



Pennsylvania Fish & Boat Commission

Division of Environmental Services

450 Robinson Lane
Bellefonte, PA 16823
Phone: 814-359-5133
Fax: 814-359-5175

Sent via e-mail to William.Muszynski@drbc.state.nj.us

February 11, 2010

Mr. William J. Muszynski, Water Resources Branch Manager
Delaware River Basin Commission
P.O. Box 7360
West Trenton, New Jersey 08628-0360

Re: Comments regarding revised draft Dockets No. D-2009-13-1 and D-2009-18-1
Stone Energy Corporation surface water withdrawal
West Branch Lackawaxen River, Mount Pleasant Twp., Wayne County, PA

Dear Mr. Muszynski:

The Pennsylvania Fish and Boat Commission (PFBC) has reviewed the subject revised docket circulated via e-mail on Feb. 5, 2010 and would like to offer the following comments. Thank you for considering our agency's input.

Docket No. D-2009-13-1, Surface water withdrawal for natural gas exploration

Pass-by Flow

Page 7 of the docket describes the basis of the pass-by flow. Note that Aldenville is misspelled in the second sentence under the *Pass-by Flow* heading. The pass-by flow of 5.9 cfs is described to represent 25% of the average daily flow at the USGS Aldenville gage prorated to the drainage area at the point of withdrawal. The Fish and Boat Commission supports this passby flow, which we believe is appropriate for the stream's HQ-CWF designation by Pennsylvania DEP. It is also consistent with our pass-by recommendations for water withdrawals on similar streams.

Decision paragraph I. m. describes Commission action on the pass-by flow. We note that after a low flow period, withdrawal is not to resume until the 24-hour average flow reaches 8 cfs. We note that withdrawals at this flow would have to be limited to 943 gpm (2.1 cfs), which is lower than the maximum withdrawal rate of 1040 gpm. Withdrawal would therefore have to be reduced below the maximum to resume withdrawals at the 8 cfs minimum. It would be advisable to list the resumption flow to the nearest 0.1 cfs (specifically 8.0 cfs) so that significant figures do not allow withdrawal resumption at 7.5 cfs, which rounds to 8 cfs.

Instantaneous withdrawal rate and intake design

The PFBC has no objection to allowing instantaneous withdrawal rates up to 1040 cfs (Paragraph I. l.) as long as pass-by flows are met and the intake is designed to minimize impingement and entrainment. I have attached PFBC's Recommendations for Locating Surface Water Intakes and Recommendations for Surface Water Intake Design Criteria to Reduce Aquatic Species Impacts, both dated June 4, 2009. These recommendations can be shared with the docket applicant and will be the criteria we use to evaluate acceptability of design under Decision paragraph I. n.

Our Mission:

www.fish.state.pa.us

To protect, conserve and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities.

Aquatic invasive species control

We support inclusion of a requirement for an Invasive Species Control Plan to prevent the spread of exotic and nuisance species. In the absence of specific PFBC recommendations, a plan that reflects docket applicant operations and best management practices to prevent spread of invasive species is the most appropriate requirement. Our agency offers our assistance in evaluating such a plan when drafted.

Docket No. D-2009-18-1, Stone Energy Corporation, Matoushek 1 Well Site

We note in Paragraph 5. a. that a U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory mapped wetlands are located at the headwaters of the unnamed tributary of West Branch Lackawaxen River, approximately ¼ mile east of the well location and that the well location conforms to the setback limitations from existing buildings, water wells, streams, springs, bodies of water, and wetlands greater than 1 acre in size as required by Pennsylvania Oil and Gas Act Chapter 2 Section 601.205 *Well Location Restrictions*. We have commented to the Pennsylvania Department of Environmental Protection that this section of the Oil and Gas Act is not sufficiently protective since it only considers wetlands greater than 1 acre in size and streams as identified as a blue line on a 7.5 minute USGS topographic map. We recommend that an assessment of potential impacts be included in the Non-Point Source Pollution Control Plan (NPSPCP) discussed on docket page 7 to appropriately protect Special Protection Waters.

This docket application was submitted in response to a Marcellus shale natural gas well drilled without prior DRBC approval. Our agency notes on page 4, Paragraph b of the docket that, "Drill cuttings and fluids were captured in a lined drill pit excavated in the drilling pad in proximity to the well," and on p. 5, Paragraph d that "The drill cuttings were solidified and disposed of in the M1 Well drilling pit in accordance with the requirements of PA Chapter 78 Subchapter C." Our agency is currently investigating some shallow groundwater contamination associated with drilling waste containment and disposal in on-site pits and strongly advises DRBC to require monitoring wells up- and downgradient of the disposal pit to assess the potential for groundwater contamination in the pit area as part of the Pre-Alteration Groundwater Quality Survey Plan described on Page 11. We also recommend that post hydraulic fracturing be required through this plan.

Thank you for the opportunity to provide our agency's comments regarding this proposed DRBC action. Please contact me at (814) 359-5133 or e-mail mhartle@state.pa.us if you have any questions or require additional information.

Sincerely,



Mark A. Hartle, Chief
Aquatic Resources Section
Division of Environmental Services

c: PFBC – D. Arnold, J. Arway, T. Schaeffer, R. Morgan, T. Pekarski (via e-mail)
DEP – Susan K. Weaver, Pamela Bishop, Carl DeLuca (via e-mail)
DRBC – Chad Pindar (via e-mail)



**Pennsylvania Fish and Boat Commission Recommendations
Surface Water Intake Design Criteria to Reduce Aquatic Species Impacts**

I. Intake design specifications to minimize impingement and entrainment

A. Minimizing impingement of aquatic organisms

1. Through-screen velocity in a submerged or floating intake should be no more than 0.5 feet/second to minimize impingement of aquatic organisms.
2. Through screen velocities of greater than 0.5 feet/second will be considered on a case-by-case basis when a detailed justification for a higher through-screen velocity is submitted and deemed appropriate.

B. Minimizing entrainment of aquatic organisms

1. Floating intake screen mesh size or opening size shall be no greater than 3/16 inches.
2. Submerged intake screen mesh size or opening size shall be no greater than 0.1 inches.
3. Mesh sizes or opening sizes greater than those listed above will be considered on a case-by-case basis when a detailed justification for an increased mesh-size or opening size is submitted and deemed appropriate.

II. Debris management

- A. An outer barrier, guard or trash rack is recommended to be placed around the intake to deflect large debris and reduce debris clogging.
- B. Maintenance and inspection of the intake, including debris cleaning, should be performed at intervals frequent enough to allow the design conditions to be met at all times.
- C. A maintenance plan that includes frequency of inspection and debris cleaning should be submitted for approval along with the submittal of intake design specifications.



Pennsylvania Fish and Boat Commission Recommendations for Locating Surface Water Intakes
Habitat Descriptions and Recommendations to Reduce Aquatic Species Impacts

I. Habitat description – three categories of habitat should be defined when project is submitted

A. Habitat type: One of three categories shown below

1. Riffle - A reach of stream that is characterized by shallow, fast moving water broken by the presence of rocks and boulders (i.e. whitewater is present) Riffles are typically less than 3 feet deep.
2. Run - A reach of stream characterized by fast flowing low turbulence water that is typically more than 1.5 feet deep. Whitewater is generally absent from runs.
3. Pool - A reach of stream that is characterized by deep low velocity water and a smooth surface. Depending on the size of the stream, pools can vary from 1 to more than 12 feet deep.

B. Depth: Should be recorded as “surface” or “submerged”. If submerged, provide depth.

1. Surface – associated with a floating intake. Considered lower risk because of less frequent occupation of this area by aquatic organisms, particularly rare species.
2. Submerged – Record depth to nearest 0.1 foot at normal summer flow. Intake located under the water surface. May be anywhere in the water column below the surface to the bottom. Considered higher risk because of greater potential for interaction with aquatic species.

C. Predominant substrate: One or combination of with following types. If combination, percentage of each bottom type within 30 feet of intake should be specified. Bottom types have their basis in U.S. EPA Rapid Bioassessment Protocol

<i>Bedrock</i>	<i>exposed rock unit</i>
<i>Boulder</i>	<i>>10”</i>
<i>Cobble</i>	<i>2.5 – 10”</i>
<i>Gravel</i>	<i>0.1 – 2.5”</i>
<i>Sand/silt</i>	<i>gritty/powdery</i>
<i>Clay</i>	<i>slick</i>

II. Photograph and Map Requirement

A. Photograph: **required**

Please provide a photograph or multiple photographs from the bank near the intake clearly depicting the proposed intake location and extent of disturbed area (if any). One or two additional photos showing a broader view of the stream area in which the intake will be located are requested. One looking upstream and one looking downstream are recommended. Show a direction and location of photographs on the map indicated below

B. Map location: **required**

Provide the withdrawal point location on a USGS 7.5 minute topographic map or equivalent. Indicate the direction and location of the photograph required above.

III. Habitat avoidance criteria for rare and protected aquatic species:

A. Habitats to avoid. Intakes in these habitats may cause conflicts and initiate site-specific studies, including surveys for fish and/or mussels:

- All riffles. This is the habitat type typically occupied by rare and protected fish and mussel species and should be avoided.
- Habitats < 3.0’ deep, particularly if cobble, gravel or sandy substrate exists. These habitats have a significant potential for mussel and fish impacts and are particularly susceptible to disturbance.

**Pennsylvania Fish and Boat Commission Recommendations for Locating Surface Water Intakes
Habitat Descriptions and Recommendations to Reduce Aquatic Species Impacts**

Preferred habitats for surface water intakes to reduce aquatic species impacts

- Deep water $\geq 3.0'$ deep with a floating intake. Minimizes disturbance and interaction with fish and mussels if intake design guidelines are met.
- Deep water $\geq 3.0'$ deep with a submerged intake and very coarse (bedrock/boulder) or fine (silt/clay) substrate. Depth and substrate type minimize interaction with rare and protected fish and mussels.

B. Pennsylvania Natural Diversity Inventory review

1. Indicate if Pennsylvania Natural Diversity Inventory review conducted – yes or no
2. If yes, request that PNDI Project Environmental Review Receipt be attached to project documentation.
3. PFBC may request site-specific studies if project conflicts are not resolved with information included in the project documentation or provided upon inquiry.