

## ADDITIONAL COMMENTS

### Haverstraw Bay HDD

The FERC certificated route across Haverstraw Bay is approximately 2.1 miles long. A number of construction methods, including Horizontal Directional Drilling (HDD) have been studied to determine their efficiency, effectiveness and feasibility for crossing this area. The O'Brien & Gere report, at page 41, states that it consulted with Cherrington Corporation (a directional drilling contractor) regarding the feasibility of completing a HDD across Haverstraw Bay and concluded that such a crossing method could be possible and should be investigated further. However, it is important to note that even Cherrington admits "that a project of this magnitude is completely outside the realm of conventional HDD technology..." and that its Environmental Beneficial Boring (EBB) technology "...has had limited opportunities for use therefore placing it in the realm of research and development also". In fact, a 2.1 mile HDD would represent a crossing more than an order of magnitude longer than Cherrington (or any other firm) has accomplished using any boring techniques. Cherrington offers no specifics on how this order of magnitude increase will be achieved other than "We have observed several such evolutionary advancement ...". This is hardly the basis for a sound construction plan and Haverstraw Bay is far too sensitive an area to even attempt crossing technologies which are in the "realm of research and development". Clearly, such an attempt would devastate the sensitive bottom sediments either by introducing huge volumes of bentonite clay or, worse, a complete collapse of the drilled hole with no way to remediate the impacts. It is highly unlikely that either the NY Department of Environmental Conservation or the US Army Corps of Engineers would permit such a poorly developed construction plan. Given that these drilling methods are not within the realm of proven technology, they are not "available" alternatives, and further investigation of them for this crossing location is not warranted.

### Village of Croton-on-Hudson Wellfield

At page 7, O'Brien & Gere report claims there are 5 types of impacts which could occur from constructing the pipeline across the Village of Croton-on-Hudson Wellfield. These are:

- Construction Impacts – Dewatering
- Construction Impacts – Contaminant Releases and Aquifer Impairment
- Construction Impacts – Blasting
- Reduction in Well Field Expansion Options
- Pipeline Operational Impacts

Further, the NYSDOS indicates at page 89 of its Initial Brief that the FEIS does not provide the management practices and monitoring efforts for the Wellfield crossing. However, from personal involvement in the routing of this portion of the pipeline and review of the extensive construction and mitigation information filed by Millennium in the FERC proceeding (Millennium's Environmental Construction Standards and Spill Prevention Control and Countermeasures Plan (Initial Brief, Exhibit 2, Volume 1, at page 6-34), LMS Study

Addendum (Initial Brief, Exhibit 15), at page 25; and Millennium Response to WAC Findings (Initial Brief, Exhibit 15), at page 4), it is apparent that none of the impacts are of serious consequence.

Dewatering the trench will not result in a decline in the local watertable since the water would normally be discharged immediately adjacent to the construction work area and be available to recharge the aquifer. Dewatering the trench is only necessary while the pipe is being lowered into the trench and backfilled, a task which should only take a couple days at most. However, in addition to the extensive mitigation already proposed, using a concrete coated pipe across the Wellfield will increase the mechanical protection on the pipe and eliminate the need to de-water the trench altogether.

The risk for contaminate release into the Wellfield is insignificant. Millennium has previously agreed that construction activities and fuel storage will be closely monitored and conducted in accordance with the SPCC Plan. Among other requirements, the SPCC Plan restricts equipment refueling within 400 feet, prohibits overnight parking of construction equipment, and requires that construction and inspection vehicles be equipped with spill prevention and containment kits. In addition, no materials are proposed to be stored in the area, which could impact either the Wellfield or the aquifer.

Blasting within the Wellfield is not required. The surrounding areas, which have exposed bedrock, are the steep slopes leading into the stream valley and not the valley itself. Geotechnical data for the valley, including the bore logs from the wells, show that bedrock is over 68 feet deep, which is well below that needed for pipeline installation. Since blasting will not be required for construction across the Wellfield, none of the potential impacts cited by O'Brien & Gere will occur.

The FERC-approved route across the Wellfield was selected by Millennium with assistance from Baker Engineers, a landowner whose land would be traversed, and with the Village of Croton-on-Hudson Engineer who, in effect, chose the alignment through the Village's water Wellfield. This alignment avoided all existing wells (active and inactive) and sites for future wells. Given the highly permeable nature of the aquifer, Millennium's commitment to bury the pipeline a minimum of eight feet deep (to prevent possible interference with the Village's water lines), and the lack of any other limitation on locating a new well (other than within 25 feet of the proposed pipeline), virtually the entire Wellfield is available for future development.

Finally, the chance that the pipeline would leak and introduce contaminants into the Wellfield is extremely remote. First, given the high level of material and workmanship testing and inspection, including a final hydrostatic test of the pipeline after it is constructed and before it is placed into service, it is highly unlikely that the pipeline will develop a leak in the Wellfield. Second, Millennium's pipeline will be continuously monitored to detect leaks through pressure monitoring, aerial and ground reconnaissance, and automated robotic devices. All pipelines, by law, are required to incorporate a patrol program to observe surface conditions on and adjacent to the transmission line ROW for indications of leaks, construction activity, and other factors affecting safety and operation. Odorization of the gas, as required by law, alerts the operations personnel and general public in the detection of any leaks during these patrols. The odorants used are not soluble in water, nor will the odorants

be deleterious to persons, and are not toxic if breathed. Contrary to the O'Brien & Gere report, odorant does not leak out of the pipeline as a liquid. Odorant is a vapor in the gas stream will dissipate into the atmosphere should a leak occur, not into the ground or in groundwater. Leaks generally develop slowly and are easily detectable before they become serious. Next, it is highly unlikely that any fluid would be in the gas stream since only dry, high quality natural gas would be contained in the pipeline once it is placed in service. Contrary to O'Brien & Gere's report, natural gas is virtually insoluble in water and would rise in porous soils and dissipate into the atmosphere.

Finally, at page 45, the O'Brien & Gere report suggests two alternatives that would avoid the Wellfield. Neither route is reasonable from a construction or design perspective. The "Northeast Alternative" would require side slope construction through a steep area that has several slips. This route would also require two additional crossings under Con Ed's powerline facilities, a situation the NYPSC and FERC sought to limit. These slips could easily compromise the integrity of the pipeline during operation and place not only Millennium's facilities in jeopardy but Con Ed's as well. The "Southwest Alternative" would place the pipeline in multiple local roads which are narrow and winding. Even with the use of manufactured bends, it is doubtful that the pipeline would fit into this narrow corridor. Construction would require closure of these local roads for weeks if not months and suitable detours are not available.

#### **Jane E. Lytle Memorial Arboretum Impacts**

The O'Brien & Gere report at page 10 states, "the placement of the trench and access roads across these features (intermittent and perennial streams) would disrupt drainage patterns temporarily and potentially permanently...an excavated trench would act as a conduit or drain and intercept and/or divert surface and ground waters". However, O'Brien & Gere have failed to take into account Millennium's plans to use sack breakers within the trench. These devices are specifically designed to prevent the trench from acting like a conduit, thus existing subsurface water patterns are maintained. Further, Millennium's Environmental Construction Standards specifically require restoration of original wetland and drainage pattern contours, thus surface drainage will be equally unaffected. As a result of these site-specific mitigation measures, there will be no short or long term effects on surface or ground waters.

O'Brien & Gere suggests that a Horizontal Directional Drill (HDD) would be appropriate for the Arboretum crossing. While HDD's have made a major impact on available mitigation measures to the environment, such a casual approach to their recommendation is ill advised. It is not apparent that sufficient workspace is available outside the Arboretum to stage the drilling equipment on one side and weld together lengthy pipe string on the other. For example, the 1000-foot distance recommended by O'Brien & Gere is not possible because installation of this short distance would require exceeding the pipelines' stress-free radius. Further, O'Brien & Gere's estimate on cost and duration are significantly understated. However, most importantly, an HDD installation near Con Ed's power lines, the integrity of which have been the subject of great concern from the New York Public Service Commission and Con Ed, is not in the best interests of either facility. Due to the depth of the installation and the inability to routinely confirm the cathodic protection and voltage mitigation effectiveness, an HDD installation in this location is not recommended.

The NYSDOS requested Millennium to consider an alternate route at the Catskill Aqueduct Bryn Mawr Siphon. This suggested route is not feasible as it contains numerous fatal flaws described as follows: The west side (cut side) of the Thruway at the crossing location has a rock cliff immediately adjacent to the roadway. The east side (fill side) has a steep incline consisting of fill material and supports the Thruway surface. This area is also on a substantial curve in the Thruway. In order to stay as far away from the Aqueduct valve chamber (located immediately to the east of the Thruway) as possible, the pipeline would have to be installed along the western edge of the Thruway. This would result in a bore well over 600 feet in length, far beyond the typical maximum bore length of 250 feet. Regardless of the bore length, the proximity of the rock cliff prevents creation of a receiving pit, thus a bore is infeasible. Further complicating this crossing site is the location of an apartment complex and Con Ed's electrical facilities, in particular the towers supporting six of the main electrical circuits providing power to New York City. As a consequence, the pipe cannot be adequately bent, even with the use of manufactured bends, to reconnect with the certificated route. Other pipe installation methods were also considered but the available workspace prevents their use.