



March 7, 2014

Mr. Abdel Nassani
PA DEP Southeast Regional Office
Waterways and Wetlands Program Manager
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Norristown, PA 19401
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Re: Columbia's Eastside Expansion Project, Chapter 105 application (E15-846)

Dear Mr. Nassani:

Thank you for the Department's time and review of Columbia's Eastside Expansion Pipeline Project's Chapter 105 permit application. DRN is re-submitting our initial comment regarding the Chapter 105 application, submitted to the Department on January 23, 2014. This March 6, 2013 comment supplements the original submission and is based on a file review conducted on January 15, 2013 of the materials made available for the application. DRN also includes an addendum to this comment including several expert reports, monitor inspection reports, and field data related to similar pipeline projects where DRN has conducted field monitoring and investigations.

At the time of our review of the permit application, the application was not complete making it impossible for DRN to do a thorough review at that time (Mr. Nassani, DEP letter to Columbia dated 1/14/14). During the file review we observed missing components to the application including important documents like the Erosion and Sedimentation Plan and the Bog Turtle Habitat Assessment, incomplete alignment sheets that did not include aerial overlays, among other missing items outlined in DEP's 1/14/14 letter to Columbia.

Therefore, we request that additional time be granted for this review and another public comment period of

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at least 60 days be opened and announced in the PA Bulletin when Columbia's application is deemed administratively complete so the Delaware Riverkeeper Network and the public can review the complete application. In addition, because this application would impact expansive linear areas that would affect, according to the application, 55 streams and waterbodies and 38 wetlands on the Pennsylvania loop alone, DRN requests at least one public hearing so that the impacted communities would have an opportunity to comment on and learn about this linear project. At that time, a complete permit application would be instrumental to ensuring the public has the ability to review all pertinent information so they can comment completely and effectively. Furthermore, more time than 30 days is requested. Thirty days is simply not enough time for the public to navigate through over 700 pages that the applicant has provided to the Department to date. As of 3/6/14, an e-Facts web search conducted by DRN shows this Chapter 105 application (E15-846), is still not administratively complete and the applicant has yet to produce the documentation requested in the Department's 1/14/14 letter. The public notification process requires that all documents are made available for the public to be able to make an informed and complete review.

The Delaware Riverkeeper Network champions the rights of our communities to a Delaware River and tributary streams that are free-flowing, clean and healthy. With this mission, DRN is opposed to any expansion of gas infrastructure projects such as Columbia's Eastside Expansion Pipeline, which if constructed, will collect and transport methane gas to other markets that will fuel additional and unsustainable gas drilling in the Marcellus shale where communities health and environment are currently being harmed by this unconventional and highly industrialized process of drilling. DRN does not believe that gas drilling is sustainable for the health of our communities or a thriving economy for our region today or for future generations. And we firmly believe that this permit should not be granted and this pipeline should not be allowed to be constructed. But if a no build option is not granted to the community, then the following comments we request that the Department will consider, require, investigate, and respond to related to Columbia's Chapter 105 permit application, which as of this time, is still administratively

complete, in an effort to limit the harm caused to waterbodies, wetlands and habitats to the greatest extent possible.

Delaware Riverkeeper Network has documented pipeline impacts in the northern part of the Basin the past several years (see addendum materials). Based on our past experience monitoring similar open cut and pipeline construction techniques by Columbia and other companies that have caused irreparable harm, damage to HQ and EV streams, and permanent changes to waterbodies and wetlands, we urge DEP to disapprove this permit by Columbia (see NOV^s from Pike County Conservation District to Columbia Gas, 4/2012)ⁱ. Or at a minimum, require better practices that are available and have been demonstrated in past pipeline projects to limit harm.

Horizontal Directional Drilling for Streams, Wetlands, Forests and Communities Should be Required

Due to harm caused by open pipeline cuts, DRN believes that the Dept. should require horizontal directional drilling (HDD) or other drilling methods underneath the water resources and forests to greatly minimize harm and disturbance to the surrounding environment. By requiring HDD and limiting soil disturbance, there will ultimately be less potential for erosion and sediment violations to the surrounding waterbodies and less short and long term environmental problems including but not limited to: soil stabilization, increased stormwater runoff, hydrologic changes to wetlands, disturbed soil profiles, changes in micro-topography and micro-habitat, irreparable compaction of soils, destruction and disturbance of benthic and fish spawning habitat, thermal impacts from loss of tree cover, habitat loss, forest fragmentation, invasive species introductions, and disturbance of amphibian activity, etc. Many streams to be impacted by the project are designated High Quality - Trout Stocked Fisheries (HQ-TSF). Pickering and Brandywine Creeks, both of which feed public water supplies, would also be crossed by the proposed gas line. Marsh Creek, Shamona Creek, and Beaver Creeks would be crossed as well and at least one of these wetland complexes may have the presence of bog turtle according to Fish and Boat Commission. All of these streams and other additional wetlands should not have open pipeline cuts across them and instead require HDD crossings. Columbia states for some of these crossings HDD is being investigated and will be

conducted “if feasible”. It is critical that the Dept. requires them to perform HDD or investigate other drilling methods that could be employed to limit earth disturbance as we have seen instances where Columbia has requested variances or changes months before the project to instead do cheaper open cuts and avoid HDD or other drilling options and in some construction activities, in 2011 for example, this has also led to violations issued by agencies and harm to high quality and exceptional value resources that could have been avoided if these practices were required in the first place under the permitⁱⁱ.

Reduction of Pipeline ROW Width

If HDD is not employed in sensitive areas, the Dept. should require minimization of the ROW to the greatest extent possible to minimize fragmentation, soil compaction and other impacts. The applicant is proposing a 300 foot ROW (including the existing older ROW) to install a 26-inch pipeline – this ROW width should be greatly reduced to minimize permanent environmental impacts. In some parts of the application, it appears Columbia is proposing a 100 foot ROW in non-colocated sections of the line – smaller ROWs are very possible and feasible. For example in Morris County NJ a pipeline company was required to limit its ROW to 34 feet to avoid and minimize harm and to run the ROW along an existing road to decrease fragmentation. Stove piping, HDD, smaller side booms, wood chips to cushion equipment, and sod pillows can all be deployed by the Applicant to greatly minimize harm and amount of time to have the site restored on a faster timeframe.ⁱⁱⁱ

Limiting “Temporary” Work Spaces and Additional “Temporary” Work Spaces

Temporary work spaces and additional temporary workspaces should be avoided and not located in areas where mature trees would need to be cut as cutting down a mature forest creates fragmentation and trees would take decades to grow back. These temporary work spaces should be avoided adjacent to sensitive waterbodies and wetlands where tree cutting could cause thermal impacts to the surrounding waterbody and reduce the riparian buffer for decades and long term. Soil compaction is an irreparable harm in these “temporary” work spaces. DRN commissioned a soil study on a past pipeline project with similar construction practices that documented permanent soil compaction in these work spaces that were deemed

“temporary” – making these impacts long term and not temporary by nature^{iv}. In fact, the soil in some of the temporary work spaces was more compacted than that compaction of soil at an earthen dam. And if the Applicant is allowed to construct “temporary” work spaces where natural soils and habitat exists, the acreage should be made part of the mitigation acreage due to its permanent damage. Temporary work spaces in natural areas should be prohibited. Instead, existing parking lots and paved surfaces would be a more appropriate work space than an area with natural soils.

Columbia appears to be requesting these temporary work spaces be located near high quality streams and wetlands. Drawing Number TA-6711-8213 (Section H) indicates, for example, a 25 foot “additional temporary workspace” within about a 60 foot area from a HQ- TSF stream and also a larger 50 foot temporary work space adjacent a nearby wetland area. These temporary workspaces near or adjacent waterbodies are not protective to these waterbodies and should not be permitted. These temporary work spaces are also noted near waterbodies and wetlands on diagrams: TA-6711-8202 (W201-PA PEM), TA-6711-8203 (W202-PA PEM), TA-6711-8205 (W205 & S203), TA-6711-8208 (S202), among others. This indicates a persistent problem and practice by the pipeline company that should not be allowed and greatly minimized. W205 crossing also appears to disturb the wetland in various locations – the western edge could be protected and perhaps avoided by cutting down the travel corridor. Due to lack of aerials on the alignment overlays, DRN is unsure of the landuse or if there is an existing buffer in that temporary workspace but there are buffer requirements for HQ streams in Pennsylvania that must be adhered for special protection streams to ensure riparian buffers are protected and preserved and watersheds protected. Again because these diagrams do not include the aerial overlay, it is much more difficult to discern where discrepancies or inaccuracies may be present in this paper application – a missing component for a thorough review.

Co-Location with Existing Hard Surfaces and Infrastructure

Landuse within the study area, according to the wetland delineation report, characterizes the region as mix of residential subdivisions, commercial retail, and rolling mature forestland with a mix of mature sweet

gum, American beech, oak sp., maple sp., tulip, hickory sp., eastern hemlock, viburnum, and eastern red cedar. DRN believes the pipeline path should avoid non-disturbed areas, public lands, forests and waterbodies and be installed and drilled under roads and other infrastructure projects that already impact and fragment the existing land in order to reduce overall disturbance and cause the least harm and permanent damage. The pipeline should also be co-located along its existing ROW as to limit disturbance and tighten pipelines within the existing industrial area the existing line already creates.

Detailed Comments on the Application

Appendix E Wetland Determination Sketches are Vague and Incomplete

Maps included in the Chapter 105 application are incomplete and vague. DRN did not see in the application materials detailed alignment sheets overlain on aerial photographs to determine the nature and characterization of any of these stream and wetland crossings. Wetland determination forms only included a sketch and written components outlining the wetland areas but this is not enough information to visually examine the area to be impacted by the pipeline. Overview maps provided in Figures 1-14 are not detailed enough to be able to do a thorough detailed review of the complete pipeline footprint that runs over 9 miles in length. Alignment sheets need to be made available by the applicant for a thorough review. DRN has noted large discrepancies for past pipeline projects with alignment sheet information in regard to the determination and characterization of forested wetlands and scrub shrub wetlands, therefore it is critical that the Applicant include these detailed drawings for Delaware Riverkeeper Network and the public review^v. It does appear from the majority of waterbody data forms in Appendix E, the majority of riparian buffers or surrounding habitat are categorized with having trees, shrub, and herb layers, indicative of what appears to be healthy riparian buffers. These healthy riparian buffers should be preserved - again why HDD should be employed in order to avoid denuding the buffer along these waterways. High Quality (HQ) waterbodies also have protective measures for riparian buffers in place for the state of Pennsylvania that need to be protected.

The tables in the Wetland and Waterbody Delineation Report for the project also vary from the alignment sheets just from a spot check by DRN. For example, on Table 3 on Page 18 of the wetland delineation, S202 is listed as an intermittent tributary to East Branch Brandywine Creek and wetted perimeter is listed as 2 feet. Meanwhile S202 on Engineering Diagram TA-6711-8208 appears to say the length of crossing is 16.3833 feet. This is a difference of over 14 feet.

What type of trench plugs will be used to ensure hydrologic changes or drainage of wetlands does not occur?

Section A. Permit Application

Page 2 – Project Information – Columbia states that the 1278 Loop pipeline will be co-located to the existing pipeline ROW, *where feasible*. This characterization is vague. Co-location along existing infrastructure as to avoid additional fragmentation or harm should be required. Detailed maps and information for each potential route should be provided so the public can review the least damaging route. Columbia states that access is to be achieved through existing and proposed access roads. A more detailed description is needed here. How many new roads will be cut by the line? Columbia states there will be three HDD sections near railroads, highways and park areas. As indicated above HDD should be required for waterbody crossings, wetlands and natural areas to avoid environmental damage.

Page 3 – Project timeline is vague and only includes project start and in service date. More details should be included here for the various construction steps of the project. Restoration deadlines should also be included as to avoid repeated harm to wetland habitats over time.

Page 3 – Landuse plans – The applicant states there are no county comprehensive plans or municipal comprehensive plans. We believe there is a Chester County Conservation Plan and there are also local ordinances that might apply to this project. Chester County Commissioners authored a 55-page Wetlands publication in 2002 that describes municipal, state and federal protections of these county resources^{vi}

Page 5 - 3.0 – Columbia states the pipeline project is not associated with oil or gas or water from oil or gas. This is not true.

Page 5 3.2 & 6.0 – Columbia states it will not discharge stormwater to any surface water or dry swale – this is not accurate due to the nature of pipeline projects and what has been observed on similar pipelines.

Page – 4.0 – Columbia states total disturbed earth disturbance will equal 128.72 acres. Does this include temporary and additional temporary work spaces as well as access roads? Is this an accurate calculation?

There is not enough information in the application to be able to double check these calculations.

Page 6 – 13.0 – Columbia states there will be no air emissions (i.e., NOX, VOC, etc.) related to this pipeline project. This statement is not true. There are multiple compressor stations that are a large source of air contamination related to this project.

Page 6 0 16.0 Columbia does not specify what type of waste will be generated for this project. A brief description (e.g., hazardous, infectious, municipal) should be available on this form. No other details in the permit application were observed related to drilling muds and other potential contaminants that will need to be employed with this construction project.

Page 6 – 20 Applicant did not answer this question – form incomplete

Page 7 – 24.0 Applicant did not answer if the intended activity involves the use of a radioactive source.

Marcellus shale is known to have radioactive qualities that are found in the deep shale layer and brought up in the gas. A NY study examined the implications of pipelines carrying radioactive shale gas to communities in NYC and documented projected lung cancer rates due to this exposure.^{vii} What consideration is this given to proposed projects like Eastside expansion and large intrastate pipelines?

Compliance Review

Columbia states that there are no violations of any permits (See NOV's in 2012 from Pike County Conservation District related to multiple E&S violations and discharge of sediment to waterbodies at Columbia's pipeline project in Upper Delaware). Is that accurate being Columbia's recent activities and construction projects the past several years?

Part One Water Obstruction Calculations Form

Page 2 – 4 Disturbance Calculations

Columbia states that 1.7 acres will be temporarily disturbed and 2.8 acres will be permanently disturbed in way of waterbody disturbance. With the current incomplete application, it is not possible for the public to review how those calculations were made by the Applicant. A break-down of these acreages is needed for both the Dept and the public to be able to confirm these numbers. In DRN's prior experience with pipelines, we have documented instances where delineations were not complete and acreages did not seem accurate or correct so we are concerned for this project, the same could happen if these calculations are not made more transparent^{viii}. On the ground damage needs to be fully compensated so these calculations need verification throughout the project period.

Columbia states there is only one GP-7 minor road crossing (access road) for this pipeline and that it will require permanent filling of 0.27 acres of wetlands as part of a residential subdivision. DRN has no detailed maps or aerials to see this potential fill but we believe this access road should not be allowed to be created by filling a wetland. Page 4 of the form then states that the access road also will include the pipeline utility line and fill 0.28 acres of wetland and 0.05 acres of the road will fill a floodplain or stream. A general schematic is also produced here outlining the 25-foot construction ROW, 50-foot permanent ROW, and the 35-foot access road. The Applicant is proposing open trench through this wetland and stream. The Applicant should be required to HDD the utility line under this sensitive area to eliminate any permanent or temporary fill into the wetlands. It also appears that the acreage is incorrect for temporary disturbance.

DRN does not have detailed maps or alignment sheets to observe this area, only this general schematic and the numbers provided by Columbia so again, more detailed information is necessary for a thorough review.

Point 4, Page 4 – Columbia states it will construct a building, 2 road crossings, and 3 separate pipelines through a wetland and a separate stream that will require the filling of 0.2 acres of wetland. Columbia states that 0.17 acres of that 0.2 acres is to construct a building over the wetland. Columbia should have to place their structure elsewhere other than wetland habitat and the pipeline should use HDD to limit disturbance of this wetland area. Is this building a compressor station? It is unclear the size of the overall wetland for this location but studies show large impacts from utility lines when small wetlands are allowed to be disturbed even temporarily – hydrologic changes occur and soils are often compacted.

Municipal Authority, Power and Duties

A letter from Columbia to Caln Township dated December 2, 2014 states that the municipality has only 30 days to respond on pipeline impacts through the municipality. This notification is part of requirements under Acts 14, 67, 68 and 127. Columbia states if no response is provided within 30 days the Applicant will assume that the pipeline project is consistent with the Stormwater and Flood Plan Management Plans and proceed with the application. DRN does not believe that 30 days is adequate time for the Township to respond to this request nor does it appear like detailed alignment sheets and information have been provided to the Township to be able to knowledgeably review the proposed impact. The recent Act 13 court decision of the Pennsylvania Supreme Court should reinforce the duties, obligation and power of the local municipalities in the Commonwealth to protect Pennsylvanians health, water and environment from gas drilling infrastructure.

Streams and Waterbodies

Many of the streams and waterbodies are designated HQ-TSF (High Quality – Trout Stock Fishery) and some streams feed water supplies (Pickering and Brandywine Creeks)- these streams are not allowed to degrade in water quality by anti-degradation standards unless socio-economic justification (SEJ) is employed. Some streams appear to have incorrect designations by the applicant. Table 14 of the wetland

delineation appears to have incorrect designations for many of the wetlands as well. These errors need to be corrected and better delineations may be necessary. As stated prior, aerial overlays with proposed stream crossing diagrams should also be provided to allow for better review of the habitat being proposed to be cut across or drilled under^{ix}.

The applicant also states that wetlands that are stormwater basins are lower in quality. It may be that these wetlands are not pristine in nature by far, but one could argue that they are essential to help filter out impurities and help with groundwater recharge in an area that needs this additional filtering capacity due to surrounding landuse. Since wetlands act as natural filters, they are just as important and should not be minimized due to their proximity and functioning of stormwater filtration. DRN requests that DEP and the Army Corps visit many of the stream and wetland crossings to ensure proper delineation and characterization is conducted.

Heat and potential thermal impacts from pipelines moving gas – DRN volunteers have observed areas of recent shale gas intra state pipelines where snow is melting along the buried line. What thermal impacts could be occurring from groundwater flow or streams being near these buried lines? How far does the soil vary in temperature due to these heated lines? Drawings TA-8711-8210 denote a 4 foot minimum to 3 foot minimum covering of the pipe while Shamona Creek TA-6711-8209 denotes a 100 foot minimum cover of the pipe and TA-6711-8211 has a 3 – 5 foot minimum covering. The three of these diagrams are to depict HDD – are those depths correct? DRN believed HDD was generally deeper than open cut trenches. Does the minimum depth of 3 – 5 feet possibly affect stream and wetland temperatures due to gas flowing through the pipelines? Do these minimum depths ensure that erosive forces from waterbodies will not undermine the pipe or cause damage in years to come^x?

Cumulative Impacts Project Screening Form

Columbia states acreages for cumulative impact to be the following:

Permanent impacts to waters – 0 square feet; Permanent impact to wetlands – 39,204 sq. feet; Temporary impacts to waters – 28,079 sq. feet (0.64 acres) or 562 linear feet; Temporary impacts to wetlands – 998 square feet (2.64 acres).

It is impossible with the current information for reviewers to double check these acreages and understand how they were calculated. The wetland determination and waterbody data forms in Appendix E provide characterizations of waterbodies and wetlands but there are no delineations or acreages on each of these forms. Again, because of discrepancies we have observed on alignment sheets and on the ground pipeline impacts and delineations from other projects, it is critical these numbers are transparent and available to the public for review. These numbers must also be accurate for mitigation and restoration follow through.

These linear projects impact a far greater number and area of wetlands and waterbodies which again is why HDD to limit disturbance and avoidance of wetlands, waterbodies, and mature forests is essential. DRN has observed in the field large changes to wetlands, that were cut through by past pipeline operators.

The wetland delineation report notes that Dowlin Woods is a large woodland area that buffers the East Branch Brandywine Creek and lies just east of the proposed corridor. The pipeline also skirts the southern edge of core habitats SP520/SP514. Marsh Creek State Park is within 0.5 miles of the proposed pipeline. Because much of Chester County has fragmentation of forest lands, it is essential that these forested areas remain intact and additional fragmentation for this proposed pipeline is limited by requiring HDD under these natural areas. Forest impacts including increased wind throw, root loss due to compaction of soils, thermal impacts, invasive species, etc. have been documented to go much deeper into the forest – causing an even greater damage to the ecosystem^{xi}. Those numbers of forest impact should be reflected in mitigation. There are several prime farmland soils categorized by NRCS in Chester County and some are 0.5 to 3.5 feet from the seasonal high water table. DRN has seen major compaction from past pipeline projects, again one reason to require HDD in most areas to also preserve soil structure and profiles.

Bog Turtle Survey

The bog turtle survey conducted by Conestoga-Rovers & Associates, Inc in Exton, PA was missing from the Application. There was a page of Section F from Erosion and Sediment Control that noted that W214PA (adjacent Beaver Creek) had identified and documented bog turtle. Columbia states HDD is now not

possible for that area and currently the application states it would be an open cut. But boring clearly needs to be conducted here with preservation of any buffers or vegetation that is present in this reach as not to disturb the bog turtle, a federally listed endangered species. Mapping of these areas would need to also show that Zones 1, 2 and 3 surrounding bog turtle habitat are not impacted by the project to best protect this federally listed species. Zone 2 extends at least 300 feet from the edge of Zone 1 and includes upland areas adjacent to Zone 1. Zone 3 includes upland, wetland and riparian areas extending either to the geomorphic edge of the drainage basin or at least one half mile beyond the boundary of Zone 2. This area, if impacted could affect other pockets of turtles as well as travel corridors for the turtles. Zone 3 is designed to protect the ground and surface water recharge zones for bog turtle wetlands^{xii}.

Timing of Projected Project

Columbia states that pipeline construction would begin November 2014 and be in service running gas by September 2015. DRN has noted in past pipeline projects repetitive disturbance of waterbodies and wetlands due to lagging restoration practices. What types of biological windows will Columbia be adhering to for construction work? This outline of work should be included in this application. Amphibian activity and fish spawning concerns need to be considered and repeated impacts over time should be avoided.

Timing is also important and needs to be considered with recent and heavier rain storms due to climate change and extreme weather patterns. Pipeline companies are not preparing E&S structures to withstand these now more common rain events. Pennsylvania is prone to flash flooding and is one of the most flood prone states in the country with its abundant streams and tropical systems that come through the area and sometimes get stalled. Pipeline operators need to acknowledge this and plan accordingly especially when they want to disturb and open the soils that are often highly erosive during these rain events.

Figures of Various Pipeline Routes and Alternates

As indicated above, to avoid long term disturbance and environmental damage, DRN urges the Dept to require HDD or under-ground boring techniques especially in waterbody and wetland areas and mature forests and co-location along the existing pipeline to avoid additional fragmentation and disturbance.

Figure 10. Blakely Rock Raymond 5C Variation – this alternate would greatly impact mature forested areas and would create increased stormwater and fragmentation to the region. Open cuts here should not be allowed and forest should be preserved with HDD. We understand that currently this is not the proposed route.

Figure 11 – Blakely Rock Raymond 5D Variation – As with Figure 10, this route causes more disturbance of mature woodlands and woodland soils and forested and PEM wetlands than the original route and again should not be conventionally cut due to loss of mature trees and natural areas. In the alternatives analysis, this variation impacts double the amount of forested area than the original route (9.3 acres vs. 4.4 acres of forest); 0.53 acres of wetlands for construction and 0.38 for permanent operation of wetlands (versus original route of 0.05 and 0.02 wetlands respectively). This route also will disturb 0.49 acres of forested wetlands while the original route would disturb zero acres of forested wetlands (see inserted Table 4 below). This route would not be co-located with the existing gas line, therefore creating additional industrial areas outside of the existing industrial ROW. This route may be tempting to limit impacted residences but since there is already an existing line present, selection of this option, due to environmental damage, non-colocation, and disturbance does not make ecological or planning sense.

Factor	Original Route	Alternative 5C	Alternative 5D (Proposed)	Information Sources ^a
Length (miles)	1.14	1.49	1.68	B
Length adjacent to existing Columbia ROW (miles)	0.66	0.18	0	B
Length adjacent to other utility or road ROWs (miles)	0.11	0.11	0	B
Construction ROW (acres) ^b	13.6	18.1	18.2	A, B
Permanent ROW (acres) ^b	4.4	8.1	10.1	A, B
Construction impact on forest/woodland (acres) ^b	4.4	13.5	9.3	A, B, E
Operation impact on forest/woodland (acres) ^b	1.4	6.5	4.9	A, B, E
Construction impact on recreational land (acres) ^b	0	0	2.5	A, B, E
Operation impact on recreational land (acres) ^b	0	0	1.3	A, B, E
Construction impact on wetlands (acres) ^b	0.05	0.53	0.53	A, B, C
Operation impact on wetlands (acres) ^b	0.02	0.02	0.38	A, B, C
Construction impact on forested wetlands (acres) ^b	0	0	0.49	A, B, C
Operation impact on forested wetlands (acres) ^b	0	0	0.35	A, B, C
Waterbody crossings (no.) – Open Cut/HDD	4/0	2/0	5/1	A, B
Previously recorded cultural resources within footprint (no.) ^c	0	0	2	A, F
Parcels crossed (no.)	19	11	14	A, B, G
Residences within 50/25 feet of construction ROW (no.)	39/21	28/9	2/2	A, E
Commercial buildings within 50/25 feet of construction ROW (no.)	0/0	0/0	1/1	A, E
Road crossings (no.)	5	3	5	A, E
Opinion of Construction Costs (Millions) ^d	3.4	5.2	5.3	

^a Sources of information: A = alignment sheets/engineered plans; B = GIS data; C = NWI maps; D = field survey; E = aerial photograph interpretation; F = consultation with regulatory authorities; G = tax maps.

^b Based on engineered footprint.

^c Numbers presented for cultural resources sites are data used for comparison information only. Numbers presented for cultural resources sites are data used for comparison information only. Sites have not been confirmed and may not be impacted. No representation of eligibility for the National Register of Historic Places is included.

Table 4 above from Alternatives Analysis Report

Figure 4 – Hunters Ridge Alternatives 2B (HDD) Variation – It appears that HDD is possible for long segments of the pipeline under residential community areas. If this HDD is possible in these residential areas dominated by lawn and residential development, roads and driveways, then HDD should also be required in less damaged areas under streams, wetlands, and woodlands and meadows. For this diagram, the northern portion of the woodland should also be HDD to avoid mature trees having to be cut. DRN is unsure of the nature of the field to the southwest but that too could be HDD to limit earth moving activities and soil compaction and disturbance. There is no reason why wetlands and mature forests and sensitive habitats that provide ecosystem services for the community are not protected and given the same protections as residential areas by requiring HDD.

Lloyd Avenue Alternative – Proposed – Columbia states that this variance would impact a forested wetland surrounding Beaver Creek and that HDD may be employed or may not. It is critical that if this variance is selected, disturbance must be limited by HDD or other boring technology as not to disturb this forested wetland complex.

3.6 of Alternatives Analysis - The Corps and DEP need to examine closely Columbia's wetland impact minimization variations they examined, and subsequently denied to consider avoidance of disturbance at W400PA and W214PA. The proposed route by Columbia for that segment (MPs 8.0-8.4) as proposed would lead to greater damage. DRN did not have time to examine the information more closely. See Table 8 below from the Alternatives Analyses Report:

TABLE 8
Comparison of Wetland W214PA Variations (MPs 8.0 – 8.4)

Factor	Proposed Route	Variation 1	Variation 2	Information Sources ^a
Length (miles)	0.39	0.40	0.46	B
Length adjacent to existing Columbia ROW (miles)	0	0.06	0	B
Length adjacent to other utility or road ROWs (miles)	0	0	0.44	B
Construction ROW (acres) ^b	4.19	3.74	2.96	A, B
Permanent ROW (acres) ^b	2.26	2.00	2.21	A, B
Construction impact on forest/woodland (acres) ^b	0.83	0.09	0	A, B, E
Operation impact on forest/woodland (acres) ^b	0.45	0.05	0	A, B, E
Construction impact on recreation land (acres) ^b	0.37	0.37	0.56	A, B, E
Operation impact on recreation land (acres) ^b	0.13	0.13	0.29	A, B, E
Construction impact on wetlands (acres) ^b	0.92	0	0	A, B, C
Operation impact on wetlands (acres) ^b	0.56	0	0	A, B, C
Construction impact on forested wetlands (acres) ^b	0	0	0	A, B, C
Operation impact on forested wetlands (acres) ^b	0	0	0	A, B, C
Waterbody crossings (no.) – Open Cut/HDD	2/0	0/0	0/0	A, B
Parcels crossed (no.)	9	12	12	A, B, G
Residences within 50/25 feet of construction ROW (no.)	1/1	4/2	3/3	A, E
Commercial buildings within 50/25 feet of construction ROW (no.)	1/1	1/1	5/1	A, E
Road crossings (no.)	1	1	3	A, E

^a Sources of information: A = alignment sheets/engineered plans; B = GIS data; C = NWI maps; D = field survey; E = aerial photograph interpretation; F = consultation with regulatory authorities; G = tax maps.

^b Based on engineered footprint.

^c Numbers presented for cultural resources sites are data used for comparison information only. No representation of eligibility for the National Register of Historic Places is included.

Section H – Stream Crossings

Again, aerial overlays with these supplied schematics are needed to help verify existing habitat being proposed to be impacted. The diagrams lack this detail and based on past discrepancies with other pipelines, it is critical reviewers have these detailed aerials and schematics made available to review.

From the diagrams, we discern that S205, W206, W207 are proposed HDD – S201 and W203 also are proposed for HDD. S206 (Shamona Creek) and W208, S207 (Brandywine Creek, East Branch), S208, W211 are also proposed for HDD to limit disturbance. Applicant should be required to stick with this less disturbance option as we have seen where operators have changed to open cut further along in the process which leads to more damage to the resource. We understand in addition to HDD there are other piping methods that should be considered to limit earth disturbance if HDD is not possible. Cost should not be prohibitive to employ these techniques to protect the community.

Meanwhile, W231, W230, S211, S200, W200, W201, W202, W204, W205, S203, S202 are not given this same HDD construction technique. DRN believes HDD should be employed and required of the Applicant to protect these water resources.

Section J

In this instance in residential areas, Columbia reduces pipeline spacing to 15 feet from center line to center line to “minimize impact to residences”, yet in wetland areas a 25 foot offset it proposed “due to wider trench necessary in saturated soil conditions” (to presumably be able to dig in the pipe). This is all the more reason to require the Applicant to HDD under wetlands to avoid this larger trenching disturbance. With HDD, we understand that likely TWS and ATWS would also be cut back significantly except for at the beginning and ending locations of the bore hole launch and exit sites. See excerpt from Applicant below:

Construction and operation of the Project will require the acquisition of temporary workspace and permanent easements for the pipeline loop. To the extent feasible, these ROWs will parallel or overlap Columbia’s existing transmission lines and other utility corridors, while providing a safe separation distance between the proposed pipeline and existing facilities. The typical overlap between the proposed construction workspace and adjacent existing Columbia ROWs will be 25 to 35 feet, with the new pipeline typically placed 10 feet inside of the adjacent existing Columbia ROW. Typical separation between pipelines in a shared ROW is 25 feet from centerline to centerline; however, for this Project, Columbia has reduced the typical pipeline separation to 15 feet to minimize impact on residences and businesses, except in wetland areas where a 25-foot offset is proposed due to the wider trench necessary in saturated soil conditions. Where Columbia’s existing and proposed pipelines will be co-located, an additional 15 to 25 feet of new permanent ROW will be acquired for the proposed Project to supplement the current easement.

Conclusion:

In addition to the problems identified in the January 23, 2014 letter, the potential missing information and potential mischaracterization of water resources and underreporting of impacts for the proposed project likely pervade the entire application for the Chapter 105 permit and must be addressed. Columbia should be required to properly delineate the wetlands and waterbodies for this project making the information available to the public, revise the projected impacts from construction activity to better protect these sensitive resources, and accurately document the supporting data for its conclusions. As the application currently exists, the Department may not lawfully approve the Water Obstruction and Encroachment permit until the aforementioned issues and gaps are resolved or the application is withdrawn.

Respectfully Submitted,



Maya K. van Rossum
the Delaware Riverkeeper



Faith Zerbe
Director of Monitoring

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- ⁱ Pike County Conservation District NOV letter to Columbia Gas Transmission. April 12, 2012.
- ⁱⁱ HydroQuest, Hydrologic and Environmental Rationale to Bury Gas Pipelines using Horizontal Directional Drilling Technology at Stream and River Crossings. June 12, 2012
- ⁱⁱⁱ Leslie Sauer. Achieving Higher Quality Restoration along Pipeline Rights-of-Way. October, 2013.
- ^{iv} Meliora Environmental Design. Field Evaluation of Soil Compaction Within TGP 300 Line Upgrade Project Temporary Work Spaces. February 19, 2013
- ^v Delaware Riverkeeper Network. Letter Re: Transco Leidy Line wetlands. March 7, 2013.
- ^{vi} Chester County Wetlands Bulletin, 2002. <http://www.chesco.org/DocumentCenter/View/3664>
- ^{vii} Radioactivity in the Marcellus Shale. 2010. New York
- ^{viii} Delaware Riverkeeper Network. Letter Re: Transco Leidy Line wetlands. March 7, 2013.
- ^{ix} Ibid.
- ^x HydroQuest, Hydrologic and Environmental Rationale to Bury Gas Pipelines using Horizontal Directional Drilling Technology at Stream and River Crossings. June 12, 2012
- ^{xi} Heatley, Professional Review & Comment On Natural Gas Pipeline Impacts to Terrestrial Ecology, September 5, 2012
- ^{xii} Fish and Boat Commission. Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan, May 15, 2001.