 8420 Crestbrook Road

Jack (Posie) Guthrie

Phone: 336-924-5857 (home)

*June 14, 2011*

Letter response from Jack Guthrie denying access to install monitoring well.

ERM NC, Inc.

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

May 25, 2011

Mr. Jack Guthrie  
5340 Seward Circle  
Pfafftown, NC 27040

Reference: Request for Access to Install Groundwater Monitoring Well  
Guthrie Property  
8420 Crestbrook Road  
Rural Hall, NC



*Via Certified Mail*

Dear Mr. Guthrie:

On behalf of R.J. Reynolds Tobacco Company, ERM NC, Inc. (ERM) is submitting this request for authorization to install one groundwater monitoring well on your property located at 8420 Crestbrook Road in Rural Hall.

Per our previous discussions, R.J. Reynolds is evaluating groundwater quality conditions in the vicinity of the inactive coal ash landfill on Edwards Road which is in the vicinity of the Payne property. The North Carolina Department of Environment and Natural Resources – Division of Waste Management (NCDENR DWM) has requested that R.J. Reynolds attempt to obtain access for a groundwater monitoring well in the vicinity of your property. The purpose of the proposed monitoring well is to evaluate groundwater quality in the bedrock beneath your property. Enclosed is an aerial photograph presenting the approximate location of the proposed monitoring well on your property. Trees and vegetation would need to be removed to access this location.

The proposed monitoring well would be installed via a “water well” drill rig commonly used to install household water supply wells in conjunction with three support vehicles. Installation of the well would be completed within four days of initiation then periodic sampling and laboratory analyses on the sample(s) would be conducted. Each sampling event would be completed in one day or less.

Following completion of the groundwater monitoring activities as approved by NCDENR, the monitoring well will be properly abandoned, any temporary roadway(s), if required by Property Owner, will be removed and the surface of the Property disturbed by installation of the monitoring well will be restored to as close to its original condition as practicable.

ERM requests that you provide your written response to this request in the space provided below in accordance with directives from the North Carolina Department of Environment and Natural Resources – Division of Waste Management (NCDENR DWM). Two copies of this document are enclosed, one of which you may keep for your





6-14-11

ERM NC, INC.

ALAN MARTIN

Dear Mr. Martin:

I really don't have an objection to having a groundwater monitoring well on my property. However, to get to the area you need to go you would have to cross septic tanks, sewer and water lines. You would also have to destroy a large area of forest. You will need to find a different route to this spot and I don't think this is possible.

Please contact me if you have any questions.

Sincerely,

Posie J. Guthrie

Posie J. Guthrie

Property owner

# CONTACT LOG

By Alan Martin, ERM

Payne Property - 8600 Crestbrook Road  
Barbara & Tom Jessup plus Shirley Gordon  
Phone: 336-969-5216 (home)

Barbara Jessup is daughter of Margie Payne. Mrs. Payne has dementia and Mrs. Jessup and her sister, Mrs. Shirley Gordon, are co-administrators of Mrs. Payne's estate.

*September 27, 2010, Monday - 12:00 pm*

A. Martin inquired to Tom Jessup about installation of monitoring well on Mrs. Payne's property at 8600 Crestbrook Road. Tom will ask his wife to contact me regarding well installation.

*September 29, 2010, Wednesday, 4:00 pm*

A. Martin met with Barbara & Tom Jessup plus Shirley Gordon at the Jessup's house (8605 Crestbrook Road) to discuss basis for proposed well installation and preferred location on Payne property. Mrs. Jessup explained her mother's fragile condition and indicated that the disruption of her mother's routine as a result of the well installation activities would likely cause significant stress to her mother and the family. The Jessups and Mrs. Gordon will discuss the well installation within the family and A. Martin to call back next week to inquire about their decision.

*October 11, 2010, Monday 6:00 pm*

A. Martin left voice message with Jessups to inquire about possibility of installing well on Payne property.

*October 19, 2010, Tuesday - 2:30 pm*

A. Martin left voice message with Jessups to inquire about possibility of installing well on Payne property.

*October 20, 2010, Wednesday - 9:30 am*

Barbara Jessup called A. Martin to decline request to install well on Payne property. Ms. Payne's medical condition is too fragile to allow large equipment and unknown persons access to family property.

*December 21, 2010, Tuesday - 4:30 pm*

A. Martin contacted Barbara Jessup requesting access to collect surface water sample (SS-90) from Leak Creek where it intersects Payne property. A. Martin informed Mrs. Jessup that ERM staff would walk in from Landfill to access Payne parcel and collect about 1 gallon of creek water. Total onsite time = 30 minutes. Ms. Jessup agreed to allow sample collection. A. Martin alerted her that we will collect the sample next Tuesday or Wednesday.

*February 8, 2011, Tuesday - 10:30 am*

A. Martin contacted Tom Jessup informing him of SS-90 surface water sample results (1/4/11). No significant sulfates or manganese detected and the iron concentrations are naturally-occurring. Mr. Jessup will pass info onto his wife.

*May 2, 2011, Monday - 10:10 am*

Telephone conversation with Mrs. Jessup requesting meeting to discuss possibly installing well on Payne property. Meeting scheduled for Thursday, May 5 at 2 pm.

# CONTACT LOG

By Alan Martin, ERM

Payne Property - 8600 Crestbrook Road  
Barbara & Tom Jessup plus Shirley Gordon  
Phone: 336-969-5216 (home)

*May 5, 2011, Thursday - 2:00 pm*

Site meeting with Barbara and Tom Jessup plus Shirley Gordon to discuss installation of well on Payne property. A. Martin reviewed basis for request. Mrs. Jessup reiterated that her mother's condition remains fragile and minor disruptions to her routine results in significant distress for her and the family. Based on this, the family is unwilling to allow installation of a monitoring well on the Payne property. I will send a letter to the Jessups requesting a written reply. Jessups indicated they would review the letter and reply.

*May 25, 2011*

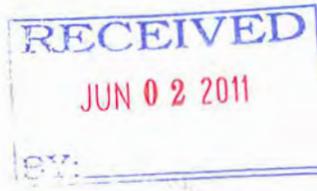
Written request for well installation mailed to Jessups.

*June 2, 2011*

Response from Barbara Jessup and Shirley Gordon denying access to install monitoring well on the Payne property.

**COPY**

May 25, 2011



ERM NC, Inc.

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

Barbara and Tom Jessup  
8695 Crestbrook Road  
Rural Hall, North Carolina 27045



Reference: Request for Access to Install Groundwater Monitoring Well  
Margie Payne Property  
8600 Crestbrook Road  
Rural Hall, NC

*Via Certified Mail*

Dear Mrs. Jessup:

On behalf of R.J. Reynolds Tobacco Company, ERM NC, Inc. (ERM) is submitting this request for authorization to install one groundwater monitoring well on the Payne property. ERM understands that you and your sister are daughters of Mrs. Margie Payne (the property owner) and are administrators of real estate matters associated with the Payne property.

Per our previous discussions, R.J. Reynolds is evaluating groundwater quality conditions in the vicinity of the inactive coal ash landfill on Edwards Road which is in the vicinity of the Payne property. The North Carolina Department of Environment and Natural Resources - Division of Waste Management (NCDENR DWM) has requested that R.J. Reynolds attempt to obtain access for a groundwater monitoring well in the vicinity of the Payne property. The purpose of the proposed monitoring well is to evaluate groundwater quality in the bedrock beneath your Mother's property. Enclosed is an aerial photograph presenting the approximate location of the proposed monitoring well on your Mother's property. No significant clearing of vegetation for accessibility to the proposed location is anticipated.

The proposed monitoring well would be installed via a "water well" drill rig commonly used to install household water supply wells in conjunction with three support vehicles. Installation of the well would be completed within four days of initiation then periodic sampling and laboratory analyses on the sample(s) would be conducted. Each sampling event would be completed in one day or less.

Following completion of the groundwater monitoring activities as approved by NCDENR, the monitoring well will be properly abandoned, any temporary roadway(s), if required by Property Owner, will be removed and the surface of the Property disturbed by installation of the monitoring well will be restored to as close to its original condition as practicable.

ERM requests that you provide your written response to this request in the space provided below in accordance with directives from the North Carolina Department of

Environment and Natural Resources - Division of Waste Management (NCDENR DWM). Two copies of this document are enclosed, one of which you may keep for your records. Please return your written response on one of the copies in the enclosed envelope. You may also fax your response to my attention.

COPY

COPY

Please contact me if you have any questions or require additional information.

Sincerely,

*Alan D. Martin*

Alan Martin, P.G.  
Project Manager



Attachments

cc: Jackie Drummond - NCDENR  
Yong Yi, R.J. Reynolds

**PROPERTY OWNER RESPONSE:**

(please check the appropriate box and provide any written comments)

Yes, we will allow  No, we will not allow installation of the proposed monitoring well.

Multiple horizontal lines for providing written comments.

Printed Name: Shirley P. Gordon  
Barbara P. Jessup  
Signature: *Shirley P. Gordon*  
*Barbara P. Jessup*



FIGURE  
**1**