APPENDIX H2 – QUALITATIVE ECOLOGICAL ASSESSMENT OF POND AT AOC 1

FLORA & FAUNA 5129 BREEDS ROAD MORAVIA, NY 13118

Mr. George Moreau Parsons Suite 312 290 Elwood Davis Road Liverpool, NY 13088 July 12, 2004

RE: Findings Letter – NYSDEC FWIA Step 1.B Schenectady Depot – Albany County, NY Flora & Fauna Project No. 0012

Dear Mr. Moreau:

At the request of Parsons, Flora & Fauna (F&F) conducted a qualitative assessment of the diversity and condition of aquatic life for the pond in Area of Concern (AOC) No. 1 at the Schenectady Depot located in Albany County, New York. F&F's assessment was performed in accordance with Sections B.1, B.2, and B.3 of the Step I procedure described in the 1994 New York State Department of Environmental Conservation (NYSDEC) guidance document entitled: *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA)*. The assessment took place on June 22, 2004. Weather conditions were mild (70 to 75 ^oF), overcast, and dry. Under F&F's scope, the limit of study was the pond as defined by the waterline; and, data regarding water chemistry, temperature, dissolved oxygen, depth, substrate composition, discharge flow rate, gradients, and past pond records were to be collected by Parsons, as necessary. F&F's findings are given below.

FWIA Step I.B.1: Fish & Wildlife Resources and Covertypes

The pond was approximately 400 feet in length and 150 feet in width. It was found to possess no defined feeder streams other than two ditches that conducted water into the area from the northeast. Parsons AOC Descriptions and Sampling Objectives section 2 described the pond as having minimal flow from the ponded areas during normal conditions, but, that there could be limited discharge to Black Creek during storm events. Black Creek is located southwest of the pond. The site investigation found that the pond possessed no defined outlet to the south; but, rather, graded from a deep emergent marsh to a shallow emergent marsh and then mostly into upland. The pond appeared to be the result of an excavation and was observed to possess a rather uniform bottom. The bottom was visible throughout the pond and the water depth was visually estimated to be 3 feet deep. Except for a small island and two upright dead trees (snags) no other habitat elements, such as logs, brush piles, root masses, or bank overhangs, were found to be present.

Submergent aquatic vegetation was found to consist almost exclusively of bladderwort (*Utricularia* spp.). This alga covered the bottom of the entire open aquatic area; and ranged in plant height from 6 inches to 1 foot (Photo 1). In addition, patches of a floating aquatic plant, variable leaf pondweed (*Potamogeton* spp.), were found present along the eastern shoreline (Photo 2).

State and Federal wetland maps for the Voorheesville quadrangle were examined to see if the pond had been mapped by either entity. The NYSDEC Freshwater Wetland map showed that the pond was not included within State wetland V-19 (Figure 1). The National Wetlands Inventory (NWI) map classified the pond as PUBHh (palustrine; unconsolidated bottom; permanently flooded; and diked/impounded) (Figure 2). This NWI classification was in agreement with the field observation that the pond appeared to have been formed as the result of an excavation.

Emergent aquatic vegetation around the pond was found to be dominated by narrow-leaved cattail (*Typha angustifolia*). The cattails formed large, dense stands along the eastern and southern shores (Photos 3 and 4). The cattails also thickly covered a small island located in the northern portion of the pond (Photo 5). Other species commonly present within the cattail marsh areas included purple loosestrife (*Lythrum salicaria*), spike rush (*Eleocharis acicularis*), twig rush (*Cladium mariscoides*), and common reed (*Phragmites australis*) - though the common reed was only prevalent at the southern end of the pond. Purple loosestrife formed narrow, moderately dense fringes along the eastern shoreline (Photo 6).

A covertype map was generated that sketches the observed aquatic and emergent vegetational covertypes present within the pond (Figure 3).

FWIA Step I.B.2: Fauna Expected Within Each Covertype and Aquatic Habitat

FISH, AMPHIBIANS, AND RETILES

No fish, fish egg masses, or signs of fish feeding on surface water insects (which were numerous) were observed during the site visit. The United States Fish & Wildlife Service (USFWS) was contacted for further information on typical New York State fish species that might inhabit a warmwater pond of the description given above. The USFWS opinion was that due to the isolated and shallow nature of the pond, the pond would not be expected to be able to sustain a viable fish population. The pond would be expected to freeze in winter and thus prevent the successful overwintering of individuals. Parsons Section 2 of the AOC Descriptions and Sampling Objectives plan previously reported the presence of fish in the pond; however, it was the USFWS opinion that these fish most likely represented human-introduced individuals, and that such introduced individuals would not be expected to form sustainable populations within the pond.

Numerous frogs were noted in the area as they jumped into the water ahead of the investigative team. Though frogs were numerous, only green frogs (*Rana clamitans*) were sited and/or heard. The sited frogs were normal in appearance and the jumping/hiding behavior of the frogs seemed active and normal. The USFWS was contacted for further information on typical New York frog species that might inhabit a pond of this type. The USFWS opinion was that, during other seasons of the year, spring peepers (*Hyla crucifer*), bull frog (*Rana catesbeianna*), and northern leopard frog (*Rana palustris*) may also be found.

Three turtle nests with eggshell remains were found (Photo 7). The nest sites were investigated to find if any unhatched eggs remained in the nests. No unhatched eggs were found remaining within the nests. Also, no signs of claw marks and/or enlargement of the nest sites were observed that would suggest the

eggs had been dug up and eaten by a predator. These circumstances suggest that the eggs were laid normally and the hatchlings emerged successfully. The 1979 Audubon Society *Field Guide to Northern American Reptiles & Amphibians* (published by Alfred A. Knopf, Inc, NY) was consulted and compared against the 1993 NYSDEC *Checklist Of New York State Amphibians, Reptiles, Birds, And Mammals* (published by the Division of Fish and Wildlife, Endangered Species and Non game/ Habitat Units, Wildlife Resources Center, Delmar, NY) to identify the turtles within New York that possessed the range, habitat requirements, and body size appropriate to the field findings. Only the painted turtle (*Chrysemys picta*) met all requirements.

MAMMALS

Deer trails and tracks were numerous around the shoreline of the pond (Photo 8), indicating that the area supports an active deer population. Raccoon tracks and scat (Photo 9) were also observed around the pond. The entire depot area is surrounded by high fences, so some restriction of the movement of animals to-and-from the pond is expected.

BIRDS

The most prevalent bird species utilizing the pond area was the red-wing blackbird (*Agelaius phoeniceus*). Other birds sited or heard within the immediate area included the red-eye vireo (*Vireo olivaceus*), blue jay (*Cyanocitta cristata*), song sparrow (*Melospiza melodia*), tree swallow (*Iridoprocne bicolor*), gray catbird (*Dumetella carolinensis*), house sparrow (*Passer domesticus*), and yellow warbler (*Dendroica petechia*). In addition, Canada goose (*Branta canadensis*) droppings and several female mallard (*Anas platyrhynchos*) feathers were observed.

THREATENED AND ENDANGERED SPECIES

Responses received by Parsons in 1998 from the USFWS and the NYSDEC Natural Heritage program regarding species that are threatened, endangered, rare, or of concern, and potentially present in the Schenectady Depot area were reviewed by F&F with regard to the pond area. The USFWS reported no protected species being mapped to the area. Of the species reported by the NYSDEC Natural Heritage program, only the great blue heron (*Ardea herodias* – protected) had the potential of utilizing the pond. The other species were found to be non-aquatic, preferred a different habitat, or their listed locations were remote from the pond of interest.

The Natural Heritage data indicated that the great blue heron is known to be present at the nearby Black Creek. Great blue herons inhabit (among other habitat types) freshwater, shallow emergent marshes composed of cattails, sedges, and shrubs, which is in keeping with the pond of concern's habitat make up. No herons or heron nests were observed at the pond during the site visit, and since the pond is predicted not to be able to sustain viable fish populations, herons would not be expected to take up permanent residence at the pond. However, the pond could represent a resting or stop-over area for herons flying to-and-from the vicinity of Black Creek.

FWIA Step I.B.3: Observations of Stress

The pond area was reviewed for obviously contaminated areas, such as stained soils, leachate seeps, or exposed waste. The findings were as follows.

A grayish-white film was noted coating the pond floor (Photo 10). The 1983 USDA Soil Conservation Service *Soil Survey of Albany County, NY* (Figure 4) lists the pond as a wet spot situated within Udorthent soils (i.e., soils that have been manipulated through man's development activities and thus no longer possess a set geologic profile). Accordingly, it could not be determined from the site visit whether the film was from a natural source, such as fine clay silt present in the area, or an introduced source. Two small ditches leading into the pond from the east were found to possess a bluish hue and an oily sheen (Photo 11). The approximate locations of these ditches are shown in Figure 3. Water runoff toward the pond from the east comes from the direction of a well-used railroad track. However, it could not be determined from the site visit whether the blue coloring and sheen were coming from a natural source, the railroad track, or from some other introduced source.

Conclusions

The grayish-white film coating the bottom of the pond and the reason for the bluish color and oily sheen observed in the feeder ditches may warrant further investigation. Otherwise, no further signs of stress other were observed at the pond. The water was clear and odorless. No fish or wildlife carcasses were found. The observed species composition seemed appropriate for the habitat conditions present. And, all species present appeared active and looked & behaved in a normal fashion.

Thank you for letting Flora & Fauna to be of service. Please feel free to contact the undersigned with any questions.

Cordially,

Dr. Sally M. Numan

Dr. Sally M. Newman *FLORA & FAUNA* President (315) 497-9332 Inc.









New York Quadrangle Albany County

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Status as of:6/22/04Photo #1:Shows bladder wort covering of pond bottom.

Status as of:6/22/04Photo #2:Shows patches of variable pond weed present along the eastern edges of the pond..

PROJECT:

Schenectady Depot

PROJECT: PROJECT#: 0012 CLIENT Parsons

LOCATION

Guilderland, NY



LOCATION

Guilderland, NY

6/22/04 Status as of:

Photo #3:

Schenectady Depot

View is looking east across the pond. Photo shows the cattail dominated marsh along the eastern shore of the pond. Photo also shows the proximity of the active railway line that runs parallel to the eastern shore.

6/22/04 Status as of:

Photo #4: View is looking south across the pond. Photo shows the cattail and common reed dominated marsh present along the southern shore of the pond.



Status as of: 6/22/04

Photo #5: View is looking north across the pond. Photo shows the small cattail dominated island present in the northern section of the pond. Photo also shows the cattail fringe present along the eastern shore of the pond.

Status as of: 6/22/04 Photo #6: View is

View is looking north along the western edge of the pond. Photo shows the narrow fringe of purple loosestrife present along the western shore of the pond.



Status as of: 6/22/04

Photo #7: Photo shows a turtle nest site. The dug depression and the remnants of the shells are evident. No unhatched eggs were found remaining within the nests. No signs of claw marks and/or enlargement of the nest sites were observed that would suggest the eggs were dug up and eaten by predators. These circumstances suggest that the eggs were laid normally and the hatchlings emerged successfully.

Status as of: 6/22/04

Photo #8: Photos shows deer tracks present in the soft soils surrounding the pond; thus demonstrating the presence of deer in the area.



Status as of:6/22/04Photo #9:Photos show raccoon scat present at the edge of the pond.

Status as of:6/22/04Photo #10:Photo shows the grayish-white film coating the pond bottom.



Status as of: 6/22/04

Photo #11: Photo shows one of the two small ditches present in the northeastern portion of pond that exhibited a bluish color and an oily sheen..