

Berkshire Regional Planning Commission Clearinghouse Review Report

Approved by BRPC Executive Committee
June 6, 2007

SUBJECT: Berkshire Biodiesel
EOEA#: 14037
LOCATION: Pittsfield
ESTIMATED COST: \$50 million
REVIEW TYPE: ENF
PROPONENT: Berkshire Biodiesel LLC
COMMENTS DUE: June 12, 2007

PROJECT DESCRIPTION:

The proposed project is comprised of two distinct but interrelated components: construction of a large-scale biodiesel production facility; and a new rail siding connecting the biodiesel production facility to the adjacent CSX rail line. The production facility will be located in an existing industrial building located at 448 Hubbard Avenue (the former Beloit research center). The proposed rail siding will be approximately 2,750 feet in length and will replace a nearby former siding no longer in use and unable to be reactivated under current CSX operating regulations. The proposed rail line will cross a second industrial facility which is under the same ownership as the proposed biodiesel plant, however the adjacent industrial facility is not part of the proposed project or included in ENF, except for the impacts from the rail siding. The proposed biodiesel facility will be on 8 acres and the rail siding will be on 7 acres, for a total 15 acres. There are wetlands in proximity to the site, primarily to the west and south.

The former Beloit facility was purchased by Crane & Company a few years ago and has primarily been used for storage. The overall site is in both Dalton and Pittsfield. The facility will be located entirely in Pittsfield but the rail siding is located primarily in Dalton. The existing building, which is approximately 28,300 square feet in size, will be converted to a biodiesel manufacturing process building. Liquid feedstock, process compounds, and biodiesel will be stored in a proposed tank facility, located within a spill containment area north of the process building. Initially, the facility will be processing refined, bleached and deodorized soybean oil. There will be dedicated space allocated for the potential future processing of unrefined soybean oil and high free fatty acid. The additions of these potential future systems would likely increase water consumption and wastewater treatment rates, although the ENF states these would remain well within EIR thresholds.

At peak capacity, the proposed biodiesel facility will require 24MMBTU/hour of steam and 2.5MW of electricity in its initial configuration. The electricity and majority of the steam will be produced on-site from a proposed power plant, which will be fueled primarily with biodiesel produced on-site. The project will seek to sell excess energy to the regional distribution/transmission grid. The power plant will be a nominal 10MW facility designed to operate within non-major source emission profile. The power plant is shown conceptually on the plans but has not actually been designed. The building footprint shown is adequate to accommodate the proposed generators, which are off-the-shelf diesel generators. As the biodiesel facility capacity expands in the future, a major source permit would likely be sought. The ENF states that expanded operating emissions are anticipated to remain well within EIR thresholds, although there are not calculations provided in summary form to verify this claim.

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Air emissions will occur from three general processes: 1) the biodiesel production process; 2) boilers for producing process steam required by the biodiesel production process; and 3) the on-site power plant. The production process will emit methanol, a volatile organic compound, from the storage tanks and from process piping/components. Emissions from the major methanol processing steps will be controlled via condensation/recovery. The expected emission reduction through the use of condensation is 90%. The boiler combustion will be emitted at non-major levels of emissions. Biodiesel is a substantially cleaner burning fuel than standard fuel oil, resulting in reductions of 45-65 percent for most pollutants, according to the ENF. The power plant will use biodiesel, reducing emissions from standard fuel oil. The engines for the power plant will employ an emissions reduction control system for nitrogen oxides (NOx). The proposed Selective Catalytic Reduction system will reduce this pollutant up to 95% from uncontrolled levels, according to the ENF.

The rail siding will connect to the existing CSX rail line, with one track at the point of connection, expanding to three tracks to allow for preparation of trains for entry onto the main line. At the biodiesel production facility, five sidings will be provided serving the facility and one siding will be built for public access. The proposed rail siding will cross a wetland area at the general location of the existing rail spur crossing to minimize wetland disturbance. The rail siding will be transferred to and owned by a municipal entity following construction. According to the project summary, the rail siding is expected to require 4,000 square feet of wetlands disturbance which is necessitated by CSX requirements for the siding regarding its intersection with the main CSX line and maximum grades and curve radius. Meeting CSX's siding requirements also impacts the potential location for the feedstock and biodiesel storage area.

Since a state Freight Rail Transportation Capital Improvement grant is being used for the project, MEPA jurisdiction will extend to all potential impacts, not just those subject to a state permit. According to the ENF, state permits which are required are a sewer connection permit, air quality permit, an Order of Conditions under the Wetlands Protection Act, Tank Registration with the MA Board of Fire Prevention, and MADEP VSQC Waste Oil Generator Registration. A NPDES Stormwater Permit and Stormwater Pollution Prevention Plan will also be required. The project will require local wetlands permits from the Dalton and Pittsfield Conservation Commissions, a Special Review from the Pittsfield Community Development Board, Sewer and Water Connection permits from the Pittsfield Public Works Department, a Storage Tank License from the City, and a stormwater permit from the Town of Dalton. The MEPA filing threshold for an ENF which is triggered is transportation impacts, specifically the construction of a new rail line for transportation of freight. The more detailed section on Air Quality also indicates that the air quality review threshold is triggered.

The BRPC Clearinghouse Review Committee met on June 5, 2007. The proponent was present and provided extensive information regarding the project and its potential impacts. Of primary importance for the purposes of this review, the potential impacts in the ENF are the most up-to-date as of the ENF filing and include the impacts which might be expected at full build-out and utilization of the site and facilities. Any changes subsequent to the filing lead to a reduction in impacts (number of tracks on the rail spur, adjustment in the location of the spur, and emissions from a maximum of two 5 MW generators).

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CONSIDERATIONS AND POTENTIAL ISSUES:

Land Alteration

It is unclear from the ENF exactly how much new land alteration will occur on the site. The Summary Table on page 2 does not match the figures in the Land Section. This should be clarified.

Wetlands and Stormwater Management

The proposed rail spur in the southeast section of the site will impact 4,000 square feet of bordering vegetated wetlands in the southeast portion of the site. Due to the physical and operational constraints that CSX is requiring for a rail spur, these appear to be unavoidable. The exact design and location of the rail spur continues to evolve; as of the date of the Clearinghouse Review Committee meeting, the number of tracks crossing the wetlands had been reduced from three to two and the location had been shifted very slightly to the east which reduces the wetlands impact slightly. There is also a 300-square-foot area within the riverfront area that will be impacted by the driveway curb cut in order to provide proper turning radius for trucks. Relocating the driveway to avoid this impact appears to be a less desirable option than allowing the minor encroachment.

According to the Proposed Conditions Map within the ENF, there is substantial fill and grading proposed for two wetland buffer zone sites, one in the northwest corner of the site and one in the southeast corner. The ENF does not discuss the work proposed for these sites, nor does it quantify the square footage of buffer zone that will be altered. The proposed driveway extension will encroach upon the buffer zone in the northwest corner of the site. Fill, regrading and the construction of a retaining wall, presumably to support the driveway, are also proposed for this buffer zone. The ENF makes no mention of the activities proposed, except to state that they will not impact the wetland. There appears to be adequate area to move the driveway slightly to the east to avoid its location within the buffer zone, but this is not offered as an alternative.

The fill required to accommodate a new rail spur through the BVW buffer zone in the southeast of the site will be substantial, yet this is not discussed nor quantified in the ENF. The new rail effectively dissects the wetland and its associated buffer zone. The new rail 3-track rail spur is noticeably wider than the original 1-track spur, resulting in the substantial fill that will be required for its construction. Obviously constructing a rail spur with 1 or 2 tracks would lessen the impacts to the wetland and buffer zone. Such an alternative is not discussed in the ENF, however the proponent indicated at the Clearinghouse Review Committee meeting that CSX has determined that 2 tracks are adequate. In addition, through use of selected materials for the fill, the slope has been increased to 1 1/2:1 at the wetlands rather than the standard 3:1 slope. As always, we are concerned about the potential introduction of invasive species in the fill material.

The ENF indicates that the wetlands impact is 4,000 s.f. on the summary table and on the chart in the Wetlands section of the ENF. However, the narrative in the wetlands section states that 2,500 s.f. will be impacted. This discrepancy should be cleared up.

The ENF indicates that wetlands will be replicated at a 1:1 ratio, which meets requirements for replication.

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There is limited indication on the plans provided of how stormwater will be managed, other than a general depiction of proposed stormwater basin locations in the general vicinity of the rail spur. Apparently this will manage runoff from the impervious surface areas of the plant. The ENF does not describe how runoff from the new rail spur will be controlled and/or treated. The ENF contains statements that the stormwater management system for the proposed redevelopment project will comply with the MA Stormwater Management Policy relative to construction and post-construction stormwater runoff. We question whether the new construction elements on the site (a much expanded rail spur, a new tank farm, a cogeneration facility, and expanded traffic circulation areas) should be considered “redevelopment” and believe those elements should have to fully comply with the Stormwater Management Policy and the Wetland Protection Act as new development.

At the BRPC Clearinghouse Review Committee meeting, the proponent indicated that they were designing the entire stormwater management system to fully comply with the Stormwater Management Policy as new development. The exact design is very much still under development.

Due to the tank farm, and the unloading/loading operations for both the rail sidings and for fuel trucks, these portions of the site should be considered to have high potential pollutant loads. The ENF indicates that the tank farm and rail and truck loading and unloading operations will be provided with spill containment measures consistent with local, state and federal regulations and the general plans submitted with the ENF indicate that the rail sidings will have drainage/containment swales on each side. Areas with higher potential pollutant loads are subject to Standard #5 of the Stormwater Management Policy. Stormwater management within such areas is required to include source reduction and pretreatment. Restrictions to certain BMPs are applied within areas of higher potential pollutant load. These restrictions include the use of detention basins and constructed wetlands only if sealed or lined.

The Proposed Conditions Map seems to indicate that stormwater runoff will be directed into the wetlands. These are not mentioned in the ENF text. Overall, the wetlands and stormwater management descriptions in the ENF are deficient, however the proponent provided clarification at the BRPC Clearinghouse Review Committee meeting and also indicated that the stormwater management systems is still under design and consideration and at this stage in the development process, many of the details cannot be provided. They will have to be provided when the Notices of Intent are filed with Dalton and Pittsfield and the NPDES and Dalton stormwater permits are applied for.

Water Supply

The project will use almost 100,000 gallons of water per day, to be supplied by the City of Pittsfield. The project requires a water connection permit from the Pittsfield Department of Public Works and Utilities. The City has adequate water treatment capacity to serve the project but the adequacy of the municipal water line to the site has to be determined. If new construction of water lines is required to serve the facility, that would trigger an additional ENF threshold. In a March 30th letter from DEP, there is reference to a 136,000 gpd usage; that is outdated according to the proponent and the ENF number is the current maximum usage.

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Wastewater

The project is expected to generate 55,000 gallons of wastewater per day, to be treated at the City of Pittsfield Municipal Treatment Plant. There is no explanation in the ENF why the facility will use 100,000 gpd but export only 55,000 gpd in wastewater. At the BRPC Clearinghouse Review Committee meeting, the proponent indicated the difference is explained by the loss of water to steam during the overall process. The wastewater from the biodiesel plant may need pre-treatment; that has to be determined during the permitting process. The project requires sewer connection permits from both the City and DEP. The City has adequate sewerage treatment capacity to treat the sewerage and, in fact, would benefit from increased flow, but the adequacy of the municipal sewerage collection lines to the site has to be determined. In a March 30th letter from DEP, there is reference to a 92,000 gpd generation rate; that is outdated according to the proponent and the ENF number is the current maximum usage.

Rare Species Habitat

There are not rare species habitats identified on or in close proximity to the site.

Consistency with Local & Regional Plans

As stated in the ENF, reuse of a previously developed industrial site in this location is in accord with the City of Pittsfield's Comprehensive Development Plan (1993) and is supported by the work done thus far on the City's master plan which is under development. The Town of Dalton Master Plan (2001) also supports industrial use in this area and the Town, through its Industrial Commission, has been actively working toward development of an industrial/business park on the portion of the overall site which is in Dalton.

The Regional Plan for the Berkshires (2001) supports, as a policy, reuse of formerly used industrial sites across the region and this site certainly fits into that category. The Plan also calls for protection of air quality and water quality and thus the proposed project must be carefully designed and managed to be consistent with those policies.

Transportation Impacts

The ENF summary indicates that the site currently generates 450 vehicle trips per day and that the proposed Berkshire Biodiesel facility will increase that number by 126 trips. There is not a separate traffic study provided in the ENF so we cannot verify the foundation of these numbers but they are obviously well below any MEPA review threshold. The existing 450 vehicle trips are generated from the larger Crane & Company site, including the former Beloit manufacturing facility in Dalton.

The narrative indicates that the raw material (soybean oil) will be brought in by train, hence the need for the rail siding. They estimate that there will be 28 rail cars per week. They indicate that delivery of the refined product will be primarily by truck, estimating 24 tanker trucks per day.

The plan provided with the ENF indicates that the existing site driveway from Hubbard Avenue will need a minor widening to better accommodate the truck traffic. There is adequate sight distance at the driveway location. Hubbard Avenue is classified as an Urban Collector and serves both the adjoining businesses, primarily manufacturing, building supplies, and contractors and as a route for commuters and shoppers coming from the southeast side of Pittsfield and the southwest side of Dalton, as well as points further to the southeast. There are no recent traffic counts in our database for Hubbard Avenue. Hubbard Avenue is deficient from

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a design standpoint given its current usage, which includes a significant amount of truck traffic and is recommended for a study in the 2007 Regional Transportation Plan. The railroad overpass is very narrow and creates a significant impediment to traffic. However these are existing conditions which the proposed development only affects in a minor way through increased traffic.

The site plan provided shows a public access road around the western side of the site to provide access to one of the rail sidings, which we understand is a requirement for the state rail grant. However, that road seems to simply trail-off in a wooded area and does not actually abut the rail siding which seems to defeat its purpose. Clarification of the design and location of that public access to the rail siding is needed.

Air Quality Impacts

The project will require an air quality permit from DEP (Comprehensive Plan Approval). The Air Quality section of the ENF filing provides the following emission estimates in tons per day of various pollutants:

Particulate Matter:	.15
Carbon Monoxide:	.45
Sulfur Dioxide	0 (approximate)
Volatile Organic Compounds (VOC)	.14
Oxides of Nitrogen (NOx)	.23
Lead	0 (approximate)
Any hazardous air pollutant	.04
Carbon Dioxide (CO2)	167.24

The Berkshires are a serious non-attainment area for Ozone pollution. Both VOC and NOx are contributors to Ozone pollution and thus any increase in these is of importance. Particulate Matter is also a regulated pollutant. CO2 is considered to be a prime contributor to increased global warming. The U.S. EPA has just been successfully sued, in a case that went all the way to the U.S. Supreme Court and in which Massachusetts was a lead complainant, to require regulation of CO2 as a pollutant. DEP does not currently regulate CO2 but it would seem very appropriate to review this project's air quality impacts on global warming. Massachusetts does have a CO2 policy and we believe the proponent should be required to comply with it. It should be noted that the use of soybean and other vegetable oil is using carbon sequestered by plants rather than carbon from fossil fuels.

BRPC staff are not air quality experts and thus our ability to analyze the project's air quality impacts is very limited. Much of our limited knowledge comes from our experience in trying to intervene in the proposed St. Lawrence Cement Plant in Greenport, New York, which had much more severe potential air quality impacts than the proposed biodiesel plant. The summary table indicating which ENF review thresholds are reached does not show air quality but the detailed section in the ENF indicates that the project does trigger that threshold. The ENF indicates that one of the benefits of biodiesel is that it burns cleaner than conventional diesel fuel. The net impact of producing biodiesel, which is apparently cleaner burning, in substitution for conventional diesel for vehicles or mixed biodiesel/fuel oil for furnaces, versus the project's air quality emissions is not estimated.

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It should be noted that there are other significant emissions sources in the immediate and general area of the proposed project. These include the Energy Answers trash-to-steam plant on Hubbard Avenue, various Crane & Company facilities in Dalton, and the currently closed Vicon facility on Merrill Road in Pittsfield. We understand that one weakness in the area of air quality modeling and permitting is that the cumulative impact of multiple sources is often not analyzed and recognized.

The ENF indicates that the proposed rail and truck transport of feedstocks will generate some additional noise, but provides no technical information on the additional noise levels. The ENF does not clearly state it, but presumably the power plant and possibly the production facility also may generate noise. The ENF indicates that the truck noise will not be significant compared to the existing traffic noise on Hubbard Avenue and that the additional train traffic will be similar to the existing noise on the CSX main line. They indicate that noise will be further evaluated through the City of Pittsfield's Department of Community Development Special Review Process. There is no MEPA review threshold for noise.

The ENF does not indicate if the facility will create any odors. To our knowledge, this is not regulated by the State but it should be considered during the local permitting process.

Any noise or odor impacts are somewhat mitigated by the fact that the surrounding lands are industrially zoned and either used for industrial/heavy commercial purposes or are currently vacant. The closest residence (which is a non-conforming residence and isolated) is approximately 500 feet to the southwest, across Hubbard Avenue. The closest neighborhood is approximately 1,000 feet to the northeast off of South Street in Dalton. At the BRPC Clearinghouse Review Committee meeting, the proponent indicated that both noise and odors would be contained within the buildings.

Public Safety

Methanol is used in the process and is highly combustible and presence of a tank farm could presumably raise concerns with neighbors. It is important that the proponent fully satisfy any safety concerns raised by the State Fire Marshall, Pittsfield and Dalton Fire Departments, and the Berkshire County Hazmat Team during the state and local permitting processes.

Potential for Project Segmentation

The ENF indicates that the project may be expanded in the future, "The facility will have dedicated space allocated for the future addition of crude de-gummed soybean oil and high free fatty acid (FFA) preprocessing systems. If future economic projections indicate that capability to process these and other feedstocks is feasible, additional preprocessing equipment may be added as future project capital improvements." The ENF states several times that air quality emissions are "calculated based on facility emissions at expanded capacity." However, it also states in one section that "as the biodiesel facility ramps up...a major source permit will likely be sought...Expanded operating emissions are anticipated to remain well within EIR thresholds." It is thus unclear whether the air emissions being presented in the ENF represent the projected emissions at the facility's maximum capacity or build-out, or if they represent the projected emissions at the facility's start-up. Also, the proponent presents no calculations nor back-up documentation to clearly quantify the projected increase in emissions. Any increase in emissions, not quantified and analyzed in this MEPA filing, constitutes project segmentation.

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The ENF does not discuss “expanded capacity” as it relates to the footprint of the facility. At the BRPC Clearinghouse Review Committee meeting, the proponent clarified that the ENF discusses the impacts of the facility at its expected maximum build-out, including the greatest amount of alteration that is expected to occur and that there is no future expansion of this facility beyond that quantified and shown in the ENF.

The Berkshire Biodiesel site, including the rail spur, is 15 acres of a much larger property owned by Crane & Company which was purchased from Beloit Corporation. An announcement of a potential biomass plant has been made for a portion of the site and the Town of Dalton, working through its Industrial Commission, has been working collaboratively with Crane & Company to explore the feasibility of a business park on the site. The combined land-based impacts and air emissions from two or more new industrial facilities in such close proximity may be significant. Thus, if a second industrial facility were to be proposed at the neighboring site, the incoming proponent should analyze the cumulative effects of the two facilities in a future, expanded MEPA filing.

COMMENTS AND RECOMMENDATIONS:

BRPC does not believe that an EIR is necessary for this project. No mandatory EIR thresholds are approached. While the existing ENF is unclear in several areas and deficient in quantifying the anticipated wetland impacts, the proponent provided additional information at the BRPC Clearinghouse Review Committee meeting. BRPC does have the following comments and recommendations:

1. The proponent should explain and quantify the square footage of wetland buffer zone that will be altered, including fill, re-grading, and retaining wall. The proponent has stated that the proposed alterations will not impact the wetland resources, but does not explain why such alterations in the buffer zone will not impact the resource areas. The burden of proof is upon the proponent to verify that alterations in the buffer zone will not impact the wetland resources.
2. The proponent should consider shifting the public access road extension located to the west of the tank farm to avoid any encroachment in the wetland buffer in this area. Shifting may allow the amount of fill and retaining to be reduced, and possibly eliminate the need for a retaining wall. The public access road should also be more fully explained and designed to appropriately serve the public access rail siding being provided. The proponent has indicated that they agree it would be desirable to shift the road location entirely to avoid the need for impacts in that area but that is subject to the owner of the larger property surrounding their lease site.
3. The new construction elements of the project (the much expanded rail spur, the tank farm, the cogeneration facility, and expansions to the traffic circulation and parking areas) should fully comply with the Massachusetts Stormwater Policy and the Wetland Protection act for new development. Further, all areas with the potential for higher pollutant loads should include source reduction and pretreatment consistent with the policy. The proponent has indicated that they intend to fully comply with the new development standards.

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4. The proponent should discuss stormwater management in more detail, including what appear to be discharges into wetland areas and stormwater management to control runoff from the new rail spur. The proponent has indicated that this will occur during the wetlands and stormwater permitting process with Dalton and Pittsfield but their designs are not far enough along at this stage to provide detailed information.
5. Given the proximity of construction to wetlands resource areas, extreme care to not introduce invasive species is critical. Since hay bales frequently contain seed stock from invasive plants the proponent should consider using an alternative method of silt-fencing and straw-baling to reduce the risk of the inadvertent introduction of invasive species. Alternatives include straw bales in place of hay bales or double silt fences, silt socks, or coconut fiber material which can be staked like a silt fence and obviates the need for hay bales. These products are available from a variety of manufacturers. Similarly, all fill material should be carefully selected to protect against the introduction of invasive species.
6. While we are not qualified to provide technical analysis of the air quality impacts, we request that DEP pay significant attention to these during the air quality permitting process. We are particularly concerned with Particulate Matter, VOC, NOx, and CO2. The cumulative impact of the multiple sources, both existing and potential, in the immediate and general vicinity should be considered during the permitting. The proponent should be required to comply with the Commonwealth's CO2 policy. It would be very unfortunate if a project which is intended to improve air quality actually serves to degrade it.
7. The City of Pittsfield should require noise and odor studies as part of its Special Review process and these should be shared with the adjacent Town of Dalton.
8. The storage and use of methanol and other potentially hazardous or flammable materials on the site needs to be carefully reviewed with the State Fire Marshall, the Dalton and Pittsfield Fire Departments, and the Berkshire County Hazmat Team.
9. The City of Pittsfield should share all information provided by the applicant for the Special Review with the Town of Dalton and invite the Town to participate in the review process, given the project's location and potential to impact the adjoining municipality.
10. We recommend that if additional industrial facilities are proposed for other portions of the Crane site, the future proponents be required to file to MEPA an ENF or EIR that quantifies and analyzes the cumulative impacts from all development on the overall site.

These comments were approved by the Berkshire Regional Planning Commission's Executive Committee at its meeting on June 6, 2007.