Lawrence Aviation Industries, Inc.

Port Jefferson Station, New York
EPA Facility ID: NYD002041531
Basin: Northern Long Island
HUC: 02030201

Executive Summary

The Lawrence Aviation Industries, Inc. (Lawrence Aviation) site in Port Jefferson Station, Suffolk County, New York, is approximately 2 km (1.2 mi) south of Port Jefferson Harbor, an inlet of Long Island Sound. From 1959 to the present, the site has been used by Lawrence Aviation Industries, Inc. for the manufacturing of titanium sheet metal. Metals, VOCs, acids and acid sludges, oils, solvents, and ink were stored on site, and the facility has been cited by county and state agencies for numerous environmental violations. Metals, PAHs, pesticides, PCBs, and VOCs are the contaminants of concern to NOAA at this site. NOAA trust resources present within Port Jefferson Harbor and Long Island Sound include the federally endangered Kemp's Ridley sea turtle, anadromous and marine fishes, as well as shellfish and the catadromous American eel. Groundwater, surface water, and sediment transport are the primary pathways for the migration of contaminants from the site to NOAA trust resources. The primary habitat of concern to NOAA is Port Jefferson Harbor.

Site Background

The Lawrence Aviation Industries, Inc. (Lawrence Aviation) site occupies approximately 50 ha (124 acres) in Port Jefferson Station, Suffolk County, New York. The site is approximately 2 km (1.2 mi) south of Port Jefferson Harbor, an inlet of Long Island Sound (Figure 1). From 1959 to the present, the site has been used for the manufacturing of titanium sheet metal, which was used mostly in the aviation industry. The facility has been cited by county and state agencies for numerous environmental violations. In the 1970s, the facility discharged waste liquids directly to a sump that overflowed and became an unlined lagoon (Figure 2). Samples collected from the lagoon contained chromium, nitrates, and fluoride in excess of groundwater discharge limits. In 1980, the facility crushed more than 1,600 drums and allowed liquid wastes to spill directly onto the ground. The drums contained volatile organic compounds (VOCs), acids and acid sludges, salt wastes, hydraulic oils, and other wastes from the manufacturing process. In 1990, the state discovered more than 2,000 drums at the site; these drums contained waste solvents, acids, oil, ink, and untreated acidic sludge (Weston 1999).

The site is bordered to the north by the Long Island Railroad and Sheep Pasture Road, to the east and west by residential single-family homes, and to the south by a utility company right-of-way. Directly west of the site is a recycling facility for yard waste (CDM 2005a).

Groundwater, surface water, and sediment transport are the primary pathways for the migration of contaminants from the site to NOAA trust resources. Groundwater was encountered between 2.4 m (8 ft) and 84 m (276 ft) below ground surface (bgs). Groundwater flow is to the north and northwest toward Port Jefferson Harbor (Weston 1999). Old Mill Pond and Old Mill Creek, which are north of the site (Figure1), are fed by groundwater (CDM 2005b). Old Mill Creek drains to Port Jefferson Harbor through a culvert for approximately 122 m (400 ft). Soils at the site are predominantly loamy to sandy in

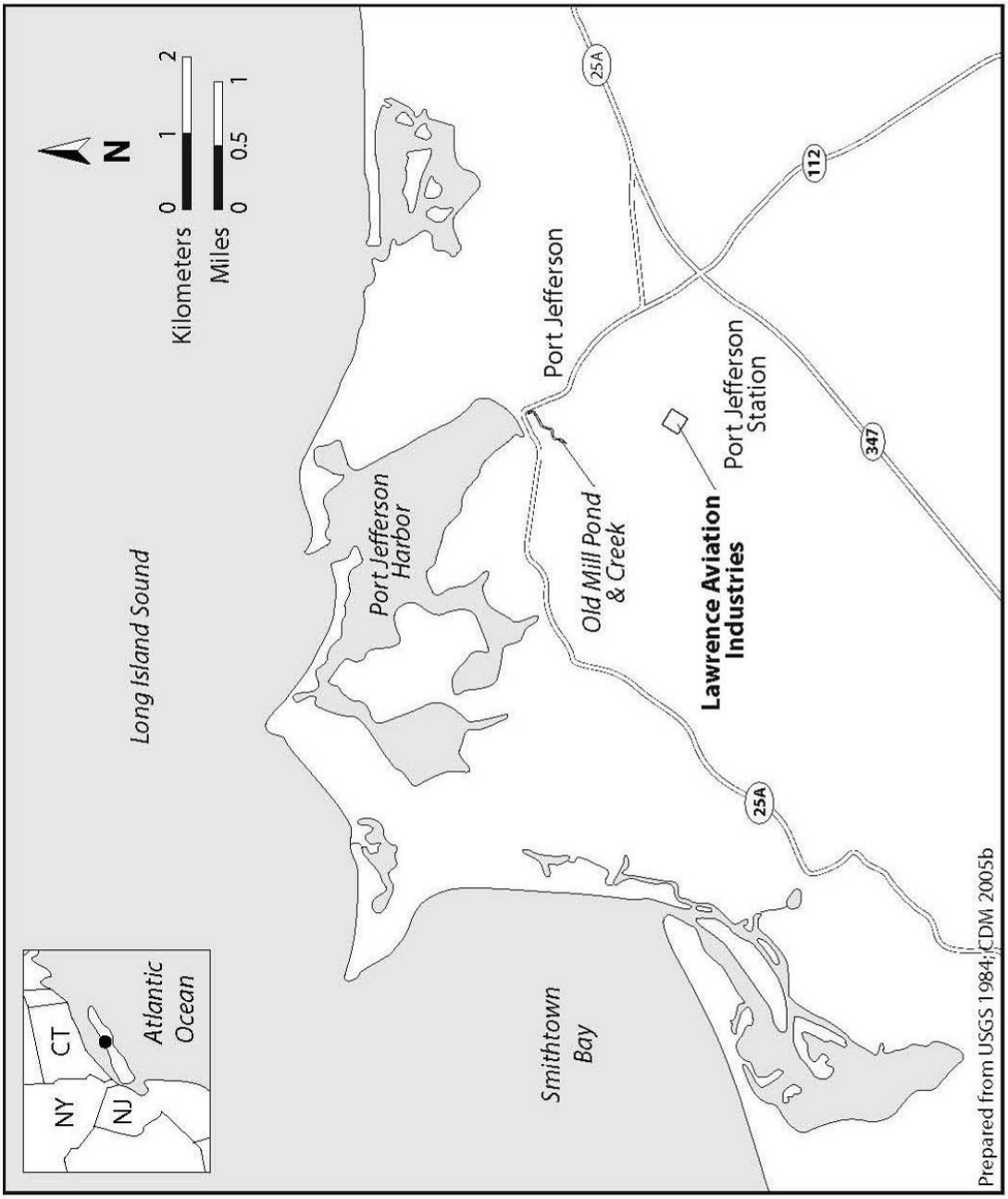

Figure 1. Location of the Lawrence Aviation Industries Inc. site in Port Jefferson Station, New York.

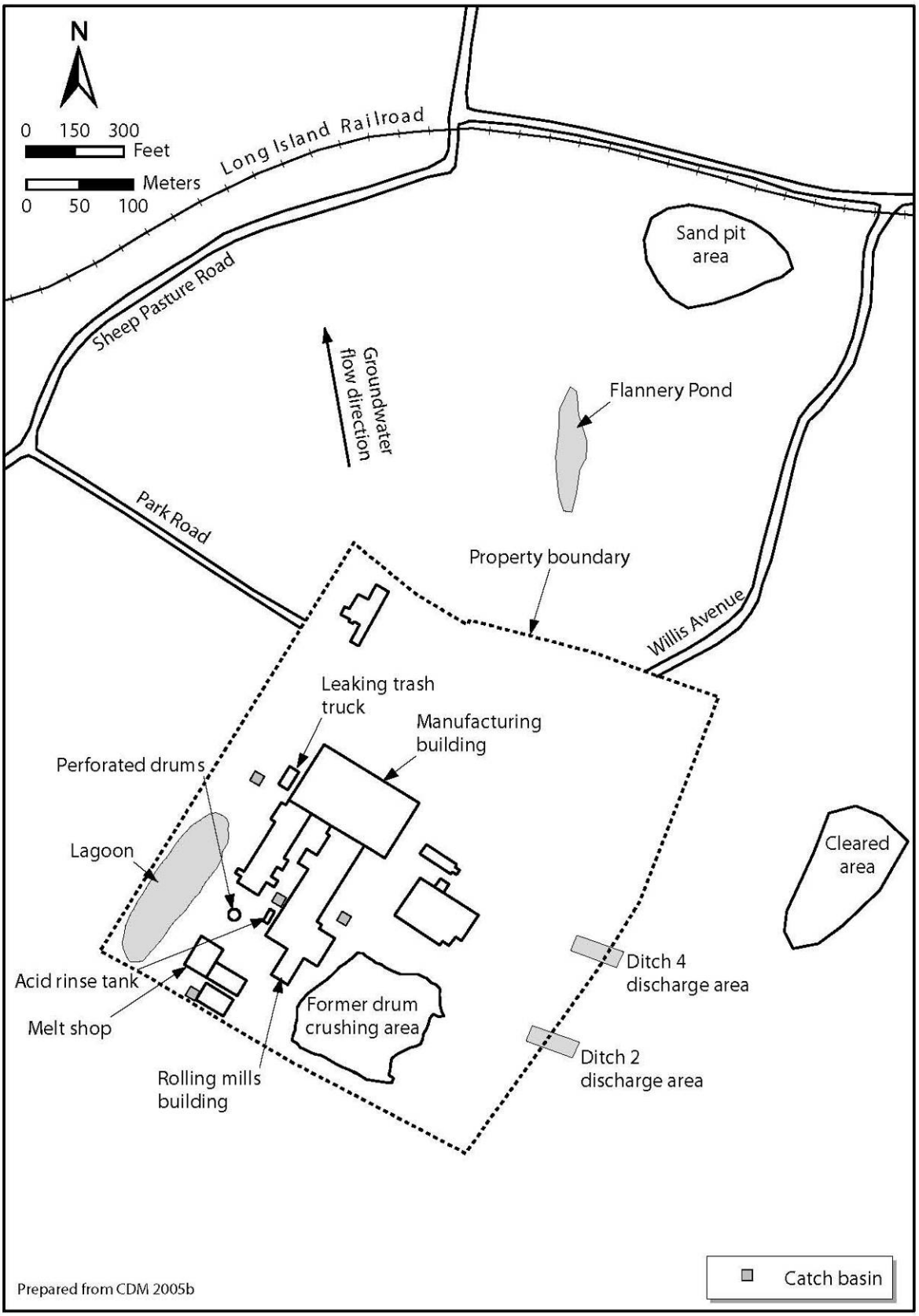

Figure 2. Detail of the Lawrence Aviation Industries Inc. property.

texture (CDM 2005b). The catch basins on the property received surface water runoff from the Lawrence Aviation facility (CDM 2005b). Although it is likely that the catch basins are connected to the sanitary sewer system, information regarding where the catch basins discharge was not available in the documents reviewed to prepare this report.

The site was proposed to the National Priorities List (NPL) on October 22, 1999 and was placed on the NPL on February 4, 2000 (USEPA 2005b). A remedial investigation/feasibility study was initiated in July 2001. From March to November 2004, drums and other containers were removed by the U.S. Environmental Protection Agency (USEPA). Overall, approximately 1,300 drums and other containers were processed. Drums and containers in good condition were disposed of off site. Drums and containers that could not be removed from the site because of their poor condition were placed in an area behind a berm for evaluation (CDM 2005b).

NOAA Trust Resources

The primary habitat of concern to NOAA is Port Jefferson Harbor, an embayment within the Long Island Sound estuary. Old Mill Creek is a secondary habitat of concern, because it is possible that American eel migrate into the creek from the harbor via the culvert that connects the two (Guthrie 2006). Numerous marine and anadromous species that are present within the bay and estuary use these waters for spawning, rearing, and adult habitat (Table 1). In 1987, the harbor was designated a Significant Coastal Fish and Wildlife Habitat by the state of New York (NYSDOS 2004). In 1988, Long Island Sound was identified as an Estuary of National Significance (NYSDEC 2005a).

Port Jefferson Harbor is a shallow embayment on the south-central shore of Long Island Sound. Long Island Sound is a large coastal estuary that measures 170 km (106 mi) in length and 34 km (21 mi) in width. The sound has more than 800 km (497 mi) of shoreline (Long Island Sound Foundation 2005). Most of the harbor ranges from 1.8 to 9.1 m (6 to 30 ft) in depth below the mean low water level (NYSDOS 2004). The harbor is protected by two barrier islands that allow an opening to the sound of only 300 m (984 ft) (USGS 1967) (Figure 1). Despite the small opening, salinity is generally over 20 parts per thousand; very little freshwater input to the harbor occurs. Bottom substrates range from silts to sands.

Small forage species such as bay anchovy, gobies, killifish, northern pipefish, oyster toadfish, sheepshead minnow, and silversides spend their entire lives within estuaries and are common to abundant in nearshore areas of Long Island Sound. Atlantic herring and Atlantic menhaden, which are also common-to-abundant forage species, usually spawn in coastal waters; the larvae are transported to estuaries, where they reside through adulthood (Stone et al. 1994).

Larger demersal species such as skates, windowpane, and winter flounder are common to abundant and spend all or most of their lives in the estuary. Spawning can occur either in bays or in coastal waters of the sound (Stone et al. 1994).

Several cod species, including Atlantic tomcod, pollock, and red hake, are present in Long Island Sound, but these species are not as common in the sound as in more northern estuaries. Atlantic tomcod spawn in nearly fresh water and reside in waters of low salinity. Pollock and red hake spawn in coastal waters; the larvae are transported to bays, where they reside as juveniles and adults (Stone et al. 1994).

Table 1. NOAA trust resources present in the Long Island Sound estuary near the Lawrence Aviation Industries, Inc. site (Stone et al. 1994; NYSDEC 2005b; Young 2005).

Species		**Habitat Use**			**Fisheries**	
Common Name	Scientific Name	Spawning Area	Nursery Area	Adult Habitat	Comm.	Rec.
ANADROMOUS FISH						
Alewife	*Alosa pseudoharengus*		♦	♦		
American shad	*Alosa sapidissima*		♦	♦		
Blueback herring	*Alosa aestivalis*		♦	♦		
Rainbow smelt	*Osmerus mordax mordax*		♦	♦		
Shortnose sturgeon	*Acipenser brevirostrum*		♦	♦		
Striped bass	*Morone saxatilis*		♦	♦	♦	♦
White perch	*Morone americana*		♦	♦		♦
CATADROMOUS FISH						
American eel	*Anguilla rostrata*			♦		♦
MARINE/ESTUARINE FISH						
American sand lance	*Ammodytes americanus*		♦	♦		
Atlantic herring	*Clupea harengus harengus*		♦	♦		
Atlantic mackerel	*Scomber scombrus*		♦	♦		
Atlantic menhaden	*Brevoortia tyrannus*		♦	♦		
Atlantic tomcod	*Microgadus tomcod*		♦	♦		♦
Bay anchovy	*Anchoa mitchilli*		♦	♦		
Black seabass	*Centropristis striata*		♦	♦	♦	♦
Bluefish	*Pomatomus saltatrix*		♦	♦	♦	♦
Butterfish	*Peprilus triacanthus*		♦	♦		
Cunner	*Tautogolabrus adspersus*		♦	♦		
Gobie	*Gobiosoma spp.*	♦	♦	♦		
Hogchoker	*Trinectes maculatus*	♦	♦	♦		
Killifish	*Fundulus spp.*	♦	♦	♦		
Northern pipefish	*Syngnathus fuscus*	♦	♦	♦		
Northern searobin	*Prionotus carolinus*	♦	♦	♦		
Pollock	*Pollachius virens*		♦	♦		
Red hake	*Urophycis chuss*		♦	♦		
Oyster toadfish	*Opsanus tau*	♦	♦	♦		
Scup	*Stenotomus chrysops*		♦	♦	♦	♦
Sheepshead minnow	*Cyprinodon variegatus variegatus*	♦	♦	♦		
Silverside	*Menidia spp.*	♦	♦	♦		
Skate	*Raja spp.*	♦	♦	♦		
Tautog	*Tautoga onitis*		♦	♦	♦	♦
Weakfish	*Cynoscion regalis*		♦	♦	♦	♦
Windowpane	*Scophthalmus aquosus*	♦	♦	♦		
Winter flounder	*Pseudopleuronectes americanus*	♦	♦	♦	♦	♦
SEA TURTLES						
Kemp's Ridley sea turtle	*Lepidochelys kempii*		♦			
INVERTEBRATES						
American lobster	*Homarus americanus*	♦	♦	♦	♦	♦
Blue crab	*Callinectes sapidus*		♦	♦	♦	♦
Blue mussel	*Mytilus edulis*	♦	♦	♦		
Daggerblade grass shrimp	*Palaemonetes pugio*	♦	♦	♦		
Eastern oyster	*Crassostrea virginica*	♦	♦	♦		
Northern quahog	*Mercenaria mercenaria*	♦	♦	♦	♦	♦
Sevenspine bay shrimp	*Crangon septemspinosa*	♦	♦	♦		
Softshell clam	*Mya arenaria*	♦	♦	♦		
			♦	♦		

Most of the remaining marine/estuarine species (Table 1) exhibit the common marine lifestyle of spawning in coastal areas followed by larval transport to estuaries, where the juveniles rear. Adults are present in the estuaries seasonally, usually moving offshore during the winter (Stone et al. 1994).

Many of the East Coast anadromous species are common to abundant in Long Island Sound. Juvenile alewife, American shad, blueback herring, striped bass, and white perch rear in bays through the summer and fall. Adults generally dwell in coastal areas of the sound (Stone et al. 1994).

Several species of shellfish spend their entire lives within the estuary. The northern quahog and eastern oyster are common in Long Island Sound. American lobster, daggerblade grass shrimp, and sevenspine bay shrimp are common to abundant, spending most or all of their lives within the sound. Blue crab are common but not as abundant as they are in estuaries farther south on the East Coast. Both juvenile and adult blue crab are present in the estuary, while brooding females generally move offshore (Stone et al. 1994).

The Kemp's Ridley sea turtle, listed as federally endangered by NOAA and as endangered in New York State, uses Long Island Sound as juvenile habitat (NYSDEC 2005b).

Areas of Long Island Sound in the vicinity of Port Jefferson Harbor support commercial and recreational fisheries for fish and shellfish. American lobster, hard clam, and long fin squid are the most valuable commercial fisheries (NYSDEC 2005c). The fish most actively sought by recreational and commercial fishers are black seabass, bluefish, scup, striped bass, tautog, weakfish, and winter flounder (Young 2005).

A health advisory is in effect Long Island Sound and some other marine waters of New York State because of polychlorinated biphenyl (PCB) contamination. The advisory recommends that women of child bearing age and children not eat fish of any species from these waters. For the general public, the advisory recommends limited consumption of no more than one meal per week of bluefish and American eel and no more than one meal per month of striped bass. There is also an advisory against consuming the hepatopancreas of crab and lobster in all waters of New York State because of PCB, cadmium, and dioxin contamination (NYSDOH 2007).

Site-Related Contamination

Samples of surface water, sediment, groundwater, and surface soil were collected from the Lawrence Aviation site during a screening-level ecological risk assessment and remedial investigation (CDM 2005a; CDM 2005b). The surface water samples were collected from 21 locations and the sediment samples from 24 locations in Port Jefferson Harbor, Flannery Pond, Old Mill Pond, Old Mill Creek, and catch basins. The groundwater samples were collected from 22 monitoring wells, public supply wells, and residential wells on the Lawrence Aviation property and neighboring properties at depths between 2.4 m (8 ft) and 84 m (276 ft) bgs. The surface soil samples were collected from 67 locations on the Lawrence Aviation property and an area approximately 183 m (600 ft) southwest of the property. The contaminants of concern to NOAA are metals, polycyclic aromatic hydrocarbons (PAHs), pesticides, PCBs, and VOCs.

Table 2 summarizes the maximum concentrations of contaminants of concern to NOAA detected during the site investigations and compares them to relevant screening guidelines. Site-specific or regionally specific screening guidelines are always used when available. In the absence of such guidance, the screening guidelines for groundwater and surface water are the ambient water quality criteria (AWQC; USEPA 2002); the screening guidelines for sediment in a freshwater environment (such as Old Mill Creek, Old Mill Pond, and catch basins) are the threshold effects concentrations (TECs; MacDonald et al. 2000); and the screening guidelines for soil are the Oak Ridge National Laboratory final preliminary remediation goals (ORNL-PRGs; Efroymson et al. 1997) and the USEPA's ecological soil screening guidelines (USEPA 2005a). Exceptions to these screening guidelines, if any, are noted on Table 2. Only maximum concentrations that exceeded relevant screening guidelines, or for which there are currently no screening guidelines available, are discussed below. When known, the general sampling locations (refer to Figure 2) are also provided for maximum concentrations that exceeded screening guidelines or do not have screening guidelines.

Surface Water

Nine metals were detected in surface water samples collected from the Lawrence Aviation site at concentrations that exceeded the AWQC (Table 2). The maximum concentrations of cadmium, chromium, copper, mercury, nickel, selenium, silver, and zinc were detected in samples collected from the catch basin on the south side of the Lawrence Aviation property. The maximum concentrations of cadmium and copper exceeded the AWQC by two orders of magnitude. The maximum concentrations of chromium and zinc exceeded the AWQC by one order of magnitude. The maximum concentrations of mercury, nickel, and silver exceeded the AWQC by factors of four, three, and two, respectively. The maximum concentration of selenium slightly exceeded the AWQC.

The maximum concentration of lead, which was detected in a sample collected from the catch basin on the west side of the Lawrence Aviation property, exceeded the AWQC by two orders of magnitude.

Sediment

Eight metals were detected in sediment samples collected from the Lawrence Aviation site at concentrations that exceeded the TECs. The maximum concentrations of cadmium, copper, mercury, and zinc were detected in samples collected from the catch basin near the melt shop. The maximum concentrations of copper and zinc exceeded the TECs by an order of magnitude. The maximum concentrations of cadmium and mercury exceeded the TECs by factors of nine and three, respectively.

The maximum concentrations of lead and nickel were detected in samples collected from the catch basin east of the rolling mills building. Maximum concentrations of lead and nickel exceeded the TECs by factors of four and three, respectively. The maximum concentration of arsenic, which was detected in a sample collected from the south end of Old Mill Creek, exceeded the TEC by a factor of 1.5. The maximum concentration of chromium, which was detected in a sample collected from the catch basin near the acid rinse tank, also exceeded the TEC by a factor of 1.5.

Eleven PAHs were detected in sediment samples collected from the Lawrence Aviation site at maximum concentrations that exceeded the TECs, and one PAH was also detected for which there is currently no screening guideline available. The maximum concentrations of

Table 2. Maximum concentrations of contaminants of concern to NOAA at the Lawrence Aviation Industries, Inc. site (CDM 2005a; CDM 2005b). Contaminant values in bold exceed or are equal to screening guidelines.

	Soil (mg/kg)		Water (µg/L)			Sediment (mg/kg)	
Contaminant	Soil	ORNL-PRG[a]	Ground-water	Surface Water	AWQC[b]	Sediment	TEC[c]
METALS/INORGANICS							
Arsenic	**17**	9.9	18	42	150	**15**	9.79
Cadmium	**18**	0.36[d]	ND	**73**	0.25[e]	**9.2**	0.99
Chromium[f]	**270**	0.4	8.2	**120**	11	**63**	43.4
Copper	**120**	60	ND	**6,500**	9[e]	**920**	31.6
Lead	**790**	40.5	**320**	**1,500**	2.5[e]	**140**	35.8
Mercury	**0.4**	0.00051	0.7	**3.3**	0.77[g]	**0.5**	0.18
Nickel	**160**	30	**120**	**170**	52[e]	**68**	22.7
Selenium	**2.1**	0.21	**35**	**6.5**	5.0[h]	ND	NA
Silver	**3**	2	ND	**7.4**	3.2[e,i]	ND	4.5[j]
Zinc	**600**	8.5	**270,000**	**11,000**	120[e]	**1,600**	121
PAHs							
Acenaphthene	ND	20	N/A	ND	520[k]	**0.3**	0.290[j]
Anthracene	ND	NA	N/A	ND	NA	**0.6**	0.0572
Benz(a)anthracene	ND	NA	N/A	ND	NA	**1.4**	0.108
Benzo(a)pyrene	ND	NA	N/A	ND	NA	**1.2**	0.15
Benzo(b)fluoranthene	0.04	NA	N/A	ND	NA	1.6	NA
Benzo(k)fluoranthene	ND	NA	N/A	ND	NA	1.2	13.4[j]
Chrysene	0.09	NA	N/A	ND	NA	**1.6**	0.166
Dibenz(a,h)anthracene	ND	NA	N/A	ND	NA	**0.2**	0.033
Fluoranthene	0.14	NA	N/A	ND	NA	**3.7**	0.423
Fluorene	ND	NA	N/A	ND	NA	**0.4**	0.0774
Indeno(1,2,3-cd)pyrene	ND	NA	N/A	ND	NA	**1**	0.330[j]
Phenanthrene	0.13	NA	N/A	ND	NA	**3.1**	0.204
Pyrene	0.12	NA	N/A	ND	NA	**2.7**	0.195
PESTICIDES/PCBs							
Aldrin	0.03	NA	N/A	ND	3.0[j]	ND	0.040[j]
4,4'-DDD	0.004	NA	N/A	ND	0.6[i,k]	ND	0.00488
4,4'-DDE	0.3	NA	N/A	ND	1050[i,k]	**0.091**	0.00316
4,4'-DDT	0.6	NA	N/A	ND	0.001[l]	**0.094**	0.00416
Dieldrin	**0.02**	0.000032[d]	N/A	ND	0.056	**0.019**	0.0019
Endrin	0.002	NA	N/A	ND	0.036	**0.055**	0.00222
Gamma-BHC (Lindane)	0.0004	NA	N/A	ND	0.95[i]	ND	0.00237
Heptachlor	ND	NA	N/A	ND	0.0038	**0.034**	0.010[j]
Heptachlor Epoxide	ND	NA	N/A	ND	0.0038	**0.0086**	0.00247
Total PCBs	**4.2**	0.371	N/A	N/A	0.014	**6**	0.0598
VOCs							
cis-1,2-Dichloroethene	ND	NA	10	2.9	11,600[i,k]	0.15	NA
Trichloroethene	ND	NA	1,200	0.3	21,900[k]	**3**	0.041[m]

Table 2 continued on next page

Table 2, *cont*.

a: Oak Ridge National Laboratory (ORNL) final preliminary remediation goals (PRG) for ecological endpoints (Efroymson et al. 1997).
b: Ambient water quality criteria for the protection of aquatic organisms (USEPA 2002). Freshwater chronic criteria presented.
c: Threshold Effects Concentration (TEC). Concentration below which harmful effects are unlikely to be observed (MacDonald et al. 2000).
d: Ecological soil screening guidelines (USEPA 2005a).
e: Criterion expressed as a function of total hardness; concentrations shown correspond to hardness of 100 mg/L $CaCO_3$.
f: Screening guidelines represent concentrations for $Cr.^{+6}$
g: Derived from inorganic, but applied to total mercury.
h: Criterion expressed as total recoverable metal.
i: Chronic criterion not available; acute criterion presented.
j: Freshwater upper effects threshold (UET) for bioassays. The UET represents the concentration above which adverse biological impacts would be expected.
k: Lowest observable effects level (LOEL) (USEPA 1986).
l: Expressed as total DDT.
m: Apparent Effects Threshold for Neanthes bioassays (PTI 1988).
NA: Screening guidelines not available.
N/A: Contaminant not analyzed for.
ND: Not detected.

acenaphthene, anthracene, fluorene, and phenanthrene were detected in samples collected south of Old Mill Pond. The maximum concentrations of phenanthrene and anthracene exceeded the TECs by one order of magnitude. The maximum concentration of fluorene exceeded the TEC by a factor of five, while the maximum concentration of acenaphthene slightly exceeded the TEC.

The maximum concentrations of benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene were detected in samples collected from the north end of Old Mill Creek. The maximum concentrations of benz(a)anthracene, chrysene, and pyrene exceeded the TECs by one order of magnitude. The maximum concentrations of fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene exceeded the TECs by factors of nine, eight, and six, respectively. The maximum concentration of indeno(1,2,3-cd)pyrene exceeded the TEC by a factor of three. No screening guideline is currently available for comparison to the maximum concentration of benzo(b)fluoranthene detected in the sediment samples.

Total PCBs and six pesticides were detected in sediment samples collected from the Lawrence Aviation site at maximum concentrations that exceeded the TECs. The maximum concentrations of total PCBs, 4,4'-DDE, and endrin were detected in samples collected from the catch basin east of the rolling mills building. The maximum concentration of total PCBs exceeded the TEC by two orders of magnitude. The maximum concentrations of 4,4'-DDE and endrin exceeded the TECs by one order of magnitude. The maximum concentrations of 4,4'-DDT and dieldrin, which were detected in samples collected from the catch basin near the acid rinse tank, also exceeded the TECs by one order of magnitude. The maximum concentration of heptachlor epoxide, which was detected in a sample collected from the north end of Old Mill Creek, exceeded the TEC by a factor of 3.5. The maximum concentration of heptachlor, which was detected in a sample collected from the catch basin near the melt shop, also exceeded the TEC by a factor of 3.5.

One VOC was detected in sediment samples collected from the Lawrence Aviation site at a maximum concentration that exceeded the screening guideline, and one VOC was also detected for which no screening guideline is currently available. The maximum concentrations of trichloroethene and cis-1,2-dichloroethene were detected in samples collected from the Old Mill Pond. The maximum concentration of trichloroethene exceeded

the screening guideline by one order of magnitude. No screening guideline is currently available for comparison to the maximum concentration of cis-1,2-dichloroethene detected in the sediment samples.

Groundwater

Four metals were detected in groundwater samples collected from the Lawrence Aviation site at maximum concentrations that exceeded the AWQC. The maximum concentration of zinc, which was detected in a sample collected from near Sheep Pasture Road to the west of the Lawrence Aviation property, exceeded the AWQC by three orders of magnitude. The maximum concentration of lead, which was detected in a sample collected from a well approximately 1.2 km (0.75 mi) to the northwest of the Lawrence Aviation property, exceeded the AWQC by two orders of magnitude. The maximum concentrations of selenium and nickel were detected in samples collected near Park Road, to the northwest of the Lawrence Aviation property. The maximum concentrations of selenium and nickel exceeded the AWQC by factors of seven and two, respectively.

Soil

Ten metals were detected in soil samples collected from the Lawrence Aviation site at maximum concentrations that exceeded screening guidelines. The maximum concentrations of cadmium, chromium, copper, lead, mercury, nickel, and silver were detected in samples collected from the former drum crushing area. The maximum concentrations of chromium and mercury exceeded the ORNL-PRGs by two orders of magnitude. The maximum concentration of cadmium exceeded the USEPA's ecological soil screening guideline by one order of magnitude, and the maximum concentration of lead exceeded the ORNL-PRG by one order of magnitude. The maximum concentrations of nickel and copper exceeded the ORNL-PRGs by factors of five and two, respectively. The maximum concentration of silver slightly exceeded the ORNL-PRG.

The maximum concentration of selenium, which was detected in a sample collected from the Ditch 4 discharge area on the east side of the Lawrence Aviation property, exceeded the ORNL-PRG by one order of magnitude. The maximum concentration of zinc, which was detected in a sample collected near the melt shop, also exceeded the ORNL-PRG by one order of magnitude. The maximum concentration of arsenic, which was detected in a sample collected from the Ditch 2 discharge area on the east side of the Lawrence Aviation property, exceeded the ORNL-PRG by a factor of two.

Five PAHs, for which no screening guidelines are currently available, were detected in soil samples collected from the Lawrence Aviation site. The maximum concentration of benzo(b)fluoranthene was detected in a sample collected from the former drum crushing area. The maximum concentration of chrysene was detected in a sample taken from the sand pit area at the north end of the site. The maximum concentrations of fluoranthene, phenanthrene, and pyrene were detected in samples taken from the cleared area on the west side of the site. No screening guidelines are currently available for comparison to the maximum concentrations of PAHs detected in the soil samples.

Total PCBs and one pesticide were detected in soil samples collected from the Lawrence Aviation site at maximum concentrations that exceeded screening guidelines, and six pesticides were also detected for which no screening guidelines are currently available. The maximum concentrations of dieldrin and total PCBs were detected in samples taken from the lagoon on the west side of the site. The maximum concentration of dieldrin exceeded

the USEPA's ecological soil screening guideline by two orders of magnitude. The maximum concentration of total PCBs exceeded the ORNL-PRG by one order of magnitude. The maximum concentrations of aldrin and 4,4'-DDT were detected in samples taken from the former drum crushing area. The maximum concentrations of 4,4'-DDD, 4,4'-DDE, and endrin were detected in samples taken just north of the Lawrence Aviation property line. The maximum concentration of gamma-BHC (lindane) was detected in a sample taken from the sand pit area. No screening guidelines are currently available for comparison to the maximum concentrations of 4,4'-DDT, 4,4'-DDD, 4,4'-DDE, aldrin, endrin, and gamma-BHC detected in the soil samples.

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