

**State of Michigan
Ingham County Circuit Court**

Paul Brady,

Plaintiff,

v

Case No: 13-648-AA

Hon: Clinton Canady III

Filed: 6/13/13

Michigan Department of Environmental
Quality and Encana Oil & Gas (USA) Inc,

Defendants,

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Second Affidavit of Ellis Boal

1. On April 18, 2012, I attended an afternoon seminar at a meeting at the Grand Traverse Resort in Acme, of American Petroleum Association (“API”) and the

Michigan Oil and Gas Association. I didn't count, but I would say over 100 industry people were there, along with Rick Henderson, chief of the DEQ field operations section.

2. One of the distributed materials was a thick packet titled “Hydraulic Fracturing (HF), Traverse City, MI, April 18, 2012.” The packet consisted of five tabbed sections, the first of which is titled “Hydraulic Fracturing Operation – Well Construction and Integrity Guidelines,” a document available online at http://www.api.org/policy-and-issues/policy-items/hf/api_hf1_hydraulic_fracturing_operations .

3. Attached as exhibit 30 is the cover page and page 21 of that document, which includes section 10.4.3. The section is titled “Tiltmeter and Microseismic Monitoring.” The section says monitoring with these technologies is “commonly used to . . . refine the effectiveness of fracturing techniques in new areas.” The technologies allow real-time 3-dimensional mapping, including the vertical and lateral extent, azimuth, and complexity of fractures. Enabled by a geophone array in a nearby observation well, they can help "predict hydraulic fracture performance in an area."

4. Exhibits 25-28 to my previous affidavit were the DEQ documents related to Encana's application for a spacing exception for the three wells of pad B between the dates of January 28 and June 21. I have reviewed each page of the exhibits.

5. Nowhere do they take note of data obtained through tiltmeter or microseismic monitoring of Encana's three comparator wells – Pioneer 1-3 HD1,

Excelsior 1-13 HD1, Excelsior 1-25 HD1 – or discuss how that data would bear on the issue of possible interference among the wells on pad B.

6. Similarly, nowhere do they take note of or discuss such data from Encana's wells, Excelsior 2-25 HD1 or Excelsior 3-25 HD1.

Ellis Boal

Subscribed and sworn to before me this
____ day of _____, 2013

Notary public, _____ County
My commission expires: