

Appendix A1

Basic Site Information Checklist

General Site Information
ECSI File No. or LUST File No.: ECSI 5822
Site Name: South Rivergate Pond
Site Location (address, city, and/or county): T2N/R1W/S35A, PORTLAND, OR 97203 (Multnomah County)
Latitude/Longitude or other location documentation for site: 45°36'54.5"N 122°45'54.1"W
Current and Historical Site Use (gas station, dry cleaner, jet hangar, etc.) ¹: Stormwater discharge from multiple sources including PGE and Bonneville Power Administration yards, and North Pond area are routed to South Rivergate Pond. Sediments in the pond are a mixture of native material and settled solids from stormwater inputs. Based on historical photo evidence presented by BPA, South Rivergate Pond was not originally a natural water body; it was instead formed from the filling of properties around it as well as construction of N. Lombard Ave and other streets.
Zoning: IH – Heavy Industrial
Site² Features: Freshwater wetland and pond, surrounded by industrially developed uplands and roads, including PGE and BPA transformer yards to the south and railroad to the north
Chemicals of Interest³: PCBs, chlorinated pesticides and pentachlorophenol, PAHs, metals

Site Conditions – Provide Approximate Areas (acreage or square feet)

These habitats may occur in a range of natural and protected areas, including parks and green space found within urban areas. More information and habitat classification can be found at: <https://oregonexplorer.info/content/classification-wildlife-habitats>

Author Note 1: habitat estimates provided below are based on site + contiguous habitats using NWI dataset and ArcGIS Online mapping. Wetland areas are based on emergent wetland. Riparian areas are based on patches of freshwater shrubs in the NWI. Strips of bare or grassy areas were hand-drawn in ArcGIS using aerial imagery and treated as “terrestrial open habitat/grasslands”. Very limited trees/woods and impervious surfaces were included in the site. The site was assumed to extend partway into uplands (i.e., riparian and terrestrial open habitat) but not extending onto or past roads, railroads, transformer yards, fencing, or other developed areas; only adjacent contiguous habitat was included.

Area (ac)	Habitat Type: Description
<u>1.6</u>	Terrestrial Open Habitat / Grasslands: Dominated by short to medium-tall grasses, low to medium shrubs, or bare soil.
<u><0.1</u>	Forest or Woodland Habitats: Woodlands (maple, alder, aspen), conifer forest (Douglas fir, hemlock, cedar, spruce), mixed-woodland, juniper, pine (ponderosa, lodgepole).
<u>3.6</u>	Wetland: May be either tidal or non-tidal wetlands with emergent herbaceous plants.
<u>0.9</u>	Riparian Zone: Patches or linear strips of land adjacent to waterbodies (rivers, streams, waterbodies), or on nearby floodplains and terraces. May be impacted by periodic riverine flooding or perennial flowing water. May or may not also contain wetlands.
<u>3.7</u>	Aquatic Open Water: Ponds, lakes, reservoirs, rivers, creeks, streams, bays estuaries, and nearshore marine and intertidal.
<u><0.1</u>	Impermeable Surface: Pavement, structures.

Author Note 2: Though not directly adjacent due to the railroad crossing to the north of South Rivergate Pond, a large (roughly 13 acre) wetland area is also nearby (~200 ft north). Lower Columbia Slough is also nearby (~250 ft northeast). Both areas may provide habitat.

Checklist Completed By: Brian Church, DEQ Cleanup Toxicologist	Date: 12-16-2025
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Appendix A2 Ecological Scoping Checklist

Site Name	South Rivergate Pond
Date of Site Visit	November 29, 2023; November 7, 2025; December 23, 2025
Site Location	T2N/R1W/S35A, Portland, OR 97203 (Multnomah County)
Site Visits Conducted by	Brian Church, Mark Pugh, Sara Krepps DEQ Cleanup Program

Part 1

CONTAMINANTS OF INTEREST IN LOCALITY OF FACILITY[†] Types, Classes, Or Specific Hazardous Substances[‡] Known Or Suspected	Upland	Aquatic
PCBs	na	X
PAHs	na	X
TPH	na	X
Organochlorine pesticides	na	X
Metals	na	X
Pentachlorophenol	na	X

[‡] As defined by OAR 340-122-115(30) [†] As defined by OAR 340-122-115(34) na – not applicable

Part 2

IMPACTS OBSERVED IN THE LOCALITY OF THE FACILITY	Finding
Onsite vegetation (None, Limited, Extensive)	Limited/ Extensive
Vegetation in the locality of the site (None, Limited, Extensive)	Limited/ Extensive
Onsite wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other (None, Limited, Extensive)	Limited/ Extensive
Wildlife such as macroinvertebrates, reptiles, amphibians, birds, mammals, other in the locality of the site (None, Limited, Extensive)	Limited/ Extensive
Other readily observable impacts (None, Discuss below)	See below
<p>Discussion: In-water garbage including chemical canisters (spray paint), possible drums (observed at a distance) and waste wood, and general consumer trash (plastics) as well as railroad waste materials in uplands (metal scrap) and discarded chemical drums (see Figure 1 – 3). People experiencing homelessness were initially present between the PGE and BPA yards adjacent to site but not present in December 2025; associated vehicles and related domestic (and possible chemical) wastes were present. Visible sheen in upland soil adjacent PGE property. Known stormwater input related to BPA yard; not discharging during visit (low/no rainfall).</p> <p>Some cattail marsh and emergent wetlands plants are present (in addition to scattered trees/ shrubs on the shoreline), but the lake is dominated by duckweed on surface and invasive blackberry along shoreline and upland (see Figures 4-5). Some native plantings were present along PGE shoreline, probably as part of construction mitigation. Vegetative boundary around the pond is narrow, with all adjacent uplands cleared for industrial properties, roadways, or the railroad. Habitat also exists beyond disturbed areas in Columbia Slough to the east accessible under roadway), the North Pond area (potentially accessible overland or in outfalls), and west of Time Oil Rd (overland?), where there is additional turtle mitigation habitat. Ditch area (Figure 6) drains Time Oil Rd, with limited habitat value.</p> <p>Soils were soft enough for burrowing/nesting in places, but much of the fill is gravelly fill (e.g., related to railroad line). Evidence of wildlife is present (Figure 7).</p> <p>Limited riparian canopy (overhanging bramble and scattered trees/large shrubs). Limited visible turtle basking locations (partly because of duckweed).</p>	

Ecological Scoping Checklist (cont'd)

Part ③

SPECIFIC EVALUATION OF ECOLOGICAL RECEPTORS / HABITAT	Finding
<i>Terrestrial - Wooded</i>	
Percentage of site that is wooded	<1%
Dominant vegetation type (Evergreen, Deciduous, Mixed)	Deciduous
Prominent tree size at breast height, i.e., four feet (<6", 6" to 12", >12")	<6"
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	Small birds (audible)
<i>Terrestrial - Scrub/Shrub/Grasses</i>	
Percentage of site that is scrub/shrub	26%
Dominant vegetation type (Scrub, Shrub, Grasses, Other)	Shrub
Prominent height of vegetation (<2', 2' to 5', >5')	2' to 5' (blackberry)
Density of vegetation (Dense, Patchy, Sparse)	Patchy (dense blackberry, sparse tall shrubs, grassy patches)
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	Inverts present; turtle carapace; coyote and rabbit scat, and burrows/holes (mole, etc.)
<i>Terrestrial - Ruderal</i>	
Percentage of site that is ruderal	0%
Dominant vegetation type (Landscaped, Agriculture, Bare ground)	na
Prominent height of vegetation (0', >0' to <2', 2' to 5', >5')	na
Density of vegetation (Dense, Patchy, Sparse)	na
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	na
<i>Aquatic - Non-flowing (lentic)</i>	
Percentage of site that is covered by lakes or ponds	38% (+37% wetlands)
Type of water bodies (Lakes, Ponds...)	Pond
Size (acres), average depth (feet), trophic status of water bodies	3.7 ac, up to 1-2 ft deep, trophic status not determined, but algal density likely depressed by duckweed
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	Surface water runoff and stormwater discharge
Water discharge point (None, River, Stream, Groundwater, Wetlands impoundment)	Columbia Slough; groundwater infiltration
Nature of bottom (Muddy, Rocky, Sand, Concrete, Other)	Muddy, vegetation mat
Vegetation present (Submerged, Emergent, Floating)	Emergent and floating are dominant
Obvious wetlands present (Yes / No)	Yes
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	Flying insects, turtles, hooded merganser seen, frogs heard
<i>Aquatic - Flowing (lotic)</i>	
Percentage of site that is covered by rivers, streams (brooks, creeks), intermittent streams, dry wash, arroyo, ditches, or channel waterway	0% (upstream ditch not included in LOF)

Type of water bodies (Rivers, Streams, Intermittent Streams, Dry wash, Arroyo, Ditches, Channel waterway)	na
Size (acres), average depth (feet), approximate flow rate (cfs) of water bodies	na
Bank environment (cover: Vegetated, Bare / slope: Steep, Gradual / height (in feet))	na
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	na
Tidal influence (Yes / No)	na
Water discharge point (None, River, Stream, Groundwater, Wetlands impoundment)	na
Nature of bottom (Muddy, Rocky, Sand, Concrete, Other)	na
Vegetation present (Submerged, Emergent, Floating)	na
Obvious wetlands present (Yes / No)	na
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	na
<i>Aquatic - Wetlands</i>	
Obvious or designated wetlands present (Yes / No)	Yes
Wetlands suspected as site is/has (Adjacent to water body, in Floodplain, Standing water, Dark wet soils, Mud cracks, Debris line, Water marks)	Adjacent to water body, standing water, dark wet soils (delineated by NWI)
Vegetation present (Submerged, Emergent, Scrub/shrub, Wooded)	Submerged, emergent, scrub/shrub, wooded (to varying degrees)
Size (acres) and depth (feet) of suspected wetlands	3.6 acres, depth ~1 to 2 ft
Source water (River, Stream, Groundwater, Industrial discharge, Surface water runoff)	Surface water runoff
Water discharge point (None, River, Stream, Groundwater, Impoundment)	Columbia Slough, groundwater
Tidal influence (Yes / No)	Limited influence possible via groundwater / Columbia Slough
Evidence / observation of wildlife (Macroinvertebrates, Reptiles, Amphibians, Birds, Mammals, Other)	All of the above – Figure 7 provides photo evidence for turtles, mammals; birds observed and heard; amphibians heard; aquatic insects seen;

Ecological Scoping Checklist (cont'd)

Part 4

HABITATS AND SPECIES OBSERVED OR DOCUMENTED IN LOF
Plants – grasses, mosses, blackberry/bramble, cattail marsh plants, willow, relatively small deciduous trees (some fairly large on south shoreline); matted submerged/emergent vegetation in pond wetland, duckweed floating on pond.
Invertebrates – flying insects observed; detailed observations not generated. Benthic invertebrates not collected, but assuming aquatic insect larvae and oligochaete worms are present (common).
Amphibians – frogs were audible during the visit, but none seen/photographed.
Reptiles – western painted turtle observed and turtle carapace also found (see Figure 7). Nesting habitat not observed, but likely present based on life histories (nest relatively close to home waters). Nesting was not obviously occurring during early November 2025.
Birds – small birds seen (not counted or ID'd) and heard; hooded merganser (1) observed on the pond but not photographed; no large/predatory birds seen during site visit. Limited capacity for nesting in immediately adjacent riparian areas, but there is capacity for nesting in human-modified areas (e.g., poles) or in nearby habitat (Columbia Slough); nest survey not conducted.
Mammals – scat observed (see Figure 7); burrows observed suggesting small mammals present: mole, mouse, etc. No evidence of aquatic predatory mammals like mink or otter.
Habitats – mix of heavily modified/impacted habitat in uplands (industrial properties, railroad), “riparian” shrubs dominated by blackberry, and sparse higher quality patches of cattail marsh, and deciduous trees (not much canopy cover). Fully aquatic habitat is dominated by duckweed, which suggests that water quality is probably good, though potentially seasonally poor when duckweed dies off. This is unknown.
Fish were not observed, though no survey was conducted. There was discarded fishing tackle along the water edge. Some limited evidence for small fish exists in literature; if fish are present, it's doubtful that the lake is large/deep or permanent enough to support larger predators (e.g., bass), etc.



Figure 1. Drum observed at end of Time Oil Road (12-23-2025; Pugh)



Figure 2. Discarded tires in upland north of BPA yard (11-29-2023; Krepps)



Figure 3. Paint cans discarded in pond at shoreline (11-7-2025; Church, Pugh)



Figure 4. Cattail marsh and pond habitat (11-7-2025; Church, Pugh)



Figure 5. Upper wetlands area with PGE plantings on far bank (11-7-2025; Church, Pugh)



Figure 6. Time Oil Road ditch upstream of South Rivergate Pond (12-23-2025; Pugh)



Figure 7. Examples of wildlife signs (clockwise from top-left) – coyote scat, deer scat, rabbit scat, western painted turtle, mole hill, turtle carapace (11-7-2025; Church, Pugh)

Appendix A3

Evaluation of Receptor-Pathway Interactions

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
<p>Are hazardous substances present or potentially present in surface waters? This includes tidal or seasonally inundated areas and wetlands.</p> <p>AND</p> <p>Could hazardous substances reach these receptors via surface water?</p>			X
<p>When answering the above questions, consider the following:</p> <ul style="list-style-type: none"> • Known or suspected presence of hazardous substances in surface waters. • Ability of hazardous substances to migrate to surface waters. Consider migration pathways such as erosion of soils adjacent to aquatic environments (e.g., banks or riparian areas), subsurface preferential pathways (e.g., pipes), outfalls, groundwater discharges, and surface migration (e.g., ditches). • Terrestrial organisms may be dermally exposed to water-borne contaminants as a result of wading or swimming in contaminated waters. Aquatic receptors may be exposed through osmotic exchange, respiration or ventilation of surface waters. • Contaminants may be taken-up by terrestrial plants whose roots are in contact with surface waters. • Terrestrial receptors may ingest water-borne contaminants if contaminated surface waters are used as a drinking water source. 			
<p>Are hazardous substances present or potentially present in groundwater?</p> <p>AND</p> <p>Could hazardous substances reach these receptors via groundwater?</p>			X
<p>When answering the above questions, consider the following:</p> <ul style="list-style-type: none"> • Known or suspected presence of hazardous substances in groundwater. • Ability of hazardous substances to migrate to groundwater. • Potential for hazardous substances to migrate via groundwater and discharge into habitats and/or surface waters. • Contaminants may be taken-up by terrestrial and rooted aquatic plants whose roots are in contact with groundwater present within the root zone (~1m depth). • Terrestrial wildlife receptors generally will not contact groundwater unless it is discharged to the surface. 			

“Y” = yes; “N” = No, “U” = Unknown (counts as a “Y”)

Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
<p>Are hazardous substances present or potentially present in sediments? This includes tidal or seasonally inundated areas and wetlands.</p> <p>AND</p> <p>Could hazardous substances reach receptors via contact with sediments?</p>	X		
<p>When answering the above questions, consider the following:</p> <ul style="list-style-type: none"> • Known or suspected presence of hazardous substances in sediment. • Ability of hazardous substances to leach or erode from surface soils and be carried into sediment via surface runoff. • Potential for contaminated groundwater to upwell through, and deposit contaminants in, sediments. • If sediments are present in an area that is only periodically inundated with water, both aquatic and terrestrial species may be exposed. Aquatic receptors may be directly exposed to sediments or may be exposed through osmotic exchange, respiration or ventilation of sediment pore waters. • Terrestrial species may be exposed to sediment in an area that is only periodically inundated with water. • If sediments are present in an area that is only periodically inundated with water, terrestrial species may have direct access to sediments for the purposes of incidental ingestion. Aquatic receptors may regularly or incidentally ingest sediment while foraging. 			
<p>Are hazardous substances present or potentially present in prey or food items of ecologically important receptors?</p> <p>AND</p> <p>Could hazardous substances reach these receptors via consumption of food items?</p>	X		
<p>When answering the above questions, consider the following:</p> <ul style="list-style-type: none"> • Higher trophic level terrestrial and aquatic consumers and predators may be exposed through consumption of contaminated food sources. • In general, organic contaminants with $\log K_{ow} > 3.5$ may accumulate in terrestrial mammals and those with a $\log K_{ow} > 5$ may accumulate in aquatic vertebrates. 			

“Y” = yes; “N” = No, “U” = Unknown (counts as a “Y”)

Evaluation of Receptor-Pathway Interactions (cont'd)

EVALUATION OF RECEPTOR-PATHWAY INTERACTIONS	Y	N	U
<p>Are hazardous substances present or potentially present in surficial soils? AND Could hazardous substances reach these receptors via incidental ingestion of or dermal contact with surficial soils?</p>			X
<p>When answering the above questions, consider the following:</p> <ul style="list-style-type: none"> • Known or suspected presence of hazardous substances in surficial (~1m depth) soils. • Ability of hazardous substances to migrate to surficial soils. • Significant exposure via dermal contact would generally be limited to organic contaminants which are lipophilic and can cross epidermal barriers. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces by rain striking contaminated soils (i.e., rain splash). • Contaminants in bulk soil may partition into soil solution, making them available to roots. • Incidental ingestion of contaminated soil could occur while animals grub for food resident in the soil, feed on plant matter covered with contaminated soil or while grooming themselves clean of soil. 			
<p>Are hazardous substances present or potentially present in soils? AND Could hazardous substances reach these receptors via vapors or fugitive dust carried in surface air or confined in burrows?</p>			X
<p>When answering the above questions, consider the following:</p> <ul style="list-style-type: none"> • Volatility of the hazardous substance (volatile chemicals generally have Henry's Law constant $> 10^{-5}$ atm-m³/mol and molecular weight < 200 g/mol). • Exposure via inhalation is most important to organisms that burrow in contaminated soils, given the limited amounts of air present to dilute vapors and an absence of air movement to disperse gases. • Exposure via inhalation of fugitive dust is particularly applicable to ground-dwelling species that could be exposed to dust disturbed by their foraging or burrowing activities or by wind movement. • Foliar uptake of organic vapors would be limited to those contaminants with relatively high vapor pressures. • Exposure of terrestrial plants to contaminants present in particulates deposited on leaf and stem surfaces. 			

“Y” = yes; “N” = No, “U” = Unknown (counts as a “Y”)