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Del Amo

Los Angeles, California

Cerclis #CAD029544731

Site Exposure Potential

The Del Amo site, located next to the Montrose Chemical site in Los Angeles, California, is 2.4 km west of the Dominguez Channel (Figure 1). The Del Amo site produced synthetic rubber for the U.S. during World War II. From 1945 until the plant closed in 1969, a variety of organic wastes from former styrene, butadiene, and synthetic rubber production facilities were disposed of in eight excavated unlined pits on the site.

The wastes vary in composition, but are generally characterized as hydrocarbon wastes with high concentrations of volatile aromatic compounds and/or PAHs. There is a six-meter wide underground pipeline right-of-way just inside the site boundary. For the last 50 years, up to 8 different petroleum companies have used pipelines within this right-of-way to transmit a wide range of refined petroleum and chemical products (Dames & Moore, 1990). Groundwater and surface water are potential pathways of contamination from the site to NOAA resources and associated habitats.

Groundwater occurs in four aquifers beneath the site. Shallow groundwater lies approximately 18 m below ground surface and flows southeast. The upper aquifer is separated from the lower aquifers by fine-grained sandy silts and clays and is not hydraulically connected to the three underlying confined aquifers. Groundwater in the deepest aquifer lies thirty meters below ground surface and flows northeast (Dames & Moore, 1990).

Surface drainage near the Del Amo site follows topography and flows southeast. A drainage

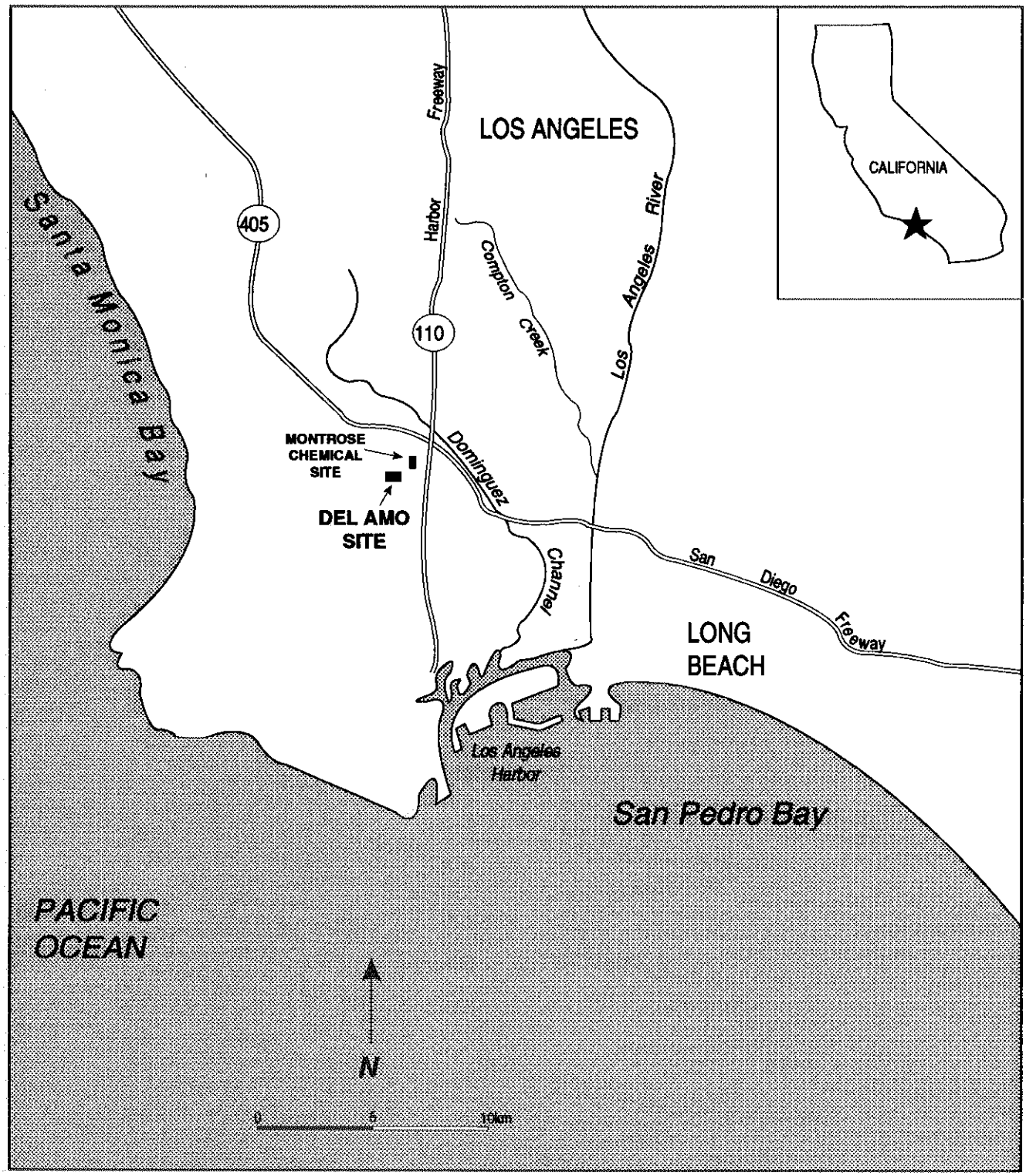

Figure 1. General vicinity of the Del Amo site, Los Angeles, California.

ditch along the northern edge of the site stops surface runoff from entering the site from the north. A drainage channel formed by a railroad embankment along the southern border of the site intercepts any site runoff and conducts it to the east towards a storm drain. Surface drainage has been artificially improved by channelization of Dominguez Creek (Dames & Moore, 1990), which is a modified ancestral coastal river functioning as a flood control and industrial discharge channel for the South Bay area of Los Angeles. The Channel discharges to Los Angeles Harbor in San Pedro Bay 10 km downstream of the site. San Pedro Bay is directly connected to the Pacific Ocean.

NOAA Trust Habitats and Species

The primary habitats of concern to NOAA are the surface waters and associated bottom habitats of Los Angeles Harbor and San Pedro Bay, and to a lesser degree tidal waters and substrates in Dominguez Channel. Dominguez Channel discharges into the east basin of Los Angeles Harbor and is tidally influenced 13 km upstream of its mouth (Helvey, personal communication 1991). In the vicinity of the site, the channel is an unimproved, clay-lined, rip-rap waterway 5 m wide and 25 m deep (Nakahara, personal communication 1991). Composition of substrate in the channel is unknown (Helvey, personal communication 1991).

San Pedro Bay and Los Angeles Harbor are considered important spawning, nursery, and adult habitats for trust resources (Johansen, personal communication 1991).

Species diversity and abundance is greater in San Pedro Bay than in Los Angeles Harbor. Over 130 different fish and invertebrate species have been sampled in San Pedro Bay (Table 1; Allen, 1976; Hagner, personal communication 1991; Crooke, personal communication 1991; Helvey, personal communication 1991; Cross, personal communication 1991). Species utilization of Dominguez Channel is unknown. Sampling conducted at the mouth of Dominguez Channel indicates the presence of fish found in Los Angeles Harbor (Cross, personal communication 1991). During low flow periods, fish may access Dominguez Channel and may utilize it for spawning or nursery habitat (Cross, personal communication 1991). There are no known endangered or threatened trust species in the vicinity of the site (Johnson, personal communication 1991).

No commercial fishing occurs in Dominguez Channel, and sport fishing is minimal due to limited public access along the industrialized channel (Cross, personal communication 1991). San Pedro Bay supports significant year-round recreational fishing, but little commercial fishing. Species regularly caught by anglers include: kelp bass, sand bass, queenfish, white croaker, rockfish, surfperch, California halibut, and diamond turbot. Spiny lobster and rock crab are invertebrate species caught regularly by sport fisherman near Los Angeles Harbor. A commercial bait

Table 1. Species, habitat use, and commercial and recreational fisheries in Los Angeles Harbor and inner San Pedro Bay.

Species		Habitat			Fisheries	
Common Name	Scientific Name	Spawning	Nursery	Adult Forage	Comm	Recr.
RESIDENT SPECIES						
Fish						
poacher	*Agonidae*			♦		
silverside	*Atherinidae*	♦	♦	♦	♦	♦
blenny	*Blennidae*	♦	♦	♦		
left-eye flounder	*Bothidae*	♦	♦	♦		♦
clinid	*Clinidae*	♦	♦	♦		
sculpin	*Cottidae*	♦	♦	♦		♦
surfperch	*Embiotocidae*	♦	♦	♦	♦	♦
anchovy	*Engraulidae*	♦	♦	♦	♦	♦
flying fish	*Exocoetidae*			♦		
goby	*Gobiidae*	♦	♦	♦		
striped mullet	*Mugil cephalus*		♦	♦		
smoothhound	*Mustelus* spp.			♦		
sea bass	*Paralabra* spp.		♦	♦		♦
right eye flounder	*Pleuronectidae*	♦	♦	♦		♦
damselfish	*Pomacentridae*		♦	♦		
midshipmen	*Porichthy* spp.	♦	♦	♦		
skate	*Rajidae*		♦	♦		
guitarfish	*Rhinobatidae*		♦	♦		
drum	*Sciaenidae*	♦	♦	♦	♦	♦
mackerel	*Scombridae*		♦	♦	♦	♦
scorpionfish	*Scorpaenidae*	♦	♦	♦		♦
rockfish	*Sebastes* spp.	♦	♦	♦		♦
California barracuda	*Sphyraena argentea*			♦		♦
pipefish	*Syngnathidae*	♦	♦	♦		
Invertebrate						
rock crab	*Cancer anternnarius*	♦	♦	♦	♦	♦
abalone	*Halioti* spp.	♦	♦	♦		
bay mussel	*Mytilis edulis*	♦	♦	♦		
spiny lobster	*Panulirus interruptus*	♦	♦	♦	♦	♦
littleneck clam	*Protothaca staminea*	♦	♦	♦		
kelp	*Pugettia producta*	♦	♦	♦		
octopus	*Octopodidae*	♦	♦	♦		♦
platform mussel	*Septifer bifurcatus*	♦	♦	♦		
urchins	*Strongylocentro* spp.	♦	♦	♦		
tunicates	*Styel* spp.	♦	♦	♦		
Pismo clam	*Tivela stultorum*	♦	♦	♦		♦
gaper clam	*Tresus nuttali*	♦	♦	♦		♦

fishery exists in San Pedro Bay for northern anchovy, topsmelt, mackerel, and queenfish.

No significant recreational or commercial fishing occurs in Los Angeles Harbor, due to a combination of advisories, closures, and commercial shipping traffic (Crooke, personal communication 1991).

A ban is in effect for commercial and recreational harvesting of white croaker from the San Pedro Bay area due to DDT and PCB contamination (Pollock, personal communication 1991). A related advisory is in effect for the Palos Verdes/ San Pedro Bay area, warning people to limit consumption of fish taken from these waters (Pollock, personal communication 1991). A health advisory is in effect for consuming shellfish from San Pedro Bay; likely due to fecal coliform (Crooke, personal communication 1991).

Site-Related Contamination

Data from previous investigations indicate that soils are contaminated beneath the former waste disposal pits and shallow groundwater in the vicinity of the site. Benzene is the most widespread contaminant, but ethylbenzene, toluene, naphthalene, and mercury have also been found at relatively high concentrations (Table 2; Dames & Moore, 1990).

Benzene and ethylbenzene were major contaminants in waste sampled from the eight on-site hazardous waste disposal pits. High concentrations of PAHs (up to 30,210 ppm) and VOCs (up to 100,000 ppm) were also reported in the waste samples. Concentrations of trace elements in the waste samples collected from the disposal pits were described as generally "low," but the actual data were not available for review (Dames & Moore, 1990).

Benzene, ethylbenzene, and toluene were the dominant VOCs found in soil samples from below the waste pits. Several PAHs were also found in soils below the disposal pits. Soils were not analyzed for trace elements.

Concentrations of benzene, chlorobenzene, and ethylbenzene in groundwater exceeded the LOEL reported by EPA by two to three orders of magnitude. The maximum concentration of mercury in groundwater samples exceeded the ambient water quality criteria by two orders of magnitude. No pesticides or PCBs were detected in groundwater samples (Dames & Moore, 1990).

Lead was found in a ponded surface water sample at a maximum concentration of 300 µg/l, exceeding the ambient water quality criteria by more than a factor of ten. Concentrations of VOCs were reported to be "low," but analytical results for other trace elements and organics were not provided (Dames & Moore, 1990).

EPA signed a Consent Decree with the Potentially Responsible Party in May 1992. The PRP's

Table 2. Maximum concentrations of selected contaminants of concern at the Del Amo site.

	Water			Soil	
	Groundwater µg/l	Surface Water µg/l	AWQC[1] µg/l	Soil mg/kg	Average[2] U.S. Soil mg/kg
INORGANIC SUBSTANCES					
Trace Elements					
lead	<8.4	300	5.6*	NR	10
mercury	6.5	NR	0.025	NR	0.03
zinc	45	80	86**	NR	50
ORGANIC COMPOUNDS					
VOCs					
benzene	1,600,000	NR	700*	66,000	NA
chlorobenzene	300,000	NR	129*	NR	NA
ethylbenzene	300,000	NR	430*	50,000	NA
toluene	2,600	NR	5,000*	940	NA
SVOCs					
acenaphthene	40	NR	55*	9,900	NA
phenanthrene/ anthracene	64	NR	NA	3,900	NA
naphthalene	66	NR	2,350*	5,800	NA

1: Ambient water quality criteria for the protection of aquatic organisms. Freshwater chronic presented (EPA, 1986).

2: Lindsay (1979).

NR: Data not reported.

NA: Screening level not available.

*: Insufficient data to develop Criteria. Value presented is the Lowest Observed Effects Level (L.O.E.L.).

**: Hardness-dependent criteria, 100 µg/l $CaCo_3$ assumed.

site investigation, to be conducted over the next eighteen months, will provide additional information on site-related contaminants.

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