

# **LAW OFFICE OF GARY A. ABRAHAM**

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September 21, 2010

Commissioner Alexander B. Grannis  
NYS Dept. of Environmental Conservation  
Office of Hearings & Mediation Services  
625 Broadway, First Floor  
Albany, NY 12233-1550  
ATTN: Louis A. Alexander, Assistant Commissioner for  
Hearings and Mediation Services

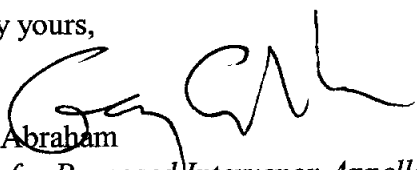
Re: In the Matter of the Application of **CHEMUNG COUNTY**,  
Application No. 8-0728-00004/00013; Appeal of ALJ Rulings

Dear Mr. Alexander:

Enclosed please find three copies of the above-referenced appeal. Copies are being sent via overnight courier to the parties on the Service List.

Please do not hesitate to contact me regarding this matter.

Sincerely yours,

  
Gary A. Abraham

*Attorney for Proposed Intervenor-Appellant*

gaa/encs.

cc: Service List

In the Matter of the Application of  
**CHEMUNG COUNTY** for modification of the  
Part 360 permit for its municipal solid waste  
landfill on County Route 60 in  
the Town of Chemung<sup>1</sup>

**APPEAL OF ADMINISTRATIVE  
LAW JUDGE'S RULINGS ON  
ISSUES AND PARTY STATUS**

Application No. 8-0728-00004/00013

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**INTRODUCTION**

This appeal is respectfully submitted in accordance with 6 N.Y.C.R.R. § 624.8(d) on behalf of Residents for the Protection of Lowman and Chemung (“RFPLC”) regarding the Rulings of the Administrative Law Judge (“ALJ”), dated September 3, 2010, rejecting RFPLC’s proposed issue in this matter, that acceptance of Marcellus shale drilling wastes from Pennsylvania violates the restriction on disposal of naturally occurring radioactive material (“NORM”) under Part 360 and therefore requires further inquiry. *See* 6 NYCRR § 360-1.1(a); Petition at 8.n.25. RFPLC also appeals an interim decision of the ALJ, by memorandum dated June 3, 2010, striking all or most of RFPLC’s offered submissions on this proposed issue, which seek to develop facts about the manner in which Marcellus shale gas well sites are developed, and specifically the manner in which shale drilling wastes are generated and the nature of the waste.<sup>2</sup> It is RFPLC’s position that the interim decision unduly restricted the development of this issue in the Issues Conference, with the result that the ALJ Rulings are insufficiently informed

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<sup>1</sup> The Chemung County Landfill is located in the Town of Chemung, east of the Town of Elmira within which is located the City of Elmira. *See* “City Maps” at <http://www.cityofelmira.net/index/community.html>.

<sup>2</sup> The June 3, 2010 interim decision is attached to the ALJ’s September 3, 2010 Rulings.

about the facts needed to understand whether the Department's regulations allow Marcellus shale drilling wastes to be disposed in a Part 360-regulated landfill. It is RFPLC's position that these wastes can be expected to be several times more radioactive than the background radiation level in the environment, and the manner of their generation once fully understood shows they are processed and concentrated and therefore must be managed in a specially permitted low-level radioactive waste landfill. *See* 6 NYCRR §§ 380-1.2(e), 382.1(c)(5), 383-1.1(b)(5); Petition, 8.n.25; ALJ Rulings, 37.<sup>3</sup>

Applications to modify a permit under Part 360 must contain "a demonstration that, as modified, the facility will be capable of compliance with the applicable requirements of the ECL and this Part." 6 NYCRR § 360-1.9(c)(4). During the Issues Conference RFPLC offered to prove facts which, if true, would show that, by accepting large volumes of Marcellus shale drilling wastes the Chemung County Landfill is not capable of complying with Part 360, which does not allow processed and concentrated NORM to be disposed in the landfill. 6 NYCRR § 360-1.1(a). Facts developed at an issues conference must be adjudicated in a formal hearing if the facts could result in "a major modification to the proposed project or the imposition of significant permit conditions in addition to those proposed in the draft permit," and if the proffered facts raise "sufficient doubt about the applicant's ability to meet statutory or regulatory criteria applicable to the project, such that a reasonable person would require further inquiry." 6 NYCRR §§

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<sup>3</sup> RFPLC also proposed two additional issues, whether the landfill would emit noise in excess of regulatory limits once the pace of operations increases to accommodate increased waste acceptance rate, and whether the increased waste acceptance rate conforms to the landfill's NYSDEC-approved local waste management plan, or whether instead a proposal to modify the plan must be reviewed in advance of consideration of the application. These two issues are not being appealed.

624.4(c)(2), (3). The propriety of disposing relatively highly radioactive NORM from Marcellus shale drill sites in Pennsylvania, and RFPLC's proposal that the landfill's permit be conditioned to prohibit this waste stream should therefore have been certified for further adjudication.

### **Background**

New England Waste Services of New York, Inc. ("NEWSNY"), a subsidiary of Vermont-based Casella Waste Systems, Inc., has operated the Chemung County Landfill as well as several other county-owned waste management facilities since September 2005 under a lease agreement with the County that prohibits the County from interfering with NEWSNY's operational plans. Issues Conference Exhibit ("IC Ex.") No. 7-J, Section 3.1(b). These plans include the present application which seeks to increase the maximum waste tonnage acceptance rate at the landfill from 120,000 tons per year to 180,000 tons per year.

In contrast to the local solid waste management plan approved by the Department in 1991, (*see* 6 NYCRR § 360-15.10), which states that the County operates an integrated waste management system designed "to meet the future solid waste needs of the County," ( IC Ex. 7-A, at ES-4), "prior to the fall of last year" NEWSNY began accepting about 2,000 tons per week of drilling wastes from Marcellus shale drill sites in Pennsylvania. Issues Conference Transcript ("IC Tr.") 144:15.

It was not until January 21, 2010 that Regional Staff approved the practice without, however, ever inquiring into the radioactivity of the waste. Petition, Exhibit A. About six weeks later, on March 5, 2010, the Department published a notice that an issues conference would be held in this matter. IC Exs. 1, 2.

In 2009 Chemung County generated about 72,000 tons of waste per year for land

disposal, but NEWSNY exported about half of that to other landfills it operates, and imported about 63,000 tons of wastes from outside the county. IC Tr.92-93. In the Issues Conference RFPLC asked whether the purpose of increasing the maximum waste acceptance further is to make room for drilling wastes, since the County's waste generation rate is decreasing, (IC Tr. 183-185), and clearly "[the County and NEWSNY are] not proposing further expansion of the landfill as a means to accommodate solid waste disposal further generated in the County." IC Tr. 328:15ff. These questions were never resolved in the issues conference, and NEWSNY never offered to explain what wastes would be utilized for the requested additional disposal capacity.

Although NEWSNY's application to modify the County's permit was initially submitted in December 2006, (ALJ Rulings 39), the application was suspended by NEWSNY and not revived until this year. IC Tr. 24-25. The initial application stated that the purpose for requesting a tonnage increase is to respond to market conditions and more fully utilize the landfill space. IC Ex. 5, Item 3. However, in the issues conference NEWSNY acknowledged that "the evaluation of market conditions has changed in light of the development of Marcellus shale drilling in Pennsylvania and the potential for it here in New York." IC Tr. 31:17ff. *See also* IC Tr. 88-89 (ALJ, "the entire waste stream of the facility could be Marcellus shale drill cuttings if [NEWSNY] wanted it to").

### **The Positions of the Parties and Proposed Intervenor**

#### **RFPLC**

RFPLC's starting point is the finding included in the Department's September 30, 2009 draft Supplemental Generic Environmental Impact Statement ("Draft SGEIS") prepared to address potential impacts of allowing development of the Marcellus shale formation in New

York.<sup>4</sup> The Department has not yet completed a Final SGEIS and thus has drawn no conclusions about such impacts, including the impacts associated with managing waste generated from development of the Marcellus shale formation.

According to the Draft SGEIS, solids in Marcellus shale drill cutting waste (rock cuttings alone) are approximately 25-30 times more radioactive than background. Indeed, Marcellus shale is detected by well drillers by its radioactivity, because it is substantially more radioactive than rock formations above or below the Marcellus formation. Petition, Ex. B at 2. Commenting on the Draft SGEIS on July 21, 2009, the New York State Department of Health's Bureau of Environmental Radiation Protection ("NYSDOH") notes that "the Marcellus Shale [has] a higher radioactive material content than other shale formations," and waste generated at gas wells in this formation includes NORM. IC Ex. 11 at 1. NEWSNY acknowledged that the drilling wastes at issue are NORM. IC Tr. 243:11-12. A relevant question, never resolved in the issues conference, is how rock cuttings from Marcellus shale lose their radioactivity once brought to the surface. IC Tr. 243:4-8.

NYSDOH identified a potential "public health concern" in the fact that "production brine samples provided by DEC" to NYSDOH have even higher levels of radioactivity than "drill tailings" (or rock cuttings), including "high levels [of] radium-226." *Id.* See also Petition, Ex. B at 3-4 ("As indicated in NYSDEC's Appendix 13 of the dSGEIS, the sampling of production brine from the Marcellus Shale results in radium concentrations of 5000 pCi per liter and higher."). Radium-226 is found naturally in Marcellus shale, as is brine, owing to the origins of

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<sup>4</sup> NYSDEC, *Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program*, <<http://www.dec.ny.gov/energy/58440.html>>, September 30, 2009 (corr. October 5, 2009).

the formation in an ocean environment. IC Tr. 167:4-7. In the issues conference NEWSNY acknowledged that drilling liquid, including formation brine, is commingled with shale drill cuttings, but provided no indication about the proportion of solids and liquid contained in the drilling waste disposed at the landfill. IC Tr. 246:18-22. Natural formation brine generated during the production phase of a shale gas well is not distinguishable from natural formation brine generated during the initial drilling phase, (IC Tr. 166-167; Resnikoff report of May 19, 2010, at sec. 3<sup>5</sup>), and therefore it can be expected that even drill cuttings from the Marcellus formation (which are not generated during the production phase) are “briny.” IC Tr. 167:7. Because Radium-226 is highly soluble, the fluid medium containing both formation brine and drilling muds, recirculated through a Marcellus shale wellbore, (IC Tr. 151:11-13, 239:4-5), leaches Radium-226 from the shale. Resnikoff report of May 19, 2010, at sec. 4.0.<sup>6</sup> However, although pre-production drilling wastes are dewatered, “how the drill cuttings and drilling mud are dewatered” is “currently unclear.” Petition, Ex. B at 5. *See also* IC Tr. 84:8-9 (NEWSNY,

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<sup>5</sup> “[G]amma ray drill logs . . . indicate high radioactivity in Marcellus shale. In fact, the Marcellus shale formation is *identified* using a gamma-ray detector that produces a chart of radioactivity (measured in GAPI units) versus depth. Shale rock always displays a spike on such graphs, but compared to other shales the Marcellus shale formation spike is substantially greater. The attached gamma-ray log (Attachment 1) shows a typical spike in radioactivity readings of >400 GAPI units, which is >24 pCi/gram and 25 times higher than background. This is consistent with DEC's findings for the radioactivity of Marcellus shale cuttings.”

<sup>6</sup> “The formation water can be contained in the rock formations for centuries and can contain extremely high levels of water-soluble radionuclides that are present in the underground formations. In addition to mixing with brine, the drilling fluid may also become contaminated when it comes in contact with radioactive rock. Radium-226 is a highly water-soluble radionuclide and will preferentially dissolve in the drilling fluid under the pressure and temperature conditions below ground. Drilling fluid can be reused many times and radium will progressively concentrate in it after each reuse. Since no sources specify the radioactivity of produced water, we assume that it is the same as brine, which NYSDEC measures at 15,000 pCi/L.”

“it’s hard to say what wastes will come from a drill site”). This conclusion is consistent with concerns expressed to the Department by NYSDOH last year:

Until more data are available, gas drilling in the Marcellus should include sampling of *drill tailings*, frac flowback water and production brine. Analysis of gross alpha activity, gross beta activity and some gamma spectroscopy analysis should be adequate to assess whether further characterization of radioactive material is needed. The counting efficiency for a total gross alpha sample that has high dissolved solids is very low, resulting in considerable uncertainty (error) for estimating possible radiation exposure. However, total gross alpha activity is an inexpensive (but effective) screening tool, and if the value is greater than 15 pCi/L then additional analysis is performed. [IC Ex. 11 at 2 (*italics added*)].

The Department’s landfill regulations allow wastes to be landfilled with as little as 20 percent solids so long as there are no free liquids in the waste. 6 NYCRR § 360-2.17(n).

Therefore, substantial volumes of liquid may be contained in approved wastes. As indicated previously, in the case of Marcellus shale drilling wastes, the liquid component of the waste is more radioactive than the rock cuttings themselves.

It is undisputed that various industrial-scale mechanical processes are applied to Marcellus shale drilling waste in order to separate fluids from solids. IC Tr. 211:1-3 (NEWSNY, “that occurs through a process of shakers and physical separation mechanisms”). In addition, deep formation drilling involving injection and recirculation of drilling fluids under high pressure is applied to the Marcellus shale formation. The qualities of the waste generated requires a dewatering process unlike what is applied to mined waste from a gravel pit, and thus the generation of Marcellus shale drilling wastes involves more than “simple removal of rocks or other natural materials from the ground.” IC Tr. 220:9-16 (DEC Staff). In contrast to gravel mining wastes, Marcellus shale rock cuttings originate in a fluid medium that concentrates



NORM, elevating the radioactivity of already relatively highly radioactive NORM in the rock. “[R]ock cuttings and any solids originally present in the drilling fluid are filtered out,” (Petition, Ex. B at 1), and NYSDOH has said the process of filtration of precipitates and sediment, including rock cuttings, may concentrate the radioactive materials and require them to be disposed of at a facility prepared to handle this waste. I.C. Ex. 11 at 1. Whether the activities involved in generating waste at Marcellus shale gas wells “process and concentrate NORM” under Part 360, (IC Tr. 220:16-18 (DEC Staff); *cf.* 6 NYCRR § 360-1.1(a)), therefore cannot be determined without further inquiry. 6 NYCRR § 624.4(c)(2).

#### **NEWSNY/Chemung County**

The applicant took the position that it was not its responsibility to provide sufficient information about the potential harm to the environment and human health posed by exposure to NORM in Marcellus shale wastes being disposed at the landfill. IC Tr. 174:2-7 (“It’s not Casella’s purpose to do that, nor should they be saddled with that burden. If that’s necessary, somebody else should do that. The drilling industry should do that.”). Instead, NEWSNY provided a report by CoPhysics Corp. on the analysis of samples of drill cuttings purporting to be taken from the horizontal wellbore at Marcellus shale gas wells. IC Ex. 10. The report concludes that the cuttings sampled are no more than twice as radioactive as background. *Id.* at 5. However, CoPhysics is not certified in New York to analyze waste samples for radiological contaminants. Although Dr. Rahon of CoPhysics who performed the analysis for NEWSNY was identified as a “certified health physicist,” (ALJ Rulings at 28), CoPhysics is not an environmental laboratory certified to analyze solid waste samples for radiochemical or chemical parameters. *See* Pub. Health L. § 502. CoPhysics itself asserted no more than that it “is licensed to handle radioactive

materials and provide radiological services by the NYS Department of Health.” IC Ex. 10 at 2.

In New York, certified laboratories must employ a full time supervisor with at least three years experience in the field to oversee radiochemistry analyses. 10 NYCRR §§ 55-2.10(a), (f). DOH certification is obtained by compliance with the standards specified for an appropriate analytical category, including radiochemistry, in DOH's Environmental Laboratory Approval Program (ELAP). 10 NYCRR § 55-2.1 et seq. *See also* ALJ Corresp., Abraham letter dated June 30, 2010, at 2-3. The ELAP website lists all New York laboratories certified to perform radiochemical analysis in New York, and CoPhysics is not listed.<sup>7</sup>

According to its website, CoPhysics specializes in the analysis of radioactivity in medical and dental offices, not environmental radiochemistry, and the company does not state that it is ELAP certified in any analytical category.<sup>8</sup> Thus, CoPhysics may have a DOH radioactive materials license authorizing it to handle small amounts of radioactive materials, but this does not authorize the company to analyze waste samples for radiochemistry. In fact, CoPhysics did not accurately measure radium concentrations in the waste samples it was given and instead measured surrogates which, unlike radium, are not soluble in water. ALJ Corresp., Abraham letter dated June 30, 2010, attachment, Resnikoff Memo dated June 30, 2010, at 3.

In an effort to further confirm that the rock cuttings CoPhysics sampled are representative of horizontal drilling wastes taken from the Marcellus shale, NEWSNY offered a report by Billman Associates. This report is based solely on an examination of the cuttings under a microscope to determine whether their black color is characteristic of Marcellus shale. *See id.* at

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<sup>7</sup> *See* <<http://www.wadsworth.org/labcert/elap/radiochem.html>> (visited June 21, 2010).

<sup>8</sup> *See* <[http://cophysics.com/#Radiological\\_Services](http://cophysics.com/#Radiological_Services)> (visited June 21, 2010).

1. However, NEWSNY previously acknowledged that Devonian shale, which originates in a formation substantially deeper underground than the Marcellus formation, is also being actively developed in the region for natural gas. No information was provided that would help distinguish these two shales, and the Billman report provides no indication that drilling logs were examined to confirm the origin of the examined samples. *Id.* Moreover, NEWSNY acknowledged that “there really may not be much difference” between Marcellus shale drilling wastes and drilling wastes from Trenton Black River formation in New York, as drilling in both formations involves horizontal well bores, but the Trenton Black River formation is located deeper than and below the Marcellus shale formation. IC Tr. 145:10-20. It should be emphasized that the concentration of NORM in the Marcellus formation is substantially higher than in adjacent formations.

Resnikoff report of May 19, 2010, at sec. 3.

#### **DEC Staff**

DEC Staff took the position that drill cuttings from the Marcellus shale are just environmentally benign “ground rocks, fragmented rocks,” like gravel from a surface mine. IC Tr. 164:6-11; 220. According to Staff, liquids that may be contained with the drill cuttings “don’t come to the landfill.” IC Tr. 150. “The rock simply is rock without any additives I don’t think, it’s not a concern.” IC Tr. 201:20-22. However, no empirical basis was provided in support of these conclusions, nor was any further elaboration on the process of drilling waste generation provided.

#### **The ALJ Rulings**

In his Rulings the ALJ took the position that because there is no reason to think that the cuttings should contain “produced water,” (ALJ Rulings 35, citing IC Tr. at 235), concerns raised by NYSDOH in comments on the Department’s Draft SGEIS are irrelevant. *Id.* In addition,

RFPLC's offer to prove Marcellus shale drilling wastes are more than mere rock cuttings because they do in fact contain drilling fluid and extant brine, and would therefore likely be relatively highly radioactive NORM, is not appropriate at a landfill permit proceeding, because members of the public are not entitled to adjudication of their requests for permit modification. ALJ Rulings 36. RFPLC should instead petition Regional DEC Staff to modify the permit utilizing a procedure outside the permit proceeding; and while DEC Staff must respond to the request, rejection of an interested party's request is not subject to public notice, comment or hearings. *Id.* Since DEC Staff made it very clear they disagree that the waste at issue is anything more than rock cuttings, as a practical matter a petition to regional Staff would be futile.

When RFPLC offered the expert testimony of a rock fracture scientist, a radiological health physicist experienced in the issues presented by Marcellus shale development, and further description of the manner in which drilling wastes become concentrated in radioactivity by its radioactive waste expert, these submittals were stricken from the record. *See* ALJ Rulings, Attachment, ALJ Memorandum dated June 3, 2010. In light of the incomplete development of the factual record on this question, and the crucial legal requirement to show the ability to comply with the Department's regulations, (6 NYCRR § 360-1.9(c)(4)), including a demonstration that the NORM waste at issue is neither processed nor concentrated, (6 NYCRR § 360-1.1(a)), striking these materials from the record was an improvident and unreasonable exercise of the ALJ's discretion.

Because NEWSNY's expert CoPhysics is not a licensed environmental laboratory, reliance on NEWSNY's expert was also an improvident and unreasonable exercise of the ALJ's discretion.

Because the drill cuttings sampled by NEWSNY's expert had Ra-226 levels near background, and there is no known procedure for removing radioactivity from drilling wastes, it is not possible the cuttings samples are characteristic of waste that would be generated by development of horizontal wellbores into Marcellus shale and disposed in large volumes in the Chemung County Landfill. Because the Issues Conference failed to develop a sufficient record regarding the manner in which such wastes are processed, and because there is little question that such wastes when generated during the relatively brief period of horizontal wellbore development may concentrate NORM,<sup>9</sup> the ALJ's decision to credit Staff's conclusion "that the drill cuttings are not a threat to public health or the environment," (ALJ Rulings 37), was also an improvident and unreasonable exercise of the ALJ's discretion.

Finally, although the ALJ found that "issues about Marcellus Shale wastes could be adjudicated in this proceeding, based on the record developed at and since the issues conference," (*id.* 38), his conclusion that these issues are "not relevant to a decision on the County's application," (*id.*), disregards the facts about the timing of the revival of the application, the ALJ's own conclusion that all other wastes could be diverted away from the landfill in order to devote all its disposal capacity to Marcellus Shale wastes, (*id.* at 88-89 ("the entire waste stream of the facility could be Marcellus shale drill cuttings if [NEWSNY] wanted it to")), and the legal requirement that to obtain a modification of its permit, an applicant must demonstrate an ability to comply with the Department's regulations, including the Department's restriction on landfill disposal of NORM, the ALJ's ruling that the Marcellus shale waste issue should not be

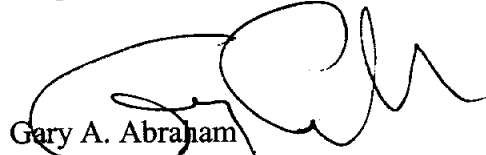
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<sup>9</sup> The ALJ recognized that the concern in this matter focuses on "fluid-based drilling, for the horizontal leg" of development of a Marcellus shale gas well. ALJ Rulings 27.

adjudicated further was also an improvident and unreasonable exercise of the ALJ's discretion.

Dated: September 21, 2010

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Gary A. Abraham". The signature is fluid and cursive, with a large initial "G" and "A".

Gary A. Abraham  
*Attorney for Residents for the Protection of  
Lowman and Chemung*

gaa

cc: Service List