DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name:	Millennium Rail, Inc. (formerly known as Berwind Railway Service Company)
Facility Address:	Berwind Dr., Route 22, Hollidaysburg, PA 16648
Facility EPA ID #:	PAD 990752321

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

X If yes - check here and continue with #2 below.

_____ If no – re-evaluate existing data, or

_____ If data are not available skip to #8 and enter "IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Controls" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program, the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be "contaminated"[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action anywhere at, or from, the facility?

_____ If yes – continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

__X__ If no – skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown (for any media) – skip to #8 and enter "IN" status code.

Facility Background

The site is located on Berwind Dr. in Hollidaysburg, Blair County, Pennsylvania on 65 acres of land. Brush Run flows along the northern border down through the eastern side of the site. The site was owned by the Berwind family from 1905 to June 1998 when the Hollidaysburg facility was sold to Millennium Rail, Inc. The Hollidaysburg facility has repaired and refurbished railcars since the 1950's. The facility has contracts with the petrochemical industry for the refurbishing of tank cars, hopper cars, box cars, and flat cars. The Berwind family began in the coal-mining industry in the early 1900's when it owned the Berwind-White Coal Company. The Hollidaysburg facility was set up to build and service coal cars. The coal car business lasted until World War II. During World War II, the plant was involved in the war effort manufacturing shell casings. During the 1950's the company expanded its operations to include the repair of train cars. Production processes at the site include cleaning and decontamination, mechanical and assembly work, metal fabrication, grit blasting, and lining and painting of rail cars. There is a chain-link fence that surrounds the entire plant facility. It is 6.5 feet high with 15 inches of barbed wire on top. There are also 6 locking chain-link gates at specific locations around the perimeter of the facility. These gates are locked after the close of business each day. The facility and the old "factory housing" which are the closest houses to the facility are serviced by public water. The groundwater flow direction in the shallow aquifer zone beneath the site is not known, but is assumed to follow the local topography in a southeasterly direction from the site, towards Brush Run.

Areas of concern at the facility include a tank-cleaning pad, the sump and holding area, the wastewater pre-treatment plant, the drum storage area, the paint shop area, scrap metal areas, fabrication area, lining area, the grit blast area, and the former lagoon area. A variety of hazardous wastes are generated on the site. Millennium Rail is currently listed as a large quantity generator of hazardous waste. Company representatives and facility inspections have indicated that hazardous wastes are stored on-site for less than 90 days before shipment for off-site disposal.

Three lagoons (surface impoundments) were built on the site in the late 1970's for the aeration and settling of organic wastes generated by the car cleaning and decontamination process. An Order was given to the company by Pennsylvania Department of Environmental Resources in 1981, after the lagoons were found to be inadequately managed and maintained. The lagoons were subsequently removed in 1982. The wastewater from the lagoons was pumped into six rail tank cars. The PVC liners were removed, along with the sludge and contaminated soil to six inches in depth, and disposed off-site. The lagoons were reclaimed under Pennsylvania Department of Environmental Resources in 1982. The remaining depressions were filled in with layers of limestone, clay, and shale, and capped with topsoil, graded, and grass was planted. An onsite wastewater pre-treatment plant was built to

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

replace the lagoons in 1983. The pre-treatment permit to discharge to the Hollidaysburg Sewer Authority is conducted under Pennsylvania permit-by-rule regulations.

Rationale and Reference(s):

Groundwater samples were collected in 1981 and 1982 from on-Site locations prior to and after closure of the lagoons. The locations of the sampling points are identified as "background groundwater" (sampled in 1981), "downgradient groundwater" (sampled in 1981), and "upgradient well" (sampled in 1982).

The 1981 site investigation indicates that two wells on the facility property, a production well and a monitoring well were sampled. The report indicates that chloroform was present in both the production well and the monitoring well at concentrations of 2 ug/l and 6 ug/l respectively. The results for chloroform are well below the Pennsylvania MSC residential use aquifer level of 100 ug/l. Methyl Ethyl Ketone was also detected in the monitoring well at a concentration of 270 ug/l, but there is no drinking water standard at this time for this contaminant.

The actual locations of these initial samples are unclear; however, based on information provided by Millennium, the 1981 "background groundwater" sample was collected from a location northwest of the former lagoons, approximately where monitoring well (MW-1) is currently located. Whether the groundwater sample was collected from this well is currently unknown. No records regarding the details of this well were located. The "upgradient well" sampled in 1982, however, refers to MW-1, according to Millennium personnel. The 1981 "downgradient groundwater sample" appears to have been located along the west bank of Brush Run, east of the former final receiving pond. The Old Boiler House abandoned well was also sampled in 1982.

The 1981/1982 groundwater sample results were tabulated and compared to the current Pennsylvania groundwater medium specific concentrations (MSCs) for residential used aquifers with total dissolved solids less than 2,500 ug/L. The sample results indicate that groundwater collected from the "background groundwater" sample location in 1981 contained low concentrations of benzene, chlorobenzene, chloroform, ethylbenzene, butyl benzyl phthalate, 4-nitrophenol, and pentachlorophenol. Methylene chloride and bis (2-ethylhexyl)phthalate were identified in this sample at concentrations exceeding the current groundwater MSCs. Beta-BHC and endosulfan sulfate were also detected at low concentrations in this groundwater sample. Inorganics were not analyzed for in this groundwater sample.

The 1981 "downgradient groundwater" sample contained concentrations of multiple volatiles. These constituents did not exceed any current groundwater MSCs, except methylene chloride. Several PAHs (e.g., acenaphthene, anthracene, benzo(a)anthracene, fluoranthene, and naphthalene) were also detected in the 1981 "downgradient groundwater" sample at concentrations that exceeded the current groundwater MSCs. Inorganics were not analyzed for this groundwater sample.

The groundwater samples collected from the "upgradient well" and the Old Boiler House abandoned well in 1982 did not contain VOCs, SVOCs, or pesticides. The "upgradient well" groundwater sample was not analyzed for inorganics; however, concentrations of barium, cadmium, total chromium, and nickel were detected in the Old Boiler House (abandoned) wells. The concentrations of these metals did not exceed the current residential groundwater MSCs.

Groundwater samples were collected by NUS Corporation (NUS) in June 1990 as part of an Environmental Priorities Initiative Site Inspection of Berwind Railway Service Co. Wells sampled included the on-Site production well (PW-1), the court ordered monitoring well (MW-1), and three private water supply wells. Two groundwater samples were collected from monitoring well MW-1; one, which was filtered, and one, which was not filtered.

The 1990 groundwater sample results were tabulated and compared to current Pennsylvania residential groundwater MSCs. Based on this data, chloroform and methyl ethyl ketone were detected in the production well duplicate sample and in the unfiltered MW-1 sample. The concentrations of these constituents did not exceed the current residential groundwater MSCs. These constituents were not detected in the initial production well sample or the filtered MW-1 sample. No VOCS were detected in the residential well samples collected during the 1990 NUS sampling.

The groundwater collected from the on-Site wells contained concentrations of the majority of the metals analyzed. Exceedances of the current residential groundwater MSCs were identified in the unfiltered groundwater samples. The

production well sample and the duplicate production well sample contained concentrations of iron and zinc the exceeded the current residential groundwater standards. The unfiltered MW-1 sample contained concentrations of aluminum, chromium, iron, lead, manganese, and nickel that exceeded the current residential groundwater standards. These metals were not detected in the filtered MW-1 sample. It should be noted that the current aluminum and iron residential groundwater standards to which these data were compared are secondary maximum contaminant levels (MCLs).

Concentrations of barium calcium, magnesium, potassium, and sodium were detected in the three residential well samples collected by NUS in 1990. A low concentration of cyanide was detected in the HW-1 sample and a low concentration of zinc was detected in the HW-2 sample. None of the inorganic detected in the residential well samples exceeded current residential groundwater standards.

Three private wells were sampled as part of the 1990 NUS investigation. The sample locations were chosen based on their proximity to the site. The toxicological evaluation indicates that no contaminants were detected above health-based criteria (MCLs - Maximum Contaminant Level) in the sampled wells.

A complaint was filed with PADEP in 2001 by a resident along Scotch Valley Road stating that the groundwater from her well was killing her plants. PADEP subsequently sampled the well located topographically upgradient of the Site and found that the groundwater sample was not impacted by Site-related COCs.

As of the August 1, 2006 EI Site investigation, there are currently no wells on-Site monitoring the points of compliance to determine the quality of the groundwater entering and leaving the site. This site has had no on-Site groundwater sampling since 1990; therefore, the current water quality conditions were unknown and more information was required to make a determination regarding the extent of impact by Site-related COCs to groundwater in the vicinity of the Site.

According to Millennium representatives, the on-Site wells are used for industrial processes and monitoring only. Potable water is supplied to the Site from the public water supply system.

During the August 1,2006 EI investigation, EPA indicated to Millennium that the facility would need to do some new groundwater sampling near the former surface lagoons to provide current and relevant data, as EPA would need this data to ensure that the former lagoons were not having an adverse affect on groundwater or surfacewater.

During the January 24, 2007 meeting, EPA and Millennium agreed that current groundwater data near the former impoundments would have to be obtained. These sampling results would then be used to determine if the former impoundments were having any effect on groundwater or surface water.

Millennium agreed to install and sample three temporary low flow wells between the former lagoons and Brush Run. The groundwater samples were analyzed for volatile organic compounds (VOC's), semi-volatile organic compounds (SVOC's), pesticides/PCB's, and RCRA metals. In addition Millennium had the well contractor close and cap off well MW-1, which was in poor condition and could have provided a direct conduit to the underlying aquifer.

Chemical analysis of the groundwater samples collected from the three temporary wells revealed only minor concentrations of metals, and one hit of a VOC. Barium was detected in all three samples at concentrations ranging from 90 to 93 ppb. The Act 2 screening level for Barium is 2000 ppb, SDWA levels for Barium are 7300 ppb, and EPA RBC screening levels for Barium are also 7300 ppb. Barium is commonly detected in geologic formations like those found under and around this location. One well had a hit for Acetone of 5ppb, which is well below the Act 2 screening level of 3,700 ppb, and EPA RBC levels of 22,00 ppb, and there is no SDWA level for Acetone. Acetone is a common laboratory artifact, which may have been caused by inadvertent contamination during sample handling at the lab. There were no detections in any of the samples of SVOCs, pesticides, or PCBs.

No groundwater sample concentrations exceeded SDWA, RBC, or PADEP Act 2 levels. After reviewing the sample results from the three temporary wells it appears that the former lagoons are not having an adverse effect on the groundwater or Brush Run.

Reference the Environmental Priorities Imitative Site Inspection for Millennium Rail (Berwind Railway Service Company), August 6, 1991, for investigation of contaminants and associated levels in groundwater, and supporting documentation.

Reference the Environmental Indicator Inspection Report (Millennium Rail Inc. - former Berwind Railway Service Company), December 15, 2006, for supporting documentation.

Reference Groundwater Monitoring Results for Millennium Rail Facility, Hollidaysburg, Blair County, Pennsylvania February 26, 2007

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[1] as defined by the monitoring locations designated at the time of this determination)?

_____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2])

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

[1] "Existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration [2] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate "level(s)," and if estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing. .

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

[2] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be **"currently acceptable"** (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[3])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment[4] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be **"currently acceptable"**) – skip to #8 and enter a "NO" status, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown – skip to 8 and enter "IN" status code.

Rationale and Reference(s):

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[3] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[4] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

. X YE – Yes, "Migration of contaminated Groundwater Under Control" has been verified.

_____ NO – Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN – More information is needed to make a determination.

Completed by: (signature) [signature] Date 10/10/08

(print) Grant J. Dufficy

(title) Project Manager

Supervisor: (signature) [signature] Date 10-10-08

(print) Paul Gotthold

(title) PA Operation Manager

(EPA Region or State)

Locations where References may be found:

A list of all reference documents is appended to the EI Report. Copies of these reference documents can be found at USEPA's Region III office in Philadelphia or PADEP's Southcentral Regional office in Harrisburg, PA.

Contact telephone and e-mail numbers: